

# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 1



## McCORMICK COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
McCORMICK, TOWN OF	450152
McCORMICK COUNTY, UNINCORPORATED AREAS	450226
MOUNT CARMEL, TOWN OF*	450297
PARKSVILLE, TOWN OF	455420
PLUM BRANCH, TOWN OF*	455419

\*No Special Flood Hazard Areas Identified



# FEMA

**PRELIMINARY**  
**04/29/2016**

**REVISED:**

FLOOD INSURANCE STUDY NUMBER

**45065CV000B**

Version Number 2.3.3.3

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Flood Profiles	<u>Panel</u>
Savannah River	01-02 P

**Published Separately**

Flood Insurance Rate Map (FIRM)

# FLOOD INSURANCE STUDY REPORT MCCORMICK COUNTY, SOUTH CAROLINA

## SECTION 1.0 – INTRODUCTION

### 1.1 The National Flood Insurance Program

The National Flood Insurance Program (NFIP) is a voluntary Federal program that enables property owners in participating communities to purchase insurance protection against losses from flooding. This insurance is designed to provide an alternative to disaster assistance to meet the escalating costs of repairing damage to buildings and their contents caused by floods.

For decades, the national response to flood disasters was generally limited to constructing flood-control works such as dams, levees, sea-walls, and the like, and providing disaster relief to flood victims. This approach did not reduce losses nor did it discourage unwise development. In some instances, it may have actually encouraged additional development. To compound the problem, the public generally could not buy flood coverage from insurance companies, and building techniques to reduce flood damage were often overlooked.

In the face of mounting flood losses and escalating costs of disaster relief to the general taxpayers, the U.S. Congress created the NFIP. The intent was to reduce future flood damage through community floodplain management ordinances, and provide protection for property owners against potential losses through an insurance mechanism that requires a premium to be paid for the protection.

The U.S. Congress established the NFIP on August 1, 1968, with the passage of the National Flood Insurance Act of 1968. The NFIP was broadened and modified with the passage of the Flood Disaster Protection Act of 1973 and other legislative measures. It was further modified by the National Flood Insurance Reform Act of 1994 and the Flood Insurance Reform Act of 2004. The NFIP is administered by the Federal Emergency Management Agency (FEMA), which is a component of the Department of Homeland Security (DHS).

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60.3, *Criteria for land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is

later. These buildings are generally referred to as “Post-FIRM” buildings.

## 1.2 Purpose of this Flood Insurance Study Report

This Flood Insurance Study (FIS) report revises and updates information on the existence and severity of flood hazards for the study area. The studies described in this report developed flood hazard data that will be used to establish actuarial flood insurance rates and to assist communities in efforts to implement sound floodplain management.

In some states or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. Contact your State NFIP Coordinator to ensure that any higher State standards are included in the community’s regulations.

## 1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of McCormick County, South Carolina.

The jurisdictions that are included in this project area, along with the Community Identification Number (CID) for each community and the 8-digit Hydrologic Unit Codes (HUC-8) sub-basins affecting each, are shown in Table 1. The Flood Insurance Rate Map (FIRM) panel numbers that affect each community are listed. If the flood hazard data for the community is not included in this FIS Report, the location of that data is identified.

The location of flood hazard data for participating communities in multiple jurisdictions is also indicated in the table.

Jurisdictions that have no identified SFHAs as of the effective date of this study are indicated in the table. Changed conditions in these communities (such as urbanization or annexation) or the availability of new scientific or technical data about flood hazards could make it necessary to determine SFHAs in these jurisdictions in the future.

**Table 1: Listing of NFIP Jurisdictions**

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
McCormick, Town of	450152	03060103, 03060107	45065C0170D	
McCormick County, Unincorporated Areas	450226	03060103, 03060106, 03060107	45065C0015D, 45065C0020D, 45065C0025D, 45065C0050D, 45065C0075D, 45065C0100D <sup>2</sup> , 45065C0110D, 45065C0125D, 45065C0145D, 45065C0150D, 45065C0170D,	

**Table 1: Listing of NFIP Jurisdictions, continued**

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
McCormick County, Unincorporated Areas (continued)	450226	03060103, 03060106, 03060107	45065C0175D, 45065C0200D, 45065C0225D, 45065C0250D, 45065C0255D, 45065C0260D, 45065C0275D, 45065C0290D, 45065C0295E, 45065C0300E, 45065C0325D, 45065C0330D, 45065C0335E, 45065C0340D, 45065C0345E, 45065C0375E, 45065C0380D, 45065C0385D, 45065C0405D	
Mount Carmel, Town of <sup>1</sup>	450297	03060103	45065C0020D, 45065C0050D, 45065C0110D, 45065C0150D	
Parksville, Town of	455420	03060103, 03060107	45065C0290D	
Plum Branch, Town of <sup>1</sup>	455419	03060103, 03060107	45065C0260D	

<sup>1</sup> No Special Flood Hazard Areas Identified

<sup>2</sup> Panel Not Printed

#### 1.4 Considerations for using this Flood Insurance Study Report

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

This section presents important considerations for using the information contained in this FIS Report and the FIRM, including changes in format and content. Figures 1, 2, and 3 present information that applies to using the FIRM with the FIS Report.

- Part or all of this FIS Report may be revised and republished at any time. In addition, part of this FIS Report may be revised by a Letter of Map Revision (LOMR), which does not involve republication or redistribution of the FIS Report. Refer to Section 6.5 of this FIS Report for information about the process to revise the FIS Report and/or FIRM.

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 31, “Map Repositories,” within this FIS Report.

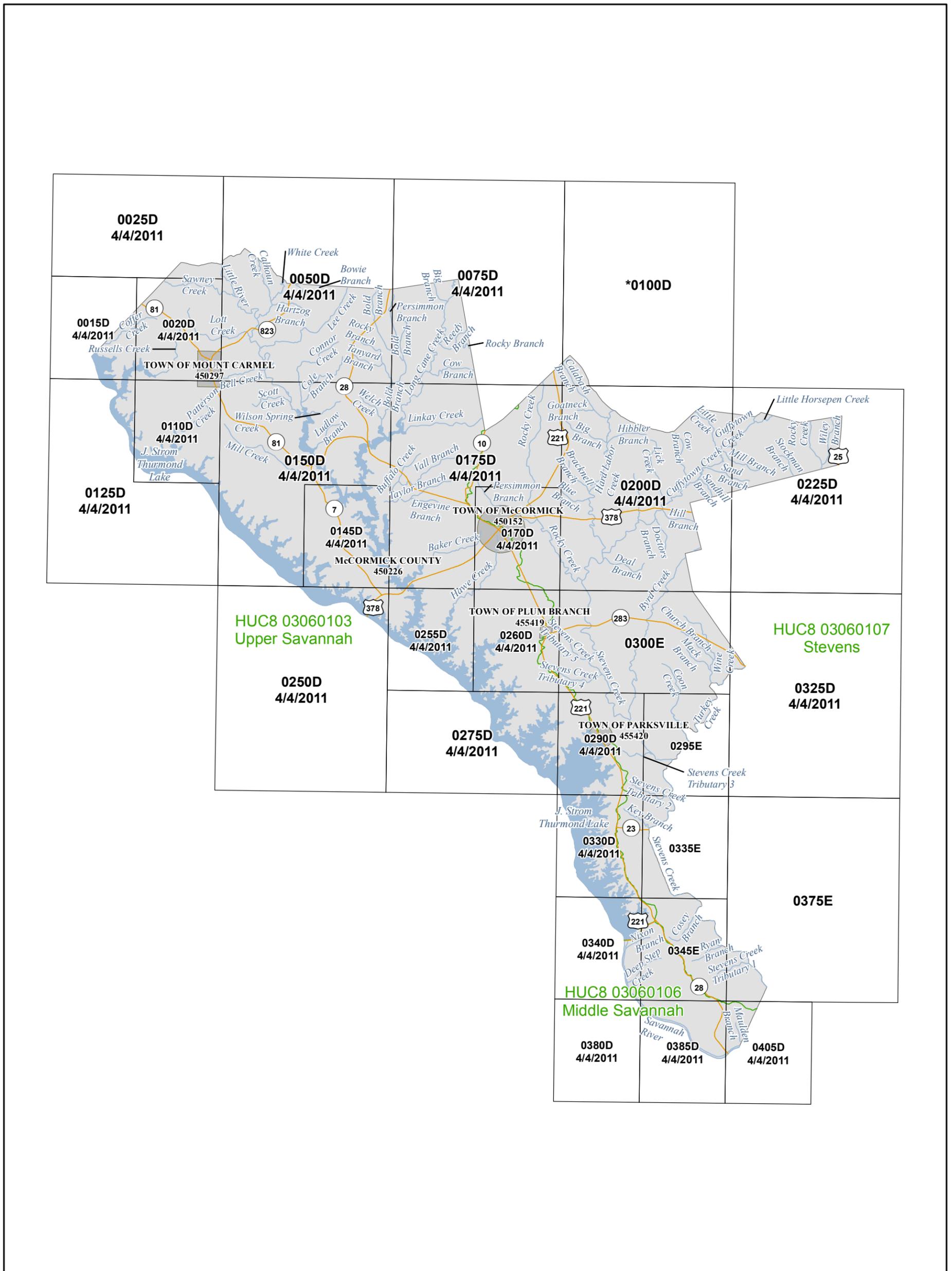
- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for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

The initial Countywide FIS Report for McCormick County became effective on April 4, 2011. Refer to Table 28 for information about subsequent revisions to the FIRMs.

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

The FIRM Panel Index in Figure 1 shows the overall FIRM panel layout within McCormick County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Panel Index includes community boundaries, flooding sources, watershed boundaries, and United States Geological Survey (USGS) Hydrologic Unit Code – 8 (HUC-8) codes.

Figure 1: FIRM Panel Index



1 inch = 20,911 feet 1:250,933

0 5,500 11,000 22,000 33,000 44,000 feet

Map Projection:  
Lambert Conformal Conic State Plane South Carolina  
FIPS 3900; North American Datum 1983  
Western Hemisphere; Vertical Datum: North American  
Vertical Datum of 1988

**THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT [HTTP://MSC.FEMA.GOV](http://MSC.FEMA.GOV)**

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

\*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS



**NATIONAL FLOOD INSURANCE PROGRAM**  
FLOOD INSURANCE RATE MAP INDEX

McCORMICK COUNTY, SOUTH CAROLINA and Incorporated Areas

PANELS PRINTED:  
0015, 0020, 0025, 0050, 0075, 0110, 0125, 0145, 0150, 0170, 0175, 0200, 0225, 0250, 0255, 0260, 0275, 0290, 0295, 0300, 0325, 0330, 0335, 0340, 0345, 0375, 0380, 0385, 0405

**PRELIMINARY**  
**4/29/2016**

U.S. DEPARTMENT OF  
HOMELAND SECURITY  
**FEMA**

MAP NUMBER  
45065CIND08  
MAP REVISED

Each FIRM panel may contain specific notes to the user that provide additional information regarding the flood hazard data shown on that map. However, the FIRM panel does not contain enough space to show all the notes that may be relevant in helping to better understand the information on the panel. Figure 2 contains the full list of these notes.

**Figure 2: FIRM Notes to Users**

## **NOTES TO USERS**

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at [msc.fema.gov](http://msc.fema.gov). Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Flood Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Panel Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to Table 28 in this FIS Report.

To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

PRELIMINARY FIS REPORT: FEMA maintains information about map features, such as street locations and names, in or near designated flood hazard areas. Requests to revise information in or near designated flood hazard areas may be provided to FEMA during the community review period, at the final Consultation Coordination Officer's meeting, or during the statutory 90-day appeal period. Approved requests for changes will be shown on the final printed FIRM.

The map is for use in administering the NFIP. It may not identify all areas subject to flooding, particularly from local drainage sources of small size. Consult the community map repository to find updated or additional flood hazard information.

BASE FLOOD ELEVATIONS: For more detailed information in areas where Base Flood Elevations (BFEs) and/or floodways have been determined, consult the Flood Profiles and Floodway Data and/or Summary of Non-Coastal Stillwater Elevations tables within this FIS Report. Use the flood elevation data within the FIS Report in conjunction with the FIRM for construction and/or floodplain management.

FLOODWAY INFORMATION: Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the FIS Report for this jurisdiction.

FLOOD CONTROL STRUCTURE INFORMATION: Certain areas not in Special Flood Hazard Areas may be protected by flood control structures. Refer to Section 4.3 "Non-Levee Flood Protection Measures" of this FIS Report for information on flood control structures for this jurisdiction.

## Figure 2: FIRM Notes to Users

**PROJECTION INFORMATION:** The projection used in the preparation of the map was North American Datum of 1983 (NAD83) StatePlane South Carolina FIPS 3900, Lambert Conformal Conic. The horizontal datum was NAD83, Spheroid GRS 1980. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

**ELEVATION DATUM:** Flood elevations on the FIRM are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov) or contact the National Geodetic Survey at the following address:

*NGS Information Services  
NOAA, N/NGS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(301) 713-3242*

Local vertical monuments may have been used to create the map. To obtain current monument information, please contact the appropriate local community listed in Table 31 of this FIS Report.

**BASE MAP INFORMATION:** Base map information shown on the FIRM was provided by NFHL and TIGER at a scale of 1:12,000. For panels dated April 4, 2011 base map information was provided by NHD, SCDNR, and University of South Carolina GIS Data Server. For information about base maps, refer to Section 6.2 "Base Map" in this FIS Report.

The map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables may reflect stream channel distances that differ from what is shown on the map.

Corporate limits shown on the map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after the map was published, map users should contact appropriate community officials to verify current corporate limit locations.

### **NOTES FOR FIRM PANEL INDEX**

**REVISIONS TO INDEX:** As new studies are performed and FIRM panels are updated within McCormick County, South Carolina, corresponding revisions to the FIRM Panel Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to Table 28 of this FIS Report to determine the most recent FIRM revision date for each community. The most recent FIRM panel effective date will correspond to the most recent index date.

**Figure 2: FIRM Notes to Users**

**SPECIAL NOTES FOR SPECIFIC FIRM PANELS**

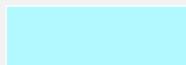
This Notes to Users section was created specifically for McCormick County, South Carolina, effective TBD.

FLOOD RISK REPORT: A Flood Risk Report (FRR) may be available for many of the flooding sources and communities referenced in this FIS Report. The FRR is provided to increase public awareness of flood risk by helping communities identify the areas within their jurisdictions that have the greatest risks. Although non-regulatory, the information provided within the FRR can assist communities in assessing and evaluating mitigation opportunities to reduce these risks. It can also be used by communities developing or updating flood risk mitigation plans. These plans allow communities to identify and evaluate opportunities to reduce potential loss of life and property. However, the FRR is not intended to be the final authoritative source of all flood risk data for a project area; rather, it should be used with other data sources to paint a comprehensive picture of flood risk.

