FLOOD INSURANCE STUDY

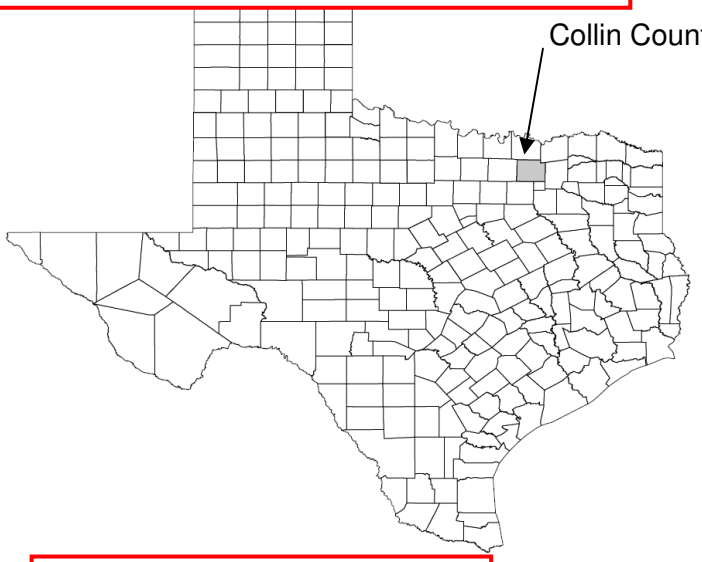
COLLIN COUNTY, TEXAS

AND INCORPORATED AREAS

VOLUME 1 OF 4

Notice

This preliminary FIS report includes only revised Flood Profiles and Floodway Data tables. See "Notice to Flood Insurance Study Users" page for additional details.



Community Name	Community Number	Community Name	Community Number
Allen, City of	480131	Murphy, City of	480137
Anna, City of	480132	Nevada, City of	481657
Blue Ridge, Town of	481628	New Hope, City of	480138
Carrollton, City of*	480167	Parker, City of	480139
Celina, City of	480133	Plano, City of	480140
Dallas, City of	480171	Princeton, City of	480757
Fairview, Town of	481069	Prosper, Town of	480141
Farmersville, City of	481627	Richardson, City of	480184
Frisco, City of	480134	Royse City, City of	480548
Garland, City of	485471	Sachse, City of	480186
Josephine, City of	480756	St. Paul, Town of	481318
Lavon, Town of	481313	Van Alstyne, Town of	481620
Lowry Crossing, City of	481631	Westminster, Town of	480758
Lucas, City of	481545	Weston, City of	481324
McKinney, City of	480135	Wylie, City of	480759
Melissa, City of	481626	Unincorporated Areas	480130

*No Special Flood Hazard Areas Identified

REVISED PRELIMINARY

December 9, 2014

REVISED: _____

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
48085CV001B

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.

This publication incorporates revisions to the original Flood Insurance Study. These revisions are presented in Section 10.0.

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

Initial Countywide FIS Effective Date: September 4, 1991
First Revised Countywide FIS Revision Date: January 19, 1996
Second Revised Countywide FIS Revision Date: December 19, 1997
Third Countywide FIS Revision Date: June 2, 2009
Fourth Revised Countywide FIS Revision Date: _____

This Preliminary FIS report does not include unrevised Floodway Data tables or unrevised Flood Profiles. These Floodway Data tables and Flood Profiles will appear in the final FIS report.

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FLOOD INSURANCE STUDY
COLLIN COUNTY, TEXAS AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in, or revises and updates previous FIS and Flood Insurance Rate Maps (FIRMs) for the geographic area of Collin County, Texas, including: the Cities of Allen, Anna, Carrollton, Celina, Dallas, Farmersville, Frisco, Garland, Josephine, Lowry Crossing, Lucas, McKinney, Melissa, Murphy, Nevada, New Hope, Parker, Plano, Princeton, Richardson, Royse City, Sachse, Weston, and Wylie; and the Towns of Blue Ridge, Fairview, Lavon, Prosper, St. Paul, Van Alstyne, and Westminster, and the Unincorporated areas of Collin County; (hereinafter referred to collectively as Collin County).

Please note that the City of Carrollton is geographically located in Collin, Dallas and Denton Counties; the City of Dallas is geographically located in Collin, Dallas, Denton and Rockwall Counties; the Cities of Frisco and Plano are geographically located in Collin and Denton Counties; the Cities of Garland, Richardson, Sachse, and Wylie are geographically located in Collin and Dallas Counties; the City of Josephine is geographically located in Collin and Hunt Counties. The City of Royse City is geographically located in Collin and Rockwall Counties. The Town of Van Alstyne is geographically located in Collin and Grayson Counties. Only the portions within Collin County for these communities are included in this FIS. The remaining portions of these communities are being shown in each adjacent County FIS.

Please note that on the effective date of this study, the City of Carrollton has no Special Flood Hazard Areas (SFHAs) within Collin County. This does not preclude future determinations of SFHAs that could be necessitated by changed conditions affecting the community (i.e. annexation of new lands) or the availability of new scientific or technical data about flood hazards.

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

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

1.2 Authority and Acknowledgments

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

This FIS was prepared to include the unincorporated areas and incorporated communities within Collin County into a countywide FIS. Information on the authority and acknowledgments for each of these studies, compiled from their previous effective narratives, is shown below.

Unincorporated Areas of Collin County:	the hydrologic and hydraulic analyses for the FIS dated September 16, 1980 (FIRM dated March 16, 1981) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for the Federal Emergency Management Agency (FEMA), under Contract No. H-4570. This work was completed in April 1979.
City of Allen:	the hydrologic and hydraulic analyses for the FIS dated December 1977 (FIRM dated June 1, 1978) were prepared by the Fort Worth District of the U. S. Army Corps of Engineers (USACE), for FEMA, under Inter-Agency Agreement Nos. H-7-76 and H10-77, Project Order Nos. 21 and 2. This work was completed in March 1977.
City of Celina:	the hydrologic and hydraulic analyses for the FIS dated May 1979 (FIRM dated November 1, 1979) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for FEMA, under Contract No. H4570. This work was completed in April 1978.
City of Fairview:	the hydrologic and hydraulic analyses for the FIS dated May 1979 (FIRM dated November 1, 1979) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for FEMA, under Contract No. H4570. This work was completed in April 1978.
City of Frisco:	the hydrologic and hydraulic analyses for the FIS dated December 1979 (FIRM dated June 18, 1980) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for FEMA, under Contract No. H4570. This work was completed in June 1978.

City of Josephine: the hydrologic and hydraulic analyses for the FIS dated July 1979 (FIRM dated January 2, 1980) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for FEMA, under Contract No. H4570. This work was completed in May 1978.

City of McKinney: the hydrologic and hydraulic analyses for the FIS dated December 1979 (FIRM dated June 18, 1980) were prepared by Freese and Nichols, Inc./Rady and Associates, Inc., for FEMA, under Contract No. H4570. This work was completed in May 1978.

the hydrologic analysis for Herndon Branch was developed as a result of a Letter of Map Revision issued October 13, 1994.

City of Murphy: the hydrologic and hydraulic analyses for the FIS dated October 1979 (FIRM dated April 1, 1980) were prepared by USACE, for FEMA, under Inter-Agency Agreement No. H-10-77, Project Order No. 29. This work was completed in February 1978.

The lower reach of Maxwell Creek downstream of McWhirter Road has been revised as the result of revised hydrology and the use of updated cross sections. The hydrologic and hydraulic analyses for this study were performed by the USACE, Fort Worth District, for FEMA, under Inter-Agency Agreement No. EMW-94-E-4371, Project Order No. 4. This work was completed in September 1995.

City of Parker: the hydrologic and hydraulic analyses for the FIS dated February 1979 (FIRM dated August 15, 1979) were prepared by USACE for FEMA, under Inter-Agency Agreement No. H-10-77, Project Order No. 29. This work was completed in February 1978.

City of Plano: the hydrologic and hydraulic analyses for the FIS dated January 2, 1980, were prepared by the USACE for FEMA, under Inter-Agency Agreement No. IAA-H-7-76, Project Order No. 21, and Inter-Agency Agreement no. IAA-H-10-77, Project Order No. 2.

City of Plano (Cont'd):

The hydrologic and hydraulic analyses for the revised FIS dated August 4, 1985, for Stream 5B13 and Stream 2I9 were prepared by Shimek, Jacobs, and Finklea; for Prairie Creek, the revised hydrologic and hydraulic analyses were prepared by Albert Halff Associates.

The hydrologic and hydraulic analyses for the revised FIS dated February 19, 1986, for Pittman Creek and North Fork Pittman Creek were prepared by Shimek, Jacobs, and Finklea. That work was completed in June 1984.

In the revised FIS dated August 19, 1987, the hydraulic analysis for Rowlett Creek was prepared by Espey, Huston and Associates, Inc., and completed in August 1985; the hydraulic analysis for Spring Creek was prepared by Shimek, Jacobs, and Finklea and completed in August 1985; the hydraulic analysis for Prairie Creek was prepared by Nathan D. Maier Consulting Engineers, Inc., for Worrell & Associates, Inc. and completed in March 1986; the hydraulic analysis from a Letter of Map Revision for Stream 5B23 issued November 26, 1986 was prepared by Shimek, Jacobs, and Finklea and completed in August 1985; and the hydraulic analysis for Stream 5B234 was prepared by HuittZollars, Inc. and completed in February 1986.

In the revised FIS dated December 19. 1997, the hydraulic analyses for Bowman Branch, Brown Branch, Rowlett Creek, Russell Creek, Spring Creek, Stream IC-1, Stream IC-1A, Stream 5B27, Stream 5B29 through 5B37, and White Rock Creek were prepared by the USACE for FEMA under Inter-Agency Agreement EMW-85-E-1922 and completed in April 1997. White Rock Creek was revised in June 1998 to include updated topographic data; the hydraulic analysis prepared by Albert H. Halff Associates, Inc for streams 5B18 through 5B26 and stream 5B28 was completed in June 1989. The hydrologic and hydraulic analyses for Indian Creek were prepared by USACE during the preparation of the FIS for Denton County.

City of Wylie (Cont'd): under Contract No. H-4570. The work was completed in August 1978.

In the revised FIS dated March 2, 1989, the hydraulic analysis of Rush Creek was prepared by Nathan D. Maier, Inc., to reflect the effects of a channel modification and bridge construction project. That work was completed in July 1987.

As part of the 2009 countywide revision, hydrologic and hydraulic analyses for Cottonwood Creek No. 1, Doe Branch, East Fork Trinity River, Muddy Creek, Rowlett Creek, West Rowlett Creek, and Stewart Creek Tributary No. 4 were prepared by CF3R JV, for FEMA, under contract No. EMT-2002-CO-0049. This work was completed in September 2006. Base map information that was used for this study was provided in digital format by North Central Texas Council of Governments. This information was digitized at a scale of at least 1:12,000 from aerial photography dated 2003.

As part of this most recent countywide revision, hydrologic and hydraulic analyses for Caruth Creek, Cedar Creek West, Fox Creek, Pittman Creek, Pittman Creek Tributary 2, Prairie Creek, Russell Creek, Spring Creek, Spring Creek Tributary 4, Stream 2H3, Stream 5B18, Stream 5B19, Stream 5B20, Stream 5B21, Stream 5B22, Stream 5B23, Stream 5B24, Stream 5B25, Stream 5B26, Stream 5B27, Stream 5B29, Stream 5B30, Stream 5B31, Stream 5B32, Stream 5B33, Stream 5B34, Stream 5B35, Stream 5B36, Stream 5B37, Warden Creek, White Rock Creek, White Rock Creek Tributary 1, White Rock Creek Tributary 2, and White Rock Creek Tributary 3 were prepared as a Physical Map Revision (PMR) by Risk Assessment, Mapping, and Planning Partners (RAMPP), for FEMA, under contract No. HSFEHQ-09-D-0369. This work was completed in December 2011.

Base map information that was used for this countywide revision was derived from multiple sources. This information was compiled from the U.S. Geological Survey (USGS), 1989 and 1999, the National Geodetic Survey, 2004, the US Census Bureau, 2006 and 2009, Bureau of Land Management, 2006, FEMA existing FIRM data, 2009, and the North Central Texas Council of Governments (NCTCOG), 2007 and 2010.

The projection used in the preparation of the FIRMs was North American Datum of 1983 (NAD 83), Universal Transverse Mercator (UTM), Zone 14N in meters. The vertical datum was the North American Vertical Datum of 1988 (NAVD 88). Differences in datum, projection or State Plane zones used in the projection of the FIRMs for adjacent jurisdictions may result in slight positional differences across jurisdictional boundaries. These differences do not affect the accuracy of these FIRMs.

1.3 Coordination

The dates of the initial and final Consultation and Coordination Officer's (CCO) meetings held for Collin County and the incorporated communities within its boundaries for the previous FIS's are shown in the following tabulation.

Community Name	Initial CCO Meeting	Final CCO Date
Unincorporated Areas of Collin County	May 1978	March 10, 1980
Collin County and Incorporated Areas	May 5, 2004	February 15, 2007
City of Allen	January 28, 1986	August 18, 1988
City of Anna	*	*
City of Celina	August 17, 1977	December 5, 1978
City of Fairview	May 16, 1977	December 5, 1978
City of Farmersville	*	*
City of Frisco	May 20, 1977	May 8, 1979
Town of Lowry Crossing	*	*
City of Lucas	*	*
City of McKinney	September 1, 1977	April 6, 1979
City of Melissa	*	*
City of Murphy	July 8, 1977	October 23, 1978
City of Parker	July 8, 1977	September 11, 1978
City of Plano	September 11, 1984	*
City of Princeton	*	*
City of Weston	*	*
City of Wylie	May 17, 1977	May 9, 1979
Town of Blue Ridge	*	*
Town of Josephine	May 17, 1977	January 8, 1978
Town of Lavon	*	*
Town of Prosper	*	*
Town of St. Paul	*	*
Town of Westminster	*	*

*Data not applicable or not available

For this countywide revision, an initial CCO meeting was held on October 27, 2009, and was attended by representatives of the community, the study contractor, and FEMA. A final CCO meeting was held on March 27, 2012, and attended by representatives of the community, the study contractor, and FEMA. All problems raised at that meeting have been addressed in this study.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Collin County, Texas.

Table 1, "Scope of Study," lists the limits of study of all riverine flooding sources studied by detailed methods.

TABLE 1 – SCOPE OF STUDY

Stream	Limits of Detailed Study
Beck Branch	From its confluence with Rowlett Creek to a point approximately 70 feet upstream of Shiloh Road
Bois D'Arc Creek	From a point approximately 920 feet downstream of the county boundary to a point approximately 60 feet upstream of Josephine Street
Bowman Branch	From its confluence with Brown Branch to Alma Drive
Brown Branch	From its confluence with Rowlett Creek to Alma Drive
Bunny Run North Tributary	From its confluence with Bunny Run South to point approximately 2,500 feet upstream
Bunny Run South Tributary	From its confluence with Maxwell Creek to a point approximately 4,600 feet upstream
Camp Creek	From a point approximately 0.45 mile downstream of State Route 205 to the county boundary
Caruth Creek	From its confluence with Spring Creek to its upstream limit at President George Bush Highway
Cedar Creek West	From a point immediately upstream of E Wilson Creek Parkway to a point immediately downstream of Josephine Street
Cottonwood Branch	From a point approximately 0.95 mile upstream of its mouth to a point approximately 50 feet upstream of Preston Road
Cottonwood Branch Tributary 4	From its confluence with Cottonwood Branch to a point approximately 2,700 feet upstream
Cottonwood Branch Tributary 5	From its confluence with Cottonwood Branch to a point approximately 800 feet upstream
Cottonwood Branch Tributary 6	From its confluence with Cottonwood Branch to a point approximately 1,070 feet upstream
Cottonwood Creek No. 1	From its confluence with Rowlett Creek to a point approximately 0.65 miles upstream of State Route 121

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Cottonwood Creek No. 2	From the county boundary to a point approximately 1,000 feet upstream of Lookout Drive
Cottonwood Creek-East Fork	From the county boundary to a point approximately 0.73 miles upstream
Doe Branch	From County Road 94 to County Road 94
Dublin Creek	From its confluence with Cottonwood Creek No. 1 to a point approximately 0.52 miles upstream of Dublin Road
East Fork Trinity River	From a point approximately 2.3 miles downstream of Greenville Road to a point approximately 0.28 miles upstream of County Road 279
Fox Creek	From its confluence with Spring Creek to a point immediately downstream from Renner Road
Franklin Branch	From its confluence with Wilson Creek to a point approximately 1,200 feet upstream of U. S. Route 380 (Buckner Road)
Hall Branch	From a point approximately 1,900 feet downstream of Hilton Head Road to Frankford Road
Herndon Branch	Feet above limit of detailed study (limit of detailed study is located approximately 1,300 feet upstream of SCS FWRS 3D Flood Retarding Structure)
Jeans Creek	From its confluence with Wilson Creek to a point approximately 250 feet upstream of Rockhill Road
Long Branch	From a point approximately 360 feet upstream of State route 78 to a point approximately 0.51 miles upstream of the Atchison, Topeka and Santa Fe Railway
Maxwell Creek	From a point approximately 1.46 miles downstream of FM 544 to a point approximately 0.47 mile upstream of Elisa Lane; three tributaries to Maxwell Creek: Bunny Run South Tributary, Bunny Run North Tributary, and McMillan Tributary
McKamy Branch	From the county boundary to a point approximately 0.51 miles upstream of White Rock Road
McMillan Tributary	From its confluence with Maxwell Creek to a point approximately 2,000 feet upstream

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Muddy Creek (Upper Reach)	From a point approximately 1,870 feet upstream of its mouth to Stinson Road
Muddy Creek Tributary	From a point approximately 2,030 feet upstream of its confluence with Muddy Creek (Upper Reach) to a point approximately 0.63 mile upstream of Martinez Lane
Muddy Creek Tributary 1	From its confluence with Muddy Creek (Upper Reach) to a point approximately 600 feet upstream of FM 544
Muddy Creek Tributary 2	From its confluence with Muddy Creek (Upper Reach) to a point approximately 1.3 miles upstream
Mustang Creek	From its confluence with Cottonwood Creek No. 1 to a point approximately 1,370 feet upstream of FM 2170 (Main Street)
North Branch Stewart Creek Tributary 1	From a point approximately 2,000 feet upstream of its confluence with Stewart Creek Tributary 1 to the Dallas North Tollway
North Fork Pittman Creek	From its confluence with Pittman Creek to a point approximately 1,900 feet upstream of Parker Road
Osage Branch	From the county boundary to Shady Lane
Panther Creek	From a point approximately 0.86 miles downstream of Burlington Northern Railroad to a point approximately 1.25 miles upstream of State Highway 289
Panther Creek Tributary 1	From its confluence with Spring Creek to a point approximately 1.4 miles upstream
Pittman Creek	From its confluence with Spring Creek to its upstream limit at a point approximately 450 feet upstream of Whiffletree Drive
Pittman Creek Tributary 2	From its confluence with Pittman Creek to its upstream limit approximately 1,200 feet upstream of Sandpiper Lane
Pond Branch	From a point at the county boundary to a point approximately 0.43 miles upstream of the county boundary
Prairie Creek	From its confluence with Spring Creek to a point approximately 0.58 miles upstream of Woodburn Corners Road

