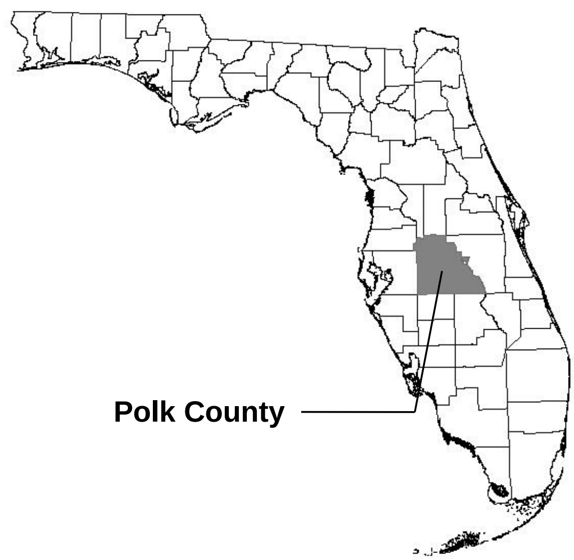
FLOOD INSURANCE STUDY

VOLUME 1 of 3

POLK COUNTY, FLORIDA
AND INCORPORATED AREAS

Community Name	Community Number
AUBURNDALE, CITY OF	120262
BARTOW, CITY OF	120263
DAVENPORT, CITY OF	120410
DUNDEE, TOWN OF	120409
EAGLE LAKE, CITY OF	120385
FORT MEADE, CITY OF	120264
FROSTPROOF, CITY OF	120265
HAINES CITY, CITY OF	120266
HIGHLAND PARK, VILLAGE OF	120386
HILLCREST HEIGHTS, TOWN OF	120666
LAKE ALFRED, CITY OF	120667
LAKE HAMILTON, TOWN OF	120414
LAKE WALES, CITY OF	120390
LAKELAND, CITY OF	120267
MULBERRY, CITY OF	120268
POLK CITY, CITY OF	120665
POLK COUNTY (UNINCORPORATED AREAS)	120261
WINTER HAVEN, CITY OF	120271



REVISED:
December 22, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
12105CV001C

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

Initial Countywide FIS Effective Date: **December 20, 2000**

Revised Countywide Dates: **November 19, 2003** – to change Special Flood Hazard Areas, to reflect updated topographic information, and to incorporate previously issued Letters of Map Revision.

September 28, 2012 – to update corporate limits, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to add roads and road names, to reflect updated topographic information and to incorporate previously issued Letter of Map revision.

December 22, 2016 – to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to change zone designations, to add/update roads and road names, to incorporate previously issued Letters of Map Revision, and to reflect updated topographic information.

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FLOOD INSURANCE STUDY
POLK COUNTY, FLORIDA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in, or revises previous FIS reports/Flood Insurance Rate Maps (FIRMs) for the geographic area of Polk County, including the Cities of Auburndale, Bartow, Davenport, Eagle Lake, Fort Meade, Frostproof, Haines City, Lake Alfred, Lake Wales, Lakeland, Mulberry, Polk City, and Winter Haven; the Towns of Dundee, Hillcrest Heights, and Lake Hamilton; the Village of Highland Park; and the unincorporated areas of Polk County (referred to collectively herein as Polk County).

Please note that the City of Plant City is not included in this Polk County revision and is shown on the FIRM panels as Area Not Included. The City of Plant City is included in its entirety in the Hillsborough County FIS.

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 community that will be used to establish actuarial flood insurance rates and to assist the community in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

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.

The Digital Flood Insurance Rate Map (DFIRM) and FIS report for this countywide study have been produced in digital format. Flood hazard information was converted to meet the Federal Emergency Management Agency (FEMA) DFIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local Geographic Information System (GIS) and be accessed more easily by the community.

1.2 Authority and Acknowledgments

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

The original December 20, 2000, FIS was prepared to include incorporated communities within Polk County into a countywide FIS. Information on the authority and acknowledgments for each jurisdiction included in that countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Bartow, City of:	The hydrologic and hydraulic analyses for the June 1980 FIS report were performed by the U.S. Geological Survey (USGS) for the Federal Insurance Administration (FIA) under Inter-Agency Agreement No. IAA-H9-77, Project Order No. 25. That work was completed in June 1977.
Davenport, City of:	The hydrologic and hydraulic analyses for the June 1980 FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in February 1979.
Dundee, Town of:	The hydrologic and hydraulic analyses for the May 1980 FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in November 1978.
Fort Meade, City of:	The hydrologic and hydraulic analyses for the May 1980 FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in August 1978.
Frostproof, City of:	The hydrologic and hydraulic analyses for the November 1979 FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in June 1978.
Haines City, City of:	The hydrologic and hydraulic analyses for the March 16, 1981, FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in February 1979.
Lake Hamilton, Town of:	The hydrologic and hydraulic analyses for the May 1980 FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in August 1978.
Lake Wales, City of:	The hydrologic and hydraulic analyses for the March 16, 1988, FIS report were performed by the USGS, Water Resources Division, Tampa, Florida, for the Federal Emergency Management Agency (FEMA) under Contract No. EMW-85-E-1823. That work was completed in June 1986.
Lakeland, City of:	The hydrologic and hydraulic analyses for the March 16, 1981, FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in July 1979.

Mulberry, City of:	The hydrologic and hydraulic analyses for the August 4, 1980, FIS report were performed by the USGS for the FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in October 1978.
Polk County (Unincorporated Areas)	The hydrologic and hydraulic analyses for the January 19, 1983, FIRM were performed by the USGS for FEMA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in September 1980. For the October 18, 1988, FIS report, the hydraulic analyses for Lake Hamilton, Lake Kissimmee, Lake Mabel, Foley Creek, and Lake Rosalie were obtained from the U.S. Army Corps of Engineers (USACE), Jacksonville District, for FEMA.
Winter Haven, City of:	The hydrologic and hydraulic analyses for the March 30, 1981, FIS report were performed by the USGS for FIA under Inter-Agency Agreement No. IAA-H-9-77, Project Order No. 25. That work was completed in May 1979.

The authority and acknowledgments for the Cities of Auburndale, Eagle Lake, Lake Alfred, Polk City, the Village of Highland Park, and the Town of Hillcrest Heights were not included in the original countywide FIS because there were no previously printed FIS reports for these communities.

In the countywide FIS dated December 20, 2000, updated hydrologic and hydraulic analyses were prepared for FEMA by Engineering Methods & Applications, Inc., (EMA) under Contract No. EMW-93-C-4196, for the following streams: Blackwater Creek, Blackwater Creek Tributary 1, Blackwater Creek Tributary 2, Fox Branch, Fox Branch Tributary, Itchepackesassa Creek, Itchepackesassa Creek Tributary 1, Itchepackesassa Creek Tributary 2, Peace Creek Drainage Canal, Peace Creek Drainage Canal Tributary 2, Peace Creek Drainage Canal Tributary 3, Peace Creek Drainage Canal Tributary 4, Wahneta Farms Canal, and Wahneta Farms Canal Tributary. Degrove Surveyors, Inc., was subcontracted by FEMA to survey stream cross sections for the hydraulic modeling. This work was completed in June 1994. Envisors Inc., under contract to Polk County, refined the analyses for Fox Branch and its tributary, Itchepackesassa Creek and its tributaries, Peace Creek Drainage Canal and its tributaries, and Wahneta Farms Canal and its tributary. That work was submitted in April 1998.

Polk County Engineering Services Division consolidated and submitted new and updated analyses for numerous lakes within the county. That work was completed in August 1993. Subsequently, Polk County performed updated hydrologic analyses on Lake Seward and Hidden and Sick Lakes. This work was completed in the fall of 1999. Polk County also submitted a new analysis for Lake Aurora prepared by Southern Land Surveyors, Inc., and a new analysis for River Lake prepared by Pickett & Associates, Inc. That work was completed in the fall of 1998.

Additionally, for the countywide December 20, 2000 FIS, a floodplain study for South Prong Alafia River prepared by the Southwest Florida Water Management District (SWFWMD) in March 1979 was incorporated (Reference 1).

For the November 19, 2003 revision, floodplain boundaries revised to reflect updated topography and incorporation of two Letters of Map Revision (LOMRs) on panels affecting the Cities of Lakes Wales and Winter Haven, Polk County (Unincorporated Areas), and the Town of Dundee were prepared by Dewberry & Davis, LLC.

For the September 28, 2012 revision, the hydrologic and hydraulic analyses were performed by Atkins for FEMA, under Contract No. EMA-2005-CA-5218. The work was completed in July 2010.

For this December 22, 2016 revision, hydrologic and hydraulic analyses prepared for the SWFWMD were incorporated by AECOM for the SWFWMD, in accordance with contract No. EMA- 2005-CA-5218 between FEMA and the SWFWMD. The work was completed in August 2014.

Detailed flood hazard information for Horse Creek was reflected in the unincorporated areas of Polk County based on the previously printed FIS for the City of Davenport (Reference 2). Detailed flood hazard information for Lake Dell Outlet Ditch that was formerly in the unincorporated areas of Polk County was reflected in the Town of Dundee, and was based on the previously printed FIS for the Town of Dundee (Reference 3). Detailed flood hazard information for Lake Bonnet Drain was reflected in the unincorporated areas of Polk County and was based on the previously printed FIS for the City of Lakeland (Reference 4). Detailed flood hazard information for Lake Parker Tributary was reflected in the City of Lakeland and was based on the previously printed FIS for the unincorporated areas of Polk County (Reference 5). Detailed flood hazard information for Mud Lake Drain was reflected in the City of Polk City and was based on the previously printed FIS for the unincorporated areas of Polk County (Reference 5). Detailed flood hazard information for Reedy Creek was reflected in the unincorporated areas of Polk County and was based on the FIS for Osceola County (Reference 6).

Base map information shown on this FIRM was provided in digital format by the SWFWMD. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 100' from photography flown January - March 2005 (Reference 7). Users of this FIRM should be aware that minor adjustments may have been made to specific base map features.

The coordinate system used for the production of this FIRM is HARN State Plane Florida West FIPS 0902, and the horizontal datum used is North American Datum 1983 (NAD 83), Geodetic Reference System 1980 spheroid. Differences in the datum and spheroid used in the production of FIRMs for adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

An initial Consultation Coordination Officer (CCO) meeting (also occasionally referred to as the Scoping meeting) is held with representatives of the communities, FEMA, and the study contractors to explain the nature and purpose of the FIS and to identify the streams to be studied by detailed methods. A final CCO (often referred to as the Preliminary DFIRM Community Coordination, or PDCC, meeting) is held with representatives of the communities, FEMA, and the study contractors to review the results of the study.

The dates of the initial and final CCO meetings held for communities within Polk County prior to the December 20, 2000, countywide FIS are shown in Table 1, "Historical CCO Meeting Dates".

Table 1: Historical CCO Meeting Dates

Community Name	Initial CCO Date	Final CCO Date
Bartow, City of	February 9, 1977	November 28, 1979
Davenport, City of	February 10, 1977	November 29, 1979
Dundee, Town of	February 8, 1977	November 29, 1979
Fort Meade, City of	February 1977	November 28, 1979
Frostproof, City of	February 10, 1977	January 30, 1979
Haines City, City of	February 8, 1977	September 16, 1980
Lake Hamilton, Town of	February 8, 1977	November 29, 1979
Lake Wales, City of	*	May 6, 1987
Lakeland, City of	February 11, 1977	September 15, 1980
Mulberry, City of	February 1977	November 28,1979
Polk County (Unincorporated Areas)	July 13, 1977	April 19, 1982 September 16, 1980
Winter Haven, City of	February 7, 1977	November 28, 1979

*Data not available

For the December 20, 2000, countywide FIS, the initial CCO meeting was held on August 5, 1992. That meeting was attended by representatives of Polk County, Engineering Methods & Applications, Inc., DeGrove Surveyors, Inc., Florida Department of Transportation, and FEMA. A final CCO meeting was held on August 18, 1997.

Numerous other contacts for coordination and data acquisition were made with appropriate agencies throughout the course of the study, including the following: Florida Department of Transportation; National Weather Service; SWFWMD; St. Johns River Water Management District; South Florida Water Management District; USACE, Jacksonville District; U.S. Department of Agriculture, National Resources Conservation Service (NRCS) [formerly the Soil Conservation Service]; USGS, Water Resources Division; Lakes Region Lakes Management District; University of Florida Experiment Station, Gainesville, Range Forecast Center, Avon Park Bombing Range; and Howard L. Searcy Consulting Engineers.

For the November 19, 2003, countywide FIS, all affected communities were notified in a letter from the FEMA Map Coordination Contractor, Dewberry & Davis LLC, dated November 1, 2002, that their FIS would be revised. No final CCO meeting was required for the 2003 revision.

For the September 28, 2012, countywide FIS, the initial CCO meeting was held on April 22, 2008. That meeting was attended by representatives of FEMA, Polk County, SFWMD, SWFWMD, and Atkins. A project update meeting was held on September 23, 2009, and attended by representatives of FEMA, Polk County, SFWMD, SWFWMD, Watershed Concepts/AECOM, and Atkins.

The results of the study were reviewed at the final meeting held on November 19, 2010, and attended by representatives of FEMA, Polk County, the communities, SFWMD, and Atkins. All issues and/or concerns raised at the meeting have been addressed.

For this December 22, 2016 revision of the countywide FIS, the initial CCO meeting was held on June 22, 2006, and attended by representatives of FEMA, Polk County, the communities, Lakes Region Lake Management District, SFWMD, SWFWMD, Baker, and TBE group.

The final CCO meetings were held on May 12-14, 2015 to review and accept the results of this revision. Those who attended this meeting included representatives of FEMA, Polk county, the communities, SWFWMD, and the study contractors. All issues raised at the meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS report covers the geographic area of Polk County, Florida, including the incorporated communities listed in Section 1.1. The scope and methods of this study were proposed to, and agreed upon, by FEMA, Polk County, and SWFWMD. The area of study is shown on the Vicinity Map (Figure 1).

This Physical Map Revision (PMR) covers the geographic area of Polk County that falls within the territory of the SWFWMD. The area includes all of the following watersheds: Big Creek East, Big Creek West, Blackwater Creek, Bowlegs Creek, Charlie Creek, Crooked Lake, Gator Creek, Homeland, Hookers Prairie/South Alafia, Itchepackesassa Creek, Lake Drain, Lake Hancock Area, Lake Lulu, Lake Reedy, Little Payne Creek, Livingston Creek, McCullough Creek, Mulberry (aka Christina), Peace Creek, Poley Creek/North Alafia, Polk City, Pony Creek, Reedy Creek, and Saddle Creek. This area also includes portions of the following watersheds: Catfish Creek, Lake Hatchineha, Lake Marion, Lake Marion Creek, Lake Pierce, Lake Rosalie, Lake Weohyakapka, and Lower Reedy Creek.

This revision incorporated updated hydrologic and hydraulic analyses as well as updated floodway analyses for streams that were previously studied by detailed methods in the Lake Hancock Area, Lake Lulu, Mulberry (aka Christina), Peace Creek, and Polk City watersheds. In addition, floodplain boundaries of streams that had been previously studied by detailed methods were redelineated based on more detailed and up-to-date topographic mapping for this FIS report.

The areas studied by detailed methods were selected with priority given to all known flood hazards and areas of projected development or proposed construction. The flooding sources studied by detailed methods are presented in Table 2 , "Flooding Sources Studied by Detailed Methods."

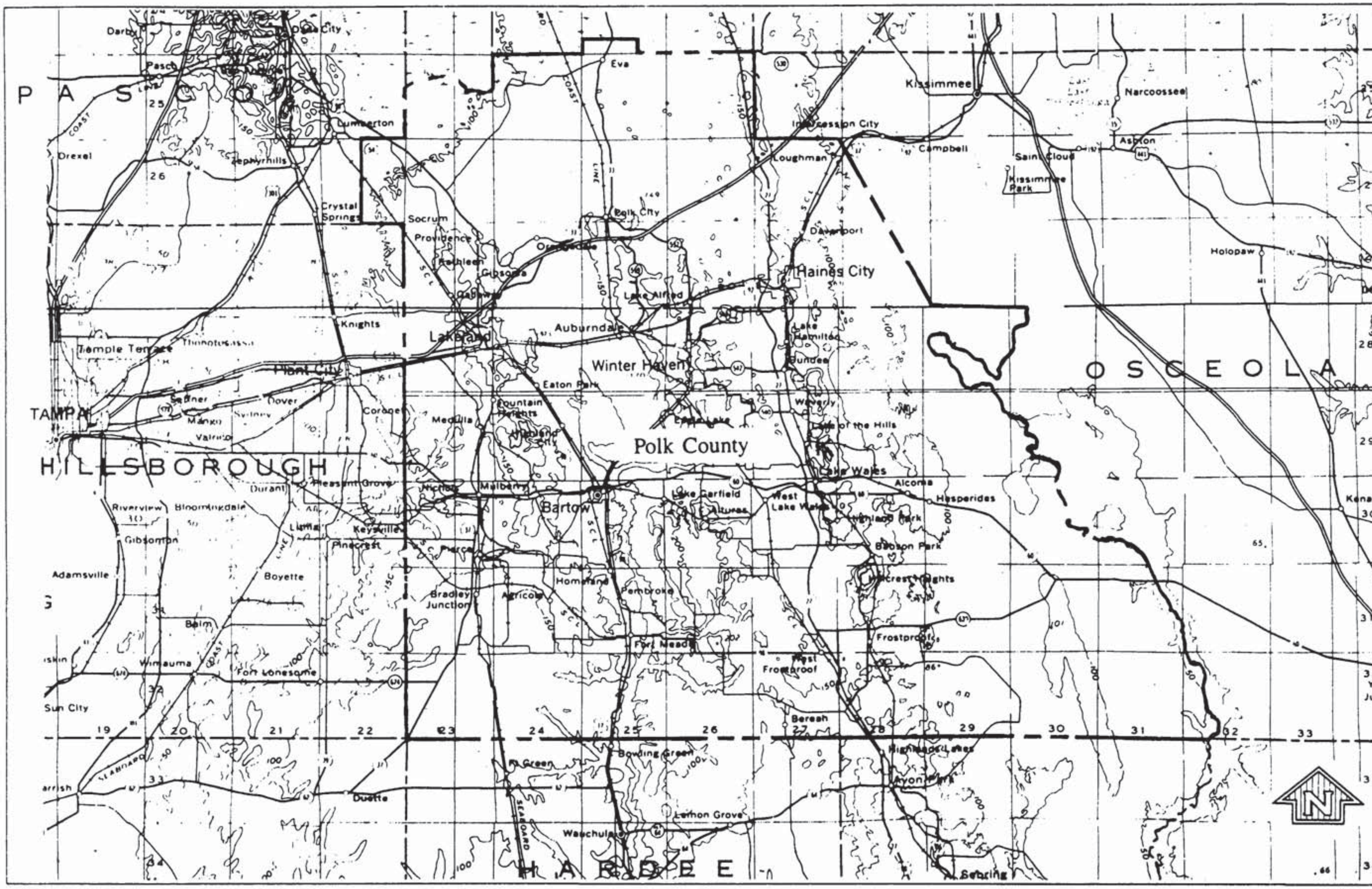


FIGURE 1	FEDERAL EMERGENCY MANAGEMENT AGENCY **POLK COUNTY, FL AND INCORPORATED AREAS**	APPROXIMATE SCALE 8 0 8 16 24 MILES **VICINITY MAP**

Table 2: Flooding Sources Studied by Detailed Methods

Flooding Source	Study Limits
Bailey Road Ditch	From a point approximately 1,320 feet upstream of confluence with Poley Creek to approximately 440 feet upstream of Waterstone Way
Blackwater Creek	From county boundary to State Route 542-A
Blackwater Creek Tributary 1	From confluence with Blackwater Creek to a point approximately 0 7 mile upstream of Smith Road
Blackwater Creek Tributary 2*	From county boundary to a point approximately 900 feet upstream of Ross Creek Road
Ellis Branch	From confluence with North Prong Alafia River to a point approximately 1,630 feet upstream of 5th Street NE
Fox Branch	From county boundary to a point approximately 1,050 feet upstream of U.S. Route 98
Fox Branch Tributary	From confluence with Fox Branch to a point approximately 1,500 feet upstream of Duff Road
Haines City Drainage Canal	From Middle Lake Hamilton to Lake Tracy
Horse Creek	From a point approximately 1,540 feet downstream of State Route 547 to a point approximately 0.9 mile downstream of State Route 547
Itchepackesassa Creek	From county boundary to a point approximately 1.5 miles upstream of Walker Road
Itchepackesassa Creek Tributary 1	From confluence with Itchepackesassa Creek to North Wabash Avenue
Itchepackesassa Creek Tributary 2	From confluence with Itchepackesassa Creek to a point approximately 400 feet upstream of Airport Road
Lake Bonnet Drain	From North Chestnut Road to a point approximately 600 feet upstream of North Chestnut Road
Lake Dell Outlet Ditch	From confluence with Peace Creek Drainage Canal to a point approximately 500 feet upstream of U.S. Route 27
Lake Drain	From confluence with Poley Creek to Scott Lake Road
Lake Drain Central Channel	From confluence with Lake Drain to approximately 1,000 feet upstream of confluence with Lake Drain

* In the December 20, 2000, countywide FIS, Lester Lake Drain was renamed Blackwater Creek Tributary 2

Table 2: Flooding Sources Studied by Detailed Methods (continued)

Flooding Source	Study Limits
Lake Drain West Channel	From confluence with lake Drain to approximately 100 feet upstream of Ewell Road
Lake Eva Outlet Ditch	From confluence with Haines City Drainage Canal to Lake Eva No. 2
Lake Gibson Drain	From Lake Gibson to approximately 825 feet upstream of Lake Cargo
Lake Hollingsworth Drain	From Lake Bentley to Lake Hollingsworth
Lake Hunter Drain	From Lotus Avenue to Lake Hunter
Lake Lena Drain	From Lake Hancock to Lake Lena
Lake Marion Creek	From junction of Lake Marion Outlet Drain and Snell Creek to Lake Hatchineha
Lake Marion Outlet Drain	From Lake Marion to junction with Lake Marion Creek
Lake Parker Drain	From approximately 200 feet downstream of railroad to Lake Parker No.1 Outlet
Lake Parker Tributary	From a point approximately 100 feet downstream of Lake Parker Drive to U.S. Route 98
Lake Rosalie Tributary	From Lake Rosalie to approximately 2,554 feet of Camp Mack Road
Lower Saddle Creek*	From confluence with Peace River to Lake Hancock
Meadow View Ditch	From confluence with Avatar basin to approximately 750 feet upstream of confluence with Avatar basin
Mud Lake Drain	From a point approximately 1,550 feet downstream of State Route 33 to Mud Lake Outlet
North Fork Lake Rosalie Tributary	From confluence with Lake Rosalie Tributary to approximately 3,088 feet upstream
North Prong Alafia River	From county boundary to approximately 2,726 feet upstream of State Highway 37 South
Oakhill Ditch Creek	Approximately 4,057 feet portion in Lower Reedy Creek watershed
Peace Creek Drainage Canal	From confluence with the Peace River to Country Club Road
Peace Creek Drainage Canal Tributary 2	From divergence from Peace Creek Drainage Canal to confluence with Peace Creek Drainage Canal, approximately 11.4 miles upstream

* In the December 22, 2016, countywide FIS, Saddle Creek was renamed for its respective location upstream and downstream of Lake Hancock

Table 2: Flooding Sources Studied by Detailed Methods (continued)

Flooding Source	Study Limits
Peace Creek Drainage Canal Tributary 3	From confluence with Peace Creek Drainage Canal to a point approximately 1.5 miles upstream of Lake Daisy Road
Peace Creek Drainage Canal Tributary 4	From confluence with Peace Creek Drainage Canal to a point approximately 0.6 mile upstream of Dundee
Peace River	From county boundary to confluence of Peace Creek Drainage Canal and Saddle Creek
Poley Creek	From confluence with North Prong Alafia River to approximately 1,589 feet upstream of Pipkin Road
Reedy Creek	From a point approximately 16.1 miles above mouth to a point approximately 19.9 miles above mouth
Snell Creek	From SWFWMD boundary to junction with Lake Marion Outlet Drain
South Prong Alafia River	From county boundary to a point approximately 1.1 miles upstream of Bethlehem Road
Southwest Ditch	From approximately 1,878 feet downstream of Harden Boulevard to approximately 1,291 feet upstream of San Gully Road
Southwest Ditch Tributary	From confluence with Southwest Ditch to a point approximately 1,264 feet upstream
Tributary No. 1	From county boundary to Old Lake Wilson Road
Tributary No. 2	From railroad to divergence from Tributary No. 1
Tributary to Lake Drain	From confluence with Lake Drain to approximately 1,060 feet upstream of confluence with Lake Drain
Upper Saddle Creek*	From Lake Hancock to Saddle Creek Road
Wahneta Farms Canal	From confluence with Peace Creek Drainage Canal to a point approximately 480 feet upstream of Hoover Road
Wahneta Farms Canal Tributary	From divergence from Wahneta Farms Canal to confluence with Wahneta Farms Canal

* In the December 22, 2016, countywide FIS, Saddle Creek was renamed for its respective location upstream and downstream of Lake Hancock

Approximate analyses were used to study those areas having low development potential or minimal flood hazards. The scope and methods of the revision were proposed to and agreed upon by FEMA, Polk County, and SWFWMD.