Each FIRM panel contains an abbreviated legend for the features shown on the maps. However, the FIRM panel does not contain enough space to show the legend for all map features. Figure 3 shows the full legend of all map features. Note that not all of these features may appear on the FIRM panels in McCormick County.

**Figure 3: Map Legend for FIRM**

**SPECIAL FLOOD HAZARD AREAS:** *The 1% annual chance flood, also known as the base flood or 100-year flood, has a 1% chance of happening or being exceeded each year. Special Flood Hazard Areas are subject to flooding by the 1% annual chance flood. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. See note for specific types. If the floodway is too narrow to be shown, a note is shown.*



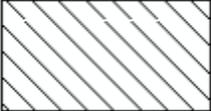
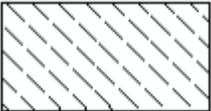
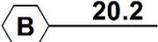
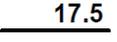
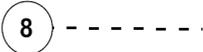
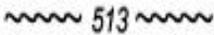
Special Flood Hazard Areas subject to inundation by the 1% annual chance flood (Zones A, AE, AH, AO, AR, A99, V and VE)

- Zone A The flood insurance rate zone that corresponds to the 1% annual chance floodplains. No base (1% annual chance) flood elevations (BFEs) or depths are shown within this zone.
- Zone AE The flood insurance rate zone that corresponds to the 1% annual chance floodplains. Base flood elevations derived from the hydraulic analyses are shown within this zone, either at cross section locations or as static whole-foot elevations that apply throughout the zone.
- Zone AH The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the hydraulic analyses are shown at selected intervals within this zone.
- Zone AO The flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the hydraulic analyses are shown within this zone.
- Zone AR The flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- Zone A99 The flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or flood depths are shown within this zone.
- Zone V The flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations are not shown within this zone.
- Zone VE Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Base flood elevations derived from the coastal analyses are shown within this zone as static whole-foot elevations that apply throughout the zone.

**Figure 3: Map Legend for FIRM**

	Regulatory Floodway determined in Zone AE.
	Non-encroachment zone (see Section 2.4 of this FIS Report for more information)
<b>OTHER AREAS OF FLOOD HAZARD</b>	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood Hazard – Zone X: The flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined based on future-conditions hydrology. No base flood elevations or flood depths are shown within this zone.
	Area with Reduced Flood Risk due to Levee: Areas where an accredited levee, dike, or other flood control structure has reduced the flood risk from the 1% annual chance flood.
<b>OTHER AREAS</b>	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.
	Unshaded Zone X: Areas of minimal flood hazard.
<b>FLOOD HAZARD AND OTHER BOUNDARY LINES</b>	
 (ortho) (vector)	Flood Zone Boundary (white line on ortho-photography-based mapping; gray line on vector-based mapping)
	Limit of Study
	Jurisdiction Boundary
	Limit of Moderate Wave Action (LiMWA): Indicates the inland limit of the area affected by waves greater than 1.5 feet
<b>GENERAL STRUCTURES</b>	
 <i>Aqueduct Channel Culvert Storm Sewer</i>	Channel, Culvert, Aqueduct, or Storm Sewer
 <i>Dam Jetty Weir</i>	Dam, Jetty, Weir

**Figure 3: Map Legend for FIRM**

	<p>Levee, Dike or Floodwall</p>
 <p>Bridge</p>	<p>Bridge</p>
<p><b>COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA):</b> CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.</p>	
 <p>CBRS AREA 09/30/2009</p>	<p>Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.</p>
 <p>OTHERWISE PROTECTED AREA 09/30/2009</p>	<p>Otherwise Protected Area</p>
<p><b>REFERENCE MARKERS</b></p>	
	<p>River mile Markers</p>
<p><b>CROSS SECTION &amp; TRANSECT INFORMATION</b></p>	
	<p>Lettered Cross Section with Regulatory Water Surface Elevation (BFE)</p>
	<p>Numbered Cross Section with Regulatory Water Surface Elevation (BFE)</p>
	<p>Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)</p>
	<p>Coastal Transect</p>
 	<p>Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.</p> <p>Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.</p>
	<p>Base Flood Elevation Line (shown for flooding sources for which no cross sections or profile are available)</p>

**Figure 3: Map Legend for FIRM**

<b>ZONE AE (EL 16)</b>	Static Base Flood Elevation value (shown under zone label)
<b>ZONE AO (DEPTH 2)</b>	Zone designation with Depth
<b>ZONE AO (DEPTH 2) (VEL 15 FPS)</b>	Zone designation with Depth and Velocity
<b>BASE MAP FEATURES</b>	
 <i>Stevens Creek</i>	River, Stream or Other Hydrographic Feature
	Interstate Highway
	U.S. Highway
	State Highway
	County Highway
	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
<sup>42</sup> 76 <sup>000m</sup> E	Horizontal Reference Grid Coordinates (UTM)
<b>365000 FT</b>	Horizontal Reference Grid Coordinates (State Plane)
<b>80° 16' 52.5"</b>	Corner Coordinates (Latitude, Longitude)

## SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

### 2.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1% annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2% annual chance (500-year) flood is employed to indicate additional areas of flood hazard in the community.

Each flooding source included in the project scope has been studied and mapped using professional engineering and mapping methodologies that were agreed upon by FEMA and McCormick County as appropriate to the risk level. Flood risk is evaluated based on factors such as known flood hazards and projected impact on the built environment. Engineering analyses were performed for each studied flooding source to calculate its 1% annual chance flood elevations; elevations corresponding to other floods (e.g. 10-, 4-, 2-, 0.2-percent annual chance, etc.) may have also been computed for certain flooding sources. Engineering models and methods are described in detail in Section 5.0 of this FIS Report. The modeled elevations at cross sections were used to delineate the floodplain boundaries on the FIRM; between cross sections, the boundaries were interpolated using elevation data from various sources. More information on specific mapping methods is provided in Section 6.0 of this FIS Report.

Depending on the accuracy of available topographic data (Table 23), study methodologies employed (Section 5.0), and flood risk, certain flooding sources may be mapped to show both the 1% and 0.2% annual chance floodplain boundaries, regulatory water surface elevations (BFEs), and/or a regulatory floodway. Similarly, other flooding sources may be mapped to show only the 1% annual chance floodplain boundary on the FIRM, without published water surface elevations. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundary is shown on the FIRM. Figure 3, “Map Legend for FIRM”, describes the flood zones that are used on the FIRMs to account for the varying levels of flood risk that exist along flooding sources within the project area. Table 2 and Table 3 indicate the flood zone designations for each flooding source and each community within McCormick County, South Carolina, respectively.

Table 2, “Flooding Sources Included in this FIS Report,” lists each flooding source, including its study limits, affected communities, mapped zone on the FIRM, and the completion date of its engineering analysis from which the flood elevations on the FIRM and in the FIS Report were derived. Descriptions and dates for the latest hydrologic and hydraulic analyses of the flooding sources are shown in Table 13. Floodplain boundaries for these flooding sources are shown on the FIRM (published separately) using the symbology described in Figure 3. On the map, the 1% annual chance floodplain corresponds to the SFHAs. The 0.2% annual chance floodplain shows areas that, although out of the regulatory floodplain, are still subject to flood hazards.

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. The procedures to remove these areas from the SFHA are described in Section 6.5 of this FIS Report.

**Table 2: Flooding Sources Included in this FIS Report**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Baker Creek	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Savannah River	Approximately 110 feet upstream of Mims Drive	03060103	4.9	—	N	A	2011
Baker Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Baker Creek	0.6 miles upstream of confluence with Baker Creek	03060103	0.6	—	N	A	2011
Baker Creek Tributary 2	McCormick, Town of	Confluence with Baker Creek	0.4 miles upstream of confluence with Baker Creek	03060103	0.4	—	N	A	2011
Bee Tree Branch	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	Approximately 370 feet upstream of Gold Street	03060107	0.5	—	N	A	2011
Bell Creek	McCormick County, Unincorporated Areas	Confluence with Little River	1.7 miles upstream of confluence with Little River	03060103	1.7	—	N	A	2011
Big Branch	McCormick County, Unincorporated Areas	Confluence with Hard Labor Creek	0.8 miles upstream of confluence with Hard Labor Creek	03060107	0.8	—	N	A	2011
Big Branch North	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	At McCormick-Abbeville County Boundary	03060103	1.1	—	N	A	2011
Bold Branch	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	At McCormick-Abbeville County Boundary	03060103	7.7	—	N	A	2011
Bracknell Branch	McCormick County, Unincorporated Areas	Confluence with Hard Labor Creek	Approximately 290 feet upstream of Unnamed Road	03060107	0.7	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Buffalo Creek	McCormick County, Unincorporated Areas	Confluence with Savannah River	2.1 miles upstream of Huguenot Parkway	03060103	3.8	—	N	A	2011
Byrd Creek	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.5 miles upstream of State Rd S-33-604	03060107	8.8	—	N	A	2011
Calabash Branch	McCormick County, Unincorporated Areas	Confluence with Hard Labor Creek	1.2 miles upstream of Long Cane Road	03060107	2.1	—	N	A	2011
Calhoun Creek	McCormick County, Unincorporated Areas	Confluence with Little River	At McCormick-Abbeville County Boundary	03060103	3.5	—	N	A	2011
Cedar Hill Creek	McCormick County, Unincorporated Areas	Confluence with Baker Creek	Approximately 1,000 feet upstream of Brewer Road	03060103	4.3	—	N	A	2011
Cedar Hill Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Cedar Hill Creek	At State Road S-33-43	03060103	0.4	—	N	A	2011
Cedar Hill Creek Tributary 2	McCormick County, Unincorporated Areas	Confluence with Cedar Hill Creek	0.6 miles upstream of Cedar Hill Road	03060103	0.9	—	N	A	2011
Cedar Hill Creek Tributary 3	McCormick County, Unincorporated Areas	Confluence with Cedar Hill Creek	1.7 miles upstream of confluence with Cedar Hill Creek	03060103	1.7	—	N	A	2011
Cedar Hill Creek Tributary 4	McCormick County, Unincorporated Areas	Confluence with Cedar Hill Creek	0.5 miles upstream of confluence with Cedar Hill Creek	03060103	0.5	—	N	A	2011
Chapel Branch	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	0.6 miles upstream of confluence with Long Cane Creek	03060103	0.6	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Cole Branch	McCormick County, Unincorporated Areas	Confluence with Connor Creek	0.8 miles upstream of State Road S-33-37	03060103	2.2	—	N	A	2011
Connor Creek	McCormick County, Unincorporated Areas	Confluence with Little River	0.7 miles upstream of Foster Road	03060103	2.9	—	N	A	2011
Coon Creek	McCormick County, Unincorporated Areas	Confluence with Turkey Creek	0.4 miles upstream of Prices Mill Road	03060107	2.6	—	N	A	2011
Cosey Branch	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.8 miles upstream of confluence with Stevens Creek	03060107	0.8	—	N	A	2011
Cow Branch	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	At Long Cane Road	03060107	2.5	—	N	A	2011
Cow Branch West	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	1.2 miles upstream of confluence with Long Cane Creek	03060103	1.2	—	N	A	2011
Cow Branch West Tributary 1	McCormick County, Unincorporated Areas	Confluence with Cow Branch West	1.0 miles upstream of confluence with Cow Branch West	03060103	1.0	—	N	A	2011
Cuffytown Creek	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	At McCormick-Greenwood County Boundary	03060107	12.5	—	N	A	2011
Deal Branch	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	03060107	0.7	—	N	A	2011
Hard Labor Creek	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	At McCormick-Greenwood County Boundary	03060107	9.2	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Hartzog Branch	McCormick County, Unincorporated Areas	Confluence with Calhoun Creek	Approximately 650 feet upstream of State Highway 823	03060103	0.9	—	N	A	2011
Hawe Creek	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Savannah River	At Augusta Street	03060103	7.4	—	N	A	2011
Hawe Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Hawe Creek	0.8 miles upstream of confluence with Hawe Creek	03060103	0.8	—	N	A	2011
Hawe Creek Tributary 2	McCormick County, Unincorporated Areas	Confluence with Hawe Creek	0.6 miles upstream of confluence with Hawe Creek	03060103	0.6	—	N	A	2011
Hawe Creek Tributary 3	McCormick County, Unincorporated Areas	Confluence with Hawe Creek	0.6 miles upstream of confluence with Hawe Creek	03060103	0.6	—	N	A	2011
Hawe Creek Tributary 4	McCormick, Town of	Confluence with Hawe Creek	0.4 miles upstream of confluence with Hawe Creek	03060103	0.4	—	N	A	2011
Hill Branch	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	0.4 miles upstream of Scotts Ferry Road	03060107	0.8	—	N	A	2011
Horse Branch	McCormick County, Unincorporated Areas	Confluence with Little River	0.4 miles upstream of Forest Service Road F3015	03060103	0.8	—	N	A	2011
Key Branch	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	03060107	0.7	—	N	A	2011
Lee Creek	McCormick County, Unincorporated Areas	Confluence with Little River	0.9 miles upstream of Old Charleston Road	03060103	4.9	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Lick Creek	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	Approximately 1,400 feet upstream of Unnamed Road	03060107	1.9	—	N	A	2011
Linkay Creek	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	2.6 miles upstream of Unnamed Road	03060103	3.2	—	N	A	2011
Linkay Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Linkay Creek	At McCormick-Greenwood County Boundary	03060103	1.5	—	N	A	2011
Linkay Creek Tributary 1-1	McCormick County, Unincorporated Areas	Confluence with Linkay Creek Tributary 1	0.4 miles upstream of Cherokee Ridge	03060103	0.9	—	N	A	2011
Little Creek	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	At McCormick-Greenwood County Boundary	03060107	2.3	—	N	A	2011
Little Horsepen Creek	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	At McCormick-Greenwood County Boundary	03060107	1.0	—	N	A	2011
Little Persimmon Branch	McCormick County, Unincorporated Areas	Confluence with Persimmon Branch North	Approximately 700 feet upstream of Forest Service Road F547J	03060103	0.3	—	N	A	2011
Little River	McCormick County, Unincorporated Areas	Confluence with Savannah River	At McCormick-Abbeville County Boundary	03060103	25.3	—	N	A	2011
Little River Tributary 1	McCormick County, Unincorporated Areas	Confluence with Little River	1.5 miles upstream of confluence with Little River	03060103	1.5	—	N	A	2011
Long Cane Creek	McCormick County, Unincorporated Areas	Confluence with Little River	At McCormick-Abbeville County Boundary	03060103	13.6	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Lott Creek	McCormick County, Unincorporated Areas	Confluence with Little River	2.8 miles upstream of State Highway 823	03060103	3.1	—	N	A	2011
Ludlow Branch	McCormick County, Unincorporated Areas	Confluence with Little River	0.8 miles upstream of confluence with Little River	03060103	0.8	—	N	A	2011
Mill Branch	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	0.6 miles upstream of Callison Highway	03060107	1.3	—	N	A	2011
Mill Branch West	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	0.6 miles upstream of State Highway 28	03060103	0.8	—	N	A	2011
Mill Creek	McCormick County, Unincorporated Areas	Confluence with Little River	At Willington Academy Drive	03060103	4.6	—	N	A	2011
Persimmon Branch	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Rocky Creek	At State Highway 10	03060107	3.8	—	N	A	2011
Persimmon Branch Tributary 1	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Persimmon Branch	0.6 miles upstream of Hammond Street	03060107	0.9	—	N	A	2011
Persimmon Branch Tributary 2	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Persimmon Branch	Approximately 990 feet upstream of Pine Street	03060107	0.6	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Persimmon Branch Tributary 3	McCormick, Town of; McCormick County, Unincorporated Areas	Confluence with Persimmon Branch	0.7 miles upstream of Pine Street	03060107	0.9	—	N	A	2011
Persimmon Branch North	McCormick County, Unincorporated Areas	Confluence with Bold Branch	1.3 miles upstream of confluence with Bold Branch	03060103	1.3	—	N	A	2011
Reedy Branch	McCormick County, Unincorporated Areas	Confluence with Long Cane Creek	At McCormick-Greenwood County Boundary	03060103	1.8	—	N	A	2011
Rocky Branch	McCormick County, Unincorporated Areas	Confluence with Reedy Branch	At McCormick-Greenwood County Boundary	03060103	1.0	—	N	A	2011
Rocky Branch West	McCormick County, Unincorporated Areas	Confluence with Bold Branch	1.7 miles upstream of confluence with Bold Branch	03060103	1.7	—	N	A	2011
Rocky Creek	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.9 miles upstream of Eden Hall Road	03060107	10.6	—	N	A	2011
Rocky Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Rocky Creek	0.7 miles upstream of New Hope Road	03060107	1.5	—	N	A	2011
Rocky Creek Tributary 2	McCormick County, Unincorporated Areas	Confluence with Rocky Creek	0.5 miles upstream of Whitetown Road	03060107	1.1	—	N	A	2011
Rocky Creek Tributary 3	McCormick County, Unincorporated Areas	Confluence with Rocky Creek	0.5 miles upstream of Unnamed Road	03060107	0.7	—	N	A	2011
Rocky Creek Tributary 4	McCormick County, Unincorporated Areas	Confluence with Rocky Creek	At Rocky Creek Road	03060107	0.8	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Rocky Creek Tributary 5	McCormick County, Unincorporated Areas	Confluence with Rocky Creek	At McCormick-Greenwood County Boundary	03060107	2.3	—	N	A	2011
Rocky Creek East	McCormick County, Unincorporated Areas	At McCormick-Edgefield County Boundary	Approximately 1,700 feet upstream of Long Cane Road	03060107	1.4	—	N	A	2011
Ryan Branch	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.9 miles upstream of confluence with Stevens Creek	03060107	0.9	—	N	A	2011
Sandhill Branch	McCormick County, Unincorporated Areas	Confluence with Cuffytown Creek	Approximately 280 feet downstream of Scotts Ferry Road	03060107	1.0	—	N	A	2011
Savannah River	McCormick County, Unincorporated Areas	At McCormick, SC-Edgefield, SC-Columbia, GA County / State Boundary	0.5 miles downstream of J. Strom Thurmond Dam at Clarks Hill Road	03060106	7.7	—	Y	AE	1994
Savannah River	McCormick County, Unincorporated Areas	0.5 miles downstream of J. Strom Thurmond Dam at Clarks Hill Road	At J. Strom Thurmond Dam at Clarks Hill Road	03060106	0.5	—	N	AE	2011
Savannah River (J. Strom Thurmond Lake)	Parksville, Town of; McCormick County, Unincorporated Areas	At J. Strom Thurmond Dam at Clarks Hill Road	At McCormick, SC-Abbeville, SC-Elbert, GA County / State Boundary	03060103	37.0	—	N	AE	2011
Sawney Creek	McCormick County, Unincorporated Areas	Confluence with Little River	At McCormick-Abbeville County Boundary	03060103	3.7	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sawney Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Sawney Creek	At McCormick-Abbeville County Boundary	03060103	0.4	—	N	A	2011
Scott Creek	McCormick County, Unincorporated Areas	Confluence with Little River	2.4 miles upstream of confluence with Little River	03060103	2.4	—	N	A	2011
Stevens Creek	McCormick County, Unincorporated Areas	At McCormick-Edgefield County Boundary	Approximately 90 feet upstream of confluence of Turkey Creek	03060107	14.4	—	N	AE	2015
Stevens Creek	McCormick County, Unincorporated Areas	Approximately 90 feet upstream of confluence of Turkey Creek	Confluence of Cuffytown Creek and Hard Labor Creek	03060107	14.1	—	N	A	2011
Stevens Creek Tributary 1	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	1.0 miles upstream of confluence with Stevens Creek	03060107	1.0	—	N	A	2011
Stevens Creek Tributary 2	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.6 miles upstream of confluence with Stevens Creek	03060107	0.6	—	N	A	2011
Stevens Creek Tributary 3	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.8 miles upstream of confluence with Stevens Creek	03060107	0.8	—	N	A	2011
Stevens Creek Tributary 4	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	03060107	0.7	—	N	A	2011
Stevens Creek Tributary 5	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	1.5 miles upstream of confluence with Stevens Creek	03060107	1.5	—	N	A	2011
Taylor Branch	McCormick County, Unincorporated Areas	Confluence with Buffalo Creek	0.5 miles upstream of State Highway 28	03060103	2.1	—	N	A	2011

