FLOOD INSURANCE STUDY

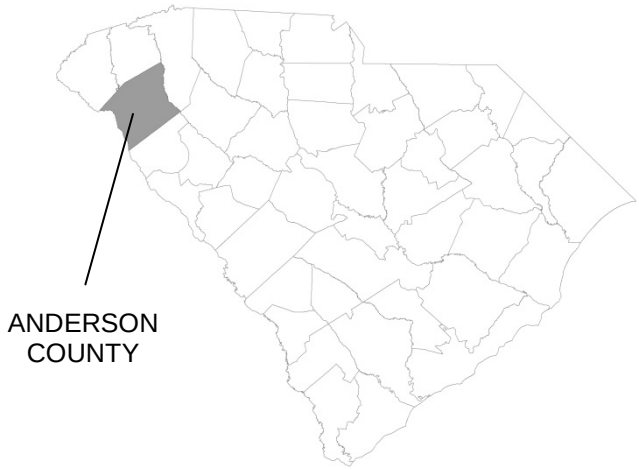
VOLUME 1 OF 3

ANDERSON COUNTY, SOUTH CAROLINA,

AND INCORPORATED AREAS

Community Name	Community Number
ANDERSON COUNTY (UNINCORPORATED AREAS)	450013
ANDERSON, CITY OF	450014
BELTON, CITY OF	450015
HONEA PATH, TOWN OF	450016
IVA, TOWN OF	450017
PELZER, TOWN OF	450018
PENDLETON, TOWN OF	450019
STARR, TOWN OF	450247
WEST PELZER, TOWN OF*	450294
WILLIAMSTON, TOWN OF	450020

* No Special Flood Hazard Areas Identified



REVISED:

PRELIMINARY
DECEMBER 18, 2015

This Preliminary FIS report only includes revised Floodway Data, Limited Detailed Flood Hazard Data and Flood Profiles. The unrevised Floodway Data, Limited Detailed Flood Hazard Data and Flood Profiles will appear in the final FIS report.

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
45007CV001B

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: September 29, 2011

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.

This Preliminary FIS report only includes revised Floodway Data, Limited Detailed Flood Hazard Data and Flood Profiles. The unrevised Floodway Data, Limited Detailed Flood Hazard Data and Flood Profiles will appear in the final FIS report.

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FLOOD INSURANCE STUDY
ANDERSON 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 Anderson County, South Carolina, including the Cities of Anderson and Belton; the Towns of Honea Path, Iva, Pelzer, Pendleton, Starr, West Pelzer, and Williamston; and the unincorporated areas of Anderson County (referred to collectively herein as Anderson County), and aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood-risk data for various areas of the community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Cities of Clemson and Easley are geographically located in Anderson and Pickens Counties. The Cities of Clemson and Easley are shown in their entirety in the Pickens County FIS. The Town of Honea Path is geographically located in Anderson and Abbeville Counties. The Town of Honea Path is shown in its entirety in this FIS report.

Please note that the Town of West Pelzer 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 Acknowledgments

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

This FIS was prepared to include all jurisdictions within Anderson County into a countywide format FIS. Information on the authority and acknowledgments for each jurisdiction with a previously printed FIS report included in this countywide

FIS is shown as follows.

Anderson County (Unincorporated Areas):	The hydrologic and hydraulic analyses for this study were performed by the Savannah District, United States Army Corps of Engineers (USACE), for the Federal Emergency Management Agency (FEMA), formerly the Federal Insurance Administration (FIA), under Interagency Agreement No. IAA-H-1077, Project Order No. 24. This study was completed in January 1979.
Anderson, City of:	The hydrologic and hydraulic analyses for this study were performed by the U.S. Geological Survey (USGS), Water Resources Division, Columbia, SC for FEMA, formerly the FIA, under Interagency Agreement No. IAA-H-19-75, Project Order No. 10. This study was completed in December 1978.
Belton, City of:	The hydrologic and hydraulic analyses for this study were performed by the Soil Conservation Service (SCS) under contract to the USACE, Savannah District, for FEMA, formerly the FIA, under Interagency Agreement No. IAA-H-10- 77, Project Order No. 24. All field survey data for this study were collected and compiled by the Heaner Engineering Co., Inc., Greenwood, SC. This study was completed in June 1978.
Honea Path, Town of:	The hydrologic and hydraulic analyses for this study were performed by the USACE, Savannah District, for FEMA, formerly the FIA, under Interagency Agreement No. IAA-H-10-77, Project Order No. 24. This study was completed in August 1978.
Pendleton, Town of:	The hydrologic and hydraulic analyses for this study were performed by the SCS under for FEMA, formerly the FIA, under Interagency Agreement No. IAA-10-77. This study was completed in June 1978.

Williamston, Town of: The hydrologic and hydraulic analyses for this study were performed by the USACE, for FEMA, formerly the FIA, under Interagency Agreement No. IAA- 10-77, Project Order No. 24. This study was completed in September 1978.

The authority and acknowledgements for the Towns of Iva, Pelzer, Starr and West Pelzer are not included because there were no previously printed FIS Reports for these communities.

For the September 29, 2011, countywide FIS, the hydrologic and hydraulic analyses were prepared by URS Corporation (URS) for the state of South Carolina Department of Natural Resources (SCDNR) (Cooperating Technical Partner) under South Carolina Map Modernization Initiative Project No. P-24-N085-MJ. This work was completed in February 2008.

Base map information shown on the September 29, 2011, Flood Insurance Rate Map (FIRM) was provided in digital format by the Anderson County GIS Department. This information was developed from city ordinances, plats, GPS, and aerial photography at scales of 1”=400’, 1”=200’, and 1”=100’. Additional information may have been derived from other sources. Users of this FIRM should be aware that minor adjustments may have been made to specific base map features.

For the [TBD], countywide FIS, the hydrologic and hydraulic analyses were prepared by AECOM for SCDNR under Mapping Activity Statement FY12.22. The work in Anderson County was performed as a part of the larger Seneca Watershed study and is based on the Discovery Report for Seneca Watershed dated January 18, 2013; 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 Anderson County, detailed hydrologic and hydraulic analyses were performed for approximately 15 miles of portions of Hembree Creek and Eighteen Mile Creek. For portions of Six and Twenty Creek and West Twenty Six Mile Creek, approximately 15.6 miles of limited detailed analyses were performed. The extents of these analyses can be found in Table 4, “[TBD], Study Scope,” in Section 2.1, “Study Scope,” of this FIS Report. For Deep Creek and Seneca River, the Lake Hartwell stillwater elevation was applied. This work was completed in March 2015.

Additionally, for the [TBD], countywide FIS, revised hydrologic and hydraulic analyses were prepared by AECOM for SCDNR under Mapping Activity Statement FY13.23, Contract No. P24-N085-MJ. The work in Anderson County was performed as a part of the larger Middle Savannah, Upper Savannah, Savannah, and Stevens Watershed study and is based on the Discovery Report for Upper Savannah Watershed and Stevens Watershed dated January 13, 2014. In

Anderson County, approximately 5.7 miles of portions of First Creek, First Creek Tributary 1, Governers Creek, Rocky River and Rocky River Tributary 1 in the Upper Savannah Watershed were studied by limited detailed methods. The extents of these analyses can be found in Table 4, "[TBD], Study Scope," in Section 2.1, "Study Scope," of this FIS report. This work was completed in July 2015.

Base map information shown on the [TBD], FIRMs was provided in digital format by Anderson 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 Coordination Officer's (CCO) meeting is held typically 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 held typically with the same representatives to review the results of the study.

The dates of the pre-countywide initial and final CCO meetings held for the communities within Anderson County are shown in Table 1, "Initial and Final CCO Meeting Dates."

Table 1 – Initial and Final CCO Meeting Dates

Community Name	Initial CCO Date	Final CCO Date
Anderson County (Unincorporated Areas)	September 1976	December 19, 1979
City of Anderson	October 21, 1975	December 19, 1979
City of Belton	*	April 24, 1979
Town of Honea Path	September 15, 1976	January 31, 1979
Town of Pendleton	September 16, 1976	April 23, 1979
Town of Williamston	September 15, 1976	January 31, 1979

*Date not available

For the September 29, 2011, countywide FIS an initial CCO meeting was held on April 26, 2006, and attended by representatives of Anderson County; the City of Anderson; URS; Milone& MacBroom; F&S Surveyors, Engineers, Planners; and

SCDNR.

The results of the September 29, 2011, countywide FIS were reviewed at the final CCO meeting held on July 29, 2009, and attended by representatives of Anderson County; the Town of Belton; the Town of Pendleton, the Town of Williamston; and SCDNR.

For the [TBD], countywide FIS, an initial Discovery meeting for the Seneca Watershed study was held on July 11, 2012, and attended by representatives from Anderson, Oconee, and Pickens Counties; the Cities of Anderson and Clemson, and the Town of Peddleton; as well as representatives from FEMA, SCDNR, USGS, USACE, the National Weather Service – Southeast River Forecast Center and the study contractors. A Discovery Report, Seneca, 03060101, dated January 18, 2013, describes and summarizes the Discovery tasks that were conducted.

Additionally, for the [TBD], countywide FIS, an initial Discovery meeting for the Upper Savannah and Stevens Watershed study was held on June 19, 2013, and attended by representatives from the City of Anderson and Anderson County; as well as representatives from FEMA, SCDNR, and the study contractors. A Discovery Report, Upper Savannah Watershed, HUC-03060103, Stevens Watershed HUC-03060107, dated January 13, 2014, describes and summarizes the Discovery tasks that were conducted.

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 report covers the geographic area of Anderson County, South Carolina and includes part of the Seneca Watershed, Hydrologic Unit Code 03060101 and part of the Upper Savannah Watershed, Hydrologic Unit Code 03060103.

The Seneca River is formed at the confluence of the Keowee River and the Little River in northern South Carolina, just downstream of Lake Keowee and flows into Lake Hartwell. Seneca River joins the Tugaloo River just downstream of Lake Hartwell to form the Savannah River. The Seneca watershed is located in the Blue Ridge and Piedmont physiographic regions along the Northwest border of South Carolina and North Carolina. Parts of the watershed are located in Anderson, Oconee and Pickens Counties in South Carolina and a small portion of

the watershed is located in Jackson and Transylvania Counties in North Carolina. The watershed is largely rural with a small portion of urban area along Hembree Creek. In Anderson County, the Seneca Watershed covers approximately 203 square miles (sq. mi.) of the county (approximately 20 percent) and includes portions of the City of Anderson and the Town of Pendelton (FEMA, 2013).

The Upper Savannah Watershed is associated with the Savannah River, starting at Lake Hartwell and ending at the Atlantic Ocean, forming most of the South Carolina-Georgia border. As the watershed's namesake, the Savannah River is the watershed's largest waterway. Principal tributaries such as Rocky River, Little River, Long Cane Creek, Big Generostee Creek, and Little Generostee Creek convey the most water. The Upper Savannah Watershed encompasses parts of four South Carolina counties (Abbeville, Anderson, Greenwood and McCormick) and partly in the state of Georgia. In Anderson County, the Upper Savannah Watershed covers approximately 450 sq. mi. of the county (approximately 63 percent) and includes portions of the City of Anderson and the Towns of Iva and Starr in their entireties (FEMA, 2014).

All or portions of the flooding sources listed in Table 2, "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 2 – Flooding Sources Studied by Detailed Methods

Baily Creek	Little Beaverdam Creek A
Beaver Creek	Rocky River
Big Creek	Rocky River Tributary
Big Creek Tributary 1	Salem Creek
Big Generostee Creek	Saluda River
Bynum Creek	Shanklin Creek
Camp Creek	Town Creek Tributary
Corner Creek	Tributary A of Broad Mouth Creek
Cox Creek	Tributary B of Cupboard Creek
Cox Creek Tributary No. 2	Tributary to Little Beaverdam Creek A
Eighteen Mile Creek	Unnamed Tributary to Middle Branch
Hartwell Reservoir Tributary	Whitner Creek
Hembree Creek	

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction through Anderson County.

