FLOOD INSURANCE STUDY

VOLUME 1 OF 10

DEKALB COUNTY, GEORGIA

AND INCORPORATED AREAS

DeKalb County

COMMUNITY NAME	COMMUNITY NUMBER
ATLANTA, CITY OF	135157
AVONDALE ESTATES, CITY OF	130528
BROOKHAVEN, CITY OF	135175
CHAMBLEE, CITY OF	130066
CLARKSTON, CITY OF	130067
DECATUR, CITY OF	135159
DEKALB COUNTY (UNINCORPORATED AREAS)	130065
DORAVILLE, CITY OF	130069
DUNWOODY, CITY OF	130679
LITHONIA, CITY OF	130472
PINE LAKE, CITY OF	130070
STONE MOUNTAIN, CITY OF	130260
STONECREST, CITY OF	130268
TUCKER, CITY OF	130681

Revised: August 15, 2019

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
13089CV001C

NOTICE TO
FLOOD INSURANCE STUDY USERS

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

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

This FIS report was revised on August 15, 2019. Users should refer to Section 10.0, Revisions Description, for further information. Section 10.0 is intended to present the most up-to-date information for specific portions of this FIS report. Therefore, users of this report should be aware that the information presented in Section 10.0 supersedes information in Sections 1.0 through 9.0 of this FIS report.

Initial Countywide FIS Effective Date: May 7, 2001

Revised Countywide FIS Dates:

May 16, 2013 – to change Base Flood Elevations and Special Flood Hazard Areas

December 8, 2016 – to change Base Flood Elevations and Special Flood Hazard Areas

August 15, 2019 – to change Base Flood Elevations and Special Flood Hazard Areas

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FLOOD INSURANCE STUDY
DEKALB COUNTY, GEORGIA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in, or revises previous FISs/Flood Insurance Rate Maps (FIRMs) for, the geographic area of DeKalb County, Georgia, including: the Cities of Atlanta, Brookhaven, Chamblee, Clarkston, Decatur, Doraville, Pine Lake, Stonecrest, Stone Mountain, Tucker, Avondale Estates, Lithonia, Dunwoody; and the unincorporated areas of DeKalb County (hereinafter referred to collectively as DeKalb County).

The City of Atlanta is located in Fulton and DeKalb Counties. Flood hazard information for the portion of the City of Atlanta located in Fulton County is included in the FIS for Fulton County, Georgia and Incorporated Areas.

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

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

1.2 Authority and Acknowledgments

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

This FIS was prepared to include incorporated communities within DeKalb County in a countywide-format report. Information on the authority and acknowledgments for each jurisdiction included in the initial countywide FIS, as compiled from their previously printed FIS reports, is shown on the following pages.

Atlanta, City of: The hydrologic and hydraulic analyses for South Fork Peachtree Creek and Sugar Creek in the FIS report dated March 4, 1987, were prepared by the U.S. Army Corps of Engineers (USACE), Savannah District, for the Federal Emergency Management Agency (FEMA), under Inter Agency Agreement No. EMW-E-1153, Project Order No. 1. Hydrologic and hydraulic analyses were also taken from the January 3, 1985, FIS for the City of Atlanta, which obtained its hydrologic and hydraulic information from various USACE floodplain information reports (USACE, May 1967, etc.).

Chamblee, City of: The hydrologic and hydraulic analyses for the FIS report dated September 1977 were performed by the U.S. Geological Survey (USGS), Doraville District, Water Resources Division, for the Federal Insurance Administration (FIA), under Inter-Agency Agreement No. IAA-H-17-75, Project Order No. 15. That work was completed in June 1976.

Clarkston, City of: The hydrologic and hydraulic analyses for South Fork Peachtree Creek in the FIS report dated December 15, 1980, were performed by the USACE, Savannah District, for FEMA, under Inter-Agency Agreement No. (IAA) H-18-78, Project Order No. 33. That work was completed in October 1979. For the April 17, 1984, FIS report, the hydrologic and hydraulic analyses for South Fork Peachtree Creek and Snapfinger Creek Tributary C were taken from the July 5, 1983, restudy of the unincorporated areas of DeKalb County FIS (FEMA, 1983). The DeKalb County restudy was performed by the USACE, Savannah District, for FEMA under Inter-Agency Agreement No. (IAA) 4-18-78, Project No. 33. That work was completed in October 1980.

Decatur, City of: The hydrologic and hydraulic analyses for the FIS report dated August 3, 1993, were performed by the USACE, Savannah District for FEMA, under Inter-Agency Agreement No. EMW-89-E-2978, Project Order No. 7. That work was completed in June 1990. The hydrologic and hydraulic analyses for Shoal Creek along the eastern corporate limits were taken from the FIS for the unincorporated areas of DeKalb County, Georgia (FEMA, 1989).

DeKalb County (Unincorporated Areas): The hydrologic and hydraulic analyses for the FIS report dated July 5, 1983, were performed by the USACE, Savannah District, for FEMA under Inter-Agency Agreement No. (IAA) 4-18-78, Project Order No. 33. The mapping and much of the field surveys were performed by John J. Harte Associates, Inc., under contract to the Savannah District. Other survey data were obtained from previous USACE studies. That work was completed in October 1980.

For the FIS report dated July 17, 1986, the hydrologic and hydraulic analyses for South Fork Peachtree Creek were performed by the USACE, Savannah District. For the FIS report dated September 2, 1988, the hydraulic analyses for Henderson Mill Creek and Peachtree Branch were performed by the USACE, Savannah District. For the FIS report dated December 5, 1989, the hydrologic and hydraulic analyses for South Fork Peachtree Creek were performed by McNally and Patrick, Inc. The hydrologic and hydraulic analyses for Nancy Creek Tributary A were performed by Stonehenge Engineering Services Corporation. Supplemental hydraulic analysis for Nancy Creek Tributary A downstream of Village Drive was performed by Mayes, Sudderth, and Etheredge, Inc. The hydrologic and hydraulic analyses for Stone Mountain Creek, Stone Mountain Creek Tributary A, and Crooked Creek Tributary to Stone Mountain Creek were performed by Walden, Ashworth & Associates, Inc. For the FIS report dated June 15, 1994, the hydraulic analyses for Peavine Creek were performed by Travis Pruitt & Associates, P.C.

Doraville, City of: The hydrologic and hydraulic analyses for the FIS report dated September 15, 1977, were performed by the USGS, Water Resources Division, Doraville, Georgia, for the FIA, under Inter-Agency Agreement No. IAA-H-17-75, Project No. 15. That work was completed in June 1976.

For the FIS report dated August 5, 1985, the hydrologic and hydraulic analyses for Nancy Creek were performed by the USACE, Savannah District, in conjunction with the FIS for the unincorporated areas of DeKalb County (FEMA, 1983).

Pine Lake, City of: The hydrologic and hydraulic analyses for the FIS report dated December 15, 1980, were performed by the USACE, Savannah District, for the FIA, under Inter-Agency Agreement No. (IAA)-H-18-78, Project Order No. 33. That work was completed in October 1979.

The authority and acknowledgments for the Cities of Stone Mountain, Avondale Estates, Lithonia, and Dunwoody are not included because there was no previously printed FIS for these communities.

For the May 7, 2001 countywide FIS, the hydrologic and hydraulic analyses for Henderson Mill Creek; Lullwater Creek; Nancy Creek; North Fork Peachtree Creek; North Fork Peachtree Creek Tributaries A, B, C, D-l, D-2, and D-3; Peachtree Branch; Peavine Creek; Perimeter Creek; South Fork Peachtree Creek; and South Fork Peachtree Creek Tributaries A, B, and C were performed by W. L. Jorden & Co., Inc., for FEMA under Contract No. EMA-96-CO-0020. This work was completed in February 1998. The land use delineations were performed for the watershed studied using maps and information supplied by the DeKalb County, Georgia, GIS Department. Topographic mapping for the study areas was prepared by ASI Inc., of Denver, Colorado, under contract with DeKalb County. The use of this topographic information was made possible through an interagency agreement between FEMA and DeKalb County.

The planimetric base map files were provided in digital format by the DeKalb County Geographic Information System Office, The Maloof Center, 1300 Commerce Drive, Room 402, Decatur, Georgia 30030. These files were photogrammetrically compiled by the DeKalb County Geographic Information System Office at a scale of 1: 1,200 from aerial photography dated February 1995.

The digital FIRM was produced in Universal Transverse Mercator coordinates referenced to the North American Datum of 1927 and the Clarke 1866 spheroid.

For the May 16, 2013 revision to the Countywide FIS, the hydrologic and hydraulic analyses were performed by Manhard Consulting Ltd. and Dewberry and Davis LLC, up to the 100-acre drainage limit under contract with DeKalb County Floodplain Management between 2007 and 2011. These watersheds are Barbashela, Blue, Cobbs, Conley, Crooked, Doolittle, Honey/Plunkett, Indian, Intrenchment, Pole Bridge, Shoal, Snapfinger, Stephenson, South River, Sugar and Brookhaven (small watershed tributary to Nancy Creek). Panthers Branch studied within Snapfinger Creek watershed, and Clarks and Corn Creeks studied within South River watershed. Doless Creek studied within Doolittle Creek watershed, and Hardee Creek studied within Sugar Creek watershed. Fowler Branch and Idle Creek studied within Cobbs watershed. Since these studies extended up to the 100-acre drainage area limit, several streams were added to the detailed studies in this FIS report. Refer to Table 3A for Scope of Revision for the Countywide FIS.

1.3 Coordination

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

The dates of the initial and final CCO meetings held for DeKalb County and the incorporated communities within its boundaries are shown in the following tabulation:

Community Name	Initial CCO Date	Final CCO Date
Atlanta, City of	*	January 20, 1995
Chamblee, City of	March and August 1975	September 21, 1976
Clarkston, City of	**	July 11, 1980
Decatur, City of	August 10, 1988	July 9, 1991
DeKalb County (Unincorporated Areas)	May 1978	August 9, 1982
Doraville, City of	March and August, 1975	October 4, 1976
Pine Lake, City of	**	July 11, 1980

* An initial CCO meeting was not held, but the City of Atlanta was notified of the revision by FEMA in a letter dated October 28, 1993.

** An initial CCO meeting was held, but the date of this meeting is not available.

For the May 7, 2001 countywide FIS, streams requiring detailed study or restudy were identified in an initial CCO meeting held on October 26, 1995. This meeting was attended by representatives of FEMA; W.L. Jorden & Co., Inc.; DeKalb County; and representatives from the incorporated communities. A final CCO meeting was held on November 23, 1999. Background data on flooding along the stream corridors was obtained from local officials. Early in the study process, W.L. Jorden & Co., Inc. requested meetings with representatives of all jurisdictional authorities, which would potentially be impacted by the study to determine areas of specific flooding concerns. Authorities responding to these inquiries were met individually to define their concerns. In addition, any planned activities to be developed along the study corridor were requested so that such improvements could be incorporated into the restudy.

For the May 16, 2013 revision, the Multi-Agency Stakeholder Meeting was held on April 5, 2010. The initial CCO meetings were held with DeKalb County and representatives from the incorporated communities at Scott Candler Plant on April

13, 2010 and June 30, 2010. The final CCO meeting was held on October 26, 2011 at Central Transfer Station, 3720 Leroy Scott Drive, Decatur, GA 30032.

2.0 AREA STUDIED

2.1 Scope of Study

The May 7, 2001 countywide FIS covers the geographic area of DeKalb County, Georgia. All or portions of the flooding sources listed in Table 1, "Streams Studied by Detailed Methods," were studied by detailed methods. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2) where applicable.

Table 1 – Streams Studied by Detailed Methods

Barbashela Creek	Nancy Creek
Barbashela Creek Tributary A	Nancy Creek Tributary A
Blue Creek	Nancy Creek Tributary B
Burnt Fork Creek	Nancy Creek Tributary C
Camp Creek	Nancy Creek Tributary C-1
Camp Creek Tributary A	Nancy Creek Tributary C-2
Camp Creek Tributary A	Nancy Creek Tributary D
Church Street Branch	Nancy Creek Tributary No. 1
Clarks Creek	Nancy Creek Tributary No. 1.1
Cobbs Creek	North Fork Peachtree Creek
Cobbs Creek Tributary A	North Fork Peachtree Creek Tributary A
Conley Creek	North Fork Peachtree Creek Tributary B
Corn Creek	North Fork Peachtree Creek Tributary B-1
Crooked Creek Tributary to Stone Mountain Creek	North Fork Peachtree Creek Tributary C North Fork Peachtree Creek Tributary D-1
Crooked Creek Tributary A	North Fork Peachtree Creek Tributary D-2
Crooked Creek Tributary A-1	North Fork Peachtree Creek Tributary D-3
Crooked Creek (South River)	North Fork Peachtree Creek Tributary No. 1
Doless Creek	North Fork Peachtree Creek Tributary No. 1.1
Doolittle Creek	North Fork Peachtree Creek Tributary No. 2
Doolittle Creek Tributary A	Panthers Branch
Doolittle Creek Tributary B	Peachtree Branch
Fowler Branch	Peavine Creek
Henderson Mill Creek	Peavine Creek Tributary
Honey Creek	Perimeter Creek
Honey Creek Tributary A	Pine Mountain Creek
Indian Creek	Pole Bridge Creek
Indian Creek Tributary A	Pole Bridge Creek Tributary A
Intrenchment Creek	Pole Bridge Creek Tributary B
Intrenchment Creek Tributary A	Shoal Creek
Johnson Creek	Shoal Creek West Tributary
Lamont Drive Branch	Snapfinger Creek
Little Stone Mountain Creek	Snapfinger Creek Tributary A
Lullwater Creek	Snapfinger Creek Tributary B

Table 1 – Streams Studied by Detailed Methods – continued

Snapfinger Creek Tributary C	Stephenson Creek
Snapfinger Creek Tributary D	Stone Mountain Creek
Snapfinger Creek Tributary E	Stone Mountain Creek Tributary A
South Fork Peachtree Creek	Sugar Creek
South Fork Peachtree Creek Tributary	Sugar Creek Tributary
South Fork Peachtree Creek Tributary A	Sugar Creek Tributary A
South Fork Peachtree Creek Tributary B	Swift Creek
South Fork Peachtree Creek Tributary C	Swift Creek Tributary A
South River	Tom George Creek
South River Tributary A	Yellow River

Table 2, "Stream Name Changes," lists streams that have names in the May 7, 2001 countywide FIS other than those used in the previously printed FISs for the communities in which they are located.

Table 2 – Stream Name Changes

Community	Old Name	New Name
Chamblee, City of	Nancy Creek Tributary No. 1	Nancy Creek Tributary C
	Nancy Creek Tributary No. 1.1	Nancy Creek Tributary C-1
	Nancy Creek Tributary No. 1.2	Nancy Creek Tributary C-2
	Nancy Creek Tributary No. 2	Nancy Creek Tributary B
	North Fork Peachtree Creek Tributary No. 1	North Fork Peachtree Creek Tributary A
	North Fork Peachtree Creek Tributary No. 2	North Fork Peachtree Creek Tributary B
	North Fork Peachtree Creek Tributary No. 2.1	North Fork Peachtree Creek Tributary B-1

As part of the May 7, 2001 countywide FIS, updated analyses were included for the flooding sources shown in Table 3, "Scope of Revision for the May 7, 2001 Countywide FIS."

Table 3 – Scope of Revision for May 7, 2001 Countywide FIS

Stream	Limits of New or Updated Detailed Study
Henderson Mill Creek	At the confluence with Peachtree Creek to approximately 0.76 mile upstream of Interstate Route 285

Table 3 – Scope of Revision for May 7, 2001 Countywide FIS – continued

Stream	Limits of New or Updated Detailed Study
Lullwater Creek	At confluence with Peavine Creek to approximately 1,100 feet upstream of Lullwater Parkway crossing
Nancy Creek	At county boundary to approximately 3,680 feet upstream of Tilly Mill Road
North Fork Nancy Creek	At confluence with Nancy Creek to approximately 525 feet upstream of confluence with Nancy Creek
North Fork Peachtree Creek	At the downstream county boundary to approximately 0.7 mile upstream of Pleasantdale Road
North Fork Peachtree Creek Tributary A	At confluence with North Fork Peachtree Creek to approximately 1,600 feet upstream of Tobey Road
North Fork Peachtree Creek Tributary B	At confluence with North Fork Peachtree Creek to approximately 950 feet upstream of Buford Highway
North Fork Peachtree Creek Tributary C	At confluence with North Fork Peachtree Creek to approximately 2,480 feet upstream of Lynnray Drive
North Fork Peachtree Creek Tributary D-1	At confluence with North Fork Peachtree Creek to approximately 900 feet upstream of Greenoaks Circle
North Fork Peachtree Creek Tributary D-2	Approximately 150 feet downstream of Briarcliff Road to approximately 500 feet upstream of Aspen Drive
North Fork Peachtree Creek Tributary D-3	At confluence with North Fork Peachtree Creek Tributary D-l to approximately 0.4 mile upstream of Greenbrook Way
Peachtree Branch	At confluence with North Fork Peachtree Creek to approximately 1.5 mile upstream of Interstate Route 285
Peavine Creek	At confluence with South Fork Peachtree Creek to Scott Boulevard
Perimeter Creek	At confluence with Nancy Creek to approximately 360 feet upstream of unnamed road

Table 3 – Scope of Revision for May 7, 2001 Countywide FIS – continued

Stream	Limits of New or Updated Detailed Study
South Fork Peachtree Creek	At county boundary to approximately 0.63 mile upstream of Elmdale Road
South Fork Peachtree Creek Tributary A	At confluence with South Fork Peachtree Creek to approximately 0.43 mile upstream of Woburn Drive
South Fork Peachtree Creek Tributary B	At confluence with South Fork Peachtree Creek to approximately 800 feet upstream of Pine Valley Road
South Fork Peachtree Creek Tributary C	At confluence with South Fork Peachtree Creek to approximately 300 feet upstream of North Arcadia Avenue

Additionally, portions of the floodplains of the following streams were revised using updated topographic information:

Barbashela Creek
Camp Creek
Camp Creek Tributary A
Cobbs Creek
Crooked Creek Tributary A
Crooked Creek Tributary A-1
Crooked Creek Tributary to Stone Mountain Creek
Doolittle Creek
Doolittle Creek Tributary A
Fowler Branch
Honey Creek
Honey Creek Tributary A
Panthers Branch
Pole Bridge Creek
Pole Bridge Creek Tributary A
Pole Bridge Creek Tributary B
Shoal Creek
Shoal Creek West Tributary
Snapfinger Creek
Snapfinger Creek Tributary B
Snapfinger Creek Tributary D
Snapfinger Creek Tributary E
Indian Creek
Intrenchment Creek
Johnson Creek
Little Stone Mountain Creek
Nancy Creek Tributary D
South Fork Peachtree Creek Tributary
South River
South River Tributary A
Stephenson Creek
Stone Mountain Creek
Swift Creek
Swift Creek Tributary A
Snapfinger Creek
Yellow River

The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

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

As part of the May 16, 2013 countywide FIS revision, new and revised detailed studies were included for the flooding sources shown in Table 3A, "Scope of Revision for May 16, 2013 Countywide FIS."