**Table 2: Flooding Sources Included in this FIS Report, continued**

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi <sup>2</sup> ) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Turkey Creek	McCormick County, Unincorporated Areas	Confluence with Stevens Creek	0.7 miles upstream of Key Road	03060107	4.5	—	N	AE	2015
Turkey Creek	McCormick County, Unincorporated Areas	0.7 miles upstream of Key Road	At McCormick-Edgefield County Boundary	03060107	3.4	—	N	A	2011
Vall Branch	McCormick County, Unincorporated Areas	Confluence with Buffalo Creek	Approximately 370 feet upstream of Red Row Road	03060103	2.4	—	N	A	2011
Welch Creek	McCormick County, Unincorporated Areas	Confluence with Bold Branch	0.7 miles upstream of confluence with Bold Branch	03060103	0.7	—	N	A	2011
White Creek	McCormick County, Unincorporated Areas	Confluence with Calhoun Creek	At McCormick-Abbeville County Boundary	03060103	1.5	—	N	A	2011
Wiley Branch	McCormick County, Unincorporated Areas	Confluence with Rocky Creek East	Approximately 1,100 feet upstream of Long Cane Road	03060107	0.9	—	N	A	2011
Wilson Spring Creek	McCormick County, Unincorporated Areas	Confluence with Little River	0.7 miles upstream of confluence with Little River	03060103	0.7	—	N	A	2011
Wine Creek	McCormick County, Unincorporated Areas	Confluence with Turkey Creek	At State Highway 283	03060107	2.1	—	N	A	2011

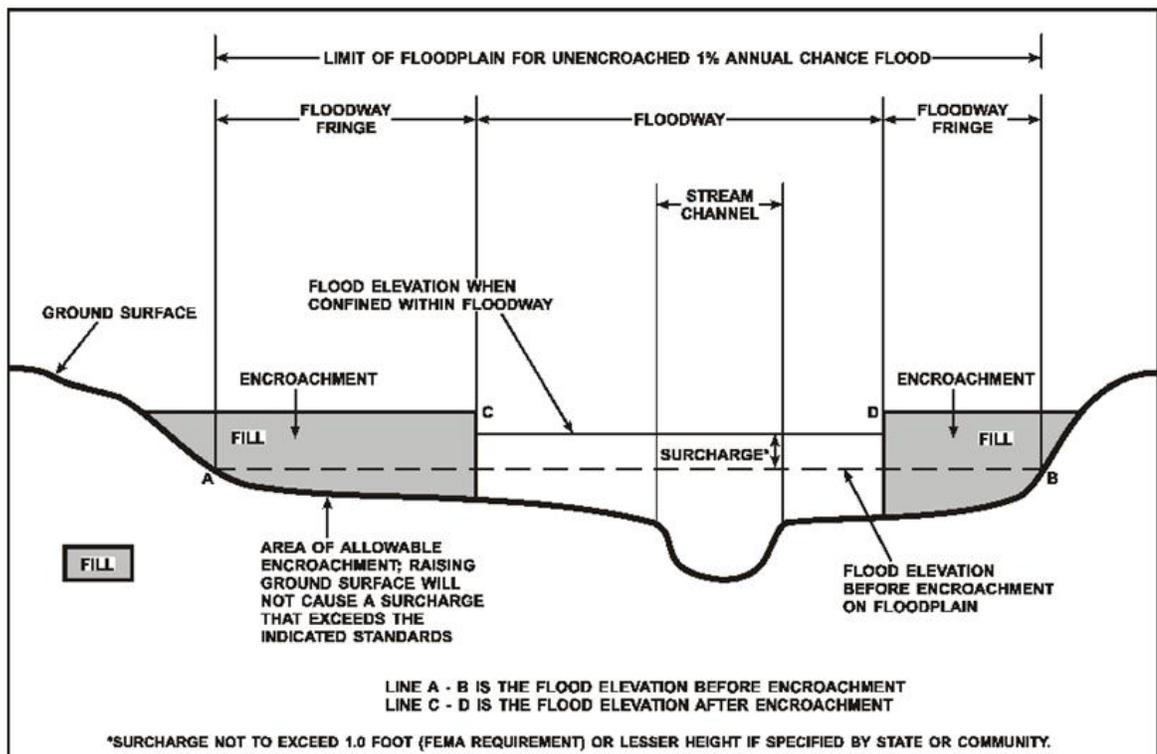
## 2.2 Floodways

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 balancing floodplain development against increasing flood hazard. With this approach, the area of the 1% annual chance floodplain on a river is divided into a floodway and a floodway fringe based on hydraulic modeling. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment in order to carry the 1% annual chance flood. The floodway fringe is the area between the floodway and the 1% annual chance floodplain boundaries where encroachment is permitted. The floodway must be wide enough so that the floodway fringe could be completely obstructed without increasing the water surface elevation of the 1% annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 4.

To participate in the NFIP, Federal regulations require communities to limit increases caused by encroachment to 1.0 foot, provided that hazardous velocities are not produced. Regulations for South Carolina require communities in McCormick County to limit increases caused by encroachment to 1.0 foot and several communities have adopted additional restrictions. The floodways in this project are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway projects.

**Figure 4: Floodway Schematic**



Floodway widths presented in this FIS Report and on the FIRM were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. For certain stream segments, floodways were adjusted so that the amount of floodwaters conveyed on each side of the floodplain would be reduced equally. The results of the floodway computations have been tabulated for selected cross sections and are shown in Table 24, "Floodway Data."

All floodways that were developed for this Flood Risk Project are shown on the FIRM using the symbology described in Figure 3. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown on the FIRM. For information about the delineation of floodways on the FIRM, refer to Section 6.3.

### **2.3 Base Flood Elevations**

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM.

Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

### **2.4 Non-Encroachment Zones**

Some States and communities use non-encroachment zones to manage floodplain development. For flooding sources with medium flood risk, field surveys are often not collected and surveyed bridge and culvert geometry is not developed. Standard hydrologic and hydraulic analyses are still performed to determine BFEs in these areas. However, floodways are not typically determined, since specific channel profiles are not developed. To assist communities with managing floodplain development in these areas, a "non-encroachment zone" may be provided. While not a FEMA designated floodway, the non-encroachment zone represents that area around the stream that should be reserved to convey the 1% annual chance flood event. As with a floodway, all surcharges must fall within the acceptable range in the non-encroachment zone.

General setbacks can be used in areas of lower risk (e.g. unnumbered Zone A), but these are not considered sufficient where unnumbered Zone A is replaced by Zone AE. The NFIP requires communities to ensure that any development in a non-encroachment area causes no increase in BFEs. Communities must generally prohibit development within the area defined by the non-encroachment width to meet the NFIP requirement. Regulations for South Carolina require communities in McCormick County to limit increases caused by encroachment to 1.0 foot and several communities have adopted additional restrictions for non-encroachment areas.

Non-encroachment determinations may be delineated where it is not possible to delineate

floodways because specific channel profiles with bridge and culvert geometry were not developed. Any non-encroachment determinations for this Flood Risk Project have been tabulated for selected cross sections and are shown in Table 25, “Flood Hazard and Non-Encroachment Data for Selected Streams.” Areas for which non-encroachment zones are provided show BFEs and the 1% annual chance floodplain boundaries mapped as zone AE on the FIRM but no floodways.

## **2.5 Coastal Flood Hazard Areas**

This section is not applicable to this Flood Risk Project.

### **2.5.1 Water Elevations and the Effects of Waves**

This section is not applicable to this Flood Risk Project.

#### **Figure 5: Wave Runup Transect Schematic**

**[Not Applicable to this Flood Risk Project]**

### **2.5.2 Floodplain Boundaries and BFEs for Coastal Areas**

This section is not applicable to this Flood Risk Project.

### **2.5.3 Coastal High Hazard Areas**

This section is not applicable to this Flood Risk Project.

#### **Figure 6: Coastal Transect Schematic**

**[Not Applicable to this Flood Risk Project]**

### **2.5.4 Limit of Moderate Wave Action**

This section is not applicable to this Flood Risk Project.

## **SECTION 3.0 – INSURANCE APPLICATIONS**

### **3.1 National Flood Insurance Program Insurance Zones**

For flood insurance applications, the FIRM designates flood insurance rate zones as described in Figure 3, “Map Legend for FIRM.” Flood insurance zone designations are assigned to flooding sources based on the results of the hydraulic or coastal analyses. Insurance agents use the zones shown on the FIRM and depths and base flood elevations in this FIS Report in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (e.g. Zones A, AE, V, VE, etc.), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of additional flood hazards.

Table 3 lists the flood insurance zones in McCormick County.

**Table 3: Flood Zone Designations by Community**

Community	Flood Zone(s)
McCormick, Town of	A, X
McCormick County, Unincorporated Areas	A, AE, X
Mount Carmel, Town of	X
Parksville, Town of	AE, X
Plum Branch, Town of	X

### 3.2 Coastal Barrier Resources System

This section is not applicable to this Flood Risk Project.

**Table 4: Coastal Barrier Resources System Information**

[Not Applicable to this Flood Risk Project]

## SECTION 4.0 – AREA STUDIED

### 4.1 Basin Description

Table 5 contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its drainage area.