Floodplain boundaries for streams previously studied by detailed analyses have been redelineated based on more up-to-date topographic data for the September 29, 2011, countywide FIS.

For the September 29, 2011, countywide FIS new limited detailed analyses were performed for the flooding sources listed in Table 3, "September 29, 2011, Scope of Study." Limits of studies for the newly studied streams are shown in Table 3.

Table 3 – September 29, 2011, Scope of Study

Stream Name	Limits of Study
Bailey Creek	From the confluence with Cox Creek to approximately 1.6 miles upstream of Simpson Road
Bear Creek	From the confluence with Rocky River to approximately 1.8 miles upstream of Due West Highway
Beaver Creek	From the confluence with Rocky River to approximately 1 mile upstream of Key Street.
Beaver Creek Tributary 1	From the confluence with Beaver Creek to approximately 0.2 mile upstream of Mimosa Road
Beaver Creek Tributary 12	From the confluence with Beaver Creek to approximately 0.6 mile upstream of the confluence with Beaver Creek
Beaver Creek Tributary 13	From the confluence with Beaver Creek to approximately 0.2 mile upstream of Key Street
Beaver Creek Tributary 14	From the confluence with Beaver Creek to approximately 0.02 mile upstream of corning Avenue
Beaver Creek Tributary 15	From the confluence with Beaver Creek to approximately 0.2 mile upstream of Unnamed Dam.
Beaverdam Creek A	From the confluence with Rocky River to approximately 0.7 mile upstream of Welcome Road
Beaverdam Creek A Tributary 15	From the confluence with Beaverdam Creek A to approximately 0.7 mile upstream of the confluence with Beaverdam Creek A
Beaverdam Creek B Tributary 3	From Interstate 85 to approximately 0.6 mile upstream of Interstate 85
Big Brushy Creek	From the confluence with Saluda River to approximately 0.8 mile upstream of Sitton Hill road
Big Brushy Creek Tributary 9	From the confluence with Big Brushy Creek to approximately 0.1 mile upstream of Cater Road

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Big Brushy Creek Tributary 17	From the confluence with Big Brushy Creek to approximately 0.8 mile upstream of the confluence with Big Brushy Creek
Big Brushy Creek Tributary 23	From the confluence with Big Brushy Creek to approximately 0.7 mile upstream of the confluence with Big Brushy Creek
Big Creek (Upstream)	From just downstream of Big Creek Reservoir Dam to approximately 0.4 mile upstream of Highway 29
Big Creek (Downstream)	From the confluence with Saluda River to approximately 0.2 mile upstream of Mill Street
Big Creek Tributary 13	From the confluence with Big Creek to approximately 0.5 mile upstream of the confluence with Big Creek
Big Garvin Creek	From the confluence with Three and Twenty Creek to approximately 0.4 mile upstream of Central Road
Big Garvin Creek Tributary 3	From the confluence with Big Garvin Creek to approximately 0.1 mile upstream of Bishop Branch Road
Big Generostee Creek	From approximately 0.1 mile downstream of the confluence with Lazy Branch to approximately 0.8 mile upstream of the confluence with Threemile creek
Big Generostee Creek Tributary 15	From the confluence with Big Generostee Creek to approximately 0.4 mile upstream of the confluence with Big Generostee Creek
Big Generostee Creek Tributary 17	From the confluence with Big Generostee Creek to approximately 0.4 mile upstream of the confluence with Big Generostee Creek
Big Generostee Creek Tributary 20	From the confluence with Big Generostee Creek to approximately 0.1 mile upstream of Unnamed Dam
Big Generostee Creek Tributary 22	From the confluence with Big Generostee Creek to approximately 0.8 mile upstream of the confluence with Big Generostee Creek
Big Generostee Creek Tributary 28	From the confluence with Big Generostee Creek to approximately 0.1 mile upstream of Railroad
Big Generostee Creek Tributary 30	From the confluence with Big Generostee Creek to approximately 0.5 mile upstream of the confluence with Big Generostee Creek

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Big Generostee Creek Tributary 31	From the confluence with Big Generostee Creek to approximately 0.4 mile upstream of Highway 29
Big Generostee Creek Tributary 32	From the confluence with Big Generostee Creek to approximately 1.3 miles upstream of the confluence with Big Generostee Creek
Broad Mouth Creek	From the county boundary to approximately 0.5 mile upstream of Highway 247
Broad Mouth Creek Tributary 11	From the confluence with Broad Mouth Creek to approximately 0.3 mile upstream of Whitfield Road
Broad Mouth Creek Tributary 11.1	From the confluence with Broad Mouth Creek Tributary 11 to approximately 0.3 mile upstream of the confluence with Broad Mouth Creek Tributary 11
Broadway Creek	From the confluence with Rocky River to approximately 1.4 miles upstream of Whiten Road
Brushy Creek	From the confluence with Big Brushy Creek to approximately 0.6 mile upstream of St. Paul Road
Brushy Creek Tributary 7	From the confluence with Brushy Creek to approximately 0.6 mile upstream of Laboone Road
Camp Creek	From approximately 0.4 mile upstream of the confluence with Big Creek to approximately 0.7 mile upstream of the confluence with Big Creek
Canoe Creek	From the confluence with Little Generostee Creek to approximately 2 miles upstream of Turpin Road
Canoe Creek Tributary 3	From the confluence with Canoe Creek to approximately 0.6 mile upstream of Gene Forrester Road
Canoe Creek Tributary 6	From the confluence with Canoe Creek to approximately 0.5 mile upstream of Hatchery Road
Canoe Creek Tributary 6.1	From the confluence with Canoe Creek Tributary 6 to approximately 0.1 mile upstream of Gray Circle

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Carmel Creek	From the confluence with Three and Twenty Creek to approximately 1.6 mile upstream of the confluence with Three and Twenty Creek
Charles Creek	From the confluence with Three and Twenty Creek to approximately 1.2 miles upstream of Miles Mill Road
Cherokee Creek	From approximately 0.56 mile upstream of Cherokee Road to approximately 0.88 mile upstream of Cherokee Road.
Cherokee Creek Tributary 17	From the confluence with Cherokee Creek to approximately 0.2 mile upstream of Palmetto Parkway
Corner Creek (Downstream)	From the confluence with Little River to approximately 0.1 mile upstream of Sherwood Avenue
Corner Creek (Upstream)	From approximately 190 feet downstream of W. Greer Street to approximately 160 feet upstream of Oak Drive
Corner Creek Tributary 2	From the confluence with Corner Creek to approximately 0.2 mile upstream of Pison Street
Corner Creek Tributary 4	From the confluence with Corner Creek to approximately 0.1 mile upstream of park Avenue
Craven Creek	From the confluence with Saluda River to approximately 0.6 mile upstream of Cannon Lane
Crooked Creek	From the confluence with Little Generostee Creek to approximately 1.1 miles upstream of Sam Turner Road
Crooked Creek Tributary 2	From the confluence with Crooked Creek to approximately 0.4 mile upstream of the confluence with Crooked Creek
Cuffie Creek	From the confluence with Three and Twenty Creek to approximately 2.1 miles upstream of Bishops Branch Street
Deep Step Creek	From the confluence with Jordan Creek to approximately 0.3 mile upstream of the confluence with Jordan Creek
Double Branch	From the confluence with Three and Twenty Creek to approximately 0.6 mile upstream of Burgess Road

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
East Beards Creek	From the county boundary to approximately 80 feet upstream of Sexton Gin Road
East Prong Creek	From the confluence with Little Generostee Creek to approximately 0.7 mile upstream of Old Cementery Road
East Prong Creek Tributary 11	From the confluence with East Prong Creek to approximately 0.25 mile upstream of West Church Street
Eighteen Mile Creek (Upstream)	From just upstream of North Mechanic Street to just upstream of Central Road
Eighteen Mile Creek (Downstream)	From the confluence with Seneca River to just upstream of Excelsior Mill Road
Eighteen Mile Creek Tributary 1	From the confluence with Eighteen Mile Creek to approximately 0.4 mile upstream of the confluence with Eighteen Mile Creek
Eighteen Mile Creek Tributary 3	From the confluence with Eighteen Mile Creek to approximately 0.5 mile upstream of the confluence with Eighteen Mile Creek
Eighteen Mile Creek Tributary 4	From the confluence with Eighteen Mile Creek to approximately 0.5 mile upstream of the confluence with Eighteen Mile Creek
Eighteen Mile Creek Tributary 5	From the confluence with Eighteen Mile Creek to approximately 0.1 mile upstream of Fants Grove Road
Eighteen Mile Creek Tributary 6	From the confluence with Eighteen Mile Creek to approximately 0.4 mile upstream of the confluence with Eighteen Mile Creek
Eighteen Mile Creek Tributary 7	From the confluence with Eighteen Mile Creek to approximately 0.4 mile upstream of Fants Grove Circle
Eighteen Mile Creek Tributary 10	From the confluence with Eighteen Mile Creek to approximately 0.7 mile upstream of Eighteen Mile Creek
Eighteen Mile Creek Tributary 11	From the confluence with Eighteen Mile Creek to approximately 1.6 miles upstream of the confluence with Eighteen Mile Creek
Eighteen Mile Creek Tributary 12	From the confluence with Eighteen Mile Creek to approximately 0.6 mile upstream of the confluence with Eighteen Mile Creek

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Eighteen Mile Creek Tributary 13	From the confluence with Eighteen Mile Creek to approximately 0.2 mile upstream of West Queen Street
Eighteen Mile Creek Tributary 13.2	From the confluence with Eighteen Mile Creek Tributary 13 to approximately 0.6 mile upstream of Eighteen Mile Creek Tributary 13
Eighteen Mile Creek Tributary 18	From the confluence with Eighteen Mile Creek to approximately 0.5 mile upstream of West Queen Street
Eighteen Mile Creek Tributary A	From the confluence with Eighteen Mile Creek to approximately 0.1 mile upstream of Unnamed Dam
Eighteen Mile Creek Tributary A Tributary 1	From the confluence with Eighteen Mile Creek Tributary A to approximately 1 mile upstream of the confluence with Eighteen Mile Creek Tributary A
Eighteen Mile Creek Tributary B	From the confluence with Eighteen Mile Creek Tributary to approximately 0.2 mile upstream of Hamburg Street
Eighteen Mile Creek Tributary B Tributary 2	From the confluence with eighteen Mile Creek Tributary B to approximately 0.2 mile upstream of Crenshaw Street
First Creek	From the confluence with Rocky River to approximately 480 feet upstream of First Creek Road
First Creek Tributary 1	From the confluence with First Creek to approximately 0.4 mile upstream of First Creek
Five Mile Creek	From the confluence with Big Generostee Creek to approximately 0.5 mile upstream of New Prospect Church Road
Five Mile Creek Tributary 1	From the confluence with Five Mile Creek to approximately 1.3 miles upstream of the confluence with Five Mile Creek
Five Mile Creek Tributary 5	From the confluence with Five Mile Creek to approximately 0.4 mile upstream of Country Meadow Road
Five Mile Creek Tributary 9	From the confluence with Five Mile Creek to approximately 0.2 mile upstream of the confluence with Five Mile Creek
Georges Creek	From the confluence with Saluda River to the county boundary