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision

Stream	Limits of New or Revised Detailed Study
Barbashela Creek	From the confluence with Snapfinger Creek to approximately 1,030 feet upstream of Rockborough Drive
Barbashela Creek Tributary A	From the confluence with Barbashela Creek to approximately 250 feet upstream of Megan Road
Barbashela Creek Tributary B	From the confluence with Barbashela Creek to approximately 260 feet upstream of Treehills Parkway
Barbashela Creek Tributary C	From the confluence with Barbashela Creek to approximately 1,060 feet upstream of Mill Lake Circle
Barbashela Creek Tributary D	From the confluence with Barbashela Creek to approximately 2,150 feet upstream of Elam Road
Barbashela Creek Tributary D1	From the confluence with Barbashela Creek Tributary D to approximately 710 feet upstream of Granite Springs Lane
Barbashela Creek Tributary D2	From the confluence with Barbashela Creek Tributary D to approximately 1,070 feet upstream of the confluence with Barbashela Creek Tributary D
Barbashela Creek Tributary E	From the confluence with Barbashela Creek to approximately 2,100 feet upstream of Martin Road
Barbashela Creek Tributary E1	From the confluence with Barbashela Creek Tributary E to approximately 930 feet upstream of Forest Path

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Barbashela Creek Tributary F	From the confluence with Barbashela Creek to approximately 3,830 feet upstream of Selene Drive
Barbashela Creek Tributary G	From the confluence with Barbashela Creek to downstream face of Dam
Barbashela Creek Tributary H	From the confluence with Barbashela Creek to approximately 170 feet downstream of Kenilworth Circle
Barbashela Creek Tributary H1	From the confluence with Barbashela Creek Tributary H to approximately 950 feet upstream of the confluence with Barbashela Creek Tributary H
Barbashela Creek Tributary I	From the confluence with Barbashela Creek to an approximately 390 feet upstream of Sheppard Road
Barbashela Creek Tributary J	From the confluence with Barbashela Creek to approximately 500 feet upstream of West Mountain Street
Blue Creek	From the confluence with South River to approximately 720 feet upstream of Moore Road
Blue Creek Tributary 1	From the confluence with Blue Creek to approximately 740 feet upstream of River Road
Blue Creek Tributary 2	From the confluence with Blue Creek to approximately 870 feet upstream of Bouldercrest Road
Clarks Creek	From the confluence with South River to approximately 720 feet upstream of Brookstone Way
Clarks Creek Tributary 1	From the confluence with Clarks Creek to approximately 760 feet upstream of Brookstone Place
Cobbs Creek	From the confluence with Shoal Creek to an approximately 330 feet upstream of Wiltshire Drive

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Cobbs Creek Tributary A	From the confluence with Cobbs Creek to approximately 50 feet downstream of Cornwall Road
Cobbs Creek Tributary A1	From the confluence with Cobbs Creek Tributary A to approximately 160 feet downstream of Bennington Drive
Cobbs Creek Tributary 1	From the confluence with Cobbs Creek to approximately 60 feet downstream of Stardust Trail
Cobbs Creek Tributary 2	From the confluence with Cobbs Creek to approximately 70 feet downstream of Preakness Drive
Cobbs Creek Tributary 3	From the confluence with Cobbs Creek to approximately 200 feet downstream of Leisure Springs Drive
Cobbs Creek Tributary 4	From the confluence with Cobbs Creek to approximately 260 feet upstream of Rainbow Creek Drive
Cobbs Creek Tributary 5	From the confluence with Cobbs Creek to approximately 80 feet downstream of Spring Valley Road
Cobbs Creek Tributary 6	From the confluence with Cobbs Creek to approximately 480 feet upstream of Oregon Trail
Cobbs Creek Tributary 7	From the confluence with Cobbs Creek to approximately 300 feet upstream of Cindy Drive
Cobbs Creek Tributary 8	From the confluence with Cobbs Creek to approximately 1,300 feet upstream of Wiltshire Drive
Conley Creek	From the confluence with South River to county boundary limit to approximately 710 feet upstream of Thurman Drive

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Conley Creek Tributary 1	From the confluence with Conley Creek to approximately 1,880 feet upstream of the confluence with Conley Creek
Conley Creek Tributary 2	From the confluence with Conley Creek to approximately 200 feet upstream of Seminole Road
Conley Creek Tributary 2A	From the confluence with Conley Creek Tributary 2 to approximately 920 feet upstream of the confluence with Conley Creek Tributary 2
Conley Creek Tributary 3	From the confluence with Conley Creek to approximately 2,930 feet upstream of Ward Lake Road
Conley Creek Tributary 3A	From the confluence with Conley Creek Tributary 3 to approximately 2,720 feet upstream of the confluence with Conley Creek Tributary 3
Conley Creek Tributary 4	From the confluence with Conley Creek to approximately 1,200 feet downstream of Rocky Valley Drive
Conley Creek Tributary 5	From the confluence with Conley Creek to the county boundary limit
Conley Creek Tributary 5A	From the confluence with Conley Creek Tributary 5 to the county boundary limit
Conley Creek Tributary 6	From the confluence with Conley Creek to approximately 290 feet downstream of Highway 675 North Bound Expressway
Conley Creek Tributary 7	From the confluence with Conley Creek to approximately 190 feet upstream of Moreland Avenue
Corn Creek	From the confluence with Clarks Creek to approximately 150 feet downstream of the county boundary limit

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Corn Creek Tributary 1	From the confluence with Corn Creek to approximately 960 feet upstream of the confluence with Corn Creek
Corn Creek Tributary 2	From the confluence with Corn Creek to approximately 560 feet upstream of the confluence with Corn Creek
Crooked Creek (South River)	From the confluence with South River to approximately 5,160 feet upstream of South Goddard Road
Crooked Creek Tributary 1	From the confluence with Crooked Creek to approximately 1,500 feet upstream of Browns Mill Road
Crooked Creek Tributary 2	From the confluence with Crooked Creek to approximately 280 feet upstream of Browns Mill Road
Crooked Creek Tributary 3	From the confluence with Crooked Creek to approximately 360 feet upstream of Browns Mill Road
Crooked Creek Tributary 4	From the confluence with Crooked Creek to approximately 3,000 feet upstream of Roundtree Lane
Crooked Creek Tributary 5	From the confluence with Crooked Creek to approximately 2,050 feet upstream of South Goddard Road
Doless Creek	From the confluence with Doolittle Creek to approximately 120 feet upstream of La Fortune Drive
Doolittle Creek	From the confluence with South River to approximately 20 feet upstream of the Tupelo Street
Doolittle Creek Branch A	From the confluence with Doolittle Creek to approximately 700 feet upstream of Interstate 20

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Doolittle Creek Branch B	From the confluence with Doolittle Creek to approximately 40 feet upstream of Glenwood Avenue
Doolittle Creek Tributary A	From the confluence with Doolittle Creek to approximately 1,130 feet upstream of Rockdale Drive
Doolittle Creek Tributary B	From the confluence with Doolittle Creek to approximately 390 feet upstream of Habersham Drive
Fowler Branch	From the confluence with Cobbs Creek to approximately 1,180 feet upstream of Gretna Green Drive
Fowler Branch Tributary 1	From the confluence with Fowler Branch to approximately 320 feet upstream of Snapfinger Road
Fowler Branch Tributary 2	From the confluence with Fowler Branch to approximately 100 feet downstream of Emerald North Drive
Fowler Branch Tributary 3	From the confluence with Fowler Branch to approximately 40 feet downstream of Lindsey Drive
Fowler Branch Tributary 4	From the confluence with Fowler Branch to approximately 220 feet upstream of Cory Boulevard
Hardee Creek	From the confluence with Sugar Creek to an approximately 300 feet upstream of the Hosea L Williams Drive
Honey Creek	From the county boundary limit to approximately 170 feet upstream of Interstate 20
Honey Creek Tributary A	From the confluence with Honey Creek to approximately 4,470 feet upstream of Forest Lake Parkway

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Idle Creek	From the confluence with Shoal Creek to approximately 850 feet downstream of Wakefield Drive
Indian Creek	From the confluence with Snapfinger Creek to approximately 870 feet upstream of Indian Creek Way
Indian Creek Tributary A	From the confluence with Indian Creek to approximately 2,000 feet downstream of North Clarendon Avenue
Indian Creek Tributary B	From the confluence with Indian Creek to approximately 880 feet upstream of Kensington Road
Indian Creek Tributary C	From the confluence with Indian Creek to approximately 340 feet upstream of Clubhouse Drive
Indian Creek Tributary D	From the confluence with Indian Creek to approximately 380 feet downstream of Woodland Avenue
Indian Creek Tributary D1	From the confluence with Indian Creek Tributary D to approximately 960 feet upstream of Hatton Drive
Indian Creek Tributary D2	From the confluence with Indian Creek Tributary D to an approximately 50 feet downstream of North Decatur Road
Intrenchment Creek	From the confluence with South River to the county boundary limit
Intrenchment Creek Tributary A	From the confluence with Intrenchment Creek to approximately 300 feet upstream of Ormewood Avenue
Intrenchment Creek Tributary 1	From the confluence with Intrenchment Creek to approximately 2,200 feet upstream of the confluence with Intrenchment Creek

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Intrenchment Creek Tributary 2	From the confluence with Intrenchment Creek to approximately 1,040 feet downstream of Eastland Road
Intrenchment Creek Tributary 3	From the confluence with Intrenchment Creek to approximately 140 feet downstream of Moreland Avenue SE
Intrenchment Creek Tributary 4	From the confluence with Intrenchment Creek to approximately 250 feet downstream of Cloverdale Drive
Panthers Branch	From the confluence with Snapfinger Creek to approximately 50 feet downstream of Dividend Drive
Panthers Branch Tributary 1	From the confluence with Panthers Creek to approximately 340 feet downstream of Portsmouth Circle
Panthers Branch Tributary 2	From the confluence with Panthers Creek to approximately 800 feet upstream of Rock Springs Road
Panthers Branch Tributary 3	From the confluence with Panthers Creek to approximately 810 feet upstream of the confluence with Panthers Creek
Plunkett Creek	From the confluence with Honey Creek to approximately 350 feet upstream of Rockland Road
Plunkett Creek Unnamed Tributary	From the confluence with Plunkett Creek to approximately 1,900 feet downstream of Rockland Road
Pole Bridge Creek	From the confluence with South River to approximately 330 feet downstream of Albans Way
Pole Bridge Creek Tributary A	From the confluence with Pole Bridge Creek to approximately 430 feet downstream of Cove Lake Way

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Pole Bridge Creek Tributary AA	From the confluence with Pole Bridge Creek Tributary A to approximately 1,580 feet upstream of Keystone Gate Drive
Pole Bridge Creek Tributary AAA	From the confluence with Pole Bridge Creek Tributary A to approximately 1,070 feet upstream of Shirewick Lane
Pole Bridge Creek Tributary B	From the confluence with Pole Bridge Creek to approximately 40 feet downstream of South Deshon Road
Pole Bridge Creek Tributary BA	From the confluence with Pole Bridge Creek Tributary B to approximately 1,480 feet upstream of Lithonia Industrial Boulevard
Pole Bridge Creek Tributary BAA	From the confluence with Pole Bridge Creek Tributary BA to approximately 530 feet upstream of Tribble Street
Pole Bridge Creek Tributary BB	From the confluence with Pole Bridge Creek Tributary B to approximately 300 feet upstream of Railroad crossing
Pole Bridge Creek Tributary BC	From the confluence with Pole Bridge Creek Tributary B to approximately 2,260 feet downstream of South Deshon Road
Pole Bridge Creek Tributary BD	From the confluence with Pole Bridge Creek Tributary B to Covington Highway
Pole Bridge Creek Tributary C	From the confluence with Pole Bridge to approximately 700 feet downstream of Browns Mill Road
Pole Bridge Creek Tributary D	From the confluence with Pole Bridge Creek to approximately 650 feet downstream of Hunters Valley
Pole Bridge Creek Tributary E	From the confluence with Pole Bridge Creek to approximately 1,300 feet upstream of Hunters Hill Drive

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Pole Bridge Creek Tributary F	From the confluence with Pole Bridge Creek to approximately 260 feet upstream of Timor Trail
Pole Bridge Creek Tributary FA	From the confluence with Pole Bridge Creek Tributary F to approximately 1,280 feet upstream of Ottawa Trail
Pole Bridge Creek Tributary FB	From the confluence with Pole Bridge Creek Tributary F to approximately 600 feet upstream of Winslow Xing
Pole Bridge Creek Tributary G	From the confluence with Pole Bridge Creek to approximately 450 feet upstream of Evans Mill Road
Pole Bridge Creek Tributary H	From the confluence with Pole Bridge Creek to approximately 540 feet upstream of Evans Mill Road
Pole Bridge Creek Tributary HA	From the confluence with Pole Bridge Creek Tributary H to approximately 20 feet upstream of East Glen Road
Pole Bridge Creek Tributary J	From the confluence with Pole Bridge Creek to approximately 1,160 feet downstream of Marbut Road
Pole Bridge Creek Tributary K	From the confluence with Pole Bridge Creek to approximately 800 feet upstream of Marbut Road
Pole Bridge Creek Tributary L	From the confluence with Pole Bridge Creek to approximately 130 feet upstream of Marbut Road
Pole Bridge Creek Tributary LA	From the confluence with Pole Bridge Creek Tributary L to approximately 150 feet upstream of Briar Knoll Road
Pole Bridge Creek Tributary M	From the confluence with Pole Bridge Creek to approximately 1,380 feet upstream of Giles Road
Pole Bridge Creek Tributary N	From the confluence with Pole Bridge Creek to approximately 560 feet upstream of Young Road

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Pole Bridge Creek Tributary O	From the confluence with Pole Bridge Creek to approximately 930 feet upstream of Stoneleigh Hill
Pole Bridge Creek Tributary P	From the confluence with Pole Bridge Creek to approximately 460 feet upstream of Interstate 20
Pole Bridge Creek Tributary Q	From the confluence with Pole Bridge Creek to approximately 230 feet downstream of Spring Lake Overlook
Shoal Creek	From the confluence with South River to the City of Decatur corporate limit
Shoal Creek East Fork Middle Branch	From the confluence with Shoal Creek to approximately 100 feet downstream of Forrest Boulevard
Shoal Creek East Fork Middle Branch Tributary 1	From the confluence with Shoal Creek East Fork Middle Branch to approximately 300 feet upstream of Katie Kerr Drive
Shoal Creek Tributary A	From the confluence with Shoal Creek to approximately 200 feet upstream of Rosewood Road
Shoal Creek Tributary 1	From the confluence with Shoal Creek to approximately 50 feet downstream of Da Vinci Boulevard
Shoal Creek Tributary 2	From the confluence with Shoal Creek to approximately 200 feet downstream of Eastwyck Way
Shoal Creek Tributary 3	From the confluence with Shoal Creek to approximately 830 feet upstream of Miriam Lane
Shoal Creek Tributary 4	From the confluence with Shoal Creek to approximately 40 feet downstream of Nichols Lane

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Shoal Creek Tributary 5	From the confluence with Shoal Creek to approximately 1,760 feet upstream of Meadow Lane
Shoal Creek Tributary 6	From the confluence with Shoal Creek to approximately 580 feet upstream of Shoal Creek Boulevard
Shoal Creek Tributary 7	From the confluence with Shoal Creek to approximately 110 feet upstream of Catalina Drive
Shoal Creek Tributary 8	From the confluence with Shoal Creek to approximately 350 feet downstream of Line Street
Shoal Creek Tributary 9	From the confluence with Shoal Creek to approximately 370 feet upstream of Delano Drive
Snapfinger Creek	From the confluence with South River to approximately 450 feet downstream of East Ponce De Leon Avenue
Snapfinger Creek Tributary A	From the confluence with Snapfinger Creek to approximately 50 feet downstream of Autumn Lake Lane
Snapfinger Creek Tributary A1	From the confluence with Snapfinger Creek Tributary A to approximately 1,100 feet upstream of Sterling Forest Drive
Snapfinger Creek Tributary B	From the confluence with Snapfinger Creek to approximately 70 feet downstream of Interstate 285 Entry Ramp
Snapfinger Creek Tributary B1	From the confluence with Snapfinger Creek Tributary B to approximately 240 feet downstream of Jane Marie Lane
Snapfinger Creek Tributary C	From the confluence with Snapfinger Creek to approximately 350 feet upstream of Reilly Lane

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Snapfinger Creek Tributary C SPLIT	From downstream of Norman Road to approximately 950 feet upstream of Norman Road
Snapfinger Creek Tributary C1	From the confluence with Snapfinger Creek Tributary C to approximately 260 feet upstream of Norman Road
Snapfinger Creek Tributary D	From the confluence with Snapfinger Creek to approximately 490 feet upstream of Central Drive
Snapfinger Creek Tributary E	From the confluence with Snapfinger Creek to approximately 930 feet upstream of Cedar Park Drive
Snapfinger Creek Tributary E1	From the confluence with Snapfinger Creek Tributary E to approximately 190 feet upstream of Cherie Glen Trail
Snapfinger Creek Tributary 1	From the confluence with Snapfinger Creek to approximately 390 feet downstream of Flat Shoals Parkway
Snapfinger Creek Tributary 2	From the confluence with Snapfinger Creek to approximately 1,130 feet upstream of the confluence with Snapfinger Creek
Snapfinger Creek Tributary 3	From the confluence with Snapfinger Creek to approximately 1,890 feet upstream of Snapfinger Woods Drive
Snapfinger Creek Tributary 4	From the confluence with Snapfinger Creek to approximately 800 feet upstream of Interstate 20
Snapfinger Creek Tributary 5	From the confluence with Snapfinger Creek to approximately 230 feet upstream of Cross Lane
Snapfinger Creek Tributary 6	From the confluence with Snapfinger Creek to approximately 120 feet upstream of South Hairston Road