**Table 5: Basin Characteristics**

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Upper Savannah	03060103	Savannah River	Major portion of McCormick County, encompassing the entire western region from north to south along a central division	1,846
Middle Savannah	03060106	Savannah River	Small area of McCormick County around the southern tip of the county boundary	1,846
Stevens	03060107	Stevens Creek	Major portion of McCormick County, encompassing the entire eastern region from north to south along a central division	740

### 4.2 Principal Flood Problems

Table 6 contains a description of the principal flood problems that have been noted for McCormick County by flooding source.

**Table 6: Principal Flood Problems**

Flooding Source	Description of Flood Problems
All sources	Man-made obstructions or structures (bridges, culverts, buildings, etc.) inhibit flow as well as natural organics (trees, brush and associated debris).
All sources	Major floods on small streams in McCormick County occur as a result of tropical storms (hurricanes) or local thunderstorms.  Large storms, which produce severe flooding in McCormick County, usually occur during the winter or spring. These storms are usually of the frontal type, lasting two to four days and covering large areas. The summer storms generally consist of thunderstorms, which have high rainfall intensities and area scattered over small areas. In addition, the study area is vulnerable to hurricane and tropical storm activities. These storms usually occur from August through October and have produced some of the most severe floods in McCormick County.
Savannah River	Savannah River is a principal flooding source in McCormick County.

Table 7 contains information about historic flood elevations in the communities within McCormick County.

**Table 7: Historic Flooding Elevations**

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Savannah River	USGS Gage 02196670 Savannah River Jefferson Davis Bridge, at Augusta, GA	350,000 cfs; 46.3 feet (stage)	10/01/1929	N/A	USGS National Water Information System (NWIS)

#### 4.3 Non-Levee Flood Protection Measures

Table 8 contains information about non-levee flood protection measures within McCormick County such as dams, jetties, and or dikes. Levees are addressed in Section 4.4 of this FIS Report.

**Table 8: Non-Levee Flood Protection Measures**

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Savannah River	Hartwell Dam (Hartwell Lake)	Hydroelectric Dam	On South Carolina -Georgia State Boundary near U.S. Highway 29	Main purposes include flood alleviation as well as electric power production
Savannah River	Richard B. Russell Dam (Richard B. Russell Lake)	Hydroelectric Dam	On South Carolina -Georgia State Boundary near Bobby Brown State Park Road near Town of Calhoun Falls, SC	Mainly for purposes of electric power production and recreation, but also intended for flood control and stream-flow regulation
Savannah River	J. Strom Thurmond Dam (J. Strom Thurmond Lake)	Hydroelectric Dam	On South Carolina -Georgia State Boundary on J. Strom Thurmond Highway near Augusta, GA	Main purposes include flood alleviation as well as electric power production

**4.4 Levees**

This section is not applicable to this Flood Risk Project.

**Table 9: Levees**

[Not Applicable to this Flood Risk Project]

**SECTION 5.0 – ENGINEERING METHODS**

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

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

## **5.1 Hydrologic Analyses**

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. A summary of the hydrologic methods applied to develop the discharges used in the hydraulic analyses for each stream is provided in Table 13. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

A summary of the discharges is provided in Table 10. Frequency Discharge-Drainage Area Curves used to develop the hydrologic models may also be shown in Figure 7 for selected flooding sources. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. (Coastal stillwater elevations are discussed in Section 5.3 and shown in Table 17.) Stream gage information is provided in Table 12.

**Table 10: Summary of Discharges**

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Savannah River	At confluence of Stevens Creek	7,173	44,000	*	75,000	102,000	193,000
Stevens Creek	At Woodlawn Road	721.4	23,505	29,320	34,166	38,457	48,803
Stevens Creek	Immediately downstream of confluence of Turkey Creek	535.7	21,896	27,224	31,172	34,951	43,583
Stevens Creek	Immediately upstream of confluence of Turkey Creek	249.0	11,981	15,210	18,103	20,576	26,730
Turkey Creek	At confluence with Stevens Creek	285.6	12,218	15,502	18,418	20,917	27,147

\* Not calculated for this Flood Risk Project

**Figure 7: Frequency Discharge-Drainage Area Curves**

[Not Applicable to this Flood Risk Project]

**Table 11: Summary of Non-Coastal Stillwater Elevations**

[Not Applicable to this Flood Risk Project]

**Table 12: Stream Gage Information used to Determine Discharges**

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Stevens Creek	02196000	USGS	Stevens Creek Near Modoc, SC	545	02/14/1940	12/31/2013

## 5.2 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. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. 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 Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For streams for which hydraulic analyses were based on cross sections, locations of selected cross sections are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 6.3), selected cross sections are also listed on Table 24, "Floodway Data."

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

**Table 13: Summary of Hydrologic and Hydraulic Analyses**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Baker Creek	Confluence with Savannah River	Approximately 110 feet upstream of Mims Drive	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Baker Creek Tributary 1	Confluence with Baker Creek	0.6 miles upstream of confluence with Baker Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Baker Creek Tributary 2	Confluence with Baker Creek	0.4 miles upstream of confluence with Baker Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Bee Tree Branch	Confluence with Cuffytown Creek	Approximately 370 feet upstream of Gold Street	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Bell Creek	Confluence with Little River	1.7 miles upstream of confluence with Little River	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Big Branch	Confluence with Hard Labor Creek	0.8 miles upstream of confluence with Hard Labor Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Big Branch North	Confluence with Long Cane Creek	At McCormick-Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Bold Branch	Confluence with Long Cane Creek	At McCormick-Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Bracknell Branch	Confluence with Hard Labor Creek	Approximately 290 feet upstream of Unnamed Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Buffalo Creek	Confluence with Savannah River	2.1 miles upstream of Huguenot Parkway	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Byrd Creek	Confluence with Stevens Creek	0.5 miles upstream of State Rd S-33-604	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Calabash Branch	Confluence with Hard Labor Creek	1.2 miles upstream of Long Cane Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Calhoun Creek	Confluence with Little River	At McCormick-Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cedar Hill Creek	Confluence with Baker Creek	Approximately 1,000 feet upstream of Brewer Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cedar Hill Creek Tributary 1	Confluence with Cedar Hill Creek	At State Road S-33-43	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cedar Hill Creek Tributary 2	Confluence with Cedar Hill Creek	0.6 miles upstream of Cedar Hill Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cedar Hill Creek Tributary 3	Confluence with Cedar Hill Creek	1.7 miles upstream of confluence with Cedar Hill Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cedar Hill Creek Tributary 4	Confluence with Cedar Hill Creek	0.5 miles upstream of confluence with Cedar Hill Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Chapel Branch	Confluence with Long Cane Creek	0.6 miles upstream of confluence with Long Cane Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cole Branch	Confluence with Connor Creek	0.8 miles upstream of State Road S-33-37	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Connor Creek	Confluence with Little River	0.7 miles upstream of Foster Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Coon Creek	Confluence with Turkey Creek	0.4 miles upstream of Prices Mill Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cosey Branch	Confluence with Stevens Creek	0.8 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cow Branch	Confluence with Cuffytown Creek	At Long Cane Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Cow Branch West	Confluence with Long Cane Creek	1.2 miles upstream of confluence with Long Cane Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cow Branch West Tributary 1	Confluence with Cow Branch West	1.0 miles upstream of confluence with Cow Branch West	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Cuffytown Creek	Confluence with Stevens Creek	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Deal Branch	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hard Labor Creek	Confluence with Stevens Creek	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hartzog Branch	Confluence with Calhoun Creek	Approximately 650 feet upstream of State Highway 823	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Hawe Creek	Confluence with Savannah River	At Augusta Street	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hawe Creek Tributary 1	Confluence with Hawe Creek	0.8 miles upstream of confluence with Hawe Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hawe Creek Tributary 2	Confluence with Hawe Creek	0.6 miles upstream of confluence with Hawe Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hawe Creek Tributary3	Confluence with Hawe Creek	0.6 miles upstream of confluence with Hawe Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hawe Creek Tributary 4	Confluence with Hawe Creek	0.4 miles upstream of confluence with Hawe Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Hill Branch	Confluence with Cuffytown Creek	0.4 miles upstream of Scotts Ferry Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Horse Branch	Confluence with Little River	0.4 miles upstream of Forest Service Road F3015	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Key Branch	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Lee Creek	Confluence with Little River	0.9 miles upstream of Old Charleston Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Lick Creek	Confluence with Cuffytown Creek	Approximately 1,400 feet upstream of Unnamed Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Linkay Creek	Confluence with Long Cane Creek	2.6 miles upstream of Unnamed Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Linkay Creek Tributary 1	Confluence with Linkay Creek	At McCormick-Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Linkay Creek Tributary 1-1	Confluence with Linkay Creek Tributary 1	0.4 miles upstream of Cherokee Ridge	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Little Creek	Confluence with Cuffytown Creek	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Little Horsepen Creek	Confluence with Cuffytown Creek	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Little Persimmon Branch	Confluence with Persimmon Branch North	Approximately 700 feet upstream of Forest Service Road F547J	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Little River	Confluence with Savannah River	At McCormick- Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Little River Tributary 1	Confluence with Little River	1.5 miles upstream of confluence with Little River	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Long Cane Creek	Confluence with Little River	At McCormick- Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Lott Creek	Confluence with Little River	2.8 miles upstream of State Highway 823	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Ludlow Branch	Confluence with Little River	0.8 miles upstream of confluence with Little River	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Mill Branch	Confluence with Cuffytown Creek	0.6 miles upstream of Callison Highway	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Mill Branch West	Confluence with Long Cane Creek	0.6 miles upstream of State Highway 28	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Mill Creek	Confluence with Little River	At Willington Academy Drive	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Persimmon Branch	Confluence with Rocky Creek	At State Highway 10	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Persimmon Branch Tributary 1	Confluence with Persimmon Branch	0.6 miles upstream of Hammond Street	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Persimmon Branch Tributary 2	Confluence with Persimmon Branch	Approximately 990 feet upstream of Pine Street	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Persimmon Branch Tributary 3	Confluence with Persimmon Branch	0.7 miles upstream of Pine Street	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Persimmon Branch North	Confluence with Bold Branch	1.3 miles upstream of confluence with Bold Branch	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Reedy Branch	Confluence with Long Cane Creek	At McCormick-Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Rocky Branch	Confluence with Reedy Branch	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Branch West	Confluence with Bold Branch	1.7 miles upstream of confluence with Bold Branch	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek	Confluence with Stevens Creek	0.9 miles upstream of Eden Hall Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek Tributary 1	Confluence with Rocky Creek	0.7 miles upstream of New Hope Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek Tributary 2	Confluence with Rocky Creek	0.5 miles upstream of Whitetown Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek Tributary 3	Confluence with Rocky Creek	0.5 miles upstream of Unnamed Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Rocky Creek Tributary 4	Confluence with Rocky Creek	At Rocky Creek Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek Tributary 5	Confluence with Rocky Creek	At McCormick- Greenwood County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Rocky Creek East	At McCormick- Edgefield County Boundary	Approximately 1,700 feet upstream of Long Cane Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Ryan Branch	Confluence with Stevens Creek	0.9 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Sandhill Branch	Confluence with Cuffytown Creek	Approximately 280 feet downstream of Scotts Ferry Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Savannah River	At McCormick, SC- Edgefield, SC- Columbia, GA County / State Boundary	0.5 miles downstream of J. Strom Thurmond Dam at Clarks Hill Road	HEC-1 / HEC-5	HEC-2	02/16/1994	AE w/ Floodway	Special report for Savannah River discharges, USGS WRIR 90-4024 (USGS, 1990), and appeal through FEMA (FEMA, 1994)

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Savannah River	0.5 miles downstream of J. Strom Thurmond Dam at Clarks Hill Road	At J. Strom Thurmond Dam at Clarks Hill Road	HEC-1 / HEC-5	HEC-2	02/16/1994	AE	Special report for Savannah River discharges, USGS WRIR 90-4024 (USGS, 1990), and appeal through FEMA (FEMA, 1994)
Savannah River (J. Strom Thurmond Lake)	At J. Strom Thurmond Dam at Clarks Hill Road	At McCormick, SC- Abbeville, SC- Elbert, GA County / State Boundary	HEC-1 / HEC-5	HEC-2	02/16/1994	AE	Special report for Savannah River discharges, USGS WRIR 90-4024 (USGS, 1990), and appeal through FEMA (FEMA, 1994)
Sawney Creek	Confluence with Little River	At McCormick- Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Sawney Creek Tributary 1	Confluence with Sawney Creek	At McCormick- Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Scott Creek	Confluence with Little River	2.4 miles upstream of confluence with Little River	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Stevens Creek	At McCormick- Edgefield County Boundary	Approximately 90 feet upstream of confluence of Turkey Creek	2006 Rural South Carolina Regression Equations	HEC-RAS 4.1.0	06/24/2015	AE	
Stevens Creek	Approximately 90 feet upstream of confluence of Turkey Creek	Confluence of Cuffytown Creek and Hard Labor Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stevens Creek Tributary 1	Confluence with Stevens Creek	1.0 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Stevens Creek Tributary 2	Confluence with Stevens Creek	0.6 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Stevens Creek Tributary 3	Confluence with Stevens Creek	0.8 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Stevens Creek Tributary 4	Confluence with Stevens Creek	0.7 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Stevens Creek Tributary 5	Confluence with Stevens Creek	1.5 miles upstream of confluence with Stevens Creek	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Taylor Branch	Confluence with Buffalo Creek	0.5 miles upstream of State Highway 28	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Turkey Creek	Confluence with Stevens Creek	0.7 miles upstream of Key Road	2006 Rural South Carolina Regression Equations	HEC-RAS 4.1.0	06/24/2015	AE	
Turkey Creek	0.7 miles upstream of Key Road	At McCormick- Edgefield County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Vall Branch	Confluence with Buffalo Creek	Approximately 370 feet upstream of Red Row Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Welch Creek	Confluence with Bold Branch	0.7 miles upstream of confluence with Bold Branch	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
White Creek	Confluence with Calhoun Creek	At McCormick- Abbeville County Boundary	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Wiley Branch	Confluence with Rocky Creek East	Approximately 1,100 feet upstream of Long Cane Road	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 13: Summary of Hydrologic and Hydraulic Analyses, continued**

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Wilson Spring Creek	Confluence with Little River	0.7 miles upstream of confluence with Little River	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	
Wine Creek	Confluence with Turkey Creek	At State Highway 283	1999 Rural / 2000 Rural and Urban South Carolina Regression Equations	HEC-RAS 3.1.3	01/31/2011	A	

**Table 14: Roughness Coefficients**

Flooding Source	Channel “n”	Overbank “n”
Savannah River	0.031-0.033	0.100
Stevens Creek	0.038-0.052	0.035-0.155
Turkey Creek	0.042-0.052	0.110-0.150

### 5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

**Table 15: Summary of Coastal Analyses**

[Not Applicable to this Flood Risk Project]

#### 5.3.1 Total Stillwater Elevations

This section is not applicable to this Flood Risk Project.