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Governors Creek	From the confluence with Rocky River to approximately 0.5 mile upstream of Gillespie Road
Governors Creek Tributary 4	From the confluence with Governors Creek to approximately 0.9 mile upstream of the confluence with Governors Creek
Hartwell Reservoir Tributary	From the confluence with Town Creek A to approximately 1.2 miles upstream of the confluence with Town Creek A
Hembree Creek (Downstream)	From the confluence with Six and Twenty Creek to just downstream of Valley Road
Hembree Creek (Upstream)	From approximately 2.7 miles upstream of the confluence with Six and Twenty Creek to approximately 2.8 miles upstream of the confluence with Six and Twenty Creek
Hencoop Creek	From the confluence with Rocky River to approximately 0.1 mile upstream of Due West Highway
Hornbuckle Creek	From the confluence with Big Brushy Creek to approximately 160 feet upstream of Sitton Hill Road
Hurricane Creek A	From the confluence with Six and Twenty Creek to approximately 0.8 mile upstream of Interstate 85
Hurricane Creek B	From the confluence with Saluda River to approximately 0.5 mile upstream of State Highway 17
Hurricane Creek Tributary B Tributary 11	From the confluence with Hurricane Creek B to approximately 0.6 mile upstream of the confluence with Hurricane Creek B
Hurricane Creek Tributary B Tributary 7	From the confluence with Hurricane Creek B to approximately 0.6 mile upstream of the confluence with Hurricane Creek B
Hurricane Creek Tributary B Tributary 8	From the confluence with Hurricane Creek B to approximately 0.3 mile upstream of the confluence with Hurricane Creek B
Indian Branch	From the confluence with Little Generostee Creek to approximately 0.3 mile upstream of Pollard Road
Indian Branch Tributary 3	From the confluence with Indian Branch to approximately 0.4 mile upstream of the confluence with Indian Branch

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Jones Creek	From the confluence with Six and Twenty Creek to approximately 0.7 mile upstream of Shackleburry Road
Jones Creek Tributary 1	From the confluence with Jones Creek to approximately 0.3 mile upstream of Interstate 85
Jordan Creek	From the confluence with Wilson Creek to approximately 0.2 mile upstream of Hebron Church Road
Jordan Creek Tributary 1	From the confluence with Jordan Creek to approximately 0.3 mile upstream of Aubrey Hardy Road
Little Beaverdam Creek	From approximately 0.4 mile downstream of Smith Road to approximately 350 feet upstream of Fairplay Road
Little Beaverdam Creek A	From the confluence with Rocky River to approximately 0.9 mile upstream of Welcome Road
Little Beaverdam Creek Tributary 2	From the confluence with Little Beaverdam Creek to approximately 0.7 mile upstream of the confluence with Little Beaverdam Creek
Little Beaverdam Creek Tributary 4	From the confluence with Little Beaverdam Creek to approximately 0.4 mile upstream of Gaines Farm Road
Little Beaverdam Creek Tributary 5	From the confluence with Little Beaverdam Creek to approximately 0.8 mile upstream of Fred Dobbins Road
Little Beaverdam Creek Tributary 6	From the confluence with Little Beaverdam Creek to approximately 0.5 mile upstream of Bradberry Road
Little Beaverdam Creek Tributary 7	From the confluence with Beaverdam Creek to approximately 0.5 mile upstream of the confluence with Little Beaverdam Creek
Little Beaverdam Creek Tributary 8	From the confluence with Little Beaverdam Creek to approximately 0.4 mile upstream of Slaton Road
Little Brushy Creek	From the confluence with Big Brushy Creek to approximately 0.2 mile upstream of Mountain Springs Road
Little Garvin Creek	From the confluence with Big Garvin Creek to approximately 0.5 mile upstream of Bishops Branch Road

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Little Generostee Creek	From the confluence with Savannah River to approximately 0.7 mile upstream of Erwin Street
Little Generostee Creek Tributary 6	From the confluence with Little Generostee Creek to approximately 1.2 miles upstream of Gentry Road
Little Generostee Creek Tributary 6.2	From the confluence with Little Generostee Creek Tributary 6 to approximately 0.3 mile upstream of the confluence with Little Generostee Creek Tributary 6
Little Generostee Creek Tributary 8	From the confluence with Little Generostee Creek to approximately 0.5 mile upstream of the confluence with Little Generostee Creek
Little Generostee Creek Tributary 9	From the confluence with Little Generostee Creel to approximately 0.8 mile upstream of the confluence with Little Generostee Creek
Long Branch A	From approximately 170 feet downstream of Liberty Road to approximately 0.5 mile upstream of Liberty Road
Middle Branch Brushy Creek	From the confluence with Big Brushy Creek to approximately 0.8 mile upstream of the confluence with Big Brushy Creek
Millwee Creek	From the confluence with Six and Twenty Creek to approximately 1 mile upstream of Gentry Road
Mountain Creek	From the confluence with Big Generostee Creek to approximately 1.6 mile upstream of Mountain Creek Church Road
Mountain Creek Tributary 5	From the confluence with Mountain Creek to approximately 1.1 miles upstream of the confluence with Mountain Creek
Mountain Creek Tributary 6	From the confluence with Mountain Creek to approximately 0.7 mile upstream of the confluence with Mountain Creek
Mountain Creek Tributary 7	From the confluence with Mountain Creek to approximately 0.5 mile upstream of the confluence with Mountain Creek
Mountain Creek Tributary 9	From the confluence with Mountain Creek to approximately 105 feet upstream of Chris De Lane
Mountain Creek Tributary 9.3	From the confluence with Mountain Creek Tributary 9 to approximately 0.6 mile upstream of Martin Road

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Mountain Creek Tributary 9.5	From the confluence with Mountain Creek Tributary 9 to approximately 1.9 miles upstream of the confluence with Mountain Creek Tributary 9
Mountain Creek Tributary 9.8	From the confluence with Mountain Creek Tributary 9 to approximately 0.5 mile upstream of the confluence with Mountain Creek Tributary 9
Mountain Creek Tributary 11	From the confluence with Mountain Creek to approximately 1.1 miles upstream of the confluence with Mountain Creek
Neals Creek	From the confluence with Broadway Creek to approximately 0.2 mile upstream of Highway 252
Nesbit Creek	From the confluence with Beaver Creek to approximately 0.4 mile upstream of the confluence with Beaver Creek
Pea Creek	From the confluence with Rocky River to approximately 0.2 mile upstream of Sheerwood Drive
Pickens Creek	From the confluence with Three and Twenty Creek to approximately 0.3 mile upstream of Hunt Road
Pickens Creek Tributary 6	From the confluence with Pickens Creek to approximately 0.1 mile upstream of Lake Road
Richland Creek	From the confluence with Big Generostee Creek to approximately 1.5 miles upstream of Highway 29
Rocky Branch	From the confluence with Big Generostee Creek to approximately 0.3 mile upstream of Strawberry Road
Rocky River (Upstream)	From approximately 0.8 mile downstream of Stringer Road to approximately 0.8 mile upstream of Stringer Road
Rocky River (Downstream)	From the county boundary to approximately 0.4 mile upstream of Central Road
Rocky River Tributary 1	From the confluence with Rocky River to approximately 1.3 miles upstream of the confluence with Rocky River
Rocky River Tributary 18	From the confluence with Rocky River to approximately 0.5 mile upstream of Due West Highway

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Rocky River Tributary 20	From the confluence with Rocky River to approximately 0.4 mile upstream of Scott Road
Rocky River Tributary 27	From the confluence with Rocky River to approximately 0.5 mile upstream of Highway 141
Rocky River Tributary 27.3	From the confluence with Rocky River Tributary 27 to approximately 0.3 mile upstream of George Albert Lake Road
Rocky River Tributary 28	From the confluence with Rocky River to approximately 0.2 mile upstream of Lawrence Road
Salem Creek	From the confluence with Six and Twenty Creek to approximately 0.2 mile upstream of Centerville Road
Salem Creek Tributary 4	From the confluence with Salem Creek to approximately 0.1 mile upstream of Quail Ridge Road
Saluda River	From the county boundary to just downstream of railroad
Saluda River Tributary 1	From the confluence with Saluda River to approximately 1.3 miles upstream of Sterling Bridge Road
Saluda River Tributary 41	From the confluence with Saluda River to approximately 0.1 mile upstream of Highway 269
Saluda River Tributary 42	From the confluence with Saluda River to approximately 105 feet upstream of Osteen Hill Road
Saluda River Tributary 51	From the confluence with Saluda River to approximately 0.3 mile upstream of Holiday Street
Saluda River Tributary 52	From the confluence with Saluda River to approximately 0.2 mile upstream of Old River Road
Saluda River Tributary 62	From the confluence with Saluda River to approximately 0.5 mile upstream of the confluence with Saluda River
Saluda River Tributary 103.1	From the confluence with Saluda River to approximately 0.7 mile upstream of the confluence with Saluda River

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Savannah River	From the county boundary to just upstream of Hartwell Dam
Savannah River Tributary 23	From the confluence with Savannah River to approximately 1.1 miles upstream of the confluence with Savannah River
Shanklin Creek Tributary A	From the confluence with Shanklin Creek to approximately 260 feet upstream of Queen Street
Silver Brook	From the confluence with Rocky River to approximately 370 feet upstream of White Street
Silver Brook Tributary 2	From the confluence with Silver Brook to S. McDuffie Street
Six and Twenty Creek	From approximately 1.3 miles downstream of Clemson Blvd. to approximately 200 feet upstream of Interstate 85
Six and Twenty Creek Tributary 10	From the confluence with Six and Twenty Creek to approximately 0.7 mile upstream of Manse Jolly Road
Six and Twenty Creek Tributary 11	From the confluence with Six and Twenty Creek to approximately 0.4 mile upstream of the confluence with Six and Twenty Creek
Six and Twenty Creek Tributary 12	From the confluence with Six and Twenty Creek to approximately 230 feet upstream of Harris Bridge Road
Six and Twenty Creek Tributary 15	From the confluence with Six and Twenty Creek to approximately 0.7 mile upstream of the confluence with Six and Twenty Creek
Six and Twenty Creek Tributary 16	From the confluence with Six and Twenty Creek to approximately 0.8 mile upstream of Slater Road
Six and Twenty Creek Tributary 19	From the confluence with Six and Twenty Creek to approximately 0.3 mile upstream of Dalrymple Road
Three and Twenty Creek	From the confluence with Six and Twenty Creek to approximately 0.2 mile upstream of Miles Mill Road
Three and Twenty Creek Tributary 1	From the confluence with Three and Twenty Creek to approximately 0.9 mile upstream of the confluence with Three and Twenty Creek
Three and Twenty Creek Tributary 3	From the confluence with Three and Twenty Creek to approximately 0.2 mile upstream of Rock Creek Road

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Three and Twenty Creek Tributary 5	From the confluence with Three and Twenty Creek to approximately 0.3 mile upstream of Hix Road
Three and Twenty Creek Tributary 5.1	From the confluence with Three and Twenty Creek to approximately 0.5 mile upstream of the confluence with Three and Twenty Creek Tributary 5
Three and Twenty Creek Tributary 6	From the confluence with Three and Twenty Creek to approximately 0.5 mile upstream of the confluence with Three and Twenty Creek
Three and Twenty Creek Tributary 7	From the confluence with Three and Twenty Creek to approximately 0.9 mile upstream of Sandy Springs Road
Three and Twenty Creek Tributary 8	From the confluence with Three and Twenty Creek to approximately 0.4 mile upstream of the confluence with Three and Twenty Creek
Three and Twenty Creek Tributary 14	From the confluence with Three and Twenty Creek to approximately 400 feet upstream of La France Road
Three and Twenty Creek Tributary 15	From the confluence with Three and Twenty Creek to approximately 0.4 mile upstream of La France Road
Three and Twenty Creek Tributary 29	From the confluence with Three and Twenty Creek to approximately 0.4 mile upstream of Porter Road
Three and Twenty Creek Tributary 34	From the confluence with Three and Twenty Creek to approximately 90 feet upstream of Six and Twenty Road
Three and Twenty Creek Tributary 43	From the confluence with Three and Twenty Creek to approximately 1 mile upstream of Slab Bridge Road
Threemile Creek	From the confluence with Big Generostee Creek to approximately 0.2 mile upstream of Michelin Road
Toney Creek	From the confluence with Saluda river to approximately 0.7 mile upstream of Cannon Bottom Road
Toney Creek Tributary 1	From the confluence with Toney Creek to approximately 0.6 mile upstream of the confluence with Toney Creek