Approximate floodplain boundaries in the Big Creek East, Big Creek West, Blackwater creek, Bowlegs Creek, Charlie Creek, Crooked Lake, Gator Creek, Homeland, Hookers Prairie/South Alafia, Itchepackesassa Creek, Lake Drain, Lake Marion, Lake Pierce, Lake Reedy, Lake Rosalie, Lake Weohyakapka, Little Payne Creek, Livingston Creek, Lower Reedy Creek, McCullough Creek, Poley Creek/North Alafia, Pony Creek, Reedy Creek, and Saddle Creek watersheds were supplemented by use of hydric soil designations, Environmental Resource Permits (ERPs) provided by SWFWMD, and updated orthoimagery and topographic information (Reference 8).

This December 22, 2016 FIS also incorporates the determination of letters issued by FEMA resulting in Letters of Map Change as shown in Table 3, "Letters of Map Revision (LOMRs) Incorporated into Current Revision."

Table 3: Letters of Map Revisions (LOMRs) Incorporated into Current Revision

Case Number	Flooding Source(s)	Communities Affected	Effective Date
00-04-205P	Tributary To Lake Drain	Polk County (Unincorporated Areas)	12/21/2000
01-04-009P	Horse Creek	Davenport, City of Polk County (Unincorporated Areas)	02/01/2002
01-04-175X	Tributary To Lake Drain	Polk County (Unincorporated Areas)	03/22/2001
01-04-335P	Lake Blanton, Lake Charles, Lake Bonnet Drain	Lakeland, City of Polk County (Unincorporated Areas)	08/03/2001
01-04-355P	Unnamed Ponding Areas	Lakeland, City of	02/11/2002
01-04-419P	Ponding	Polk County (Unincorporated Areas)	08/24/2001
01-04-515P	Area south of Blackwater Creek	Polk County (Unincorporated Areas)	01/04/2002
01-04-529P	Lakes Parker & Crago	Lakeland, City of Polk County (Unincorporated Areas)	03/11/2002
01-04-535P	Unnamed Zone A Area	Polk County (Unincorporated Areas)	02/07/2002
02-04-021P	Ponding Areas	Lakeland, City of	03/27/2002
02-04-163P	Unnamed Ponding Area	Polk County (Unincorporated Areas)	03/11/2002

Table 3: Letters of Map Revisions (LOMRs) Incorporated into Current Revision (continued)

Case Number	Flooding Source(s)	Communities Affected	Effective Date
02-04-201X	Ponding Area 1	Polk County (Unincorporated Areas)	03/07/2002
02-04-219P	Cypress Lake	Polk County (Unincorporated Areas)	05/14/2002
02-04-255P	Zone A Floodplain	Lakeland, City of	05/14/2002
02-04-269P	Unnamed Zone A, Unnamed Ponding Area	Bartow, City of Polk County (Unincorporated Areas)	05/16/2002
02-04-271P	Unnamed Zone A, Zone A Ponding	Bartow, City of Polk County (Unincorporated Areas)	05/20/2002
02-04-367X	Zone A Ponding Area	Polk County (Unincorporated Areas)	09/30/2002
02-04-431P	S.W. Ditch Ponds #1-3& 2 Other	Lakeland, City of	09/24/2002
03-04-033P	Unnamed Ponding Areas	Lakeland, City of	02/19/2003
03-04-077P	Itchepackessa Creek Trib. 2	Lakeland, City of Polk County (Unincorporated Areas)	04/10/2003
03-04-231P	Former Commercial Fish Ponds, Unnamed Zone A Pond Areas	Polk County (Unincorporated Areas)	05/05/2003
03-04-535P	Lake Drain	Polk County (Unincorporated Areas)	07/27/2004
04-04-109P	Unnamed Zone A	Polk County (Unincorporated Areas)	03/30/2004
04-04-221P	Unnamed Ponding Area	Polk County (Unincorporated Areas)	05/26/2004
04-04-281P	Ponding Area	Polk County (Unincorporated Areas)	07/08/2004
04-04-397P	Itchepackesassa Creek Trib 2	Polk County (Unincorporated Areas)	11/13/2004
04-04-B007P	Meadow View Lake, Unnamed Zone A Areas	Lakeland, City of Polk County (Unincorporated Areas)	04/12/2006
05-04-0457A	Canterwood & Oaklanding Subdivision Ponding Areas	Polk County (Unincorporated Areas)	06/13/2005

Table 3: Letters of Map Revisions (LOMRs) Incorporated into Current Revision (continued)

Case Number	Flooding Source(s)	Communities Affected	Effective Date
05-04-1899P	Runoff From Adjacent Area	Polk County (Unincorporated Areas)	02/21/2005
05-04-2731P	Lake Hunter	Lakeland, City of Polk County (Unincorporated Areas)	12/16/2005
05-04-2888P	Ponding Area 12	Lakeland, City of	10/31/2005
06-04-B694P	Lake A	Polk County (Unincorporated Areas)	08/31/2006
06-04-BI19P	Unnamed Ponding Area	Haines City, City of	01/22/2007
06-04-BO60P	Bailey Road Ditch	Polk County (Unincorporated Areas)	02/22/2007
06-04-BP16P	Lake Easy	Polk County (Unincorporated Areas)	10/23/2006
06-04-C505P	Ponding Areas	Lakeland, City of	02/26/2007
07-04-5360P	Lake Davenport	Davenport, City of	10/29/2007
08-04-0475P	Ponding Area 15, 16 & 17	Lakeland, City of	02/20/2008
08-04-0620P	Unnamed Ponding Area 2, Unnamed Ponding Area 3	Polk County (Unincorporated Areas)	05/21/2008
08-04-5418P	East Wet Pond, Mid Wet Pond, Northwest Wet Pond, Northwest Wet Pond-2	Lakeland, City of	02/16/2009
09-04-1385P	Ponding Areas 10, 2, 3, 4, 5, 6, 7, 8, & 9	Polk County (Unincorporated Areas)	08/13/2009
09-04-8238P	Safari Wild Pond 1, 2, 3, & 4	Polk County (Unincorporated Areas)	08/05/2010
10-04-4064P	Bridgewater Ponding Areas	Lakeland, City of	07/30/2010
12-04-0571P	Lake Hart	Auburndale, City of	11/15/2011
12-04-7496P	FCA Pond, Oakhill Ponding Areas, Unnamed Ponding Area, Watersong Flooding Pond Areas	Polk County (Unincorporated Areas)	10/01/2012
13-04-6579P	Ponding Areas	Polk County (Unincorporated Areas)	11/28/2014
13-04-7607P	Saddle Creek	Bartow, City of Polk County (Unincorporated Areas)	07/17/2014
14-04-2776P	Unnamed Ponding Area 44, 45, 46, 47, 48, 49, 50, 51 & 52	Polk County (Unincorporated Areas)	10/16/2014

2.2 Community Description

Polk County is in the center of the Florida Peninsula, approximately equidistant from the Atlantic Ocean and the Gulf of Mexico. Polk County has a land area of 1,858 square miles and is the fourth largest county in Florida. The county averages 40 miles wide by 48 miles long.

A ridge, referred to as the Central Highlands, extends north and south through most of Polk County (Reference 9). Land-surface elevations are as low as 50 feet, National Geodetic Vertical Datum of 1929 (NGVD29) and as high as 305 feet NGVD29. Because of this topographic high, water flows outward in all directions from the county. The eastern 35 percent of the county is in the Kissimmee River basin and drains eastward and southward into the Kissimmee River. The south-central 35 percent is in the Peace River basin and drains into the Peace River. Along the western boundary, 8 percent of the county is in the Alafia River basin and drains into the Alafia River and 4 percent is in the Hillsborough River basin and drains to the west into the Hillsborough River. On the north, the St. Johns River basin drains water from 3 percent of the county northward into the headwaters system of the Oklawaha River, a tributary of the St. Johns River. The western boundary of the Kissimmee River basin follows the top of the Central Highlands ridge.

The climate of Polk County is subtropical. The average temperature is approximately 72 degrees Fahrenheit, and the average annual rainfall is approximately 54 inches. More than half of the rain falls during June, July, August, and September.

Since Polk County was formed in 1861, its population has steadily increased to 602,095 in 2010. There are 17 incorporated cities and towns in Polk County. Lakeland is the largest city in the county, having a population of 97,422. Winter Haven, with a population of 33,874, is the second largest and is followed by Bartow, the county seat, with a population of 17,298. Most of the population is concentrated along the ridge area in central and northeastern Polk County.

Polk County has a diversified economy. The principal sources of income are citrus, phosphate, cattle, and tourist trade. Some of the largest landpebble phosphate mines in the world are located in the county. These mines produce about three-fourths of all phosphate mined in the United States. Active and abandoned strip-mining pits have significantly changed some drainage systems.

Nearly 500 lakes, ranging in size from less than an acre to 54 square miles, lie within or adjacent to the county. These lakes have had a decided influence upon the development of the economy. The lakes are utilized for recreational, agricultural, and industrial purposes.

Flood-prone areas are largely located near lakes and streams and in low-lying swamps that include pasture and cypress woodlands. A few commercial developments and mobile home parks have been built near or in flood hazard areas.

The following describes soils, topography, and drainage systems by drainage basin.

Kissimmee River Basin

In the Kissimmee River basin, soils in the higher elevations, west and south of Lakes Marion and Pierce and west of Lake Weohyakapka, are mostly well drained to moderately well drained. Soils in the area of Lake Weohyakapka north to Lake Hatchineha are somewhat poorly drained in the low, flat ridges and poorly to very poorly drained in the low-lying, swampy areas.

The relatively low, flat prairie land is characterized by large, shallow lakes that drain from lake to lake by natural and manmade canals to the Kissimmee River. Lake Marion overflows via Lake Marion Creek to Lake Hatchineha. Saddlebag Lake overflows into a chain of small lakes to the northwest, which are tributaries to Big Gum Lake. Big Gum Lake overflows northwest to Lake Pierce. Lake Pierce overflows into Lake Hatchineha by Catfish Creek. Lake Hatchineha overflows to Lake Kissimmee and the Kissimmee River. Lake Weohyakapka overflows to Lake Rosalie by Weohyakapka Creek. Lake Rosalie overflows southeast through swamp land into Tiger Lake and Lake Kissimmee, and also eastward through a drainage canal to Lake Kissimmee.

The major drainage system in southeast Polk County is formed by four interconnected lakes: Crooked Lake, Lake Clinch, Reedy Lake, and Lake Arbuckle. Crooked Lake was a closed basin until 1930 when it was connected to Lake Clinch by a drainage canal. Lake Clinch overflows to Reedy Lake through the ridge on which the City of Frostproof is located. Reedy Lake overflows via Reedy Creek to Lake Arbuckle. Lake Arbuckle overflows via Arbuckle Creek to Lake Istakpoga. Lake Istakpoga overflows by canal to the Kissimmee River.

Peace River Basin

In the high, rolling, sandy ridges of the Peace River basin, the soils are mostly well drained to moderately well drained. Some areas east of Lakeland and southeast of Bartow have somewhat poorly drained soils. Many of the lakes are interconnected by natural and modified drainage channels. Lakes in several areas are joined by canals forming complex drainage systems. Interconnected lake drainage systems in the basin include the Auburndale, Lake Alfred, and the Winter Haven chains. The Auburndale lake chain is formed by Lakes Arietta, Whistler, Ariana, and Lena. Lakes Whistler, Ariana, and Lena are joined by small canals. The SWFWMD Control Structure P-3 regulates the flow from Lake Arietta into Lake Whistler. Outflow from Lake Lena to Lake Lena drainage canal (Lake Lena Drain) is regulated by SWFWMD Control Structure P-1. Lake Lena Drain also receives flow from the Auburndale lake chain that drains southward to Lake Hancock. The outflow from Lake Hancock to Saddle Creek is regulated by SWFWMD Control Structure P-11. Saddle Creek and Peace Creek Drainage Canal join just north of Bartow to form Peace River.

The Lake Alfred lake chain drains an area from Lake Alfred, north of Winter Haven and west of Haines City. During flood periods, Lake Alfred drains south to Lake Cummings through culverts under a paved road and CSX Transportation to Lake Rochelle. Lakes George and Pansy drain to Lake Rochelle. Lake Echo drains to Lake Rochelle through a separate channel. Gum Lake and swampy areas northeast of Lake Alfred drain south during flood periods to Lake Haines. Lakes Haines, Rochelle, Conine, and Smart are interconnected by short channels and have a common outlet at the east side of Lake

Smart. Lake Smart drains to Lake Fannie, but is regulated by SWFWMD Control Structure P-6. Lake Fannie drains to Lake Hamilton, but is regulated by SWFWMD Control Structure P-7. Lake Henry also drains to Lake Hamilton and is regulated by SWFWMD Control Structure P-5. Lake Hamilton drains to the Peace Creek Drainage Canal and is regulated by SWFWMD Control Structure P-8.

Drainage from low-lying areas east of Winter Haven, including overflow from Lakes Florence and Mariam, enters the Peace Creek Drainage Canal. During floods, Lake Dexter, Ned Lake, and Lake Daisy are interconnected by shallow ditches. Outflow from the system is through Ned Lake to the Peace Creek Drainage Canal.

The Winter Haven lake chain is composed of 14 interconnected lakes that drain areas between Auburndale and Lake Alfred and along the west and south sides of Winter Haven. Included in the chain are Lakes Jessie, Idylwild, Hartridge, Cannon, Mirror, Spring, Howard, May, Shipp, Lulu, Roy, Eloise, Winterset, and Summit. Regulated outflow from Lake Mariana enters the Winter Haven lake chain, which has a controlled outlet at the south side of Lake Lulu. Regulated outflow from Lake Lulu drains to the Peace Creek Drainage Canal via the Wahneta Farms Canal. Lake elevations in the chain are affected by water-level conditions in the canal during flood periods. Lake Garfield, downstream from the chain, also drains to the Peace Creek Drainage Canal.

Peace River is the largest stream in Polk County and flows directly south from Bartow, through Fort Meade, into Hardee County. Lake Buffum drains to Peace River south of Fort Meade via Boggy Branch.

Alafia and Hillsborough River Basins

The Alafia River and Hillsborough River basins are located along the western side of Polk County. The land area is flat but has fairly high land-surface elevations. Soils are well- to moderately well-drained south and east of Mulberry and somewhat poorly drained north of Mulberry and west of Lakeland. Although the few streams in this area are small, most have well-defined channels. Poley Creek drains the southwest side of Lakeland and flows southwest to its confluence with North Prong Alafia River, west of Mulberry. Tributaries of Itchepackesassa Creek and Blackwater Creek drain the west side of Lakeland. Lester Lake and a swampy area northwest of Lakeland drain to Blackwater Creek.

Withlacoochee River Basin

The northwestern part of the county is in the Withlacoochee River basin. It is characterized by numerous small, low hammocks and shallow, saucer-like depressions. The sandy soils are somewhat poorly drained on the hammocks and poorly to very poorly drained in the waterlogged sloughs.

Except for the Withlacoochee River, which runs along the northern boundary of the county, natural drainage channels in this part of Polk County are virtually nonexistent. In recent years, however, extensive ditching has improved drainage. Mud Lake, Lake Agnes, Little Lake Agnes, and Lake Helene drain north toward the Withlacoochee River. Clearwater Lake, east of Little Lake Agnes, discharges to the north via a drop structure with a 30” diameter pipe. The swampy areas east of Polk City and north of Lake Alfred drain northward to the Withlacoochee River.

St. Johns River Basin

A long, narrow strip of the St. Johns River basin extends south into the northeast part of Polk County. The western drainage divide, with the Withlacoochee River basin, is a poorly defined north-south ridge. The sandy soils along the east ridge are well-drained to moderately well-drained; soils on the relict sand dunes are poorly drained, and a large part of the lower elevations are swamps void of well-defined drainage channels. Lake Lowery, Bonnet Lake, Lake Hammock, and Tower Lake, north of Haines City, drain to the north (sheet flow) through the extensive swamp areas.

2.3 Principal Flood Problems

Low-lying areas near lakes and streams in Polk County are subject to flooding. Major flooding in the county has not occurred since 1960, but severe flooding potential exists in many areas. Most of the major floods in the area occurred during the months of September and October as a result of the heavy rains that accompanied hurricanes; however, locally heavy rainfall during May through December have produced severe flooding of small areas. The highest known flood in the Kissimmee River basin occurred in October 1949 and had a recurrence interval of about 20 years at the gaging station at the outlet of Lake Kissimmee. This flood was the result of Hurricane Hazel that followed an exceptionally wet summer. Bridges and culverts were washed out, pastures and crops were inundated, and livestock was lost. The U.S. Weather Bureau reported that estimates of flood damage ran as high as $9 million. In the Peace River Basin, the 1960 flood was the highest since 1947 at Bartow and had a recurrence interval of 25 years. The 1960 flood washed out portions of Interstate Route 4, which was under construction, east of Polk City.

Streamflow records have been collected at the Peace River gaging station at Bartow (State Route 60) since 1940. Four annual peak discharges had recurrence intervals of 20 years or greater. The largest annual peak discharge was 4,240 cubic feet per second (cfs) in September 2004. The corresponding stage was not recorded due to a malfunctioning gauge. The second largest annual peak discharge occurred in 1947 and was 4,140 cfs. This event had a recurrence interval of almost 50 years. Flood elevations, however, were greater in 1959 and 1960. The higher flood elevation in 1960 was probably caused in part by hurricane debris in the floodplain and by encroachment on the floodplain.

During the flood associated with Hurricane Donna, Horse Creek attained a peak discharge of 358 cfs, on September 12, 1960, at Davenport gaging station (No. 02266700) at State Route 547. The flood elevation was 109.60 feet NGVD29. The range in annual peak discharge at the Davenport gaging station of the period of record, June 1960 to December 1964, is from 66 to 358 cfs (Reference 10).

Flooding along the shorelines of Lake Clinch and Reedy Lake occurs as a result of a combination of consecutive above-normal rainfalls, followed by short periods of heavy rainfall. Most annual maximum stages occur during the late summer and fall months, when lake levels are maintained by a high water table and runoff from thundershowers and cyclonic storms. Lake Clinch receives the outflow from Crooked Lake; in turn, its outflow goes to Reedy Lake when the stage exceeds 105.3 feet NGVD29. Reedy Lake has a perennial outflow through Reedy Lake and does not experience as large a range in stage as Lake Clinch. Lake Ida is connected to Reedy Lake by a short narrow channel, Ida Branch, which carries small quantities of base flow from Lake Ida to Reedy Lake. During floods, both lakes are combined and have the same water-surface elevation.

The highest known historical flood occurred in September 1926 and was caused by a hurricane that passed approximately 50 miles southwest of Frostproof. Lake Clinch flooded part of Clinch Lake Boulevard south of Ninth Street and the low-lying areas in the northwest part of the city, west of Palm Avenue in the vicinity of State Route 630. No information was found on Reedy Lake for the 1926 flood, but the 1948 peak stage of 80.5 feet NGVD29 was the highest recorded since 1946.

The Lake Clinch peak stage during the September 1926 flood had a recurrence interval of approximately 100 years, and the Reedy Lake 1948 peak stage had a 30-year recurrence interval.

The maximum recorded lake elevation at Lake Lowery near the Haines City gage is 133.32 feet NGVD29, and occurred on September 11, 1960. This flood was the highest remembered by local residents. By comparison, the lake reached an elevation of 131.68 feet NGVD29 on September 27, 2004 after Hurricane Jeanne.

The maximum recorded flood elevation on Lake Hamilton at the Lake Hamilton gage is 124.34 feet NGVD29, and occurred on October 3, 1948 (Reference 18). Based on the Lake Hamilton record from 1947 to 1962, during which outlet control and drainage area remained unchanged, the estimated recurrence interval for a lake stage of 124.34 feet NGVD29 is 16 years. The September 1960 flood elevation of 123.81 feet NGVD29 was the third highest during the period 1947 to 1961. A new outlet structure was built in 1961, and therefore, recurrence intervals for these historical floods are not known for present outflow conditions. However, the peak water level at the outfall channel upstream of the structure reached 123.97 feet NGVD29 in October 2004.

Flood elevations of 129.8 feet NGVD29 and 126.4 feet NGVD29 were determined for Lake Tracy from 1928 and 1960 flood marks indicated by local residents. The 1953 and 1960 flood elevations are approximately equal.

Historical flood elevations were determined for Lake Eva from 1953 and 1960 flood marks identified by local residents. Both floods reached an elevation of 124.8 feet NGVD29.

In Haines City, frequent flooding occurs along the drainage canal north of CSX Transportation and south of Commerce Avenue because of the poorly drained, low-lying floodplain and the flat slope of the canal. The canal slope is limited by the invert elevation of culverts under the CSX Transportation, just north of U.S. Route 17. Additionally, the city experienced flooding in the low-lying floodplain areas adjacent to Snell/Lake Marion Creek Slough. The problem is compounded by the placement of an undersized and irregular system of culvert pipes draining the uplands to the Slough.

The Lake Eva Outlet Ditch is within the Haines City Drainage Canal floodplain and is in backwater from 100-, and 500-year floods.

The 100- and 500-year flood discharges from Lake Brown exceed the capacity of a 300-foot-long 18-inch CMP culvert at the junction with Haines City Drainage Canal.

The maximum daily lake elevation recorded at Lake Parker at Lakeland gage is 131.81 feet NGVD29, and occurred on August 2 and September 13, 1960 (Reference 11). This flood had a recurrence interval of approximately 45 years.

Some boat docks and low-lying areas around Lake Bonny are below the elevation of the outlet weir, at Lake Parker, and are subject to flooding before Lake Bonny drains into Lake Parker. Low-lying areas of the reclaimed land around Lake John and Southeast Lakes are subject to flooding.

Two major floods are known to have occurred on the North Prong Alafia River. The flood of September 6, 1933, was the highest flood remembered by residents of Mulberry. The Florida Department of Transportation surveyed flood marks in July 1950 at State Route 37 and at Buell Road. The flood elevation at State Route 37 was 102.6 feet NGVD29. The highway bridge, at the time, had a deck elevation of 96.5 feet NGVD29 and had an opening with approximately one-half of the area of the existing opening. The other floodmark was at Buell Road, and the elevation was 101.2 feet NGVD29. Local residents reported that the dikes of the phosphate pits broke during the storm. This storm caused the highest peak of record at the USGS gaging station (No. 02301500) downstream of Mulberry on the Alafia River at Lithia, Hillsborough County, Florida (Reference 12). Gage records have been kept since 1932.

A high water mark peak elevation of 96.2 feet NGVD29 on the North Prong Alafia River for the flood of September 11, 1960, was determined at State Route 37 by the USGS in 1972. This peak elevation is lower than the 10-year flood profile at State Route 37, although the peak discharge for the same storm has a 70-year recurrence interval on the North Prong Alafia River at the Keysville (Hillsborough County) USGS gaging station (No. 02301000), approximately nine miles downstream (west). Rainfall totals for September 10 and 11, 1972, at Bartow and Lakeland (the two closest rainfall gages, 8 miles east and 6 miles north of Mulberry, respectively) were 6.75 and 6.33 inches, respectively. Rainfall west of Mulberry was heavier, registering 8.00 inches at Hillsborough State Park (20 miles northwest), and 9.50 inches at Parrish (32 miles southwest).

USGS gages were located on Fox Branch at Rock Ridge Road (No. 02301900) and on Blackwater Creek near Knights, Florida (No. 02302500). USGS gages are located on the Peace River just downstream of the confluence with Peace Creek Drainage Canal (No. 02294650), on the Peace River at Fort Meade (No. 02294898), on Green Swamp Run near Eva (No. 02236350), on Cat Fish Creek near Lake Wales (No. 02267000), and on Saddle Creek just upstream of Peace Creek Drainage Canal (No. 02294491). The location of these 5 gaging stations are shown on the FIRM (Exhibit 2). New gages were installed on the Peace Creek Drainage Canal at State Route 655 (02293987), on Livingston Creek near Frostproof (No. 02269520), on Tiger Creek near Babson Park (No. 02268390), and on Bowlegs Creek near Fort Meade (No. 02295013) in 1991.

The Central Florida Orlando/Kissimmee area has experienced significant urban development since the 1970s. Entertainment-based theme parks in and around the Disney World/Kissimmee area are partially located within the Reedy Creek (Disney/Orlando) and Horse Creek basins which contribute significant peak discharges to the Snell/Lake Marion Creek watershed area and the increased flooding potential.

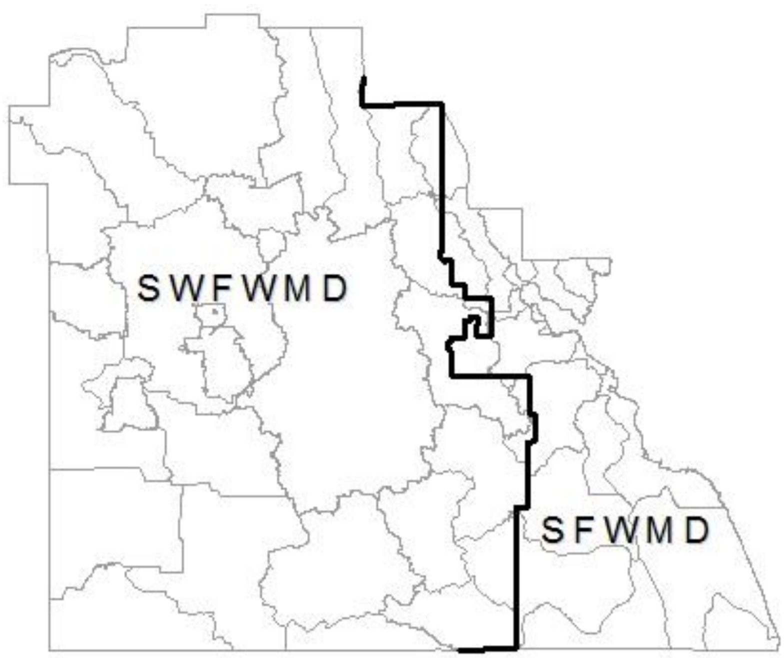
Two major roadways have been placed across the historical floodplain of the Snell/Lake Marion Creek slough system. Cypress Parkway crosses Snell Creek just south of the City of Davenport, and Poinciana Parkway crosses the Lake Marion Creek Slough east of the City of Haines City.