**Figure 8: 1% Annual Chance Total Stillwater Elevations for Coastal Areas**

[Not Applicable to this Flood Risk Project]

**Table 16: Tide Gage Analysis Specifics**

[Not Applicable to this Flood Risk Project]

#### 5.3.2 Waves

This section is not applicable to this Flood Risk Project.

#### 5.3.3 Coastal Erosion

This section is not applicable to this Flood Risk Project.

#### 5.3.4 Wave Hazard Analyses

This section is not applicable to this Flood Risk Project.

**Table 17: Coastal Transect Parameters**

[Not Applicable to this Flood Risk Project]

**Figure 9: Transect Location Map**

[Not Applicable to this Flood Risk Project]

### 5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

**Table 18: Summary of Alluvial Fan Analyses**

[Not Applicable to this Flood Risk Project]

**Table 19: Results of Alluvial Fan Analyses**

[Not Applicable to this Flood Risk Project]

**SECTION 6.0 – MAPPING METHODS**

**6.1 Vertical and Horizontal Control**

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 the North American Vertical Datum of 1988 (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 FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov), or contact the National Geodetic Survey at the following address:

NGS Information Services  
NOAA, N/NGS12  
National Geodetic Survey  
SSMC-3, #9202  
1315 East-West Highway  
Silver Spring, Maryland 20910-3282  
(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 archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please contact information services Branch of the NGS at (301) 713-3242, or visit their website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

The datum conversion locations and values that were calculated for McCormick County are provided in Table 20.

**Table 20: Countywide Vertical Datum Conversion**

Quadrangle Name	Quadrangle Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
Heardmont	SE	34.000	-82.625	-0.512
Calhoun Falls	SE	34.000	-82.500	-0.531
Calhoun Creek	SE	34.000	-82.375	-0.581
Verdery	SE	34.000	-82.250	-0.587
Bradley	SE	34.000	-82.125	-0.594
Chennault	SE	33.875	-82.500	-0.564
Willington	SE	33.875	-82.375	-0.594
McCormick	SE	33.875	-82.250	-0.636
Winterseat	SE	33.875	-82.125	-0.650
Plum Branch	SE	33.750	-82.250	-0.699
Parksville	SE	33.750	-82.125	-0.705
Clarks Hill	SE	33.625	-82.125	-0.732
Average Conversion from NGVD29 to NAVD88 = -0.615 feet				

**Table 21: Stream-Based Vertical Datum Conversion**

[Not Applicable to this Flood Risk Project]

## 6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA’s FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA’s *Guidelines and Standards for Flood Risk Analysis and Mapping*, [www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping](http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping).

Base map information shown on the FIRM was derived from the sources described in Table 22.

**Table 22: Base Map Sources**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Benchmarks	NFHL	2011	1:12,000	Benchmarks located using NFHL data
Benchmarks	NOAA, NGS	2004	N/A	Benchmarks located using NGS data
General Structures	NFHL	2011	1:12,000	Major and significant NFHL recorded structures
Political Boundaries	NFHL	2011	1:12,000	Municipal and county boundaries
Surface Water Features	NFHL	2011	1:12,000	Streams, rivers, and lakes were derived from NFHL data
Surface Water Features	National Hydrography Dataset (NHD)	2008	N/A	Streams, rivers, and lakes were derived from NHD data
Surface Water Features	University of South Carolina (USC) GIS Data Server	2009	N/A	Lakes were derived from USC GIS data
Surface Water Features	South Carolina Department of Natural Resources (SCDNR)	2009	1:24,000	Streams, and rivers were derived from SCDNR data
Transportation Features	TIGER	2015	1:12,000	Roads and railroads, were derived from TIGER data
Transportation Features	University of South Carolina (USC) GIS Data Server	2009	N/A	Roads and railroads, were derived from USC GIS data

### 6.3 Floodplain and Floodway Delineation

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23. In ponding areas, flood elevations were determined at each junction of the model; between junctions, boundaries were interpolated using the topographic elevation data described in Table 23.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the

1% 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.

The floodway widths presented in this FIS Report and on the FIRM 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. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 24, “Floodway Data.”

Certain flooding sources may have been studied that do not have published BFEs on the FIRMs, or for which there is a need to report the 1% annual chance flood elevations at selected cross sections because a published Flood Profile does not exist in this FIS Report. These streams may have also been studied using methods to determine non-encroachment zones rather than floodways. For these flooding sources, the 1% annual chance floodplain boundaries have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 23. All topographic data used for modeling or mapping has been converted as necessary to NAVD88. The 1% annual chance elevations for selected cross sections along these flooding sources, along with their non-encroachment widths, if calculated, are shown in Table 25, “Flood Hazard and Non-Encroachment Data for Selected Streams.”

**Table 23: Summary of Topographic Elevation Data used in Mapping**

Community	Flooding Source	Source for Topographic Elevation Data					
		Description	Scale	Contour Interval	RMSE <sub>z</sub>	Accuracy <sub>z</sub>	Citation
McCormick County (Unincorporated Areas)	Stevens Creek, Turkey Creek	Light Detection and Ranging data (LiDAR)	1 m	5 ft	15 cm	29.4 cm	Towill, Inc., 2012
McCormick County And Incorporated Areas	All within HUC 03060103, 03060106, 03060107	USGS Quad Topographic Maps	1:24,000	10 ft	N/A	N/A	USGS, 1980(a-b), 1981, 1986(a-e)

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations.

**Table 24: Floodway Data**

LOCATION		FLOODWAY			1% ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION (FEET NAVD88)			
CROSS SECTION	DISTANCE <sup>1</sup>	WIDTH <sup>2</sup> (FEET)	SECTION AREA (SQ. FEET)	MEAN VELOCITY (FEET/SEC)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
A	213.48	425 / 610	14,242	7.2	195.1	195.1	195.2	0.1
B	213.50	390 / 630	14,294	7.1	195.3	195.3	195.5	0.2
C	214.26	430 / 1,635	22,950	4.4	196.7	196.7	197.1	0.4
D	214.28	440 / 1,620	22,700	4.5	196.8	196.8	197.1	0.3
E	214.86	410 / 1,485	20,765	4.9	197.4	197.4	197.8	0.4
F	215.25	540 / 2,725	31,728	3.2	198.1	198.1	198.5	0.4
G	216.47	402 / 2,123	32,826	3.1	199.1	199.1	199.7	0.6
H	218.10	1,005 / 1,400	32,019	3.2	200.3	200.3	201.0	0.7
I	219.00	863 / 1,300	18,468	5.5	200.7	200.7	201.6	0.9
J	220.19	314 / 631	15,907	6.4	202.2	202.2	202.9	0.7
K	220.64	349 / 587	14,001	7.3	202.8	202.8	203.5	0.7

<sup>1</sup> Miles above confluence with Atlantic Ocean

<sup>2</sup> Width within McCormick County / total floodway width

<b>TABLE 24</b>	<b>FEDERAL EMERGENCY MANAGEMENT AGENCY MCCORMICK COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS</b>	<b>FLOODWAY DATA</b>
		<b>FLOODING SOURCE: SAVANNAH RIVER</b>

Non-encroachment areas may be delineated where it is not possible to delineate floodways because specific channel profiles with bridge and culvert geometry were not developed. Any non-encroachment determinations for this Flood Risk Project have been tabulated for selected cross sections and are shown in Table 25. The non-encroachment width indicates the measured distance left and right (looking downstream) from the mapped center of the stream to the non-encroachment boundary based on a surcharge of 1.0 foot or less.