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Quail Creek Channel B	From a point approximately 892 feet west of Lake Forest Drive to a point 676 feet downstream of Lake Forest Drive
Reid Branch	From its confluence with White Rock Creek (East) to a point approximately 0.85 miles upstream
Rowlett Creek	From the county boundary to FM 2478 (Custer Road)
Rowlett Creek Tributary	From its confluence with Rowlett Creek to a point approximately 0.4 miles upstream of FM 2478 (Custer Road)
Rush Creek	From a point approximately 1.5 miles downstream of East Stone Road to State Highway 78
Rush Creek Tributary	From its confluence with Rush Creek to a point approximately 35 feet upstream of State Highway 78
Russell Creek	From its confluence with Rowlett Creek to its upstream limit south of McDermott Road
Rutherford Branch	From its confluence with Wilson Creek to a point approximately 1,600 feet upstream of FM 2478
Sabine Creek	From the county boundary to a point approximately 70 feet upstream of Missouri-Kansas-Texas Railroad
Sabine Creek Tributary B	From a point approximately 0.52 miles upstream of its confluence with Sabine Creek to a point approximately 400 feet upstream of Hubbard Street
Sloan Creek	From its confluence with Wilson Creek to a point approximately 0.68 miles stream of FM 1376 (Country Club Road)
Spring Creek	From a point approximately 450 feet downstream of the county boundary to its upstream limit south of Rolling Hills Drive
Spring Creek Tributary 4	From its confluence with Spring Creek to the county boundary upstream of E Lookout Drive
Stewart Creek	From State Highway 423 to U. S. Route 289 (Preston Road)
Stewart Creek Tributary 1	From its confluence with Stewart Creek to a point approximately 0.78 miles upstream of the county boundary

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Stewart Creek Tributary 2	From its confluence with Stewart Creek Tributary 1 to a point approximately 0.69 miles upstream
Stewart Creek Tributary 3	From its confluence with Stewart Creek to a point approximately 0.69 miles upstream of Burlington Northern Railroad
Stewart Creek Tributary 4	From its confluence with Stewart Creek to Preston RoadStream IC-1From the Burlington Northern Railroad to Midway Road
Stream IC-1A	From its confluence with Stream IC-1 to Midway Road
Stream 2D8	From its confluence with Rowlett Creek to Jupiter Road
Stream 2D9	From its confluence with Stream 2D8 to a point approximately 60 feet upstream of Ridgewood Drive
Stream 2D10	From its confluence with Stream 2D8 to a point approximately 15 feet upstream of 18th Street
Stream 2D11	From its confluence with Brown Branch to a point approximately 120 feet upstream of P Avenue
Stream 2D12	From its confluence with Rowlett Creek to a point approximately 0.75 miles upstream
Stream 2D15	From its confluence with Rowlett Creek to a point approximately 1,200 feet upstream of Chaparral Road
Stream 2D16	From its confluence with Rowlett Creek to a point approximately 0.62 miles upstream of Texette Drive
Stream 2E7	From the county boundary to a point approximately 550 feet upstream of the county boundary
Stream 2F1	From its confluence with Watters Branch to a point approximately 50 feet upstream of FM 2170
Stream 2G2	From its confluence with Cottonwood Creek No. 1 to a point approximately 570 feet upstream of Keith Drive
Stream 2G3	From its confluence with Cottonwood Creek No. 1 to a point approximately 40 feet upstream of Allen Drive
Stream 2G5	From its confluence with Cottonwood Creek No. 1 to a point approximately 0.86 miles upstream

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Stream 2H3	From its confluence with Pittman Creek to its upstream limit north of President George Bush Highway
Stream 2I5.5	From a point approximately 2,400 feet upstream of its confluence with Spring Creek to a point approximately 4,200 feet upstream of its confluence with Spring Creek
Stream 2I8	From its confluence with Spring Creek to the county boundary
Stream 2I9	From its confluence with Spring Creek to a point approximately 0.46 miles upstream of Country Place Drive
Stream 2I11	From its confluence with Spring Creek to a point approximately 0.61 miles upstream
Stream 2I12	From its confluence with Spring Creek to a point approximately 700 feet upstream of Plano Parkway
Stream 2L1	From its confluence with Prairie Creek to Plano Parkway.
Stream 5B13	From its confluence with McKamy Branch to a point approximately 1,900 feet upstream of Atchison, Topeka, and Santa Fe Railway
Stream 5B14	From its confluence with Stream 5B13 to the Atchison, Topeka, and Santa Fe Railway
Stream 5B15	From its confluence with White Rock Creek to a point approximately 0.67 miles upstream
Stream 5B16	From its confluence with White Rock Creek to a point approximately 0.83 miles upstream
Stream 5B17	From its confluence with White Rock Creek to a point approximately 50 feet upstream of Private Road
Stream 5B18	From its confluence with White Rock Creek to a point approximately 0.52 miles upstream of Village Creek Drive
Stream 5B19	From its confluence with White Rock Creek to its upstream limit approximately 50 feet downstream of Plano Parkway

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Stream 5B20	From its confluence with White Rock Creek to its upstream limit approximately 150 feet downstream of Dallas Parkway
Stream 5B21	From its confluence with White Rock Creek to its upstream limit approximately 100 feet upstream of FM 544
Stream 5B22	From its confluence with Stream 5B21 to its upstream limit approximately 100 feet upstream of Shaddock Boulevard
Stream 5B23	From its confluence with White Rock Creek to a point its upstream limit approximately 900 feet upstream of Winding Hollow Lane
Stream 5B24	From its confluence with White Rock Creek to its upstream limit approximately 900 feet upstream of State Highway 289
Stream 5B25	From its confluence with White Rock Creek to its upstream limit approximately 0.38 miles upstream of State Route 289
Stream 5B26	From its confluence with White Rock Creek to a point approximately 0.63 miles upstream of Willow Bend Drive
Stream 5B27	From its confluence with White Rock Creek to its upstream limit approximately 250 feet upstream of Preston Meadow Drive
Stream 5B28	From its confluence with Stream 5B27 to a point approximately 1,740 feet upstream
Stream 5B29	From its confluence with White Rock Creek to its upstream limit approximately 600 feet upstream of Spring Creek Parkway
Stream 5B30	From its confluence with White Rock Creek to its upstream limit approximately 2,517 feet upstream of Preston Meadow Drive
Stream 5B31	From its confluence with White Rock Creek to a point approximately 520 feet upstream of Preston Meadow Drive
Stream 5B32	From its confluence with White Rock Creek to its upstream limit proximately 1,770 upstream

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Stream 5B33	From its confluence with White Rock Creek to its upstream limit approximately 900 feet of State Highway 289
Stream 5B34	From its confluence with White Rock Creek to its upstream limit approximately 960 feet upstream of Hedgcoxe Road
Stream 5B35	From its confluence with White Rock Creek to its upstream limit approximately 660 feet upstream of Dollar Drive
Stream 5B36	From its confluence with White Rock Creek to its upstream limit approximately 300 feet upstream of State Highway 121
Stream 5B37	From its confluence with White Rock Creek to a point approximately 0.50 miles upstream of Robinson Road
Tributary A to Stewart Creek	From its confluence with Stewart Creek to a point approximately 3,400 feet upstream of Stewart Creek
Tributary to Stream 5B13	From its confluence with Stream 5B13 to a point approximately 480 feet upstream
Tributary WRC-1 West Rowlett Creek	From its confluence with West Rowlett Creek to a point approximately 3,000 feet upstream
Unnamed Tributary to Muddy Creek	From a point approximately 4,900 feet upstream of its confluence with Muddy Creek to a point approximately 100 feet downstream of Westgate Way
Unnamed Tributary to an Unnamed Tributary of Muddy Creek	From its confluence with Unnamed Tributary of Muddy Creek to a point approximately 870 feet upstream of Ann Drive
Unnamed Tributary to Rowlett Creek	From its confluence with Rowlett Creek to a point approximately 4,800 feet upstream
Unnamed Tributary to Watters Branch	From its confluence with Watters Branch to a point approximately 1,030 feet upstream
Unnamed Tributary to White Rock Creek	From its confluence with White Rock Creek to a point approximately 570 feet upstream
Warden Creek	From immediately upstream of E Wilson Creek Parkway to its upstream limit approximately 800 feet upstream of Howell Street

TABLE 1 – SCOPE OF STUDY (Cont'd)

Stream	Limits of Detailed Study
Watters Branch	From its confluence with Rowlett Creek to a point approximately 70 feet upstream of State Highway121
West Rowlett Creek	From its confluence with Rowlett Creek to FM 720
West Rowlett Creek Tributary 1	From approximately 7,200 feet upstream of the confluence with West Rowlett Creek to approximately 90 feet upstream of Independence Parkway
White Rock Creek	From the county boundary to its upstream limit approximately 670 feet upstream of Alexandria Drive
White Rock Creek (East)	From a point approximately 100 feet downstream of FM 3286 to a point approximately 60 feet upstream of FM 1378
White Rock Creek Tributary 1	From its confluence with Stream 5B36 to its upstream limit approximately 1,860 feet upstream from State Highway 289
White Rock Creek Tributary 2	From its confluence with White Rock Creek to approximately 150 feet downstream of State Highway 121
White Rock Creek Tributary 3	From its confluence with White Rock Creek to its upstream limit approximately 1,660 feet upstream of Rockledge Lane
Wilson Creek	From the confluence of Sloan Creek to a point approximately 0.63 miles upstream of FM 2478
Wilson Creek Tributary 8	From approximately 450 feet downstream of Deer Trail to approximately 200 feet upstream of Bois D'Arc Road
Wilson Creek Tributary 9	From its confluence with Wilson Creek to a point approximately 290 feet upstream of Virginia Parkway

As part of the 2009 countywide FIS, updated analyses were included for the flooding sources shown in Table 2A, "Scope of 2009 Revision."

TABLE 2A - SCOPE OF 2009 REVISION

Stream	Limits of Revised or New Detailed Study
Cottonwood Creek No. 1	From Greenville Avenue to State Highway 121
Doe Branch	From a point approximately 0.4 miles upstream of County Road 51 to County Road 94

TABLE 2A - SCOPE OF 2009 REVISION (Cont'd)

Stream	Limits of Revised or New Detailed Study
East Fork Trinity River	From County Road 331 to County Road 279
Muddy Creek (Upper Reach)	From Sanden Road to Stinson Road
Rowlett Creek	From U.S. Highway 75 to State Highway 121
Stewart Creek Tributary 4	From a point approximately 0.7 miles downstream of Fossil Ridge Drive to Preston Road
Watters Branch	From the confluence with Rowlett Creek to State Highway 121
West Rowlett Creek	From the confluence with Rowlett Creek to State Highway 121

As part of this countywide FIS, updated analyses were included for the flooding sources shown in Table 2B, "Scope of Revision."

TABLE 2B - SCOPE OF REVISION

Stream	Limits of Revised or New Detailed Study
Caruth Creek	From its confluence with Spring Creek to its upstream limit at President George Bush Highway
Cedar Creek West	From a point immediately upstream of E Wilson Creek Parkway to a point immediately downstream of Josephine Street
Fox Creek	From its confluence with Spring Creek to a point immediately downstream from Renner Road
Pittman Creek	From its confluence with Spring Creek to its upstream limit at a point approximately 450 feet upstream of Whiffletree Drive
Pittman Creek Tributary 2	From its confluence with Pittman Creek to its upstream limit approximately 1,200 feet upstream of Sandpiper Lane
Prairie Creek	From a point immediately upstream of President George Bush Highway to a point approximately 0.58 miles upstream of Woodburn Corners Road
Russell Creek	From its confluence with Rowlett Creek to its upstream limit south of McDermott Road

TABLE 2B - SCOPE OF REVISION (Cont'd)

Stream	Limits of Revised or New Detailed Study
Spring Creek	From immediately upstream of President George Bush Highway to its upstream limit south of Rolling Hills Drive
Spring Creek Tributary 4	From its confluence with Spring Creek to the county boundary upstream of E Lookout Drive
Stream 2H3	From its confluence with Pittman Creek to its upstream limit north of President George Bush Highway
Stream 5B18	From its confluence with White Rock Creek to a point approximately 0.52 miles upstream of Village Creek Drive
Stream 5B19	From its confluence with White Rock Creek to its upstream limit approximately 50 feet downstream of Plano Parkway
Stream 5B20	From its confluence with White Rock Creek to its upstream limit approximately 150 feet downstream of Dallas Parkway
Stream 5B21	From its confluence with White Rock Creek to its upstream limit approximately 100 feet upstream of FM 544
Stream 5B22	From its confluence with Stream 5B21 to its upstream limit approximately 100 feet upstream of Shaddock Boulevard
Stream 5B23	From its confluence with White Rock Creek to a point its upstream limit approximately 900 feet upstream of Winding Hollow Lane
Stream 5B24	From its confluence with White Rock Creek to its upstream limit approximately 900 feet upstream of State Route 289
Stream 5B25	From its confluence with White Rock Creek to its upstream limit approximately 0.38 miles upstream of State Route 289
Stream 5B26	From its confluence with White Rock Creek to a point approximately 0.63 miles upstream of Willow Bend Drive
Stream 5B27	From its confluence with White Rock Creek to its upstream limit approximately 250 feet upstream of Preston Meadow Drive

TABLE 2B - SCOPE OF REVISION (Cont'd)

Stream	Limits of Revised or New Detailed Study
Stream 5B29	From its confluence with White Rock Creek to its upstream limit approximately 600 feet upstream of Spring Creek Parkway
Stream 5B30	From its confluence with White Rock Creek to its upstream limit approximately 2,517 feet upstream of Preston Meadow Drive
Stream 5B31	From its confluence with White Rock Creek to a point approximately 520 feet upstream of Preston Meadow Drive
Stream 5B32	From its confluence with White Rock Creek to its upstream limit proximately 1,770 upstream
Stream 5B33	From its confluence with White Rock Creek to a its upstream limit approximately 900 feet of State Highway 289
Stream 5B34	From its confluence with White Rock Creek to its upstream limit approximately 960 feet upstream of Hedgcoxe Road
Stream 5B35	From its confluence with White Rock Creek to its upstream limit approximately 660 feet upstream of Dollar Drive
Stream 5B36	From its confluence with White Rock Creek to its upstream limit approximately 300 feet upstream of State Highway 121
Stream 5B37	From its confluence with White Rock Creek to a point approximately 0.50 miles upstream of Robinson Road
Warden Creek	From immediately upstream of E Wilson Creek Parkway to its upstream limit approximately 800 feet upstream of Howell Street
White Rock Creek	From immediately upstream of George Bush Highway to approximately 670 feet upstream of Alexandria Drive
White Rock Creek Tributary 1	From its confluence with Stream 5B36 to its upstream limit approximately 1,860 feet upstream from State Highway 289
White Rock Creek Tributary 2	From its confluence with White Rock Creek to approximately 150 feet downstream of State Highway 121

TABLE 2B - SCOPE OF REVISION (Cont'd)

Stream	Limits of Revised or New Detailed Study
White Rock Creek Tributary 3	From its confluence with White Rock Creek to its upstream limit approximately 1,660 feet upstream of Rockledge Lane

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

Approximate analyses were applied to numerous streams in the county, including the remaining portions of selected flooding sources studied by detailed methods. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Collin County.

This FIS also incorporates, where applicable, the determinations of letters issued by FEMA resulting in map changes (Letter of Map Revision [LOMR], and Letter of Map Revision Based on Fill [LOMR-F]). Letters of Map Revision incorporated as part of this countywide update have been shown in Table 2C, Letters of Map Revision," and are reflected in Table 5, "Floodway Data," and Exhibit 1, "Flood Profiles."

TABLE 2C – LETTERS OF MAP REVISION

Case Number	Effective Date	Flooding Source	Community
09-06-0276P	3/19/2010	West Rowlett Creek	City of Allen, City of Plano
09-06-1503P	8/31/2009	Wilson Creek, Franklin Branch, Wilson Creek Tributary 9	City of McKinney
09-06-1727P	6/3/2009	Prairie Creek[1] Stream 2L1	City of Plano
09-06-2082P	7/20/2009	West Rowlett Creek Tributary 1, West Rowlett Creek Tributary 1-2	City of Plano
09-06-2159P	6/30/2009	Herndon Branch	City of McKinney
09-06-2222P	7/20/2009	Jeans Creek	City of McKinney
09-06-3028P	10/28/2009	Rowlett Creek[2]	City of Allen

[1]LOMR for Prairie Creek was superseded.
[2]LOMR was partially incorporated.

TABLE 2C – LETTERS OF MAP REVISION (Cont'd)

Case Number	Effective Date	Flooding Source	Community
09-06-3155P	11/9/2009	Cottonwood Branch	City of Frisco
09-06-3251P	11/24/2009	Panther Creek, Panther Creek Tributary 1, Panther Creek Tributary 1A, and Panther Creek Tributary 2-1[1]	City of Frisco
09-06-3411P	1/25/2010	Watters Branch	City of Allen
09-06-3493P	12/21/2009	Wilson Creek[1]	City of McKinney
10-06-0160P	1/8/2010	Stewart Creek Tributary 2	City of Frisco
10-06-0166P	1/6/2010	Unnamed Tributary to Stewart Creek	City of Frisco
10-06-0322P	6/11/2010	Wilson Creek Tributary 8	City of McKinney
10-06-0342P	9/21/2010	Cottonwood Creek No. 1	City of Allen
10-06-0963P	10/1/2010	Rowlett Creek	City of Allen
10-06-0997P	8/31/2010	Stream 2I12	City of Plano
10-06-1256P	4/30/2010	Cottonwood Branch	City of Frisco
10-06-1626P	5/17/2010	Stream 5B13[1]	City of Dallas
10-06-1941P	5/28/2010	Stream 5B14	City of Dallas, City of Plano
10-06-2440P	3/23/2010	West Rowlett Creek, Rowlett Creek	City of Allen
10-06-3483P	6/6/2010	Cottonwood Creek No. 1	City of Allen, City of McKinney
11-06-0181P	1/14/2011	Tributary A of Stewart Creek, Stewart Creek	City of Frisco
11-06-1691P	3/25/2011	Tributary A of Stewart Creek	City of Frisco
11-06-2328P	6/28/2011	Wilson Creek Tributary 5	City of McKinney
11-06-3685A	8/9/2011	Rowlett Creek	City of Allen

[1]LOMR was partially incorporated.