In addition, residential and commercial development in the adjacent Poinciana area (Osceola and Polk Counties) has contributed to the historical encroachment on the eastern Lake Marion Creek floodplain. Portions of the Poinciana development have taken place adjacent to the historical 1-percent-annual-chance floodplain of the Lake Marion Creek Slough. Specifically, the residential developments found along the western boundary of Poinciana Parkway indicate that some encroachment of the Lake Marion Slough floodplain took place between 1987 and 2007 as evident by the existing berms surrounding these subdivisions.

2.4 Flood Protection Measures

Polk County falls under the jurisdiction of two water management districts, South Florida Water Management District (SFWMD) and Southwest Florida Water Management District (SWFWMD). Figure 2 shows the district boundaries across Polk County.

Figure 2: Polk County Water Management District Boundary



Polk County has a strong Stormwater Management Department; its flood protection measures include regulation of development in the floodplains. The County also has numerous channelized streams and canals, but these are not usually designed to contain the 100-year flood.

The SFWMD operates the outlet control structure at the south end of Lake Kissimmee to maintain recreational levels and regulate flood discharges to the lower Kissimmee River. The operating schedule for the outlet structure and the maintenance of the dredged channel downstream are being revised to minimize possible regulated environmental changes.

The SWFWMD operates outlet control structures for several lakes in the Peace River basin. The structures are moderately effective in regulating small floods, but are not designed to regulate large floods; because they are water conservation structures, not flood control structures. The Peace Creek Drainage Canal is the principal drainage system for many lakes in north-central Polk County and provides some protection from lowland flooding.

Existing flood protection in the City of Haines City consists of the drainage ditch and surface outlets from Lakes Tracy, Joe, Brown, Eva, and Butler. Some lakefront residences are protected by sea walls with top elevation generally at the 1960 flood elevation.

Existing flood protection in the City of Lakeland consists of the drainage ditches and surface outlets from Lakes Bentley, Bonnet, Bonny, Canyon, Hollingsworth, Hunter, John, and Parker and Southwest Ditch. Some lakefront residences are protected by sea walls with top elevation generally at the 1960 flood elevation.

In the City of Winter Haven, there are a number of drainage canals with control structures, open channels, and storm drainage pipes that serve as flood protection devices. The Lake Region Lakes Management District control structure at the outlet of Lake Lulu can regulate the normal flow elevation in the Winter Haven lake chain but is not designed for flood control purposes.

An 18-inch pipe culvert carries outflow from Lake Deer to Lake Cannon when elevation exceeds 139.0 feet NGVD29. The capacity of the pipe has been exceeded frequently since 1946.

A moderate amount of flood control can be achieved by the operation of the SWFWMD control structure P-5 at Lake Henry, P-6 at Lake Smart, P-7 at Lake Fannie, and P-8 at Lake Hamilton.

A 2-foot diameter pipe from Lake Silver to Lake Martha permits flow out of Lake Silver when the elevation exceeds 144.55 feet NAVD88. However, the structure is controlled manually with a gate, and can only flow when the structure is open. A 4-foot diameter pipe from Lake Martha to Lake Maude carries discharge above 140.63 feet NAVD88. From Lake Maude, a concrete-lined channel carries flow at elevations above 139.00 feet NGVD88 to Lake Idyl. A channel carries flow from Lake Idyl to Lake Buckeye, and outflow from Lake Buckeye flows north through a drainage ditch to Lake Fannie.

There are no other flood protection structures in Polk County. Drainage canals and ditches in the Hillsborough River and Withlacoochee River basins afford some flood protection to low-lying areas.

The Lake Marion Creek watershed includes the community of Poinciana along the eastern boundary of the Lake Marion Creek Slough. A berm surrounding the Sheldrake Road subdivision and other adjacent developments was built at or near the level of the Lake Marion historical floodplain.

A review of the SFWMD surface water management permit for the Sheldrake Road subdivision indicates that a berm with a top elevation of 63 feet, NAVD88 was placed to separate the drainage between the Lake Marion Creek and London Creek Watersheds. The permit further states that the subdivision was designed to drain in the direction of London Creek, and a 1-percent-annual-chance flood stage of 62.0 feet, NAVD88 was calculated for the permitting process.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods in the community, standard hydrologic and hydraulic study methods were used to determine the flood-hazard data required for this study. Flood events of a magnitude that is expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10-, 2-, 1-, and 0.2-percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

The recurrence intervals of floods in the closed lakes in rural Polk County that were studied in detail (Lakes Helene and Deeson and Clearwater Lake), and the closed lakes in Haines City (Lakes Alice, Boomerang, Elsie, and Hester and Engineers Lake) are expressed in a slightly different manner. Flood elevations that are expected to be exceeded once on the average during any 10-, 50-, 100-, or 500-year period are still expressed as the 10-, 50-, 100-, and 500-year recurrence interval floods, but because of high serial correlation of annual peak elevations, the probability of a certain flood elevation being exceeded in any year is strongly influenced by the preceding year and cannot be expressed as the reciprocal of the recurrence interval.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish peak discharge-frequency relationships for each flooding source studied by detailed methods affecting the community. A summary of peak discharge-drainage area relationships for streams studied by detailed methods is shown in Table 5, "Summary of Discharges."

Precountywide Analyses

Each community within Polk County, except the Cities of Auburndale, Eagle Lake, Lake Alfred, Polk City, and the Village of Highland Park and the Town of Hillcrest Heights, had a previously printed FIS report. The hydrologic analyses described in those reports have been compiled and are summarized below.

Riverine Analyses

Flood-frequency distributions for the Peace River, the North Prong Alafia River, and Ellis Branch, were developed for each station in a log-Pearson Type III analysis using Water Resources Council guidelines. The Peace River used a generalized map skew coefficient of -0.05. Regional flood relations were developed using a multiple linear-regression analysis of flood-peak discharges for selected recurrence intervals (from log-Pearson Type III distributions) and selected basin parameters. Basin parameters used in the regression include drainage area, stream length and slope, and percent of drainage area as lake and swamp area. All basin parameters used were significant at the 5 percent confidence level. The range for the Peace River basin parameters used is summarized in the following tabulation:

Basin Parameter	Range
Drainage Area	9.0 to 1,367 square miles
Length	6.2 to 140 miles
Slope	1.2 to 5.0 feet per mile
Lake and Swamp Area	4.5 to 28.7 percent of total basin area

For the North Prong Alafia River and Ellis Branch, peak discharges were determined using regional flood-frequency relations for west-central Florida, as described in USGS Open-File Report 79-1293 (Reference 13).

Flood discharges for the North Prong Alafia River study reach in the City of Mulberry are based on a weighted procedure, which weighs gaging station data with regression estimates. The weighted gaging-station data at the Keysville gage (drainage area 135 square miles) are transferred to ungaged sites in the vicinity of Mulberry by a drainage area ratio. Gage records have been kept at the Keysville gage since 1950.

For the detailed study of Ellis Branch in the City of Mulberry, the discharge estimates were not weighted because streamflow records were not available for Ellis Branch. Almost all of the Ellis Branch watershed has been altered by strip mining operations. The watershed parameters were estimated from USGS topographic maps and a photomosaic planimetric map (References 14 and 15).

For Horse Creek, the appropriate NRCS unit hydrographs were selected using the ratio of duration of rainfall excess to time and peak. Using the NRCS procedures, flood hydrographs were also synthesized for Lake Davenport, Palm Lake, Lake Play, and the Southeast Depression in the City of Davenport; Lakes Buckeye, Citrus, Gem, Ida, Lucerne, Mariam, Martha, Maude, Pansy, and Muck Pond in the City of Winter Haven; and Lakes Agnes, Buffum, Cummings, Echo, and Mariam, Little Lake Agnes, Mine Pit Nos. 1, 2, and 3, and Clearwater, Gum, Ned, Saddlebag, St. Claire, and Skyview Lakes in the unincorporated areas of Polk County.

Peak discharges for the selected recurrence intervals along the Haines City Drainage Canal were based on the outflows from Lakes Tracy, Joe, Brown, Eva, and Butler plus the contribution of the intervening direct runoff. Peak discharges for the Lake Brown Outlet Ditch and Lake Eva Outlet Ditch were computed using results of the NRCS storm hydrograph routing analysis.

Lacustrine Analyses

Analyses of elevations of Lake Clinch in the City of Frostproof were based on records for the lake gage at Frostproof from January 1947 to May 1977 (References 16, 17, and 18). Lake stage records for Reedy Lake, weekly observations from April 1945 to July 1946, and continuous records from January 1947 to September 1971 were used in the analyses of peak stage-frequency relationships of Reedy Lake and Lake Ida. No changes in inlet or outlet conditions of the lakes occurred during the periods of record. The detailed investigations of the gage data by the study contractor included Gumbel, Pearson Type III, and log-Pearson Type III analyses of annual peak stage (References 19 and 20). The June 1 to May 31 climatic year was used instead of the standard October 1 to September 30 water year because the occurrence of some of the annual peaks near the end of the standard year were not independent of peak stage in the following year. The analyses of Lake Deer in the City of Winter Haven were based on records available through 1977.

In the unincorporated areas of Polk County, stage-frequency data for Lakes Clinch, Hamilton, Hancock, Juliana, Lowery, Marion, Parker, Pierce, Rosalie, Weohyakapka, and Crooked and Reedy Lakes were determined from results of log-Pearson Type III analysis of the annual maximum stages. Stage-frequency data for Lakes Deeson and Helene were determined from results of a combination of the log-Pearson Type III analysis and modified NRCS hydrograph flood routing.

Analyses of peak elevations of Lake Hamilton and Little Lake Hamilton were based on records for the USGS gaging station at Lake Hamilton November 1966 to May 1977. The entire period of record (January 1947-May 1977) could not be used because of changes in outlet control and drainage area prior to 1966. Flood elevations for Lake Lowery and Lake Hammock are based on records for the gaging station at Lake Lowery near Haines City from June 1960 to May 1977.

For the City of Winter Haven, stage-frequency data for Lake Deer, Lake Hamilton, Lake Otis, and Middle Lake Hamilton were determined from results of log-Pearson Type III analysis of the annual maximum stages. Similar analysis was performed for Lake Parker in the City of Lakeland; Little Lake Hamilton, Lake Lowery, and Lake Hammock in the City of Haines City; Lake Hamilton in the Town of Hamilton; and Lake Clinch in the City of Frostproof.

Flood stages for Lakes in the Alfred Chain, Fannie, Henry, and Winter Haven Chain in the City of Winter Haven; and Lakes Ariana, Lake Arietta, Eloise, Gibson, Haines, Henry, Lena, Lulu, Mariana, Rochelle, Winterset, and Whistler in the unincorporated areas of Polk County were computed in a flood routing model used by SWFWMD as described in the report titled, *Flood-Stage Frequency Relations for Selected Lakes in Polk County*.

Rainfall frequency data used in the study are based on data from the following sources: Four Rivers Basin, Florida, General Design Memorandum of USACE for storm durations greater than 24 hours, and the Rainfall Frequency Atlas of the U.S. Department of Commerce, Weather Bureau, for durations of 24 hours and less. The Puls method was used with stage-volume curves based on 5-foot contour, 1:24,000 scale topographic maps and discharge ratings for the outlet structures to route floods of known recurrence interval through lakes indicated.

Flood stages for Pond Nos. 1 through 4 and Lake City Beach in the City of Fort Meade; Crystal Lake, Lakes Christina, Dora, Gordon, Ida, Lee, and Sara and Depression Nos. 1 and 2 in the Town of Lake Hamilton; Lakes Alice, Elsie, and Hester and Engineers Lake in the City of Haines City; Lakes Bentley, Bonny, Canyon, Hollingsworth, Hunter, and John in the City of Lakeland; in the unincorporated areas of Polk County were computed in a routing analysis using inflow hydrographs based on a procedure outlined by the NRCS (Reference 21). This procedure consists of selecting a storm of known duration and recurrence interval, and computing the direct runoff by the use of curve numbers to estimate the runoff from soils with various land-use combinations. Runoff curve numbers are selected for each different combination of soil type and land use. If more than one soil type, ground cover, or land use exists in a watershed, a composite runoff curve number is determined by weighting each curve number proportional to its area.

Beginning elevations used in the NRCS routing analyses were estimated as the long-term average elevation. In an analysis of 32 long-term lake gages in Polk County and adjoining counties, it was found that the standard error of the average lake elevation was within 1.1 feet of the elevation printed on the USGS topographic quadrangle. Therefore, the lake-surface elevations from the topographic quadrangle were used as the beginning elevations for flood-routing analyses for both gaged and ungaged lakes.

Outflow ratings were based on field survey data of weir, culvert, and channel elevations obtained in 1979. Culvert ratings were computed using USGS computer program A526 (Reference 22). Weir control discharges were computed using weir coefficients determined by using USGS procedures (Reference 23). Open channel discharge ratings were computed using USGS step-backwater computer program E431 (Reference 24).

Flood hydrographs, based on storm durations of 6-, 12-, 24-, and 240-hour storms, were used in the routing analysis. The relatively large volume, between average annual stage and outflow elevation, resulted in the 240-hour duration storm giving the peak elevation for all recurrence interval floods.

The highest elevation computed by the routing procedure for each recurrence interval using the different storm durations was selected as the flood elevation for that recurrence interval.

Rainfall amounts for a given recurrence interval and duration were selected from U.S. Weather Bureau Technical Paper No. 40 (Reference 25). In this publication, rainfall amounts are given for return periods ranging from 1 to 100 years and storm durations from 30 minutes to 24 hours. Rainfall amounts for durations from 2 to 10 days were selected from U.S. Weather Bureau Technical Paper No. 49 (Reference 26). The 500-year return period rainfall amounts were estimated from an extension of a graph drawn through the lower frequency values on lognormal-probability paper.

The NRCS procedure assumes a relationship between time-to-peak and time-of-concentration. Time-of-concentration is the time of travel from the most distant part of the basin to the outlet. A graph of average basin slope versus ground cover is used to determine an overland velocity. The time-of-concentration is then determined by dividing the overland flow distance by the average velocity. A design storm hydrograph is then computed using a NRCS unit hydrograph selected on the basis of the ratio of time-to-rainfall excess to time-of-peak. For rainfall durations greater than 6 hours, a time adjustment is used to compute the unit hydrograph.

A modified Puls routing technique was used to route flood hydrographs of the selected recurrence intervals through the lakes. The procedure is based on the continuity relation, in which change in storage is equal to the difference between average inflow and outflow. The procedure requires a stage-volume relationship and outflow rating.

Inflow hydrograph routing was accomplished by use of a computer model, which accumulates inflow increments as an increase in storage and allows for outflow over roads or embankments. Computation begins by accumulating inflow until embankment overflow begins. Embankment overflow is subtracted from the accumulated volume, and the resulting volume is compared with the stage-volume curve to determine the corresponding water-surface elevation. Computations were continued until the maximum stage was determined for each pond.

Inflow hydrograph routing through interconnected lakes in the City of Winter Haven was used to determine flood stages for the following groups of lakes, listed in downstream order:

Lake Citrus	Lake Ida
Lake Silver	Lake Martha
Lake Maude	Lake Idyl
Lake Buckeye	Lake Elbert
Lake Otis	

Outflow from Lake Ida into Lake Conine was computed based on the Lake Conine elevation for the same recurrence interval as the routed inflow hydrograph. Outflow from Lake Buckeye to Lake Fannie was computed based on the Lake Fannie elevation for the same recurrence interval as the routed inflow hydrograph. Lake Elbert discharge into Lake Otis was computed based on the Lake Otis elevations computed by the routing model. The computed maximum elevations for Lake Otis compare very well with the elevations determined from the log-Pearson Type III frequency analysis of the recorded annual maximums.

Inflow hydro graph routing through interconnected lakes was done sequentially using a digital computer model. The model accumulates inflow increments as an increase in storage allowing for outflow by culvert and channel overflow. Inflow volume is cumulated until outflow begins. The outflow volume is subtracted from the cumulated volume and the resulting change in volume is compared with the stage-volume curve to compute a new estimated upstream lake elevation. The new lake elevation is used to estimate a new culvert or channel outflow for the time interval. The revised outflow volume is subtracted from the inflow volume to compute a new upstream lake elevation. Iterative trials are made until the assumed and computed upstream lake stage agree. If the upstream stage exceeds the elevation of the overflow embankment, this outflow is also subtracted from the change in volume in the upstream lake. The trials are repeated until the change in volume for the time interval equals inflow minus culvert, channel, and embankment overflow.

The routing trials are made downstream to successive pairs of lakes for the same time interval, repeating the procedure until the most downstream lake elevation is computed. Runoff from the intervening watershed between lakes is computed by the NRCS hydrograph method and is included in the inflow volume. Each time computations are completed for an additional lake, the model checks previous upstream lake elevations for possible revisions. The computations of lake elevations are continued for each time increment of the inflow hydro graphs until the maximum stage is determined for each lake.

Lake Dell overflows through Lake Dell Outlet Ditch during 10-, 50-, 100-, and 500-year floods. Peak elevation on Lake Trask, Lake Menzie, Lake Ruth, Lake Marie, Lake Ada, Lake Josephine, Lake Lois, and Sinkhole Lake, in the Town of Dundee, were below overflow stage for all of the selected recurrence intervals.

The maximum computed lake stage for all recurrence interval floods on Lake Pansy were lower than or equal to the backwater from Lake Rochelle, which has the same elevation as Lakes Conine and Smart. The elevations of Lake Pansy will be the same as Lakes Conine and Smart for all recurrence intervals.

Due to the configuration of the drainage basin, Lake Dora and Christina were combined for detailed study. It was also necessary to include a depression directly south of Lake Christina in the analysis.

North Lake and nearby depressions were incorporated into the surface area of Lake Davenport. Therefore, the 100-year flood elevations for Lake Davenport, North Lake, and nearby depressions are the same.

For six of the lakes in the City of Lake Wales (Lake Altamaha, Lake Cooper, North Lake Wales, Twin Lakes, Lake Wales, and Lake Weader) studied in detail, the 100-year flood elevations were estimated by the Lopez and Hayes procedure for estimating peak stage for unregulated lakes in west-central Florida (Reference 27).

A weighted estimate of the 100-year flood elevation for Lake Wales is included in a report by Lopez and Hayes. The 1960 flood stage estimate of 115.10 feet NGVD29 was not included in the station frequency analysis presented in that report. For this precountywide study, the station frequency analysis was recomputed using the 1960 historical stage, and a new weighted estimate of the 100-year flood elevation for Lake Wales was prepared.

Revised Analyses for Countywide FIS

Information on the methods used to determine peak discharge-frequency relationships for the flooding sources restudied as part of the December 20, 2000, countywide FIS is shown below.

Hydrologic analyses for the December 20, 2000, restudy performed by Engineering Methods & Applications were determined using the HEC-1 computer program (Reference 28). Rainfall values were determined from analyses of rain gage data for locations in and around Polk County (Reference 29). A 4-day storm was chosen based on historical patterns.

Times of concentration were determined using either the NRCS velocity method or the NRCS lag equation (Reference 21). Rainfall infiltration calculations were based on NRCS curve number methods. Curve numbers were calculated based on NRCS Polk County Soil maps, land use as determined from 1990 Florida Department of Transportation aerial photographs, and site visits (References 30 and 31). Snyder Unit hydrographs with peak factors of 0.2 were used to determine basin runoff.

New or revised lake elevations were derived from the August 1991 SWFWMD report (Reference 32).

HEC-1 models were developed by the county to determine the elevations of Lake Aurora, Hidden Lake, and Sick Lake.

Information on the methods used to determine peak discharge-frequency relationships for the flooding sources restudied as part of the September 28, 2012, countywide FIS is shown below.

The hydrologic and hydraulic modeling activities in the 2012 study update revised an existing comprehensive hydrologic computer model of the study area (Reference 33). That study was performed between 1984 and 1987 on behalf of Polk County during the implementation of the Polk County Surface Water Management Plan (SWMP).

A HEC-1 (HEC, 1987) model of the project area was created following the guidelines of the 1987 Polk County SWMP. The calibrated HEC-1 model for the study area was converted to the HEC-HMS software format. Twenty nine sub-basins from the SWMP Drainage Analysis Unit 8 were selected for the detailed hydrologic modeling. The 29-sub-basin area corresponds to the extent of the Lake Marion Watershed and its Snell Creek tributary drainage area.

The Snyder-Clark unit hydrograph methodology, selected for the HEC-1 modeling in the 1987 Polk County SWMP was also applied in the study update. The HEC-1 model used the Clark Method (Reference 34), which applies the time-area curve (TAC) for the watershed, and the Snyder Method (USACE, 1959) for calculating watershed lag and peak runoff rates. The Clark Method TAC defines the cumulative area of the watershed (sub-basin) contributing runoff to the watershed outlet as a function of the time of concentration.

Two rainfall distributions were selected for rainfall-runoff analysis in the study area: the NRCS Type II Florida-Modified 24-hour distribution, and the SFWMD 72-hour rainfall distribution. Twenty-four and 72-hour rainfall-intensity-duration relationships were developed for the study area. The total rainfall depths were obtained from depth-duration-frequency curves. The rainfall depth-duration-frequency relationships were applied in this study revision as follows:

- NRCS Type II Florida-Modified 24-Hour Rainfall Distribution: for the 10-percent-annual chance, design storm;

- SFWMD 72-Hour Rainfall Distribution: for the 2- and 1- percent-annual-chance design storm.

Total rainfall values for each watershed included in the September 28, 2012 revision are shown in Table 4, "Total Rainfall Values used for September 28, 2012, Revision".

Table 4: Total Rainfall Values used for September 28, 2012, Revision

Watershed	Datum Offset (ft)	Study Type	1 Day 100-year	3 Day 100-year	Date of Model
Arbuckle Creek	-1.0	Historical Delineation	11.0	13.0	11/19/03
Catfish Creek	-1.0	Historical Delineation	11.0	13.0	11/19/03
Lake Arbuckle	-1.0	Historical Delineation	11.0	13.0	11/19/03
Lake Cypress	-1.0	Historical Delineation	11.0	13.0	11/19/03
Lake Hatchineha	-1.0	Redelineation	11.0	13.0	11/19/03
Lake Kissimmee	-1.0	Redelineation	11.0	13.0	11/19/03
Lake Marion	-1.0	Redelineation	11.0	13.0	11/19/03
Lake Marion Creek	-1.0	Detailed	*	13.0	11/23/09
Lake Pierce	-1.0	Redelineation	11.0	13.0	11/19/03
Lake Reedy	-1.0	Historical Delineation	11.0	*	11/19/03
Lake Rosalie	-1.0	Redelineation	11.0	13.0	11/19/03
Lake Weohyakapka	-1.0	Redelineation	11.0	13.0	11/19/03
Livingston Creek	-1.0	Historical Delineation	11.0	*	11/19/03
London Creek	-1.0	Limited Detailed	*	14.1	11/23/09
Lower Reedy Creek	-1.0	Historical Delineation	11.0	13.0	11/19/03
S-65A	-1.0	Historical Delineation	11.0	13.0	11/19/03

Table 4: Total Rainfall Values used for September 28, 2012, Revision (continued)

Watershed	Datum Offset (ft)	Study Type	1 Day 100-year	3 Day 100-year	Date of Model
S-65BC	-1.0	Historical Delineation	11.0	13.0	11/19/03
Tiger Lake	-1.0	Historical Delineation	11.0	13.0	11/19/03

*Data Not Available

The 0.2-percent-annual-chance design-storm depth was extrapolated from the more frequent design- storm event depths.

The development of the hydrologic model for the Lake Marion Creek Watershed detailed study area was predicated on the correlation of the SWMP projected 2010 condition NRCS, formally the Soil Conservation Service (SCS), curve numbers (CNs) (Reference 35) and impervious percentages with the 2007 land use for the watershed. It was proposed that if the SWMP projected and current 2007 baseline year CNs and impervious percentages matched within 5 percent, the associated HEC-1 peak discharges for the future SWMP model condition could be used as input to the Interconnected Channel and Pond Routing (ICPR) model (Reference 36). Examination of the 2007 Florida Land Use, Land Cover Classification System (FLUCCS) indicated that a direct correlation could not be made with the SWMP study land uses as derived from the LANDSAT image data. This required a detailed comparison of soil and land cover data for both the 1987 SWMP and the 2007 conditions to arrive at an applicable set of CN and percent impervious parameters for the HEC-HMS (Reference 37) modeling.

The updated land use was compiled from the ERPs that resulted from construction after 2005. The areas of updated land use were designated as Residential Medium Density (FLUCCS Code 1200) to reflect the type of construction seen in the ERPs. The most important aspect of this update was to locate the areas of significant urban development (such as the Poinciana community) where flood volume storage has diminished due to urban development and wetland encroachment.