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Snapfinger Creek Tributary 7	From the confluence with Snapfinger Creek to approximately 210 feet upstream of Creekside Place
Snapfinger Creek Tributary 8	From the confluence with Snapfinger Creek to approximately 90 feet downstream of Red Branch Drive
Snapfinger Creek Tributary 9	From the confluence with Snapfinger Creek to approximately 400 feet upstream of Pineford Court
Snapfinger Creek Tributary 9A	From the confluence with Snapfinger Creek Tributary 9 to approximately 240 feet upstream of Young Road
Snapfinger Creek Tributary 9B	From the confluence with Snapfinger Creek Tributary 09 to approximately 580 feet upstream of Greensbrooke Close
Snapfinger Creek Tributary 10	From the confluence with Snapfinger Creek to approximately 1,450 feet upstream of the confluence with Snapfinger Creek
Snapfinger Creek Tributary 11	From the confluence with Snapfinger Creek to approximately 410 feet upstream of Glenhaven Drive
Snapfinger Creek Tributary 12	From the confluence with Snapfinger Creek to approximately 150 feet downstream of To Lani Drive
Snapfinger Creek Tributary 13	From the confluence with Snapfinger Creek to approximately 350 feet upstream of Lake Breeze Drive
Snapfinger Creek Tributary 14	From the confluence with Snapfinger Creek to approximately 650 feet upstream of Allgood Road
Snapfinger Creek Tributary 15	From the confluence with Snapfinger Creek to approximately 170 feet downstream of Woodcrest Manor Drive

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Snapfinger Creek Tributary 16	From the confluence with Snapfinger Creek to approximately 980 feet upstream of the confluence with Snapfinger Creek
Snapfinger Creek Tributary 17	From the confluence with Snapfinger Creek to approximately 280 feet downstream of East Ponce De Leon Avenue
South River	From DeKalb/Rockdale County Boundary, approximately 8,600 feet downstream of Klondike Road to DeKalb/Fulton County Boundary, approximately 1,000 feet upstream of Moreland Avenue
South River Tributary A	From the confluence with South River to approximately 400 feet downstream of Wesley Chapel Road
South River Tributary 1	From the confluence with South River to approximately 2,100 feet upstream of Browns Mill Road
South River Tributary 1A	From the confluence with South River Tributary 01 to approximately 2,900 feet upstream of Browns Mill Road
South River Tributary 1AA	From the confluence with South River Tributary 1A to approximately 1,220 feet upstream of East Saddleridge Drive
South River Tributary 2	From the confluence with South River to approximately 420 feet downstream of Browns Mill Road
South River Tributary 2A	From the confluence with South River Tributary 2 to approximately 130 feet downstream of Panola Lake Circle
South River Tributary 2B	From the confluence with South River Tributary 2 to approximately 630 feet upstream of confluence with South River Tributary 2

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
South River Tributary 3	From the confluence with South River to approximately 2,040 feet upstream of confluence with South River
South River Tributary 4	From the confluence with South River to approximately 1,920 feet upstream of confluence with South River
South River Tributary 5	From the confluence with South River to approximately 2,900 feet upstream of River Road
South River Tributary 5A	From the confluence with South River Tributary 05 to approximately 70 feet upstream of River Road
South River Tributary 6	From the confluence with South River to approximately 500 feet upstream of Cherry Ridge Boulevard
South River Tributary 7	From the confluence with South River to approximately 600 feet upstream of Waldrop Hills Drive
South River Tributary 8	From the confluence with South River to approximately 960 feet upstream of Clifton Springs Road
South River Tributary 9	From the confluence with South River to approximately 430 feet downstream of Bouldercrest Road
South River Tributary 10	From the confluence with South River to approximately 280 feet upstream of Interstate 285 Exit Ramp
South River Tributary 11	From the confluence with South River to approximately 1,200 feet upstream of Fayetteville Road
South River Tributary 12	From the confluence with South River to approximately 120 feet upstream of Moreland Avenue

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
South River Tributary 12A	From the confluence with South River Tributary 12 to approximately 330 feet downstream of Bonsal Road
South River Tributary 14	From the confluence with South River to approximately 1,200 feet upstream of confluence with South River
Stephenson Creek	From the confluence with Pole Bridge Creek to approximately 3,930 feet upstream of Rockland Road
Stephenson Creek Tributary 1	From the confluence with Stephenson Creek to approximately 2,750 feet upstream of South Goddard Road
Stephenson Creek Tributary 2	From the confluence with Stephenson Creek to approximately 2,375 feet upstream of confluence with Stephenson Creek
Sugar Creek	From the confluence with South River to approximately 950 feet upstream of Whitefoord Avenue SE
Sugar Creek East Branch A	From the confluence with Sugar Creek to approximately 1,060 feet downstream of Terry Mill Road
Sugar Creek Tributary A	From the confluence with Sugar Creek to 2nd Avenue
Sugar Creek Tributary A1	From the confluence with Sugar Creek Tributary A to approximately 840 feet upstream of Lanes Lane
Sugar Creek Tributary C	From the confluence with Sugar Creek to approximately 40 feet upstream of Rollingwood Lane
Sugar Creek Tributary D	From the confluence with Sugar Creek to approximately 200 feet upstream of Creek Crossing Walk

Table 3A – Scope of Revision for May 16, 2013 Countywide FIS Revision – continued

Stream	Limits of New or Revised Detailed Study
Sugar Creek Tributary E	From the confluence with Sugar Creek to approximately 390 feet upstream of Hilburn Drive
Sugar Creek Tributary F	From the confluence with Sugar Creek to approximately 50 feet upstream of Longdale Drive
Sugar Creek Tributary G	From the confluence with Sugar Creek to approximately 50 feet downstream of Clifton Road SE
Sugar Creek Tributary H	From the confluence with Sugar Creek to approximately 60 feet downstream of Blake Avenue
Sugar Creek Tributary I	From the confluence with Sugar Creek to approximately 150 feet upstream of Hardee Circle
Sugar Creek Tributary J	From the confluence with Sugar Creek to approximately 870 feet upstream of Moreland Avenue SE
Sugar Creek Tributary J1	From the confluence with Sugar Creek Tributary J to approximately 70 feet downstream of Hosea L William Drive NE
Unnamed Tributary to Nancy Creek	From approximately 390 feet downstream of Brookhaven Drive to approximately 220 feet upstream of Woodrow Way
Unnamed Tributary 2 to Unnamed Tributary to Nancy Creek	From confluence with Unnamed Tributary to Nancy Creek to approximately 380 feet downstream of Mabry Oaks Drive

The May 16, 2013 countywide FIS also includes re-delineated streams from the effective profiles and an approved LOMR with vertical datum conversion from NGVD 29 to NAVD 88. Table 3B listed the re-delineated streams for the May 16, 2013 countywide FIS revision.

<u>Table 3B – Re-delineated Streams for May 16, 2013 Countywide FIS Revision</u>

Burnt Fork Creek
Camp Creek
Camp Creek Tributary A
Crooked Creek Tributary A
Crooked Creek Tributary A-1
Crooked Creek Tributary to Stone Mountain Creek
Henderson Mill Creek
Johnson Creek
Little Stone Mountain Creek
Lullwater Creek
Nancy Creek
Nancy Creek Tributary A
Nancy Creek Tributary B
Nancy Creek Tributary C
Nancy Creek Tributary C-1
Nancy Creek Tributary C-2
Nancy Creek Tributary D
Nancy Creek Tributary No. 1
Nancy Creek Tributary No. 1.1
Nancy Creek Tributary No. 2
North Fork Nancy Creek
North Fork Peachtree Creek
North Fork Peachtree Creek Tributary A
North Fork Peachtree Creek Tributary B
North Fork Peachtree Creek Tributary B-1
North Fork Peachtree Creek Tributary C
North Fork Peachtree Creek Tributary D-1
North Fork Peachtree Creek Tributary D-2
North Fork Peachtree Creek Tributary D-3
North Fork Peachtree Creek Tributary No. 1
North Fork Peachtree Creek Tributary No. 1.1
North Fork Peachtree Creek Tributary No. 2
Peachtree Branch
Peavine Creek
Peavine Creek Lamont Tributary
Peavine Creek Tributary
Peavine Creek Upland Tributary
Perimeter Creek
Pine Mountain Creek
Shoal Creek (within City of Decatur)
Shoal Creek Driftwood Tributary
Shoal Creek Kirk Tributary
Shoal Creek West Tributary
South Fork Peachtree Creek
South Fork Peachtree Creek Tributary
South Fork Peachtree Creek Tributary A
South Fork Peachtree Creek Tributary B
South Fork Peachtree Creek Tributary C
South Fork Peachtree Creek Tributary Glendale Tributary
South Fork Peachtree Creek Tributary Willow Tributary
South Fork Peavine Creek
Stone Mountain Creek
Stone Mountain Creek Tributary A
Sugar Creek Tributary
Swift Creek
Swift Creek Tributary A
Tom George Creek
Yellow River

The May 7, 2001 countywide FIS incorporated the determination of Letters of Map Change issued by FEMA (Letter of Map Revision [LOMR]), as shown in Table 4, "Letters of Map Change."

Table 4 – Letters of Map Change

Community	Flooding Source(s)/Project Identifier	Date Issued	Type
DeKalb County	T. Baker (G&O)	July 3, 1989	LOMR
	Blue Creek at Moore Road	July 9, 1993	LOMR

The May 16, 2013 revision to the countywide FIS incorporates the determination of LOMRs issued by FEMA, as shown in Table 4A,"Letters of Map Revision for May 16, 2013 Countywide FIS Revision."

Table 4A – Letters of Map Revision for May 16, 2013 Countywide FIS Revision

Community	Case Number	Flooding Source(s)	Date Issued	Date Effective
DeKalb County	10-04-4217P	Peavine Creek	September 1, 2010	October 4, 2010
DeKalb County	10-04-0882P	North Fork Peachtree Creek	July 30, 2010	July 30, 2010
City of Decatur	07-04-3101P	Peavine Creek	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Peavine Creek Lamont Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Peavine Creek Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Peavine Creek Upland Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Shoal Creek	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Shoal Creek Driftwood Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Shoal Creek Kirk Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Shoal Creek West Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	South Fork Peachtree Creek Tributary Glendale Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	South Fork Peachtree Creek Tributary Willow Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Sugar Creek Tributary	October 23, 2007	February 20, 2008
City of Decatur	07-04-3101P	Unnamed Ponding Area	October 23, 2007	February 20, 2008

2.2 Community Description

DeKalb County, located in northwest Georgia, was formed in 1822 from a portion of Henry County. In 1853, a portion of the county, which included the City of Atlanta, was taken to form a part of Fulton County. The land area of the county is now approximately 172,000 acres.

The climate of DeKalb County is temperate with short, usually mild winters and long summers, typical of this part of the United States. Annual average precipitation in the region is 50.2 inches. The average precipitation distribution throughout the year in this region ranges from 3.11 inches in October to nearly 5.38 inches in March (NOAA online weather data, Years 1971-2000). The average annual temperature in DeKalb County (Atlanta Area) is 62.1 degrees Fahrenheit (NOAA online weather data, Years 1971-2000).

Development in the metro-Atlanta area is an important issue in DeKalb County. This area is rapidly evolving into a highly urbanized area with significant growth around established population centers such as Decatur and Atlanta. However, areas of moderate to low development have also begun to develop at an accelerated rate. All indications point to a continuation of this trend throughout the county. The 2010 census indicated a total population within the county boundaries of 691,893 people. In 1995, the Atlanta Regional commission delineated the land use within the county as approximately 25.5 percent urban and 45.6 percent residential. It should be noted that "multi-family residential" was included in the urban classification for land use as this category more closely reflects the land development characteristics associated with that activity. Continuing urbanization of the study area is expected, which will likely lead to intensified development of the floodplain unless these areas are properly identified and managed.

DeKalb County is in the Southern Piedmont major land resource area. The soils on uplands are mainly well drained and have a loamy surface layer and clayey subsoil. The landscape is made up of very gently sloping soils on ridge tops with sloping to steep, well-drained loamy type soil. Although the county is planned mainly for urban use, some excellent farmland exists. Most of the county that has not been developed is in woodland or pastureland. The streams have a steep hydraulic gradient in their headwater reaches, but transition to a moderate gradient as they continue into the major channels.

2.3 Principal Flood Problems

The history of flooding in DeKalb County indicates that flooding may occur during any season of the year, but floods are most likely to occur in winter and spring when runoff conditions are most favorable. Major flood producing storms in these seasons are usually of the frontal type, which last from two to four days and often cover large areas. Although summer storms are usually more intense, they are typically of short duration and limited extent.

There have been numerous flood events in DeKalb County. Significant flood-related damage has been experienced along North Fork Peachtree Creek, South Fork Peachtree Creek, Nancy Creek, their tributaries, and other streams. Past floods have caused damage because of development in the floodplains of the impacted streams. As growth in the county continues, the demand for building sites to accommodate residential and industrial development may force the county to consider sites previously considered unacceptable. Such sites could be vulnerable to serious flooding if proper precautions are not implemented.

2.4 Flood Protection Measures

For the Cities of Atlanta (DeKalb County portion), Chamblee, Clarkston, Doraville, and Pine Lake, there are no existing flood protection measures.

The City of Decatur lies along a drainage divide within the upper catchment areas of four streams. Therefore, the potential for flooding is not as great in the city as it is in developed areas in lower reaches of the catchments. Lower flood flows and narrow floodplains in the upper catchment areas lessen the flood hazard potential. Despite these natural advantages, a number of detached, single-family dwellings and some multi-family structures suffer flood damages because they were built very close to the streams.

The City of Decatur has employed various structural measures to reduce flood damages. Detention ponds have been constructed at Griffin Circle on a branch of Shoal Creek West Tributary and at Montgomery Street on Peavine Creek Tributary. Two detention ponds have been constructed in the Sugar Creek Tributary basin, one north of East Lake Drive and the other east of Second Avenue. Pipes and catch basins have been installed at locations where ponding or erosion has caused problems. The city has made a number of channel improvements, which include replacement, repair, or new construction of culverts, headwalls, and retaining walls. A concrete lining has been installed in the channel of Sugar Creek Tributary between Madison Avenue and Second Avenue. The lining extends east along a branch stream from Second Avenue to a point just east of North Fourth Avenue. One house on Westchester Drive along Peavine Creek Tributary was elevated above the flood level following a storm in May 1980.

DeKalb County completed construction of a detention basin for the Drew Valley Neighborhood in 2009. The detention basin is located just upstream of Drew Valley Road on Poplar Creek, which is a tributary to North Fork Peachtree Creek Tributary A. This watershed had a history of flooding including a flooding event that occurred between June 16 and 17, 2003, which impacted numerous residential structures. During flooding in the area in September 2009, no major flooding issue was reported from the neighborhood.

No other significant channels, structural, or non-structural measures were identified during this study which would reduce potential flood impacts. Although site specific improvements were noted in some locations, these were usually located at intersections with stream crossings. Further, no proposed stream improvements were identified for development during the study. Any flood protection measures would be maintained by the person or company responsible for their placement rather than the county and would serve to protect an individual property rather than a larger area.

DeKalb County passed an ordinance in 1970 to help protect against significant flooding damages from future flooding events. The ordinance stipulates that all buildings located adjacent to a floodplain drainage easement shall be constructed such that the finished floor elevation of the lowest level is three feet above the regional intermediate flood elevation. Said restriction shall apply to basement floor or crawl areas as well. All streets shall be at least one foot above the regional intermediate flood elevation. Proposed grading or filling operations within a floodplain drainage easement are required to be accompanied by hydraulic calculations which indicate that such activities would not overload the capacity of the channel downstream or increase flood stages upstream. Such demonstration must be made prior to the issue of a permit for said activities. Additionally, calculations must accompany the proposal for development, which indicate that stormwater runoff from the site would not increase by more than one cubic foot per second during a ten-year frequency storm event. Failing such demonstration, a design for on-site storage and controlled discharge of increased stormwater flows must accompany the permit request such that the existing runoff rates for the site are maintained. All drainage improvements shown on approved plans shall be constructed and properly operating before final approval of the development project. All drainage structures and facilities shall be constructed in accordance with county standards and specifications.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1-percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, 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 county at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

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

Precountywide Analyses

For the unincorporated areas of DeKalb County, City of Atlanta, and the City of Clarkston, the hydrologic analyses were accomplished by computing the peak runoff which would result from storms (rainfall) of a given exceedence frequency. Data from the National Weather Service Technical Paper No. 40 (U.S. Department of Commerce, 1961) were utilized to generate the 10-, 50-, 100- and 500-year hypothetical 24-hour storms. (The rainfall frequency curve was extrapolated to determine the 500-year rainfall). Procedures given in Soil Conservation Service (SCS) Technical Paper 149 (SCS, 1973) were utilized to distribute the rainfall amounts for the hypothetical storms with maximum centering over all subbasins simultaneously for ungaged watersheds. The rainfall distribution, which best recreated recorded flood events in the basin, was used for gaged watersheds.

For the City of Clarkston, there are several gaging stations on South Fork Peachtree Creek, two are in the vicinity of Clarkston, Georgia. Storms recorded on South Fork Peachtree Creek at Williver Drive (drainage area = 11.0 square miles, period of record 1974-1978) were reproduced to calibrate hydrologic model runoff parameters for the area.

The method used to develop discharge frequency estimates for various sites on South Fork Peachtree Creek and Snapfinger Creek Tributary C consisted of computing the estimated peak runoff which would result from storms (rainfall) of a given exceedence frequency. Data from Technical Paper No. 40 (U.S. Department of Commerce, 1963) was utilized to determine the 2-, 10-, 25-, 50-, and 100-year hypothetical 24-hour rainfall. Using rainfall patterns from several severe events in the watershed, a pattern hydrograph was derived from these storm analyses and applied to the hypothetical storms.

For the City of Pine Lake, a crest stage partial record station on Snapfinger Creek at Redan Road, Drainage Area = 13.2 square miles, was in operation during the period 1961, 1963 to 1970. A peak discharge of 3,800 cubic feet per second (cfs), which is estimated to be approximately the 4-year flood, was recorded on May 27, 1963. A frequency analysis was made for comparison with hydrologic model results.

For the City of Pine Lake, the modified PULS stream routing technique was adopted for use in the South Fork Peachtree basin model. The storage outflow relationships were obtained from a water-surface profile analysis using HEC-2 (USACE, 1991).

The runoff curve number (CN) method described in the Soil Conservation service's National Engineering Handbook, Section 4 (NEH-4), Chapters 7-10 (U.S. Department of Agriculture, 1972), was used to determine the runoff resulting from hypothetical flood events. The curve number method uses the soil series name and type, land use, the slope of the watershed, and the antecedent moisture condition (AMC) in determining the basin's response to runoff, i.e., basin lag. The SCS curve number method has been programmed into the HEC-l model and is used to develop consistent runoff responses, while allowing the evaluation of the effects of changes in land use. The soil series names were secured from the preliminary soil surveys of DeKalb, Clayton, and Henry Counties, Georgia. The average hydrologic soil group of each subbasin was determined as a weighted average of the area of each subbasin. Rain loss curve numbers were designated for each soil group and a predominant land use associated with each subbasin (Table 5, "DeKalb County Land Use Categories and Associated Curve Numbers (CN)).