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Stevens Creek	569	56,882	36,695	212.7	N/A	N/A
Stevens Creek	574	57,382	36,695	212.8	N/A	N/A
Stevens Creek	579	57,882	36,695	212.9	N/A	N/A
Stevens Creek	584	58,382	36,695	213.2	N/A	N/A
Stevens Creek	589	58,882	36,646	213.4	N/A	N/A
Stevens Creek	594	59,382	36,646	213.6	N/A	N/A
Stevens Creek	599	59,882	36,646	213.9	N/A	N/A
Stevens Creek	604	60,382	36,646	214.0	N/A	N/A
Stevens Creek	609	60,882	36,646	214.2	N/A	N/A
Stevens Creek	614	61,382	36,646	214.3	N/A	N/A
Stevens Creek	619	61,882	36,646	214.4	N/A	N/A
Stevens Creek	624	62,382	36,646	214.5	N/A	N/A
Stevens Creek	629	62,882	36,646	214.6	N/A	N/A
Stevens Creek	634	63,382	36,646	215.0	N/A	N/A
Stevens Creek	639	63,882	36,594	215.0	N/A	N/A
Stevens Creek	644	64,382	36,594	215.3	N/A	N/A
Stevens Creek	648	64,768	36,594	215.4	N/A	N/A
Stevens Creek	651	65,145	36,594	215.6	N/A	N/A
Stevens Creek	654	65,382	36,594	215.6	N/A	N/A
Stevens Creek	659	65,882	36,594	216.1	N/A	N/A
Stevens Creek	664	66,382	36,594	216.2	N/A	N/A
Stevens Creek	669	66,882	36,594	216.5	N/A	N/A
Stevens Creek	674	67,382	36,594	216.5	N/A	N/A
Stevens Creek	679	67,882	36,594	216.9	N/A	N/A
Stevens Creek	684	68,382	36,594	217.2	N/A	N/A
Stevens Creek	689	68,882	36,594	217.5	N/A	N/A
Stevens Creek	694	69,382	36,594	217.7	N/A	N/A
Stevens Creek	699	69,882	36,594	217.7	N/A	N/A
Stevens Creek	704	70,382	36,594	217.8	N/A	N/A
Stevens Creek	709	70,882	36,594	218.0	N/A	N/A
Stevens Creek	714	71,382	36,594	218.2	N/A	N/A
Stevens Creek	719	71,882	36,594	218.3	N/A	N/A
Stevens Creek	724	72,382	36,232	218.4	N/A	N/A
Stevens Creek	729	72,882	36,232	218.5	N/A	N/A
Stevens Creek	734	73,382	36,232	218.6	N/A	N/A
Stevens Creek	739	73,882	36,232	218.7	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Stevens Creek	744	74,382	36,232	218.7	N/A	N/A
Stevens Creek	749	74,882	36,232	218.8	N/A	N/A
Stevens Creek	754	75,382	36,232	218.8	N/A	N/A
Stevens Creek	759	75,882	36,232	218.8	N/A	N/A
Stevens Creek	764	76,382	36,232	219.0	N/A	N/A
Stevens Creek	766	76,598	36,232	219.0	N/A	N/A
Stevens Creek	769	76,882	36,232	219.1	N/A	N/A
Stevens Creek	774	77,382	36,232	219.1	N/A	N/A
Stevens Creek	779	77,882	36,232	219.2	N/A	N/A
Stevens Creek	783	78,269	36,232	219.2	N/A	N/A
Stevens Creek	786	78,624	36,232	219.4	N/A	N/A
Stevens Creek	789	78,882	36,232	219.4	N/A	N/A
Stevens Creek	793	79,320	36,232	219.6	N/A	N/A
Stevens Creek	798	79,767	36,232	219.7	N/A	N/A
Stevens Creek	801	80,101	36,232	220.1	N/A	N/A
Stevens Creek	804	80,440	36,232	220.4	N/A	N/A
Stevens Creek	809	80,882	36,232	220.4	N/A	N/A
Stevens Creek	814	81,382	36,232	220.5	N/A	N/A
Stevens Creek	819	81,882	36,232	220.6	N/A	N/A
Stevens Creek	824	82,382	36,232	220.7	N/A	N/A
Stevens Creek	829	82,882	36,232	220.9	N/A	N/A
Stevens Creek	834	83,382	36,232	221.2	N/A	N/A
Stevens Creek	839	83,882	36,232	221.5	N/A	N/A
Stevens Creek	841	84,134	36,232	221.5	N/A	N/A
Stevens Creek	845	84,474	36,232	221.7	N/A	N/A
Stevens Creek	849	84,882	36,232	221.7	N/A	N/A
Stevens Creek	854	85,382	36,232	222.0	N/A	N/A
Stevens Creek	856	85,603	36,232	222.1	N/A	N/A
Stevens Creek	859	85,881	36,232	222.1	N/A	N/A
Stevens Creek	861	86,121	36,232	222.2	N/A	N/A
Stevens Creek	864	86,382	36,232	222.4	N/A	N/A
Stevens Creek	868	86,769	36,232	222.5	N/A	N/A
Stevens Creek	872	87,174	36,232	222.9	N/A	N/A
Stevens Creek	876	87,557	36,232	223.0	N/A	N/A
Stevens Creek	879	87,882	36,232	223.1	N/A	N/A
Stevens Creek	881	88,133	36,232	223.2	N/A	N/A
Stevens Creek	884	88,382	36,232	223.4	N/A	N/A
Stevens Creek	889	88,882	36,232	223.6	N/A	N/A
Stevens Creek	894	89,382	36,031	223.6	N/A	N/A
Stevens Creek	896	89,625	36,031	223.7	N/A	N/A
Stevens Creek	899	89,882	36,031	223.8	N/A	N/A
Stevens Creek	902	90,243	36,031	223.9	N/A	N/A
Stevens Creek	903	90,344	36,031	224.0	N/A	N/A
Stevens Creek	907	90,697	36,031	224.0	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Stevens Creek	910	91,007	36,031	224.1	N/A	N/A
Stevens Creek	914	91,382	36,031	224.3	N/A	N/A
Stevens Creek	916	91,640	36,031	224.5	N/A	N/A
Stevens Creek	920	92,008	35,611	224.7	N/A	N/A
Stevens Creek	924	92,382	35,611	224.7	N/A	N/A
Stevens Creek	929	92,882	35,611	224.9	N/A	N/A
Stevens Creek	934	93,382	35,611	225.1	N/A	N/A
Stevens Creek	939	93,882	35,611	225.3	N/A	N/A
Stevens Creek	944	94,382	35,611	225.5	N/A	N/A
Stevens Creek	949	94,874	35,611	225.8	N/A	N/A
Stevens Creek	951	95,113	35,611	226.1	N/A	N/A
Stevens Creek	954	95,382	35,611	226.3	N/A	N/A
Stevens Creek	959	95,882	35,611	226.4	N/A	N/A
Stevens Creek	961	96,137	35,611	226.7	N/A	N/A
Stevens Creek	964	96,382	35,611	226.7	N/A	N/A
Stevens Creek	969	96,882	35,611	226.9	N/A	N/A
Stevens Creek	974	97,382	35,611	226.9	N/A	N/A
Stevens Creek	979	97,882	35,611	227.3	N/A	N/A
Stevens Creek	984	98,382	35,611	227.4	N/A	N/A
Stevens Creek	987	98,713	35,611	227.5	N/A	N/A
Stevens Creek	990	99,017	35,554	227.8	N/A	N/A
Stevens Creek	993	99,286	35,554	227.8	N/A	N/A
Stevens Creek	996	99,637	35,554	228.0	N/A	N/A
Stevens Creek	999	99,882	35,554	228.0	N/A	N/A
Stevens Creek	1003	100,279	35,554	228.2	N/A	N/A
Stevens Creek	1006	100,580	35,554	228.3	N/A	N/A
Stevens Creek	1009	100,882	35,554	228.6	N/A	N/A
Stevens Creek	1014	101,382	35,554	228.7	N/A	N/A
Stevens Creek	1019	101,882	35,554	229.0	N/A	N/A
Stevens Creek	1024	102,382	35,554	229.0	N/A	N/A
Stevens Creek	1026	102,572	35,554	229.3	N/A	N/A
Stevens Creek	1028	102,784	35,554	229.4	N/A	N/A
Stevens Creek	1031	103,071	35,554	229.4	N/A	N/A
Stevens Creek	1034	103,382	35,554	229.5	N/A	N/A
Stevens Creek	1039	103,882	35,554	229.7	N/A	N/A
Stevens Creek	1043	104,338	35,554	229.9	N/A	N/A
Stevens Creek	1047	104,724	35,554	230.5	N/A	N/A
Stevens Creek	1050	105,003	35,554	230.5	N/A	N/A
Stevens Creek	1053	105,293	35,554	230.6	N/A	N/A
Stevens Creek	1056	105,564	35,554	230.8	N/A	N/A
Stevens Creek	1059	105,927	35,554	230.8	N/A	N/A
Stevens Creek	1062	106,184	35,554	230.8	N/A	N/A
Stevens Creek	1064	106,382	35,554	230.8	N/A	N/A
Stevens Creek	1069	106,882	35,554	231.1	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Stevens Creek	1074	107,382	35,554	231.4	N/A	N/A
Stevens Creek	1079	107,882	35,554	231.6	N/A	N/A
Stevens Creek	1084	108,382	35,554	231.9	N/A	N/A
Stevens Creek	1086	108,619	35,554	231.9	N/A	N/A
Stevens Creek	1089	108,882	35,554	232.1	N/A	N/A
Stevens Creek	1092	109,198	35,554	232.3	N/A	N/A
Stevens Creek	1096	109,583	35,554	232.3	N/A	N/A
Stevens Creek	1099	109,882	35,554	232.3	N/A	N/A
Stevens Creek	1104	110,382	35,554	232.4	N/A	N/A
Stevens Creek	1108	110,845	35,414	232.6	N/A	N/A
Stevens Creek	1111	111,118	35,414	233.2	N/A	N/A
Stevens Creek	1112	111,220	35,414	233.5	N/A	N/A
Stevens Creek	1115	111,487	35,414	233.5	N/A	N/A
Stevens Creek	1119	111,882	35,414	233.7	N/A	N/A
Stevens Creek	1124	112,382	35,414	234.0	N/A	N/A
Stevens Creek	1126	112,623	35,414	234.0	N/A	N/A
Stevens Creek	1129	112,882	35,414	234.1	N/A	N/A
Stevens Creek	1134	113,382	35,414	234.3	N/A	N/A
Stevens Creek	1139	113,882	35,414	234.5	N/A	N/A
Stevens Creek	1141	114,128	35,414	234.6	N/A	N/A
Stevens Creek	1145	114,468	35,414	234.8	N/A	N/A
Stevens Creek	1149	114,882	35,414	234.9	N/A	N/A
Stevens Creek	1151	115,130	35,414	235.1	N/A	N/A
Stevens Creek	1154	115,382	35,414	235.2	N/A	N/A
Stevens Creek	1159	115,882	35,414	235.5	N/A	N/A
Stevens Creek	1164	116,382	35,414	235.9	N/A	N/A
Stevens Creek	1166	116,616	35,414	236.0	N/A	N/A
Stevens Creek	1169	116,882	35,414	236.1	N/A	N/A
Stevens Creek	1171	117,130	35,414	236.2	N/A	N/A
Stevens Creek	1174	117,382	35,414	236.2	N/A	N/A
Stevens Creek	1176	117,593	35,414	236.2	N/A	N/A
Stevens Creek	1179	117,882	35,414	236.4	N/A	N/A
Stevens Creek	1181	118,142	35,414	236.6	N/A	N/A
Stevens Creek	1184	118,382	35,414	236.6	N/A	N/A
Stevens Creek	1189	118,882	35,414	237.1	N/A	N/A
Stevens Creek	1194	119,382	35,414	237.5	N/A	N/A
Stevens Creek	1197	119,650	35,414	237.5	N/A	N/A
Stevens Creek	1199	119,882	35,414	237.8	N/A	N/A
Stevens Creek	1202	120,172	35,414	237.8	N/A	N/A
Stevens Creek	1204	120,382	35,414	237.9	N/A	N/A
Stevens Creek	1208	120,795	35,414	238.1	N/A	N/A
Stevens Creek	1211	121,060	35,414	238.3	N/A	N/A
Stevens Creek	1214	121,382	35,414	238.8	N/A	N/A
Stevens Creek	1216	121,609	35,414	238.8	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Stevens Creek	1219	121,882	35,414	238.8	N/A	N/A
Stevens Creek	1221	122,102	35,414	238.8	N/A	N/A
Stevens Creek	1224	122,382	35,414	238.9	N/A	N/A
Stevens Creek	1226	122,640	34,989	239.0	N/A	N/A
Stevens Creek	1229	122,882	34,989	239.0	N/A	N/A
Stevens Creek	1231	123,113	34,989	239.1	N/A	N/A
Stevens Creek	1234	123,382	34,989	239.1	N/A	N/A
Stevens Creek	1239	123,882	34,989	239.3	N/A	N/A
Stevens Creek	1244	124,382	34,989	239.4	N/A	N/A
Stevens Creek	1249	124,882	34,989	239.9	N/A	N/A
Stevens Creek	1251	125,117	34,989	239.9	N/A	N/A
Stevens Creek	1254	125,382	34,989	240.2	N/A	N/A
Stevens Creek	1257	125,666	34,989	240.3	N/A	N/A
Stevens Creek	1259	125,882	34,989	240.3	N/A	N/A
Stevens Creek	1261	126,123	34,989	240.5	N/A	N/A
Stevens Creek	1264	126,382	34,989	240.5	N/A	N/A
Stevens Creek	1269	126,882	34,989	240.7	N/A	N/A
Stevens Creek	1271	127,118	34,989	240.7	N/A	N/A
Stevens Creek	1274	127,382	34,989	240.8	N/A	N/A
Stevens Creek	1279	127,882	34,951	240.9	N/A	N/A
Stevens Creek	1282	128,155	34,951	241.0	N/A	N/A
Stevens Creek	1285	128,487	34,951	241.1	N/A	N/A
Stevens Creek	1289	128,882	34,951	241.5	N/A	N/A
Stevens Creek	1291	129,103	34,951	241.5	N/A	N/A
Stevens Creek	1294	129,382	34,951	241.6	N/A	N/A
Stevens Creek	1299	129,882	34,951	241.9	N/A	N/A
Stevens Creek	1304	130,382	34,951	241.9	N/A	N/A
Stevens Creek	1306	130,624	34,951	242.9	N/A	N/A
Stevens Creek	1308	130,819	34,951	242.9	N/A	N/A
Stevens Creek	1310	131,014	34,951	242.9	N/A	N/A
Stevens Creek	1313	131,294	34,951	242.9	N/A	N/A
Stevens Creek	1316	131,560	34,951	243.0	N/A	N/A
Stevens Creek	1319	131,882	34,951	243.0	N/A	N/A
Stevens Creek	1324	132,382	34,951	243.6	N/A	N/A
Stevens Creek	1326	132,613	34,951	243.7	N/A	N/A
Stevens Creek	1328	132,809	20,576	244.0	N/A	N/A
Turkey Creek	001	58	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	005	500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	010	972	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	012	1,208	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	015	1,500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	020	2,000	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	023	2,274	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	024	2,445	20,917	243.8 <sup>3</sup>	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Turkey Creek	028	2,778	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	030	3,000	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	035	3,500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	038	3,802	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	041	4,091	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	045	4,500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	050	5,000	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	055	5,500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	060	6,000	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	065	6,500	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	070	7,000	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	073	7,319	20,917	243.8 <sup>3</sup>	N/A	N/A
Turkey Creek	076	7,610	20,682	244.1	N/A	N/A
Turkey Creek	080	8,000	20,682	244.3	N/A	N/A
Turkey Creek	085	8,500	20,682	244.6	N/A	N/A
Turkey Creek	090	9,000	20,682	245.0	N/A	N/A
Turkey Creek	095	9,500	20,682	245.1	N/A	N/A
Turkey Creek	100	10,000	20,682	245.6	N/A	N/A
Turkey Creek	103	10,258	20,682	245.7	N/A	N/A
Turkey Creek	105	10,500	20,682	245.8	N/A	N/A
Turkey Creek	110	11,000	20,682	246.0	N/A	N/A
Turkey Creek	115	11,500	20,682	246.6	N/A	N/A
Turkey Creek	120	11,992	20,682	246.7	N/A	N/A
Turkey Creek	125	12,486	20,466	246.9	N/A	N/A
Turkey Creek	130	12,986	20,466	247.3	N/A	N/A
Turkey Creek	133	13,276	20,466	247.5	N/A	N/A
Turkey Creek	135	13,486	20,466	248.0	N/A	N/A
Turkey Creek	137	13,736	20,466	248.1	N/A	N/A
Turkey Creek	140	13,986	20,466	248.1	N/A	N/A
Turkey Creek	145	14,486	20,466	248.3	N/A	N/A
Turkey Creek	150	14,986	20,466	248.5	N/A	N/A
Turkey Creek	155	15,486	20,466	248.6	N/A	N/A
Turkey Creek	157	15,709	20,466	248.7	N/A	N/A
Turkey Creek	160	15,986	20,466	248.8	N/A	N/A
Turkey Creek	162	16,220	20,466	249.3	N/A	N/A
Turkey Creek	165	16,486	20,466	249.6	N/A	N/A
Turkey Creek	170	16,986	20,466	249.7	N/A	N/A
Turkey Creek	175	17,486	20,466	249.8	N/A	N/A
Turkey Creek	177	17,745	20,466	250.0	N/A	N/A
Turkey Creek	180	17,986	20,466	250.1	N/A	N/A
Turkey Creek	182	18,184	20,466	250.4	N/A	N/A
Turkey Creek	185	18,486	20,466	250.7	N/A	N/A
Turkey Creek	188	18,822	20,466	250.8	N/A	N/A
Turkey Creek	192	19,212	20,434	250.9	N/A	N/A

**Table 25: Flood Hazard and Non-Encroachment Data for Selected Streams, continued**

Flooding Source <sup>1</sup>	Cross Section	Stream Station <sup>2</sup>	1% Annual Chance Flood Discharge (cfs)	1% Annual Chance Water Surface Elevation (feet NAVD88)	Non-Encroachment Width (feet)	
					Left	Right
Turkey Creek	195	19,504	20,434	251.2	N/A	N/A
Turkey Creek	196	19,566	20,434	251.3	N/A	N/A
Turkey Creek	198	19,760	20,434	251.5	N/A	N/A
Turkey Creek	199	19,851	20,434	251.8	N/A	N/A
Turkey Creek	200	20,001	20,434	251.8	N/A	N/A
Turkey Creek	205	20,486	20,434	252.0	N/A	N/A
Turkey Creek	210	20,986	20,434	252.3	N/A	N/A
Turkey Creek	215	21,486	20,434	252.4	N/A	N/A
Turkey Creek	220	21,986	20,434	253.0	N/A	N/A
Turkey Creek	224	22,440	20,382	253.1	N/A	N/A
Turkey Creek	226	22,630	20,382	253.4	N/A	N/A
Turkey Creek	229	22,920	20,382	253.5	N/A	N/A
Turkey Creek	234	23,400	20,382	253.5	N/A	N/A
Turkey Creek	237	23,730	20,382	253.7	N/A	N/A

<sup>1</sup> This table reflects all modeled cross sections; some cross sections shown in this table may not appear on the map

<sup>2</sup> Feet above mouth

<sup>3</sup> Elevation includes backwater effects

#### 6.4 Coastal Flood Hazard Mapping

This section is not applicable to this Flood Risk Project.

**Table 26: Summary of Coastal Transect Mapping Considerations**

[Not Applicable to this Flood Risk Project]

#### 6.5 FIRM Revisions

This FIS Report and the FIRM are based on the most up-to-date information available to FEMA at the time of its publication; however, flood hazard conditions change over time. Communities or private parties may request flood map revisions at any time. Certain types of requests require submission of supporting data. FEMA may also initiate a revision. Revisions may take several forms, including Letters of Map Amendment (LOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), Letters of Map Revision (LOMRs) (referred to collectively as Letters of Map Change (LOMCs)), Physical Map Revisions (PMRs), and FEMA-contracted restudies. These types of revisions are further described below. Some of these types of revisions do not result in the republishing of the FIS Report. To assure that any user is aware of all revisions, it is advisable to contact the community repository of flood-hazard data (shown in Table 31, “Map Repositories”).

##### 6.5.1 Letters of Map Amendment

A LOMA is an official revision by letter to an effective NFIP map. A LOMA results from an administrative process that involves the review of scientific or technical data submitted by the owner or lessee of property who believes the property has incorrectly been included in a

designated SFHA. A LOMA amends the currently effective FEMA map and establishes that a specific property is not located in a SFHA.

To obtain an application for a LOMA, visit [www.fema.gov/floodplain-management/letter-map-amendment-loma](http://www.fema.gov/floodplain-management/letter-map-amendment-loma) and download the form “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill”. Visit the “Flood Map-Related Fees” section to determine the cost, if any, of applying for a LOMA.

FEMA offers a tutorial on how to apply for a LOMA. The LOMA Tutorial Series can be accessed at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

For more information about how to apply for a LOMA, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627).

### **6.5.2 Letters of Map Revision Based on Fill**

A LOMR-F is an official revision by letter to an effective NFIP map. A LOMR-F states FEMA’s determination concerning whether a structure or parcel has been elevated on fill above the base flood elevation and is, therefore, excluded from the SFHA.

Information about obtaining an application for a LOMR-F can be obtained in the same manner as that for a LOMA, by visiting [www.fema.gov/floodplain-management/letter-map-amendment-loma](http://www.fema.gov/floodplain-management/letter-map-amendment-loma) for the “MT-1 Application Forms and Instructions for Conditional and Final Letters of Map Amendment and Letters of Map Revision Based on Fill” or by calling the FEMA Map Information eXchange, toll free, at 1-877-FEMA MAP (1-877-336-2627). Fees for applying for a LOMR-F, if any, are listed in the “Flood Map-Related Fees” section.