The 1984 SWMP watershed condition CNs were recalculated based on the spatial interrelationship of soils and land cover for the 2007 land use database. A GISbased overlay procedure was created from land cover and soils to produce a land cover-hydrologic soil group (HSG) (Type A, B, C, and D) (Reference 35) combination. Soils data was obtained from the NRCS Soil Survey Geographic Database for Polk and Osceola Counties. A CN value was assigned to each land cover-HSG combination using a CN look-up table.

Determination of Type A soils occurrence in the study area is very important because it identifies locations where there is a significant amount of infiltration from rainfall and reduced volumes of direct runoff. Also, these are areas which can have special treatment in the application of the HEC-HMS and ICPR models. The percentage of soil Type A was calculated for each sub-basin by using an area weighted average of the soil Type A for each sub-basin.

The HEC-HMS model, coded per the updated land uses and applicable CN numbers, was applied to calculate the 1-percent-annual-chance, 72-hr design storm event peak discharges for the 2007 land use based CN characteristics and percent imperviousness in the Lake Marion Watershed area of detailed study.

The stage-storage-outflow data applied in the HEC-HMS model was obtained from the best available topographic maps and Light Detection and Ranging (LiDAR) topography. Stage-outflow data was obtained by applying, standard hydraulic formulas with empirical coefficients for weirs, culverts, and gates. Streamflow field measurements were also applied where appropriate.

Starting water-surface elevations (WSEL) for the storage routings were based on several lake conditions, depending upon the type and location of the lake. If the lake was isolated, the starting WSEL was obtained from topographic maps from the Digital Elevation Model derived from 2005 LiDAR data. This elevation was assumed to represent the long-term average elevation of the lake.

The HEC-HMS model output time series consists of a data storage system (DSS) file typically applied in all HEC software. The DSS output file was used as input to the ICPR model (Reference 67).

Information on the methods used to determine peak discharge-frequency relationships for the flooding sources revised as part of this December 22, 2016, countywide FIS is shown below.

Peace Creek Watershed

ICPR program, version 3 was used for analysis of the hydrologic and hydraulic conditions of the study area. The ICPR Hydrology Module with Green-Ampt infiltration method was used to generate runoff excess from drainage basins.

The SCS unit hydrograph method was used to convert precipitation excess into a runoff hydrograph. A synthetic unit hydrograph with a shape factor of 256 was used for this application. This value of the shape factor is considered adequate for areas with mild slopes and relatively flat terrain, such as those in this watershed.

Time of concentration was calculated per the Kirpich method which utilizes the length of overland flow and basin slope data.

Total impervious area and directly connected impervious area were established by calculating actual values at locations in the watershed that represent the various land use categories and averaging them to represent average conditions for each land use category (Reference 38).

Mulberry Watershed

ICPR program, version 3 was used for analysis of the hydrologic and hydraulic conditions of the study area. The hydrologic rainfall abstraction method used was the SCS Curve Number equation, as incorporated in the ICPR software. In general, the CN values were established using typical literature values associated with the various land use/soil categories.

The SCS unit hydrograph method was used to convert precipitation excess into a runoff hydrograph. A synthetic unit hydrograph with a shape factor of 256 was used for this application. This value of the shape factor is considered adequate for areas with mild slopes and relatively flat terrain, such as those in this watershed.

The time of concentration (Tc) for hydrologic modeling was calculated as the sum of the overland, shallow concentrated and channel flows for the path identified for each subbasin.

In general, the values of directly connected impervious area (DCIA) were established using typical literature values associated with the various land use categories. However, the values were adjusted where deemed necessary based on actual field conditions (Reference 39).

Lake Hancock

The goal of the Lake Level Modification Project is to store water by raising the control elevation, from 98.7 to 100.0 feet, of the existing outflow structure on Lake Hancock and to slowly release the water during the dry season to help meet the minimum flow requirements in the upper Peace River between Bartow and Zolfo Springs. In the Lake Hancock project, ICPR was used to model the watershed. The modeling conducted during for the Lake Level Modification Project was limited to determining the 1-percent-annual-chance flood elevations for existing conditions and each of the three proposed lake level alternatives. The 1-percent-annual-chance, 5-day storm event with a total of 16.0 inches and distributed according to the specifications in the District’s Guidelines and Specifications (Reference 40) was used for the simulations (Reference 41).

Polk City Watershed

ICPR program, version 3 was used for analysis of the hydrologic and hydraulic conditions of the study area. The ICPR Hydrology Module with Green-Ampt infiltration method was used to generate runoff excess from drainage basins.

The SCS unit hydrograph method was used to convert precipitation excess into a runoff hydrograph. A synthetic unit hydrograph with a shape factor of 256 was used for this application. This value of the shape factor is considered adequate for areas with mild slopes and relatively flat terrain, such as those in this watershed.

The time of concentration (Tc) was calculated per the TR-55 methodology. The Tc path was drawn in the GIS for all subbasins in the watershed, except for those with an estimated Tc of less than 10 minutes, which is the minimum value assumed for the model.

Percent DCIA and percent impervious area were estimated for each land use type using takeoffs from representative parcels. Subbasins were checked individually to make sure estimates were consistent with field conditions (Reference 42).

A summary of the drainage area-peak discharge relationships for all of the streams studied by detailed methods is shown in Table 5, “Summary of Discharges.”

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

The conceptual representation of a stormwater conveyance system is based on the "link-node" or "reach-junction" concept. The links (or reaches) represents sections of ditches, canals, rivers, or pipes along the conveyance system. Nodes (and/or junctions) represent storage or the intersection of two or more reaches and are described as confluence or diversion points of flow. Nodes also provide a computation point that is used to determine water surface elevations within the primary storm event.

A stage-storage relationship was provided in the ICPR models for applicable streams at node locations where a flood storage-routing was desired. Elevations at the nodes found on the FIRMs (Exhibit 1) are presented in a Node Table, representing the node name, watershed, and elevation, at the end of this FIS report.

Table 5: Summary of Discharges

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
BAILEY ROAD DITCH					
At approximately 1,000 feet upstream upstream of mouth	0.4	*	*	157	*
BLACKWATER CREEK					
At county boundary	6.8	1,900	3,123	3,709	5,056
At Harrelson Road	2.5	379	710	880	1,444
BLACKWATER CREEK TRIBUTARY 1					
At county boundary	1.6	743	1,147	1,345	1,958
BLACKWATER CREEK TRIBUTARY 2					
At Greenfield Acres Road	6.9	561	1,099	1,377	2,244
At State Route 35A (Kathleen Road)	6.0	476	935	1,166	1,940
ELLIS BRANCH					
At confluence with North Prong Alafia River	*	*	*	368	*
FOX BRANCH					
At county boundary	21.4	742	1,086	1,271	1,829
At cross-section G	14.1	876	1,309	1,527	2,173
At Rock Ridge Road (gage)	8.8	790	1,119	1,255	1,662
At Banana Wilder Road	3.5	322	487	576	829
At confluence of Fox Branch Tributary	2.4	219	337	396	574
Upstream of Fox Branch Tributary	1.0	96	147	173	251

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
FOX BRANCH TRIBUTARY					
At confluence with Fox Branch	1.4	124	191	225	326
HAINES CITY DRAINAGE CANAL					
At Middle Lake Hamilton	*	*	*	47	*
HORSE CREEK					
At CSX Transportation	15.2	888	1,259	1,427	1,710
ITCHEPACKESASSA CREEK					
At county boundary	30.6	1,870	3,216	3,843	5,584
Upstream of county boundary	24.5	1,593	2,385	2,678	3,766
At Walker Road	22.5	1,593	2,353	2,657	3,760
At confluence of Itchepackesassa Creek Tributaries 1 and 2	21.2	1,540	2,293	2,586	3,700
ITCHEPACKESASSA CREEK TRIBUTARY 1					
At confluence with Itchepackesassa Creek	4.2	692	1,025	1,202	1,685
ITCHEPACKESASSA CREEK TRIBUTARY 2					
At confluence with Itchepackesassa Creek	17.1	1,402	2,089	2,315	3,029
At Interstate Route 4	16.2	1,415	2,129	2,415	3,400
At Old Tampa Highway/State Route 542	3.2	253	368	438	641
At Airport Road	1.5	64	160	202	319
LAKE A	0.3	*	*	365	*
LAKE BONNET DRAIN					
At City of Lakeland corporate limits	1.3	84	155	180	250

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
LAKE DELL OUTLET DITCH					
At U.S. Highway 27	0.6	15	32	36	42
LAKE DRAIN					
Confluence with Poley Creek	7.6	535	809	1,060	1,850
Upstream of Carlton Arms Apts. driveway culvert	7.5	533	805	1,060	1,840
Downstream of Old Hwy. 37 culvert	3.8	260	383	508	832
Upstream of Old Hwy. 37 culvert	3.8	258	379	495	776
Upstream of CSX Bridge	3.7	352	475	536	762
Downstream of S.R. 37 (South Florida Avenue)	3.3	243	319	351	541
Upstream of Brewer Way Street	3.1	64	162	290	471
Upstream of Francis Pipkin Road	2.6	43	48	50	57
Downstream of Scott Lake Road	2.0	49	49	55	74
LAKE DRAIN CENTRAL CHANNEL					
At the upstream limit of detailed study	*	83	154	232	449
Approximately 136 feet upstream of Ewell Road	*	10	32	48	102
LAKE DRAIN WEST CHANNEL					
Approximately 180 feet upstream of Ewell Road	*	144	196	202	317
Just downstream of Ewell Road	*	138	183	191	317
Approximately 630 feet upstream of Lunn Woods Trail culvert crossing	*	91	142	192	317

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
LAKE DRAIN WEST CHANNEL (CONTINUED)					
Approximately 30 feet upstream of Lunn Woods Trail culvert crossing	*	66	156	212	350
LAKE EVA OUTLET DITCH	1.2	7	24	29	54
LAKE GIBSON DRAIN					
At mouth	4.3	60	125	143	186
LAKE HOLLINGSWORTH DRAIN	2.2	29	63	95	126
LAKE HUNTER DRAIN					
At mouth	1.0	14	24	28	33
LAKE LENA DRAIN					
At mouth	20.6	150	166	172	181
At State Route 540	16.4	118	132	137	144
LAKE LENA DRAIN (CONTINUED)					
At State Route 542	14.0	103	107	117	123
At State Route 655	12.5	90	99	104	110
LAKE MARION CREEK					
At confluence with Lake Hatchineha	81.3	*	*	4813.9	*
LAKE MARION OUTLET DRAIN					
At confluence with Snell Creek	30.1	*	*	609.3	*

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
LAKE PARKER DRAIN					
At CSX Transportation	23.6	145	195	213	257
LAKE PARKER TRIBUTARY	3.5	120	165	195	275
LAKE ROSALIE TRIBUTARY					
Below confluence of North Fork Lake Rosalie Tributary	6.5	292	658	713	1,180
Above confluence of North Fork Lake Rosalie Tributary	2.5	227	513	524	835
MEADOW VIEW DITCH	**	**	**	**	**
MUD LAKE DRAIN					
At cross-section A	1.89	44	69	84	111
NORTH FORK LAKE ROSALIE TRIBUTARY	4.0	65	145	189	346
NORTH PRONG ALAFIA RIVER					
At county boundary	64.4	4,140	7,320	8,980	13,500
Above confluence of Poley Creek	39.0	2,170	4,000	4,950	8,050
OAKHILL DITCH CREEK					
Approximately 570 feet upstream of Unnamed Dirt Road	*	*	*	288	*
PEACE CREEK DRAINAGE CANAL					
At confluence with Peace River	*	*	*	3,073	*

*Data not available

**No revised Summary of Discharges table information provided in LOMR 04-04-B007P

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
PEACE CREEK DRAINAGE CANAL TRIBUTARY 2					
At divergence from Peace Creek Drainage Canal	*	*	*	5,654	*
PEACE CREEK DRAINAGE CANAL TRIBUTARY 3					
At confluence with Peace Creek Drainage Canal	*	*	*	98	*
PEACE CREEK DRAINAGE CANAL TRIBUTARY 4					
At confluence with Peace Creek Drainage Canal	*	*	*	94	*
PEACE RIVER					
At county boundary	730	9,500	15,800	19,200	28,800
At cross-section M	583	6,750	10,800	13,200	19,700
At cross-section R	542	5,930	9,550	11,500	17,000
At U.S. Highway 98	465	4,280	7,000	8,450	12,300
At cross-section AV	434	3,600	6,050	7,250	10,600
At State Route 60	390	2,740	4,720	5,680	8,240
POLEY CREEK					
At confluence with North Prong Alafia River	25.4	1,080	1,970	2,410	3,940
At State Route 60	24.0	920	1,710	2,100	3,460
At Shepherd Road	20.5	830	1,530	1,880	3,080
Below Lake Drain	17.3	670	1,240	1,520	2,500

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
POLEY CREEK (CONTINUED)					
Above Lake Drain	6.5	420	840	1,050	1,710
Above Pipkin Road	3.6	300	590	750	1,180
REEDY CREEK					
At U.S. Highway 92	209.0	800	1,100	1,100	1,100
SNELL CREEK					
At confluence with Lake Marion Outlet Drain	9.9	*	*	3017.9	*
SOUTH PRONG ALAFIA RIVER					
At county boundary	*	4,260	7,040	8,270	10,980
SOUTHWEST DITCH	0.5	159	250	289	457
SOUTHWEST DITCH TRIBUTARY	0.2	124	200	231	340
TRIBUTARY NO. 1					
At CSX Transportation	2.2	*	*	602.0	*
At Old Lake Wilson Road	0.2	*	*	336.0	*
TRIBUTARY NO. 2					
At CSX Transportation	0.2	*	*	175.0	*
TRIBUTARY TO LAKE DRAIN					
At confluence with Lake Drain	0.21	*	*	135	*
UNNAMED PONDING AREA 41					
Approximately 200 feet east of intersection of Kinney Harmon Road and U.S. Highway 92	0.02	*	*	66.0	*
UNNAMED PONDING AREA 42					
Approximately 300 feet southeast of intersection of Kinney Harmon Road and U.S. Highway 92	0.01	*	*	23.0	*

*Data not available

Table 5: Summary of Discharges (continued)

Flooding Source and Location	Drainage Area (Square miles)	Peak Discharges (Cubic Feet per Second) 10-percent	2-percent	1-percent	0.2-percent
UNNAMED PONDING AREA 43					
Approximately 700 feet southeast of intersection of Kinney Harmon Road and U.S. Highway 92	0.01	*	*	11.0	*
UPPER SADDLE CREEK					
At Lake Hancock	*	*	*	1,871	*
WAHNETA FARMS CANAL					
At confluence with Peace Creek Drainage Canal	*	*	*	1,047	*
WAHNETA FARMS CANAL TRIBUTARY					
At confluence with Wahneta Farms Canal Tributary	*	*	*	148	*

*Data not available

Table 6: Summary of Stillwater Elevations

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88)			
		10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Avatar Ponding Areas	0301	*	*	134.7	*
Banana Lake	0485	105.9	*	106.5	*
Bay Lake	0195, 0215	*	*	133.3	*
Bellerive Pond	0313	*	*	148.4	*
Big Gum Lake	0590	94.6	*	95.1	*
Blackwater Lake	0470, 0490	*	*	111.8	*
Blackwater Ponding Area No. 1	0490	*	*	106.7	*
Blue Lake	0730	*	*	119.8	120.2
Bonnet Lake	0219, 0220	130.5	*	134.0	*
Bridgewater Pond 1	0310	*	*	135.8	*
Bridgewater Pond 2	0310	*	*	136.2	*
Bridgewater Pond 3	0310	*	*	136.4	*
Bridgewater Pond 4	0310	*	*	136.5	*
Bridgewater Pond 5	0310	*	*	135.7	*
Bridgewater Pond 6	0170	*	*	137.3	*
Bridgewater Pond 7	0170, 0310	*	*	135.7	*
Bridgewater Pond 8	0310	*	*	135.8	*
Camp Lake	0215, 0355	*	*	132.6	132.7
Carlton Arms Ponding Areas	0301	*	*	134.7	*
Christina Ponding Area No. 1	0480	142.2	142.6	143.1	*
Christina Ponding Area No. 2	0480	141.4	142.4	143.1	*
Clark Lake	0480	*	*	139.9	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Clearwater Lake	0190	*	*	146.1	*
Crescent View Pond No. 1	0535	*	*	126.0	*
Crescent View Pond No. 2	0535	*	*	126.7	*
Crescent View Pond No. 3	0535	*	*	129.5	*
Crews Lake	0485	*	*	148.1	*
Crews Lake Ponding Area	0485	*	*	120.2	*
Crooked Lake	0730, 0735, 0740, 0745	121.7	124.0	125.0	126.9
Crystal Lake No. 1	0320	*	*	139.1	*
Crystal Lake No. 2	0367, 0369, 0390	*	*	123.0	123.6
Crystal Lake No. 3	0535	*	*	132.5	132.7
Crystal Lake No. 4	0565	*	*	120.1	120.3
Crystal Lake No. 4	0705	*	*	138.8	139.2
Cypress Lake	0590	99.3	*	100.9	*
Depression No. 1 in Lake Hamilton	0390	*	*	119.6	122.2
Depression No. 2 in Lake Hamilton	0390	*	*	130.8	130.9
Dinner Lake No. 1	0510	*	*	129.1	*
Dinner Lake No. 2	0555	*	*	122.5	122.7
Dollar Lake	0535	*	*	132.1	*
Eagle Lake	0345, 0510	130.1	*	131.0	*
East Wet Pond	0313	*	*	153.0	*
Enclave Ponding Area No. 1	0470	*	*	116.2	*
Engineers Lake	0359	*	*	126.2	126.3

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
FCA Pond	0230	*	*	104.8	*
Flora Lake	0540	*	*	121.9	*
Galloway Ponding Areas	0301	*	*	134.5	*
Gator Lake	0705, 0710	*	*	132.7	133.0
Grassy Lake No. 1	0355	*	*	133.6	*
Grassy Lake No. 2	0510	133.9	*	135.5	*
Grassy Lake No. 3	0565	*	*	131.7	132.3
Grassy Lake No. 4	0705	*	*	140.1	140.5
Gum Lake	0215	*	*	132.3	132.6
Hamilton Ponding Area No. 1	0358	*	*	124.7	125.0
Hamilton Ponding Area No. 2	0358	*	*	124.2	124.6
Hamilton Ponding Area No. 3	0358	*	*	127.3	128.4
Hickory Lake	0935	97.6	*	98.4	*
Hidden Lake	0170	*	*	132.9	*
Hotel Pond	0480	*	*	151.2	*
Lake A	0695	*	*	108.8	*
Lake Ada	0390	122.9	125.2	126.4	129.7
Lake Agnes	0190	*	*	136.4	*
Lake Alfred	0335, 0355	*	*	131.8	132.2
Lake Alice	0359	*	*	133.9	134.0
Lake Altamaha	0565	*	*	121.3	121.8
Lake Annie	0555	*	*	121.4	122.1
Lake Arbuckle	0975, 1000	56.2	*	57.6	*
Lake Ariana	0335	136.2	137.0	137.4	138.1
Lake Arietta	0330, 0335	142.5	143.5	143.9	144.6
Lake Aurora	0590, 0755	*	*	101.6	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Bentley	0320	115.3	117.0	118.8	120.5
Lake Bess	0535	*	*	125.8	126.1
Lake Blue	0345	*	*	149.6	150.3
Lake Bonnet	0311	145.5	146.1	146.3	146.8
Lake Bonny	0320	130.0	131.0	131.5	132.4
Lake Boomerang	0357, 0380	*	*	127.0	127.8
Lake Brooks	0357	130.5	132.3	134.0	134.4
Lake Brown	0357	*	*	128.0	128.6
Lake Buckeye	0365	*	*	130.7	130.8
Lake Buffum	0720	131.7	132.3	132.5	132.8
Lake Butler	0359	*	*	124.5	125.4
Lake Cannon	0345, 0365	*	*	133.5	134.0
Lake Canyon	0480	111.9	112.2	112.4	112.7
Lake Christina No. 1	0390	*	*	129.5	130.2
Lake Christina No. 2	0480	144.3	145.3	146.2	*
Lake Citrus	0365	*	*	144.0	144.6
Lake City Beach	0695	137.7	138.1	138.2	138.6
Lake Clinch	0745, 0935	107.1	108.8	109.5	111.0
Lake Easy	0730, 0735	*	*	115.8	*
Lake Confusion	0357	*	*	131.2	*
Lake Cooper	0565	*	*	123.0	124.3
Lake Crago	0302, 0304	130.7	*	132.6	*
Lake Cummings	0355	*	*	130.7	131.0
Lake Daisy	0368, 0535	*	*	129.6	130.1
Lake Davenport	0240	115.5	116.8	117.4	118.5
Lake Deer	0345	*	*	142.1	142.8
Lake Deeson	0310	128.6	131.3	132.2	133.6

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Dell	0369, 0390	*	*	125.1	125.5
Lake Dexter	0535	*	*	132.4	132.9
Lake Dora	0390	*	*	122.6	125.5
Lake Easy	0730, 0735	*	*	115.8	*
Lake Echo	0355	*	*	131.4	132.0
Lake Effie	0565	*	*	117.9	119.2
Lake Elbert	0364	*	*	137.6	138.0
Lake Elizabeth	0364	*	*	130.4	130.9
Lake Eloise	0530	*	*	133.1	133.5
Lake Elsie	0357	*	*	124.8	125.4
Lake Eva No. 1	0355	*	*	131.8	132.2
Lake Eva No. 2	0357, 0359, 0380	*	*	124.5	125.4
Lake Fannie	0355, 0358, 0365, 0366	*	*	127.2	127.4
Lake Florence	0364, 0368, 0530, 0535	*	*	128.6	128.7
Lake Fox	0535	*	*	136.6	137.2
Lake Gadau	0705	*	*	121.6	122.0
Lake Garfield	0540	*	*	106.8	107.5
Lake Gem	0365	*	*	141.1	141.3
Lake George	0355	*	*	130.3	130.7
Lake Gibson	0301, 0302	143.3	*	144.6	*
Lake Gordon	0390	*	*	118.9	119.2
Lake Griffin	0335, 0355	*	*	131.8	132.2
Lake Gross	0530	*	*	138.1	138.3

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Haines	0355	*	*	130.1	130.3
Lake Hamilton	0358, 0359, 0366, 0367	*	*	124.2	124.6
Lake Hammock	0219, 0220	130.5	132.3	134.0	134.4
Lake Hart	0535	*	*	124.8	125.0
Lake Hartidge	0345, 0355, 0365	*	*	133.5	134.0
Lake Hatchineha	0420, 0450, 0585	*	*	55.8	*
Lake Helene	0200	*	*	145.3	*
Lake Hendry	0715	159.2	*	159.5	*
Lake Henry	0356, 0357, 0358, 0359	*	*	127.5	127.9
Lake Hester	0357	*	*	132.7	132.8
Lake Hollingsworth	0315	133.3	133.9	133.9	134.0
Lake Holloway	0320	*	*	140.1	*
Lake Howard	0345, 0365	*	*	133.5	133.9
Lake Hunter	0311, 0313, 0315	161.4	161.8	162.1	162.7
Lake Ida No. 1	0365	*	*	136.5	136.8
Lake Ida No. 2	0367	*	*	120.8	121.2
Lake Ida No. 3	0745	79.1	79.9	80.2	80.9
Lake Idyl	0365	*	*	134.6	135.1
Lake Idylwild	0345	*	*	133.5	134.0
Lake Ina	0364	*	*	131.8	132.3

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Jessie	0335, 0345	*	*	133.5	134.0
Lake Joe	0357	*	*	125.8	126.2
Lake John	0315, 0320, 0480	110.3	111.3	111.7	112.6
Lake Josephine	0390	123.2	125.6	126.8	129.4
Lake Juliana	0200, 0335	*	*	133.3	*
Lake Kissimmee	0625, 0800, 0825, 1025	52.5	*	54.4	*
Lake Lee No. 1	0367, 0390	*	*	123.8	124.0
Lake Lee No. 2	0555	*	*	121.4	122.1
Lake Lena	0330, 0335, 0340, 0345	136.2	137.0	137.4	138.1
Lake Leonore	0745	86.5	*	87.5	*
Lake Link	0364	*	*	128.9	129.3
Lake Lois	0390	*	*	116.9	117.2
Lake Lowery	0215, 0220, 0356	130.5	*	133.9	*
Lake Lucerne	0358	*	*	130.6	131.1
Lake Lulu	0364, 0365, 0530	*	*	133.1	133.5
Lake Mabel	0555	*	*	116.3	116.7
Lake Mariam	0364	*	*	125.7	126.1
Lake Mariana	0335	*	*	139.0	139.4
Lake Marie	0390	121.3	122.5	123.3	124.6
Lake Marion	0385, 0395	66.3	66.6	66.8	67.0

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Martha	0364, 0365	*	*	142.6	143.0
Lake Mattie	0195, 0335	*	*	133.3	*
Lake Maude	0365	*	*	141.4	141.9
Lake May	0365	*	*	133.3	133.7
Lake McLeod	0510, 0530	*	*	131.7	132.0
Lake Medora	0335	*	*	138.5	138.7
Lake Menzie	0390	*	*	125.6	126.0
Lake Mirror	0365	*	*	133.5	134.0
Lake Moody	0745	91.9	*	93.2	*
Lake Myrtle No. 1	0330	140.8	*	141.5	*
Lake Myrtle No. 2	0535	*	*	119.1	119.5
Lake Otis	0364	*	*	128.9	129.3
Lake Pansy	0355	*	*	130.2	130.7
Lake Parker No. 1	0304, 0310, 0315, 0320	130.7	*	132.6	*
Lake Parker No. 2	0545	*	*	122.2	122.3
Lake Parker Tributary Swamp	0303, 0304	137.9	138.6	139.1	140.2
Lake Pierce	0395, 0560, 0580	77.2	77.8	78.1	78.5
Lake Play	0240	124.9	127.2	127.9	129.5
Lake Reed	0535	*	*	138.1	138.3
Lake Ring	0364	*	*	132.1	132.5
Lake Rochelle	0355	*	*	130.1	130.3
Lake Rosalie	0585, 0595	54.5	55.0	55.2	55.6
Lake Roy	0364, 0365, 0530	*	*	133.1	133.5