Table 5 - DeKalb County Land Use Categories and Associated Curve Numbers (CN)

	USGS Land USE Classification Number	Hydrologic Soil Group A	B	C	D
11	Residential	80	85	90	95
12	Commercial and Industrial	95	96	97	98
13					
15					
*16	Mixed Urban or Built-up Land	73	82	88	91
17	Other Urban or Built-up Land				
21-33	Agricultural and Range Land	67	78	85	89
41-43	Forest Land	36	60	73	79
51-54	Water Bodies	100	100	100	100

*CN from avg. of all urban land uses

Table 5 presents the adopted curve number (CN) associated with each hydrologic soil group and land use for each basin. The relationships shown in Table 5 are based on an intermediate value of antecedent moisture condition (AMC II). Guidance on the adjustment to a drier or wetter condition is given in the SCS Handbook Section 4, Hydrology (NEH-4), Table 10.1, and (U.S. Department of Agriculture, 1972).

Unit hydrographs were computed for each subbasin using HEC-1, along with the generalized dimensionless unit graph described in Chapter 16 of Section 4 of the

SCS Handbook (U.S. Department of Agriculture, 1972). Lag time for each basin hydrograph was determined from the following equation:

$$L = \frac{(l)^{0.8}\ (S+1)^{0.7}}{1900(Y)^{0.5}} = \frac{(L)^{0.8}\ (S+1)^{0.7}}{1900(Y)^{0.5}}$$

Where L = hydraulic length of the basin in feet
S = (1000/CN) -10
CN = Runoff Curve Number

Channel routing for the main water course between subarea combining points was based on the HEC-2 (USACE, 1991) water-surface profile computations, which establishes a relationship between storage and discharge for each channel reach.

Normal depth calculations were used to determine storage-discharge relationship for non-surveyed tributary streams between subbasins. The modified PULS Method from HEC-l (USACE, 1987) was used to route through each subbasin reach.

Unit hydrographs were computed for each subbasin using HEC-l with the generalized dimensionless unit hydrographs using Chapter 16 of Section 4 on Hydrology of the National Engineering Handbook (U.S. Department of Agriculture, SCS, 1972).

Channel routing for the main watercourse between subarea combining points was based on the USACE HEC-2 water-surface profile computations, which establish a relationship between storage and discharge for each channel reach (USACE, 1991). Normal depth calculations were used to determine storage discharge relationships for non-surveyed tributary streams between subbasins. The modified PULS Method from HEC-l was used to route through each subbasin reach.

Flows computed by the rainfall-runoff procedures previously described were verified for ungaged urban streams by using the flood frequency curves for Metro Atlanta (U.S. Department of Interior, USGS, 1977).

Flows for gaged streams were compared to station frequency curves at specific locations on each stream. Because the peak of the hydrograph is attenuated based on storage in the routing reach and the lag time of the hydrograph, peak discharges downstream may be lower than upstream discharges. Timing of local inflows is also a contributing factor.

Peak stage and discharge measurements taken by the USGS, combined with U.S. Weather Bureau records, were used to establish the history of past floods and to compute the heights of probable future floods.

Golden used the Leopold-Sauer technique to develop preliminary flood-frequency relations for urban streams in the Atlanta metropolitan area. The urban relations were based on regional flood-frequency relationships developed by Golden and Price for small natural streams. The streams studied in detail in Chamblee are within the Atlanta metropolitan area. Therefore, because no gaging records exist for the streams in Chamblee, the hydrologic information from Golden was used (Flood-Frequency Analysis for Small Natural Streams in Georgia).

For the City of Decatur, two methods of hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each riverine flooding source studied in detail affecting the community.

Regional frequency analysis was used to determine peak discharges for Sugar Creek and South Fork Peachtree Creek. Regression equations were adjusted using the Sauer Method to include the effects of urbanization (USGS, 1979; USGS, Water Resources Investigation Report No. 83-4203, 1983). Regression equations developed for the Atlanta Metropolitan area were used to determine peak discharges for Lamont Drive Branch and Church Street Branch (USGS, 1977).

The HEC-l computer program, including the Soil Conservation Service (SCS) technique for computing unit hydrographs, was used in the calculation of the discharges for Peavine Creek, Peavine Creek Tributary, Shoal Creek, and Shoal Creek West Tributary (USACE, 1987). Hypothetical rainfall data were obtained from the National Weather Service Technical Paper No. 40 for the 10-, 50-, and 100-year events (U.S. Department of Commerce, 1963). The 500-year rainfall was extrapolated from these data. The SCS curve number method was used to determine the amount of runoff resulting from the flood events (U.S. Department of Agriculture, 1972). This method determines the basin lag time and runoff curve number from the hydrologic soil group, land use, and watershed slope. Hydrologic parameters were determined for each subbasin based on an intermediate antecedent moisture condition II (SCS, 1979).

Unit hydrographs, based on a generalized dimensionless unit graph, were computed for each subbasin utilizing HEC-l. Basin lag was determined from the following equation:

$$\text{Lag (hours)} = \frac{L^{0.8}\,(S+1)^{0.7}}{1900(Y)^{0.5}}$$

Where L = hydraulic length of subbasin in feet
Y = average subbasin land slope in percent
S = (1000/CN) -10
CN = subbasin curve number

For the Cities of Chamblee and Doraville, the discharge-frequency relationships were developed using techniques described by Sauer (U.S. Department of Interior, USGS, 1974) and based on the earlier work by Leopold ("Circular 544," 1968). Sauer also used the work of Anderson (1970), which suggested that the ratios of various recurrence floods (10-year, 50-year, etc.) to the mean annual flood (2.3-year) for fully developed (100 percent imperviousness) basins have the same ratios as rainfall-intensity data for similar recurrence intervals in that geographic area.

Golden (Preliminary Flood-Frequency Relations for Urban Streams, Metropolitan Atlanta, Georgia) used the Leopold-Sauer technique to develop preliminary flood-frequency relations for urban streams in the Atlanta metropolitan area. The urban relations were based on regional flood-frequency relationships developed by Golden and Price (Flood-Frequency Analysis for Small Natural Streams in Georgia) for small natural streams.

The streams studied in detail in the Cities of Chamblee and Doraville are within the Atlanta metropolitan area. Hydrologic methods used were developed by Golden.

The 10-, 50-, and 100-year recurrence intervals for the streams studied in detail in Chamblee are based on the regional flood discharge data. Peak discharges for the 500-year flood were obtained by straight-line extrapolation of a single-log graph of flood discharges computed for frequencies up to 100 years.

The average frequency-discharge relationships for Nancy Creek Tributaries B, C, C-1, and C-2 are shown in Figure 1, "Frequency-Discharge, Drainage Area Curves," in the City of Chamblee.

The average frequency-discharge relationship for the streams studied in Doraville is shown in Figure 1, "Frequency-Discharge, Drainage Area Curves." The curves were based on average urbanization factors.

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The hydrologic analyses were performed by computing the peak stormwater runoff which would occur as a result of a storm of a given recurrence frequency. Rainfall intensity for these storms was taken from the DeKalb County Drainage Procedures Manual for the 10-, 50-, and 100-year storm events. The 500-year storm intensity was estimated from a log-log projection from the existing storm intensity data. Each storm intensity was based on a 24-hour storm event. The Soil Conservation Services (SCS) document "Technical Release 55," was then used to develop a rainfall distribution pattern. The maximum rainfall intensity was assumed to center over all watershed basins simultaneously during the creation of the hydrologic model.

The watershed of each stream section studied was divided into sub-basins which consisted of similar run-off characteristics or which contributed runoff to the stream section at a given location. The Runoff Curve Number, described in the SCS National Engineering Handbook, was used to describe the runoff conditions in each of the subbasins. This number takes into consideration the land use and soil types present in the subbasin (U.S. Department of Agriculture, 1972). Soil series present in the study areas were determined by referencing the SCS soil surveys for Gwinnett, DeKalb, and Fulton Counties.

Lag time for each subbasin was calculated by determining the time of concentration for each area and applying the conversion factor of:

Lag Time (hours) = Time of Concentration (minutes) x 0.61

Time of Concentration was developed by applying a velocity to each sub-section of the hydraulic length of the subbasin. These velocities were determined by considering the slope, land-use in each sub-section and applying the homographs and graphs contained in the DeKalb County Drainage Procedures Manual. These velocities were then applied to the path length to calculate a travel time. The subsection times were then added to determine the total Time of Concentration for the subbasin.

This information combined with antecedent soil moisture content, the slope of the subbasin, and other information is combined to determine the subbasin's response to a storm of a given intensity and duration. The general methodology is often referred to as the “Curve Number Method" of stormwater evaluation. This method is programmed into the HEC-l E model used during this restudy. This method of evaluation is effective in determining the effects of development on stormwater runoff volumes. The result of these calculations was a unit hydrograph for each subbasin, which was then combined and routed as necessary to model the entire stream section.

Channel routing along the watercourse between points of hydrograph development or combination was based on the Muskingum-Cunge Methodology. This method is incorporated into the HEC-2 hydraulic model and establishes a relationship between discharge and storage for each channel reach. The Muskingum-Cunge Method requires the input of one of three coefficients to perform this calculation. The value of “k” was input for these calculations with the model optimizing the other two coefficients internally. The coefficient “k” is dependent upon the velocity of the water flowing through the channel. The value was originally estimated based on the slope of the channel and following the HEC-2 analyses, the value was optimized using an iterative process.

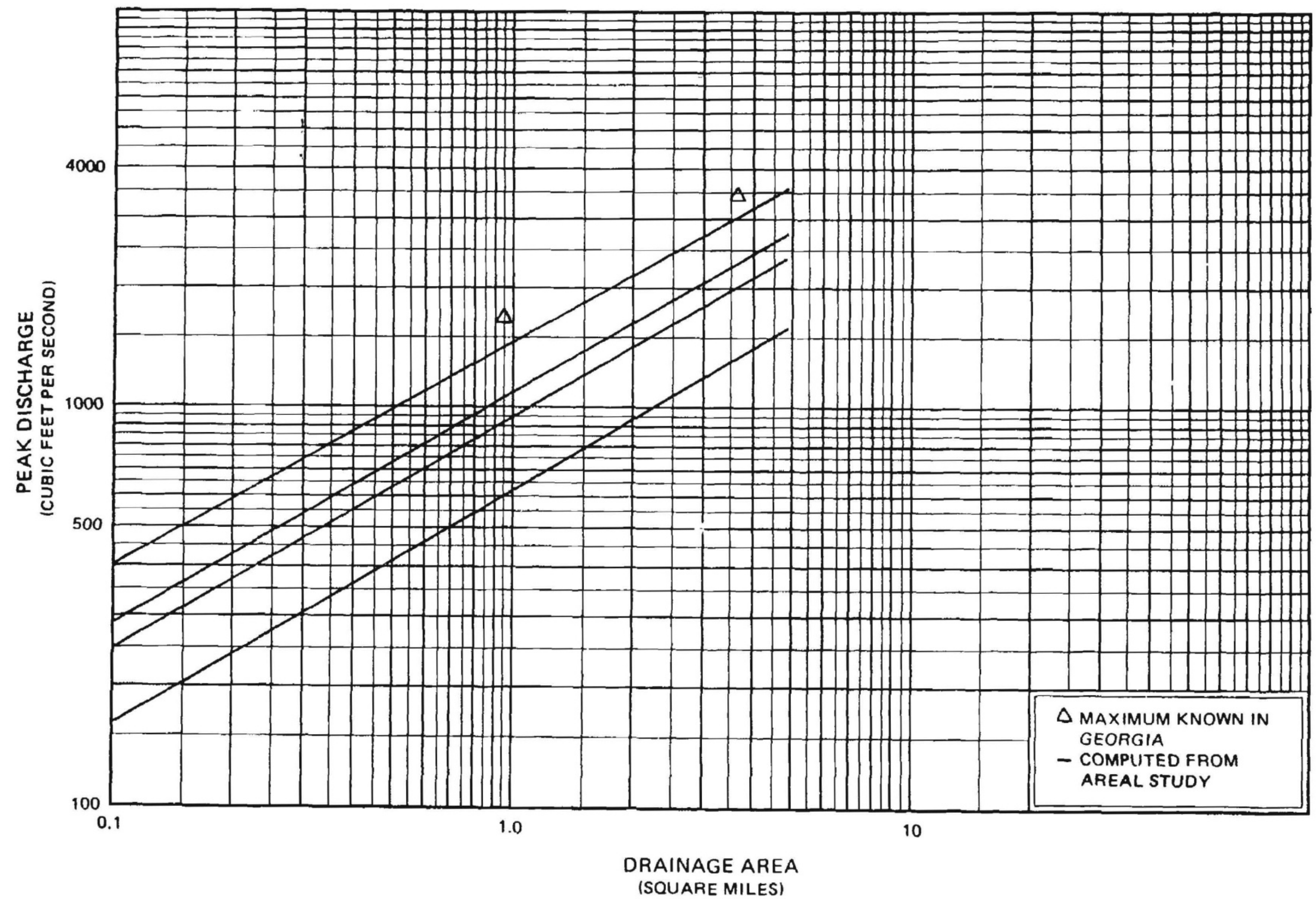

FIGURE 1

FEERAL EMERGENCY MANAGEMENT AGENCY

DEKALB COUNTY, GA AND INCORPORATED AREAS

FREQUENCY DISCHARGE, DRAINAGE AREA CURVES

ALL STREAMS IN DORAVILLE, GA

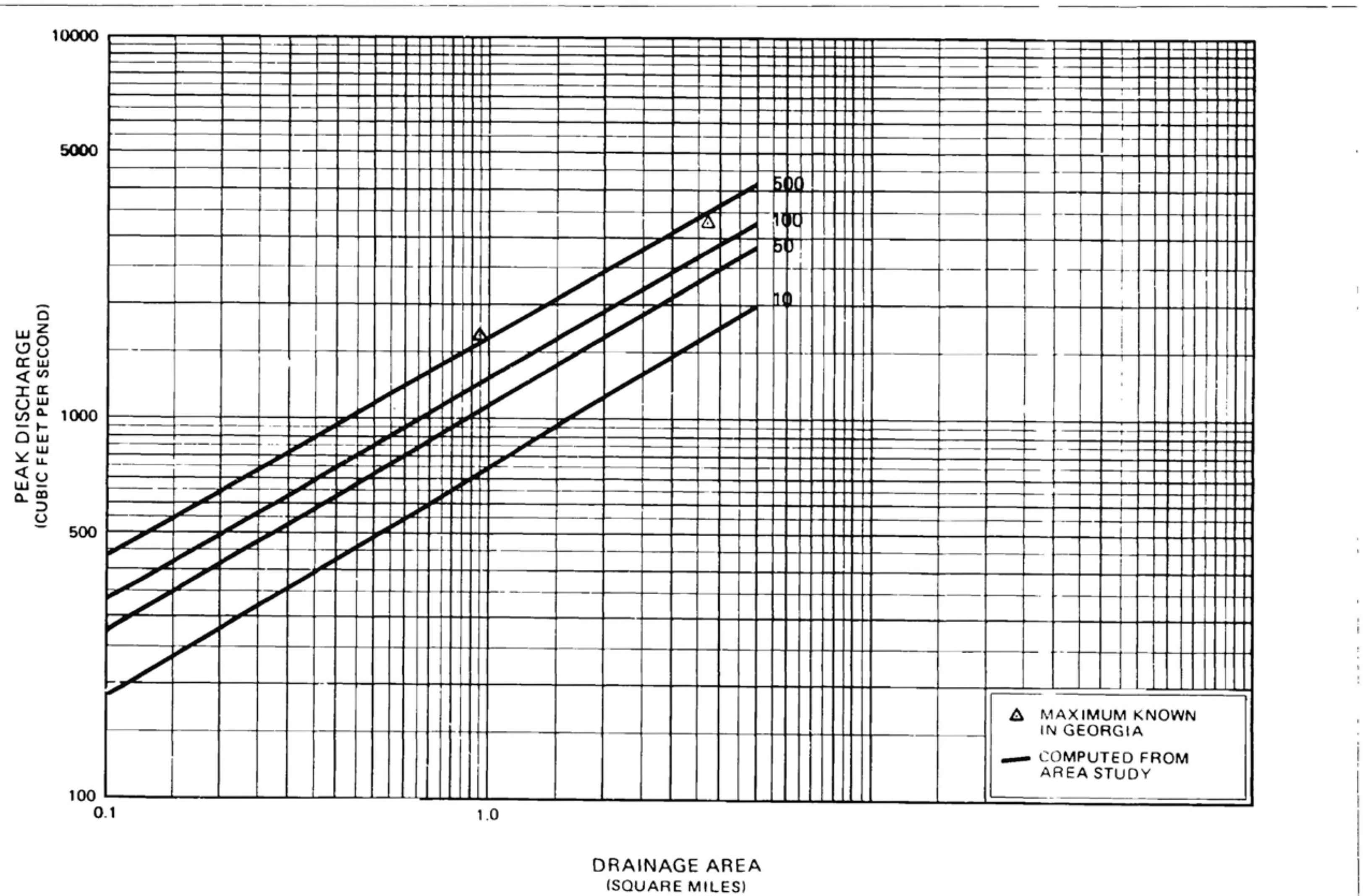

FIGURE 1

FEERAL EMERGENCY MANAGEMENT AGENCY

DEKALB COUNTY, GA AND INCORPORATED AREAS

FREQUENCY DISCHARGE, DRAINAGE AREA CURVES

NANCY CREEK TRIBUTARIES C, C-1, C-2, AND B-
NORTH FORK PEACHTREE CREEK TRIBUTARIES A, NO. 2, AND B-1

Revision for May 16, 2013 Countywide FIS

Hydrologic analyses of flood study areas were performed for existing condition to determine peak flow rates. The USACE HEC-Hydrologic Modeling System (HEC-HMS) version 3.3 or higher computer program was used to compute the 2-, 10-, 50-, 100- and 500-year, 24-hour storm events for the project watersheds for existing land-use conditions. The contributing drainage area for each watershed was delineated using DeKalb County's 2-foot interval topography, utilizing the ArcHydro tools, in the Environmental Science and Research Institute's ArcGIS software. The watersheds were subdivided into smaller sub-basins at stream confluences and specific points of interest such as roads, railroads, and dams. The Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) digital soils database for DeKalb County was used to determine the hydrologic soil groups within each sub-basin. The existing land-use coverage of the county was used for CN calculation. The land use was categorized into hydrologic land-use codes that correspond with the tables in NRCS Technical Release 55 (TR-55). The hydrologic land-use categories are based on the designations used in NRCS TR-55 (NRCS, 1986), which are typically used in hydrologic studies in estimating runoff curve numbers.