With the incorporation of LOMR Case Number 10-06-0997P, the stream previously named Stream 2I11 was renamed Stream 2I12, and the stream previously named Stream 2I12 was renamed Stream 2I11.

Detail-studied streams that were not re-studied as part of this map update may include a profile baseline on the FIRM. The profile baselines for these streams were based on the best available data at the time of their study and are depicted as they were on the previous FIRMs. In some cases the transferred profile baseline may deviate significantly from the channel or may be outside of the floodplain.

2.2 Community Description

Collin County is located in northeastern Texas, approximately thirty miles south of the Red River. McKinney, the county seat, is thirty-four miles northeast of the City of Dallas. The county is bordered by the following counties: Grayson to the north, Fannin, to the northeast, Hunt to the east, Rockwall to the southeast, Dallas to the South, and Denton to the west. The county is approximately 841 square miles in size and had a population of 782,341 in 2010 (Reference 1). The economy of the county includes farming, ranching, and light industrial activity; and its agricultural crops include cotton, sorghum, wheat, and hay.

Collin County is drained primarily by the East Fork of the Trinity River (Lake Lavon) and its tributaries. The western edge of the county is drained by a few tributaries to the Elm Fork of the Trinity River; the eastern edge is drained by tributaries to Sabine Creek.

The topography of the county is primarily rolling prairie with elevations ranging from 450 to 700 feet above sea level. Deep clayey soils over marl and chalk surface the central and western part of the county. Dark loamy alluvial soils lie in the eastern section. The climate is moderate, with an average yearly rainfall of just under 35 inches (Reference 2).

2.3 Principal Flood Problems

The principal flood problems in Collin County occur along the East Fork Trinity River and Sister Grove Creek. Flooding along these two streams is widespread, rather than limited to isolated locations. Other flooding problems within the county are reportedly controlled by numerous Soil Conservation Service flood-control structures. Although major floods are rare, several large floods have occurred in the Rowlett Creek watershed, in May 1933, April 1942, May 1946, August 1947, June 1951, April 1957, July 1962, September 1964, April 1966, and March 1977. Historical flood information for the East Fork Trinity River near McKinney begins in 1913. Since that date, the highest stage occurred in April 1980 and 1982 when, according to US Geological Survey gages, a stage of 22.7 feet was reached. Major floods occurring since that time were in May 1990, June 1950, April 1957, September 1964, May 1958, September 1962, April 1966, and May 1969.

The USGS maintained a stream gauging station on the East Fork Trinity River at U. S. Route 380 (State Highway 24) from August 1942 to 1975 and currently maintains one near State Highway 5 since 1976.

In 1968, the USGS established a recording stream gage on Rowlett Creek at State Route 78 near Sachse, approximately 3.5 miles southeast of Plano. Historical information for that gage began with the flood of April 1942, which, estimated from high-water marks and backwater runs, had a peak discharge of approximately 60,000 cubic feet per second (cfs) and a recurrence interval of approximately 100 years. Drift observed in 1967 lodged on the Atchison, Topeka, and Santa Fe Railroad bridge located approximately 150 feet upstream of the gage indicated a discharge of approximately 50,000 cfs, probably in April 1966 or September 1964. The estimated recurrence interval for this flood would be approximately 50 years. No estimate of frequency was available for other historical floods on Rowlett Creek. The largest flood on White Rock Creek occurred in September 1964. This flood produced a peak discharge of 37,900 cfs at the USGS gage at Keller Springs Road, approximately three miles below Plano. This flood is estimated to have had a recurrence interval of approximately 500 years at the gage. Other large floods on White Rock Creek are known to have occurred in April 1942, June1949, July 1962, April 1966, May 1969, and December 1971; however, no estimated of frequency is available for these floods.

2.4 Flood Protection Measures

There are several dams and reservoirs within Collin County that serve as flood protection structures. The largest of these is Lake Lavon, which is owned by the USACE. Lake Lavon is located on the East Fork Trinity River, and has a total storage capacity of approximately 921,200 acre-feet. There are numerous small dams throughout Collin County; of these, 103 are SCS structures.

3.0 ENGINEERING METHODS

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

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for the flooding sources studied in detail affecting the county.

Initial Countywide and Previous Studies

Each incorporated community within, and the unincorporated areas of, Collin County has a previously printed FIS report. The hydrologic analyses described in those reports have been compiled and are summarized below

Flow frequencies for Beck Branch, Bowman Branch, Browns Branch, Cottonwood Creek No. 1 ([formerly Cottonwood Creek] downstream from the City of Allen), Indian Creek, McKamy Branch, Mustang Creek, North Fork Pittman Creek, Pittman Creek, Prairie Creek, Rowlett Creek downstream from the City of Allen, Rowlett Creek (downstream of U.S. Highway 75), Russell Creek, Spring Creek, Streams 2D8-2D12, Streams 2D15, 2D16, F1, 2G2, 2G3, 2G5, 2H3, 2I9, SI11, 2I12, 2L1, 5B13, 5B14, 5B18-5B37, IC-1, IC-1A, and SC-1, Tributary to Stream 5B13, and White Rock Creek (References 3, 21, and 22) were developed using the computer program NUDALLAS (Reference 4).

In those studies, the watersheds were divided into subbasins, and synthetic unit and flood hydrographs were developed for selected locations. National Weather Service (NWS) Technical Paper No. 40, National Oceanic and Atmospheric Administration (NOAA) Technical Memorandum NWS Hydro-35, and USACE Civil Engineer Bulletin No. EM 1110-2-1411 was used in developing the 10-, 2-, and 1-percent-annual-chance storms (References 5, 6, and 7). The 0.2-percent-annual-chance storm was based on extrapolated data. In 1968, the USGS established a recording stream gage on Rowlett Creek at State Route 78 in Garland. Historical flood information began with the flood of 1942, and a historical discharge-frequency curve was developed at the gage. Peak discharges computed at the gage for existing urbanization with the synthetic hydrograph and PULS routing procedures agree reasonably with those of the historic discharge-frequency curve.

For Cottonwood Branch, Doe Branch, Muddy Creek (downstream from Sanden Road), Muddy Creek Tributary, Muddy Creek Tributary 1, Rowlett Creek (upstream of State Highway 121), Rowlett Creek Tributary, Spring Creek (downstream of President George Bush Turnpike), Stewart Creek Tributary 1, Stewart Creek Tributary 2, Stewart Creek Tributary 3, Stewart Creek Tributary 4 (downstream of Fossil Ridge Drive), Rush Creek, and Rush Creek Tributary, Sabine Tributary B, Sloan Creek, and West Rowlett Creek (upstream of State Highway 121), (References 8, 12 and 25) regional flood frequency equations, developed by USGS, that related drainage basin characteristics to stream flow characteristics for the 10-, 2-, and 1-percent-annualchance storms were used (Reference 9). The 0.2-percent-annual-chance storm peak discharge was obtained by extrapolating a straight line through the 10-, 2-, and 1-percent-annual-chance storms peak discharges plotted on log-probability paper.

Discharges for Stewart Creek (upstream of President George Bush Turnpike) were determined by regional flood frequency equations, developed by USGS, that related drainage basin characteristics to stream flow characteristics for the 10- and 2-percent-annual-chance storms were used (Reference 9). The 1-percent-annual-chance storm peak discharge was determined using the SCS TR-20 computer program (Reference 14). The 0.2-percent-annual-chance storm peak discharge was obtained by extrapolating a straight line through the 10-, 2-, and 1-percentannual-chance storms peak discharges plotted on log-probability paper.

White Rock Creek discharges were obtained by defining drainage areas and using the HEC-1 computer program to compute runoff to and outflow from each of the lakes in the Plantation Resort stormwater retention system (Reference 15).

For East Fork Trinity River (downstream of County Road 331), Franklin Branch, Jeans Creek, Quail Creek Channel B, Unnamed Tributary to Wilson Creek and Wilson Creek peak discharge-frequency relationships were established using conventional unit hydrograph flood analyses and regionalized flood frequency equations. One-hour unit hydrographs were developed for selected locations on Wilson Creek and a six-hour unit hydrograph was developed for the East Fork Trinity River by the Fort Worth District of the USACE (Reference 16). Peak flood discharges for the East Fork Trinity River were compared with peak annual peak flow data at the USGS gauging station located at U. S. Route 380 and the East Fork Trinity River. The regional flood frequency equations, which relate drainage basin characteristics to stream flow characteristics for floods of the selected recurrence intervals, were adopted after evaluation of available regional frequency analyses (References 9 and 17). The 0.2-percent-annual-chance storm peak discharge was obtained by extrapolating a straight line through the 10-, 2-, and 1-percent-annual-chance storms peak discharges plotted on log-probability paper.

For Herndon Branch, peak discharges were incorporated from a LOMR issued October 13, 1994 (Reference 31).

For the Maxwell Creek Watershed south of Lucas Road (State Highway 1378), which includes Maxwell Creek, Bunny Run South Tributary and Bunny Run North Tributary, and McMillan Tributary, was subdivided into 15 subbasins, the downstream of which covers SCS Floodwater Retarding Reservoir No. 7 (Reference 31). Snyder's synthetic unit hydrographs were developed for these selected areas. Urbanization and imperviousness values were based on available aerial photography and site visits. Rainfall for each frequency storm was developed suing data from NWS Technical Paper No. 40 (Reference 5) and NOAA Technical Memorandum Hydro-35 (Reference 6). Rainfall for the 0.2-percent-annual-chance storm was computed by extrapolation of data from these sources. Synder's unit hydrographs were developed for each subbasin based on specific physical measurements. The measurements were taken from standard USGS 7.5-minute quadrangle maps (Reference 26). Unit-hydrograph lag times (Tps) were derived from each subbasin using methodology described in the following reports: "Synthetic Hydrograph Relationships, Trinity River Tributaries, Fort Worth-Dallas Urban Area" (Reference 29) and "Effects of Urbanization on Various Frequency Peak Discharges" (Reference 30).

Dublin Creek was modeled using the rational method (Reference 19). NWS Technical Paper No. 40 was used in developing the 10-, 2-, and 1-percent-annualchance storms (Reference 5). The 0.2-percent-annual-chance storm peak discharges were determined by straight line extrapolation on log-probability paper. The decrease in peak discharge with an increase in drainage area for some streams is due to watershed shape and/or overbank storage effects.

For the unincorporated areas of Collin County that include Camp Creek, Cottonwood Creek-East Fork, the East Fork Trinity River, Franklin Branch, Maxwell Creek, Muddy Creek, Muddy Creek Tributary, Muddy Creek Tributary

1, Muddy Creek Tributary 2, Reid Branch, Rowlett Creek, Rowlett Creek Tributary, Rush Creek, Rush Creek Tributary, Rutherford Branch, Sabine Creek Tributary B, Sloan Creek, Stream 5B13, Stream 5B14, Unnamed Tributary to Wilson Creek, White Rock Creek, White Rock Creek East, and Wilson Creek (Reference 22) the flood-frequency discharge values were determined using the USACE HEC-1 computer program (Reference 15). The effect of SCS flood-control structures within the drainage basin of the study area and the resulting storage-discharge relationships were incorporated into the study. Unit hydrographs were derived based on a log-normal distribution and incorporated into a computer study as derived by James A Constant of the USACE. Fifteen-minute rainfall increments were used, since the drainage areas involved were small, causing short times to peak. Rainfall values were obtained from NWS Technical Paper No. 40 and NOAA Technical Memorandum NWS Hydro-35 (References 5 and 6). Lag times were based on a USACE report (Reference 23).

2009 Revised Analysis

In the 2009 revision, discharges for Cottonwood Creek No. 1, Doe Branch, East Fork Trinity River, Muddy Creek (Upper Reach), Rowlett Creek, Stewart Creek Tributary 4, Watters Branch, and West Rowlett Creek were based on new detailed analyses.

For the East Fork Trinity River, a flood frequency analysis was performed utilizing PeakFQ (Reference 32) to calculate the 10-, 2-, 1-, and 0.2-percent-annual-chance storms peak discharges. The analysis followed the standard hydrologic methods described in Bulletin 17B (Reference 33) utilizing gages located on the East Fork Trinity River. USGS Gage 8059000 with a period of record from 1955-1975 and USGS gage 8058900 with a period of record 1976-2002 were combined for the analysis to create a 48 year period of record. The peak discharge for the May 1982 event was included as a high outlier with a return period of approximately 360 years.

For the remaining streams, the hydrologic analyses of discharges were based on design storms computed using HEC-HMS computer program (Reference 34). The HEC-HMS computer program computes flood hydrographs using a unit hydrograph defined by the SCS method parameters. In order to use this program, the estimated SCS Curve Number, the lag time (tL), the storm rainfall, and drainage areas had to be defined as input parameters. The SCS Curve Number method, the SCS Unit Hydrograph Method and the Muskingum-Cunge 8-point method were used to determine the loss-rate, transform rainfall excess into surface runoff, and route the flow through the channel for steady-state simulations, respectively. Rainfall data were developed using NCTCOG Integrated Stormwater Policy Guidebook & Design Manual for Development/Redevelopment (Reference 35). The rainfall data obtained from the manual is based on the USGS Depth-Duration Frequency of Precipitation for Texas, Water Resource Investigations Report 98- 40441 (Reference 36)

Revised Analysis

In the current revision, discharges for Caruth Creek, Cedar Creek West, Fox Creek, Pittman Creek, Pittman Creek Tributary 2, Prairie Creek, Russell Creek, Spring Creek, Spring Creek Tributary 4, Stream 2H3, Stream 5B18, Stream

5B19, Stream 5B20, Stream 5B21, Stream 5B22, Stream 5B23, Stream 5B24, Stream 5B25, Stream 5B26, Stream 5B27, Stream 5B29, Stream 5B30, Stream 5B31, Stream 5B32, Stream 5B33, Stream 5B34, Stream 5B35, Stream 5B36, Stream 5B37, Warden Creek, White Rock Creek, White Rock Creek Tributary 1, White Rock Creek Tributary 2, and White Rock Creek Tributary 3 were based on new hydrologic analyses.

The hydrologic analyses of discharges for this study were based on design storms computed using HEC-HMS computer program. The HEC-HMS computer program computes flood hydrographs using a unit hydrograph defined by the SCS method parameters. The estimated SCS Curve Number, the lag time (t_p), drainage basin characteristics coefficient, the storm rainfall, and drainage areas were defined as input parameters. The SCS Curve Number method and the Snyder's Unit Hydrograph method were used to determine the loss-rate and to transform rainfall excess into surface runoff. The Modified Puls method was used to route the flow through the channel of the streams being studied. The Mukingum-Cunge method was used to route the flow through the streams which contribute to the study streams, but were not studied. Rainfall data was obtained from the NCTCOG Integrated Stormwater Policy Guidebook & Design Manual for Development/Redevelopment (Reference 35) and is based on the USGS Depth-Duration Frequency of Precipitation for Texas, Water Resource Investigations Report 98-40441.

A summary of the drainage area-peak discharge relationships for all the streams studied by detailed methods is shown in Table 8, "Summary of Discharges."