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88)			
		10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Lake Ruby	0535	*	*	125.8	126.1
Lake Ruth	0390	122.6	124.3	125.4	126.6
Lake Sara	0367	*	*	124.1	124.6
Lake Shipp	0365, 0530	*	*	133.2	133.6
Lake Silver	0365	*	*	147.4	148.0
Lake Smart	0355, 0365	*	*	129.9	130.1
Lake Spring	0365	*	*	133.5	134.0
Lake Stahl	0485	105.9	*	106.5	*
Lake Starr	0555	*	*	116.5	116.8
Lake Streety	0950	107.8	*	108.7	*
Lake Summit	0364, 0530	*	*	133.1	133.5
Lake Swoope	0355	*	*	133.2	133.5
Lake Tennessee	0190, 0195	*	*	133.3	*
Lake Tracy	0357	*	*	124.8	125.5
Lake Trask	0390	114.0	116.2	117.3	120.2
Lake Van	0335	132.1	133.4	133.8	134.7
Lake Wales	0565	*	*	115.3	115.7
Lake Walker	0705	*	*	143.9	*
Lake Weader	0565	*	*	121.1	122.1
Lake Weohyakapka	0755, 0760, 0765, 0770	62.8	*	63.8	*
Lake Whistler	0330, 0335	140.0	140.5	140.6	141.0
Lake Winterset	0530, 0535	*	*	133.1	133.5
Lakeland Harbor Ponding Area	0302, 0304, 0310	*	*	133.0	*
Lester Lake	0301	128.2	*	131.1	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Little Banana Lake	0485	105.9	*	106.5	*
Little Gum Lake	0590	95.9	*	96.9	*
Little Lake Agnes	0200, 0195	*	*	136.4	*
Little Lake Hamilton	0359, 0380	*	*	124.2	124.6
Little Van Lake	0335	*	*	139.0	*
Long Lake	0705	*	*	121.6	*
Meadow View Lake	0301	*	*	160.5	*
Mid Wet Pond	0313	*	*	152.6	*
Middle Lake Hamilton	0359	*	*	124.2	124.6
Millsite Lake	0510	124.4	*	125.3	*
Mine Pit No. 1	0320	133.7	133.8	133.8	133.9
Mine Pit No. 2	0320	135.0	135.2	135.5	136.0
Mine Pit No. 3	0320	125.3	125.4	125.5	125.5
Mountain Lake	0565	*	*	119.6	120.2
Muck Pond	0365	*	*	133.8	134.5
Mud Lake	0190	*	*	142.1	*
Ned Lake	0535	*	*	129.7	130.1
North Lake Wales	0565	*	*	115.4	115.8
NE Pretreat Pond	0480	*	*	146.3	*
Northwest Wet Pond	0313	*	*	151.9	*
Northwest Wet Pond-2	0313	*	*	151.8	*
Oakbridge Pond No. 1	0313	*	*	154.3	*
Oakbridge Pond No. 2	0313	*	*	154.1	*
Oakhill Ponding Area 1	0235	*	*	90.4	*
Oakhill Ponding Area 2	0235	*	*	90.4	*
Oakhill Ponding Area 3	0235	*	*	90.4	*
Oakhill Ponding Area 4	0235	*	*	89.8	*
Oakhill Ponding Area 5	0235	*	*	88.3	*
Oakhill Ponding Area 6	0235	*	*	89.8	*
Oakhill Ponding Area 7	0235	*	*	66.0	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Oakhill Ponding Area 8	0235	*	*	90.8	*
Oakhill Ponding Area 10	0230, 0235	*	*	96.9	*
Oakhill Ponding Area 11	0230	*	*	101.5	*
Oakhill Ponding Area 12	0230, 0235	*	*	98.1	*
Oakhill Ponding Area 14	0230, 0235	*	*	100.3	*
Oakhill Ponding Area 16	0235	*	*	95.3	*
Oakhill Ponding Area 17	0235	*	*	97.3	*
Oakhill Ponding Area 18	0235	*	*	97.3	*
Oakhill Ponding Area 20	0230	*	*	102.1	*
Oakhill Ponding Area 21	0230	*	*	102.6	*
Oakhill Ponding Area 22	0230, 0235	*	*	102.6	*
Oakhill Ponding Area 23	0230	*	*	102.6	*
Oakhill Ponding Area 24	0235	*	*	102.3	*
Oakhill Ponding Area 26	0230, 0235	*	*	102.5	*
Oakhill Ponding Area 27	0235	*	*	100.2	*
Oakhill Ponding Area 28	0235	*	*	99.3	*
Oakhill Ponding Area 29	0235	*	*	98.4	*
Oakhill Ponding Area 30	0235	*	*	96.7	*
Oakhill Ponding Area 31	0235	*	*	96.1	*
Oakhill Ponding Area 32	0235	*	*	98.6	*
Oakhill Ponding Area 33	0235	*	*	98.1	*
Oakhill Ponding Area 34	0235	*	*	97.4	*
Oakhill Ponding Area 35	0235	*	*	96.7	*
Oakhill Ponding Area 36	0235	*	*	104.6	*
Oakhill Ponding Area 37	0235	*	*	89.5	*
Oakhill Ponding Area 38	0235	*	*	88.5	*
Oakhill Ponding Area 39	0235	*	*	90.0	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Old Lake Davenport	0100	110.4	110.9	111.2	112.0
Palm Lake	0240	120.7	123.4	124.4	126.3
Paradise Ponding Area No. 1	0050, 0075	*	*	118.7	*
Paradise Ponding Area No. 2	0075	*	*	118.7	*
Paradise Ponding Area No. 3, Area 1	0050, 0075	*	*	119.5	*
Paradise Ponding Area No. 3, Area 2	0050	*	*	119.8	*
Paradise Ponding Area No. 3, Area 3	0050	*	*	119.8	*
Paradise Ponding Area No. 4	0050, 0075	*	*	119.9	*
Paradise Ponding Area No. 5	0050	*	*	120.6	*
Paradise Ponding Area No. 6	0050, 0075	*	*	120.6	*
Parks Lake	0590	103.6	*	104.3	*
Perch Lake	0705	*	*	126.0	*
Pit Pond	0480	*	*	145.2	*
Polecat Lake	0705	*	*	141.4	141.7
Polk Lake	0520	*	*	99.6	100.2
Pond No. 1 in Fort Meade	0885	97.1	99.6	100.2	100.5
Pond No. 1 in Mulberry	0490	108.8	109.0	109.3	*
Pond No. lA in Fort Meade	0885	98.6	102.3	102.9	103.0
Pond No. 2 in Fort Meade	0885	103.1	107.2	107.4	109.2
Pond No. 2 in Mulberry	0490	108.5	108.6	108.6	*
Pond No. 3 in Fort Meade	0885	91.8	91.8	91.8	94.0
Pond No. 4 in Fort Meade	0885	85.4	85.7	86.0	89.2
Pond 5	0275	*	*	68.2	*
Pond 7	0275	*	*	68.8	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Pond C1	0275	*	*	68.8	*
Pond C2	0275	*	*	68.7	*
Ponding Area 1	0125, 0230	*	*	91.1	*
Ponding Area 1	0294	*	*	134.0	*
Ponding Area 1	0675	*	*	151.8	*
Ponding Area 2	0294	*	*	132.5	*
Ponding Area 2	0675	*	*	128.2	*
Ponding Area 3	0294	*	*	134.8	*
Ponding Area 3	0675	*	*	126.4	*
Ponding Area 4	0294	*	*	133.3	*
Ponding Area 4	0675	*	*	125.9	*
Ponding Area 5	0294	*	*	131.3	*
Ponding Area 5	0675	*	*	131.1	*
Ponding Area 6	0294	*	*	133.2	*
Ponding Area 6	0675	*	*	130.5	*
Ponding Area 7	0294	*	*	136.1	*
Ponding Area 7	0675	*	*	130.7	*
Ponding Area 8	0294	*	*	136.1	*
Ponding Area 8	0675	*	*	130.2	*
Ponding Area 9	0294	*	*	136.2	*
Ponding Area 9	0675	*	*	129.2	*
Ponding Area 10	0294	*	*	136.2	*
Ponding Area 10	0675	*	*	124.4	*
Ponding Area 11	0294	*	*	136.3	*
Ponding Area 12	0293, 0294	*	*	136.4	*
Ponding Area 13	0293	*	*	137.5	*
Ponding Area 14	0293	*	*	137.2	*
Ponding Area 15	0293	*	*	134.3	*
Ponding Area 16	0293	*	*	136.5	*
Ponding Area 17	0293	*	*	136.7	*
Ponding Area CLS	0875	*	*	123.5	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Ponding Area CLS East	0875	*	*	123.5	*
Ponding Area CLS East 2	0875	*	*	123.5	*
Ponding Area CLS East 3	0875	*	*	123.5	*
Ponding Area CLS West	0875	*	*	123.5	*
Ponding Area No. 1	0294	*	*	137.9	*
Ponding Area No. 2	0294	*	*	138.4	*
Ponding Area No. 3	0294	*	*	138.1	*
Ponding Area No. 4	0294	*	*	139.0	*
Ponding Area RL1	0875	*	*	127.5	*
Ponding Area RL2	0875	*	*	132.1	*
Ponding Area RL3	0875	*	*	122.9	*
Ponding Area RL4	0875	*	*	127.5	*
Ponding Area RL5	0875	*	*	127.5	*
Ponding Area RL6	0875	*	*	131.9	*
Ponding Area RL7	0875	*	*	129.1	*
Ponding Area RL8	0875	*	*	125.2	*
Ponding Area RL9	0875	*	*	124.7	*
Ponding Area RL10	0875	*	*	124.6	*
Ponding Area RL17	0875	*	*	125.6	*
Ponding Area RW1	0875	*	*	133.8	*
Ponding Area RW2	0875	*	*	136.1	*
Ponding Area SL1	0875	*	*	123.5	*
Rattlesnake Lake	0535	*	*	119.4	*
Reedy Lake	0745, 0765, 0935, 0975	79.1	79.9	80.2	80.9
Reeves Lake	0535	*	*	124.5	124.7
River Lake	0535	*	*	141.1	141.6
Round Lake	0535	*	*	133.8	134.2

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Saddlebag Lake	0590	105.9	106.9	107.3	107.5
Safari Wild Pond 1	0160	*	*	126.2	*
Safari Wild Pond 2	0160	*	*	126.2	*
Safari Wild Pond 3	0160	*	*	126.2	*
Safari Wild Pond 4	0160	*	*	126.9	*
Scott Lake	0480, 0485	167.9	168.2	168.4	168.9
Sears Lake	0345	142.3	*	143.4	*
Seward Lake	0485	*	*	134.9	*
Sick Lake	0170	*	*	132.9	*
Silver Lake	0935	104.1	*	104.9	*
Sinkhole Lake	0390	*	*	120.8	121.1
Skyview Lake	0320	135.7	136.2	136.3	136.4
Solivita West Pond 1	0385	*	*	67.8	*
Solivita West Pond 2	0385	*	*	67.8	*
Solivita West Pond 3	0385	*	*	68.2	*
Solivita West Pond 4	0385	*	*	68.1	*
Solivita West Pond 5	0405	*	*	69.4	*
Solivita West Pond 6	0405	*	*	67.8	*
Solivita West Pond 7	0275	*	*	68.3	*
Solivita West Pond 8	0245, 0275	*	*	68.2	*
Solivita West Pond 9	0275	*	*	67.9	*
Solivita West Pond 10	0275	*	*	67.9	*
Solivita West Pond 11	0275	*	*	67.5	*
Solivita West Pond 12	0275	*	*	67.9	*
Solivita West Pond 13	0245	*	*	69.1	*
Solivita West Pond 15	0245	*	*	70.6	*
Solivita West Pond 16	0245	*	*	70.6	*
Solivita West Pond 17	0245	*	*	68.7	*
Solivita West Pond 18	0245	*	*	68.7	*
Solivita West Pond 19A	0245	*	*	66.8	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Solivita West Pond 19B	0245, 0275	*	*	68.7	*
Solivita West Pond 19C	0245	*	*	66.8	*
Solivita West Pond 20	0245	*	*	67.7	*
Solivita West Pond 21	0245	*	*	67.7	*
Solivita West Pond 22	0245	*	*	67.7	*
Solivita West Wetland 23	0385, 0405	*	*	65.5	*
Solivita West Wetland 24	0405	*	*	65.9	*
Solivita West Wetland 25	0385, 0405	*	*	66.3	*
Solivita West Wetland 26	0385	*	*	66.2	*
Solivita West Wetland 27	0245, 0275, 0385, 0405	*	*	66.6	*
Solivita West Wetland 28	0245	*	*	66.9	*
Solivita West Wetland 29	0275	*	*	67.9	*
Solivita West Wetland 30	0245, 0275	*	*	66.8	*
Solivita West Wetland 31	0245	*	*	65.6	*
Solivita West Wetland 32	0245	*	*	66.9	*
Solivita West Wetland 33	0245	*	*	66.5	*
Solivita West Wetland 34	0245	*	*	67.0	*
Solivita West Unnamed Ponding Area 35	0405	*	*	65.0	*
Solivita West Unnamed Ponding Area 36	0275	*	*	64.4	*
South East Lakes	480, 485	*	*	112.4	*
Southeast Depression	0240	120.2	122.2	122.2	122.3
Southwest Ditch Pond No. 1	0313	*	*	152.4	*
Southwest Ditch Pond No. 2	0313	150.8	152.2	152.4	153.9
Southwest Ditch Pond No. 3	0313	*	*	151.5	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Spirit Lake	0345, 0510	133.2	*	134.3	*
St. Claire Lake	0195, 0215, 0335, 0355	*	*	133.3	*
Star Lake	0540, 0705	*	*	120.2	120.7
Surveyors Lake	0705, 0710	*	*	133.7	134.0
Tangerine Lake	0215	*	*	133.3	*
Thomas Lake No. 1	0345	134.7	*	136.0	*
Thomas Lake No. 2	0590	103.3	*	104.7	*
Tice Lake	0520	*	*	89.6	89.8
Tiger Lake	0625	*	*	56.0	*
Tower Lake	0219	130.5	*	133.9	*
Twin Lakes	0565	*	*	123.8	124.9
Unnamed Detention Pond to Tower Lake	0219	*	*	135.0	*
Unnamed Ponding Area 1	0535	*	*	138.1	138.2
Unnamed Ponding Area 2	0740	*	*	134.1	*
Unnamed Ponding Area 3	0740	*	*	136.1	*
Unnamed Ponding Area 41	0235	*	*	87.3	*
Unnamed Ponding Area 42	0235	*	*	90.3	*
Unnamed Ponding Area 43	0235	*	*	91.5	*
Unnamed Ponding Area 44	0230	*	*	112.7	*
Unnamed Ponding Area 45	0230	*	*	111.7	*
Unnamed Ponding Area 46	0230	*	*	112.5	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88) 10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Unnamed Ponding Area 47	0230	*	*	112.7	*
Unnamed Ponding Area 48	0230	*	*	109.0	*
Unnamed Ponding Area 49	0230	*	*	108.9	*
Unnamed Ponding Area 50	0230	*	*	108.9	*
Unnamed Ponding Area 51	0230	*	*	109.0	*
Unnamed Ponding Area 52	0230	*	*	106.8	*
Unnamed Ponding Area 53	0364, 0365, 0366, 0368	*	*	124.1	124.6
Unnamed Ponding Area 54	0320	*	*	135.4	*
Venus Lake	0555	*	*	122.5	123.3
Watersong Pond 1	0230	*	*	105.1	*
Watersong Pond 2	0230	*	*	105.4	*
Watersong Pond 3	0230	*	*	104.4	*
Watersong Pond 4	0230	*	*	104.8	*
Watersong Pond 5	0230	*	*	104.8	*
Watersong Pond 6	0230	*	*	104.6	*
Watersong Pond 9	0230	*	*	104.5	*
Watersong Pond 11	0230, 0235	*	*	105.4	*
Watersong Pond 12	0235	*	*	103.5	*
Watersong Pond 13	0235	*	*	101.5	*
Watersong Pond 14	0235	*	*	101.9	*
Watersong Pond 15	0235	*	*	102.4	*
Watersong Pond 16	0235	*	*	100.2	*
Watersong Pond 17	0235	*	*	102.1	*

*Data not available

Table 6: Summary of Stillwater Elevations (continued)

Flooding Source	FIRM Panel Number	Stillwater Elevation (Feet NAVD88)			
		10-percent-annual-chance	2-percent-annual-chance	1-percent-annual-chance	0.2-percent-annual-chance
Watersong Ponding Area 1	0235	*	*	98.9	*
Watersong Flooding Area 1	0230	*	*	106.1	*
Watersong Flooding Area 2	0230	*	*	105.4	*
Watersong Flooding Area 3	0230	*	*	105.2	*
Watersong Flooding Area 4	0230	*	*	104.9	*
Watersong Flooding Area 5	0230	*	*	104.8	*
Watersong Flooding Area 6	0230	*	*	104.2	*
Watersong Flooding Area 7	0230	*	*	100.8	*
Watersong Flooding Area 8	0230, 0235	*	*	100.5	*
Watersong Flooding Area 9	0230, 0235	*	*	100.0	*
Watersong Flooding Area 10	0230, 0235	*	*	99.6	*
Watersong Flooding Area 11	0235	*	*	98.9	*
Watersong Flooding Area 12	0230	*	*	100.6	*
Watersong Flooding Area 13	0230, 0235	*	*	99.8	*
West Pretreat Pond	0480	*	*	146.9	*
West Wet Pond	0313, 0480	*	*	145.2	*
Unnamed Ponding Area	0535	*	*	137.0	*
Venus Lake	0555	125.1	*	126.0	*

*Data not available

3.2 Hydraulic Analyses

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

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

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

The hydraulic analyses for this 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.

All elevations on panels affected by this December 22, 2016 are referenced to NAVD88. See section 3.3 Vertical Datum, for information regarding vertical datum conversions. Elevation reference marks (ERMs) used in this study, and their descriptions, are shown on the FIRM. ERMs shown on the FIRM represent those used during the preparation of this and previous FISs. The elevations associated with each ERM were obtained and/or developed during FIS production to establish vertical control for determination of flood elevations and floodplain boundaries shown on the FIRM. Users should be aware that these ERM elevations may have changed since the publication of this FIS. To obtain up-to-date elevation information on National Geodetic Survey (NGS) ERMs shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov. Map users should seek verification of non-NGS ERM monument elevations when using these elevations for construction or floodplain management purposes.

Precountywide Analyses

The USGS step-backwater computer program E-431 (Reference 24) was used to compute water-surface elevations for floods of the selected recurrence intervals on Lake Dell Outlet Ditch, the North Prong Alafia River, Ellis Branch, Lake Bonnet Drain, Lake Hunter Drain, Southwest Ditch, Southwest Ditch Tributary, Lake Parker Tributary, Lake Hollingsworth Drain, Haines City Drainage Canal, Lake Brown Outlet Ditch, Lake Eva Outlet Ditch, the Peace River, Horse Creek, Unnamed Tributary to Horse Creek, and Saddle Creek. The change in water-surface elevations through culverts was computed by the USGS A-526 culvert rating computer program.

Stream and valley cross sections and roughness values for the backwater analyses of the Peace River, from the Polk-Hardee county line to State Route 60, were the same as used in the report entitled *Flood Profiles for Peace River, South-Central Florida* (Reference 43). Cross sections and roughness values above State Route 60, to the confluence of

Peace Creek Drainage Canal and Saddle Creek upstream to U.S. Route 92 east of Lakeland, were obtained from the USACE, Jacksonville District. From U.S. Route 92 to State Route 546, Saddle Creek channel cross sections and bridge dimensions were provided under contract by Kucera and Associates, Inc. Land-surface elevations for each floodplain cross section were determined from SWFWMD topographic maps having 1-foot contour intervals (Reference 44).

The starting water-surface elevations were taken from a stage-discharge rating available for the Arcadia gaging station, located at the downstream end of the Peace River study reach. As computations progressed upstream, reduced flood-peak discharges were introduced into the step-backwater analyses to compensate for drainage area decreases of 4 to 30 percent. Roughness coefficients were adjusted until computed flood heights agreed with stage-discharge rating at the Peace River at Bartow within approximately ±0.5 foot.

The starting water-surface elevation for Saddle Creek was taken from the Peace River profile at the confluence (Reference 32). Starting water-surface elevations for Lake Lena Drain were taken from stage-frequency data for Lake Hancock.

Starting water-surface elevations for the North Prong Alafia River were taken from the Hillsborough County FIS (Reference 45). Starting water-surface elevations for Poley Creek were taken from the North Prong Alafia River flood profiles at the confluence. Starting water-surface elevations for Lake Gibson Drain were taken from the Lake Parker flood stages.

Starting water-surface elevations for Mud Lake Drain were calculated using the slope/area method (Reference 18).

Cross sections for the backwater analyses of the North Prong Mafia River in the City of Mulberry were determined from photo-base maps based on aerial photographs taken in July 1975, at a scale of 1:2,400 with a contour interval of 1 foot, and from field data provided by the SWFWMD. Cross sections for the backwater analyses of Ellis Branch were obtained from aerial photographs taken in September 1977 at a negative scale of 1:1,500, with a contour interval of 1 foot. Ground-control point elevations were determined by Brevard Engineering Company of Cape Canaveral, Florida. The below-water sections were obtained by field measurement.

Ellis Branch backwater computations in the City of Mulberry were interrupted at culverts under Southeast 3rd Street, State Highway 60, Northeast 4th Avenue, and Northeast 5th Street. Computations were restarted at the upstream side of each culvert using an approach section water-surface elevation determined in a detailed analysis of culvert flow using the USGS computer program A-526 for computation of stage-discharge relations at culverts (Reference 46).

In the area near the confluence of the North Prong Alafia River and Ellis Branch, the stream channels flow through a swamp and the channels are not well defined; therefore, a profile base line was used.

Peak elevations on Lake Boomerang in the City of Haines City were computed using a leakage rate based on the recharge rate into the underlying unconsolidated sands and limestone aquifers. The sink bottom is filled with loose sand of medium to fine texture.

All the peat has been removed and sand has been excavated from the bottom to a reported depth of about 20 feet. Vertical leakage was computed by modification of Darcey's equation:

$$V = \frac{K_v\, h}{b\, n_e}$$

where: V = vertical velocity in feet per day

K_v = vertical hydraulic conductivity under one foot of head, in feet per day

h = head of water over water table elevation

b = depth of unsaturated surficial aquifer ne

n_e = effective porosity

Peak elevations in the ponds north of State Route 60 in the City of Mulberry were computed using the peak discharges determined for the outlet from Pond 2 in the hydrologic analysis. Drainage from strip mining areas where a large percentage of the area consists of pits (as in the case with the stream entering Pond 1 and Pond 2) is relatively slow to respond. Characteristically, the peak flow is sustained for 1 day or longer. The assumption was made that, at the time-of-peak outflow from Pond 2, an equal amount of discharge enters it from Pond 1.

The tailwater elevation for the outlet from Pond 2 was determined by the pool elevation of the pit pool south of State Route 60. This pool elevation is normally several feet below the downstream invert and does not cause a backwater effect for the 100- and 500-year flood elevations. The pit pool elevations for the 100- and 500-year recurrence interval discharges were computed by adding the head loss through the 36-inch corrugated metal pipe outlet to the 100- and 500-year North Prong Alafia River elevations at cross section A, as shown on the flood profiles.

The headwater elevations for Pond 2 were computed for each selected peak discharge and tailwater elevation in the pit south of State Route 60 using USGS computer program A-526 (Reference 35).

The tailwater elevations for the outlet of Pond 1 were computed by the slope/area method along the short channel from Pond 2 to Pond 1 outlet. The computed tailwater elevations were then used in computer program A-526 to compute the Pond 1 peak elevations.

Cross-section data for Horse Creek were obtained by field surveys. Starting water-surface elevations for Horse Creek were obtained from an approximate stage-discharge relationship at a cross section 3,250 feet downstream of the State Route 547 bridge, developed by using Manning's equation for open-channel flow. An effort was made to match the maximum historical elevation of 109.60 feet NGVD, with a discharge of 358 cfs, at the gaging station on State Route 547. However, rock and other debris under the CSX Transportation bridge near the gage site raised the bottom channel elevation to 108.2 feet NGVD, so that correlation is not possible.

Cross sections for the backwater analyses of the City of Lakeland's drainage ditches (Lake Bonnet Drain, Lake Hunter Drain, Southwest Ditch, Southwest Ditch Tributary, Lake Parker Tributary and Lake Hollingsworth Drain) were obtained, through contract, by field surveying.

Cross-section data for backwater analysis on Haines City Drainage Canal and Lakes Brown and Eva Drainage Canals in the City of Haines City were obtained from a topographic map at a scale of 1"=100' and a 2-foot contour interval. The map is based on aerial photography taken in January 1966.