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Town Creek A	From the confluence with Six and Twenty Creek to approximately 140 feet upstream of Fox Croft Way
Town Creek B	From the confluence with Six and Twenty Creek to approximately 0.6 mile upstream of Cherry Street
Town Creek Tributary (Downstream)	From the confluence with Town Creek B to approximately 0.2 mile upstream Westinghouse Road
Town Creek Tributary (Upstream)	From approximately 0.7 mile upstream of Westinghouse Road to approximately 0.8 mile upstream of Westinghouse Road
Tributary A of Broad Mouth Creek	From the confluence with Broad Mouth Creek to approximately 0.9 mile upstream of Blakes Dairy Road
Tributary A of Broad Mouth Creek Tributary 10	From the confluence with Tributary A of Broad Mouth Creek to approximately 0.2 mile upstream of the confluence with Tributary A of Broad Mouth Creek
Tributary C of Broad Mouth Creek (Downstream)	From the confluence with Broad Mouth Creek to approximately 1.6 miles upstream of the confluence with Broad Mouth Creek
Tributary C of Broad Mouth Creek (Upstream)	From approximately 0.2 mile downstream of Carolina Avenue to approximately 0.1 mile upstream of Carolina Avenue
Tributary C of Broad Mouth Creek Tributary 3	From the confluence with Tributary C of Broad Mouth Creek to approximately 0.1 mile upstream of Trussell Street
Tributary C of Broad Mouth Creek Tributary 4	From the confluence with Tributary C of Broad Mouth Creek to approximately 0.3 mile upstream of Maryland Avenue
Tributary of Eighteen Mile Creek	From the confluence with Eighteen Mile Creek to approximately 0.1 mile upstream of Central Road
Tugaloo Creek	From the confluence with Beaver Creek to approximately 0.6 mile upstream of Airline Road
Unnamed Tributary	From the confluence with Big Generostee Creek to approximately 0.3 mile upstream of the confluence with Big Generostee Creek
Unnamed Tributary 1	From the county boundary to approximately 0.5 mile upstream of county boundary

Table 3 – September 29, 2011, Scope of Study (continued)

Stream Name	Limits of Study
Unnamed Tributary of Beaverdam Creek Tributary 5	From the confluence with Little Beaverdam Creek Tributary 5 to approximately 0.8 mile upstream of the confluence with Little Beaverdam Creek Tributary 5
Unnamed Tributary of Beaverdam Creek B Tributary 3	From the confluence with Beaverdam Creek B Tributary 3 to approximately 0.3 mile upstream of the confluence with Beaverdam Creek B Tributary 3
Unnamed Tributary of Middle Branch	From the confluence with Middle Branch Brushy Creek to approximately 0.4 mile upstream of of the confluence with Middle Branch Brushy Creek
Weems Creek	From the confluence with Big Generostee Creek to approximately 0.4 mile upstream of Lenox Drive
Weems Creek Tributary 12	From the confluence with Weems Creek to approximately 0.6 mile upstream of the confluence with Weems Creek
Weems Creek Tributary 17	From the confluence with Weems Creek to approximately 0.4 mile upstream of the confluence with Weems Creek
West Beards Creek	From the confluence with East Beards Creek to approximately 0.3 mile upstream of Pine Ridge Road
West Prong Broadmouth Creek	From the confluence with Broadmouth Creek to approximately 40 feet upstream of Highway 247
Whitner Creek	From approximately 0.2 mile downstream of Mauldin Street to approximately 0.2 mile upstream of Mauldin Street
Wilson Creek	From approximately 0.9 mile downstream of E Broad Street to approximately 290 feet upstream of Wesley Court
Wilson Creek Tributary 17	From the confluence with Wilson Creek to approximately 0.7 mile upstream of the confluence with Wilson Creek
Wilson Creek Tributary 21	From the confluence with Wilson Creek to approximately 0.3 mile upstream of First Avenue
Wilson Creek Tributary 22	From the confluence with Wilson Creek to approximately 0.1 mile upstream of First Avenue
Wilson Creek Tributary 24	From the confluence with Wilson Creek to approximately 0.8 mile upstream of Miriam Road

Stream Name	Limits of Study
Wilson Creek Tributary 31	From the confluence with Wilson Creek to approximately 0.4 mile upstream of Farmer Road

For the [TBD], countywide FIS, detailed and limited detail study analyses were performed as a part of the larger Seneca Watershed Study and Upper Savannah-Stevens Watershed study for the flooding sources listed in Table 4, "[TBD], Scope of Study." Limits of study for the detailed and limited detail study analyses are shown in Table 4.

Table 4 – [TBD], Scope of Study

Stream Name	Limits of Study
	Detailed Study Scope
Eighteen Mile Creek	From approximately 0.1 mile downstream of Excelsior Mill Road to approximately 0.72 mile upstream of Central Road
Hembree Creek	From approximately 1,390 feet downstream of Phil Watson Road to approximately 1,250 feet upstream of Civic Center Boulevard
Lake Hartwell (Deep Creek, Seneca River)	Entirety within Anderson County
	Limited Detailed Study Scope
Eighteen Mile Creek	From the confluence with Seneca River to Fants Grove Road
Eighteen Mile Creek Tributary 1	From the confluence with Seneca River to approximately 2,100 feet upstream of confluence with Seneca River
Eighteen Mile Creek Tributary 3	From the confluence with Seneca River to approximately 2,300 feet upstream of confluence with Seneca River
Eighteen Mile Creek Tributary 4	From the confluence with Seneca River to approximately 1,300 feet upstream of confluence with Seneca River
Eighteen Mile Creek Tributary 5	From the confluence with Seneca River to approximately 2,000 feet upstream of confluence with Seneca River
Eighteen Mile Creek Tributary B	From the confluence with Eighteen Mile Creek to approximately 640 feet upstream of confluence with Eighteen Mile Creek

Table 4 – [TBD], Scope of Study (continued)

Stream Name	Limits of Study
	Detailed Study Scope
First Creek	From the confluence with Rocky River to approximately 5,075 feet upstream of Rocky River
First Creek Tributary 1	From the confluence with First Creek to approximately 1,930 feet upstream of confluence with First Creek
Governers Creek	From the confluence with Rocky River to approximately 1,105 feet upstream of confluence with Rocky River
Jones Creek	From the confluence with Six and Twenty Creek to approximately 640 feet upstream of confluence with Six and Twenty Creek
Rocky River	From the Anderson/Abbeville County Boundary to approximately just downstream of State Highway 28/Abbeville Highway
Rocky River 1	From the confluence with Rocky River to approximately 4,722 feet upstream of confluence with Rocky River
Salem Creek	From the confluence with Six and Twenty Creek to approximately 6,200 feet upstream of confluence with Six and Twenty Creek
Six and Twenty Creek	Just downstream of the confluence with Six and Twenty Creek Tributary 16 to immediately downstream of Lowe Road
Three and Twenty Creek	From the confluence with Six and Twenty Creek to approximately ,1300 feet upstream of Centerville Road
Three and Twenty Creek Tributary 1	From the confluence with Three and Twenty Creek to approximately 3,700 feet upstream of confluence with Three and Twenty Creek
Three and Twenty Creek Tributary 3	From the confluence with Three and Twenty Creek to approximately 150 feet upstream of Rock Creek Road
Three and Twenty Creek Tributary 5	From the confluence with Three and Twenty Creek to approximately 100 feet downstream of Hix Road
Three and Twenty Creek Tributary 5.1	From the confluence with Three and Twenty Creek Tributary 5 to approximately 1,900 feet upstream of confluence with Three and Twenty Creek

Table 4 – [TBD], Scope of Study (continued)

Stream Name	Limits of Study
	Detailed Study Scope
Three and Twenty Creek Tributary 6	From the confluence with Three and Twenty Creek to approximately 2,150 feet upstream of confluence with Three and Twenty Creek
West Twenty Six Mile Creek	At the confluence with Six and Twenty Creek to approximately 300 feet upstream of Mountain View Road

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 Anderson County.

The September 29, 2011, countywide FIS, incorporated the determination of four Letters of Map Revision (LOMR) shown below in the following tabulation.

Case Number	Flooding Source	Effective Date
98-04-193P	Bailey Creek	February 23, 1999
99-04-079P	Hembree Creek	September 8, 1999
01-04-185P	Unnamed Tributary to Middle Branch	September 26, 2001
06-04-C085P	Little Beaverdam Creek/ Tributary to Little Beaverdam Creek	July 26, 2007

There were no new LOMRs within the scope of this countywide FIS dated [TBD] that necessitated incorporation in this study. All LOMRs outside of the scope of this countywide FIS remain effective.

2.2 Community Description

Anderson County is located in northwest South Carolina in the Upper Piedmont Plateau and is bordered by Oconee and Pickens Counties to the north; Greenville County to the east; Abbeville County to the south; and Hart and Elbert Counties, Georgia to the west. The county encompasses 718 square miles. The population at the 2010 US Census was 187,126 (U.S. Census Bureau, 2010). It is estimated the population in Anderson County has increased by 3 percent between April 1, 2010, to July 1, 2014, with an estimated population of 192,810 (U.S. Census Bureau, 2010). The City of Anderson is the county seat and largest city in Anderson County with an estimated population of 26,686 in 2010 (U.S. Census Bureau, 2010).

Anderson County is located in the northwest climatological division of South Carolina. The temperate climate is characterized by warm summers, moderate falls, and mild winters. Average annual high and low temperatures range from

71.8°F to 50.3°F. Average annual precipitation for the region is approximately 44 inches. The precipitation is fairly uniformly distributed throughout the year (U.S. Climate Data, 2015).

Rocky Creek originates north of the City of Anderson and flows through the city and encompasses a drainage area of 57 square miles above South Carolina Highway 152 Bridge. Beaver Creek, a tributary of Rocky Creek, originates south of the City of Anderson and encompasses a drainage area of 7.9 square miles above South Carolina Highway 108 Bridge. Byrum Creek, a tributary of Big Generostee Creek, lies on the western perimeter of the City of Anderson and encompasses a drainage area of 3.2 square miles above South Carolina Highway 258 Bridge. Hembree Creek, which lies northwest of the City of Anderson, has a drainage area of 4.1 square miles and flows into Six and Twenty Mile Creek. Salem Creek, which also lies northwest of the City Anderson, has a drainage area of 4.2 square miles and flows into Six and Twenty Mile Creek. The Saluda River, which forms the eastern boundary of Anderson County, is a tributary of Broad River. Within the study area the river drains an area of approximately 383 square miles.

Soils in Anderson County are predominantly well drained sandy loams and clay loams. The basic soil associations in the county are: 1) Cecil-Hiwassee-Appling, 2) Cecil-Madison-Pacolet, and 3) Toccoa-Chewacia.

Anderson County owes its prosperity to textile and other industries, and diversified farming. The county is the largest beef and wheat producer in the state, second in dairy production in the state, and first in cotton production in the Piedmont area.

Most development has occurred in the central portion of Anderson County near the Cities of Anderson and Belton, and the Town of Williamston.

2.3 Principal Flood Problems

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 four flood events in Anderson County, with one of those events resulting in damages of $42,041. No additional details regarding this event were available in the HMP (The State of South Carolina, 2013).

The past history of flooding on the streams in Anderson County indicates that flooding may occur during any season of the year. However, the majority of flooding from March to May is a result of spring rains. Storms occurring during the summer months take the form of showers and thunderstorms, which result from unstable air masses that prevail during that time of year.