TABLE 3 – SUMMARY OF DISCHARGES

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
BECK BRANCH					
At confluence with Rowlett Creek	4.12	5,300	7,500	8,400	10,700
At point approximately 0.4 mile above North Star Road	2.31	4,000	5,500	6,200	7,800
At a point approximately 500 feet above Shiloh Road	1.22	2,800	3,850	4,300	5,300
BOIS D'ARC CREEK					
At confluence with Sabine Creek*	28.5	13,455	20,930	24,250	33,000
At confluence with Sabine Creek**	11.1	6,200	9,310	10,640	14,100
Immediately downstream of Josephine Street	9.9	5,735	8,615	9,835	13,100
BOWMAN BRANCH					
At confluence with Brown Branch	1.54	2,200	3,100	3,500	4,900
At U.S. Route 75	0.94	1,400	1,900	2,500	4,000
BROWN BRANCH					
At confluence with Rowlett Creek	4.43	5,800	7,900	8,900	11,400
Above Bowman Ranch	1.51	2,500	3,400	3,800	4,900
At U.S. Route 75	1.04	1,700	2,300	2,600	3,400
BUNNY RUN NORTH TRIBUTARY					
At confluence with Bunny Run South Tributary	0.36	870	1,140	1,260	1,540

* Confluence of Bois d'Arc Creek; due to existing hydraulic conditions and topography, coincident flows were used for the lower reach of Bois d'Arc Creek

** Confluence of Bois d'Arc Creek with Sabine Creek; flow reflects actual Bois d'Arc Creek contribution

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
BUNNY RUN NORTH TRIBUTARY (Cont'd)					
At a point 2,000 feet east of FM 2551 (where stream merges from two flows)	0.29	840	1,090	1,210	1,480
BUNNY RUN SOUTH TRIBUTARY					
At confluence with Maxwell Creek	0.89	1,900	2,510	2,780	3,410
Downstream of Bunny Run North Tributary	0.85	2,000	2,620	2,900	3,560
Upstream of Bunny Run North Tributary	0.49	1,140	1,500	1,660	2,030
At a point 2,250 feet east of FM 2551	0.41	1,090	1,420	1,570	1,920
At a point 1,250 feet east of FM 2551	0.31	980	1,260	1,390	1,710
CAMP CREEK					
At upstream county boundary	12.1	6,020	8,430	9,530	11,360
CARUTH CREEK					
At its confluence with Spring Creek	0.31	520	750	890	1,250
CEDAR CREEK WEST					
Immediately downstream of Wilson Creek Parkway	0.80	1,280	1,910	2,290	3,280
CLARKS BRANCH					
At confluence with Unnamed Tributary to Clarks Branch	3.6	*	*	5,200	*
COTTONWOOD BRANCH					
At a point approximately 2,700 feet west of State Highway 423	9.94	5,900	9,000	10,200	13,600

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
COTTONWOOD BRANCH (Cont'd)					
At a point approximately 1.25 miles east of State Highway 423	6.89	4,500	6,700	7,700	10,200
At county boundary	4.13	3,400	5,100	5,800	7,800
At a point just upstream of Burlington Northern Railroad	1.8	2,942	4,235	4,819	6,307
At a point approximately 50 feet above the confluence with Cottonwood Branch Tributary 4	0.9	1,351	1,974	2,336	3,152
At a point just upstream of the confluence with Cottonwood Branch Tributary 6	0.6	943	1,386	1,584	2,052
COTTONWOOD BRANCH TRIBUTARY 4					
At a point just upstream of the confluence with Cottonwood Branch	0.4	828	1,149	1,289	1,597
At a point 2,650 feet from the confluence with Cottonwood Branch	0.2	686	920	1,020	1,231
COTTONWOOD BRANCH TRIBUTARY 5					
At a point just upstream of the confluence with Cottonwood Branch	0.2	170	256	292	513
COTTONWOOD BRANCH TRIBUTARY 6					
At a point just upstream of the confluence with Cottonwood Branch	0.3	214	302	340	422

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
COTTONWOOD CREEK NO. 1					
At mouth	19.26	11,500	16,000	17,900	22,000
At Betsy Lane	17.20	11,300	15,900	17,600	21,700
At Parker Road	15.02	11,200	15,500	17,100	21,100
At confluence of Mustang Creek	13.25	13,600	18,100	20,000	24,200
Above confluence of Mustang Creek	10.30	9,800	13,000	14,500	17,600
Below confluence of Stream 2G2	9.20	9,200	12,500	14,000	16,900
At Greenville Avenue	8.24	3,985	6,180	7,475	10,805
At Main Street	8.18	3,960	6,140	7,440	10,735
At Saint Mary's Drive	7.62	3,660	5,590	6,800	10,070
At a point approximately 700 feet downstream of Cedar Drive	7.18	3,610	5,510	6,705	9,930
At Cedar Drive	6.52	3,360	5,130	6,270	9,240
At Exchange Parkway	6.34	3,340	5,090	6,225	9,180
At U.S. Route 75	5.58	3,100	4,730	5,790	8,510
At Stacy Road	4.90	2,880	4,480	5,435	7,920
At a point approximately 2,500 feet downstream of State Highway 121	4.06	2,930	4,490	5,430	7,710
At State Highway 121	3.15	2,370	3,610	4,340	6,290
COTTONWOOD CREEK NO. 2					
At county boundary	0.49	1,000	1,350	1,500	1,850
COTTONWOOD CREEK – EAST FORK					
At mouth	1.6	2,350	3,150	3,500	4,300
At Canyon Lake Drive	0.57	760	1,090	1,200	1,490
DOE BRANCH					
At a point approximately 2,000 feet downstream of County Road 51	7.00	3,135	5,050	6,210	9,350
At a point approximately 1,200 feet downstream of County Road 51	6.94	3,210	5,160	6,350	9,540

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
DOE BRANCH (Cont'd)					
At County Road 53	5.14	2,670	4,270	5,240	7,850
At approximately 0.6 mile downstream of County Road 53	4.68	2,580	4,110	5,040	7,505
At County Road 55	2.85	1,815	2,890	3,540	5,270
At State Highway 289 (Business)	1.52	1,160	1,810	2,200	3,240
As State Highway 289	1.28	1,030	1,590	1,930	2,835
At FM 455	0.58	520	810	980	1,440
At County Road 94	0.21	205	320	390	570
DUBLIN CREEK					
At mouth	0.85	1,450	1,900	2,100	2,550
At point approximately 3,750 feet above mouth	0.57	900	1,200	1,300	1,600
EAST FORK TRINITY RIVER					
At river mile 79.7*	**	17,000	35,500	49,700	104,000
At a point approximately 0.5 mile upstream of County Road 331	184.19	20,800	41,200	51,400	77,700
At a point approximately 1 mile downstream of McDonald Road	170.10	19,200	38,100	47,500	71,800
At McDonald Road	167.50	18,900	37,500	46,800	70,700
At U.S. Route 75	116.70	13,200	26,100	32,600	49,300
At County Road 279	110.40	12,500	24,700	30,800	46,600
FOX CREEK					
At its confluence with Spring Creek	0.54	800	1,210	1,450	2,090
FRANKLIN BRANCH					
At confluence with Wilson Creek	4.0	740	1,000	1,130	2,930
HALL BRANCH					
At confluence with White Rock Creek	2.16	3,150	4,350	4,850	6,100

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
HALL BRANCH (Cont'd)					
Above confluence of right bank tributary approximately 400 feet below Weber Road	1.44	2,050	2,700	3,000	3,650
At a point approximately 1,900 feet downstream of Hilton Head Road	0.39	850	1,100	1,250	1,500
HERNDON BRANCH					
At limit of detailed study	0.57	721	1,162	1,365	1,871
Approximately 2,000 feet upstream of limit of detailed study	0.41	586	969	1,133	1,513
Approximately 3,500 feet upstream of limit of detailed study	0.3	534	833	962	1,303
Approximately 5,800 feet upstream of limit of detailed study	0.14	337	509	587	779
JEANS CREEK					
At mouth	1.4	1,300	1,950	2,250	3,000
LONG BRANCH					
At State Route 78	0.92	2,000	2,600	2,900	3,550
MAXWELL CREEK					
Total inflow to SCS Floodwater Retarding Reservoir No. 7 (Rowlett Creek Watershed)	10.30	10,580	15,430	17,590	22,020
At a point 1,300 feet east of South Maxwell Road	8.28	7,920	10,980	12,560	15,780
Downstream of Bunny Run South and North Tributaries	7.16	6,250	9,310	10,600	13,290

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
MAXWELL CREEK (Cont'd)					
Upstream from Bunny Run South and North Tributaries	6.27	5,310	7,670	8,690	10,810
At the St. Louis and Southwestern Railroad	5.91	5,340	7,590	8,540	10,530
Upstream of the small right side tributary at Murphy Cemetery	5.01	4,800	6,670	7,480	9,200
Downstream of McMillan Tributary	4.59	4,570	6,300	7,060	8,690
Upstream of McMillan Tributary	4.26	4,130	5,690	6,390	7,910
At FM 2551 (Hogge Road)	3.67	3,970	5,490	6,170	7,620
At Parker Road	2.44	3,700	5,100	5,700	7,100
At a point approximately 1,800 feet upstream of Parker Road	1.98	3,150	4,300	4,750	5,850
At a point approximately 0.8 mile upstream of Parker Road	1.56	2,650	3,500	3,900	4,750
At a point approximately 1,400 feet downstream of Kara Lane	1.22	2,150	2,950	3,200	3,950
At Elisa Lane	0.90	1,700	2,300	2,500	3,100
At a point approximately 400 feet upstream of Elisa Lane	0.84	1,075	1,481	1,668	2,150
At Chaparral Drive	0.66	914	1,253	1,399	1,873
MCKAMY BRANCH					
At Atchison, Topeka, and Santa Fe Railway	0.66	1,450	2,000	2,150	2,750
Approximately 500 feet upstream of Atchison, Topeka, and Santa Fe Railway	0.60	1,300	1,800	1,950	2,450

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
MCMILLAN TRIBUTARY					
At confluence with Maxwell Creek	0.33	840	1,100	1,220	1,500
At a point 260 feet east of FM 2551	0.28	870	1,120	1,240	1,520
MUDDY CREEK (UPPER REACH)					
At Hensley Lane	15.45	1,880	2,795	3,340	6,365
At FM 544	14.68	1,310	1,980	2,380	6,250
At County Club Road	11.74	400	610	1,740	5,270
Below Muddy Creek Dam (SCS No. 4)	11.29	100	570	1,700	5,190
At McMillen Road	9.37	4,380	6,640	7,990	11,700
Below confluence of Turner Branch	6.94	3,845	5,720	6,760	9,830
At Parker Road	4.81	2,510	3,670	4,340	6,460
Below confluence of Muddy Creek Tributary 2	4.17	2,200	3,230	3,910	5,950
At Stinson Road	2.64	1,510	2,380	2,925	4,380
At Lewis Lane	1.54	1,080	1,660	2,015	2,945
MUDDY CREEK TRIBUTARY					
At its confluence with Muddy Creek	1.3	1,280	1,805	2,010	2,630
MUDDY CREEK TRIBUTARY 1					
At a point approximately 0.8 mile below SCS Dam No. 5 (above confluence with Muddy Creek)	1.9	490	650	720	880
Just downstream of SCS Reservoir No. 5	1.64	*	*	1,589	*
Just upstream of SCS Reservoir No. 5	1.64	*	*	3,408	*

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
MUDDY CREEK TRIBUTARY 2					
At a point approximately 1 mile above confluence of Turner Branch	1.2	1,670	2,250	2,530	3,070
MUSTANG CREEK					
At confluence with Cottonwood Creek	2.95	5,400	7,300	8,100	10,000
Below confluence of Randy Lane Tributary	2.30	4,600	6,100	6,800	8,400
Above confluence of Randy Lane Tributary	1.53	2,950	3,950	4,350	5,400
At Main Street	0.91	2,600	3,350	3,650	4,850
NORTH BRANCH STEWART CREEK TRIBUTARY 1					
Immediately upstream of Dallas North Tollway (East)	0.59	*	*	1,032	*
NORTH FORK PITTMAN CREEK					
At confluence with Pittman Creek	0.48	1,650	2,250	2,500	3,150
OSAGE BRANCH					
At confluence with McKamy Branch	2.31	3,300	5,000	5,900	8,000
At Shady Lane	0.30	650	900	950	1,200
PANTHER CREEK					
At County Road approximately 4,300 feet downstream from Burlington Northern Railroad	7.41	5,200	7,900	9,100	12,300
At confluence of Panther Creek Tributary 1	2.09	2,000	3,000	3,400	4,500

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
PANTHER CREEK TRIBUTARY 1					
At confluence with Panther Creek	2.99	2,600	3,900	4,400	5,900
PITTMAN CREEK					
At its confluence with Spring Creek	5.04	5,290	8,260	10,080	14,970
At upstream of confluence of Stream 2H3	4.12	4,180	6,590	8,060	12,070
At upstream of confluence of Pittman Creek Tributary 2	3.39	3,780	5,870	7,160	10,550
At approximately 900 feet downstream of Custer Road	2.86	3,260	5,110	6,200	9,130
At approximately 1,100 feet upstream of Roundrock Trail	1.34	1,770	2,660	3,190	4,600
Immediately downstream of West Parker Road	0.47	620	930	1,120	1,610
PITTMAN CREEK TRIBUTARY 2					
At its confluence with Pittman Creek	0.41	770	1,140	1,370	1,950
POND BRANCH					
At confluence with Sabine Creek	6.2	3,950	5,840	6,620	8,800
Downstream of FM 548	5.0	3,475	5,160	5,845	7,800
At a point approximately 0.43 mile upstream of county boundary	3.1	2,465	3,615	4,707	5,350
PRAIRIE CREEK					
At confluence with Spring Creek	7.12	6,300	8,700	9,700	12,300
At county boundary (first crossing)	6.13	6,200	8,600	9,600	12,200

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
PRAIRIE CREEK (Cont'd)					
At Custer Road	5.06	6,000	8,200	9,200	11,700
Immediately upstream of President George Bush Highway	3.39	5,140	7,660	9,030	12,610
Immediately upstream of West Plano Parkway	1.98	3,740	5,460	6,080	8,130
Immediately upstream of FM 544	1.24	2,530	3,760	4,520	6,470
Approximately 300 feet upstream of Woodburn Corners	0.36	880	1,290	1,540	2,190
QUAIL CREEK CHANNEL B					
At its confluence with Lake 3C	1.48	*	873	*	*
REID BRANCH					
At confluence with White Rock Creek - East	2.3	2,430	3,560	4,030	5,300
ROWLETT CREEK					
Below Cottonwood Creek	71.81	23,100	38,100	44,900	58,000
At confluence with Stream 2D8	48.8	18,700	29,300	34,100	43,600
At confluence with Brown Branch	43.1	19,500	30,700	35,400	44,900
At a point approximately 1.5 miles above Parker Road	40.7	22,600	32,000	36,400	45,700
At State Route 5	39.9	22,800	32,200	36,600	45,900
At U.S. Route 75	38.77	18,100	28,110	34,300	50,180
At Alma Drive	25.99	13,470	20,525	24,690	35,120
At McDermott drive	24.32	13,130	19,985	23,950	33,930
Below confluence of West Rowlett Creek	23.68	12,965	19,725	23,610	33,430
At Exchange Parkway	12.04	6,395	9,780	11,730	16,690
At Ridgeview Drive	11.27	6,135	9,440	11,260	16,010

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
ROWLETT CREEK (Cont'd)					
At State Highway 121	10.90	6,170	9,560	11,440	16,010
Above State Highway121	10.38	11,500	15,800	17,600	22,100
ROWLETT CREEK TRIBUTARY					
Above confluence of Rowlett Creek	3.1	2,620	3,880	4,360	5,640
RUSH CREEK					
At confluence with Lake Ray Hubbard	2.5	2,290	3,360	3,790	5,000
RUSH CREEK TRIBUTARY					
At mouth	0.6	865	1,210	1,345	1,720
RUSSELL CREEK					
At its confluence with Rowlett Creek	5.84	5,160	8,500	10,520	15,820
At approximately 2,100 feet downstream of Red River Drive	3.96	4,630	7,370	9,020	13,400
At approximately 100 feet upstream of Custer Road	2.11	3,190	4,800	5,760	8,300
Immediately downstream of Sutherland Lane	1.49	2,253	3,390	4,067	5,861
RUTHERFORD BRANCH					
At confluence with Wilson Branch	4.0	2,940	3,990	4,520	6,780
SABINE CREEK					
At a point approximately 1,100 feet upstream of U.S. Route 30	14.1	7,925	12,040	13,810	18,500

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
SABINE CREEK TRIBUTARY B					
At mouth	1.4	1,090	1,530	1,690	2,180
SLOAN CREEK					
At mouth	9.13	6,360	9,750	11,200	15,200
At FM 1378 (Country Club Road)	7.43	5,930	9,130	10,495	14,250
At a point approximately 0.68 mile upstream of FM 1378 (Country Club Road)	5.54	4,870	7,460	8,550	11,750
SPRING CREEK					
Downstream of Jupiter Road	27.40	21,400	28,900	32,100	33,800
Downstream of Plano Road	24.57	22,700	30,200	33,500	40,300
At Southern Pacific Railroad	22.72	24,600	32,200	35,400	42,200
Upstream of confluence of Pittman Creek	9.76	8,070	12,790	15,570	22,460
At approximately 300 feet downstream of FM 544	8.78	7,740	12,280	15,040	22,550
At approximately 1,500 feet downstream of Parker Road	6.74	6,380	10,140	12,410	18,290
Immediately upstream of Deerfield Drive	4.91	5,000	7,830	9,510	13,960
At approximately 0.57 miles downstream of Independence Parkway	3.21	3,830	5,930	7,240	10,450
Immediately upstream of Independence Parkway	1.65	2,160	3,250	3,900	5,620
At approximately 2,300 feet upstream of Legacy Drive	0.46	610	910	1,100	1,580

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
SPRING CREEK TRIBUTARY 4					
At its confluence with Spring Creek	0.33	620	920	1,100	1,580
STEWART CREEK					
At State Route 423	18.03	9,900	15,300	17,800	24,350
At confluence of Stewart Creek Tributary 1	10.57	6,400	9,800	11,300	15,500
At confluence of Stewart Creek Tributary 3	5.33	4,000	6,000	6,800	9,100
At confluence of Stewart Creek Tributary 4	3.21	2,700	4,000	4,500	6,000
STEWART CREEK TRIBUTARY 1					
At confluence with Stewart Creek	5.90	4,100	6,200	7,000	9,500
STEWART CREEK TRIBUTARY 2					
At 4th Army Memorial Road	1.38	*	*	2,852	*
At Legacy Drive	0.34	*	*	1,020	*
STEWART CREEK TRIBUTARY 3					
At confluence with Stewart Creek	1.77	1,800	2,600	2,900	3,600
STEWART CREEK TRIBUTARY 4					
At confluence with Stewart Creek	1.00	1,000	1,400	1,500	1,950
At a point approximately 550 feet downstream of Fossil Ridge Drive	0.83	790	1,220	1,480	2,190
At Fossil Ridge Drive	0.81	765	1,190	1,440	2,130
At Woodstream Drive	0.65	600	930	1,130	1,655
At Preston Road	0.39	370	570	680	990

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM IC-1					
At Atchison, Topeka, and Santa Fe Railway	2.88	3,500	4,700	5,200	6,300
Upstream of confluence with Stream IC-1A	1.67	2,400	3,300	3,700	4,600
STREAM IC-1A					
At confluence with Stream IC-1	1.07	1,600	2,100	2,400	3,000
STREAM 2D8					
Below confluence with Stream 2D9	2.04	4,250	5,800	6,400	8,000
Above confluence with Stream 2D9	1.53	4,150	5,600	6,200	7,800
At Jupiter Road	0.58	1,750	2,300	2,550	3,150
STREAM 2D9					
At confluence with Stream 2D8	0.51	1,550	2,100	2,300	2,800
STREAM 2D10					
At confluence with Stream 2D8	*	*	*	*	*
STREAM 2D11					
At P Avenue	0.38	1,100	1,450	1,600	1,950
STREAM 2D12					
At confluence with Rowlett Creek	0.42	750	950	1,100	1,300
STREAM 2D15					
At confluence with Rowlett Creek	0.38	700	950	1,050	1,350
At a point approximately 0.83 mile above confluence with Rowlett Creek	0.19	500	650	700	900

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM 2D16					
At confluence with Rowlett Creek	0.46	800	1,050	1,200	1,450
At a point approximately 1.18 miles above confluence with Rowlett Creek	0.17	450	600	700	850
STREAM 2E7					
At confluence with Long Branch	0.28	650	850	900	1,150
STREAM 2F1					
At confluence with Watters Branch	0.37	800	1,100	1,200	1,450
At a point approximately 3,300 feet above confluence with Watters Branch	0.16	450	600	650	800
STREAM 2G2					
At confluence with Cottonwood Creek	0.48	900	1,050	1,100	1,550
At State Route 5	0.38	650	750	800	450
STREAM 2G3					
At confluence with Cottonwood Creek	0.27	360	420	450	530
At Southern Pacific Railroad	0.24	240	260	270	280
STREAM 2G5					
At confluence with Cottonwood Creek	0.59	675	985	1,135	1,485
At a point approximately 0.63 mile upstream of confluence with At Exchange Parkway Cottonwood Creek	0.40	480	690	795	1,035