Revised Analyses for Countywide FIS

Information below describes the methods used for the hydraulic analyses performed for the countywide FIS dated December 20, 2000. Additional information concerning the South Prong Alafia River can be found in the SWFWMD’s March 1979 report entitled *Floodplain Information on the Alafia Tributaries* (Reference 1).

Cross sections for Blackwater Creek, Blackwater Creek Tributaries 1 and 2, Fox Branch Tributary, Itchepackesassa Creek, Itchepackesassa Creek Tributary 1, Peace Creek Drainage Canal, Wahneta Farms Canal, and Wahneta Farms Canal Tributary were derived from multiple sources. The primary source was the Polk County Surface Water Management Plan which included cross sections already coded in HEC-2 format (Reference 47). Additional cross sections were obtained from the SWFWMD for Peace Creek Drainage Canal and its tributaries (Reference 48). Cross sections were surveyed along Fox Branch and its tributary, Itchepackesassa Creek Tributary 2, Peace Creek Drainage Canal north of the Lake Hamilton Outfall, Tributaries 3 and 4 to Peace Creek Drainage Canal, and the easternmost sections of Tributaries 1 and 2 to Blackwater Creek. Additional topography was obtained from topographic aerial photographs at a scale of 1"=200' and from USGS quad topographic maps (Reference 49). All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry.

Water-surface elevations of floods of the selected recurrence intervals for the following streams were computed using the USACE HEC-2 step-backwater computer program (Reference 47).

For Blackwater Creek, Blackwater Creek Tributaries, and Itchepackesassa Creek, the starting water-surface elevations were taken from the Hillsborough County FIS (Reference 45) at the Hillsborough/Polk County boundary. For Peace Creek Drainage Canal and Fox Branch Tributary, the starting water-surface elevations were the backwater elevations from the Peace River and Fox Branch, respectively, since the basins are likely to peak at the same time. Starting water-surface elevations for the following streams were obtained from normal depth calculations: Fox Branch; Itchepackesassa Creek Tributaries 1 and 2; Peace Creek Drainage Canal Tributaries 2, 3, and 4; Wahneta Farms Canal and Wahneta Farms Canal Tributary.

Information below describes the methods used for the hydraulic analyses performed for the countywide FIS dated September 28, 2012.

Hydraulic analyses were performed using detailed methodology for Snell Creek, Lake Marion Outlet Drain, and Lake Marion Creek. London Creek was studied by limited detailed methods. A limited detailed study is a “buildable” product that can be upgraded to a full detailed study at a later date by verifying stream channel characteristics, bridge and culvert opening geometry, and by analyzing multiple recurrence intervals.

For the streams studied by detailed methods, cross section data was obtained from the best available digital (2005-2007) LiDAR-based topographic data augmented by spot points obtained by field survey. Road centerlines, culverts and bridges were modeled as weirs and hydraulic openings using field-surveyed elevations. The study streams were modeled using the USACE, HEC computer program, HEC-RAS, version 3.1.3, (Reference 50) to develop water surface profiles. Because the study streams are characterized by slow moving wetland/slough formations with extended floodplains the ICPR hydrodynamic model was also applied. The HEC-RAS modeling results were used for verification of the ICPR model. WSELs of floods for the limited detailed studies in the riverine (southern) portion of London Creek were computed using the USACE, HEC computer program, HEC-RAS, version 3.1.3, and the ICPR computer model.

The lacustrine (northern) portion of London Creek Watershed is characterized by a system of interconnected stormwater management ponds, lakes and wetlands and was modeled using the ICPR hydraulic/hydrodynamic model and digital LiDAR elevation data. Field measurements were conducted to approximate the geometry of the hydraulic structures in the hydraulic models.

In the western half of the London Creek Watershed (Solivita Subdivision), the limited detailed study was supplemented using the following data; LOMR 09-04-5686P (covering the northeast quarter of the subdivision), a detailed model covering the remainder of the Solivita subdivision in the London Creek Watershed, and the nine permitted retention pond base flood elevations based on the required 1-percent-annual-chance/72-hour rainfall calculation.

The most recent Lake Okeechobee-Kissimmee River regulation stage model simulations were obtained for establishment of the time-stage boundary condition of the ICPR model. According to an agreement with the SFWMD, a normal year monthly stage approximating the historical mean stage of record was selected for analysis. The December 1977 monthly mean stage of 49.8 feet, NAVD88 was applied in the HEC-RAS model for the starting WSEL at Lake Hatchineha.

A stage-storage relationship was provided in the ICPR models for applicable streams at node locations where a flood storage-routing was desired. Elevations at the nodes found on the FIRMs (Exhibit 1) are presented in a Node Table, representing the node name, watershed, and elevation, at the end of this FIS report.

A SFWMD stage recorder (MARIC Station) is located at the outfall of Lake Marion Creek to Lake Hatchineha. The period of record for stream flow is from 1983 to 1991 (eight consecutive years) and for stage from 1983 to 2009 (26 consecutive years). The stream flow period of record is not of sufficient length for statistical analysis. However, the stage monitoring record of 26 years is within acceptable, or statistically meaningful, limits for analysis. The MARIC recorded stage data annual maxima were statistically distributed to estimate the stage-frequency relationship for the lake (Reference 67).

Information below describes the methods used for the hydraulic analyses performed for this countywide FIS dated December 22, 2016.

Peace Creek Watershed

The Peace Creek watershed model includes the area described as the Peace Creek Watershed and the Lake Lulu Watershed. The study area is located in central Polk County and covers an approximate drainage area of 238 square miles. ICPR program, version 3 was used for analysis of the hydrologic and hydraulic conditions of the study area.

The geometric characteristics of the hydraulic features in the Peace Creek watershed were obtained from both existing sources and a field data collection task.

Percolation is an important factor in the watershed due to the extensive amount of depressions underlined by soils type A. Per the District's direction, percolation was considered significant when soil parameters indicate a condition where the depth to groundwater is three feet or greater.

Lake starting water elevations for design event simulations required a detailed analysis of conditions for each lake in the system. Initial base flow condition for Peace Creek canal, downstream of Lake Hamilton and Lake Lulu control structures, was specified where water is expected to be moving through the drainage system at the start of the storm. Initial stages for the design event simulations were obtained from the dry run model results.

Of note, the time series data for the downstream boundary at Peace River was set consistent with the H&H model for the Lake Hancock system developed by the SWFWMD in 2012, as both models share the same boundary point. This time stage boundary condition was derived from data from the USGS gaging station at SR 60 in Bartow, one mile downstream of the Peace Creek / Saddle Creek confluence.

Model verification was conducted by comparing model results with recorded gage data during Hurricane Frances between September 3rd and September 10th, 2004. Hurricane Frances resulted in rainfall volumes that ranged between 7 and 11.5 inches throughout the Peace Creek watershed. Although the period of verification included 7 days, most of the rainfall volume occurred during a 50-hour period between September 5th and 7th. The rainfall data indicates that the total rainfall depth is comparable to the accumulated volume for the District's 1-percent-annual-chance,24-hour design storm event, while the flow observed along the creek is closer to a 25 year return frequency event.

Model verification was conducted using two methods a) comparison of results to recorded data at the USGS station at Rifle Range Road (USGS 02293987) near Wahneta, and b) comparison of predicted model stages to observed high water elevations.

The Southwest Florida Water Management District guidance for floodplain delineation is to simulate the 1-percent-annual-chance, 24 hour design storm event over the watershed and if there is compelling evidence from historical observations, high water marks or stream gage records, which indicates that the 24 hour rainfall is not adequate to produce a 1-percent-annual-chance response from the hydraulic network, a multi-day event should be considered. These conditions are most likely to occur in areas of considerable storage or in large watersheds where the travel time of the watershed outlet exceeds a single day.

Approximately 80% of the nodes had a five-day peak stage that was higher than or equal to the one-day peak stages, suggesting that the majority of the watershed is more volume sensitive than rate sensitive.

The updated floodplains were produced by simulating the 1-percent-annual-chance, 24 hour rainfall event (9 inches) using the SCS Type III Florida Modified and the 1-percent-annual-chance, 5 day rainfall event (16 inches) using the SWFWMD 120 hr distribution (Reference 68).

Mulberry (aka Christina) Watershed

The Mulberry watershed, a subbasin of the Alafia River watershed, encompasses 20.6 square miles of western Polk County. The project boundary includes the City of Mulberry which is surrounded by portions of unincorporated Polk County in the north. ICPR program, version 3 was used for analysis of the hydrologic and hydraulic conditions of the study area.

The geometric characteristics of the hydraulic features in the watershed were obtained from both existing sources and a field data collection task.

If a subbasin was hydraulically connected to the rest of the system, then the control elevation (pipe invert, orifice elevation, weir elevation) was used as the starting elevation. For storage areas with no hydraulic control, the starting elevation was set at the seasonal high water elevation (SHWE), which was estimated from the aerials and LiDAR data or was taken from permit data.

To provide verification of the Mulberry watershed, Hurricanes Frances and Jeanne were chosen to simulate significant rainfall events of recent memory. Hurricane Frances hit the Mulberry watershed on September 5th and lasted until September 7th. Frances lasted for approximately three (3) days; resulted in rainfall depths between 5 and 7.3 inches and was equivalent to a 5-percent-annual-chance, 3 day event. Hurricane Frances was then followed by Hurricane Jeanne which produced about 6 inches of rainfall on September 26. Hurricane Jeanne was equivalent to a 10-percent-annual-chance, 1 day event.

Based on critical event analysis conducted during an earlier modeling effort for the Christina Watershed which includes about 2/3 of the Mulberry Watershed, the 100-year/1-day event was selected for regulatory floodplain delineation. No major differences were found between results of single day and multi-day storms (Reference 39).

Roughness factors (Manning's *"n")* used in the hydraulic computations were chosen on the basis of field observations, aerial photographs, and ground photographs of the streams and floodplains. Channel and over bank "n" values for the streams studied by detailed methods are shown in Table 7, “Summary of Roughness Coefficients.”

Table 7: Summary of Roughness Coefficients

Flooding Source	Roughness Coefficients	
	Channel	Overbanks
Blackwater Creek	0.015-0.100	0.060-0.200
Blackwater Creek Tributaries 1 and 2	0.015-0.100	0.060-0.200
Ellis Branch	0.035-0.080	0.020-0.160
Fox Branch	0.015-0.100	0.060-0.200
Fox Branch Tributary	0.015-0.100	0.060-0.200
Haines City Drainage Canal	0.035-0.075	0.080-0.400
Horse Creek	0.030-0.200	0.030-0.350
Itchepackesassa Creek	0.015-0.100	0.060-0.200
Itchepackesassa Creek Tributaries 1 and 2	0.015-0.100	0.060-0.200
Lake Bonnet Drain	0.030-0.160	0.040-0.200
Lake Brown Outlet Ditch	0.060-0.100	0.060-0.080
Lake Dell Outlet Ditch	0.050-0.080	0.060-0.150
Lake Eva Outlet Ditch	*	*
Lake Gibson Drain	0.030-0.160	0.100-0.300
Lake Hollingsworth Drain	0.030-0.160	0.040-0.200
Lake Hunter Drain	0.030-0.160	0.040-0.200
Lake Lena Drain	0.030-0.160	0.100-0.300
Lake Marion Outlet Drain	0.045-0.055	0.075-0.170
Lake Marion Creek	0.045-0.055	0.075-0.170
Lake Parker Drain	0.030-0.160	0.100-0.300
Lake Parker Tributary	0.030-0.160	0.040-0.200
Lake Rosalie Tributary	0.030-0.160	0.100-0.300
Mud Lake Drain	0.030-0.160	0.100-0.300
North Fork Lake Rosalie Tributary	0.030-0.160	0.100-0.300
North Prong Alafia River	0.030-0.160	0.100-0.300

*Data not available

Table 7: Summary of Roughness Coefficients (continued)

Flooding Source	Roughness Coefficients	
	Channel	Overbanks
Oakhill Ditch Creek	*	*
Peace Creek Drainage Canal	0.035-0.075	0.080-0.400
Peace Creek Drainage Canal North of Lake Hamilton Outfall	0.035-0.075	0.080-0.400
Peace Creek Drainage Canal Tributaries 2, 3, and 4	0.035-0.075	0.080-0.400
Peace River	0.035-0.075	0.080-0.400
Poley Creek	0.030-0.160	0.100-0.300
Reedy Creek	0.030	0.020
Saddle Creek	0.030-0.160	0.100-0.300
Snell Creek	0.045-0.055	0.075-0.170
South Prong Alafia River	*	*
Southwest Ditch	0.030-0.160	0.040-0.200
Southwest Ditch Tributary	0.030-0.160	0.040-0.200
Wahneta Farms Canal	0.035-0.075	0.080-0.400
Wahneta Farms Canal Tributary	0.035-0.075	0.080-0.400

*Data not available

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the Flood Profiles (Exhibit 1) are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

3.3 Vertical Datum

All FIS reports and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. Some of the data used in this revision were taken from the prior effective FIS reports and FIRMs and adjusted to NAVD88. The average countywide datum conversion factor from NGVD29 to NAVD88 in Polk County is -.959 feet. Average watershed-wide datum conversion factors have also been calculated and are provided on the FIRM panels.

For information regarding conversion between the NGVD29 and NAVD88, see the FEMA publication entitled *Converting the National Flood Insurance Program to the North American Vertical Datum of 1988*, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

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

Between cross sections and around lakes, the boundaries were interpolated using aerial photographs and topographic maps and previously printed FISs (References 51-56).

In the December 20, 2000 FIS, for the flooding sources studied by approximate methods, the 1-percent-annual-chance floodplain boundaries were delineated using a combination of the following: field inspection, engineering judgment, normal depth calculations, topographic maps, previously printed FISs, FIRMs, and Floodway Boundary and Floodway Maps (FBFM), historic data, examination of available topographic mapping, and water-surface elevations determined by the slope-conveyance method (Reference 57).

For the November 19, 2003 revision, the 1- and 0.2-percent-annual-chance floodplain boundaries were interpolated between cross sections and around lakes using aerial topographic maps at a scale of 1"=200' and 1-foot contour intervals (Reference 58).

For this revision, the 1- and 0.2-percent-annual-chance floodplain boundaries were interpolated between cross sections and around lakes using LiDAR captured at an average GSD of 1-meter (Reference 59).

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

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

4.2 Floodways

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

The floodways presented in this 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 (see Table 8, “Floodway Data Table”). In cases where the floodway and 1-percent-annual-chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown on the FIRM.

Portions of the floodway for the Peace River extend beyond the county boundary.

No floodway is shown for Reedy Creek within Polk County; therefore, no Floodway Data Table is included for this stream.

Although boundaries of the regulatory floodway are intended to remain unchanged once established and adopted, the community may find it necessary, in response to extraordinary circumstances, to change the configuration of the regulatory floodway. The Peace Creek Watershed in Polk County, Florida is such an example which has experienced considerable human-introduced alterations. The Upper Saddle Creek in Polk County, Florida has also experienced significant human-introduced alterations such as shift of watercourse, increase of tailwater condition (i.e., Lake Hancock Lake Level Modification project), construction of Polk Parkway (SR 570), mining activities, and others. New detailed studies were completed in 2014 for the study that includes the City of Mulberry, and 2013 for the study that includes Haines City, thus the need to update the regulatory floodway in those areas (References 60, 61, and 62).

The floodway was determined using encroachment methods available in the software model HEC-RAS (version 4.1.0), developed by the USACE, for Ellis Branch, Haines City Drainage Canal, Lower Saddle Creek, Peace Creek Drainage Canal, Peace Creek Drainage Canal Tributary 2, Peace Creek Drainage Canal Tributary 3, Peace Creek Drainage Canal Tributary 4, Upper Saddle Creek, Wahneta Farms Canal, and Wahneta Farms Canal Tributary in this countywide December 22, 2016 revision. Performing the updated floodway analyses involved transferring the flows, boundary conditions and the hydraulic structures information from the ICPR watershed models into HEC-RAS v 4.1.0 models.

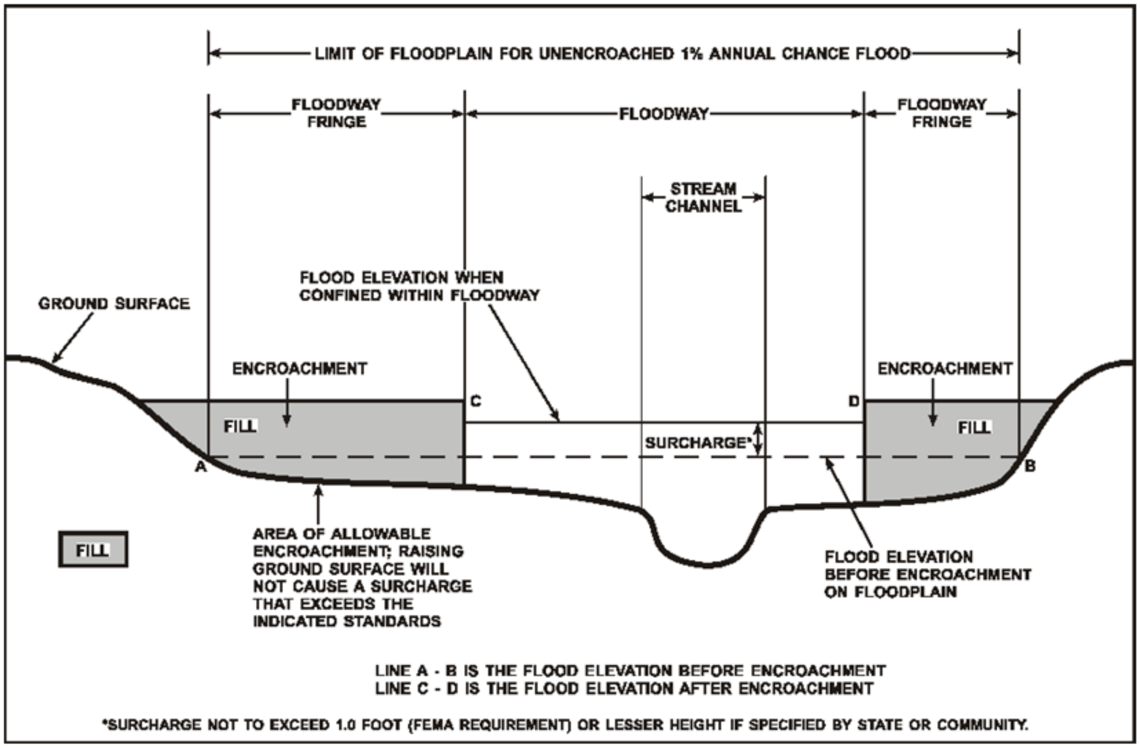
To ensure that the HEC-RAS floodway results closely represent the encroachment extents that are supported by the ICPR model results, a comparison between the results was performed. Per Appendix C of FEMA's G&S (November 2009), there may be a difference of results for the upstream and downstream cross sections (HEC-RAS) and nodes (ICPR) of no more than 0.5 feet. The HEC-RAS models have discrepancies of less than 0.5 ft and were therefore deemed fully verifiable to perform encroachment simulation.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 8 for certain downstream cross sections are lower than the regulatory flood elevations in that area, which must take into account the 1-percent-annual-chance flooding due to backwater from other sources.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 8, "Floodway Data Table." In order to reduce the risk of property damage in areas where the stream velocities are high, the community may wish to restrict development in areas outside the floodway.

The area between the floodway and 1-percent-annual-chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation (WSEL) of the base 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 3.

Figure 3: Floodway Schematic



FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Blackwater Creek								
A	231	350	1,132	1.4	110.7	110.7	111.6	0.9
B	1,002	534	1,788	0.7	111.4	111.4	112.4	1.0
C	1,950	984	3,038	0.8	111.6	111.6	112.5	0.9
D	2,859	1,130	4,059	0.7	111.9	111.9	112.8	0.9
E	3,605	1,100	3,026	0.9	113.0	113.0	113.3	0.3
F	3,905	1,100	2,578	1.2	113.1	113.1	113.5	0.4
G	5,605	1,050	3,070	0.8	113.8	113.8	114.8	1.0
H	8,020	70	231	3.3	115.9	115.9	116.8	0.9
I	8,932	271	769	1.0	118.0	118.0	118.7	0.7
J	9,895	642	1,432	0.5	118.3	118.3	119.1	0.8
K	10,858	190	443	1.7	119.2	119.2	120.1	0.9
L	12,042	202	712	1.2	121.1	121.1	121.8	0.7
M	13,167	370	1,043	0.8	121.2	121.2	122.1	0.9
N	15,642	550	1,192	0.7	121.6	121.6	122.6	1.0
O	16,942	39	183	4.8	124.6	124.6	124.8	0.2
P	18,392	42	111	3.2	131.2	131.2	131.3	0.1

[1] Feet above county boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

BLACKWATER CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Blackwater Creek Tributary 1								
A	610	463	1,753	1.0	110.9	110.7[2]	111.6	0.9
B	860	559	1,990	1.0	111.2	110.9[2]	111.8	0.9
C	1,145	570	2,014	0.9	111.4	111.2[2]	112.2	1.0
D	2,817	350	2,401	0.5	112.2	111.7[2]	112.7	1.0
E	3,333	153	770	1.0	113.0	113.0	113.9	0.9
F	3,783	40	136	1.2	113.1	113.1	114.1	1.0
G	4,883	40	176	2.1	113.8	113.8	114.6	0.9
H	8,683	233	1,065	0.8	116.8	116.8	117.8	1.0
I	10,923	209	273	3.3	120.2	120.2	120.2	0.0
J	12,315	51	255	5.3	125.2	125.2	126.1	0.9
K	15,937	177	728	1.8	133.1	133.1	134.0	0.9
L	18,658	853	2,149	0.6	133.6	133.6	134.6	1.0
Blackwater Creek Tributary 2								
A	300	30	122	3.8	106.9	106.9	107.6	0.7
B	1,960	102	207	2.3	108.5	108.5	109.3	0.8
C	3,565	46	190	2.5	112.7	112.7	113.7	1.0
D	5,485	88	154	3.0	115.8	115.8	116.1	0.3
E	10,534	662	2,871	0.5	119.8	119.8	120.8	1.0
F	14,395	370	4,228	0.3	130.9	130.9	131.8	0.9
G	16,564	63	410	2.8	131.4	131.4	132.3	0.9

[1] Feet above county boundary
[2] Elevation computed without consideration of backwater effects from Blackwater Creek

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

BLACKWATER CREEK TRIBUTARY 1 - BLACKWATER CREEK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT[2] FLOODWAY	WITH[3] FLOODWAY	INCREASE
Ellis Branch								
A	6	56	408	0.9	102.7	102.7	103.1	0.3
B	54	34	324	1.1	102.7	102.7	103.1	0.3
C	139	48	477	0.8	103.2	103.2	103.6	0.5
D	166	96	313	1.2	103.2	103.2	103.6	0.4
E	233	100	406	0.9	103.2	103.2	103.7	0.5
F	446	61	255	1.4	103.2	103.2	103.8	0.6
G	646	74	312	1.1	103.2	103.2	103.9	0.7
H	849	49	157	2.1	103.3	103.3	103.8	0.6
I	1,130	71	299	1.1	103.3	103.3	104.1	0.9
J	1,519	127	475	0.7	103.3	103.3	104.2	1.0
K	1,653	67	487	0.6	103.3	103.3	104.3	1.0
L	1,747	76	480	0.7	103.4	103.4	104.3	0.9
M	1,904	42	221	1.4	103.5	103.5	104.3	0.8
N	2,490	29	140	2.2	103.7	103.7	104.3	0.6
O	2,792	57	367	0.8	103.7	103.7	104.5	0.8
P	2,923	57	495	0.6	107.5	107.5	108.4	0.9
Q	3,263	74	476	0.3	108.0	108.0	108.4	0.5
R	3,657	81	311	0.4	108.0	108.0	108.4	0.5
S	4,025	88	350	0.4	108.0	108.0	108.5	0.5
T	4,507	116	420	0.0	108.0	108.0	108.5	0.5

[1] Feet above confluence with North Prong Alafia River
[2] Riverine elevations based on ICPR floodplain analysis
[3] Riverine elevations based on HEC-RAS encroachment analysis

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

ELLIS BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Fox Branch								
A	0	524	1,826	1.9	84.1	84.1	85.1	1.0
B	2,170	326	1,376	2.1	85.1	85.1	86.0	0.9
C	4,280	384	1,492	1.8	86.1	86.1	86.9	0.8
D	5,380	257	714	4.4	87.3	87.3	87.6	0.3
E	7,002	380	1,030	3.1	90.6	90.6	91.5	0.9
F	8,812	420	1,197	2.7	92.3	92.3	93.3	1.0
G	10,312	300	912	2.8	94.1	94.1	95.1	1.0
H	11,232	600	1,144	2.6	95.7	95.7	96.6	0.9
I	12,267	470	1,108	2.7	97.7	97.7	98.3	0.6
J	13,967	933	1,459	2.3	99.6	99.6	100.6	1.0
K	18,267	608	2,043	0.9	102.1	102.1	102.9	0.8
L	22,817	550	2,411	0.9	104.7	104.7	105.7	1.0
M	25,738	544	2,316	1.7	106.0	106.0	106.8	0.8
N	28,718	280	826	3.6	108.4	108.4	109.1	0.7
0	31,698	480	1,255	1.4	111.1	111.1	111.9	0.8
P	34,878	500	1,741	1.2	113.8	113.8	114.5	0.7
Q	37,130	692	3,445	0.6	116.0	116.0	116.6	0.6
R	41,455	330	1,736	1.1	117.3	117.3	118.2	0.9
S	43,001	320	1,147	2.2	118.9	118.9	119.7	0.8
T	56,898	100	349	2.4	131.4	131.4	131.7	0.3
U	59,311	274	923	1.7	133.5	133.5	134.2	0.7
V	63,021	73	235	2.4	139.0	139.0	140.0	1.0
W	65,751	24	72	5.5	143.6	143.6	143.8	0.2
X	66,421	19	88	2.0	145.8	145.8	146.4	0.6