There have been a number of major floods in the study area. On September 13, 1973, the City of Anderson received 6.9 inches of rain in less than 12 hours, which is documented in the *Anderson Independent* and the *Anderson Daily Mail* newspapers. This particular storm generated a flood that was equivalent to the 1-percent annual chance flood for the area. In contrast, the flood damages outside of the City of Anderson were slight because the pattern of land use consists primarily of woodlands and agricultural, with some residential development. According to local inhabitants, Byrum Creek overflows its banks almost every year.

According to information received from local inhabitants in the Saluda River area, the river overflows its banks almost every spring in the upper portion of the detailed study area. However, because of the pattern of land use adjacent to the river, little flood damages are usually sustained. The maximum discharge of record for the river in the study reach was recorded at the discontinued USGS Pelzer stream gage (in operation from September 1929 to September 1960). A discharge of 13,600 cubic feet per second (cfs) and a gage height of 10.53 feet was recorded on October 7, 1949 (USGS, 1964).

In the City of Anderson, flooding was documented on Rocky River in 1908 and 1928. On August 25, 1908 a peak elevation of approximately 675 feet National Geodetic Vertical Datum occurred at the Belton Highway Bridge. On August 16, 1928, a peak elevation of 673 feet occurred 900 feet downstream of U.S. Highway 29. On the same day a peak elevation of 670 feet occurred at the Belton Highway Bridge (USGS, 1975).

Smaller streams such as Whitner Creek, Cox Creek, and other small tributaries are subject to flooding during heavy rainfall or summer thunderstorms.

In the City of Belton, two floodplains that constitute hazards have previously been identified. One of these floodplains is in Tributary A of Broad Mouth Creek. In addition, Tributary B of Cupboard Creek's floodplain has a potential for flooding.

The bridges and culverts along Tributary A of Broad Mouth Creek are adequate in size to pass the 0.2-percent-annual-chance flood within the City of Belton. However, of the two existing culverts within the study reach of Tributary B of Cupboard Creek (the Seaboard Coast Line Railroad and West Blair Mill Road drainage structures), only the railroad structure is adequately sized. The West Blair Mill Road drainage structure will not pass the 10-percent-annual-chance flood. Accordingly, the inadequately sized drainage structure on Tributary B of Cupboard Creek is a contributing factor to potential flooding in the area.

Historically, in the Town of Pendleton, Eighteen Mile Creek has been a source of flooding. In September 1938, the area received 9-inches rain; however, the duration and concentration of the rain is unknown. The storm completely destroyed the old U.S. Highway 76 Bridge to the City of Clemson (present

location of Excelsior MillRoad Bridge), but no major flooding was reported on the tributaries in the Town of Pendleton related to this storm. The major factor influencing flooding in this area is the restricted channel capacity.

Flooding in the Town of Williamston occurs along Camp Creek, Big Creek, and Big Creel Tributary 1.

2.4 Flood Protection Measures

There are a number of dams and reservoirs in Anderson County that serve as flood protection measures to various parts of the County. The SCS has developed the following flood retarding structures on the various watersheds: 1) Four structures on Broadmouth Creek Watersheds, 2) Four structures on Brush Creek Watershed, 3) Four structures on Three and Twenty Watershed, and 4) Two structures on Big Creek Watershed.

The USACE has developed a multi-purpose flood control reservoir (Lake Hartwell) on the Savannah River. There is some regulation of the Saluda River at low and medium flows by the Saluda Lake Power Plant located a short distance above the Anderson County line. Nevertheless, the lake's capacity is too small to have any effects on floods. In addition, there is a small dam and power plant located on the Saluda River about two miles above the Town of Pelzer, South Carolina. The storage capacity of the reservoir is insignificant and would not affect larger flows.

There are two SCS flood control reservoirs that help to control the runoff above the Town of Williamston. The larger of these reservoirs, the Big Creek reservoir, is located approximately 550 feet upstream of Ida Tucker Road on Big Creek. It has a flood control storage capacity of 1230 acre-feet. The smaller reservoir, the Camp Creek reservoir is located approximately 3,100 feet west of Cherokee Road on Camp Creek. It has a flood control storage capacity of 370 acre-feet. These two structures have helped to reduce potential flooding within the Big Creek Watershed.

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 peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community.

Information on the methods used to determine peak discharge-frequency relationships for the streams studied by detailed methods is shown below.

Pre-countywide Analyses

In the Unincorporated Areas of Anderson County, City of Belton, Town of Honea Path, Town of Pendleton, and Town of Williamston, the analysis of historical records is of little value in flood-frequency studies for ungaged watersheds. To overcome this problem, in determination of flows for the ungaged streams near the City of Anderson, South Carolina, a regional flood-frequency analysis was used (U.S. Department of Agriculture [USDA], 1971; Water Resources Council [WRC], 1976; and U.S. Weather Bureau, 1961).

Stream flow records from a number of streams in the Piedmont Province with drainage areas smaller than 100 square miles were assembled. Care was taken to select streams as similar in hydrologic characteristics as possible, such as similar vegetative cover, land use, topographic conditions, and geological characteristics. The stations selected had similar rainfall and evapotranspiration regimes. It was felt that combining data from a number of watersheds may help to reduce the uncertainty arising from short periods if the records were sufficiently independent.

Frequency-discharge relationships were established using the July 1972 version of the Hydrologic Engineering Center (HEC) Program No. 723-X6-L2350, Regional Frequency Computation (USACE, 1972) and data from the following gages:

Station	Location	Drainage Area (Sq. Mi)	Years of Record
02156300	Lawson's Fork Creek at Spartanburg, SC	65.2	10
02138500	Linville River at Branch, NC	67.2	38
0216400	Reedy River near Greenville, SC	48.6	34
02152100	First Broad River near Casar, NC	59.5	13
02142900	Long Creek near Paw Creek, NC	16.1	8
0215700	North Tyger River near Fairmont, NC	44.0	26
02152610	Sugar Branch near Bolling Springs, NC	1.49	5
02159600	Dutchman Creek near Pauline, SC	8.97	10
02146700	McMullen Creek at Sharon View Road near Charlotte, NC	6.98	12
02191970	Macks Creek Tributary No. 2 near Lexington, NC	1.77	15

A comparison was made of the regional frequency with a rainfall-runoff model at selected locations. The results of the comparisons were favorable.

To develop frequency-discharge relationships for the Saluda River detailed study area, frequency analyses were run on the gage near Greenville, South Carolina, and the discharges were transferred to the study area based on the increased drainage area.

In the Town of Williamston, rainfall-runoff models and flood routings were developed for the two SCS dams located in the Big Creek Watershed. Data provided by the SCS were used to develop inflow hydrographs for the dams. Flows were routed through the dams by the Modified Plus Method. The capacity-discharge data available in the SCS data were input into the HEC-1 Hydrograph Routing Program for the routings (USACE, 1973[a]).

In the City of Anderson a flood frequency report by Authur L. Putnam, an open file report by the USGS, was used to determine flood frequencies (USGS, 1972). The flood frequencies were checked with discharges computed using a USGS administrative report entitled, "Estimating the Magnitude of Peak Discharges for

Selected Flood Frequencies for Small Streams in South Carolina" by Benjamin H. Whetstone, September 1975 adjusted for urbanized effect. Both of these reports are based on log-Pearson Type III analysis (WRC, 1976) of individual station records. Regionalization was developed using multiple-regression techniques.

September 29, 2011, Countywide Analyses

For the September 29, 2011, countywide FIS, discharges for the 10-, 2-, 1-, and 0.2-percent-annual-chance recurrence intervals for all streams studied by limited detail methods were determined using USGS regression analyses (USGS, 2004).

[TBD], Countywide Analyses

The [TBD], countywide FIS, is the first-time watershed wide hydrologic analyses were conducted for the Seneca and Upper Savannah Watersheds and there are no existing watershed wide hydrologic analyses available. However, for counties within the Seneca and Upper Savannah Watersheds, covered by the current scope, countywide and precountywide hydrologic analyses exist (FEMA, 2008, 2009, 2011[a, b]).

Discharges for the 10-, 2-, 1-, and 0.2-percent annual chance recurrence intervals for all streams studied by detailed and for the 1-percent annual chance recurrence interval for limited detailed methods were determined for both the Seneca Watershed and the Upper Savannah Watershed 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.

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

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

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

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

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

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

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

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

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 following equations were used.

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	$103L^{1.58}\ 10^{0.0185IA}$

Urban flood recurrence interval (years)	Alternative urban regional regression equation
500	$111L^{1.60}\ 10^{0.0187IA}$

Where:

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

Gage station 02187000 located at Seneca River near Anderson, SC was not considered for gage analysis as the flows were not required for Seneca River and the mapping will be done based on regulated stillwater elevation. The gage station 02186699 located at Eighteenmile Creek above Pendleton, SC was not considered for gage analysis as the performed PeakFQ-Flood Frequency Analysis gave under estimated flows. In addition, the gage station 02186699 was not considered in the USGS report (USGS, 2006) where the variance prediction values required for the gage analyses were not reported.

Hydrologic analysis was not developed for Seneca River and Deep Creek as they were located in Lake Hartwell which is regulated by Hartwell Dam and the mapping will be done based on lake elevation.

Peak discharge-drainage area relationships for the selected recurrence intervals are shown in Table 5, “Summary of Discharges.”

Table 5 – 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
BAILEY CREEK					
At Rodger Road	4.17	*	*	5,565	*
At Simpsons Road	3.31	*	*	4,835	*
BEAVER CREEK					
At State Highway 108	7.93	1,420	2,110	2,434	3,084
At State Highway 152	5.17	1,113	1,653	1,908	2,416
At State Highway 377	4.33	1,006	1,494	1,724	2,184
At Airline Road	3.38	873	1,298	1,497	1,897
At State Highway 475	1.50	550	817	942	1,194
BIG CREEK					
At Cross Section A	10.41	890	1,339	1,548	2,484
At Cross Section B	9.30	701	1,058	1,224	2,074
At Cross Section K	8.16	426	676	783	1,515
At Cross Section L	5.25	53	81	86	109
BIG CREEK TRIBUTARY 1					
At Cross Section A	1.06	452	671	774	979
BIG GENEROSTEE CREEK					
At State Highway 258	12.53	1,843	2,738	3,160	4,002
At State Highway 258	11.58	1,762	2,618	3,021	3,826
At Lewis Street	6.00	1,211	1,800	2,077	2,630
BYRUM CREEK					
At Booker Street	3.20	847	1,258	1,451	1,838
At Whitner Street	2.45	727	1,080	1,246	1,579
At Simpson Street	1.45	539	801	924	1,171
CAMP CREEK					
At Cross Section A	2.91	373	595	697	1,406
CORNER CREEK					
At corporate limits	0.93	419	622	718	914
At Samuel Road	0.66	344	511	590	751
At Cross Section D	0.41	262	390	450	573

* Data Not Available

Table 5 – 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
COX CREEK					
At mouth	9.66	1,750	2,800	3,350	4,750
Above Baily Creek	4.72	1,300	2,100	2,500	3,500
Above Cox Creek	2.68	900	1,500	1,500	2,500
At Reed Road	1.23	550	930	1,150	1,600
COX CREEK TRIBUTARY 2					
At Cross Section A	0.45	330	620	770	1,050
At Cross Section E	0.26	290	540	670	880
EIGHTEEN MILE CREEK					
Just downstream of Excelsior Mill Road	46.75	4,268	6,635	7,618	10,080
Just downstream of North Mechanic Street	46.03	4,228	6,574	7,548	9,990
Approximately 0.1 mile upstream of North Mechanic Street	43.12	4,061	6,322	7,262	9,167
Just downstream of Central Road	42.19	4,007	6,239	7,168	9,495
Approximately 0.5 mile upstream of Central Road	41.2	3,948	6,151	7,068	9,365
HARTWELL RESERVOIR TRIBUTARY					
At Cross Section A	0.60	380	700	870	1,200
At Cross Section D	0.32	280	530	660	880
HEMBREE CREEK					
Just downstream of Valley Road	3.47	2,187	2,837	3,096	3,788
Just downstream of Station Drive	2.95	1,937	2,488	2,711	3,301
Just downstream of Pearman Dairy Road	2.85	1,693	2,168	2,360	2,864
Just downstream of Salem Church Road	2.55	1,302	1,657	1,800	2,170
Just downstream of Civil Center Boulevard	1.42	1,254	1,563	1,695	2,031
LITTLE BEAVERDAM CREEK A					
Approximately 4,200 feet upstream of South Carolina Highway 96	5.74	*	*	3,445	*