A tutorial for LOMR-F is available at [www.fema.gov/online-tutorials](http://www.fema.gov/online-tutorials).

### **6.5.3 Letters of Map Revision**

A LOMR is an official revision to the currently effective FEMA map. It is used to change flood zones, floodplain and floodway delineations, flood elevations and planimetric features. All requests for LOMRs should be made to FEMA through the chief executive officer of the community, since it is the community that must adopt any changes and revisions to the map. If the request for a LOMR is not submitted through the chief executive officer of the community, evidence must be submitted that the community has been notified of the request.

To obtain an application for a LOMR, visit [www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions](http://www.fema.gov/national-flood-insurance-program-flood-hazard-mapping/mt-2-application-forms-and-instructions) and download the form “MT-2 Application Forms and Instructions for Conditional Letters of Map Revision and Letters of Map Revision”. Visit the “Flood Map-Related Fees” section to determine the cost of applying for a LOMR. For more information about how to apply for a LOMR, call the FEMA Map Information eXchange; toll free, at 1-877-FEMA MAP (1-877-336-2627) to speak to a Map Specialist.

Previously issued mappable LOMCs (including LOMRs) that have been incorporated into the McCormick County FIRM are listed in Table 27. Please note that this table only includes LOMCs that have been issued on the FIRM panels updated by this map revision. For all other areas within this county, users should be aware that revisions to the FIS Report made by prior LOMRs may not be reflected herein and users will need to continue to use the previously issued

LOMRs to obtain the most current data.

### **Table 27: Incorporated Letters of Map Change**

**[Not Applicable to this Flood Risk Project]**

#### **6.5.4 Physical Map Revisions**

Physical Map Revisions (PMRs) are an official republication of a community’s NFIP map to effect changes to base flood elevations, floodplain boundary delineations, regulatory floodways and planimetric features. These changes typically occur as a result of structural works or improvements, annexations resulting in additional flood hazard areas or correction to base flood elevations or SFHAs.

The community’s chief executive officer must submit scientific and technical data to FEMA to support the request for a PMR. The data will be analyzed and the map will be revised if warranted. The community is provided with copies of the revised information and is afforded a review period. When the base flood elevations are changed, a 90-day appeal period is provided. A 6-month adoption period for formal approval of the revised map(s) is also provided.

For more information about the PMR process, please visit [www.fema.gov](http://www.fema.gov) and visit the “Flood Map Revision Processes” section.

#### **6.5.5 Contracted Restudies**

The NFIP provides for a periodic review and restudy of flood hazards within a given community. FEMA accomplishes this through a national watershed-based mapping needs assessment strategy, known as the Coordinated Needs Management Strategy (CNMS). The CNMS is used by FEMA to assign priorities and allocate funding for new flood hazard analyses used to update the FIS Report and FIRM. The goal of CNMS is to define the validity of the engineering study data within a mapped inventory. The CNMS is used to track the assessment process, document engineering gaps and their resolution, and aid in prioritization for using flood risk as a key factor for areas identified for flood map updates. Visit [www.fema.gov](http://www.fema.gov) to learn more about the CNMS or contact the FEMA Regional Office listed in Section 8 of this FIS Report.

#### **6.5.6 Community Map History**

The current FIRM presents flooding information for the entire geographic area of McCormick County. Previously, separate FIRMs, Flood Hazard Boundary Maps (FHBM) and/or Flood Boundary and Floodway Maps (FBFM) may have been prepared for the incorporated communities and the unincorporated areas in the county that had identified SFHAs. Current and historical data relating to the maps prepared for the project area are presented in Table 28, “Community Map History.” A description of each of the column headings and the source of the date is also listed below.

- *Community Name* includes communities falling within the geographic area shown on the FIRM, including those that fall on the boundary line, nonparticipating communities, and communities with maps that have been rescinded. Communities with No Special Flood Hazards are indicated by a footnote. If all maps (FHBM, FBFM, and FIRM) were rescinded for a community, it is not listed in this table unless SFHAs have been identified in this community.

- *Initial Identification Date (First NFIP Map Published)* is the date of the first NFIP map that identified flood hazards in the community. If the FHBM has been converted to a FIRM, the initial FHBM date is shown. If the community has never been mapped, the upcoming effective date or “pending” (for Preliminary FIS Reports) is shown. If the community is listed in Table 28 but not identified on the map, the community is treated as if it were unmapped.
- *Initial FHBM Effective Date* is the effective date of the first Flood Hazard Boundary Map (FHBM). This date may be the same date as the Initial NFIP Map Date.
- *FHBM Revision Date(s)* is the date(s) that the FHBM was revised, if applicable.
- *Initial FIRM Effective Date* is the date of the first effective FIRM for the community.
- *FIRM Revision Date(s)* is the date(s) the FIRM was revised, if applicable. This is the revised date that is shown on the FIRM panel, if applicable. As countywide studies are completed or revised, each community listed should have its FIRM dates updated accordingly to reflect the date of the countywide study. Once the FIRMs exist in countywide format, as Physical Map Revisions (PMR) of FIRM panels within the county are completed, the FIRM Revision Dates in the table for each community affected by the PMR are updated with the date of the PMR, even if the PMR did not revise all the panels within that community.

The initial effective date for the McCormick County FIRMs in countywide format was 04/04/2011.

**Table 28: Community Map History**

Community Name	Initial Identification Date (First NFIP Map Published)	Initial FHBM Effective Date	FHBM Revision Date(s)	Initial FIRM Effective Date	FIRM Revision Date(s)
McCormick, Town of	06/07/1974	06/07/1974	N/A	06/25/1976	04/04/2011
McCormick County, Unincorporated Areas	03/03/1978	03/03/1978	N/A	10/01/1989	04/04/2011 09/20/1995
Mount Carmel, Town of <sup>1,2</sup>	04/04/2011	N/A	N/A	04/04/2011	N/A
Parksville, Town of <sup>2</sup>	04/04/2011	N/A	N/A	04/04/2011	N/A
Plum Branch, Town of <sup>1,2</sup>	04/04/2011	N/A	N/A	04/04/2011	N/A

<sup>1</sup> No Special Flood Hazard Areas Identified

<sup>2</sup> This community did not have a FIRM prior to the first countywide FIRM for McCormick County

## SECTION 7.0 – CONTRACTED STUDIES AND COMMUNITY COORDINATION

### 7.1 Contracted Studies

Table 29 provides a summary of the contracted studies, by flooding source, that are included in this FIS Report.

**Table 29: Summary of Contracted Studies Included in this FIS Report**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Baker Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of; McCormick County, Unincorporated Areas
Baker Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Baker Creek Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of
Bee Tree Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Bell Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Big Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Big Branch (North)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Bold Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Bracknell Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Buffalo Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Byrd Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Calabash Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Calhoun Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cedar Hill Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cedar Hill Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cedar Hill Creek Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Cedar Hill Creek Tributary 3	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cedar Hill Creek Tributary 4	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Chapel Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cole Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Connor Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Coon Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cosey Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cow Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cow Branch (West)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Cow Branch Tributary 1 (West)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Cuffytown Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Deal Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Hard Labor Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Hartzog Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Hawe Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of; McCormick County, Unincorporated Areas
Hawe Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Hawe Creek Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Hawe Creek Tributary3	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Hawe Creek Tributary 4	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of
Hill Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Horse Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Key Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Lee Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Lick Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Linkay Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Linkay Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Linkay Creek Tributary 1-1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Little Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Little Horsepen Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Little Persimmon Branch (North)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Little River	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Little River Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Long Cane Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Lott Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Ludlow Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Mill Branch (West)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Mill Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Mill Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Persimmon Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of; McCormick County, Unincorporated Areas
Persimmon Branch Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of; McCormick County, Unincorporated Areas
Persimmon Branch Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick, Town of
Persimmon Branch Tributary 3	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Persimmon Branch (North)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Reedy branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Rocky Branch (West)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek Tributary 3	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek Tributary 4	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek Tributary 5	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Rocky Creek (East)	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Ryan Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Sandhill Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Savannah River	11/02/1994	USACE; FEMA	—	February 1994	McCormick County, Unincorporated Areas
Savannah River	11/02/1994	USACE; FEMA	—	February 1994	McCormick County, Unincorporated Areas
Savannah River (J. Strom Thurmond Lake)	11/02/1994	USACE; FEMA	—	February 1994	Parksville, Town of; McCormick County, Unincorporated Areas
Sawney Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Sawney Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Scott Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Stevens Creek	TBD	AECOM	(CTP) EMA-2013-CA-5358	June 2015	McCormick County, Unincorporated Areas
Stevens Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Stevens Creek Tributary 1	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
Stevens Creek Tributary 2	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Stevens Creek Tributary 3	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Stevens Creek Tributary 4	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Stevens Creek Tributary 5	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Taylor Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Turkey Creek	TBD	AECOM	(CTP) EMA-2013-CA-5358	June 2015	McCormick County, Unincorporated Areas
Turkey Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Vall Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Welch Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

**Table 29: Summary of Contracted Studies Included in this FIS Report, continued**

Flooding Source	FIS Report Dated	Contractor	Number	Work Completed Date	Affected Communities
White Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Wiley Branch	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Wilson Spring Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas
Wine Creek	04/04/2011	Watershed Concepts	(CTP) EMA-2007-CA-5773; (CTP) EMA-2008-CA-5885; SC MapMod P24-N085-MJ	January 2011	McCormick County, Unincorporated Areas

## 7.2 Community Meetings

The dates of the community meetings held for this Flood Risk Project and previous Flood Risk Projects are shown in Table 30. These meetings may have previously been referred to by a variety of names (Community Coordination Officer (CCO), Scoping, Discovery, etc.), but all meetings represent opportunities for FEMA, community officials, study contractors, and other invited guests to discuss the planning for and results of the project.

**Table 30: Community Meetings**

Community	FIS Report Dated	Date of Meeting	Meeting Type	Attended By
McCormick, Town of	04/04/2011	05/02/2008	Scoping	Federal Emergency Management Agency (FEMA), South Carolina Department of Natural Resources (SCDNR), Upper Savannah Council of Governments (USCoG), and the study contractor (Watershed Concepts)
		11/05/2009	PDCC	SCDNR, SLVPOA Community Services, and the study contractor (Watershed Concepts)
McCormick County, Unincorporated Areas	TBD	06/19/2013	Discovery	FEMA, Georgia Department of Natural Resources (GDNR), the Office of Congressman Duncan, SCDNR, South Carolina Department of Transportation (SCDoT), South Carolina Emergency Management Division (SCEMD), USCoG, this community, and the study contractor (AECOM)
		*	Final CCO	*
	04/04/2011	05/02/2008	Scoping	FEMA, SCDNR, USCoG, this community, and the study contractor (Watershed Concepts)
		11/05/2009	PDCC	SCDNR, SLVPOA Community Services, this community, and the study contractor (Watershed Concepts)
Mount Carmel, Town of	04/04/2011	05/02/2008	Scoping	FEMA, SCDNR, USCoG, and the study contractor (Watershed Concepts)
		11/05/2009	PDCC	SCDNR, SLVPOA Community Services, and the study contractor (Watershed Concepts)
Parksville, Town of	04/04/2011	05/02/2008	Scoping	FEMA, SCDNR, USCoG, and the study contractor (Watershed Concepts)
		11/05/2009	PDCC	SCDNR, SLVPOA Community Services, and the study contractor (Watershed Concepts)
Plum Branch, Town of	04/04/2011	05/02/2008	Scoping	FEMA, SCDNR, USCoG, and the study contractor (Watershed Concepts)
		11/05/2009	PDCC	SCDNR, SLVPOA Community Services, and the study contractor (Watershed Concepts)

\* Data not available

## SECTION 8.0 – ADDITIONAL INFORMATION

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

The additional data that was used for this project includes the FIS Report and FIRM that were previously prepared for McCormick County, South Carolina and Incorporated Areas (FEMA, 2011).

Table 31 is a list of the locations where FIRMs for McCormick County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

**Table 31: Map Repositories**

Community	Address	City	State	Zip Code
McCormick, Town of	McCormick County Administration Center 610 South Mine Street	McCormick	SC	29835
McCormick County, Unincorporated Areas	McCormick County Administration Center 610 South Mine Street	McCormick	SC	29835
Mount Carmel, Town of <sup>1</sup>	McCormick County Administration Center 610 South Mine Street	McCormick	SC	29835
Parksville, Town of	McCormick County Administration Center 610 South Mine Street	McCormick	SC	29835
Plum Branch, Town of <sup>1</sup>	McCormick County Administration Center 610 South Mine Street	McCormick	SC	29835

<sup>1</sup> No Special Flood Hazard Areas Identified

The National Flood Hazard Layer (NFHL) dataset is a compilation of effective FIRM databases and LOMCs. Together they create a GIS data layer for a State or Territory. The NFHL is updated as studies become effective and extracts are made available to the public monthly. NFHL data can be viewed or ordered from the website shown in Table 32.

Table 32 contains useful contact information regarding the FIS Report, the FIRM, and other relevant flood hazard and GIS data. In addition, information about the State NFIP Coordinator and GIS Coordinator is shown in this table. At the request of FEMA, each Governor has designated an agency of State or territorial government to coordinate that State's or territory's NFIP activities. These agencies often assist communities in developing and adopting necessary floodplain management measures. State GIS Coordinators are knowledgeable about the availability and location of state and local GIS data in their state.

**Table 32: Additional Information**

FEMA and the NFIP	
FEMA and FEMA Engineering Library website	<a href="http://www.fema.gov/national-flood-insurance-program-flood-hazard-mappin/engineering-library">www.fema.gov/national-flood-insurance-program-flood-hazard-mappin/engineering-library</a>
NFIP website	<a href="http://www.fema.gov/national-flood-insurance-program">www.fema.gov/national-flood-insurance-program</a>
NFHL Dataset	<a href="http://msc.fema.gov">msc.fema.gov</a>
FEMA Region IV	Federal Emergency Management Agency, 3003 Chamblee Tucker Road, Atlanta, GA 30341 (770) 220-5200
Other Federal Agencies	
USGS website	<a href="http://www.usgs.gov">www.usgs.gov</a>
Hydraulic Engineering Center website	<a href="http://www.hec.usace.army.mil">www.hec.usace.army.mil</a>
State Agencies and Organizations	
State NFIP Coordinator	Maria Cox Lamm, CFM South Carolina Department of Natural Resources 1000 Assembly St. Columbia, SC 29201 P.O. Box 167 Columbia, SC 29202 P 803-734-3672 F 803-734-3457 <a href="mailto:CoxM@dnr.sc.gov">CoxM@dnr.sc.gov</a>
State Hazard Mitigation Officer	Katie Norris South Carolina Emergency Management Division 2779 Fish Hatchery Road West Columbia, SC 29172 P 803-737-8500 F 803-737-8570 <a href="mailto:knorris@emd.state.sc.us">knorris@emd.state.sc.us</a>
State GIS Coordinator	Dr. Tim De Troye, GISP Technology Development Program Director 1000 Assembly St. Columbia, SC 29201 P 803-734-3894 F 803-734-3457 <a href="mailto:detroyet@gis.sc.gov">detroyet@gis.sc.gov</a>

**SECTION 9.0 – BIBLIOGRAPHY AND REFERENCES**

Table 33 includes sources used in the preparation of and cited in this FIS Report as well as additional studies that have been conducted in the study area.