The time of concentration (Tc) for each subbasin was calculated following the methodology described by NRCS TR-55, June 1986. The NRCS three-part approach, called the segmental method, was used to determine the time of concentration parameter for all subbasins within the study areas. The Tc is used to estimate the lag time, which is the parameter input into the HEC-HMS model. The lag time is estimated as 0.6 x Tc. The Tc parameter represents the travel time required for stormwater runoff to travel through a basin from the hydraulically most remote point of a watershed to the outlet. In this case, "remoteness" refers to travel time and not travel distance, although these are usually comparable concepts. The segmental method was selected because it provides three physically based flow travel time components to simulate different runoff flow regimes within each subbasin - sheet flow, shallow concentrated flow, and open channel flow. The Tc is the summation of the travel times from each of these flow regimes.

Sheet Flow $$T_t = \frac{0.007(nL)^{0.8}}{(P_2)^{0.5} S^{0.4}}$$

Where: T_t = travel time for sheet flow in hours
n = effective Manning's n for sheet flow
L = the flow length in feet
P_2 = the 2-year/24-hour rainfall (inches)
S = the slope of the hydraulic grade line as average land slope (ft/ft)

Shallow concentrated flow $T = \frac{L}{3600V}$

Where: T = travel time for shallow concentrated flow in hours
L = the flow length in feet
V = the average runoff velocity 16.1345 $(s)^{0.5}$ for unpaved surfaces, 20.3282$(s)^{0.5}$ for paved surfaces (fps).

Open-channel flow $T = \frac{L}{3600V}$

Where: T = travel time for open-channel flow in hours
L = the flow length in feet
V = Manning's equation for open-channel velocity as shown below

$$V = \frac{1.49\, R^{2/3} S^{1/2}}{n}$$

Where: R = hydraulic radius
n = Manning's roughness coefficient
S = the slope of the hydraulic gradient or channel bed slope (ft/ft)

Precipitation was estimated using Table A-12 from the Georgia Stormwater Management Manual (GSMM) Volume 2. This table includes rainfall intensities derived for the Roswell, Georgia, area for durations from 5 to 1,440 minutes (0.08 to 24 hours) and return frequencies from 1- to 100-years (100- to 1-percent annual return frequency). The 1,440-minute intensities were multiplied by 24 to obtain the total rainfall depth for each of the modeled return intervals. The NRCS Type II, 24-hour rainfall distribution was used to develop the design storm hyetographs. The 500-year rainfall depth was estimated by extrapolation.

Storage routing was modeled at existing dams and road structures along the streams, where significant flow attenuation was expected. Elevation-Area and Elevation-Discharge relational tables were developed for all modeled storages. The Elevation-Area relational tables were created with the help of the HEC-GeoRAS tool in ArcGIS, while the Elevation-Discharge relational tables are generated in HEC-RAS by computing multi-flows plan in order to get the elevation-discharge rating curve.

The Muskingum-Cunge channel routing method was used to route surface water from sub-basin outlets. The eight-point cross sections, channel slope, and Manning's 'n' values required for this method were determined from the 2-foot topography, land use, and field survey. The eight-point cross section was used to define typical cross sections of modeled reaches. Channel slope was estimated using the ground surface TIN or raster. Dimensions for the overall cross section were cut from the ground surface TIN or raster and filtered to eight points that most-closely preserves the original geometry. The channel portion of the cross section, defined by the third through sixth point, was manually updated using field measurements. This is necessary because the TIN or raster does not provide adequate detail on the channel in most cases. Manning's n-values were defined from field observations and aerial photo interpretation. Manning's n-values for channels ranged from 0.035 to 0.055. Overbanks were estimated between 0.06 and 0.15.

A summary of the drainage area-peak discharge for the studied streams by detailed methods for is shown in Table 6, "Summary of Discharges." All revised data from the August 15, 2019, December 8, 2016, May 16, 2013, and May 7, 2001 FIS reports have been incorporated into the table.

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

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

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals. Water-surface elevations of floods of the selected recurrence intervals were developed using the USACE HEC-2 step backwater computer program (USACE, 1991).

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

Precountywide Analyses

Each jurisdiction within DeKalb County, except the Cities of Stone Mountain, Avondale Estates, Lithonia, and Dunwoody, has a previously printed FIS report. The hydraulic analyses described in those reports have been compiled and are summarized below.

Cross sections of the backwater analysis for the Cities of Clarkston and Pine Lake, and the unincorporated areas of DeKalb County, were compiled by a combination of photogrammetric and field survey methods at selected intervals to model conveyance of the valleys, and field surveyed just upstream or downstream of bridges and culverts in order to compute the significant backwater effects of such structures.

Cross sections for the flooding sources located in the City of Atlanta were derived from Atlanta topographic maps (City of Atlanta, 1968 and 1981). The below-water sections were obtained by field measurement.

Cross section data for streams in the Cities of Chamblee, Decatur, and Doraville were obtained by field surveys. All bridges and culverts were surveyed to obtain elevation data and structural geometry.

Water-surface elevations of floods of the selected recurrence intervals were developed using the USACE HEC-2 step-backwater computer program (USACE, 1991).

The water-surface elevations in the City of Decatur were computed using the USACE HEC-2 step-backwater computer program (USACE, 1991). Cross-section geometry input to the program was obtained by field survey. All bridges, culverts, and retaining structures were field surveyed to obtain dimension and structural geometry. Starting water-surface elevations were determined using the slope/area method except where elevations were taken from previous FISs.

Water-surface profiles were developed for the Cities of Chamblee and Doraville using the USGS E431 step-backwater computer model. Embankment storage at all road crossings was investigated to determine the effect on the computed flood profiles. In the City of Doraville, Nancy Creek Tributary No. 1 at Tilly Mill Road, the effect was significant and the flood profiles were adjusted based on the reduction in peak discharge caused by storage.

In the City of Doraville, flood elevations for the upper end of the main tributaries and for the smallest tributaries were determined by approximate methods, based on regional stage-frequency drainage area relationships.

Starting water-surface elevations for the streams studied in detail in the City of Pine Lake were based on slope/area methods utilized in HEC-2 (USACE, 1991).

Starting water-surface elevations for the streams in the City of Clarkston were based on water-surface profiles developed for the entire South Fork Peachtree Creek watershed.

Channel roughness factors (Manning's "n") for these computations were assigned based on field inspection of the floodplain areas.

Roughness coefficients (Manning's "n") for all streams in the City of Chamblee were estimated by field inspection of stream reaches at each cross section. High watermarks for the September 1975 flood, obtained by USGS personnel, provided a known flood profile for use in the step-backwater analyses to verify or adjust the field roughness coefficients.

Channel roughness coefficients (Manning's "n") were based on field inspection in the Cities of Atlanta, Chamblee, Clarkston, Decatur, Doraville, Pine Lake, and the unincorporated areas of DeKalb County.

Embankment storage at road crossings in the City of Chamblee was investigated where necessary to determine the effect on computed flood profiles. Adjustments for reduction of peak discharges due to storage were made at the Chamblee Tucker Road crossings of North Fork Peachtree Creek Tributary B and Tributary

B-1, the Hickory Road crossing of North Fork Peachtree Creek Tributary A, and the Keswick Drive and Sexton Woods Drive crossings of Nancy Creek Tributary C.

May 7, 2001 Countywide FIS

Analyses of the hydraulic characteristics of the flooding sources were performed to provide estimations of water-surface elevations associated with the selected recurrence interval storms. Existing flood elevations were retained for adjoining stream sections when such information was available. Approximate methods were used to set flood elevations along intersecting streams not included in the restudy if existing data were not available for that stream.

The cross sections used for the analysis of the stream valleys were taken from a topographic map provided by the DeKalb County GIS Department. Extensive internal review and cross checks were performed by DeKalb County to ensure the accuracy and level of detail provided in the base map was in compliance with their internal requirements prior to the release of the data for use in this study. The use of this topographic base map was permitted through an inter-agency agreement between DeKalb County, Georgia, and FEMA, and the use of the mapping data is subject to that agreement.

The topographic map was generated from photogrammetric methods using 1995 aerial photographs. The methods used in the gathering of the photographic base data and the development of the associated topographic map were in compliance with the limitations set out in Flood Insurance Study Guidelines and Specifications for Study Contractors issued by FEMA in January 1995. Cross sections located upstream and downstream of bridges and other such impediments to flood routing were performed using field-survey techniques. These sections were collected using a local datum prior to the completion of the topographic base map and were then correlated to the provided base map upon its completion.

Channel roughness coefficients (Manning's "n" coefficient) were assigned based on field inspection and were guided through reference to the USGS Water-Supply Paper 1849 Roughness Characteristics of Natural Channels (U.S. Department of Interior, 1967). This reference describes channel characteristics associated with varying Manning's coefficients and provides photographs of these conditions for comparison to the existing field conditions.

The hydraulic analyses were performed using HEC-RAS version 2.1, as produced by the USACE. This software package was specifically used to perform the floodplain and floodway analyses. The floodplain was plotted on the topographic base map using the BOSS-HEC software package by importing the analyses prepared using the HEC-RAS software. Since the BOSS-HEC package interfaces directly with AutoCAD, the floodplains were exported directly onto the base topographic map. Thus, the accuracy of data transfer between the calculated water-surface elevation and the plotted water-surface elevation was greatly improved over manual plotting techniques.

Starting water-surface elevations were developed based on the HEC-RAS slope/area calculation sub-routine.

Revision for May 16, 2013 Countywide FIS

The USACE's HEC-River Analysis System (HEC-RAS), Versions 3.1 – 4.1, were used to develop a one-dimensional steady flow hydraulic model of all streams in South River watershed and Brookhaven watershed (Tributary to Nancy Creek), up to the 100-acre drainage area limit. The HEC-RAS models were developed using the HEC-GeoRAS ArcMap interface.

DeKalb County's 2-foot interval topography map, or the 2010 Light Detection and Ranging (LiDAR) Terrain data were used to create a digital elevation model (DEM), which was used to extract cross sections and bridge/culvert sections in the studied watersheds. Cross sections were placed at critical hydraulic locations along the streams and near structures and extend beyond the maximum water surface elevation. The channel invert elevation of the cross sections was manually adjusted to correct the limitation of the DEM. To supplement the digital topographic data, field surveyed cross sections, dam, and road structure data were collected and incorporated in the hydraulic models.

The Manning's roughness coefficients were selected as referenced in the HEC-RAS Technical Reference Manual. The values were assigned based on the field survey photos and aerial imagery of the County. The contraction and expansion coefficients were used to model gradual contraction and expansion for all cross section. The entrance and exit loss coefficients, Manning's roughness coefficients, and weir coefficients for hydraulic structures were based on field survey photographs and sketches and used values recommended by the HEC-RAS User's Manual. Ineffective flow areas are coded in the studied models to account for areas adjacent to the floodplain which do not convey any flow. Ineffective flow areas are also coded upstream and downstream of hydraulic structures. Normal depth boundary conditions or known water-surface elevation boundary conditions were used in the studied watersheds.

Maximum water-surface elevations were computed for the existing 2-, 10-, 50-, 100-, and 500-year storm events. Floodway analyses were also performed for the existing condition detailed studied streams. The floodway is that portion of the available flow cross section that cannot be obstructed and cause an increase in the base flood water-surface elevations over a given amount. The floodway encroachments were set so that there is not an increase in the existing 100-year water-surface elevations of more than 1.0 feet at any cross section.

The channel and overbank "n" values for all the streams studied by detailed methods are shown in Table 7 "Manning's "n" Values." All revised data from the December 8, 2016, May 16, 2013, and May 7, 2001 FIS reports have been incorporated into the table.

TABLE 7 – MANNING'S "n" VALUES

Stream	Channel "n"	Overbank "n"
Barbashela Creek	0.020-0.100	0.017-0.100
Barbashela Creek Tributary A	0.018-0.100	0.018-0.100
Barbashela Creek Tributary B	0.018-0.100	0.045-0.100
Barbashela Creek Tributary C	0.045-0.090	0.018-0.100
Barbashela Creek Tributary D	0.030-0.100	0.010-0.100
Barbashela Creek Tributary D1	0.045-0.080	0.018-0.100
Barbashela Creek Tributary D2	0.045	0.018-0.100
Barbashela Creek Tributary E	0.030-0.045	0.018-0.100
Barbashela Creek Tributary E1	0.045-0.070	0.010-0.100
Barbashela Creek Tributary F	0.045-0.100	0.018-0.100
Barbashela Creek Tributary F1	0.045	0.018-0.100
Barbashela Creek Tributary G	0.045-0.100	0.018-0.100
Barbashela Creek Tributary H	0.030-0.045	0.018-0.100
Barbashela Creek Tributary H1	0.045	0.018-0.100
Barbashela Creek Tributary I	0.045	0.019-0.100
Barbashela Creek Tributary J	0.045	0.018-0.100
Blue Creek	0.018-0.048	0.030-0.110
Blue Creek Tributary 1	0.045	0.070-0.100
Blue Creek Tributary 2	0.030-0.045	0.060-0.110
Burnt Fork Creek	0.035-0.045	0.030-0.080
Camp Creek	0.045-0.100	0.030-0.120
Camp Creek Tributary A	0.040-0.100	0.030-0.100
Clarks Creek	0.045-0.115	0.045-0.150
Clarks Creek Tributary 1	0.045-0.115	0.045-0.115
Cobbs Creek	0.040-0.080	0.045-0.080
Cobbs Creek Tributary A	0.045	0.050-0.085
Cobbs Creek Tributary 1	0.045-0.080	0.045-0.080
Cobbs Creek Tributary 2	0.045	0.050-0.080
Cobbs Creek Tributary 3	0.045	0.040-0.080
Cobbs Creek Tributary 4	0.045	0.050-0.070
Cobbs Creek Tributary 5	0.045	0.050-0.080
Cobbs Creek Tributary 6	0.045	0.050-0.080
Cobbs Creek Tributary 7	0.045-0.080	0.050-0.080
Cobbs Creek Tributary 8	0.045	0.045-0.080
Conley Creek	0.040-0.120	0.035-0.120
Conley Creek Tributary 1	0.040-0.045	0.055-0.120
Conley Creek Tributary 2	0.040-0.050	0.060-0.120
Conley Creek Tributary 2A	0.040	0.060
Conley Creek Tributary 3	0.045-0.050	0.010-0.120
Conley Creek Tributary 3A	0.045-0.050	0.100-0.120
Conley Creek Tributary 4	0.040-0.120	0.040-0.120
Conley Creek Tributary 5	0.045	0.055-0.120
Conley Creek Tributary 5A	0.045	0.055-0.120
Conley Creek Tributary 6	0.043-0.050	0.065-0.120
Conley Creek Tributary 7	0.045-0.050	0.035-0.120

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel "n"	Overbank "n"
Corn Creek	0.045-0.050	0.045-0.150
Corn Creek Tributary 1	0.045-0.115	0.045-0.115
Corn Creek Tributary 2	0.045	0.050-0.115
Crooked Creek (South River)	0.045	0.055-0.090
Crooked Creek (South River) Tributary 1	0.045	0.045-0.080
Crooked Creek (South River) Tributary 2	0.045	0.055-0.080
Crooked Creek (South River) Tributary 3	0.045	0.055-0.080
Crooked Creek (South River) Tributary 4	0.045	0.065-0.080
Crooked Creek (South River) Tributary 5	0.045	0.065-0.080
Crooked Creek Tributary A	0.030-0.100	0.020-0.100
Crooked Creek Tributary A-1	0.030-0.100	0.020-0.110
Crooked Creek Tributary to Stone Mountain Creek	0.020-0.100	0.020-0.150
Doless Creek	0.050-0.120	0.013-0.120
Doolittle Creek	0.030-0.120	0.010-0.120
Doolittle Creek Branch A	0.050-0.080	0.010-0.120
Doolittle Creek East Branch B	0.050-0.120	0.050-0.120
Doolittle Creek Tributary A	0.035-0.120	0.050-0.120
Doolittle Creek Tributary B	0.050-0.080	0.005-0.120
Fowler Branch	0.045	0.045-0.080
Fowler Branch Tributary 1	0.045	0.050-0.100
Fowler Branch Tributary 2	0.045	0.050
Fowler Branch Tributary 3	0.045	0.050-0.080
Fowler Branch Tributary 4	0.013-0.045	0.013-0.080
Hardee Creek	0.050-0.055	0.050-0.100
Henderson Mill Creek	0.045	0.030-0.100
Honey Creek	0.013-0.050	0.020-0.120
Honey Creek Tributary A	0.030-0.050	0.030-0.120
Idle Creek	0.013-0.080	0.045-0.080
Indian Creek	0.045-0.080	0.018-0.110
Indian Creek Tributary A	0.045-0.070	0.018-0.080
Indian Creek Tributary B	0.045-0.055	0.018-0.100
Indian Creek Tributary C	0.045-0.050	0.018-0.100
Indian Creek Tributary D	0.050-0.060	0.018-0.110
Indian Creek Tributary D1	0.050	0.018-0.110
Indian Creek Tributary D2	0.045-0.050	0.018-0.100
Intrenchment Creek	0.042-0.048	0.018-0.100
Intrenchment Creek Tributary A	0.042-0.048	0.042-0.070
Intrenchment Creek Tributary 1	0.045	0.065-0.075
Intrenchment Creek Tributary 2	0.045-0.048	0.045-0.070
Intrenchment Creek Tributary 3	0.045	0.055-0.065
Intrenchment Creek Tributary 4	0.045-0.048	0.045-0.070
Johnson Creek	0.045-0.100	0.045-0.120
Little Stone Mountain Creek	0.030-0.110	0.030-0.110
Lullwater Creek	0.045	0.050-0.100