* Data Not Available

Table 5 – 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
LITTLE BEAVERDAM CREEK A (continued)					
Approximately 1,700 feet upstream of South Caroling Highway 96	3.87	*	*	2,430	*
ROCKY RIVER					
At State Highway 152	57.05	4,373	6,497	7,497	9,495
At State Highway 263	52.50	4,170	9,197	7,150	9,057
At Old Highway 29	49.35	4,026	5,982	6,902	8,743
At U.S. Highway 29	37.70	3,453	5,131	5,920	7,500
At Cox Road	33.90	3,250	4,829	5,572	7,058
ROCKY RIVER TRIBUTARY					
At Cross Section A	0.50	310	580	730	1,020
At Cross Section F	0.35	260	510	640	870
At Cross Section J	0.22	210	410	520	740
SALUDA RIVER					
At Southern Railway	382.65	10,815	14,995	16,735	21,155
At State Highway 86	379.35	10,725	14,865	16,590	20,970
At Interstate 85	338.85	9,465	13,275	14,820	18,730
At Old Highway 81	334.85	9,465	13,120	14,645	18,510
SALEM CREEK	*	*	*	*	*
SHANKLIN CREEK					
At Cross Section A	1.08	455	675	780	960
At Cross Section H	0.74	370	545	630	775
TOWN CREEK TRIBUTARY	0.45	280	415	480	590
TRIBUTARY A OF BROAD MOUTH CREEK					
At Corporate Limits	1.06	452	671	774	980
TRIBUTARY B OF CUPBOARD CREEK					
At Corporate Limits	0.63	336	499	576	730

* Data Not Available

Table 5 – 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 C OF BROAD MOUNT CREEK					
At Corporate Limits	0.89	408	606	718	914
At Chiquola Street	0.59	323	450	553	705
At Footbridge	0.35	240	356	411	523
At Walkway	0.18	164	244	282	359
TRIBUTARY TO LITTLE BEAVERDAM CREEK A					
At mouth	0.15	*	*	770	*
UNNAMED TRIBUTARY TO MIDDLE BRANCH					
At County Boundary	0.60	493	*	877	*
WHITNER CREEK					
At Cross Section A	2.91	870	1,520	1,820	2,470
At Cross Section E	2.04	690	1,240	1,500	2,050
At Cross Section H	1.71	620	1,120	1,370	1,860
At Cross Section N	1.37	540	980	1,200	1,660
At Cross Section R	1.05	450	850	1,050	1,440
At Cross Section T	0.90	410	770	960	1,330

* Data Not Available

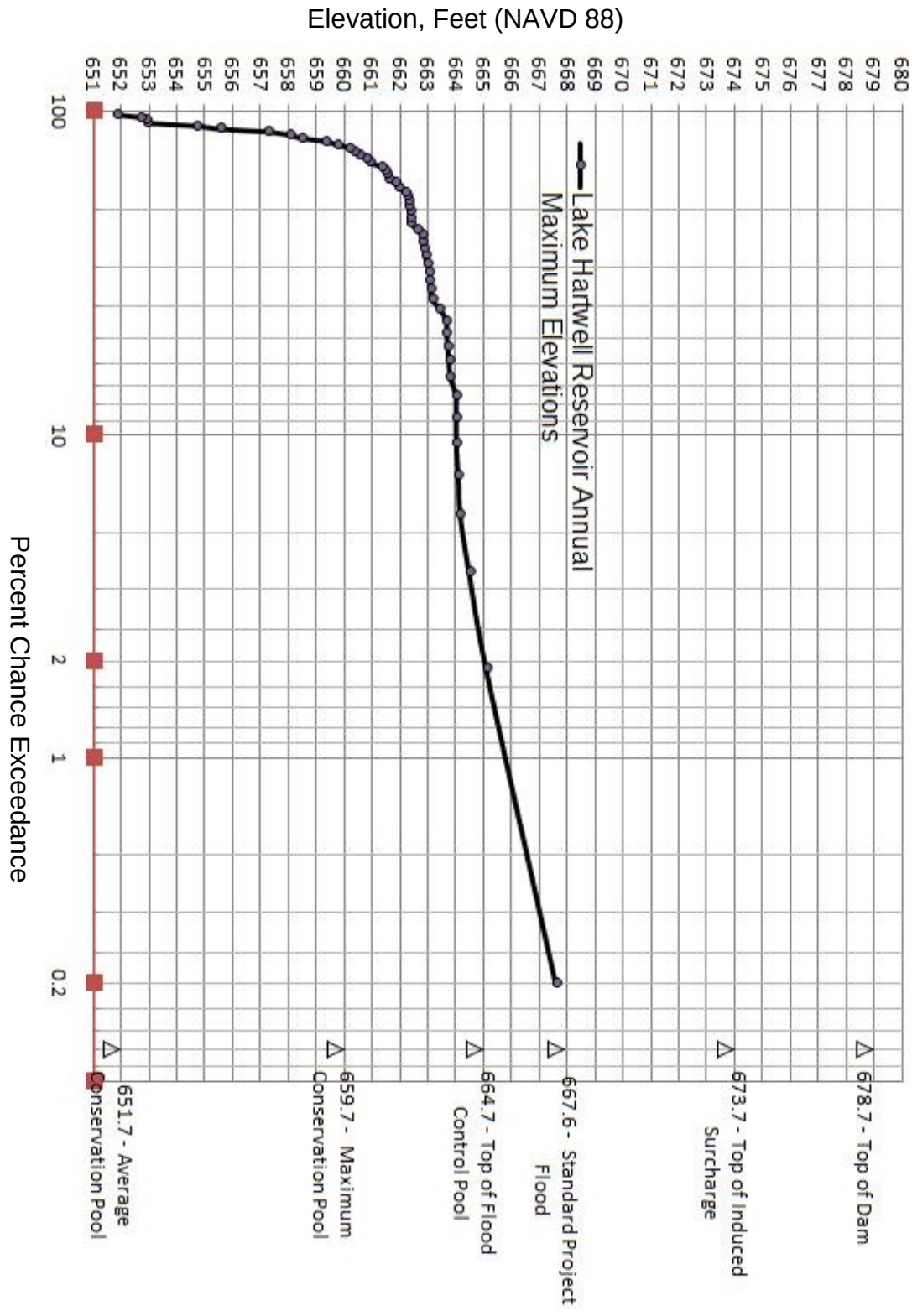
The stillwater elevations have been determined for the 10-, 2-, 1-, and 0.2-percent annual chance floods for the flooding sources studied by detailed methods and are summarized in Table 6, "Summary of Stillwater Elevations."

The base flood or stillwater elevations for Lake Hartwell were obtained from the USACE historic project data and statistical distribution (Log-Pearson Type III) of recorded annual peak flood stages, and from the Hartwell Dam and Lake Water Control Plan. USACE has collected lake stage elevation data at Lake Hartwell since 1962 until present and has developed a statistical distribution analysis of these records. As shown in Figure 1, "Lake Hartwell and Dam Maximum Reservoir Elevation-Frequency Curve," the annual peak elevation records collected by USACE were used to plot a maximum reservoir elevation-frequency curve which was used to develop the stillwater flood elevations for Lake Hartwell.

The USACE Lake Hartwell and Dam Water Control Plan indicate that the Standard Project Flood (SPF) produces a flood level of 667.6 feet (North America Vertical Datum 1988 [NAVD 88]). As defined in the USACE Engineer Manual (EM) 1110-02-1411, Standard Project Flood Determination, the "Standard Project Storm" should represent the most severe flood-producing storm that is considered reasonably characteristic of the region in which the drainage basin is located, giving consideration to the runoff characteristics and existence of water regulation structures in the basin. For the Seneca Watershed hydraulic analysis, the flood elevation for the SPF is estimated to equate to the 0.2 -percent annual-chance event. The stillwater elevations for the 10-, 2- and 1- percent recurrence interval events were interpolated from the maximum reservoir elevation-frequency curve shown on Figure 1, "Lake Hartwell and Dam Maximum Reservoir Elevation-Frequency Curve," and are summarized in Table 6, "Summary of Stillwater Elevations".

Table 6 – Summary of Stillwater Elevations

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD 88)			
	10-percent annual chance	2-percent annual chance	1-percent annual chance	0.2-percent annual chance
DIKE CREEK				
At confluence with Whitner Creek	449.9	450.8	451.1	452.5
LAKE HARTWELL RESERVOIR	664.0	665.0	665.9	667.6



FEDERAL EMERGENCY MANAGEMENT AGENCY **ANDERSON COUNTY, SC AND INCORPORATED AREAS**	**Lake Hartwell and Dam Maximum Reservoir Elevation-Frequency Curve**	**Figure 1**

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources 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. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS 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.

Cross sections for the flooding sources that were studied by detailed methods were obtained from field surveys. All bridges, dams, and culverts were previously field surveyed to obtain elevation data and structural geometry.

Flood elevations may be raised by debris blockages of the streams in the study area. The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

Pre-countywide Analyses

Water-surface elevations of floods of the selected recurrence intervals were computed utilizing the Hydrologic Engineering Center's computer program: HEC-2, Water-Surface Profiles, version updated January 1976. Cross sections for the backwater analyses were field surveyed at structures and at selected intervals to model conveyance of the valleys, bridges, and culverts to compute the significant backwater effects of such structures (USACE, 1959; 1973[a]; 1974[a]; 1974[b]).

Channel roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and based on field observations of the streams and floodplain areas. Roughness values for the detailed studied streams ranged from 0.025 to 0.10 for the main channel and 0.03 to 0.150 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 profiles.

Flood profiles were drawn showing computed water-surface elevations for all the streams studied by detailed methods using the slope-area method.

Water-surface elevations of the floods of the selected recurrence intervals for the stream reaches studied in detail by the USGS were computed through use of the USGS E431 step-backwater computer program (USGS, 1976). Supercritical flow-routing procedures were used to compute water-surface elevations at a few sections in the upper reaches of some of the streams in the study area. Where supercritical water-surface elevations were found the elevations were converted to alternate elevations and alternate elevations were used on the profiles.

September 29, 2011, Countywide Analysis

Cross section geometries were obtained from a combination of Light Detection and Ranging (LiDAR) data, contour data provided by Aiken County, and field surveys for detail studied streams. For limited detail studied streams, all structure openings were field measured.

The hydraulic model used for this FIS is the USACE Hydrologic Engineering Center – Riverine Analysis System (HEC-RAS) version 3.1.3 (USACE, 2005). Topographic data for the floodplain models was developed using recently acquired LiDAR land data, field measurements of hydraulic structure information, and updated hydrologic data. Models for limited detail studied streams were developed for the 1-percent-annual-chance frequency storm discharges.

Starting conditions for the hydraulic models were set to normal depth using starting slopes calculated from water surface elevation values taken from the LiDAR data or, where applicable, derived from the water surface elevations of existing effective flood elevations.

[TBD], Countywide Analyses

The [TBD], countywide FIS, is the first-time watershedwide hydraulic analyses were conducted for the Seneca and Upper Savannah Watersheds and there are no existing watershed wide hydraulic analyses available. However, for counties within the Seneca and Upper Savannah Watersheds, covered by the current scope, countywide and precountywide hydrologic analyses exist (FEMA, 2008, 2009, 2011[a, b]).