[1] Feet above county boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

FOX BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Fox Branch Tributary								
A	460[1]	80	101	2.2	142.0	142.0	142.7	0.7
B	3,789[1]	82	127	2.3	148.7	148.7	149.2	0.5
C	4,664[1]	43	150	1.5	149.7	149.7	150.1	0.4
Haines City Drainage Canal								
A	5,118[2]	212	956	0.1	124.2	124.2[3]	124.2[4]	0.0
B	9,226[2]	220	720	0.2	124.5	124.5[3]	124.3[4]	-0.2
C	9,882[2]	306	878	0.2	124.5	124.5[3]	124.3[4]	-0.1
D	9,944[2]	301	853	0.0	124.5	124.5[3]	124.3[4]	-0.1
E	10,134[2]	284	916	0.0	124.5	124.5[3]	124.3[4]	-0.1
F	11,784[2]	136	507	0.0	124.5	124.5[3]	124.3[4]	-0.1
G	11,952[2]	98	333	0.0	124.5	124.5[3]	124.3[4]	-0.1
H	12,061[2]	99	390	0.2	124.5	124.5[3]	124.4[4]	-0.1
I	12,296[2]	82	336	0.0	124.5	124.5[3]	124.4[4]	-0.1
J	13,037[2]	39	238	0.0	124.5	124.5[3]	124.4[4]	-0.1
K	13,103[2]	132	819	0.1	124.5	124.5[3]	124.4[4]	-0.1
L	13,536[2]	34	176	0.7	124.5	124.5[3]	124.4[4]	-0.1
M	13,609[2]	35	180	0.7	124.5	124.5[3]	124.7[4]	0.2
N	15,583[2]	33	133	1.3	124.7	124.7[3]	125.0[4]	0.3
O	15,794[2]	32	235	0.8	124.7	124.7[3]	125.1[4]	0.3
P	16,106[2]	28	161	0.7	124.8	124.8[3]	125.1[4]	0.3
Q	16,163[2]	33	158	0.7	124.8	124.8[3]	125.1[4]	0.3
R	16,314[2]	32	135	0.8	124.8	124.8[3]	125.1[4]	0.3
S	16,407[2]	28	133	0.9	124.8	124.8[3]	125.1[4]	0.3
T	16,593[2]	31	137	0.8	124.8	124.8[3]	125.1[4]	0.3
U	16,811[2]	31	132	0.9	124.9	124.9[3]	125.2[4]	0.3

[1] Distance in feet above confluence with Fox Branch
[2] Feet above Middle Lake Hamilton
[3] Riverine elevations based on ICPR floodplain analysis
[4] Riverine elevations based on HEC-RAS encroachment analysis

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

FOX BRANCH TRIBUTARY - HAINES CITY DRAINAGE CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Haines City Drainage Canal (continued)								
V	16,997[1]	27	119	0.9	124.9	124.9[2]	125.2[3]	0.3
W	17,143[1]	18	58	1.9	125.0	125.0[2]	125.2[3]	0.2
X	17,560[1]	21	92	1.2	125.1	125.1[2]	125.6[3]	0.5
Y	17,754[1]	29	97	0.9	125.2	125.2[2]	125.6[3]	0.4
Z	20,079[1]	170	235	0.4	125.5	125.5[2]	126.2[3]	0.7
AA	20,720[1]	31	147	0.7	125.5	125.5[2]	126.3[3]	0.8
BB	20,831[1]	34	152	0.6	125.5	125.5[2]	126.5[3]	0.9
CC	21,561[1]	21	88	0.3	125.5	125.5[2]	126.5[3]	1.0
DD	21,618[1]	26	126	0.1	125.5	125.5[2]	126.5[3]	1.0
EE	22,859[1]	18	54	0.3	125.5	125.5[2]	126.5[3]	1.0
Itchepackesassa Creek								
A	1,150[4]	1,432	6,405	0.8	114.6	114.6	115.6	1.0
B	2,920[4]	1,145	4,765	1.1	115.0	115.0	116.0	1.0
C	5,046[4]	1,140	3,505	1.2	116.0	116.0	116.9	0.9
D	6,717[4]	1,850	3,685	1.8	117.2	117.2	118.0	0.8
E	8,109[4]	2,062	6,385	0.7	117.9	117.9	118.8	0.9
F	8,628[4]	2,155	7,107	0.8	118.0	118.0	118.9	0.9
G	9,208[4]	1,441	5,405	1.0	118.3	118.3	119.2	0.9
H	10,333[4]	1,274	6,322	0.8	118.4	118.4	119.3	0.9
I	12,433[4]	1,494	5,016	1.3	118.6	118.6	119.5	0.9
Itchepackesassa Creek Tributary 1								
A	750[5]	749	3,157	0.7	118.6	118.6	119.6	1.0
B	1,810[5]	537	1,647	1.5	119.0	119.0	120.0	1.0
C	7,526[5]	72	291	3.0	130.2	130.2	131.1	0.9
D	10,872[5]	75	373	1.3	134.6	134.6	135.1	0.5

[1] Feet above Middle Lake Hamilton
[2] Riverine elevations based on ICPR floodplain analysis
[3] Riverine elevations based on HEC-RAS encroachment analysis
[4] Feet above county boundary
[5] Feet above confluence with Itchepackesassa Creek

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

HAINES CITY DRAINAGE CANAL - ITCHEPACKESASSA CREEK - ITCHEPACKESASSA CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Itchepackesassa Creek Tributary 2								
A	500	975	3,287	0.7	118.6	118.6	119.6	1.0
B	2,450	800	2,654	0.9	120.4	120.4	121.4	1.0
C	3,350	300	1,146	2.0	121.5	121.5	122.5	1.0
D	4,860	350	1,555	1.5	122.9	122.9	123.8	0.9
E	5,775	410	1,577	1.5	122.9	122.9	123.8	0.9
F	7,735	660	4,915	0.5	123.9	123.9	124.9	1.0
G	12,705	60	222	2.0	127.5	127.5	128.5	1.0
H	13,510	270	1,280	0.2	127.9	127.9	128.9	1.0
I	15,725	68	48	4.1	128.0	128.0	128.8	0.8
J	18,350	48	121	1.7	134.5	134.5	134.9	0.4

[1] Feet above confluence with Itchepackesassa Creek

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

ITCHEPACKESASSA CREEK TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lake Bonnet Drain								
A	30	39	116	1.55	139.1	139.1	140.1	1.0
B	280	20	71	2.52	139.5	139.5	140.3	0.8
C	410	21	55	3.27	140.8	140.8	141.0	0.2
D	640	19	85	2.12	141.2	141.2	141.4	0.2
E	710	21	95	1.88	141.5	141.5	141.6	0.1
F	1,230	27	75	2.41	141.9	141.9	142.0	0.1
G	1,365	43	193	0.93	142.0	142.0	143.0	1.0
H	1,605	39	85	2.13	142.0	142.0	143.0	1.0
I	2,135	48	182	0.99	142.6	142.6	143.2	0.6
J	2,240	61	240	0.75	142.9	142.9	143.9	1.0
K	2,720	89	482	0.37	142.9	142.9	143.9	1.0
L	3,520	73	483	0.37	142.9	142.9	143.9	1.0
M	4,390	22	75	2.39	143.0	143.0	143.9	0.9

[1] Feet above North Chestnut Road

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LAKE BONNET DRAIN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lake Drain								
A	1,218	383	1,132	0.9	88.2	88.2	88.2	0.0
B	1,744	279	1,316	0.8	98.2	98.2	89.2	0.0
C	1,849	578	2,582	0.4	91.3	91.3	91.3	0.0
D	4,484	438	1,270	0.8	95.2	95.2	95.2	0.0
E	4,563	520	2,506	0.4	98.1	98.1	98.1	0.0
F	8,259	367	906	0.9	100.9	100.9	100.9	0.0
G	9,745	549	1,355	0.5	104.2	104.2	104.2	0.0
H	10,697	403	331	1.4	105.3	105.3	105.3	0.0
I	11,531	507	920	0.4	109.1	109.1	109.1	0.0
J	13,861	63	131	2.0	115.7	115.7	116.0	0.3
K	13,998	106	187	1.4	115.8	115.8	116.1	0.3
L	15,349	82	183	3.5	120.4	120.4	121.1	0.7
M	15,449	159	492	1.2	122.0	122.0	122.7	0.7
N	16,668	135	352	1.4	127.8	127.8	128.1	0.3
O	16,896	33	103	4.7	130.2	130.2	130.9	0.7
P	16,936	354	1,485	0.3	133.2	133.2	133.3	0.1
Q	17,496	557	1,541	0.3	133.5	133.5	133.6	0.1
R	17,736	27	97	5.5	136.7	136.7	136.7	0.0
S	17,766	38	158	3.3	140.6	140.6	140.5	0.0
T	18,557	50	71	7.1	141.7	141.7	141.7	0.0
U	19,356	61	226	1.0	145.5	145.5	146.0	0.5

[1] Feet above confluence with Poley Creek

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LAKE DRAIN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lake Drain (continued)								
V	20,040[1]	34	132	3.7	146.0	146.0	146.5	0.5
W	21,101[1]	29	87	4.0	153.3	153.3	153.3	0.0
X	21,225[1]	34	78	4.5	153.8	153.8	153.8	0.0
Y	21,400[1]	49	152	2.3	155.2	155.2	155.2	0.0
Z	21,712[1]	31	113	1.7	157.5	157.5	157.5	0.0
AA	22,464[1]	31	72	2.9	159.1	159.1	159.1	0.0
AB	22,539[1]	66	154	1.3	160.9	160.9	160.9	0.0
AC	23,709[1]	192	518	0.2	161.1	161.1	161.1	0.0
AD	24,075[1]	10	9	5.6	162.9	162.9	162.9	0.0
AE	24,370[1]	12	39	1.3	166.1	166.1	166.1	0.0
AF	24,430[1]	69	121	0.4	168.2	168.2	168.2	0.0
AG	26,572[1]	38	146	0.4	168.4	168.4	168.4	0.0
Lake Drain - Central Channel								
A	620[2]	603	422	0.1	112.4	112.4	112.4	0.0
B	768[2]	43	86	0.6	112.5	112.5	112.5	0.0
C	868[2]	81	121	0.4	112.6	112.6	112.6	0.0
D	1,004[2]	1,196	3,802	0.0	112.6	112.6	112.6	0.0

[1] Feet above confluence with Poley Creek
[2] Feet above confluence with Lake Drain

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LAKE DRAIN – LAKE DRAIN – CENTRAL CHANNEL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lake Drain – West Channel								
A	480[1]	850	1,892	0.3	104.7	104.7	104.7	0.0
B	820[1]	107	162	1.3	105.1	105.1	105.1	0.0
C	1,188[1]	29	102	2.1	109.5	109.5	110.1	0.6
D	1,292[1]	565	1,185	0.2	112.7	112.7	113.4	1.0
E	1,985[1]	59	354	0.5	112.7	112.7	113.4	1.0
F	2,118[1]	342	1,770	0.1	112.7	112.7	113.7	1.0
Lake Hollingsworth Drain								
A	200[2]	25	66	1.25	118.7	115.8[4]	116.8	1.0
B	1,000[2]	16	21	3.85	119.0	118.7[4]	118.7	0.0
C	1,530[2]	13	23	3.57	123.4	123.4	123.6	0.2
D	1,650[2]	10	47	1.74	128.5	128.5	129.5	1.0
E	2,200[2]	21	89	0.92	128.9	128.9	129.7	0.8
F	2,850[2]	14	21	3.92	130.4	130.4	130.5	0.1
G	2,950[2]	14	28	2.92	131.3	131.3	131.3	0.0
H	3,370[2]	13	32	2.53	132.3	132.3	132.4	0.1
Lake Hunter Drain								
A	40[3]	20	41	0.69	156.6	156.6	157.6	1.0
B	905[3]	12	16	1.71	158.8	158.8	158.8	0.0
C	1,020[3]	15	21	1.30	159.0	159.0	159.0	0.0
D	1,370[3]	18	24	1.15	159.5	159.5	159.5	0.0
E	1,470[3]	25	42	0.67	159.6	159.6	159.6	0.0
F	2,960[3]	20	45	0.62	159.9	159.9	159.9	0.0

[1] Feet above confluence with Lake Drain
[2] Feet above Lake Bentley
[3] Feet above Lotus Avenue
[4] Elevation computed without consideration of backwater effects from Lake Bentley

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LAKE DRAIN - WEST CHANNEL LAKE HOLLINGSWORTH DRAIN - LAKE HUNTER DRAIN

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lake Parker Tributary								
A	600	80	119	1.63	132.5	129.8[2]	130.8	1.0
B	2,100	34	58	3.38	132.5	131.0[2]	131.0	0.0
C	2,215	48	102	1.91	133.0	133.0	134.0	1.0
D	2,440	90	109	1.79	133.9	133.9	134.2	0.3
E	2,660	63	114	1.71	134.4	134.4	134.5	0.1
F	3,115	46	96	2.04	135.2	135.2	135.2	0.0
G	3,415	49	104	1.87	135.4	135.4	135.4	0.0
H	3,715	50	110	1.77	135.6	135.6	135.6	0.0
I	3,822	30	103	1.89	135.7	135.7	135.7	0.0
J	5,697	51	137	1.42	136.6	136.6	137.6	0.0

[1] Feet above Lake Parker No. 1
[2] Elevation computed without consideration of backwater effects from Lake Parker No. 1

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LAKE PARKER TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Lower Saddle Creek								
A	200	1,409	6,516	0.23	98.7	98.7	99.6	0.8
B	1,900	200	1,634	0.92	98.9	98.9	99.7	0.9
C	3,030	509	2,859	0.52	99.0	99.0	100.0	0.9
D	4,200	611	3,216	0.47	99.2	99.2	100.1	0.9
E	6,200	919	4,034	0.37	99.4	99.4	100.3	0.9
F	8,200	71	510	2.94	99.6	99.6	100.5	1.0
G	10,100	79	563	2.49	100.3	100.3	101.3	0.9
H	12,200	224	941	1.49	100.9	100.9	101.7	0.8

[1] Feet above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

LOWER SADDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Mud Lake Drain								
A	0[1]	75	244	0.34	128.2	128.2	129.2	1.0
B	1,000[1]	75	256	0.33	128.2	128.2	129.2	1.0
C	2,900[1]	25	39	2.15	129.1	129.1	129.6	0.5
D	2,950[1]	32	78	1.08	130.0	130.0	131.0	1.0
E	3,100[1]	50	112	0.75	130.1	130.1	131.0	0.9
F	4,450[1]	59	108	0.78	131.0	131.0	131.4	0.4
G	4,490[1]	149	510	0.16	132.3	132.3	133.3	1.0
H	5,365[1]	125	307	0.27	132.4	132.4	133.3	0.9
I	6,150[1]	40	49	1.72	133.2	133.2	134.0	0.8
J	6,720[1]	68	105	0.80	135.8	135.8	136.2	0.4
North Prong Alafia River								
A[4]	33,920[2]	720[3]	6,607	1.36	64.6	64.6	65.6	1.0
B	37,190[2]	600	3,970	1.26	67.8	67.8	68.7	0.9
C	40,610[2]	600	3,936	1.26	71.8	71.8	72.8	1.0
D	44,365[2]	520	3,776	1.31	75.3	75.3	76.3	1.0
E	47,350[2]	500	3,344	1.48	78.9	78.9	79.8	0.9
F	51,210[2]	360	1,955	2.53	88.2	88.2	88.8	0.6
G	52,685[2]	1,100	8,419	0.59	88.9	88.9	89.4	0.5
H	56,010[2]	587	2,096	2.36	90.6	90.6	90.9	0.3
I	59,610[2]	530	3,599	1.38	97.4	97.4	97.6	0.2
J	61,600[2]	550	3,567	1.06	98.2	98.2	98.8	0.6
K	61,840[2]	440	3,772	1.01	98.5	98.5	99.2	0.7
L	62,750[2]	900	6,482	0.58	98.6	98.6	99.3	0.7
M	64,400[2]	586	4,908	0.77	98.7	98.7	99.5	0.8
N	64,850[2]	570	2,976	1.27	98.9	98.9	99.7	0.8
0	65,700[2]	540	2,914	1.29	99.8	99.8	100.8	1.0
P	67,200[2]	500	3,701	1.02	101.0	101.0	102.0	1.0

[1] Feet above downstream limit of detailed study (Limit of detailed study is located approximately 0.5 mile downstream of Sand Lane)
[2] Feet above mouth
[3] Floodway lies outside county boundary
[4] Cross section lies outside county boundary

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

MUD LAKE DRAIN - NORTH PRONG ALAFIA RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Peace Creek Drainage Canal								
A	1,345	556	3,045	3.7	99.7	99.7	100.4	0.8
B	3,217	792	4,939	1.9	100.6	100.6	101.1	0.5
C	3,384	988	6,057	2.0	100.7	100.7	101.2	0.5
D	6,131	918	4,940	4.6	101.1	101.1	101.8	0.7
E	9,350	968	5,918	2.0	101.4	101.4	102.4	1.0
F	10,724	300	1,180	4.7	102.7	102.7	102.7	0.1
G	11,089	123	1,033	5.2	104.2	104.2	104.5	0.3
H	11,815	711	5,745	2.7	104.3	104.3	105.1	0.8
I	14,706	500	3,576	3.3	104.9	104.9	105.6	0.8
J	17,620	427	3,047	3.2	105.5	105.5	106.4	0.9
K	22,105	2,975	23,913	0.5	105.6	105.6	106.6	1.0
L	27,358	3,802	24,333	0.5	105.7	105.7	106.6	1.0
M	32,393	630	3,490	2.3	106.7	106.7	107.5	0.8
N	33,687	307	1,848	3.2	106.9	106.9	107.9	1.0
O	35,322	145	1,370	3.2	108.1	108.1	108.8	0.7
P	35,657	280	1,637	3.8	108.6	108.6	109.0	0.4
Q	38,131	455	2,430	2.8	109.9	109.9	110.5	0.5
R	39,977	268	1,762	2.9	110.2	110.2	111.0	0.9
S	42,108	173	1,331	3.4	110.7	110.7	111.7	0.9
T	42,392	336	2,212	2.7	111.4	111.4	112.0	0.6
U	46,956	400	2,823	1.9	111.7	111.7	112.4	0.7

[1] Stream length in feet above is measured from the confluence between Peace Creek Drainage Canal, Lower Saddle Creek, and Upper Peace River

[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Watershed Management Plan

[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NGVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Peace Creek Drainage Canal (continued)								
V	47,602	345	3,085	1.1	111.8	111.8	112.5	0.7
W	53,266	2,000	16,809	0.4	111.8	111.8	112.5	0.7
X	56,892	459	2,618	0.8	111.8	111.8	112.6	0.8
Y	60,931	212	1,111	1.3	111.9	111.9	112.9	0.9
Z	61,208	232	1,487	1.0	112.0	112.0	113.0	1.0
AA	61,785	95	584	2.4	112.2	112.2	113.0	0.8
AB	61,986	112	686	2.0	112.6	112.6	113.4	0.8
AC	63,660	423	1,988	1.2	113.2	113.2	114.2	1.0
AD	66,006	76	537	2.0	115.2	115.2	115.0	0.0
AE	67,152	70	497	2.1	115.9	115.9	115.7	0.0
AF	67,421	103	605	1.7	116.2	116.2	116.0	0.0
AG	69,313	184	1,120	0.9	116.4	116.4	116.4	0.0
AH	71,714	138	826	1.3	116.7	116.7	116.7	0.0
AI	73,422	84	543	1.7	117.1	117.1	117.1	0.0
AJ	75,720	161	717	1.1	117.7	117.7	117.9	0.2
AK	77,439	86	529	1.4	117.9	117.9	118.4	0.4
AL	80,424	95[4]	562	1.1	118.8	118.8	119.1	0.3
AM	84,474	792	3,398	0.8	120.0	120.0	120.1	0.1
AN	89,620	199	1,017	1.2	120.1	120.1	121.0	1.0
AO	89,986	101	756	1.5	120.3	120.3	121.1	0.8
AP	94,227	132	653	1.4	N/A	N/A	121.6	N/A

[1]Stream length in feet above is measured from the confluence between Peace Creek Drainage Canal, Lower Saddle Creek, and Upper Peace River
[2]Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Watershed Management Plan
[3]Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)
[4]Width shown on FIRM represents combined floodway boundaries; encroachment analysis performed without consideration of effects from Peace Creek Drainage Canal Tributary 2

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL

AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Peace Creek Drainage Canal (continued)								
AQ	98,201	1,272	2,749	0.8	121.2	121.2	121.8	0.6
AR	98,935	1,452	2,786	0.8	121.3	121.3	121.9	0.6
AS	102,781	1,555	10,070	0.3	121.4	121.4	121.9	0.6
AT	108,142	896	1,334	1.8	121.4	121.4	122.1	0.7
AU	108,314	1,399	1,513	1.2	121.5	121.5	122.3	0.8
AV	109,445	950	3,332	1.0	121.5	121.5	122.4	0.8
AW	110,836	953	5,117	0.5	121.6	121.6	122.4	0.8
AX	111,238	671	2,968	0.8	121.6	121.6	122.4	0.8
AY	112,892	403	1,375	1.6	121.8	121.8	122.5	0.7
AZ	113,977	187	569	2.4	122.0	122.0	122.7	0.8
BA	114,318	202	788	1.9	122.2	122.2	123.0	0.8
BB	115,732	343	996	1.2	122.7	122.7	123.4	0.7
BC	116,039	54	305	2.0	122.8	122.8	123.5	0.7
BD	116,390	527	872	2.7	122.8	122.8	123.6	0.8
BE	117,241	986	3,501	0.8	122.8	122.8	123.8	1.0
BF	117,674	1,076	2,902	0.4	122.9	122.9	123.8	1.0
BG	120,576	93	356	0.6	123.4	123.4	124.0	0.6
BH	121,084	68	328	0.7	123.4	123.4	124.1	0.7
BI	123,410	67	306	0.7	123.5	123.5	124.3	0.8
BJ	123,623	222	903	0.2	123.5	123.5	123.4	0.9
BK	126,324	300	1,306	0.2	123.9	123.9	124.4	0.5

[1] Stream length in feet above is measured from the confluence between Peace Creek Drainage Canal, Lower Saddle Creek, and Upper Peace River

[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Watershed Management Plan

[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Peace Creek Drainage Canal (continued)								
BL	127,440	43	153	0.5	123.9	123.9	124.4	0.5
BM	127,514	44	136	0.5	124.0	124.0	124.6	0.6
BN	129,034	600	2,937	0.1	124.0	124.0	124.6	0.6
BO	130,691	80	249	0.3	124.0	124.0	124.6	0.6

[1] Stream length in feet above is measured from the downstream confluence between Wahneta Farms Canal Tributary and Wahneta Farms Canal
[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Water Management Plan
[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Peace Creek Drainage Canal 2								
A	1,861	5,400	15,929	0.4	111.8	111.8	112.5	0.7
B	7,693	2,000	14,745	0.5	111.8	111.8	112.6	0.8
C	13,856	1,551	4,434	2.4	114.4	114.4	114.0	0.0
D	14,803	2,500	6,231	1.8	114.5	114.5	114.8	0.3
E	16,714	2,309	13,346	0.6	114.8	114.8	115.0	0.3
F	21,376	158	376	2.3	114.9	114.9	115.3	0.4
G	22,035	69	280	2.7	116.7	116.7	116.7	0.0
H	24,362	577	1,184	1.0	117.0	117.0	117.9	0.8
I	24,425	481	938	1.2	117.0	117.0	117.9	0.8
J	28,951	294	1,747	0.5	117.2	117.2	118.0	0.8
K	30,758	769	3,789	0.2	117.3	117.3	118.1	0.8
L	34,609	1,482	7,158	0.2	117.4	117.4	118.1	0.7
M	41,651	800	5,077	0.2	117.4	117.4	118.1	0.8
N	46,059	159	599	0.4	117.5	117.5	118.3	0.8
O	46,429	192	726	0.6	117.8	117.8	118.6	0.8
P	49,251	196	536	0.5	117.9	117.9	118.7	0.8
Q	49,633	104	574	0.4	118.3	118.3	118.9	0.6
R	52,048	300	1,761	0.2	118.3	118.3	119.0	0.6
S	54,683	600	3,586	0.2	118.3	118.3	119.0	0.6
T	55,062	600	3,389	0.2	118.3	118.3	119.0	0.6
U	58,820	544	2,669	0.2	118.3	118.3	119.0	0.6