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel “n”	Overbank “n”
Nancy Creek	0.030-0.120	0.018-0.120
Nancy Creek Tributary A	0.040-0.050	0.018-0.120
Nancy Creek Tributary A Unnamed Tributary 1	0.050	0.018-0.120
Nancy Creek Tributary A Unnamed Tributary 1.2	0.050	0.018-0.100
Nancy Creek Tributary A Unnamed Tributary 2	0.050	0.018-0.080
Nancy Creek Tributary B	0.035-0.050	0.018-0.120
Nancy Creek Tributary C	0.040-0.050	0.080-0.100
Nancy Creek Tributary C-1	0.050	0.080
Nancy Creek Tributary C-2	0.050	0.080
Nancy Creek Tributary C-2.1	0.050	0.100
Nancy Creek Tributary C-3	0.050	0.080
Nancy Creek Tributary D	0.050	0.080
Nancy Creek Tributary No. 1	0.035-0.050	0.018-0.100
Nancy Creek Tributary No. 1.1	0.045-0.055	0.018-0.100
Nancy Creek Tributary No. 2	0.04-0.050	0.018-0.100
North Fork Nancy Creek	0.015-0.050	0.018-0.100
North Fork Peachtree Creek	0.030-0.045	0.030-0.120
North Fork Peachtree Creek Tributary A	0.045-0.070	0.030-0.100
North Fork Peachtree Creek Tributary A-5	0.024-0.045	0.050-0.070
North Fork Peachtree Creek Tributary A-6	0.045	0.030-0.090
North Fork Peachtree Creek Tributary B	0.030-0.080	0.030-0.120
North Fork Peachtree Creek Tributary B-1	0.045-0.060	0.030-0.100
North Fork Peachtree Creek Tributary B-1.1	0.045	0.030-0.120
North Fork Peachtree Creek Tributary B-1.2	0.03-0.090	0.030-0.080
North Fork Peachtree Creek Tributary B-2	0.045	0.030-0.080
North Fork Peachtree Creek Tributary C	0.045	0.030-0.100
North Fork Peachtree Creek Tributary D-1	0.030-0.09	0.030-0.100
North Fork Peachtree Creek Tributary D-2	0.030-0.045	0.030-0.100
North Fork Peachtree Creek Tributary D-3	0.045	0.030-0.090
North Fork Peachtree Creek Tributary No. 1	0.024-0.045	0.030-0.100
North Fork Peachtree Creek Tributary No. 1.1	0.024-0.090	0.030-0.090
North Fork Peachtree Creek Tributary No. 1.1.1	0.011-0.045	0.030-0.090
North Fork Peachtree Creek Tributary No. 1.1.2	0.045	0.030-0.070
North Fork Peachtree Creek Tributary No. 1.1.2.1	0.024	0.070
North Fork Peachtree Creek Tributary No. 1.2	0.024-0.045	0.030-0.070
North Fork Peachtree Creek Tributary No. 1.3	0.045	0.030-0.100
North Fork Peachtree Creek Tributary No. 2	0.045	0.030-0.090
North Fork Peachtree Creek Unnamed Tributary 1	0.045	0.030-0.080
North Fork Peachtree Creek Unnamed Tributary 4	0.045	0.030-0.080
North Fork Peachtree Creek Unnamed Tributary 11	0.045	0.030-0.090
North Fork Peachtree Creek Unnamed Tributary 11.2	0.015-0.045	0.030-0.090
Panthers Branch	0.045-0.120	0.045-0.120
Panthers Branch Tributary 1	0.030-0.045	0.060-0.120
Panthers Branch Tributary 2	0.045	0.060-0.120

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel “n”	Overbank “n
Panthers Branch Tributary 3	0.045	0.120
Peachtree Branch	0.045	0.030-0.100
Peavine Creek	0.035-0.045	0.050-0.120
Peavine Creek Lamont Tributary	0.02-0.045	0.050-0.120
Peavine Creek Tributary	0.03-0.045	0.040-0.120
Peavine Creek Upland Tributary	0.045	0.070-0.120
Perimeter Creek	0.013-0.045	0.030-0.120
Pine Mountain Creek	0.035-0.100	0.035-0.100
Plunkett Creek	0.030-0.050	0.060-0.120
Plunkett Creek Unnamed Tributary	0.030-0.050	0.030-0.120
Pole Bridge Creek	0.050-0.120	0.013-0.130
Pole Bridge Creek Tributary A	0.050-0.120	0.020-0.120
Pole Bridge Creek Tributary AA	0.050-0.080	0.050-0.120
Pole Bridge Creek Tributary AAA	0.050-0.120	0.080-0.120
Pole Bridge Creek Tributary B	0.050	0.013-0.120
Pole Bridge Creek Tributary BA	0.050	0.050-0.120
Pole Bridge Creek Tributary BAA	0.050	0.060-0.080
Pole Bridge Creek Tributary BB	0.050-0.120	0.030-0.120
Pole Bridge Creek Tributary BC	0.050-0.120	0.050-0.120
Pole Bridge Creek Tributary BD	0.050-0.120	0.018-0.120
Pole Bridge Creek Tributary C	0.050	0.120
Pole Bridge Creek Tributary D	0.050-0.120	0.050-0.120
Pole Bridge Creek Tributary E	0.050-0.120	0.050-0.120
Pole Bridge Creek Tributary F	0.050	0.050-0.120
Pole Bridge Creek Tributary FA	0.050	0.080-0.120
Pole Bridge Creek Tributary FB	0.050	0.080
Pole Bridge Creek Tributary G	0.050-0.120	0.050-0.120
Pole Bridge Creek Tributary H	0.050-0.120	0.013-0.120
Pole Bridge Creek Tributary HA	0.050	0.050-0.120
Pole Bridge Creek Tributary J	0.050-0.080	0.050-0.120
Pole Bridge Creek Tributary K	0.050-0.080	0.050-0.120
Pole Bridge Creek Tributary L	0.050	0.120
Pole Bridge Creek Tributary LA	0.050	0.120
Pole Bridge Creek Tributary M	0.080	0.080
Pole Bridge Creek Tributary N	0.050-0.120	0.050-0.120
Pole Bridge Creek Tributary O	0.050-0.080	0.050-0.080
Pole Bridge Creek Tributary P	0.050-0.120	0.013-0.120
Pole Bridge Creek Tributary Q	0.050-0.120	0.050-0.120
Shoal Creek	0.045-0.055	0.030-0.120
Shoal Creek Driftwood Tributary	0.013-0.045	0.050-0.080
Shoal Creek East Fork Middle Branch	0.045	0.050-0.120
Shoal Creek East Fork Middle Branch Tributary 1	0.045	0.050-0.120
Shoal Creek Kirk Tributary	0.045	0.035-0.120
Shoal Creek Tributary A	0.045	0.100-0.120
Shoal Creek Tributary 1	0.035-0.045	0.040-0.120

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel "n"	Overbank "n"
Shoal Creek Tributary 2	0.045	0.120
Shoal Creek Tributary 3	0.045	0.080
Shoal Creek Tributary 4	0.045	0.100
Shoal Creek Tributary 5	0.045	0.045-0.120
Shoal Creek Tributary 6	0.045	0.050-0.120
Shoal Creek Tributary 7	0.045	0.080-0.120
Shoal Creek Tributary 8	0.045	0.120
Shoal Creek Tributary 9	0.045	0.100-0.120
Shoal Creek West Tributary	0.013-0.050	0.080-0.100
Snapfinger Creek	0.045	0.013-0.110
Snapfinger Creek Tributary A	0.010-0.045	0.045-0.120
Snapfinger Creek Tributary A1	0.013-0.120	0.045-0.120
Snapfinger Creek Tributary B	0.045	0.045-0.120
Snapfinger Creek Tributary B1	0.045	0.045-0.120
Snapfinger Creek Tributary C	0.013-0.045	0.013-0.120
Snapfinger Creek Tributary C Split	0.010-0.045	0.045-0.070
Snapfinger Creek Tributary C1	0.045	0.030-0.120
Snapfinger Creek Tributary D	0.045	0.013-0.120
Snapfinger Creek Tributary E	0.045	0.060-0.120
Snapfinger Creek Tributary E1	0.045	0.070-0.080
Snapfinger Creek Tributary 1	0.010-0.045	0.060-0.120
Snapfinger Creek Tributary 2	0.045	0.080-0.120
Snapfinger Creek Tributary 3	0.010-0.045	0.030-0.120
Snapfinger Creek Tributary 4	0.045-0.100	0.045-0.120
Snapfinger Creek Tributary 5	0.045	0.045-0.120
Snapfinger Creek Tributary 6	0.018-0.045	0.045-0.120
Snapfinger Creek Tributary 7	0.013-0.045	0.045-0.120
Snapfinger Creek Tributary 8	0.045	0.045-0.120
Snapfinger Creek Tributary 9	0.010-0.045	0.045-0.120
Snapfinger Creek Tributary 9A	0.045	0.070-0.120
Snapfinger Creek Tributary 9B	0.013-0.045	0.045-0.120
Snapfinger Creek Tributary 10	0.045	0.120
Snapfinger Creek Tributary 11	0.045	0.080-0.120
Snapfinger Creek Tributary 12	0.010-0.045	0.045-0.120
Snapfinger Creek Tributary 13	0.045	0.070-0.120
Snapfinger Creek Tributary 14	0.045	0.030-0.120
Snapfinger Creek Tributary 15	0.045	0.030-0.120
Snapfinger Creek Tributary 16	0.045	0.060-0.100
Snapfinger Creek Tributary 17	0.010-0.045	0.050-0.120
South Fork Peachtree Creek	0.030-0.080	0.035-0.120
South Fork Peachtree Creek Tributary	0.045	0.060-0.080
South Fork Peachtree Creek Tributary A	0.045-0.050	0.050-0.080
South Fork Peachtree Creek Tributary B	0.040-0.050	0.050-0.080
South Fork Peachtree Creek Tributary C	0.040-0.045	0.050-0.060

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel "n"	Overbank "n"
South Fork Peachtree Creek Tributary Glendale Tributary	0.045	0.120
South Fork Peachtree Creek Tributary Willow Tributary	0.045	0.080
South Fork Peachtree Creek Unnamed Tributary 11	0.035-0.050	0.060-0.080
South Fork Peavine Creek	0.045	0.050-0.060
South River	0.030-0.115	0.045-0.150
South River Tributary A	0.013-0.095	0.045-0.115
South River Tributary 1	0.045-0.115	0.045-0.120
South River Tributary 1A	0.045-0.045	0.050-0.120
South River Tributary 1AA	0.045-0.045	0.035-0.115
South River Tributary 2	0.013-0.045	0.045-0.115
South River Tributary 2A	0.045-0.100	0.045-0.115
South River Tributary 2B	0.045-0.045	0.050-0.115
South River Tributary 3	0.045-0.115	0.050-0.115
South River Tributary 4	0.045-0.115	0.045-0.115
South River Tributary 5	0.045-0.045	0.050-0.115
South River Tributary 5A	0.045-0.050	0.045-0.120
South River Tributary 6	0.045-0.085	0.050-0.120
South River Tributary 7	0.045-0.045	0.050-0.115
South River Tributary 8	0.0435-0.115	0.035-0.120
South River Tributary 9	0.045-0.115	0.050-0.115
South River Tributary 10	0.045-0.045	0.045-0.115
South River Tributary 11	0.045-0.085	0.045-0.115
South River Tributary 12	0.013-0.115	0.045-0.120
South River Tributary 12A	0.045-0.115	0.050-0.115
South River Tributary 14	0.045-0.085	0.045-0.115
Stephenson Creek	0.045	0.055-0.100
Stephenson Creek Tributary 1	0.045	0.055-0.080
Stephenson Creek Tributary 2	0.045	0.055-0.080
Stone Mountain Creek	0.030-0.450	0.045-0.120
Stone Mountain Creek Tributary A	0.030-0.100	0.055-0.110
Stone Mountain Creek Unnamed Tributary 6	0.030-0.110	0.080-0.110
Sugar Creek	0.045	0.030-0.100
Sugar Creek East Branch A	0.055	0.055-0.120
Sugar Creek Tributary A	0.030-0.080	0.030-0.120
Sugar Creek Tributary A1	0.055	0.055-0.080
Sugar Creek Tributary C	0.055	0.080-0.120
Sugar Creek Tributary D	0.055	0.055-0.080
Sugar Creek Tributary E	0.050	0.030-0.080
Sugar Creek Tributary F	0.055	0.030-0.080
Sugar Creek Tributary G	0.055	0.055-0.120
Sugar Creek Tributary H	0.050-0.080	0.030-0.080
Sugar Creek Tributary I	0.055	0.080

TABLE 7 – MANNING'S "n" VALUES – CONTINUED

Stream	Channel “n”	Overbank “n”
Sugar Creek Tributary J	0.055	0.080
Sugar Creek Tributary J1	0.055	0.060
Swift Creek	0.050-0.100	0.040-0.100
Swift Creek Tributary A	0.050-0.050	0.050-0.100
Tom George Creek	0.030-0.080	0.060-0.100
Unnamed Tributary to Nancy Creek	0.040-0.055	0.090-0.120
Unnamed Tributary 2 to Unnamed Tributary to Nancy Creek	0.055	0.100
Warren Creek	0.045-0.070	0.030-0.100
Yellow River	0.035-0.060	0.055-0.120

3.3 Vertical Datum

All FISs 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 in use for newly created or revised FISs and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the finalization of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are being prepared using NAVD88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. Structure and ground elevations in the community must, therefore, be referenced to NAVD88. It is important to note that adjacent communities may be referenced to NGVD29. This may result in differences in base flood elevations across the corporate limits between the communities. The average conversion factor that was used to convert the data in this FIS report to NAVD88 was calculated using the National Geodetic Survey’s VERTCON online utility (U.S. Department of Agriculture, 1973). The data points used to determine the conversion are listed in Table 8 “Vertical Datum Conversion”.

Table 8 – Vertical Datum Conversion

Quad Name	Corner	Latitude	Longitude	Conversion from NGVD29 to NAVD88
Sandy Springs	SE	33.875	-84.375	0.230 feet
Chamblee	SE	33.875	-84.250	0.249 feet
Northwest Atlanta	SE	33.750	-84.375	0.269 feet
Northeast Atlanta	SE	33.750	-84.250	0.230 feet
Stone Mountain	SE	33.750	-84.125	0.141 feet
Snellville	SE	33.750	-84.000	0.082 feet
Southwest Atlanta	SE	33.625	-84.375	0.200 feet
Southeast Atlanta	SE	33.625	-84.250	0.174 feet
Redan	SE	33.625	-84.125	0.112 feet
			AVERAGE	+0.187 feet

For more information on NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988* (FEMA, June 1992), or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Silver Spring, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS provides 100-year floodplain data, which may include a combination of the following: 10-, 50-, 100-, and 500-year flood elevations; delineations of the 100-year and 500-year floodplains; and 100-year floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent-annual-chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent-annual-chance (500-year) flood is employed to indicate additional areas of flood risk in the county. For the streams studied in detail, the 100- and 500-year floodplains have been delineated using the flood elevations determined at each cross section. For this FIS revision, the floodplain boundaries of the detailed studied streams listed in Table 3A were delineated on the latest DeKalb County 2010 LiDAR Terrain data using ArcGIS floodplain delineation toolset. For the other detailed studies (excluded on Table 3A), a datum conversion of 0.2 foot has been added to the flood elevations determined at each cross section and re-delineated on the latest DeKalb County 2010 LiDAR Terrain data using the ArcGIS floodplain delineation toolset.

For streams studied by approximate methods, the 100-year floodplain boundaries were delineated on the latest DeKalb County 2010 LiDAR Terrain data. Some portion of the approximate 100-year floodplain boundary was also taken from DeKalb County estimated approximate floodplain delineation.

The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE); and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 100-year floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 100-year floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas that must be kept free of encroachment so that the 100-year flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this study were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 10) located in Volume 2. The computed floodway is shown on the FIRM (Exhibit 2). In cases where the floodway and 100-year floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 10, located in Volume 2, was taken from the detailed studied streams without considering the backwater effects from the receiving stream.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 10 “Floodway Data” located in Volume 2. To reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in the areas outside the floodway.

Burnt Fork Creek, Nancy Creek Tributary D, North Fork Nancy Creek, and portions Nancy Creek Tributary B and Nancy Creek Tributary C do not have floodways.

The area between the floodway and 100-year floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water surface elevation of the 100-year 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 2.

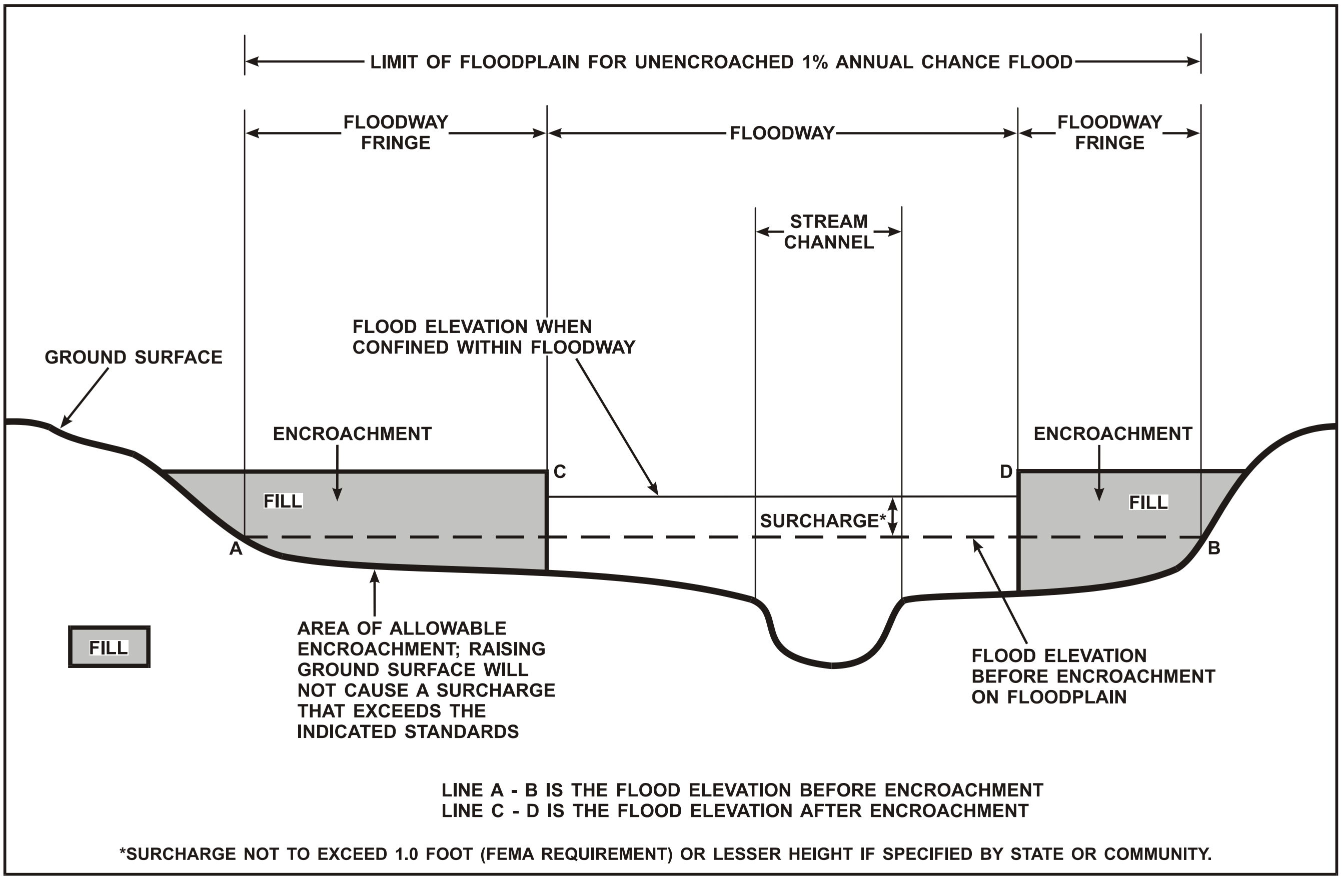

Figure 2 – Floodway Schematic

5.0 INSURANCE APPLICATIONS

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

Zone A

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

Zone AE

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

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone

Zone X

Zone X is the flood insurance risk zone that corresponds to areas outside the 500-year floodplain, areas within the existing-conditions 500-year floodplain, areas between the existing-conditions and future-conditions 100-year floodplain boundaries, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No BFEs or base flood depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

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

For flood insurance applications, the map designates flood insurance risk zones as described in Section 5.0 and, in the existing-conditions 100-year floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use the zones and BFEs for existing-conditions in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by cross-hatching, tints, screens, and symbols, the 100-year and 500-year floodplains, floodways, and the locations of selected cross sections used in the hydraulic analyses and floodway computations.