Cross section geometries were obtained from LiDAR data provided by SCDNR and field surveyed for the detailed study streams. For Six and Twenty Creek and West Twenty Six Mile Creek, all structure openings were field measured. For streams studied by limited detailed study streams cross section geometries were obtained from LiDAR provided by SCDNR.

Water surface elevations of the 10-, 2-, 1- and 0.2-percent annual chance flood events were computed using USACE computer program, HEC-RAS, version 4.1 (USACE, 2010). The hydraulic models were developed using recently acquired LiDAR land data, field measurements of hydraulic structure information, and updated hydrologic data.

Starting conditions for the hydraulic models were set to normal depth using starting slopes calculated from energy slope, or derived from the water surface elevations of existing effective hydraulic models.

Roughness factors (Manning's "n") used in the hydraulic computations were chosen based on limited detail survey photos and orthophotos. For the [TBD], countywide FIS, Table 7, "Manning's "n" Values," shows the channel and overbank "n" values for the streams studied by detailed study methods and limited detail methods. For the streams in the Upper Savannah Watershed that were updated as part of this study, Manning's n-values ranged from 0.029 to 0.055 for the channel and from 0.035 to 0.155 for the overbanks. The portions of First Creek, First Creek Tributary 1, Governers Creek, Rocky River, and Rocky River 1 that were not updated retained the Mannin'g n-values present in Table 7. It should be noted that a Manning's n-value of 10.0 was used to designate ineffective flow areas.

Table 7 – Manning's "n" Values

Stream	Channel "n"	Overbank "n"
Detailed Study Streams		
Eighteen Mile Creek	0-035-0.04	0.10-0.145
Hembree Creek	0.035-0.055	0.05-0.145
Limited Detailed Study Streams		
Bailey Creek	0.035-0.045	0.120-0.150
Bear Creek	0.035-0.045	0.120-0.150
Beaver Creek (DS)	0.035-0.050	0.100-0.150
Beaver Creek (US)	0.040-0.045	0.110-0.150
Beaver Creek Trib 1	0.035-0.045	0.100-0.150
Beaver Creek Trib 12	0.035-0.045	0.100-0.140
Beaver Creek Trib 13	0.040-0.045	0.100-0.140
Beaver Creek Trib 14	0.050	0.110-0.150
Beaver Creek Trib 15	0.035-0.045	0.130-0.150
Beaverdam Creek A	0.040-0.045	0.110-0.140
Beaverdam Creek A Trib 15	0.050	0.125-0.150
Beaverdam Creek B Trib 3	0.045	0.130
Big Brushy Creek	0.040-0.045	0.100-0.150
Big Brushy Creek Trib 9	0.040	0.110-0.150
Big Brushy Creek Trib 17	0.030-0.045	0.120-0.140

Table 7 –Manning's "n" Values (continued)

Stream	Channel "n"	Overbank "n"
Big Brushy Creek Trib 23	0.030-0.045	0.120-0.140
Big Creek (DS)	0.030-0.045	0.100-0.140
Big Creek (US)	0.040-0.045	0.100-0.150
Big Creek Trib 13	0.035-0.045	0.110-0.150
Big Garvin Creek	0.040-0.045	0.110-0.140
Big Garvin Creek Trib 3	0.035-0.045	0.110-0.150
Big Generostee Creek	0.045	0.100-0.200
Big Generostee Creek Trib 15	0.035-0.040	0.110-0.150
Big Generostee Creek Trib 17	0.050	0.110-0.150
Big Generostee Creek Trib 20	0.035-0.045	0.110-0.140
Big Generostee Creek Trib 22	0.040-0.045	0.110-0.150
Big Generostee Creek Trib 28	0.035-0.045	0.120-0.150
Big Generostee Creek Trib 30	0.040-0.045	0.110-0.140
Big Generostee Creek Trib 31	0.045-0.050	0.100-0.150
Big Generostee Creek Trib 32	0.035-0.045	0.120-0.150
Broad Mouth Creek	0.040-0.050	0.100-0.140
Broad Mouth Creek Trib 11	0.045-0.050	0.110-0.150
Broad Mouth Creek Trib 11.1	0.045-0.050	0.140-0.150
Broadway Creek	0.040-0.045	0.100-0.140
Brushy Creek	0.050	0.100-0.140
Brushy Creek Trib 7	0.045-0.050	0.100-0.140
Camp Creek	0.050	0.140
Canoe Creek	0.030-0.050	0.100-0.150
Canoe Creek Trib 3	0.045-0.050	0.100-0.150
Canoe Creek Trib 6	0.040-0.050	0.120-0.150
Canoe Creek Trib 6.1	0.040-0.050	0.100-0.150
Carmel Creek	0.040-0.050	0.120-0.150
Charles Creek	0.040-0.045	0.110-0.150
Cherokee Creek	0.050	0.130-0.150
Cherokee Creek Trib 17	0.045	0.120-0.150
Corner Creek (DS)	0.040-0.045	0.110-0.140
Corner Creek (US)	0.050	0.120-0.140
Corner Creek Trib 2	0.040-0.045	0.120-0.140
Corner Creek Trib 4	0.030-0.045	0.140
Craven Creek	0.040-0.050	0.110-0.150
Crooked Creek	0.050	0.100-0.150
Crooked Creek Trib 2	0.030-0.050	0.100-0.140
Cuffie Creek	0.045-0.050	0.100-0.150
Deep Step Creek	0.040-0.045	0.140-0.150
Double Branch	0.040-0.050	0.110-0.150
East Beards Creek	0.045-0.050	0.100-0.150
East Prong Creek	0.050	0.100-0.150
East Prong Creek Trib 11	0.050	0.080-0.140

Table 7 –Manning's "n" Values (continued)

Stream	Channel "n"	Overbank "n"
Eighteen Mile Creek (DS)	0.040-0.050	0.100-0.140
Eighteen Mile Creek (US)	0.045	0.100-0.140
Eighteen Mile Creek Trib 1	0.040-0.045	0.140-0.150
Eighteen Mile Creek Trib 3	0.040-0.045	0.140-0.150
Eighteen Mile Creek Trib 4	0.040-0.045	0.140
Eighteen Mile Creek Trib 5	0.040-0.045	0.140-0.150
Eighteen Mile Creek Trib 6	0.040-0.045	0.110-0.150
Eighteen Mile Creek Trib 7	0.040-0.050	0.130-0.150
Eighteen Mile Creek Trib 10	0.040-0.045	0.150
Eighteen Mile Creek Trib 11	0.050	0.140-0.150
Eighteen Mile Creek Trib 12	0.050	0.140
Eighteen Mile Creek Trib 13	0.035-0.045	0.110-0.150
Eighteen Mile Creek Trib 13.2	0.040-0.045	0.150
Eighteen Mile Creek Trib 18	0.040-0.045	0.110-0.150
Eighteen Mile Creek Trib A	0.040-0.045	0.100-0.140
Eighteen Mile Creek Trib A Trib 1	0.035-0.045	0.120-0.150
Eighteen Mile Creek Trib B	0.035-0.045	0.100-0.150
Eighteen Mile Creek Trib B Trib 2	0.050	0.100-0.150
First Creek	0.045-0.050	0.100-0.150
First Creek Trib 1	0.035-0.045	0.150
Five Mile Creek	0.040-0.050	0.100-0.150
Five Mile Creek Trib 1	0.045-0.050	0.100-0.150
Five Mile Creek Trib 5	0.040-0.050	0.100-0.150
Five Mile Creek Trib 9	0.045-0.050	0.120-0.150
Georges Creek	0.035-0.040	0.130-0.140
Governors Creek	0.050	0.110-0.150
Governors Creek Trib 4	0.045	0.125-0.145
Hartwell Reservoir Tributary	0.050	0.100-0.150
Hembree Creek (DS)	0.040-0.050	0.100-0.150
Hembree Creek (US)	0.050	0.150
Hencoop Creek	0.040-0.050	0.100-0.150
Hornbuckle Creek	0.045	0.045-0.150
Hurricane Creek A	0.050	0.150
Hurricane Creek B	0.045	0.100-0.150
Hurricane Creek B Trib 7	0.050	0.100-0.150
Hurricane Creek B Trib 8	0.050	0.120-0.150
Hurricane Creek B Trib 11	0.050	0.100-0.150
Indian Branch	0.040-0.050	0.100-0.140
Indian Branch Trib 3	0.045	0.100-0.150
Jones Creek	0.045-0.050	0.100-0.140
Jones Creek Trib 1	0.040-0.050	0.130-0.150
Jordan Creek	0.035-0.045	0.110-0.150
Jordan Creek Trib 1	0.040-0.045	0.120-0.150

Table 7 –Manning's "n" Values (continued)

Stream	Channel "n"	Overbank "n"
Little Beaverdam Creek	0.045-0.050	0.100-0.150
Little Beaverdam Creek A	0.045-0.050	0.110-0.140
Little Beaverdam Creek Trib 2	0.030-0.040	0.100-0.150
Little Beaverdam Creek Trib 4	0.050	0.100-0.150
Little Beaverdam Creek Trib 5	0.040-0.045	0.100-0.150
Little Beaverdam Creek Trib 6	0.040-0.045	0.100-0.150
Little Beaverdam Creek Trib 7	0.050	0.150
Little Beaverdam Creek Trib 8	0.050	0.125-0.140
Little Brushy Creek	0.045-0.050	0.100-0.150
Little Garvin Creek	0.045-0.048	0.100-0.150
Little Generostee Creek	0.040-0.050	0.100-0.150
Little Generostee Creek Trib 6	0.050	0.100-0.150
Little Generostee Creek Trib 6.2	0.040-0.050	0.100-0.140
Little Generostee Creek Trib 8	0.050	0.110-0.130
Little Generostee Creek Trib 9	0.050	0.120-0.150
Long Branch A	0.050	0.100-0.150
Middle Branch Brushy Creek	0.045	0.100-0.150
Millwee Creek	0.045-0.050	0.100-0.150
Mountain Creek	0.050	0.120-0.150
Mountain Creek Trib 5	0.040-0.050	0.110-0.150
Mountain Creek Trib 6	0.040	0.140
Mountain Creek Trib 7	0.040	0.140
Mountain Creek Trib 9	0.030-0.045	0.100-0.150
Mountain Creek Trib 9.3	0.045-0.050	0.110-0.150
Mountain Creek Trib 9.5	0.040-0.050	0.130-0.150
Mountain Creek Trib 9.8	0.045	0.130-0.140
Mountain Creek Trib 11	0.040-0.050	0.110-0.150
Neals Creek	0.045-0.050	0.100-0.150
Nesbit Creek	0.040-0.050	0.120-0.150
Pea Creek	0.040-0.050	0.100-0.140
Pickens Creek	0.045-0.050	0.100-0.150
Pickens Creek Trib 6	0.040-0.050	0.100-0.150
Richland Creek	0.045-0.050	0.100-0.150
Rocky Branch	0.045-0.050	0.100-0.150
Rocky River (DS)	0.040-0.050	0.100-0.130
Rocky River (US)	0.050	0.100-0.140
Rocky River Trib 1	0.040-0.050	0.120-0.140
Rocky River Trib 18	0.050	0.100-0.150
Rocky River Trib 20	0.045-0.050	0.110-0.150
Rocky River Trib 27	0.040-0.050	0.100-0.150
Rocky River Trib 27.3	0.045-0.050	0.110-0.150
Rocky River Trib 28	0.050	0.120-0.150
Salem Creek	0.040-0.050	0.120-0.150

Table 7 –Manning's "n" Values (continued)