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM 2H3					
At confluence with Pittman Creek	0.51	880	1,290	1,530	2,160
STREAM 2I5.5	*	*	*	*	*
STREAM 2I8					
At confluence with Spring Creek	0.29	550	750	800	1,000
STREAM 2I9					
At confluence with Spring Creek	0.72	1,675	2,150	2,400	2,900
STREAM 2I11					
At confluence with Spring Creek	0.88	1,350	1,850	2,000	2,500
STREAM 2I12					
At confluence with Spring Creek	0.46	900	1,200	1,350	1,650
STREAM 2L1					
At confluence with Prairie Creek	0.73	1,650	2,250	2,550	3,150
STREAM 5B13					
Below confluence with Stream 5B14	1.78	3,050	4,200	4,650	5,900
Above confluence with Stream 5B14	1.28	2,100	2,900	3,250	4,100
At a point approximately 1,900 feet upstream of Atchison, Topeka, & Santa Fe Railway	0.87	1,670	2,250	2,510	3,140
STREAM 5B14					
At confluence with Stream 5B13	0.28	600	860	970	1,220
At Atchison, Topeka, & Santa Fe Railway	0.15	350	450	500	600

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM 5B15					
At confluence with White Rock Creek	0.40	800	1,100	1,200	1,450
STREAM 5B16					
At confluence with White Rock Creek	0.50	850	1,150	1,250	1,550
STREAM 5B17					
At confluence with White Rock Creek	0.27	510	700	750	940
STREAM 5B18					
At confluence with White Rock Creek	0.70	1,380	2,040	2,430	3,470
STREAM 5B19					
At confluence with White Rock Creek	0.59	850	1,280	1,530	2,210
STREAM 5B20					
At confluence with the White Rock Creek	0.62	1,010	1,500	1,790	2,560
STREAM 5B21					
At confluence with White Rock Creek	0.83	1,150	1,810	2,200	3,210
Upstream of confluence of Stream 5B22	0.24	470	700	840	1,200
STREAM 5B22					
At confluence with Stream	0.40	850	1,230	1,460	2,060
STREAM 5B23					
At confluence with White Rock Creek	0.69	1,200	1,760	2,090	2,960
STREAM 5B24					
At confluence with White Rock Creek	0.82	1,450	2,160	2,580	3,700

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM 5B25					
At confluence with White Rock Creek	0.77	1,260	1,880	2,250	3,230
STREAM 5B26					
At confluence with White Rock Creek	0.54	860	1,290	1,550	2,250
STREAM 5B27					
At confluence with White Rock Creek	1.56	2,240	3,370	4,040	5,810
STREAM 5B28					
At confluence with Stream 5B27	0.21	600	800	850	1,150
STREAM 5B29					
At confluence with White Rock Creek	1.36	1,830	2,700	3,220	4,590
STREAM 5B30					
At confluence with White Rock Creek	1.43	1,890	2,820	3,380	4,850
Immediately upstream of Ohio Drive	1.22	1,610	2,400	2,880	3,820
STREAM 5B31					
At confluence with White Rock Creek	0.85	1,410	2,090	2,500	3,570
Immediately downstream of Preston Meadow Drive	0.44	730	1,080	1,290	1,850
STREAM 5B32					
At confluence with White Rock Creek	0.51	1,060	1,540	1,830	2,590
STREAM 5B33					
At confluence with White Rock Creek	0.25	480	720	860	1,240

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
STREAM 5B34					
At confluence with White Rock Creek	0.51	860	1,250	1,490	2,110
STREAM 5B35					
At confluence with White Rock Creek	0.59	1,030	1,540	1,840	2,650
STREAM 5B36					
At confluence with White Rock Creek	2.07	3,140	4,650	5,550	7,930
Upstream of confluence of White Rock Creek Tributary 1	1.50	2,480	3,620	4,290	6,070
STREAM 5B37					
At confluence with White Rock Creek	0.58	1,140	1,710	2,050	2,950
TRIBUTARY A OF STEWART CREEK					
At the confluence with Stewart Creek	0.46	*	*	745	*
At Parkwood Boulevard	0.33	*	*	565	*
TRIBUTARY TO STREAM 5B13					
At confluence with Stream 5B13	0.10	170	225	250	310
TRIBUTARY WRC-1 TO WEST ROWLETT CREEK					
At the confluence with West Rowlett Creek	0.76	*	*	2,470	*

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs)			
		10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
UNNAMED TRIBUTARY TO MUDDY CREEK (UPPER REACH)					
Just downstream of FM 3412	0.64	*	*	1,587	*
Just upstream of the confluence of unnamed tributary to an unnamed tributary to Muddy Creek	0.19	*	*	596	*
UNNAMED TRIBUTARY TO AN UNNAMED TRIBUTARY TO MUDDY CREEK (UPPER REACH)					
Just upstream of the confluence with unnamed tributary to Muddy Creek	0.29	*	*	819	*
UNNAMED TRIBUTARY TO ROWLETT CREEK					
At the mouth	0.95	1,529	2,149	2,464	3,192
UNNAMED TRIBUTARY TO WATTERS BRANCH					
At confluence with Watters Branch	0.1	*	*	260	*
UNNAMED TRIBUTARY TO WHITE ROCK CREEK	*	*	*	*	*
WARDEN CREEK					
Immediately upstream of Wilson Creek Parkway	0.45	790	1,220	1,480	2,170

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
WATTERS BRANCH					
At confluence with Rowlett Creek	5.02	2,740	4,275	5,190	7,720
At Bethany Drive	4.70	2,680	4,170	5,060	7,540
At McDermott Drive	3.88	2,340	3,620	4,330	6,580
At Exchange Parkway	2.88	1,820	2,835	3,450	5,120
At Ridgeview Drive	1.60	1,050	1,630	1,980	2,905
At State Highway 121	1.06	700	1,085	1,315	1,925
WEST ROWLETT CREEK					
At confluence with Rowlett Creek	11.24	6,730	10,470	12,860	18,610
At a point approximately 1,400 feet downstream of Ridgeview Drive	10.62	6,990	10,730	12,960	18,540
At Ridgeview Drive	7.11	4,670	7,110	8,625	12,320
At Custer Road	6.82	4,550	6,930	8,400	12,090
At State Highway 121	6.65	4,590	6,950	8,450	12,460
At a point immediately upstream of unnamed tributary above State Highway 121	5.99	7,900	10,900	12,200	15,200
At a point immediately upstream of unnamed road, approximately 0.5 mile downstream of FM 720	1.35	3,400	4,600	5,100	6,400
WEST ROWLETT CREEK TRIBUTARY 1					
At approximately 7,200 feet upstream of the confluence with West Rowlett Creek	2.03	*	*	4,100	*
WHITE ROCK CREEK					
Immediately upstream of county boundary	*	*	*	*	*

* Data not available

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
WHITE ROCK CREEK (Cont'd)					
Immediately upstream of President George Bush Highway	23.80	15,410	23,770	27,960	37,630
Upstream of confluence of Stream 5B23	19.99	14,700	23,960	29,450	42,870
Upstream of confluence of Stream 5B34	15.88	12,810	20,690	25,340	37,520
Approximately 1,700 feet upstream of Parker Road	14.08	11,890	19,140	23,490	34,940
Upstream of confluence of Stream 5B30	12.03	10,740	17,220	21,080	31,130
Upstream of confluence of Stream 5B32	10.27	9,720	15,480	18,900	27,780
At approximately 150 feet upstream of Legacy Drive	8.49	8,700	13,630	16,630	24,370
Upstream of confluence of Stream 5B36	6.06	6,600	10,100	12,250	17,760
Upstream of confluence of Stream 5B37	4.54	5,760	8,610	10,310	14,710
Upstream of confluence of White Rock Creek Tributary 3	3.36	4,500	6,610	7,880	11,240
Immediately downstream of Jereme Trail	2.69	3,600	5,290	6,300	8,990
Immediately downstream of Lebanon Road	1.92	2,570	3,770	4,490	6,410
Approximately 1,200 feet upstream of State Highway 121	1.04	1,400	2,050	2,440	3,480
WHITE ROCK CREEK (EAST)					
Downstream of FM 546	9.80	6,940	10,530	12,100	16,300
At upstream confluence of unnamed tributary approximately 0.76 mile southeast of Winningkoff Road	6.60	5,520	8,360	9,580	12,700

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
WHITE ROCK CREEK (EAST) (Cont'd)					
At upstream confluence of Reid Branch	4.30	3,670	5,440	6,180	8,050
WHITE ROCK CREEK TRIBUTARY 1					
At confluence with Stream 5B36	0.23	420	620	740	1,050
WHITE ROCK CREEK TRIBUTARY 2					
At confluence with White Rock Creek	0.34	510	770	930	1,350
WHITE ROCK CREEK TRIBUTARY 3					
At confluence with White Rock Creek	0.92	1,700	2,550	3,050	4,390
WILSON CREEK					
At confluence with Sloan Creek	71.80	13,780	24,000	30,970	56,900
At a point approximately 0.6 mile upstream of State Route 5	56.30	12,060	22,300	28,417	57,200
Immediately upstream of U.S. Route 75	50.60	9,990	17,210	23,480	49,480
Above U.S. Route 75 and confluence with Jeans Creek	49.20	9,870	17,000	23,190	48,600
Above confluence with Franklin Branch	44.40	10,730	18,800	24,640	52,000
Above confluence with Stover Creek	29.80	9,400	15,600	19,720	38,900
Above FM 2478	12.70	7,440	11,250	13,060	20,000

TABLE 3 – SUMMARY OF DISCHARGES (Cont'd)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) 10-PERCENT	2-PERCENT	1-PERCENT	0.2-PERCENT
WILSON CREEK TRIBUTARY 8					
Approximately 160 feet downstream of Deer Trail	0.50	818	1,205	1,380	1,816
WILSON CREEK TRIBUTARY 9					
At 57+70 (above Rockhill road)	*	601	602	603	604

* Data not available

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in Table 5, Floodway Data in the FIS report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Cross sections were determined from topographic maps and field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. All topographic mapping used to determine cross sections are referenced in Section 4.1.

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

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

Initial Countywide and Previous Studies

For each community within Collin County that has a previously printed FIS report, the hydraulic analyses described in those reports have been compiled and are summarized below.

Information on the methods used to determine water-surface elevations for the streams studied by detailed methods, compiled from the previously-printed narratives for Collin County, is shown below. Except where noted, water-surface elevations for floods of the selected recurrence intervals were determined using the USACE HEC-2 step-backwater compute program (Reference 25). The incorporated communities and the unincorporated areas of the county are listed in alphabetical order; methodologies used to develop cross sections, starting water-surface elevations, and channel roughness factors (Manning's "n") are described for each community. For streams that flow through two or more communities, each methodology described applies only to that portion of the stream studied by detailed methods within that particular community. The listing of streams considered in each FIS includes only those streams or portions of streams whose hydraulic analyses were taken from that particular study. For all restudied and/or revised streams, the hydraulic methodologies used for the restudies/revisions were the same as those used in the original analyses of those streams.

The FIS for the City of Allen considered the following streams: Cottonwood Creek No. 1 (formerly Cottonwood Creek), Mustang Creek, Rowlett Creek, Russell Creek, Stream 2D15, Stream 2D16, Stream 2F1, Stream 2G2, Stream 2G3, Stream 2G5, Unnamed Tributary to Watters Branch, Watters Branch, and West Rowlett Creek (Reference 3).

In that study, cross section data were compiled from several sources. Bridge data were obtained by field measurements and from local, county, and State Department of Highways and Public Transportation bridge plans. USGS topographic maps were used whenever necessary to extend cross sections to contain flow (Reference 26). Supplemental field surveys were obtained by the USACE for several streams in December 1986. Additional surveyed cross sections were supplied by Albert H. Halff Associates.

Starting water-surface elevations for Rowlett Creek were obtained from the FIS for the City of Plano (Reference 20). Starting elevations for Cottonwood Creek No. 1, Mustang Creek, Russell Creek, Stream 2G2, Stream 2G3, Watters Branch, West Rowlett Creek, and Stream 2G5 were based on slope/area computations. Starting elevations for 2D15, 2D16, and 2F1 were based on coincident condition elevations from the larger streams.

Channel roughness factors (Manning's "n") for the hydraulic computations were assigned on the basis of field inspections of floodplain areas, engineering judgment, and on previous studies by the USACE.

The FIS for the City of Celina considered Doe Branch (Reference 8). In that study, cross sections were field surveyed and located at close intervals above or below bridges and culverts in order to compute the significant backwater effects of those structures. Starting water-surface elevations were determined using the slope/area method. Channel roughness factors were assigned on the basis of field inspections of the floodplain areas.

The FIS for the Town of Fairview considered Sloan Creek and Wilson Creek (Reference 10). In that study, cross section data were obtained by field survey. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals above and

below bridges and culverts in order to compute significant backwater effects. Starting water-surface elevations were determined using the slope/area method. Channel roughness factors were assigned on the basis of field inspection of the floodplain areas.

The FIS for the City of Frisco considered the following streams: Cottonwood Branch, North Branch Stewart Creek Tributary 1, Panther Creek, Panther Creek Tributary 1, Rowlett Creek, Rowlett Creek Tributary, Stewart Creek, Stewart Creek Tributary 1, Stewart Creek Tributary 2, Stewart Creek Tributary 3, Stewart Creek Tributary 4, Tributary A of Stewart Creek, Tributary WRC-1 of West Rowlett Creek, Unnamed Tributary to White Rock Creek, West Rowlett Creek, and White Rock Creek (Reference 12). Hydraulic analyses for Stream SC-1, which is also located within the City of Frisco, were taken from the FIS for the City of the Colony (Reference 13). Hydraulic analyses used in that study were the same as those used for the streams included in the FIS for the City of Frisco.

In the FIS for the City of Frisco, cross sections were field surveyed and located at close intervals above and below bridges and culverts in order to computer their significant backwater effects. All bridges and culverts were field surveyed to obtain elevation data and structural geometry.

Water-surface elevations for the upper portion of Stewart Creek were computed using the SCS WSP-2 computer program (Reference 27); starting elevations for the upper portion of Stewart Creek were obtained from the upstream limit of detailed study on the lower portion of Stewart Creek. For the remaining steams, starting elevations were determined using the slope/area method. Channel roughness factors were assigned on the basis of engineering judgment and field inspection of the floodplain areas.

The FIS for the City of Josephine considered Sabine Creek Tributary B (Reference 28). In that study, cross sections were field surveyed and located at close intervals above or below bridges and culverts in order to compute the significant backwater effects of those structures. Starting water-surface elevations were obtained by the slope/area method. Channel roughness factors were estimated based on field inspections of the floodplain areas.

The FIS for the City of McKinney considered the following streams: the East Fork Trinity River, Wilson Creek, Jeans Creek, Unnamed Tributary to Wilson Creek, and Franklin Branch (Reference 11). Quail Creek Channel B is also located in the City of McKinney; hydraulic analyses prepared as part of this revision for that stream are the same as those prepared for streams included in the FIS for the City of McKinney.

In that study, cross section data were obtained by field surveys. Bridges and culverts were surveyed to obtain elevation data and structural geometry. The hydraulic models for the East Fork Trinity River, Wilson Creek, and Jeans Creek were obtained from the Fort Worth District of the USACE, Flood Plain Management Services Branch (Reference 16). Channel roughness factors were assigned on the basis of field inspection at each cross section location. For concrete and metal culverts, “n” values were taken from tables in hydraulic texts.

The FIS for the City of Murphy considered Maxwell Creek (Reference 18) and Bunny Run South and North Tributaries and McMillan Tributary in a subsequent

revision. In that study, cross section data were obtained by field surveys. All bridges and culverts were field surveyed to obtain elevation data and structural geometry. Cross sections were located at close intervals above and below bridges and culverts in order to compute their significant backwater effects. Starting elevations were determined by routing the flood hydrographs through the SCS flood retention basin located downstream of the City of Murphy. Channel roughness factors were assigned on the basis of field inspection and previous studies by the USACE.

The FIS for the City of Parker considered Maxwell Creek, Cottonwood Creek, and Dublin Creek (Reference 19). In that study, cross sections were field surveyed and located at close intervals above or below bridges and culverts in order to compute their significant backwater effects. Starting elevations for Maxwell Creek were taken from the stage discharges of the lake at the mouth of the creek. Starting elevations for Cottonwood Creek were based on coincident conditions with Rowlett Creek. Starting elevations for Dublin Creek were determined using the slope/area method. Channel roughness factors were assigned on the basis of field inspections of the floodplain areas and previous studies by the USACE.

The FIS for the City of Plano considered the following streams: Brown Branch, Bowman Branch, Rowlett Creek, Russell Creek, Spring Creek, Cottonwood Creek No. 1 (formerly Cottonwood Creek), Beck Branch, Pittman Creek, North Fork Pittman Creek, Prairie Creek, McKamy Branch, White Rock Creek, Unnamed Tributary to Rowlett Creek, Streams 2D8-2D12, 2D15, 2H3, 2I9, 2I11, 2I12, 2L1, 5B13, Tributary to Stream 5B13, and Streams 5B14 and 5B18-5B37 (Reference 20). Stream IC-1 and Stream IC-1A are also located in the City of Plano; hydraulic analyses prepared as part of this revision for these streams are the same as those prepared for the streams included in the FIS for the City of Plano. The hydraulic analyses for Indian Creek, which is also located within the City of Plano, were taken from the FIS for the Unincorporated Areas of Denton County (Reference 21). In the FIS for the City of Plano, cross section data were compiled from several sources. Bridge data were obtained by field measurements and from City of Plano, Collin County, and State Department of Highways and Public Transportation bridge plans. USGS topographic maps were used when necessary to extend the cross sections to contain flow. Supplemental field surveys were obtained by the USACE for several streams. Additional surveyed cross sections to contain flow. Supplemental field surveys were obtained by the USACE for several streams. Additional surveyed cross sections were supplied by Albert H. Halff Associates. Aerial mapping by the City of Plano was obtained on the White Rock Creek and Indian Creek Watersheds. This 2-foot contour interval mapping was used for hydraulic cross sections on the streams in those watersheds.