[1] Stream length in feet above is measured from the downstream confluence between Tributary 2 and Peace Creek Drainage Canal Mainstream
[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Water Management Plan
[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL TRIBUTARY 2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[3]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[4]
Peace Creek Drainage Canal 3								
A	3,978[1]	37	118	0.8	121.5	121.5	122.4	0.9
B	4,269[1]	52	216	0.4	123.0	123.0	123.9	0.9
C	5,811[1]	24	187	0.4	123.0	123.0	123.9	0.9
D	5,884[1]	64	261	0.4	123.0	123.0	124.0	1.0
E	6,332[1]	32	177	0.7	123.0	123.0	124.0	1.0
F	6,506[1]	144	455	0.3	123.7	123.7	124.1	0.4
G	7,798[1]	48	174	1.2	123.9	123.9	124.1	0.3
H	9,245[1]	101	301	0.9	123.9	123.9	124.3	0.4
I	9,587[1]	78	127	1.7	124.4	124.4	124.8	0.4
J	12,334[1]	90	370	0.8	124.5	125.5	124.9	0.5
K	15,289[1]	18	40	4.5	125.3	125.3	125.5	0.2
L	17,204[1]	56	91	1.6	128.6	128.6	129.1	0.5
Peace Creek Drainage Canal 4								
A	600[2]	56	236	0.4	123.5	123.5	124.4	0.9
B	793[2]	95	396	0.2	124.2	124.2	125.0	0.8
C	3,841[2]	67	414	0.4	124.2	124.2	125.1	0.9
D	5,342[2]	65	382	0.4	124.2	124.2	125.1	0.9
E	5,554[2]	55	328	0.5	124.8	124.8	125.7	0.9
F	7,144[2]	68	371	0.6	125.0	125.0	125.7	0.8
G	8,101[2]	51	178	1.0	125.2	125.2	125.9	0.7
H	9,120[2]	51	207	0.7	125.5	125.5	126.1	0.7
I	9,407[2]	55	208	0.7	125.5	125.5	126.2	0.7
J	10,580[2]	55	179	0.5	125.6	125.6	126.3	0.7
K	12,319[2]	93	239	0.3	125.7	125.7	126.6	0.9

[1] Stream length in feet above is measured from the confluence between Tributary 3 and Peace Creek Drainage Canal Mainstream
[2] Stream length in feet above is measured from the confluence between Tributary 4 and Peace Creek Drainage Canal Mainstream
[3] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Water Management Plan
[4] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE CREEK DRAINAGE CANAL TRIBUTARY 3 - PEACE CREEK DRAINAGE CANAL TRIBUTARY 4

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peace River								
A	423,100	1,920	22,234	0.86	71.0	71.0	72.0	1.0
B	424,500	1,800	20,744	0.93	71.4	71.4	72.2	0.8
C	428,000	2,000	22,735	0.84	71.7	71.7	72.7	1.0
D	431,600	2,000	23,016	0.83	72.3	72.3	73.3	1.0
E	434,000	2,010	26,459	0.73	72.8	72.8	73.8	1.0
F	436,000	1,600	15,957	1.20	73.4	73.4	74.2	0.8
G	439,200	1,600	19,779	0.97	74.4	74.4	75.2	0.8
H	441,000	1,800	18,012	1.07	74.7	74.7	75.7	1.0
I	444,000	1,670	20,476	0.94	75.7	75.7	76.7	1.0
J	449,000	2,100	22,421	0.86	76.9	76.9	77.9	1.0
K	451,000	1,600	22,500	0.85	77.3	77.3	78.3	1.0
L	454,000	1,750	25,689	0.75	78.0	78.0	78.8	0.8
M	455,800	1,500	17,180	0.77	78.4	78.4	79.4	1.0
N	457,200	1,300	13,878	0.95	78.8	78.8	79.71	0.9
0	459,100	1,340	14,546	0.91	79.2	79.2	80.1	0.9
P	460,900	1,250	12,813	1.03	79.7	79.7	80.6	0.9
Q	463,600	1,560	15,940	0.83	80.4	80.4	81.4	1.0
R	466,150	1,010	10,564	1.09	81.2	81.2	82.1	0.9
S	466,400	1,900	17,521	0.66	81.6	81.6	82.4	0.8
T	467,900	1,640	20,080	0.57	81.7	81.7	82.5	0.8
U	470,600	1,220	14,907	0.77	82.4	82.4	83.1	0.7
V	473,000	1,050	12,358	0.68	82.8	82.8	83.7	0.9
W	475,100	1,200	13,740	0.61	83.2	83.2	84.1	0.9
X	477,700	1,430	15,662	0.54	83.5	83.5	84.4	0.9
Y	479,300	1,420	12,401	0.68	83.8	83.8	84.7	0.9
Z	481,300	1,500	13,458	0.63	84.1	84.1	85.0	0.9

[1] Feet above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peace River (continued)								
AA	482,200	1,740	15,070	0.56	84.2	84.2	85.2	1.0
AB	484,100	1,200	10,157	0.85	84.3	84.3	85.2	0.9
AC	486,600	700	12,910	0.65	84.4	84.4	85.4	1.0
AD	488,600	1,200	10,988	0.77	84.5	84.5	85.4	0.9
AE	490,800	1,400	13,020	0.65	84.6	84.6	85.5	0.9
AF	493,000	1,300	11,787	0.72	84.7	84.7	85.6	0.9
AG	494,690	770	5,226	1.62	85.0	85.0	86.0	1.0
AH	495,040	300	2,265	3.73	85.6	85.6	86.4	0.8
AI	496,420	1,510	12,428	0.68	86.4	86.4	87.1	0.7
AJ	498,000	1,290	10,065	0.84	86.5	86.5	87.2	0.7
AK	500,150	1,060	8,526	0.99	86.6	86.6	87.4	0.8
AL	501,500	1,280	9,300	0.91	86.7	86.7	87.4	0.7
AM	503,300	1,080	8,843	0.96	86.8	86.8	87.6	0.8
AN	505,000	640	5,090	1.66	87.0	87.0	87.8	0.8
AO	506,400	1,040	8,090	1.04	87.2	87.2	88.0	0.8
AP	507,800	400	2,629	3.21	87.8	87.8	88.5	0.7
AQ	509,400	700	5,659	1.49	88.7	88.7	89.4	0.7
AR	511,000	700	5,002	1.69	88.9	88.9	89.6	0.7
AS	512,700	930	6,447	1.31	89.2	89.2	89.9	0.7
AT	514,100	1,110	7,385	1.14	89.6	89.6	90.4	0.8
AU	514,500	1,560	12,065	0.70	89.8	89.8	90.5	0.7
AV	516,240	1,060	7,357	0.99	90.0	90.0	90.8	0.8
AW	518,300	780	5,687	1.27	90.2	90.2	91.0	0.8
AX	520,200	750	6,315	1.15	90.8	90.8	91.6	0.8
AY	522,200	920	6,782	1.07	91.0	91.0	91.9	0.9
AZ	524,350	2,100	17,228	0.42	91.1	91.1	92.0	0.9

[1] Feet above mouth

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Peace River (continued)								
BA	525,950	220	1,596	4.54	91.3	91.3	92.3	1.0
BB	527,700	1,370	9,868	0.73	92.6	92.6	93.6	1.0
BC	529,140	1,270	9,871	0.73	92.7	92.7	93.7	1.0
BD	430,550	1,040	7,767	0.93	92.8	92.8	93.8	1.0
BE	532,140	750	5,162	1.40	92.9	92.9	93.9	1.0
BF	533,800	1,850	8,024	0.90	93.6	93.6	94.6	1.0
BG	534,100	670	4,686	1.55	94.3	94.3	95.0	0.7
BH	534,900	1,000	5,919	1.22	94.6	94.6	95.3	0.7
BI	536,800	1,450	11,403	0.64	94.7	94.7	95.4	0.7
BJ	538,800	950	7,628	0.95	94.7	94.7	95.5	0.8
BK	543,400	1,000	7,370	0.98	95.4	95.4	96.2	0.8
BL	543,700	1,280	9,643	0.75	95.5	95.5	96.4	0.9
BM	545,250	670	2,279	3.18	96.7	96.7	97.6	0.9
BN	546,850	2,460	18,628	0.39	97.1	97.1	98.0	0.9
BO	549,150	1,378	10,550	0.69	97.1	97.1	98.0	0.9
BP	550,400	2,224	16,720	0.43	97.1	97.1	98.0	0.9
BQ	552,050	3,060	31,280	0.23	97.1	97.1	98.0	0.9
BR	552,400	*	*	*	97.4	97.4	*	*
BS	553,000	*	*	*	97.6	97.6	*	*
BT	553,300	*	*	*	97.8	97.8	*	*
BU	557,400	2,147	14,780	0.38	98.6	98.6	99.0	0.4
BV	559,400	2,005	13,759	0.42	98.8	98.8	99.8	1.0

[1] Feet above mouth
* Not determined, encroachment not allowed

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

PEACE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Poley Creek								
A	1,600	391	1,830	1.32	66.5	62.4[2]	63.4	1.0
B	2,800	374	1,904	1.27	66.5	63.8[2]	64.8	1.0
C	4,800	335	2,056	1.17	66.5	65.5[2]	66.5	1.0
D	5,850	367	2,036	1.18	66.5	66.3[2]	97.3	1.0
E	8,675	272	614	3.93	71.8	71.8	72.5	0.7
F	9,176	184	930	2.26	73.9	73.9	74.7	0.8
G	12,050	297	1,740	1.21	75.2	75.2	76.1	0.9
H	14,440	355	1,078	1.95	78.2	78.2	79.2	1.0
I	15,050	507	2,001	0.94	79.0	79.0	80.0	1.0
J	15,100	400	617	3.05	80.1	80.1	81.1	1.0
K	16,300	280	1,885	1.00	82.4	82.4	83.3	0.9
L	16,700	300	2,302	0.82	82.5	82.5	83.4	0.9
M	17,600	448	2,932	0.64	82.6	82.6	83.6	1.0
N	19,000	200[3]	730	2.08	83.7	83.7	84.7	1.0
O	19,900	250[3]	1,097	0.96	85.4	85.4	86.3	0.9
P	21,150	180	780	1.35	86.6	86.6	87.6	1.0
Q	22,250	190	334	3.14	90.6	90.6	91.6	1.0
R	22,330	190	436	2.41	90.9	90.9	91.9	1.0
S	22,950	190	592	1.77	92.2	92.2	92.6	0.4
T	24,200	148	853	1.23	94.0	94.0	94.5	0.5
U	25,150	169	862	1.22	94.8	94.8	95.5	0.7
V	26,600	190	1,125	0.93	95.9	95.9	96.7	0.8
W	27,050	150	542	1.94	96.5	96.5	97.3	0.8
X	27,160	180	2,655	0.40	98.7	98.7	99.7	1.0
Y	27,850	390	2,625	0.40	98.8	98.8	99.8	1.0
Z	28,350	515	1,783	0.59	98.9	98.9	99.9	1.0

[1] Feet above mouth
[2] Elevation computed without consideration of backwater effects from North Prong Alafia River
[3] Width shown on FIRM represents combined floodway boundaries; encroachment analysis performed without consideration of effects from Lake Drain

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

POLEY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Poley Creek (continued)								
AA	29,100[1]	120	621	1.69	99.9	99.9	100.9	1.0
AB	30,600[1]	60	447	1.68	102.0	102.0	102.8	0.8
AC	31,050[1]	120	344	2.18	102.0	102.0	103.0	1.0
AD	31,700[1]	98	416	1.80	105.3	105.3	106.2	0.9
AE	32,600[1]	110	533	1.41	107.0	107.0	108.0	1.0
Southwest Ditch								
A[2]								
B	1,950[3]	34	157	1.83	157.9	158.9	158.9	0.0
C	3,575[3]	31	118	2.43	159.3	159.3	159.8	0.5
D	3,890[3]	27	67	1.52	160.7	160.7	161.7	1.0
E	4,390[3]	21	43	2.37	161.8	161.8	162.2	0.4
F	5,090[3]	*	*	*	*	*	*	*
Southwest Ditch Tributary								
A	410[1]	26	127	1.82	159.9	159.9	160.6	0.7

[1] Feet above mouth
[2] No encroachment possible in ditch
[3] Feet above limit of detailed study (Limit of detailed study is located at a point approximately 1,750 feet downstream of Harden Boulevard)
* Data not available

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

POLEY CREEK – SOUTHWEST DITCH SOUTHWEST DITCH TRIBUTARY

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Upper Saddle Creek								
A	541	1,550	10,398	0.8	103.0	103.0	104.0	1.0
B	843	1,550	10,136	0.7	103.4	103.4	104.1	0.7
C	1,812	1,034	6,580	1.3	103.4	103.4	104.2	0.7
D	4,054	301	1,874	3.1	103.7	103.7	104.7	1.0
E	4,692	590	3,924	1.8	104.3	104.3	105.0	0.7
F	5,646	1,081	6,947	1.2	104.4	104.4	105.1	0.7
G	8,487	1,950	10,499	1.0	104.7	104.7	105.4	0.8
H	11,968	1,558	8,630	1.2	104.8	104.8	105.8	1.0
I	13,164	972	5,636	1.2	105.0	105.0	105.9	1.0
J	14,844	799	3,487	2.6	106.1	106.1	106.4	0.2
K	16,230	776	3,482	2.5	107.2	107.2	107.3	0.1
L	18,347	1,186	5,805	1.5	107.4	107.4	108.1	0.7
M	20,736	258	1,576	1.9	108.3	108.3	108.8	0.5
N	21,002	191	1,267	2.4	108.6	108.6	109.4	0.8
0	21,273	466	3,045	1.2	108.6	108.6	109.5	0.9
P	22,014	344	1,460	1.4	108.9	108.9	109.6	0.8
Q	22,278	260	1,912	1.0	109.4	109.4	109.8	0.4
R	22,999	1,009	5,553	1.0	109.4	109.4	109.9	0.5
S	25,015	998	5,760	1.0	109.5	109.5	110.1	0.7
T	27,037	1,099	5,534	1.1	109.5	109.5	110.3	0.8
U	28,222	1,056	3,333	2.8	109.8	109.8	110.6	0.8

[1] Stream length in feet above is measured from the confluence with Lake Hancock, Polk County, FL

[2] Elevations derived from applying a conversion factor of -0.87’ from NGVD 29 used in Saddle Creek Watershed model (March 2014)

[3] Increase calculated by regulatory elevation deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

UPPER SADDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Upper Saddle Creek (continued)								
V	28,933	1,156	3,709	1.0	110.0	110.0	110.8	0.7
W	30,659	1,629	9,117	0.3	110.2	110.2	110.8	0.6
X	31,024	1,336	2,470	2.2	110.4	110.4	111.0	0.6
Y	32,649	420	869	5.0	112.2	112.2	113.2	1.0
Z	32,924	40	260	7.3	113.8	113.8	113.8	0.1

[1] Stream length in feet above is measured from the confluence with Lake Hancock, Polk County, FL

[2] Elevations derived from applying a conversion factor of -0.87’ from NGVD 29 used in Saddle Creek Watershed model (March 2014)

[3] Increase calculated by regulatory elevation deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

UPPER SADDLE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Wahneta Farms Canal								
A	1,248	136	503	2.5	106.9	106.9	107.8	0.9
B	2,602	150	325	3.7	109.2	109.2	109.2	0.1
C	4,071	116	443	2.3	112.3	112.3	113.3	1.0
D	5,501	67	295	3.0	114.8	114.8	115.7	0.8
E	6,474	83	365	2.4	118.5	118.5	118.4	0.0
F	6,705	223	1,323	0.9	120.3	120.3	121.3	1.0
G	7,182	400	1,703	1.1	120.7	120.7	121.4	0.7
H	8,914	89	334	2.4	122.0	122.0	122.2	0.2
I	9,173	107	329	2.4	122.3	122.3	122.6	0.3
J	10,183	47	278	1.5	123.0	123.0	123.6	0.6
K	12,688	33	196	2.1	125.2	125.2	125.3	0.1
L	15,239	94	395	1.0	126.4	126.4	126.7	0.3
M	15,553	131	570	0.9	126.5	126.5	126.8	0.4
N	17,128	100	444	1.6	126.5	126.5	126.9	0.5
O	19,171	31	165	2.4	128.9	128.9	129.0	0.2
P	19,927	141	347	1.6	129.9	129.9	130.0	0.2
Q	21,797	135	584	0.8	130.8	130.8	131.1	0.4
R	22,057	109	504	0.9	130.9	130.9	131.3	0.4
S	24,293	122	385	1.1	130.9	130.9	131.5	0.6
T	24,659	118	426	1.1	131.1	131.1	131.8	0.7
U	26,854	106	582	0.5	131.3	131.3	131.9	0.6
V	28,722	114	355	1.1	131.3	131.3	132.1	0.8
W	29,397	108	478	0.8	131.6	131.6	132.6	0.9
X	29,728	87	446	0.8	132.3	132.3	133.1	0.8
Y	29,886	73	394	0.9	132.4	132.4	133.2	0.8
Z	31,001	85	581	0.7	133.1	133.1	133.7	0.6
AA	31,330	171	1,072	0.4	133.1	133.1	133.7	0.7

[1] Stream length in feet above is measured from the confluence between Wahneta Farms Canal and Peace Creek Drainage Canal Mainstream
[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Water Management Plan
[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

WAHNETA FARMS CANAL

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY[2]	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE[3]
Wahneta Farms Canal Tributary								
A	632	300	1,799	0.2	120.7	120.7	121.4	0.7
B	2,813	140	459	1.0	120.7	120.7	121.6	0.8
C	4,810	216	319	1.8	121.9	121.9	122.9	1.0
D	6,501	80	196	2.2	125.4	125.4	126.1	0.6
E	7,517	97	238	1.5	127.4	127.4	127.3	0.0
F	7,731	90	340	1.0	129.6	129.6	129.9	0.3
G	8,735	108	312	0.9	129.9	129.9	130.1	0.2
H	8,955	108	370	0.8	130.2	130.2	130.6	0.4
I	9,372	135	344	0.4	130.2	130.2	130.6	0.4
J	10,680	125	330	0.4	130.2	130.2	130.7	0.4
K	11,380	122	326	0.4	130.2	130.2	130.7	0.4
L	11,625	108	327	0.5	131.2	131.2	131.5	0.3
M	13,267	91	493	0.7	131.3	131.3	131.6	0.4
N	15,725	71	413	0.8	131.3	131.3	131.8	0.5

[1] Stream length in feet above is measured from the downstream confluence between Wahneta Farms Canal Tributary and Wahneta Farms Canal
[2] Regulatory Base Flood Water Surface Elevation is obtained from SWFWMD Governing Board Approved Peace Creek Water Management Plan
[3] Increase calculated by regulatory elevation (approved ICPR model) deducted from encroached elevation (encroachment HEC-RAS model)

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL AND INCORPORATED AREAS

FLOODWAY DATA

WAHNETA FARMS CANAL TRIBUTARY

5.0 <u>INSURANCE APPLICATIONS</u>

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

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent-annual-chance floodplains that are determined in the FIS report by detailed methods. 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 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

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

6.0 <u>FLOOD INSURANCE RATE MAP</u>

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

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 1-percent-annual-chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths along floodways. Node related BFEs are shown on the FIRM rounded up to the next whole tenth of a foot. Insurance agents use zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

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

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

7.0 OTHER STUDIES

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Polk County has been compiled into this countywide FIS. Therefore, this FIS report either supersedes or is compatible with all previous studies published on streams studied in this report and should be considered authoritative for the purposes of the NFIP.

FIS reports have been prepared for Hardee, Highland, Hillsborough, Lake, Osceola, Pasco, and Sumter Counties (References 63, 57, 64, 6, 65, 66, and 45).

This is a multi-volume FIS. Each volume may be revised separately, in which case it supersedes the previous 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 Federal Insurance and Mitigation Division, FEMA Region IV, Koger-Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, GA 30341.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Auburndale, City of	February 1, 1974	January 30, 1976	May 11, 1979	N/A
Bartow, City of	January 23, 1974	September 12, 1975	December 16, 1980	N/A
Davenport, City of	March 4, 1977	None	December 2, 1980	N/A
Dundee, Town of	January 21, 1977	None	November 19, 1980	N/A
Eagle Lake, City of [1]	May 13, 1977	None	January 19, 1983	N/A
Fort Meade, City of	January 16, 1974	January 30,1976	November 5, 1980	N/A
Frostproof, City of	January 16, 1974	November 21, 1975	May 1, 1980	N/A
Haines City, City of	June 7, 1974	September 5, 1975	September 16, 1981	N/A
Highland Park, Village of [2]	N/A	None	N/A	N/A
Hillcrest Heights, Town of [1]	May 13, 1977	None	January 19, 1983	N/A
Lake Alfred, City of [1]	May 13, 1977	None	January 19, 1983	N/A
Lake Hamilton, Town of	February 4, 1977	None	November 5, 1980	N/A

[1] Dates for this community were taken from Unincorporated Polk County FIRM
[2] This community did not have a FIRM prior to the first countywide FIRM for Polk County

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Lake Wales, City of	October 17, 1975	None	March 16, 1988	N/A
Lakeland, City of	March 1, 1974	October 22, 1976	September 16, 1981	N/A
Mulberry, City of	December 28, 1973	February 6, 1976	February 4, 1981	N/A
Polk City, City of [1]	May 13, 1977	None	January 19, 1983	N/A
Polk County (Unincorporated Areas)	May 13, 1977	None	January 19, 1983	June 15, 1984 October 18,1988 November 15, 1989
Winter Haven, City of	August 16, 1974	October 31, 1975	September 30, 1981	N/A

[1] Dates for this community were taken from Unincorporated Polk County FIRM

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY

POLK COUNTY, FL
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

9.0 BIBLIOGRAPHY AND REFERENCES

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10.0 REVISION DESCRIPTIONS

This section has been added to provide information regarding significant revisions made since the original FIS was printed. Future revisions may be made that do not result in the republishing of the FIS report. To assure that the user is aware of all revisions, it is advisable to contact the Community Map Repository of flood-hazard data located at:

- AUBURNDALE, CITY OF
  Auburndale City Hall
  1 Bobby Green Plaza
  Auburndale, Florida 33823

- BARTOW, CITY OF
  Bartow City Hall
  Building Department
  450 North Wilson Avenue
  Bartow, Florida 33830

- DAVENPORT, CITY OF
  Davenport City Hall
  1 South Allapaha Avenue
  Davenport, Florida 33836

- DUNDEE, TOWN OF
  Dundee Town Hall
  202 East Main Street
  Dundee, Florida 33838

- EAGLE LAKE, CITY OF
  Eagle Lake City Hall
  75 North Seventh Street
  Eagle Lake, Florida 33839

- FORT MEADE, CITY OF
  City of Fort Meade Building Department
  8 West Broadway Street
  Fort Meade, Florida 33841

- FROSTPROOF, CITY OF
  Frostproof City Hall
  111 West First Street
  Frostproof, Florida 33843

- HAINES CITY, CITY OF
  Haines City Hall
  620 East Main Street
  Haines City, Florida 33844

- HIGHLAND PARK, VILLAGE OF
  Village of Highland Park
  1548 South Highland Park Drive
  Lake Wales, Florida 33898

- HILLCREST HEIGHTS, TOWN OF
  Hillcrest Heights Town Hall
  151 North Scenic Highway
  Babson Park, Florida 33827

- LAKE ALFRED, CITY OF
  City of Lake Alfred Building Department
  120 East Pomelo Street
  Lake Alfred, Florida 33850

- LAKE HAMILTON, TOWN OF
  Lake Hamilton Town Hall
  100 Smith Avenue
  Lake Hamilton, Florida 33851

- LAKE WALES, CITY OF
  Lake Wales Municipal Administration Building
  201 West Central Avenue
  Lake Wales, Florida 33853

- LAKELAND, CITY OF
  Lakeland City Hall
  228 South Massachusetts Avenue
  Lakeland, Florida 33801

- MULBERRY, CITY OF
  Mulberry City Hall
  104 South Church Avenue
  Mulberry, Florida 33860

- POLK CITY, CITY OF
  Polk City Hall
  123 Broadway Boulevard SE
  Polk City, Florida 33868

- POLK COUNTY (UNINCORPORATED AREAS)
  Polk County Engineering Division
  330 West Church Street
  Bartow, Florida 33830

- WINTER HAVEN, CITY OF
  Winter Haven City Hall
  451 Third Street NW
  Winter Haven, Florida 33881

10.1 First Revision (Revised September 28, 2012)

The 2012 Physical Map Revision (PMR) covered the geographic area of Polk County, Florida, that falls within the Lake Marion Creek watershed, including the Snell Creek tributary drainage area, in the Unincorporated Areas of Polk County, Florida. Portions of the Cities of Davenport, Frostproof, and Haines City; and the Town of Dundee falls within the boundaries of the FIRMs revised during the PMR; however these communities lie outside of the Lake Marion Creek Watershed revision area. The Lake Marion Creek Watershed was selected to be studied in detail at the County's request due to the potential impacts of the fast-growing residential area of the Poinciana community. London Creek was also added as an area of limited detail study. Poinciana is impacted by flooding in both the London Creek watershed and Lake Marion Creek watershed.

10.2 Second Revision (Revised December 22, 2016)

This Physical Map Revision (PMR) covers the geographic area of Polk County that falls within the territory of the SWFWMD. The area includes all of the following watersheds: Big Creek East, Big Creek West, Blackwater Creek, Bowlegs Creek, Charlie Creek, Crooked Lake, Gator Creek, Homeland, Hookers Prairie/South Alafia, Itchepackesassa Creek, Lake Drain, Lake Hancock Area, Lake Lulu, Lake Reedy, Little Payne Creek, Livingston Creek, McCullough Creek, Mulberry (aka Christina), Peace Creek, Poley Creek/North Alafia, Polk City, Pony Creek, Reedy Creek, and Saddle Creek. This area also includes portions of the following watersheds: Catfish Creek, Lake Hatchineha, Lake Marion, Lake Marion Creek, Lake Pierce, Lake Rosalie, Lake Weohyakapka, and Lower Reedy Creek.