The countywide FIRM presents flooding information for the entire geographic area of DeKalb County. Previously, FIRMs were prepared for each incorporated community and the unincorporated areas of the County identified as flood-prone. This countywide FIRM also includes flood-hazard information that was presented separately on Flood Boundary and Floodway Maps, where applicable. Historical data relating to the maps prepared for each community are presented in Table 9, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Atlanta, City of	October 14, 1971	None	October 14, 1971	July 1, 1974 November 12, 1976 January 3, 1985 March 4, 1987
Avondale Estates, City of[1]	May 7, 2001	None	May 7, 2001	
Brookhaven, City of[2]	June 2, 1970	April 15, 1977	May 15, 1980	July 5, 1983 July 17, 1986 September 2, 1988 December 5, 1989 June 15, 1994
Chamblee, City of	June 7, 1974	January 23, 1976	September 15, 1977	None
Clarkston, City of	February 21, 1975	None	June 15, 1981	April 17, 1984
Decatur, City of	June 16, 1970	None	June 16, 1970	July 1, 1974 November 28, 1975 August 3, 1992
DeKalb County (Unincorporated Areas)	June 2, 1970	April 15, 1977	May 15, 1980	July 5, 1983 July 17, 1986 September 2, 1988 December 5, 1989 June 15, 1994
Doraville, City of	June 7, 1974	January 23, 1976	September 1, 1977	August 5, 1985
Dunwoody, City of[2]	June 2, 1970	April 15, 1977	May 15, 1980	July 5, 1983 July 17, 1986 September 2, 1988 December 5, 1989 June 15, 1994
Lithonia, City of[1]	May 7, 2001	None	May 7, 2001	
Pine Lake, City of	April 12, 1974	April 16, 1976	June 15, 1981	None
Stone Mountain, City of	April 12, 1974	July 9, 1976	August 1, 1986	None
Stonecrest, City of[2]	June 2, 1970	April 15, 1977	May 15, 1980	July 5, 1983 July 17, 1986 September 2, 1988 December 5, 1989 June 15, 1994
Tucker, City of[2]	June 2, 1970	April 15, 1977	May 15, 1980	July 5, 1983 July 17, 1986 September 2, 1988 December 5, 1989 June 15, 1994

[1]This community did not have a FIRM prior to the initial FIRM for DeKalb County (Unincorporated Areas)

[2]This community's dates are taken from DeKalb County

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

DEKALB COUNTY, GA AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

This report either supersedes or is compatible with all previous studies on streams studied in this report and should be considered authoritative for purposes of the NFIP.

This is a multi-volume FIS. Each volume may be revised separately, in which case it supersedes the previously printed volume. Users should refer to the Table of Contents in Volume 1 for the current effective date of each volume; volumes bearing these dates contain the most up-to-date flood hazard data.

8.0 LOCATION OF DATA

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

9.0 BIBLIOGRAPHY AND REFERENCES

Atlanta Regional Commission and Georgia Department of Natural Resources-Environmental Protection Division. (2003). Georgia Stormwater Management Manual. Atlanta, Georgia.

Chow, Ven Te. (1959). Open Channel Hydraulics. New York, New York.

Circular 544. (1986). Hydrology of Urban Land Planning - A Guidebook on the Hydrologic Effects of Urban Land Use. L. B. Leopold (author).

City of Atlanta, Department of Environmental and Streets. (December 1981). Atlanta Topographic Maps, Scale 1:2,400, Contour Interval 2 Feet. CH2M Hill. Atlanta, Georgia.

City of Atlanta, Public Works Department. (March 1968). Atlanta Topographic Maps, Scale 1:2,400, Contour Interval 2 Feet. Black, Crow, and Eidness, Inc. Atlanta, Georgia.

Federal Emergency Management Agency. (May 7, 2001). Flood Insurance Study, DeKalb County, Georgia and Incorporated Areas. Washington, D.C.

Federal Emergency Management Agency. (July 20, 1998). Flood Insurance Study, Gwinnett County, Georgia. Washington, D. C.

Federal Emergency Management Agency. (June 22, 1998). Flood Insurance Study, Fulton County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (June 1998). Flood Insurance Study, City of Atlanta, Fulton and DeKalb Counties, Georgia. Washington, D.C.

Federal Emergency Management Agency. (January 7, 1998). Flood Insurance Study, Rockdale County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (June 15, 1994). Flood Insurance Study, DeKalb County, Georgia (Unincorporated Areas.). Washington, D.C.

Federal Emergency Management Agency. (August 3, 1992). Flood Insurance Study, City of Decatur, DeKalb County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (November 6, 1991). Flood Insurance Study, Clayton County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (December 5, 1989). Flood Insurance Study, DeKalb County, Georgia (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (August 1, 1986). Flood Insurance Rate Map, City of Stone Mountain, DeKalb County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (August 5, 1985). Flood Insurance Study, City of Doraville, DeKalb County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (April 17, 1984). Flood Insurance Study, City of Clarkston, DeKalb County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (July 5, 1983). Flood Insurance Study, DeKalb County, Georgia (Unincorporated Areas). Washington, D.C.

Federal Emergency Management Agency. (May 2, 1983). Flood Insurance Study, Henry County, Georgia. Washington, D.C.

Federal Emergency Management Agency. (FIS, December 15, 1980; FIRM, June 15, 1981). Flood Insurance Study, City of Pine Lake, DeKalb County, Georgia. Washington, D.C.

National Oceanic and Atmospheric Administration. (1978). Local Climatological Data for Atlanta, Georgia.

Open-File Report. (1976). Computer Applications for Step-Backwater and Floodway Analyses. J. O. Shearman (author).

Open-File Report. (in review). Preliminary Flood-Frequency Relations for Urban Streams, Metropolitan Atlanta, Georgia. H. G. Golden (author).

Open-File Report. Flood-Frequency Analysis for Small Natural Streams in Georgia. H. G. Golden and M. Price (authors).

Soil Conservation Service. (June 1979). Engineering Field Manual for Conservation Practices. Washington, D.C.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. Hydrologic Modeling System, Versions 3.1-3.5. Davis, California.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. HEC-GeoRAS version 4, (2005) GIS Tools for Support of HEC-RAS using ArcGIS. Davis, California.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. River Analysis System, Versions 3.1.-4.1. Davis, California.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. (August 1991). HEC-2 Water-Surface Profiles.

U.S. Army Corps of Engineers, Hydrologic Engineering Center. (March 1987). HEC-l Flood Hydrograph Package Computer Program 723-X6-L2010. Davis, California.

U.S. Army Corps of Engineers, Savannah District. (March 1975). Flood Plain Information, Sugar Creek, Metropolitan Atlanta, Georgia.

U.S. Army Corps of Engineers, Savannah District. (December 1975). Special Flood Hazard Information, DeKalb County, Georgia, Minor Tributaries.

U.S. Army Corps of Engineers, Mobile District. (October 1971). Special Flood Hazard Information Report, Atlanta, Georgia, Including Peachtree Creek Basin in DeKalb County.

U.S. Army Corps of Engineers, Mobile District. (June 1970). Flood Plain Information, Utoy Creek, North and South Utoy Creeks, Metropolitan Atlanta, Georgia.

U.S. Army Corps of Engineers, Savannah District. (June 1969). Flood Plain Information, Sweetwater, Jackson, Camp, Beaver Ruin and Bromolow Creeks, Metropolitan Atlanta, Georgia.

U.S. Army Corps of Engineers, Savannah District. (July 1968). Flood Plain Information, Conley Creek and South River, Metropolitan Atlanta, Georgia.

U.S. Army Corps of Engineers, Mobile District. (June 1968). Flood Plain Information, Metropolitan Atlanta, Georgia, Proctor Creek.

U.S. Army Corps of Engineers, Savannah District. (April 1968). Flood Plain Information, Intrenchment, Sugar, Doolittle, and Doless Creeks, DeKalb County, Georgia.

U.S. Army Corps of Engineers, Savannah District. (May 1967). Flood Plain Information, Metropolitan Atlanta, Georgia, Headwaters South River Report.

U.S. Census Bureau. (2010). 2010 U.S. Census: DeKalb County, Georgia. (Retrieved on June 13, 2011). Source: http://factfinder.census.gov.

U.S. Department of Agriculture, Soil Conservation Service. (July 1982). Soil-Survey of DeKalb County, Georgia. Washington, D.C.

U.S. Department of Agriculture, Soil Conservation Service. (Revised April 1973). A Method for Estimating Volume and Rate of Runoff in Small Watersheds, Technical Paper 149.

U.S. Department of Agriculture. (August 1972). "Soil Conservation Service, National Engineering Handbook," Section 4 (NEH-4), Hydrology.

U.S. Department of Agriculture, Soil Conservation Service. (December 1958). Soil Survey-Fulton County, Georgia.

U.S. Department of Commerce, National Weather Service. (January 1963). Technical Paper No. 40, Rainfall Frequency Atlas of the United States. Washington, D.C.

U.S. Department of Commerce, National Weather Service. Monthly Averages/Totals for Atlanta Area, Georgia. (Retrieved on June 13, 2011). Source: http://www.weather.gov/climate.

U.S. Department of Commerce, Weather Bureau. (1961). "Rainfall Frequency Atlas of the United States for Durations from 30 Minutes to 24 Hours and Return Periods from 1 to 100 Years," Technical Paper No. 40. Hershfield, P. M. (author). Washington, D.C.

U.S. Department of Housing and Urban Development, Federal Insurance Administration. (March 1977). Flood Insurance Study, City of Chamblee, DeKalb County, Georgia. Washington, D.C.

U.S. Department of the Interior, Geological Survey. (1983). Water Resources Investigations Report No. 83-4203, Flood Frequency Relations for Urban Streams in Metropolitan Atlanta. Doraville, Georgia.

U.S. Department of the Interior, Geological Survey. (October 1979). Water Resources Investigations 78-137, Floods in Georgia, Magnitude and Frequency. McGlone Price. Doraville, Georgia.

U.S. Department of the Interior, Geological Survey. (August 1977). Water Resources Investigations 77-57, Preliminary Flood Frequency Relations for Urban Streams Metropolitan Atlanta, Georgia. Harold G. Golden (author).

U.S. Department of the Interior, Geological Survey, Water Resources Division. (1974). Water Resources Investigations 23-74, An Approach to Estimating Flood Frequency for Urban Areas in Oklahoma. V. B. Sauer (author).

U.S. Department of the Interior, Geological Survey. (1970). Water Supply Paper 2001-C, Effects of Urban Development on Floods in Northern Virginia. D. G. Anderson (author).

U.S. Department of the Interior, Geological Survey. (1968). Water-Supply Paper 1678, Magnitude and Frequency of Floods in the United States, Part 5, Hudson Bay and Upper Mississippi River Basins. James L. Patterson and Charles R. Gamble (authors). Washington, D.C.

U.S. Department of the Interior, Geological Survey. (1967). Water Supply Paper 1849, Roughness Characteristics of Natural Channels. Harry H. Bames, Jr. (author). Washington, D.C.

U.S. Department of the Interior, Geological Survey. (Northeast Atlanta, Georgia, 1954, photorevised 1968 and 1973; Southeast Atlanta, Georgia, 1954, photorevised 1968 and 1973; Chamblee, Georgia, 1954, photorevised 1968 and 1973). 7.5-Minute Series Topographic Maps, Scale 1:24,000, Contour Interval 10 Feet.

10.0 REVISIONS DESCRIPTIONS

This section has been added to provide information regarding significant revisions made since the original FIS report and FIRM were printed. Future revisions may be made that do not result in the republishing of the FIS report. All users are advised to contact the Community Map Repository to obtain the most up-to-date flood hazard data.

10.1 First Revision (Revised December 8, 2016)

a. Acknowledgements

The hydrologic and hydraulic analyses for this restudy were performed by Dewberry Consultants, LLC. Local detailed studies were also leveraged and updated. The analyses covered the Upper Ocmulgee Watershed portion of DeKalb County. This work was completed under contract number EMA-2011-CA-5144 on October 2013.

Base map information shown on this FIRM was provided in digital format by DeKalb County aerial photography produced at a scale of 1:1200 from photography dated 2010 or later.

b. Coordination

A Discovery meeting was held with representatives from FEMA, the community, and the study contractor to explain the nature and purpose of the study area. An initial Consultation Coordination Officer's (CCO) meeting was also held to explain the nature and purpose of the FIS, and to identify the streams to be studied or restudied. A final CCO meeting was held with FEMA, the community, and the study contractor to review the results of the study.

The Discovery meeting was held on March 5, 2012 and attended by local officials, FEMA and Georgia DNR. The initial CCO meeting was held on February 13, 2013 and the final CCO meeting was held on March 23, 2015.

c. Scope

This revision incorporates revised analyses and mapping for Johnson Creek, Stone Mountain Creek, Yellow River and their respective tributaries. Local detailed studies were also leveraged and updated.

At the time of this revision, no Letters of Map Revision (LOMRs) were incorporated for the revised panels.

As part of this revision, updated analyses were included for the following sources:

Stream	Limits of Revised Study
Camp Creek	From county boundary to approximately 3500 feet downstream of Mountain Industrial Boulevard.
Camp Creek Tributary A	From the confluence with Camp Creek to approximately 388 feet downstream of Leeshire Road.
Crooked Creek Tributary A	From the confluence with Crooked Creek Tributary to Stone Mountain Creek to approximately 27 feet downstream of Shadow Rock Drive.
Crooked Creek Tributary A-1	From the confluence with Crooked Creek Tributary A to approximately 1600 feet upstream of Shadow Rock Drive.
Crooked Creek Tributary to Stone Mountain Creek	From the confluence with Stone Mountain Creek to a dam downstream of Longbow Drive.
Johnson Creek	From the confluence with Yellow River to approximately 2500 feet upstream of Johnson Creek Drive.
Pine Mountain Creek	From the confluence with Tom George Creek to approximately 1267 feet upstream of Turner Hill Road.
Little Stone Mountain Creek	From the confluence with Stone Mountain Creek to approximately 113 feet downstream of Skytop Drive.
Stone Mountain Creek	From the confluence with Yellow River to approximately 328 feet upstream of confluence with Stone Mountain Creek Unnamed Tributary 21.

Stream	Limits of Revised Study
Stone Mountain Creek Tributary A	From the confluence with Stone Mountain Creek to approximately 1207 feet upstream of Deshon Road.
Stone Mountain Creek Unnamed Tributary 6	From the confluence with Stone Mountain Creek to approximately 947 feet upstream of Stonewall Jackson Drive.
Swift Creek	From the confluence with Yellow River to approximately 2875 feet upstream of Regal Heights Drive.
Swift Creek Tributary A	From the confluence with Swift Creek to approximately 30 feet upstream of Rogers Lake Road.
Tom George Creek	From the DeKalb County Boundary to the confluence with Pine Mountain Creek.
Yellow River	From the DeKalb County Boundary to Rockbridge Road/ DeKalb County Boundary.

d. Hydrologic and Hydraulic Analyses

New hydrologic and hydraulic analyses were prepared for Camp Creek, Camp Creek Tributary A, Crooked Creek Tributary to Stone Mountain Creek, Crooked Creek Tributary A, Crooked Creek Tributary A-1, Pine Mountain Creek, Johnson Creek, Little Stone Mountain Creek, Stone Mountain Creek, Stone Mountain Creek Tributary A, Swift Creek, Swift Creek Tributary A, Swift Creek Unnamed Tributary 3, Tom George Creek and Yellow River. The detail hydrology and hydraulics were performed for 20-, 10-, 4-, 2-, 1-, 0.2-percent-annual-chance flood events. The hydrology and hydraulics parameters were based on DeKalb County's 2-foot interval topography map, or the 2010 Light Detection and Ranging (LiDAR) Terrain data.

The Hydrologic Engineering Center (HEC) computer software HEC-HMS (version 3.5) was used to model rainfall-runoff for the new detailed study watersheds except Yellow River, which was based on gage analysis.

The NRCS unit hydrograph transform method was used for the studies. The time of concentration for each sub-basin was calculated following the methodology described by the NRCS Technical Release 55 (TR-55), June 1986. The longest flow path for each sub-basin was delineated and manually sub-divided to represent sheet, shallow concentrated and channel flow to calculate the total time of concentration and lag time, applying the appropriate equations and parameters per the TR-55 guidelines.

The NRCS Curve Number (CN) methodology was selected to estimate the losses from a precipitation event occurring over the study stream watersheds. Composite curve numbers for each sub-basin were calculated based on the area computed for each land use in each soil type. Rainfall losses were estimated based on soil type and land use land cover properties for the watersheds.

Frequency storm method was selected to model the precipitation over all the streams listed above except the Yellow River. The 24-hour rainfall depths were taken from the NOAA Atlas 14 Volume 9; Version 2 (NOAA, 2013).

For Yellow River, gage analyses were performed using the U.S. G. S. Annual Peak Flow Frequency Analysis program (PKFQWin Ver. 5.2). Gage flow transfer from one gage to another was done to increase the confidence of the result obtained from PKFQwin analysis.

The Hydrologic Engineering Center (HEC) computer software HEC-RAS (version 4.1.0) was used to analyze and determine water surface elevations for the 20-, 10-, 4-, 2-, 1-, 0.2-percent-annual-chance (5, 10, 25, 50, 100, 500-yr, respectively) flood events and floodways for the study streams.

DeKalb County's 2-foot interval topography map, or the 2010 (LiDAR) Terrain data were used to create a digital elevation model (DEM), which was used to extract cross sections and bridge/culvert sections in the studied watersheds. Cross sections were placed at critical hydraulic locations along the streams and near structures and extend beyond the maximum water surface elevation. The channel invert elevation of the cross sections was adjusted to correct the limitation of the DEM. To supplement the digital topographic data, field surveyed cross sections, dam, and road structure data were collected and incorporated in the hydraulic models.