**Table 33: Bibliography and References**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
FEMA, 1994	Federal Emergency Management Agency	<i>Savannah River Appeal Resolution Summary of Technical Issues</i>		Washington, D.C.	1994	FEMA Flood Map Service Center <a href="http://msc.fema.gov">msc.fema.gov</a>
FEMA, 2011	Federal Emergency Management Agency	<i>Flood Insurance Study, McCormick County, South Carolina and Incorporated Areas</i>		Washington, D.C.	2011	FEMA Flood Map Service Center <a href="http://msc.fema.gov">msc.fema.gov</a>
GDOT, 1988	Georgia Department of Transportation	<i>S.R. 28 (Sandbar Ferry Road) Over Savannah River Plan and Elevation, Sheet 1 and 2 of 40, Revised March 22, 1988</i>		Savannah, GA	March 1988	
SCIWAY, 2009	South Carolina's Information Highway	<i>McCormick County, South Carolina – History</i>		Columbia, SC	Website accessed May 28, 2009	South Carolina's Information Highway, <a href="http://www.sciway.net/cnty/history/mccormick.html">www.sciway.net/cnty/history/mccormick.html</a>
SCDNR, 2009	South Carolina Department of Natural Resources, South Carolina State Climatology Office	<i>South Carolina Climate</i>		Columbia, SC	Website accessed May 19, 2009	South Carolina State Climatology Office, South Carolina Climate <a href="http://www.dnr.sc.gov/climate/sco/ClimateData/cli_sc_climate.php">www.dnr.sc.gov/climate/sco/ClimateData/cli_sc_climate.php</a>
Seaboard, 1976	Seaboard Coast Line Railroad Company	<i>Lower Savannah River Near Augusta, Georgia, General Layout, Scale 1"=20', Drawing No. AK 456.3-210, -211, -212, October 11, 1976</i>		Savannah, GA	October 1976	

**Table 33: Bibliography and References, continued**

Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
Towill, Inc., 2012	Towill, Inc. / Dewberry / SCDNR	<i>LiDAR Data, Scale 1 Meter, Contour Interval 5 Feet</i>	Jeff Poplin, Brian Mayfield, Jim Scurry	Columbia, SC	2012	
USACE, 1959	U.S. Department of the Army, Corps of Engineers	<i>Backwater Curves in River Channels, Engineering Manual, EM-1110-2-1409</i>		Washington, D.C.	1959	U.S. Army Corps of Engineers <a href="http://www.usace.army.mil/">www.usace.army.mil/</a>
USACE, 1988	U.S. Department of the Army, Corps of Engineers	<i>Savannah River Channel Capacity Study</i>		Savannah, GA	August 1988	U.S. Army Corps of Engineers <a href="http://www.usace.army.mil/">www.usace.army.mil/</a>
USACE, 1973(a)	U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center	<i>HEC-2 Water Surface Profiles, Generalized Computer Program, 723-X6-L202A</i>		Davis, CA	October 1973	U.S. Army Corps of Engineers Hydrologic Engineering Center <a href="http://www.hec.usace.army.mil/">www.hec.usace.army.mil/</a>
USACE, 1973(a)	U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center	<i>HEC-2 Water Surface Profiles, Generalized Computer Program, 723-X6-L202A User's Manual</i>		Davis, CA	October 1973	U.S. Army Corps of Engineers Hydrologic Engineering Center <a href="http://www.hec.usace.army.mil/">www.hec.usace.army.mil/</a>
USACE, 1974	U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center	<i>Calculation of Water Surface Profiles Through Bridges, Training Document 6</i>		Davis, CA	1974	U.S. Army Corps of Engineers Hydrologic Engineering Center <a href="http://www.hec.usace.army.mil/">www.hec.usace.army.mil/</a>
USACE, 1991(a)	U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center	<i>HEC-2 Water Surface Profiles, Generalized Computer Program</i>		Davis, CA	May 1991	U.S. Army Corps of Engineers Hydrologic Engineering Center <a href="http://www.hec.usace.army.mil/">www.hec.usace.army.mil/</a>

**Table 33: Bibliography and References, continued**

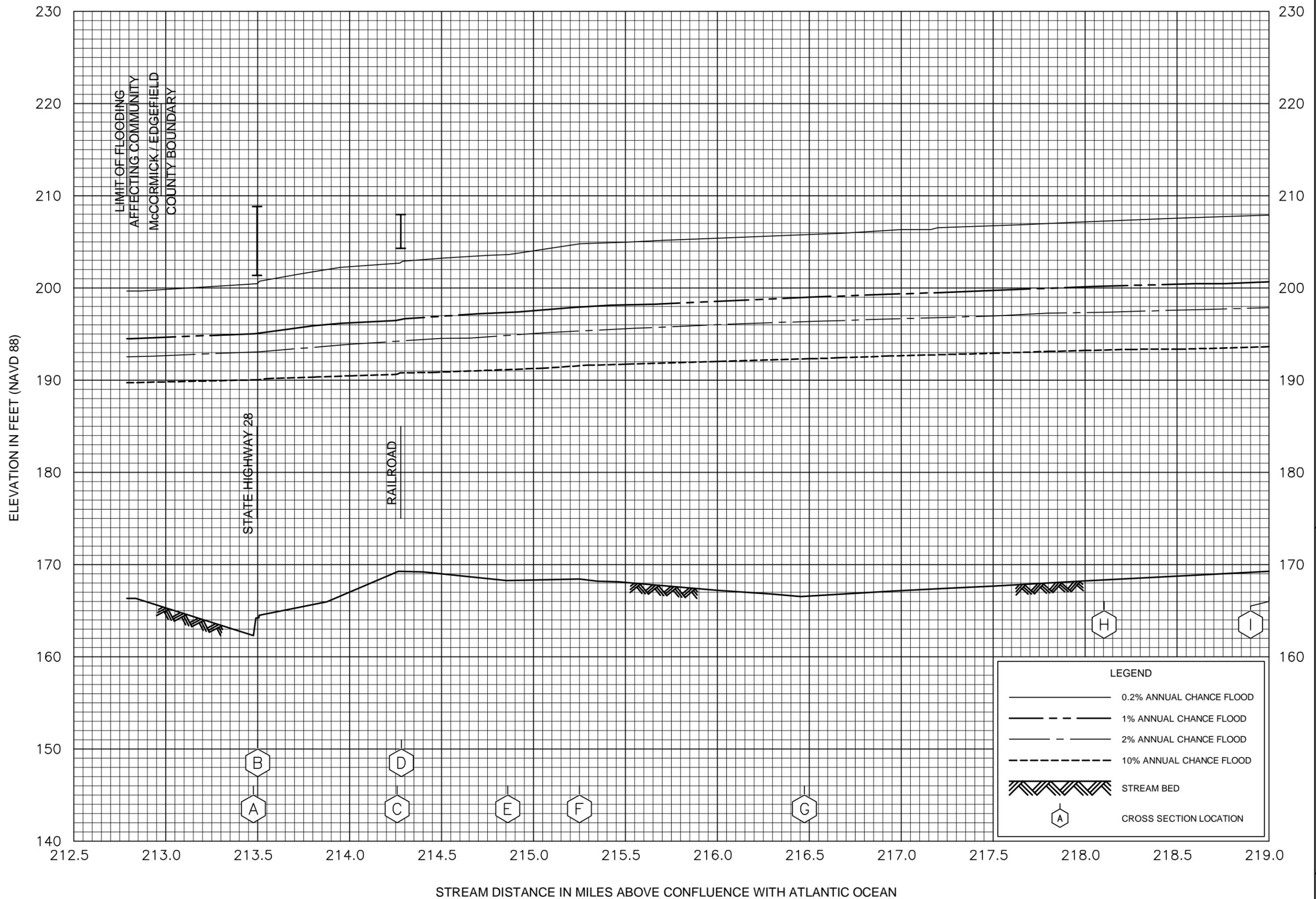
Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
USACE, 1991(b)	U.S. Department of the Army, Corps of Engineers, Hydrologic Engineering Center	<i>HEC-2 Water Surface Profiles, Generalized Computer Program, User's Manual</i>		Davis, CA	September 1991	U.S. Army Corps of Engineers Hydrologic Engineering Center <a href="http://www.hec.usace.army.mil/">www.hec.usace.army.mil/</a>
U.S. Census, 2000	U.S. Department of Commerce, Bureau of the Census	<i>2000 Census Population and Housing Data</i>		Washington, D.C.	2000	<a href="http://www.census.gov/">www.census.gov/</a>
U.S. Census, 2003	U.S. Department of Commerce, Bureau of the Census	<i>Census 2000 Data for the State of South Carolina</i>		Washington, D.C.	Website accessed June 11, 2003	<a href="http://www.census.gov/census2000/states/sc.html">www.census.gov/census2000/states/sc.html</a>
USGS, 1980(a)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, Martinez, GA-SC, 1964, Photorevised 1980</i>		Washington, D.C.	1980	USGS Store <a href="http://store.usgs.gov/">store.usgs.gov/</a>
USGS, 1980(b)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, North Augusta, SC-GA, 1964, Photorevised 1980</i>		Washington, D.C.	1980	USGS Store <a href="http://store.usgs.gov/">store.usgs.gov/</a>
USGS, 1981	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, Augusta East, GA-SC, 1965, Photorevised 1981</i>		Washington, D.C.	1981	USGS Store <a href="http://store.usgs.gov/">store.usgs.gov/</a>

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Citation in this FIS	Publisher/ Issuer	Publication Title, "Article," Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
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USGS, 1986(b)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, McCormick, SC, 1964, Photorevised 1986</i>		Washington, D.C.	1986	USGS Store <a href="https://store.usgs.gov/">store.usgs.gov/</a>
USGS, 1986(c)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, Parksville, SC-GA, 1964, Photorevised 1986</i>		Washington, D.C.	1986	USGS Store <a href="https://store.usgs.gov/">store.usgs.gov/</a>
USGS, 1986(d)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, Plum Branch, SC-GA, 1964, Photorevised 1986</i>		Washington, D.C.	1986	USGS Store <a href="https://store.usgs.gov/">store.usgs.gov/</a>
USGS, 1986(e)	U.S. Department of the Interior, Geological Survey	<i>7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet, Winterseat, SC, 1965, Photorevised 1986</i>		Washington, D.C.	1986	USGS Store <a href="https://store.usgs.gov/">store.usgs.gov/</a>

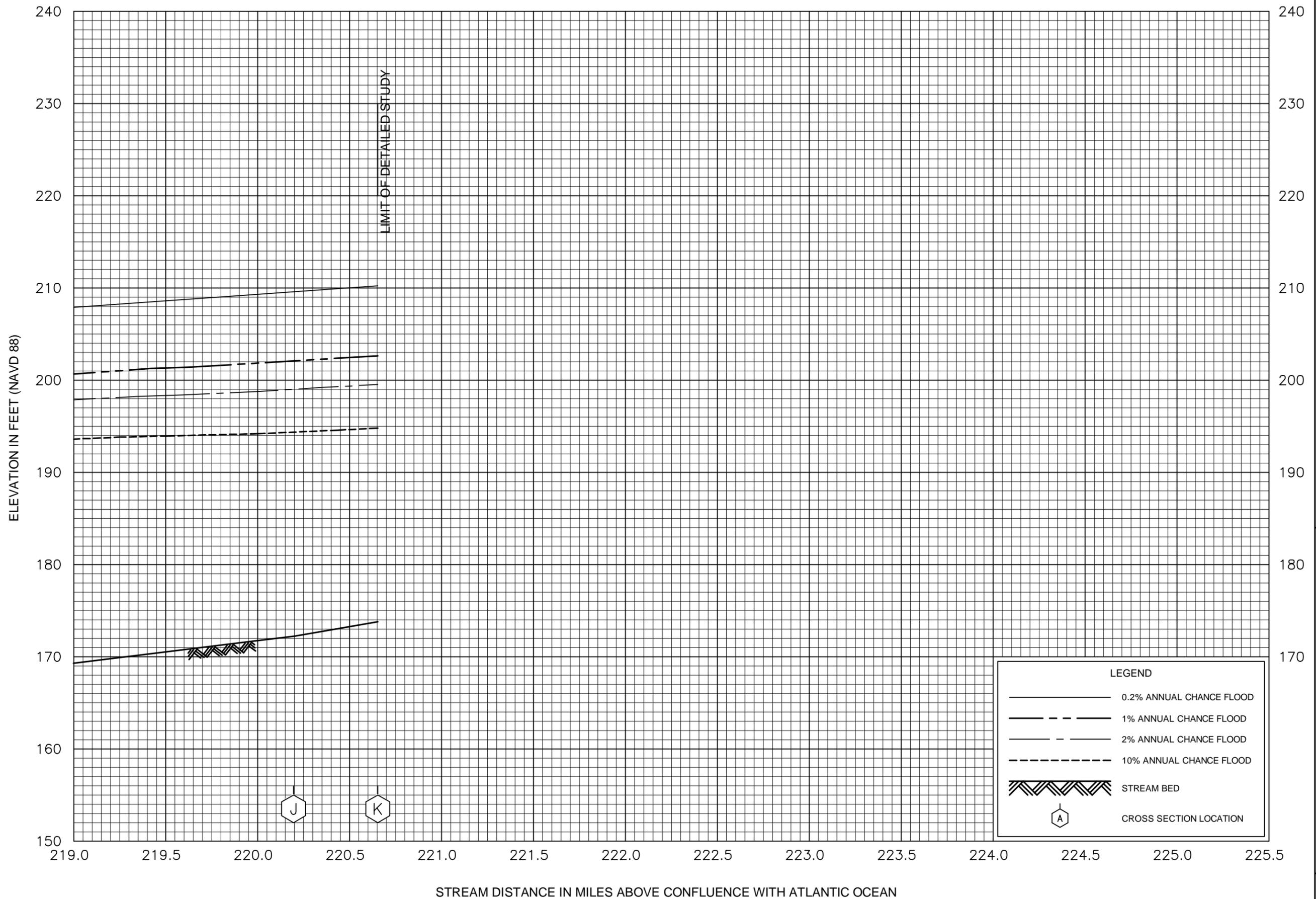
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Citation in this FIS	Publisher/ Issuer	<i>Publication Title, "Article,"</i> Volume, Number, etc.	Author/Editor	Place of Publication	Publication Date/ Date of Issuance	Link
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Walden, 1994	Walden, Ashworth, & Associates, Inc.	<i>HEC-2 Calibration Models,</i> <i>January 27, 1994</i>			January 1994	unpublished



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