Starting elevations for Rowlett Creek were based on Lake Ray Hubbard flood elevations. Starting elevations for White Rock Creek were based on a backwater model for the downstream portion of the creek. For the remaining streams, starting elevations were determined using the slope/area method.

Channel roughness factors were assigned on the basis of field inspections of the floodplain areas, engineering judgment, and previous studies by the USACE.

The FIS for the Unincorporated Areas of Collin County considered the following streams: Camp Creek, Cottonwood Creek-East Fork and the East Fork Trinity River, Franklin Branch, Maxwell Creek, Muddy Creek, Muddy Creek Tributary, Muddy Creek Tributary 1, Muddy Creek Tributary 2, Reid Branch, Rowlett Creek, Rowlett Creek Tributary, Rush Creek, Rush Creek Tributary, Rutherford Branch, Sabine Creek Tributary B, Sloan Creek, Stream 5B13, Stream 5B14, Unnamed Tributary to Wilson Creek, White Rock Creek, and Wilson Creek (Reference 22).

In that study, cross sections were field surveyed and located at close intervals above or below bridges and culverts in order to compute their significant backwater effects. All bridges and culverts were field checked to obtain elevation data and structural geometry. Starting elevations were determined using the slope/area method. Channel roughness factors were assigned on the basis of field inspections of the floodplain areas.

The FIS for the City of Wylie considered the following streams: Muddy Creek, Muddy Creek Tributary, Muddy Creek Tributary 1, Rush Creek, Rush Creek Tributary (Reference 24), Unnamed Tributary to Muddy Creek, and Unnamed Tributary to an Unnamed Tributary to Muddy Creek.

In that study, cross sections were field surveyed and located at close intervals above and below bridges and culverts in order to compute their significant backwater effects. All bridges, dams and culverts were surveyed to obtain elevation data and structural geometry. Starting elevations were determined using the slope/area method. Channel roughness factors were assigned on the basis of engineering judgment and field inspections of the channel and floodplain areas.

2009 Revised Analysis

Information on the methods used to determine peak discharge-frequency relationships for the streams restudied as part of the 2009 countywide FIS is shown below.

Cross sections for the hydraulic model were developed using GIS-based automated modeling techniques from a digital terrain model of the study area. The floodplain digital terrain model was developed from aerial photogrammetric topographic survey of the above water areas and bathymetric transect survey of the underwater areas. Dimensions of the hydraulic structures were determined from available plan information and from field surveys.

Roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations, analysis of photographs, professional experience, and previous analyses by other agencies.

Water-surface elevations of the selected recurrence intervals were determined using a steady flow step-backwater hydraulic model, HEC-RAS version 3.1.2. Starting water-surface elevations for Cottonwood Creek No. 1, East Fork Trinity River, Muddy Creek and Rowlett Creek were based on backwater models for downstream portion of the creeks. For Doe Branch, Watters Branch and West Rowlett Branch, the starting water surface elevation was based on normal depth

calculations. For Stewart Creek Tributary 4, the starting water surface elevation was based on LOMR 98-06-1035P.

Revised Analysis

Information on the methods used to determine peak discharge-frequency relationships for the streams restudied as part of this countywide FIS is shown below.

Cross-section geometries were obtained from a combination of digital terrain data, developed based on the topographic data obtained from Texas Natural Resources Information System and North Central Texas Council of Governments, and field surveys. Elevation data and structural geometry for all bridges, dams, inline structures, and culverts were based on field surveys or as-built data provided by the City of Plano and the Texas Department of Transportation. Additional cross-sections were field surveyed along the streams to determine channel geometries between bridges and culverts, and were placed along the stream to account for significant profile inflection points (profile breaks). Cross-sections at profile breaks are critical for accuracy in the development of 10-, 2-, 1- and 0.2 -percent-annual-chance flood elevations and floodways.

Roughness factors (Manning's "n") for this study were estimated from the aerial photography and field survey information. A Manning's "n" value was assigned to each land use type. Manning's n values were then extracted for each cross-section and imported into HEC-RAS models. For many of the studies in urban areas, the channels were found to be overgrown with tall vegetation while areas in the overbanks were well maintained short grasses or paved surfaces. This has resulted in higher roughness coefficients assigned to the channel for these areas.

For these detailed study streams, the water surface elevations for the 10-, 2-, 1- and 0.2- percent annual chance flood elevations were computed using the USACE HEC-RAS 4.0.0 step backwater computer program. The hydraulic analyses for this study used a steady-state riverine analysis and also included cross-sections and field data collected during detailed field surveys. For the hydraulic simulations, all structures were assumed to remain fully functional and have unobstructed flows.

The downstream boundary conditions for the stream reaches that are not continuous with other reaches along the same stream were determined using a normal depth method. For Prairie Creek, Spring Creek, and White Rock Creek, the downstream boundary conditions were set at a known water surface elevations as these streams were continuous with the existing detailed studies downstream.

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

Roughness factors (Manning's "n") used in the hydraulic computations were chosen by engineering judgment and were based on field observations of the

streams and floodplain areas. Roughness factors for all streams studied by detailed methods are shown in Table 4, "Manning's "n" Values."

TABLE 4 - MANNING'S "n" VALUES

Stream	Channel "n"	Overbank "n"
Beck Branch	0.013-0.065	0.030-0.075
Bois D'Arc Creek	0.013-0.050	0.050-0.090
Bowman Branch	0.030-0.045	0.035-0.060
Brown Branch	0.030-0.045	0.035-0.075
Bunny Run North Tributary	0.040-0.090	0.050-0.090
Bunny Run South Tributary	0.040-0.090	0.050-0.090
Camp Creek	0.04	0.055-0.065
Caruth Creek	0.03-0.04	0.015-0.12
Cedar Creek West	0.013-0.067	0.013-0.06
Cottonwood Branch	0.030-0.055	0.060-0.090
Cottonwood Creek No. 1	0.013-0.075	0.013-0.150
Cottonwood Creek No. 2	0.100-0.017	0.080-0.030
Cottonwood Creek-East Fork	0.020-0.090	0.040-0.090
Doe Branch	0.010-0.055	0.035-0.150
Dublin Creek	0.06	0.07
East Fork Trinity River	0.020-0.090	0.060-0.120
Fox Creek	0.03-0.063	0.014-0.078
Franklin Branch	0.020-0.090	0.040-0.090
Hall Branch	0.035-0.090	0.040-0.120
Herndon Branch	*	*
Jeans Creek	0.060-0.074	0.060-0.074
Long Branch	0.030-0.085	0.040-0.095
Maxwell Creek	0.040-0.090	0.050-0.090
McKamy Branch	0.013-0.065	0.030-0.075
McMillan Tributary	*	*
Muddy Creek (Upper Reach)	0.020-0.090	0.040-0.150
Muddy Creek Tributary	0.030-0.065	0.08
Muddy Creek Tributary 1	0.020-0.090	0.040-0.090
Muddy Creek Tributary 2	0.020-0.090	0.040-0.090
Mustang Creek	0.020-0.060	0.065-0.080
North Branch Stewart Creek Tributary 1	*	*
North Fork Pittman Creek	0.013-0.065	0.030-0.075
Osage Branch	0.040-0.100	0.045-0.100
Panther Creek	0.013-0.065	0.030-0.075
Panther Creek Tributary 1	0.030-0.055	0.060-0.090
Pittman Creek	0.015-0.04	0.015-0.12
Pittman Creek Tributary 2	0.04	0.015-0.12
Pond Branch	0.055	0.07
Prairie Creek	0.013-0.065	0.014-0.075
Quail Creek Channel B	0.013-0.065	0.050-0.065

* Data not available

TABLE 4 - MANNING'S "n" VALUES – Cont'd)

Stream	Channel "n"	Overbank "n"
Reid Branch	0.025-0.050	0.075-0.080
Rowlett Creek	0.030-0.080	0.035-0.120
Rowlett Creek Tributary	0.020-0.090	0.040-0.090
Rush Creek	0.025-0.050	0.065-0.085
Rush Creek Tributary	0.025-0.055	0.060-0.070
Russell Creek	0.03-0.073	0.013-0.06
Rutherford Branch	0.05	0.07
Sabine Creek	0.033-0.070	0.040-0.070
Sabine Creek Tributary B	0.020-0.090	0.040-0.090
Sloan Creek	0.020-0.090	0.040-0.090
Spring Creek	0.015-0.075	0.015-0.12
Spring Creek Tributary 4	0.067-0.072	0.014-0.065
Stewart Creek	0.035-0.070	0.060-0.090
Stewart Creek Tributary 1	0.030-0.055	0.060-0.090
Stewart Creek Tributary 2	0.030-0.055	0.060-0.090
Stewart Creek Tributary 3	0.030-0.055	0.060-0.090
Stewart Creek Tributary 4	0.030-0.055	0.035-0.120
Stream IC-1	0.015-0.055	0.040-0.100
Stream IC-1A	0.015-0.050	0.070-0.100
Stream SC-1	0.055-0.065	0.060-0.085
Stream 2D8	0.013-0.065	0.030-0.075
Stream 2D9	0.013-0.065	0.030-0.075
Stream 2D10	0.013-0.065	0.030-0.075
Stream 2D11	0.013-0.065	0.030-0.075
Stream 2D12	0.013-0.065	0.030-0.075
Stream 2D15	0.013-0.065	0.030-0.080
Stream 2D16	0.055-0.080	0.060-0.090
Stream 2E7	0.030-0.085	0.040-0.095
Stream 2F1	0.050-0.065	0.065-0.075
Stream 2G2	0.05	0.07
Stream 2G3	0.050-0.070	0.050-0.070
Stream 2G5	0.05	0.07
Stream 2H3	0.04-0.06	0.015-0.12
Stream 2I5.5	*	*
Stream 2I8	0.05	0.08
Stream 2I9	0.013-0.065	0.030-0.075
Stream 2I11	0.013-0.065	0.030-0.075
Stream 2I12	0.013-0.065	0.030-0.075
Stream 2L1	0.013-0.065	0.030-0.075
Stream 5B13	0.013-0.065	0.030-0.075
Stream 5B14	0.013-0.065	0.030-0.075
Stream 5B15	0.040-0.070	0.050-0.080
Stream 5B16	0.06	0.060-0.070

* Data not available

TABLE 4 - MANNING'S "n" VALUES – Cont'd)

Stream	Channel "n"	Overbank "n"
Stream 5B17	0.040-0.060	0.06
Stream 5B18	0.028	0.015-0.058
Stream 5B19	0.035-0.053	0.015-0.067
Stream 5B20	0.03-0.053	0.015-0.04
Stream 5B21	0.03	0.015-0.03
Stream 5B22	0.03	0.015-0.03
Stream 5B23	0.02-0.049	0.015-0.049
Stream 5B24	0.028-0.045	0.015-0.046
Stream 5B25	0.03-0.074	0.03-0.073
Stream 5B26	0.030	0.035
Stream 5B27	0.02-0.046	0.015-0.046
Stream 5B28	0.025-0.050	0.06
Stream 5B29	0.068	0.052
Stream 5B30	0.02-0.046	0.015-0.03
Stream 5B31	0.03-0.065	0.015-0.06
Stream 5B32	0.05	0.03-0.05
Stream 5B33	0.03-0.06	0.03
Stream 5B34	0.046	0.015-0.061
Stream 5B35	0.023-0.046	0.014-0.083
Stream 5B36	0.023-0.047	0.014-0.078
Stream 5B37	0.03-0.058	0.014-0.078
Tributary A Stewart Creek	*	*
Tributary to Stream 5B13	0.013-0.065	0.030-0.075
Tributary WRC-1 West Rowlett Creek	*	*
Unnamed Tributary to Muddy Creek	*	*
Unnamed Tributary to an Unnamed Tributary to Muddy Creek	*	*
Unnamed Tributary to Rowlett Creek	*	*
Unnamed Tributary to Watters Branch	*	*
Unnamed Tributary to White Rock Creek	*	*
Warden Creek	0.02-0.07	0.013-0.06
Watters Branch	0.035-0.070	0.045-0.150
West Rowlett Creek	0.055-0.065	0.045-0.120
White Rock Creek	0.020-0.070	0.014-0.095
White Rock Creek Tributary 1	0.014-0.043	0.014-0.053
White Rock Creek Tributary 2	0.03-0.067	0.014-0.078
White Rock Creek Tributary 3	0.015-0.055	0.014-0.074
White Rock Creek (East)	0.025-0.050	0.050-0.080
Wilson Creek	0.060-0.074	*
Wilson Creek Tributary 9	0.020-0.090	0.040-0.090

*Data not available

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 (NGVD 29). With the completion of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are now prepared using NAVD 88 as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to the NAVD 88. 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 NAVD 88. The datum conversion factor from NGVD 29 to NAVD 88 in Collin County is 0.06 feet.

For additional information regarding conversion between the NGVD 29 and NAVD 88, 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
SSMC-3, #9202
National Geodetic Survey
1315 East West Highway
Silver Spring, MD 20910-3282

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

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

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

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

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the streams studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic maps. Within the City of McKinney, boundaries for Wilson Creek and Jeans Creek were interpolated using topographic maps at a scale of 1:9,600, and boundaries for an unnamed stream near Bois D'Arc Road were delineated using site grading plans at a scale of 1:1,200 (References 30 and 31). For the remaining flooding sources within Collin County from previous studies, boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 10 feet (Reference 26). For the 2009 countywide FIS, the floodplain boundaries between cross sections were interpolated using topographic maps at scales of 1:6,000 with a contour interval of 2 feet (Reference 37).

For this countywide revision, the floodplain boundaries in between cross sections were interpolated using topographic data developed by FEMA in conjunction with the North Central Texas Council of Governments (NCTCOG) and Texas Water Development Board (TWDB). Light Detection And Ranging (LiDAR) data which was collected in 2009 was obtained from TWDB and photogrammetric data from the NCTCOG was used in areas not covered by the LiDAR data.

For the flooding sources studied by approximate methods, the boundaries of the 1-percent annual chance floodplains were interpolated using topographic maps at a scale of 1:6,000 and a contour interval of 2-feet (Reference 37).

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

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

4.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, a floodway is used as a tool to assist local communities in this aspect of floodplain management.

Under this concept, the area of the 1-percent annual chance floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1-percent annual chance flood can be carried without substantial increases in flood heights. Minimum federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this FIS are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 5). The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1-percent annual chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown.

Portions of the floodways for Bois d' Arc Creek, Camp Creek, Cottonwood Branch, Cottonwood Creek, Pond Branch, Prairie Creek, Rowlett Creek, Sabine Creek, Spring Creek, Stewart Creek, Stewart Creek Tributary 1, Stewart Creek Tributary 3, Stream 2E7, Stream IC-1, Stream IC-1A extend beyond the county boundary covered in this study. No floodways were computed for Cottonwood Creek – East Fork, Franklin Branch, Hall Branch, Long Branch, North Branch Stewart Creek Tributary 1, Osage Branch, Reid Branch, Rowlett Creek Tributary, Rutherford Branch, Stream I5.5, Stream 5B15, Stream 5B16, Stream 5B17, Tributary A to Stewart Creek, Tributary WRC-1 West Rowlett Creek, Unnamed Tributary to Muddy Creek, Unnamed Tributary to an Unnamed Tributary to Muddy Creek, Unnamed Tributary to Rowlett Creek, Unnamed Tributary to Watters Branch, Unnamed Tributary to White Rock Creek., West Rowlett Creek Tributary 1, Wilson Creek Tributary 8, and Wilson Creek Tributary 9.

Near the mouths of stream studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 5 for certain downstream cross sections are lower than regulatory flood elevations in that area, which must take into account the 100-year 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 5, "Floodway Data." 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.

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
Beck Branch								
A	960[1]	402	2,826	3.0	507.0	502.8[5]	503.8	1.0
B	2,220[1]	166	986	8.6	508.0	504.9[5]	505.7	0.8
C	3,430[1]	164	1,449	5.8	511.4	511.4	512.2	0.8
D	5,370[1]	88	1,148	7.3	519.3	519.3	519.9	0.6
E	8,000[1]	88	1,022	7.7	532.3	532.3	532.6	0.3
F	9,710[1]	66	738	8.4	541.0	541.0	541.1	0.1
G	12,560[1]	91	735	8.4	559.3	559.3	559.3	0.0
H	15,390[1]	82	548	7.9	581.8	581.8	582.5	0.7
Bois d'Arc Creek								
A	3,851[2]	950/760[4]	7,198	1.5	533.9	533.9	534.5	0.6
B	5.985[2]	557	2,379	4.5	534.5	534.5	535.2	0.7
C	7,068[2]	1,220	4,504	2.2	536.6	536.6	537.4	0.8
Bowman Branch								
A	1,300[3]	111	861	4.1	579.8	579.8	579.8	0.0
B	2,680[3]	155	935	3.7	586.3	586.3	586.3	0.0
C	4,390[3]	54	363	6.9	597.1	597.1	597.1	0.0
D	5,880[3]	218	341	7.3	620.9	620.9	620.9	0.0
E	7,770[3]	65	281	7.5	636.4	636.4	637.3	0.9
F	9,000[3]	231	596	3.5	649.0	649.0	650.0	1.0
G	9,750[3]	147	612	3.4	655.8	655.8	656.1	0.3

[1] Feet above confluence with Rowlett Creek
[2] Feet above confluence with Sabine Creek
[3] Feet above confluence with Brown Branch
[4] Width/width within county boundary
[5] Elevation computed without consideration of backwater effects from Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

BECK BRANCH – BOIS D'ARC CREEK – BOWMAN 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
Brown Branch								
A	2,120[1]	247	1,408	6.3	546.5	546.5	547.4	0.9
B	4,220[1]	275	1,651	5.3	556.2	556.2	557.1	0.9
C	5,140[1]	76	824	8.6	559.5	559.5	560.5	1.0
D	7,210[1]	130	1,141	6.3	567.2	567.2	567.3	0.1
E	8,240[1]	91	536	7.1	574.2	574.2	574.3	0.1
F	10,530[1]	97	553	6.9	587.1	587.1	587.1	0.0
G	13,920[1]	128	825	3.2	620.3	620.3	620.9	0.6
H	15,625[1]	61	350	6.6	631.4	631.4	631.4	0.0
I	18,040[1]	105	339	4.1	649.5	649.5	649.9	0.4
J	19,360[1]	53	189	7.4	656.2	656.2	656.4	0.2
Bunny Run North Tributary								
A	290[2]	123	612	2.1	531.1	531.1	532.0	0.9
B	720[2]	50	218	5.8	533.4	533.4	534.0	0.6
C	1,500[2]	53	219	5.9	538.8	538.8	539.6	0.8
D	2,480[2]	78	369	3.3	543.1	543.1	543.2	0.1
Bunny Run South Tributary								
A	800[2]	110	542	5.1	524.0	524.0	524.8	0.8
B	1,230[2]	76	434	6.7	526.5	526.5	527.3	0.8
C	1,510[2]	98	323	5.1	528.3	528.3	529.2	0.9
D	2,000[2]	47	257	6.5	536.0	536.0	536.0	0.0
E	2,410[2]	63	189	8.9	538.7	538.7	538.7	0.0
F	3,330[2]	108	378	4.1	545.5	545.5	545.9	0.4
G	4,000[2]	38	164	9.2	550.6	550.6	551.3	0.7
H	4,630[2]	102	251	5.5	556.0	556.0	557.0	1.0