The Manning's roughness coefficients were selected as referenced in the HEC-RAS Technical Reference Manual. The values were assigned based on the field survey photos and aerial imagery of the County. The contraction and expansion coefficients were used to model gradual contraction and expansion for all cross section. The entrance and exit loss coefficients, Manning's roughness coefficients, and weir coefficients for hydraulic structures were based on field survey photographs and sketches and used values recommended by the HEC-RAS User's Manual. Ineffective flow areas are coded in the studied models to account for areas adjacent to the floodplain which do not convey any flow. Ineffective flow areas are also coded upstream and downstream of hydraulic structures. Normal depth boundary conditions or known water-surface elevation boundary conditions were used in the studied watersheds.

Floodway analyses were also performed for the existing condition detailed studied streams. The floodway is that portion of the available flow cross section that cannot be obstructed and cause an increase in the base flood water-surface elevations over a given amount. The floodway encroachments were set so that there is not an increase in the existing 100-year water-surface elevations of more than 1.0 feet at any cross section.

e. Other Studies

Revisions for Rockdale County and Walton County were in progress as of the date of this revision. The purpose of the revisions was to update studies identified under the FY12 Risk MAP project.

f. Bibliography and References

National Oceanic and Atmospheric Administration. (2013). National Weather Service Atlas 14 Volume 9, Version 2.

Photo Science. (2010). DeKalb County LiDAR.

U.S. Army Corps of Engineers, Hydraulic Engineering Center. (2010). HEC-RAS River Analysis System, Version 4.1.0. Davis, California.

g. Considerations

Community boundaries were updated to reflect the newly annexed City of Brookhaven. Although the City of Brookhaven is not impacted by this revision, the FIS and map index have been updated to reflect the new community.

This revision to the DeKalb countywide FIS incorporates new analysis and mapping information for FIRM panels revised on December 8, 2016. This section presents important considerations for using the information contained in this FIS Report and in the

FIRM panels updated by this revision. These considerations include changes in format and content. Figures 3 and 4 present information that applies to using the updated FIRM panels with the FIS Report.

10.2 Second Revision (Revised August 15, 2019)

a. Acknowledgements

The hydrologic and hydraulic analyses for this restudy were performed by Dewberry Consultants, LLC. The analyses covered the Upper Chattahoochee Watershed portion of DeKalb County. This work was completed in 2015 under contract number 12-902460 for DeKalb Floodplain Mapping 2012 with DeKalb County.

Base map information shown on this FIRM was provided in digital format by DeKalb County aerial photography produced at a scale of 1:1200 from photography dated 2010 or later.

b. Coordination

A local scoping meeting and several status update meetings were held with community floodplain administrators and the county's mapping contractor to explain the nature and purpose of the study area. An initial Consultation Coordination Officer's (CCO) meeting was not held for these studies since they were locally funded. A final CCO meeting was held with FEMA, the community, and the study contractor to review the results of the study.

The final CCO meeting was held on December 6, 2017 and attended by local officials and local mapping contractors.

c. Scope

This revision incorporates revised analyses and mapping for local detailed studies streams within Nancy Creek Watershed, North Fork Peachtree Creek Watershed, South Fork Peachtree Creek Watershed and Peavine Creek Watershed.

At the time of this revision, no Letters of Map Revision (LOMRs) were incorporated for the revised panels.

As part of this revision, updated analyses were included for the following sources:

Stream	Limits of Revised Study
Burnt Fork Creek	From the confluence with South Fork Peachtree Creek to approximately 300 feet downstream of Hylaea Road
Henderson Mill Creek	From the confluence with Peachtree Branch to approximately 80 feet downstream of Winding Woods Drive
Lullwater Creek	From the confluence with South Fork Peavine Creek to approximately 90 feet downstream of Ponce De Leon Avenue
Nancy Creek	From DeKalb/Fulton County Boundary to downstream face of Scott Candler Reservoir
Nancy Creek Tributary A	From the confluence with Nancy Creek to approximately 140 feet downstream of Leeds Way
Nancy Creek Tributary A Unnamed Tributary 1	From the confluence with Nancy Creek Tributary A to downstream face of Womack Road
Nancy Creek Tributary A Unnamed Tributary 1.2	From the confluence with Nancy Creek Tributary A Unnamed Tributary 1 to approximately 780 feet upstream of Northbrooke Circle
Nancy Creek Tributary A Unnamed Tributary 2	From the confluence with Nancy Creek Tributary A to approximately 630 feet upstream of Cambridge Drive
Nancy Creek Tributary B	From the confluence with Nancy Creek to approximately 760 feet downstream of Peachtree Road

Stream	Limits of Revised Study
Nancy Creek Tributary C	From the confluence with Nancy Creek to approximately 230 feet downstream of Peachtree Industrial Boulevard
Nancy Creek Tributary C-1	From the confluence with Nancy Creek Tributary C to approximately 570 feet downstream of Harts Mill Road
Nancy Creek Tributary C-2	From the confluence with Nancy Creek Tributary C to approximately 300 feet downstream of Durden Drive
Nancy Creek Tributary C-2.1	From the confluence with Nancy Creek Tributary C-2 to approximately 490 feet upstream of confluence with Nancy Creek Tributary C-2
Nancy Creek Tributary C-3	From the confluence with Nancy Creek Tributary C to downstream face of Hamlin Circle
Nancy Creek Tributary D	From DeKalb/Fulton County Boundary to Silver Lake Dam.
Nancy Creek Tributary No. 1	From the confluence with Nancy Creek to approximately 815 feet upstream of Woodwin Court
Nancy Creek Tributary No. 1.1	From the confluence with Nancy Creek Tributary No. 1 to downstream face of Harber Valley Drive
Nancy Creek Tributary No. 2	From the confluence with Nancy Creek to downstream face of Winters Chapel Road

Stream	Limits of Revised Study
North Fork Nancy Creek	From the confluence with Nancy Creek to approximately 1,000 feet upstream of Valley View Road
North Fork Peachtree Creek	From DeKalb/Fulton County Boundary to DeKalb/Gwinnett County Boundary
North Fork Peachtree Creek Tributary A	From the confluence with North Fork Peachtree Creek to downstream face of Hardee Avenue
North Fork Peachtree Creek Tributary A-5	From the confluence with North Fork Peachtree Creek Tributary A to approximately 150 feet downstream of Parkridge Crescent
North Fork Peachtree Creek Tributary A-6	From the confluence with North Fork Peachtree Creek Tributary A to approximately 1,230 feet upstream of Hickory Road
North Fork Peachtree Creek Tributary B	From the confluence with North Fork Peachtree Creek to downstream face of Chamblee Dunwoody Road
North Fork Peachtree Creek Tributary B-1	From Chamblee Tucker Road to approximately 220 feet upstream of Cataline Drive
North Fork Peachtree Creek Tributary B-1.1	From the confluence with North Fork Peachtree Creek Tributary B-1 to approximately 200 feet upstream of Burk Drive
North Fork Peachtree Creek Tributary B-1.2	From the confluence with North Fork Peachtree Creek Tributary B-1 to approximately 50 feet downstream of Chamblee Dunwoody Road

Stream	Limits of Revised Study
North Fork Peachtree Creek Tributary B-2	From the confluence with North Fork Peachtree Creek Tributary B to approximately 330 feet downstream of Chamblee Dunwoody Road
North Fork Peachtree Creek Tributary C	From the confluence with North Fork Peachtree Creek to downstream face of Lynnray Drive
North Fork Peachtree Creek Tributary D-1	From the confluence with North Fork Peachtree Creek to approximately 220 feet downstream of Green Oaks Circle
North Fork Peachtree Creek Tributary D-2	From the confluence with North Fork Peachtree Creek Tributary D-1 to approximately 530 feet downstream of Briarlake Road
North Fork Peachtree Creek Tributary D-3	From the confluence with North Fork Peachtree Creek Tributary D-1 to approximately 250 feet upstream of Chesterfield Drive
North Fork Peachtree Creek Tributary No. 1	From the confluence with North Fork Peachtree Creek to approximately 50 downstream of Jess Norman Way
North Fork Peachtree Creek Tributary No. 1.1	From the confluence with North Fork Peachtree Creek Tributary 1 to downstream face of Raymond Drive
North Fork Peachtree Creek Tributary No. 1.1.1	From the confluence with North Fork Peachtree Creek Tributary 1.1 to approximately 890 feet upstream of Raymond Drive
North Fork Peachtree Creek Tributary No. 1.1.2	From the confluence with North Fork Peachtree Creek Tributary 1.1 to approximately 180 feet downstream of Raymond Drive

Stream	Limits of Revised Study
North Fork Peachtree Creek Tributary No. 1.1.2.1	From the confluence with North Fork Peachtree Creek Tributary 1.1.2 to approximately 50 feet downstream of Raymond Drive
North Fork Peachtree Creek Tributary No. 1.2	From the confluence with North Fork Peachtree Creek Tributary 1 to approximately 130 feet downstream of New Peachtree Road
North Fork Peachtree Creek Tributary No. 1.3	From the confluence with North Fork Peachtree Creek Tributary 1 to approximately 910 feet downstream of Interstate 285
North Fork Peachtree Creek Tributary No. 2	From the confluence with North Fork Peachtree Creek to downstream face of Windsor Oak Drive
North Fork Peachtree Creek Unnamed Tributary No. 1	From DeKalb/Fulton County Boundary to downstream face of Sheridan Road
North Fork Peachtree Creek Unnamed Tributary No. 4	From the confluence with North Fork Peachtree Creek to approximately 620 feet downstream of Briarcliff Road
North Fork Peachtree Creek Unnamed Tributary No. 11	From the confluence with North Fork Peachtree Creek to approximately 60 feet downstream of Pin Oak Circle
North Fork Peachtree Creek Unnamed Tributary No. 11.2	From the confluence with North Fork Peachtree Creek Tributary 11 to approximately 50 feet downstream of Oakcliff Road
Peachtree Branch	From the confluence with North Fork Peachtree Creek to approximately 60 feet downstream of Briarglen Drive

Stream	Limits of Revised Study
Peavine Creek	From the confluence with South Fork Peachtree Creek to approximately 40 feet downstream of Parkwood Center
Peavine Creek Lamont Tributary	From the confluence with Peavine Creek Tributary to approximately 170 feet downstream of Commerce Drive
Peavine Creek Tributary	From the confluence with Peavine Creek to approximately 210 feet downstream of Trinity Place
Peavine Creek Upland Tributary	From Upland Road to approximately 475 feet upstream of Upland Road
Perimeter Creek	From the confluence with Nancy Creek to approximately 200 feet downstream of Arlington Drive
South Fork Peachtree Creek	From DeKalb/Fulton County Boundary to approximately 165 feet downstream of Cowan Road
South Fork Peachtree Creek Tributary	From the confluence with South Fork Peachtree Creek to approximately 150 feet upstream of North Decatur Road
South Fork Peachtree Creek Tributary A	From the confluence with South Fork Peachtree Creek to approximately 2,490 feet upstream of Woburn Drive
South Fork Peachtree Creek Tributary B	From the confluence with South Fork Peachtree Creek to approximately 765 feet upstream of Pine Valley Road
South Fork Peachtree Creek Tributary C	From the confluence with South Fork Peachtree Creek to approximately 400 feet upstream of Arcadia Avenue/ DeKalb Industrial Way

Stream	Limits of Revised Study
South Fork Peachtree Creek Unnamed Tributary 11	From the confluence with South Fork Peachtree Creek to downstream face of Twin Brothers Lake Dam
South Fork Peavine Creek	From the confluence with Peavine Creek to confluence of Lullwater Creek
Warren Creek	From the confluence with North Fork Peachtree Creek to approximately 1,050 feet upstream of Embry Circle

d. Hydrologic and Hydraulic Analyses

New hydrologic and hydraulic analyses were prepared for 57 streams which are listed on revised streams above which includes Nancy Creek watershed detail studied streams, North Fork Peachtree Creek watershed detail studied streams, South Fork Peachtree Creek watershed detail studied streams, and Peavine Creek watershed detail studied streams. The detail hydrology and hydraulics were performed for 10-, 4-, 2-, 1-, 0.2-percent-annual-chance flood events. The hydrology and hydraulics parameters were based on DeKalb County's 2010 Light Detection and Ranging (LiDAR) Terrain data.

The Hydrologic Engineering Center (HEC) computer software HEC-HMS (version 3.5) was used to model rainfall-runoff for the new detailed study watersheds.

The NRCS unit hydrograph transform method was used for the studies. The time of concentration for each sub-basin was calculated following the methodology described by the NRCS Technical Release 55 (TR-55), June 1986. The longest flow path for each sub-basin was delineated and manually sub-divided to represent sheet, shallow concentrated and channel flow to calculate the total time of concentration and lag time, applying the appropriate equations and parameters per the TR-55 guidelines.

The NRCS Curve Number (CN) methodology was selected to estimate the losses from a precipitation event occurring over the study stream watersheds. Composite curve numbers for each sub-basin were calculated based on the area computed for each land use in each soil type. Rainfall losses were estimated based on soil type and land use land cover properties for the watersheds.

Frequency storm method was selected to model the precipitation over all the streams listed above. The 24-hour rainfall depths were taken from the NOAA Atlas 14 Volume 9; Version 2 (NOAA, 2013).

The Hydrologic Engineering Center (HEC) computer software HEC-RAS (version 4.1.0) was used to analyze and determine water surface elevations for the 20-, 10-, 4-, 2-, 1-, 0.2-percent-annual-chance (5, 10, 25, 50, 100, 500-yr, respectively) flood events and floodways for the study streams.

DeKalb County's 2010 (LiDAR) Terrain data was used to create a digital elevation model (DEM), which was used to extract cross sections and bridge/culvert sections in the studied watersheds. Cross sections were placed at critical hydraulic locations along the streams and near structures and extend beyond the maximum water surface elevation. The channel invert elevation of the cross sections was adjusted to correct the limitation of the DEM. To supplement the digital topographic data, field surveyed cross sections, dam, and road structure data were collected and incorporated in the hydraulic models.

The Manning's roughness coefficients were selected as referenced in the HEC-RAS Technical Reference Manual. The values were assigned based on the field survey photos and aerial imagery of the County. The contraction and expansion coefficients were used to model gradual contraction and expansion for all cross section. The entrance and exit loss coefficients, Manning's roughness coefficients, and weir coefficients for hydraulic structures were based on field survey photographs and sketches and used values recommended by the HEC-RAS User's Manual. Ineffective flow areas are coded in the studied models to account for areas adjacent to the floodplain which do not convey any flow. Ineffective flow areas are also coded upstream and downstream of hydraulic structures. Normal depth boundary conditions or known water-surface elevation boundary conditions were used in the studied watersheds.

Floodway analyses were also performed for the existing condition detailed studied streams. The floodway is that portion of the available flow cross section that cannot be obstructed and cause an increase in the base flood water-surface elevations over a given amount. The floodway encroachments were set so that there is not an increase in the existing 100-year water-surface elevations of more than 1.0 feet at any cross section.

e. Other Studies

At the time of this revision, there were no other studies in progress.

f. Bibliography and References

National Oceanic and Atmospheric Administration. (2013). National Weather Service Atlas 14 Volume 9, Version 2.

Photo Science. (2010). DeKalb County LiDAR.

U.S. Army Corps of Engineers, Hydraulic Engineering Center, (2010). HEC-HMS River Analysis System, Version 3.5., Davis, California.

U.S. Army Corps of Engineers, Hydraulic Engineering Center. (2010). HEC-RAS River Analysis System, Version 4.1.0. Davis, California.

g. Considerations

This revision to the DeKalb countywide FIS incorporates new analysis and mapping information for FIRM panels revised on August 1, 2019. This section presents important considerations for using the information contained in this FIS Report and in the FIRM panels updated by this revision. These considerations include changes in format and content. Figures 3 and 4 present information that applies to using the updated FIRM panels with the FIS Report.

Figure 3: 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 Map Service Center website at 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 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 Index. These may be ordered directly from the Map Service Center at the number listed above.

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.

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 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 2.4 “Flood Protection Measures” of this FIS Report for information on flood control structures for this jurisdiction.

Figure 3. FIRM Notes to Users

PROJECTION INFORMATION: The projection used in the preparation of the map was State Plane Transverse Mercator, Georgia West Zone (FIPS Zone 1002). The horizontal datum was North American Datum of 1983 (NAD83), GRS1980 spheroid. 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 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 on the separately published FIRM Index.

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by DeKalb County aerial photography produced at a scale of 1:1200 from photography dated 2010 or later.

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 INDEX

REVISIONS TO INDEX: As new studies are performed and FIRM panels are updated within DeKalb County, Georgia, corresponding revisions to the FIRM Index will be incorporated within the FIS Report to reflect the effective dates of those panels. Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located. The most recent FIRM panel effective date will correspond to the most recent index date.

SPECIAL NOTES FOR SPECIFIC FIRM PANELS

This Notes to Users section was created specifically for FIRM panels revised on August 15, 2019 in the DeKalb County, Georgia countywide Flood Insurance Study.

Figure 4: 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.
	Regulatory Floodway determined in Zone AE.

Figure 4: Map Legend for FIRM

	Non-encroachment zone (see Section 4.2 of this FIS Report for more information)
FLOOD INSURANCE IS NOT AVAILABLE FOR STRUCTURES NEWLY BUILT OR SUBSTANTIALLY IMPROVED ON OR AFTER APRIL 8, 1987, IN THE DESIGNATED COLORADO RIVER FLOODWAY	The Colorado River Floodway was established by Congress in the Colorado River Floodway Protection Act of 1986, Public Law 99-450 (100 Statute 1129). The Act imposes certain restrictions within the Floodway.
OTHER AREAS OF FLOOD HAZARD	
	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. See Notes to Users for important information.
OTHER AREAS	
	Zone D (Areas of Undetermined Flood Hazard): The flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible
NO SCREEN	Unshaded Zone X: Areas determined to be outside the 0.2% annual chance flood hazard
FLOOD HAZARD AND OTHER BOUNDARY LINES	
(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
GENERAL STRUCTURES	
Aqueduct Channel Culvert Storm Sewer	Channel, Culvert, Aqueduct, or Storm Sewer

Figure 4: Map Legend for FIRM

Dam Jetty Weir	Dam, Jetty, Weir
	Levee, Dike or Floodwall
Bridge	Bridge
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas. See Notes to Users for important information.*	
CBRS AREA 09/30/2009	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.
OTHERWISE PROTECTED AREA 09/30/2009	Otherwise Protected Area
REFERENCE MARKERS	
22.0	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
B 20.2	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
5280 21.1	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
17.5	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
8	Coastal Transect
	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.
	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.

Figure 4: Map Legend for FIRM

~~ 513 ~~~~	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)
ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	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
$^{42}76^{000m}$E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16’ 52.5”	Corner Coordinates (Latitude, Longitude)