Stream	Channel "n"	Overbank "n"
Salem Creek Trib 4	0.045	0.120-0.150
Saluda River	0.040-0.045	0.100-0.150
Saluda River Trib 1	0.040-0.045	0.100-0.150
Saluda River Trib 41	0.040	0.150
Saluda River Trib 42	0.045-0.050	0.100-0.150
Saluda River Trib 51	0.050	0.100-0.150
Saluda River Trib 52	0.045	0.150
Saluda River Trib 62	0.050	0.150
Saluda River Trib 103.1	0.040	0.150
Savannah River	0.050	0.150
Savannah River Trib 23	0.045	0.150
Shanklin Creek Trib A	0.045	0.120-0.150
Silver Brook	0.040	0.100-0.150
Silver Brook Trib 2	0.035-0.040	0.100-0.140
Six and Twenty Creek	0.040-0.050	0.100-0.150
Six and Twenty Creek Trib 10	0.045	0.120-0.150
Six and Twenty Creek Trib 11	0.045	0.120-0.150
Six and Twenty Creek Trib 12	0.040-0.050	0.100-0.140
Six and Twenty Creek Trib 15	0.045	0.120-0.150
Six and Twenty Creek Trib 16	0.045	0.100-0.150
Six and Twenty Creek Trib 19	0.050	0.130-0.150
Three and Twenty Creek	0.045-0.050	0.100-0.150
Three and Twenty Creek Trib 1	0.045-0.050	0.150
Three and Twenty Creek Trib 3	0.040-0.045	0.120-0.150
Three and Twenty Creek Trib 5	0.040-0.050	0.120-0.150
Three and Twenty Creek Trib 5.1	0.040-0.050	0.130-0.150
Three and Twenty Creek Trib 6	0.040-0.050	0.140-0.150
Three and Twenty Creek Trib 7	0.040-0.045	0.120-0.150
Three and Twenty Creek Trib 8	0.040-0.050	0.100-0.150
Three and Twenty Creek Trib 14	0.050	0.100-0.150
Three and Twenty Creek Trib 15	0.050	0.100-0.140
Three and Twenty Creek Trib 29	0.050	0.140-0.150
Three and Twenty Creek Trib 34	0.045	0.100-0.150
Three and Twenty Creek Trib 43	0.045-0.050	0.100-0.150
Threemile Creek	0.040-0.050	0.100-0.150
Toney Creek	0.030-0.050	0.100-0.140
Toney Creek Trib 1	0.040-0.050	0.100-0.140
Town Creek A	0.045-0.050	0.100-0.150
Town Creek B	0.045-0.050	0.100-0.150
Town Creek Trib (DS)	0.035-0.050	0.100-0.150
Town Creek Trib (US)	0.050	0.120-0.150
Tributary A of Broad Mouth Creek	0.045-0.050	0.100-0.150
Tributary A of Broad Mouth Creek Trib 10	0.040	0.100-0.150

Table 7 –Manning's "n" Values (continued)

Stream	Channel "n"	Overbank "n"
Tributary C of Broad Mouth Creek (DS)	0.045-0.050	0.100-0.150
Tributary C of Broad Mouth Creek (US)	0.050	0.120
Tributary C of Broad Mouth Creek Trib 3	0.045-0.050	0.100-0.150
Tributary C of Broad Mouth Creek Trib 4	0.045	0.120-0.140
Tributary of Eighteen Mile Creek	0.035-0.045	0.110-0.150
Tugaloo Creek	0.040-0.050	0.100-0.150
Unnamed Trib of Beaverdam Creek B Trib 3	0.050	0.125-0.150
Unnamed Trib of Little Beaverdam Creek	0.045-0.050	0.100-0.150
Unnamed Tributary	0.045	0.100-0.150
Unnamed Tributary 1	0.045	0.125-0.150
Unnamed Trib of Middle Branch	0.045	0.135-0.150
Weems Creek	0.045-0.050	0.100-0.150
Weems Creek Trib 12	0.050	0.140
Weems Creek Trib 17	0.050	0.125-0.140
West Six and Twenty Mile Creek	0.045	0.100-0.140
West Beards Creek	0.045-0.050	0.110-0.150
West Prong Broadmouth Creek	0.040-0.045	0.100-0.150
Whitner Creek	0.045	0.100-0.240
Wilson Creek	0.045-0.050	0.080-0.150
Wilson Creek Trib 17	0.050	0.100-0.150
Wilson Creek Trib 21	0.050	0.150
Wilson Creek Trib 22	0.050	0.100-0.150
Wilson Creek Trib 24	0.045-0.050	0.100-0.150
Wilson Creek Trib 31	0.045-0.050	0.100-0.150

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 National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of 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. The datum conversion factor from NGVD29 to NAVD88 in Anderson County is -0.3 feet.

It is important to note that adjacent counties may be referenced to NGVD29. This may result in differences in BFEs across county lines.

For supplementary information regarding conversion between the NGVD and NAVD, 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 APPLICATION

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 Digital Terrain Model for the hydraulic analysis and floodplain mapping for the study streams. The LiDAR was collected for SCDNR in 2011 (SCDNR, 2013). The data is available from SCDNR LiDAR Data Products

website at:

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

For the September 29, 2011, countywide FIS, flood boundaries between cross sections were interpolated using 2-foot contours for guidance on topographic characteristics.

The 1- and 0.2-percent annual chance floodplain boundaries are shown on the FIRM. 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. In 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 for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections in Table 8, “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 is shown.

No floodways have been computed for Bailey Creek, Little Beaverdam Creek, Tributary to Little Beaverdam Creek, and Unnamed Tributary to Middle Branch.

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 8 for certain downstream cross sections of Cox Creek, Rocky River Tributary, and Whitner Creek are lower than regulatoryflood elevations in that area, which must take into account the 1-percent-annual-chance flooding due to backwater from other sources.

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 8, "Floodway Data." To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

Along streams where floodways have not been computed, the community must ensure that the cumulative effect of development in the floodplains will not cause more than a 1.0-foot increase in the Base Flood Elevation (BFE) at any point within the community.

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 by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 2, "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 9 (Volume 2), "Limited Detailed Flood Hazard Data."

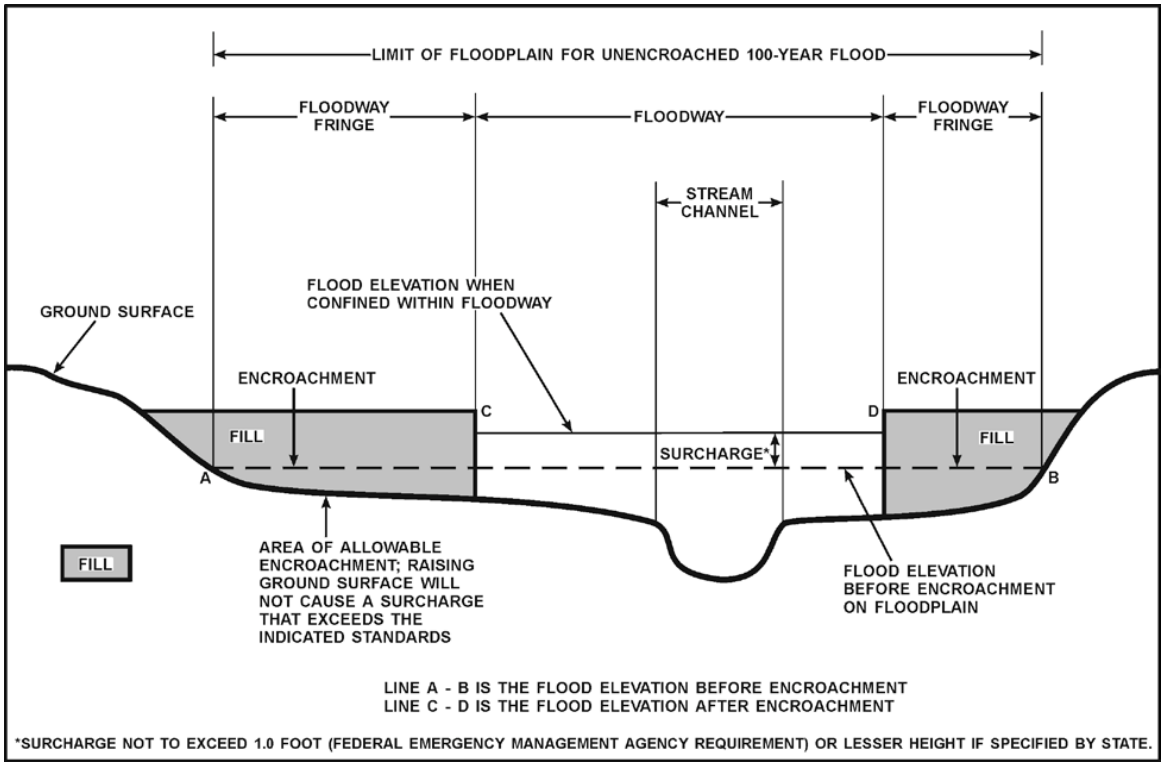


Figure 2 – Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE
Eighteen Mile Creek								
A	41,946	700	3,212	5.1	694.7	694.7	695.7	1.0
B	42,749	175	1,107	11.1	696.6	696.6	697.2	0.6
C	43,126	178	1,587	7.4	700.2	700.2	700.2	0.0
D	43,283	260[2]	2266	6.0	700.7	700.7	700.7	0.0
E	44,177	750[2]	5,544	3.9	701.8	701.8	701.8	0.0
F	44,803	300[2]	2,076	7.1	701.9	701.9	702.0	0.1
G	45,393	181[2]	1,544	7.8	702.9	702.9	703.0	0.1
H	46,055	300[2]	2,494	6.1	704.5	704.5	704.5	0.0
I	46,942	364[2]	2,645	6.7	705.0	705.0	705.6	0.6
J	47,373	410[2]	3,109	5.0	705.8	705.8	706.4	0.6
K	48,500	516[2]	3,580	5.1	706.4	706.4	707.2	0.8
L	49,464	128[2]	942	9.5	707.1	707.1	707.9	0.8
M	50,341	275[2]	1,869	8.4	709.9	709.9	710.5	0.6
N	50,600	230[2]	1,491	8.9	710.5	710.5	711.0	0.6

[1] Stream distance in feet above confluence with Seneca River

[2] Width extends beyond County Boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

ANDERSON COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

EIGHTEEN 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	WITHOUT FLOODWAY (FEET NAVD88)	WITH FLOODWAY (FEET NAVD88)	INCREASE
Hembree Creek								
A	4,072	65	404	12.8	675.3	675.3	676.3	1.0
B	4,503	165	877	9.7	679.6	679.6	680.1	0.5
C	4,985	125	650	11.4	681.0	681.0	681.7	0.7
D	5,392	120	575	8.7	683.3	683.3	683.7	0.4
E	5,931	105	377	12.7	685.4	685.4	685.4	0.0
F	6,365	120	560	8.7	688.8	688.8	688.9	0.1
G	6,721	63	444	11.2	689.8	689.8	690.0	0.2
H	7,059	65	521	7.4	692.0	692.0	692.1	0.1
I	7,419	63	591	7.1	694.4	694.4	694.5	0.1
J	7,839	63	544	8.7	695.9	695.9	695.9	0.0
K	8,405	70	538	7.9	697.4	697.4	697.4	0.0
L	8,894	70	549	7.9	698.5	698.5	698.5	0.0
M	9,507	95	575	8.5	700.0	700.0	700.0	0.0
N	9,929	166	724	8.9	700.9	700.9	701.0	0.1
O	10,569	55	413	9.5	702.3	702.3	702.4	0.1
P	10,913	90	500	6.7	704.3	704.3	704.6	0.3
Q	11,446	110	611	6.5	705.7	705.7	706.0	0.3
R	12,046	98	313	8.9	708.0	708.0	708.4	0.4
S	12,743	80	371	8.6	711.9	711.9	712.0	0.1
T	13,319	120	451	8.1	713.8	713.8	714.0	0.2
U	13,622	133	720	6.4	720.4	720.4	721.1	0.7
V	14,106	130	695	6.0	721.8	721.8	722.2	0.4
W	14,931	142	478	8.2	723.1	723.1	723.5	0.4

1 Stream distance in feet above confluence with Six and Twenty Creek

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

ANDERSON COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

HEMBREE CREEK