[1]Feet above confluence with Rowlett Creek
[2]Feet above mouth

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

BROWN BRANCH – BUNNY RUN NORTH TRIBUTARY – BUNNY RUN SOUTH TRIBUTARY

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Camp Creek								
A	2,420[1]	27,573	11,578	2.1	439.0	439.0	440.0	1.0
B	120[1]	18,103	8,991	2.7	444.9	444.9	445.2	0.3
C	710[1]	12,963	5,874	3.4	445.5	445.5	445.9	0.4
D	2,600[1]	1,359	6,027	2.3	447.7	447.7	448.5	0.8
E	4,960[1]	1,285	4,833	2.9	453.8	453.8	454.7	0.9
F	7,580[1]	412	2,426	5.7	459.2	459.2	460.0	0.8
G	10,730[1]	861	3,324	2.9	465.0	465.0	465.8	0.8
H	12,900[1]	813	2,879	3.3	470.4	470.4	470.9	0.5
I	15,720[1]	829	3,580	2.7	477.8	477.8	478.8	1.0
Caruth Creek								
A	2,263[2]	17	84	10.6	586.2	586.2	586.2	0.0
B	3,361[2]	39	98	9.0	599.0	599.0	599.0	0.0
C	4,621[2]	20	215	11.3	611.3	611.3	611.3	0.0
D	5,147[2]	20	176	7.6	616.8	616.8	616.8	0.0
E	5,216[2]	54	176	5.0	617.6	617.6	617.6	0.0
Cedar Creek West								
A	189[3]	94	435	5.3	555.4	555.4	555.4	0.0
B	1,544[3]	44	296	7.7	569.3	569.3	569.3	0.0
C	2,706[3]	38	204	12.1	579.9	579.9	579.9	0.0

[1]Feet above mouth

[2]Feet above confluence with Spring Creek

[3]Feet from the intersection with Wilson Creek Parkway

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

CAMP CREEK - CARUTH CREEK - CEDAR CREEK WEST

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Cedar Creek West (Cont'd)								
D	3,755[1]	45	259	8.8	594.2	594.2	595.0	0.8
E	4,625[1]	39	171	10.2	604.9	604.9	605.2	0.3
F	5,166[1]	72	628	2.8	611.0	611.0	611.2	0.2
G	5,853[1]	57	293	6.0	613.0	613.0	613.2	0.2
H	7,125[1]	76	221	7.9	623.2	623.2	623.2	0.0
Cottonwood Branch								
D	31,174[2]	64	656	7.4	626.7	626.7	627.1	0.4
E	33,405[2]	137	554	8.7	639.5	639.5	639.6	0.1
F	35,515[2]	205	640	7.3	657.5	657.5	658.0	0.5
G	36,872[2]	200	789	3.5	666.4	666.4	666.4	0.0
H	39,203[2]	184	869	2.7	691.6	691.6	691.8	0.1
I	40,851[2]	140	514	5.6	703.6	703.6	703.7	0.1
J	42,218[2]	235	206	5.4	718.8	718.8	718.8	0.0

[1]Feet from the intersection with Wilson Creek Parkway
[2]Feet from State Highway 205

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

CEDAR CREEK WEST - COTTONWOOD BRANCH

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Cottonwood Branch Tributary 4								
A	1,186[1]	103	184	8.7	676.4	676.4	676.4	0.0
B	2,095[1]	80	385	3.4	689.3	689.3	689.9	0.6
Cottonwood Branch Tributary 5								
A	483[1]	48	103	2.8	690.6	690.6	690.6	0.0
Cottonwood Branch Tributary 6								
A	262[1]	65	93	4.0	698.2	698.2	698.3	0.1
B	759[1]	50	87	4.1	706.8	706.8	707.0	0.2
C	1,065[1]	55	71	4.8	711.8	711.8	711.8	0.0
Cottonwood Creek No. 1								
A	4,940[2]	524	3,822	4.7	525.7	525.7	526.6	0.9
B	7,500[2]	490	3,900	4.6	531.8	531.8	532.8	1.0

[1]Feet above confluence with Cottonwood Branch

[2]Feet above confluence with Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

COTTONWOOD BRANCH TRIBUTARY 4 - COTTONWOOD BRANCH TRIBUTARY 5 - COTTONWOOD BRANCH TRIBUTARY 6 - COTTONWOOD CREEK NO. 1

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Cottonwood Creek No. 1 (Cont'd)								
C	10,030	621	4,448	4.0	536.6	536.6	537.5	0.9
D	13,150	327	2,713	6.3	542.5	542.5	543.4	0.9
E	16,210	530	3,280	8.0	549.1	549.1	549.9	0.8
F	21,700	347	2,224	9.4	561.2	561.2	561.8	0.6
G	24,530	300	2,385	8.3	568.5	568.5	568.9	0.4
H	29,020	325	2,958	7.1	582.4	582.4	583.3	0.9
I	31,910	133	1,916	7.6	589.5	589.5	590.1	0.6
J	36,010	147	2,161	6.5	600.9	600.9	601.2	0.3
K	39,335	175	2,762	2.7	610.8	610.8	611.8	1.0
L	40,066	170	2,323	2.9	611.3	611.3	612.2	0.9
M	40,864	82	1,273	5.3	611.6	611.6	612.5	0.9
N	41,746	71	988	6.9	613.2	613.2	614.0	0.8
O	42,647	130	1,240	5.4	615.5	615.5	616.3	0.8
P	43,368	148	1,355	4.6	617.7	617.7	618.1	0.4
Q	44,002	164	1,724	3.6	618.7	618.7	619.0	0.3
R	44,789	136	1,068	5.8	619.9	619.9	620.1	0.2
S	46,065	68	741	7.8	625.9	625.9	626.0	0.1
T	46,562	251	640	9.1	634.0	634.0	634.0	0.0
U	46,663	176	1,524	3.8	636.8	636.8	636.8	0.0
V	47,142	273	1,573	3.7	637.9	637.9	637.9	0.0
W	49,128	439	2,909	1.9	645.1	645.1	646.1	1.0
X	50,540	162	1,236	4.4	648.5	648.5	649.5	1.0
Y	52,550	205	1,411	3.8	652.8	652.8	653.3	0.5

[1]Feet above confluence with Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

COTTONWOOD CREEK NO. 1

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Cottonwood Creek No. 1 (Cont'd)								
Z	53,925[1]	172	1,046	5.2	657.0	657.0	657.3	0.3
AA	54,831[1]	147	1,181	4.6	659.2	659.2	660.1	0.9
AB	55,884[1]	72	735	7.4	661.3	661.3	662.2	0..9
AC	57,438[1]	90	809	5.4	665.7	665.7	666.4	0.7
AD	59,577[1]	124	866	5.0	671.1	671.1	671.2	0.1
AE	60,820[1]	456	2,230	3.5	674.2	674.2	674.2	0.0
AF	62,559[1]	399	1,490	5.0	679.0	679.0	679.0	0.0
AG	63,382[1]	376	2,104	4.2	681.0	681.0	681.0	0.3
Cottonwood Creek No. 2								
A	36,800[2]	42	233	4.7	679.3	679.3	679.9	0.6
Doe Branch								
A	-51[3]	536	2,622	2.4	623.6	623.6	624.6	1.0
B	1,803[3]	503	2,294	2.3	626.7	626.7	627.7	1.0
C	2,276[3]	498	2,654	1.9	628.0	628.0	629.0	1.0
D	3,670[3]	253	1,482	3.4	632.4	632.4	633.4	1.0
E	5,013[3]	737	2,933	1.7	635.1	635.1	636.0	0.9
F	5,802[3]	986	1,938	2.6	636.4	636.4	637.0	0.6
G	8,094[3]	502	1,744	2.9	642.3	642.3	643.1	0.8
H	9,591[3]	281	1,031	3.4	645.5	645.5	646.4	0.9
I	11,464[3]	271	1,150	3.1	651.3	651.3	652.1	0.8
J	11,999[3]	139	776	2.8	652.9	652.9	653.9	1.0
K	14,433[3]	93	436	5.0	660.3	660.3	660.4	0.1

[1]Feet above confluence with Rowlett Creek

[2]Feet above confluence with White Rock Creek

[3]Feet above confluence of Doe Branch Tributary F

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

COTTONWOOD CREEK NO. 1 - COTTONWOOD CREEK NO. 2 - DOE BRANCH

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE FLOOD WATER-SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY	WITH FLOODWAY	INCREASE
Doe Branch (Cont'd)								
L	16,345[1]	75	374	5.9	667.7	667.7	667.7	0.0
M	16,580[1]	77	406	5.4	668.9	668.9	668.9	0.0
N	17,557[1]	80	385	5.7	672.5	672.5	672.5	0.0
O	19,369[1]	61	333	6.6	682.1	682.1	682.1	0.0
P	19,676[1]	60	322	6.0	684.0	684.0	684.0	0.0
Q	20,275[1]	182	912	2.1	690.2	690.2	691.2	1.0
R	20,685[1]	96	513	3.8	692.4	692.4	693.3	0.9
S	21,596[1]	73	362	5.3	697.5	697.5	697.5	0.0
T	22,382[1]	77	388	5.0	701.9	701.9	701.9	0.0
U	22,705[1]	102	650	1.5	706.7	706.7	706.7	0.0
V	23,481[1]	69	322	3.1	707.5	707.5	707.5	0.0
W	24,230[1]	85	359	1.1	716.6	716.6	716.6	0.0
X	25,137[1]	31	84	4.6	723.8	723.8	723.8	0.0
Y	26,150[1]	28	83	4.7	734.8	734.8	735.0	0.2
Z	26,621[1]	40	72	5.4	741.2	741.2	741.3	0.1
Dublin Creek								
A	1,170[2]	84	418	5.0	540.8	540.8	541.8	1.0
B	3,100[2]	51	214	6.1	552.7	552.7	552.8	0.1
C	4,580[2]	64	286	4.5	562.5	562.5	562.8	0.3
East Fork Trinity River								
A	80.42[3]	3,590	24,787	2.0	526.2	526.2	526.7	0.5
B	82.40[3]	4,400	34,594	1.4	531.1	531.1	531.2	0.1

[1]Feet above confluence of Doe Branch Tributary F

[2]Feet above confluence with Cottonwood Creek No. 1

[3]Miles above mouth

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

DOE BRANCH - DUBLIN CREEK - EAST FORK TRINITY 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
East Fork Trinity River (Cont'd)								
C	83.30	2,200	14,647	3.4	534.5	534.5	535.3	0.8
D	84.30	2,300	19,176	2.6	541.7	541.7	542.6	0.9
E	84.80	1,794	15,951	3.2	543.9	543.9	544.9	1.0
F	84.90	1,740	16,159	2.9	544.4	544.4	545.4	1.0
G	85.40	3,331	27,792	1.7	545.9	545.9	546.8	0.9
H	85.80	2,358	20,724	2.3	548.2	548.2	549.2	1.0
I	86.10	2,308	21,762	2.2	549.0	549.0	550.0	1.0
J	86.50	1,931	17,275	2.7	549.9	549.9	550.9	1.0
K	86.80	3,058	29,399	1.6	554.4	554.4	555.2	0.8
L	87.40	3,067	30,838	1.1	554.7	554.7	555.6	0.9
M	87.80	3,121	27,000	1.2	555.0	555.0	555.9	0.9
N	88.10	2,439	26,364	1.2	560.3	560.3	561.0	0.7
O	88.50	2,007	21,178	1.5	560.5	560.5	561.3	0.8
P	88.70	1,589	15,595	2.0	560.8	560.8	561.5	0.7
Q	89.10	1,959	19,639	1.6	561.0	561.0	561.9	0.9
R	89.50	1,578	15,097	2.0	562.6	562.6	563.5	0.9
S	89.80	1,796	16,226	1.9	563.4	563.4	564.4	1.0
T	90.00	1,663	15,026	2.1	564.4	564.4	565.4	1.0
U	90.40	2,398	17,656	1.7	565.8	565.8	566.7	0.9
V	90.90	2,347	18,893	1.6	567.3	567.3	567.8	0.5
W	91.30	1,172	9,834	3.1	568.8	568.8	569.0	0.2
X	91.60	888	7,850	3.9	569.6	569.6	570.1	0.5

[1]Miles above mouth

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

EAST FORK TRINITY RIVER

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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 Creek								
A	1,154[1]	42	152	9.6	565.3	565.3	565.4	0.1
B	2,212[1]	45	142	10.5	578.7	578.7	578.7	0.0
C	2,607[1]	31	214	6.8	586.3	586.3	586.6	0.3
D	3,208[1]	37	134	11.0	590.7	590.7	590.7	0.0
Herndon Branch								
A	3,260[2]	79	291	5.5	609.5	609.5	609.7	0.2
B	4,075[2]	88	413	3.3	617.1	617.1	617.3	0.2
C	5,036[2]	37	194	5.8	622.5	622.5	622.5	0.0
D	6,296[2]	49	213	4.5	633.5	633.5	633.5	0.0
E	8,341[2]	39	138	4.2	660.1	660.1	660.1	0.0
F	10,323[2]	49	100	5.8	692.1	692.1	692.1	0.0

[1]Stream distance in feet from the confluence with Spring Creek

[2]Feet above limit of detailed study (limit of detailed study is located approximately 2,800 feet downstream of Mallard Lakes Drive)

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

FOX CREEK - HERNDON BRANCH

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Jeans Creek								
A	1,210[1]	45	190	11.7	561.1	561.1	561.1	0.0
B	2,400[1]	43	188	12.0	566.7	566.7	566.7	0.0
C	2,921[1]	51	225	10.0	570.8	570.8	570.8	0.0
D	3,626[1]	74	428	5.3	577.5	577.5	577.7	0.2
Maxwell Creek								
A	16,160[2]	302	1,720	6.2	521.2	521.2	521.8	0.6
B	17,200[2]	305	2,043	4.3	524.5	524.5	525.4	0.9
C	19,350[2]	241	1,783	4.9	531.4	531.4	531.9	0.5
D	19,711[2]	250	2,042	4.3	533.3	533.3	534.1	0.8
E	20,960[2]	200	1,573	5.4	536.5	536.5	537.0	0.5
F	22,330[2]	200	1,696	5.0	543.3	543.3	543.8	0.5
G	23,740[2]	220	1,309	6.5	547.4	547.4	547.8	0.4
H	24,720[2]	150	1,098	6.8	551.6	551.6	552.1	0.5
I	25,380[2]	140	1,441	5.2	554.3	554.3	554.8	0.5
J	26,630[2]	111	1,236	6.1	557.9	557.9	558.9	1.0
K	27,705[2]	254	1,772	3.6	562.0	562.0	563.0	1.0
L	28,013[2]	110	1,015	6.3	562.9	562.9	563.8	0.9

[1]Feet above confluence with Wilson Creek

[2]Feet upstream of SCS Dam

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

JEANS CREEK - MAXWELL 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
Maxwell Creek (Cont'd)								
M	28,820	145	1,474	4.3	567.3	567.3	567.9	0.6
N	30,860	221	1,721	3.7	573.8	573.8	574.7	0.9
O	31,750	180	1,431	4.3	576.0	576.0	576.8	0.8
P	32,960	140	1,202	5.7	580.3	580.3	581.1	0.8
Q	35,500	189	1,410	4.3	589.0	589.0	590.0	1.0
R	36,330	218	1,437	4.2	591.3	591.3	592.3	1.0
S	37,090	201	1,140	5.3	593.3	593.3	594.3	1.0
T	38,350	216	1,175	4.8	597.5	597.5	598.5	1.0
U	39,440	307	1,376	4.1	601.5	601.5	601.8	0.3
V	40,280	272	1,410	4.0	604.2	604.2	604.8	0.6
W	41,300	262	1,079	4.4	606.2	606.2	607.2	1.0
X	42,000	179	943	5.0	609.5	609.5	610.4	0.9
Y	42,570	267	1,372	3.5	610.8	610.8	611.8	1.0
Z	43,670	316	1,233	3.2	614.2	614.2	615.2	1.0
AA	46,010	257	878	3.6	622.9	622.9	623.9	1.0
AB	46,570	340	917	2.7	624.6	624.6	625.5	0.9
AC	47,221	330	3,748	0.44	626.2	626.2	626.2	0.0
AD	48,122	290	3,425	0.41	628.5	628.5	628.5	0.0

[1] Feet upstream of SCS DAM

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

MAXWELL 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
McKamy Branch								
A	23,190[1]	283	463	5.0	683.5	683.5	683.5	0.0
B	23,640[1]	40	145	13.4	684.0	684.0	684.0	0.0
McMillan Tributary								
A	960[2]	88	352	3.7	562.4	562.4	562.6	0.2
B	1,280[2]	68	167	7.7	566.3	566.3	566.3	0.0
C	1,600[2]	128	240	5.3	570.0	570.0	570.1	0.1
D	2,000[2]	82	193	6.4	575.3	575.3	575.4	0.1
Muddy Creek (Upper Reach)								
A	63,601[3]	128	1289	2.6	486.9	486.9	487.9	1.0
B	64,597[3]	770	4242	0.8	487.2	487.2	488.2	1.0
C	66,667[3]	332	928	2.6	488.0	488.0	489.0	1.0
D	68,735[3]	52	434	4.6	491.4	491.4	492.1	0.7
E	69,478[3]	91	587	3.0	492.9	492.9	493.8	0.9
F	70,576[3]	224	765	2.2	495.3	495.3	495.9	0.6
G	71,144[3]	52	401	4.2	496.0	496.0	496.7	0.7
H	73,010[3]	59	431	3.9	499.7	499.7	500.1	0.4
I	73,545[3]	340	313	5.4	526.0	526.0	526.0	0.0
J	82,459[3]	592	5612	1.5	526.6	526.6	526.7	0.1
K	85,375[3]	468	2783	2.6	527.4	527.4	528.3	0.9
L	87,144[3]	343	2063	3.5	530.7	530.7	531.5	0.8
M	88,541[3]	490	2950	2.3	533.4	533.4	534.3	0.9

[1]Feet above confluence with White Rock Creek
[2]Feet above mouth
[3]Feet above Lake Ray Hubbard

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

MCKAMY BRANCH – MCMILLAN TRIBUTARY – MUDDY CREEK (UPPER REACH)

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
Muddy Creek (Upper Reach) (Cont'd)								
N	90,508[1]	490	3248	2.1	536.8	536.8	537.4	0.6
O	92,861[1]	310	1672	2.6	541.0	541.0	541.7	0.7
P	94,144[1]	186	1091	4.0	543.2	543.2	544.2	1.0
Q	94,655[1]	456	3710	1.1	547.3	547.3	548.2	0.9
R	96,853[1]	399	2749	1.4	550.0	550.0	551.0	1.0
S	98,539[1]	242	1562	2.5	553.5	553.5	554.4	0.9
T	100,868[1]	367	1590	1.8	558.9	558.9	559.9	1.0
U	102,381[1]	244	932	3.1	563.3	563.3	564.2	0.9
V	103,685[1]	49	462	6.3	568.4	568.4	569.2	0.8
W	103,993[1]	55	549	5.3	568.7	568.7	569.7	1.0
Muddy Creek Tributary								
A	2,030[2]	226	797	2.5	482.3	482.3	483.2	0.9
B	3,240[2]	82	365	5.5	489.3	489.3	489.9	0.6
C	4,250[2]	177	664	3.0	495.2	495.2	496.1	0.9
D	4,375[2]	185	623	3.2	497.6	497.6	498.5	0.9
E	5,600[2]	80	383	5.3	502.0	502.0	502.6	0.6
F	6,880[2]	128	519	3.9	509.4	509.4	510.4	1.0
G	7,700[2]	180	887	3.3	512.5	512.5	513.4	0.9

[1]Feet above Lake Ray Hubbard
[2]Feet above confluence with Muddy Creek (Upper Reach)

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

MUDDY CREEK (UPPER REACH) - MUDDY CREEK TRIBUTARY

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
Muddy Creek Tributary 1								
A	1,060[1]	49	247	2.9	498.8	496.9[2]	497.8	0.9
B	2,360[1]	41	144	5.0	501.7	501.7	502.7	1.0
C	3,780[1]	43	271	5.3	510.1	510.1	510.6	0.5
D	4,240[1]	403	1,026	0.7	510.1	510.1	510.6	0.5
Muddy Creek Tributary 2								
A	1,670[1]	113	600	4.2	556.7	556.7	557.6	0.9
B	2,500[1]	169	752	3.4	560.0	560.0	561.3	1.3
C	4,500[1]	229	1,407	1.8	571.2	571.2	572.2	1.0
D	5,740[1]	134	611	4.1	573.2	573.2	574.1	0.9
E	7,050[1]	237	1,067	2.4	576.7	576.7	577.7	1.0
Mustang Creek								
A	2,478[3]	89	1,136	7.1	588.9	588.9	589.3	0.4
B	4,298[3]	102	975	7.0	595.9	595.9	595.9	0.0
C	6,978[3]	98	605	7.2	610.3	610.3	610.7	0.4
D	9,773[3]	198	1,578	2.8	632.5	632.5	632.5	0.0
E	11,228[3]	109	585	6.2	639.8	639.8	639.8	0.0
F	13,420[3]	127	750	4.9	649.1	649.1	649.4	0.3
G	14,075[3]	136	699	4.4	650.8	650.8	650.9	0.1

[1]Feet above confluence with Muddy Creek (Upper Reach)
[2] Elevation computed without consideration of backwater effects from Muddy Creek (Upper Reach)
[3]Feet above confluence with Cottonwood Creek No. 1

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

MUDDY CREEK TRIBUTARY 1 – MUDDY CREEK TRIBUTARY 2 – MUSTANG CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
North Fork Pittman Creek								
A	649[1]	35	228	11.0	679.7	679.7	679.7	0.0
B	1,660[1]	40	194	9.3	685.1	685.1	685.2	0.1
C	2,590[1]	36	190	9.5	689.4	689.4	689.4	0.0
D	3,720[1]	54	204	4.7	694.5	694.5	694.5	0.0
E	4,450[1]	43	141	6.7	699.4	699.4	699.4	0.0
Panther Creek								
A	220[2]	298	1,367	6.7	604.1	604.1	604.6	0.5
B	4,563[2]	113	895	10.2	618.7	618.7	619.6	0.9
C	9,660[2]	526	2,577	3.5	638.6	638.6	639.5	0.9
D	13,350[2]	121	740	4.6	651.9	651.9	652.4	0.5
E	15,101[2]	261	1,048	3.2	668.1	668.1	669.0	0.9
F	17,620[2]	123	599	5.7	683.6	683.6	683.6	0.0
G	20,500[2]	77	490	6.9	700.7	700.7	700.8	0.1
Panther Creek Tributary 1								
A	15,850[3]	95	546	7.3	666.2	666.2	666.3	0.1
B	20,480[3]	83	479	5.9	694.6	694.6	695.5	0.9

[1]Feet above confluence with Pittman Creek

[2]Feet above limit of detailed study (limit of detailed study is located approximately 0.9 miles downstream of Burlington Northern Railroad)

[3]Feet above confluence of detailed study of Panther Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

NORTH FORK PITTMAN CREEK - PANTHER CREEK - PANTHER CREEK TRIBUTARY 1

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Pittman Creek								
A	965	108	907	11.1	594.3	590.0[2]	590.0	0.0
B	2,809	154	1,069	9.4	600.1	600.1	600.3	0.2
C	4,425	114	979	8.2	603.7	603.7	603.8	0.1
D	5,880	88	1,083	7.4	613.6	613.6	613.6	0.0
E	6,585	94	919	7.8	614.6	614.6	614.7	0.1
F	7,975	59	614	11.7	619.9	619.9	620.2	0.3
G	8,715	62	466	15.4	624.1	624.1	624.1	0.0
H	10,006	113	967	7.4	631.9	631.9	631.9	0.0
I	11,070	60	419	14.8	638.6	638.6	638.6	0.0
J	11,348	106	1,031	6.0	644.1	644.1	644.8	0.7
K	12,378	45	483	12.8	646.2	646.2	647.0	0.8
L	12,496	69	974	6.4	650.5	650.5	651.5	1.0
M	13,412	84	561	11.0	652.9	652.9	653.6	0.7
N	14,740	132	982	6.3	661.2	661.2	661.2	0.0
O	17,164	174	999	6.2	672.9	672.9	673.0	0.1
P	17,495	242	1,251	5.0	674.1	674.1	675.0	0.9
Q	19,533	82	335	9.5	688.7	688.7	688.7	0.0
R	20,657	48	268	11.9	697.8	697.8	697.8	0.0
S	21,620	53	317	10.1	707.7	707.7	707.7	0.0
T	23,003	85	396	8.1	722.9	722.9	723.0	0.1
U	24,447	36	119	9.5	728.7	728.7	728.7	0.0
V	25,445	32	131	8.6	736.3	736.3	736.4	0.1
W	26,026	29	153	7.3	740.5	740.5	741.1	0.6

[1]Feet above confluence with Spring Creek

[2]Elevation computed without consideration of backwater effects from Spring Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

PITTMAN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Pittman Creek Tribuary 2								
A	173[1]	40	176	7.8	614.5	610.2[4]	610.2	0.0
B	953[1]	45	212	6.4	620.4	620.4	620.4	0.0
C	1,924[1]	72	331	4.1	633.5	633.5	633.5	0.0
D	2,729[1]	53	146	9.4	644.1	644.1	644.2	0.1
E	3,169[1]	51	189	7.2	652.5	652.5	652.5	0.0
Pond Branch								
A	16,415[2]	349	1,835	3.2	541.8	541.8	542.7	0.9
B	18,070[2]	132	784	5.2	545.2	545.2	545.8	0.6
Prairie Creek								
A	1,470[3]	192	1,325	7.3	582.0	582.0	582.0	0.0
B	2,330[3]	161	1,504	6.5	583.1	583.1	584.1	1.0
C	3,650[3]	113	1,346	7.2	587.4	587.4	588.2	0.8
D	15,570[3]	112	1,281	7.2	630.5	630.5	630.6	0.1
E	17,430[3]	150	1,439	6.4	642.5	642.5	642.6	0.1
F	19,080[3]	97	1,067	8.2	649.5	649.5	649.7	0.2
G	20,970[3]	143	1,305	7.1	657.5	657.5	657.6	0.1
H	22,280[3]	128	1648	5.6	664.5	664.5	665.5	1.0
I	24,081[3]	75	643	18.5	670.0	670.0	670.2	0.2
J	24,423[3]	192	1786	5.0	680.0	680.0	680.0	0.0
K	25,954[3]	88	996	6.1	681.1	681.1	681.3	0.2
L	26,405[3]	144	1666	3.7	686.5	686.5	687.0	0.5

[1]Feet above confluence with Pittman Creek

[2]Feet above confluence with Sabine Creek

[3]Feet above confluence with Spring Creek

[4]Elevation computed without consideration of backwater effects from Pittman Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

PITTMAN CREEK TRIBUTARY 2 - POND BRANCH - PRAIRIE CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Prairie Creek (Cont'd)								
M	27,696[1]	97	975	6.2	687.4	687.4	687.8	0.4
N	28,962[1]	79	577	10.5	689.5	689.5	689.8	0.3
O	29,359[1]	106	900	5.0	695.3	695.3	695.4	0.1
P	30,243[1]	168	962	6.5	696.1	696.1	696.3	0.2
Q	30,630[1]	161	1178	3.8	701.4	701.4	701.5	0.1
R	31,935[1]	98	705	6.4	702.3	702.3	702.5	0.2
S	32,624[1]	92	548	8.2	703.8	703.8	703.9	0.1
T	33,277[1]	130	704	6.4	709.9	709.9	709.9	0.0
U	33,836[1]	132	944	4.8	714.5	714.5	714.5	0.0
V	34,169[1]	96	855	5.3	716.1	716.1	716.1	0.0
W	34,817[1]	95	611	2.5	716.7	716.7	717.0	0.3
X	35,245[1]	93	524	2.9	717.0	717.0	717.3	0.3
Y	35,774[1]	75	306	5.0	718.3	718.3	718.4	0.1
Z	36,261[1]	86	331	4.7	719.9	719.9	719.9	0.0
AA	36,997[1]	42	168	9.2	723.4	723.4	723.4	0.0
Quail Creek Channel B								
A	375[2]	65	603	1.4	633.8	633.8	634.8	1.0
B	565[2]	60	468	1.9	636.0	636.0	636.0	0.0
C	1,535[2]	*	51	3.0	643.0	643.0	643.0	0.0
D	2,245[2]	*	29	5.2	667.4	667.4	667.4	0.0

[1]Feet above confluence with Spring Creek

[2]Feet above confluence with Lake 3C

* Floodway coincident with channel banks

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

PRAIRIE CREEK - QUAIL CREEK CHANNEL B

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
Rowlett Creek								
A	95,800	442	6,018	7.1	510.6	510.6	511.5	0.9
B	98,720	1,342	1,246	3.0	514.0	514.0	514.6	0.6
C	102,700	1,400	13,586	3.1	516.7	516.7	517.5	0.8
D	105,320	1,400	17,552	2.4	523.1	523.1	523.1	0.0
E	108,280	2,100	20,527	2.2	523.6	523.6	523.7	0.1
F	112,700	1,637	12,788	2.6	524.8	524.8	525.3	0.5
G	117,700	1,100	11,085	3.1	532.0	532.0	532.7	0.7
H	121,240	1,550	13,046	2.6	536.1	536.1	536.6	0.5
I	124,900	1,300	13,710	2.5	542.0	542.0	542.5	0.5
J	128,670	1,390	10,324	3.4	544.7	544.7	545.6	0.9
K	132,020	2,911	24,514	1.4	549.9	549.9	540.7	0.8
L	134,340	1,750	11,797	3.1	550.9	550.9	551.7	0.8
M	138,220	1,436	9,309	3.9	555.9	555.9	556.8	0.9
N	139,240	1,000	7,282	5.0	558.6	558.6	559.4	0.8
O	142,800	1,523	10,212	3.6	564.5	564.5	564.8	0.3
P	146,120	1,232	10,096	3.6	570.8	570.8	571.1	0.3
Q	149,500	1,600	14,815	2.5	577.3	577.3	577.7	0.4
R	150,400	2,096	30,974	1.1	584.8	584.8	585.8	1.0
S	160,698	834	5,980	4.1	590.7	590.7	591.7	1.0
T	161,969	323	3,604	6.6	594.9	594.9	595.7	0.8

[1] Feet above confluence with the East Fork Trinity River

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

ROWLETT CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Rowlett Creek (Cont'd)								
U	163,385[1]	562	5,841	4.1	598.4	598.4	599.4	1.0
V	165,289[1]	760	7,823	3.1	601.9	601.9	602.9	1.0
W	166,339[1]	691	6,834	3.5	603.4	603.4	604.4	1.0
X	168,425[1]	920	11,642	2.0	608.9	608.9	609.6	0.7
Y	169,645[1]	364	4,829	4.9	609.2	609.2	609.9	0.7
Z	171,158[1]	928	5,674	2.1	609.8	609.8	610.8	1.0
AA	172,711[1]	331	1,785	6.6	612.1	612.1	613.1	1.0
AB	173,793[1]	277	1,742	6.7	614.7	614.7	615.6	0.9
AC	175,124[1]	275	2,172	5.4	617.2	617.2	618.0	0.8
AD	175,503[1]	217	1,552	7.4	618.7	618.7	619.0	0.3
AE	176,630[1]	380	2,646	4.3	622.3	622.3	622.8	0.5
AF	178,661[1]	206	2,176	5.3	627.2	627.2	628.1	0.9
AG	180,230[1]	170	1,738	10.2	631.8	631.8	632.6	0.8
AH	185,030[1]	196	1,864	8.8	646.7	646.7	647.5	0.8
AI	187,280[1]	450	3,463	4.7	655.4	655.4	656.2	0.8
AJ	190,544[1]	160	1,848	8.8	664.1	664.1	664.5	0.4
AK	194,214[1]	197	1,720	10.2	678.1	678.1	678.9	0.8
AL	196,609[1]	186	1,581	6.1	688.4	688.4	688.5	0.1
Rush Creek								
A	-7,885[2]	578	2,674	2.4	442.0	442.0	443.1	0.9
B	-5,980[2]	361	1,108	5.6	448.8	448.8	449.7	0.9
C	-4,545[2]	546	3,195	2.0	455.1	455.1	456.1	1.0
D	-2,650[2]	280	866	4.4	458.5	458.5	458.6	0.1

[1]Feet above confluence with the East Fork Trinity River

[2]Feet from East Stone Road

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

ROWLETT CREEK - RUSH CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Rush Creek (Cont'd)								
E	-200[1]	270	866	4.4	469.3	469.3	469.9	0.6
F	0[1]	270	593	6.4	474.1	474.1	474.2	0.1
G	475[1]	64	379	10.0	475.3	475.3	475.3	0.0
H	1,620[1]	148	1,051	3.6	477.4	477.4	478.0	0.6
I	3,870[1]	74	212	8.2	485.0	485.0	485.5	0.5
J	4,920[1]	290	866	2.0	492.2	492.2	492.6	0.4
K	5,000[1]	298	415	4.2	497.3	497.3	497.3	0.0
Rush Creek Tributary								
A	600[2]	150	391	3.4	490.4	490.4	490.8	0.4
B	1,750[2]	69	233	5.8	498.6	498.6	499.1	0.5
C	2,037[2]	141	443	3.0	508.8	508.8	509.7	0.9
D	2,045[2]	310	2,223	0.6	509.0	509.0	509.9	0.9
E	2,078[2]	257	1,084	1.2	509.0	509.0	509.9	0.9
F	2,430[2]	148	770	1.7	509.1	509.1	510.0	0.9
G	2,590[2]	184	704	1.9	509.2	509.2	510.1	0.9
H	2,724[2]	10	60	22.4	512.7	512.7	512.7	0.0
Russell Creek								
A	2,018[3]	237	1,729	7.8	584.9	582.3[4]	583.3	1.0
B	3,104[3]	107	1,009	11.4	584.9	584.9	585.0	0.1
C	3,622[3]	236	1,878	7.2	590.7	590.7	590.9	0.2
D	4,624[3]	108	954	11.9	592.2	592.2	592.5	0.3
E	5,131[3]	257	1,675	8.4	594.7	594.7	594.7	0.0

[1]Feet from East Stone Road
[2]Feet above confluence with Rush Creek
[3]Feet above confluence with Rowlett Creek
[4]Elevation computed without consideration of backwater effects from Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

RUSH CREEK - RUSH CREEK TRIBUTARY - RUSSELL CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Russell Creek (Cont'd)								
F	6,136	163.1	1,388	11.6	596.9	596.9	597.1	0.2
G	6,878	118.6	1,338	9.0	600.8	600.8	601.7	0.9
H	8,110	126	1,318	10.0	605.4	605.4	605.8	0.4
I	8,587	116	1,223	9.9	606.1	606.1	606.9	0.8
J	9,719	94	1,178	10.3	610.4	610.4	611.0	0.6
K	10,782	92	1,187	10.5	615.8	615.8	616.2	0.4
L	11,623	108	1,253	9.0	619.6	619.6	620.1	0.5
M	12,700	84	992	9.6	622.7	622.7	623.0	0.3
N	13,539	103	1,014	10.8	624.8	624.8	625.4	0.6
O	14,698	78	778	13.5	632.2	632.2	632.4	0.2
P	15,485	97	1,144	8.1	636.9	636.9	637.8	0.9
Q	16,586	63	703	14.2	641.7	641.7	641.7	0.0
R	17,430	80	849	10.9	647.6	647.6	647.7	0.1
S	18,388	54	530	18.7	654.6	654.6	654.6	0.0
T	19,009	94	910	13.6	660.8	660.8	661.3	0.5
U	19,491	79	860	7.8	664.5	664.5	664.5	0.0
V	19,896	57	690	9.5	664.9	664.9	664.9	0.0
W	20,848	48	450	13.2	667.2	667.2	667.7	0.5
X	21,907	68	697	8.8	673.2	673.2	673.7	0.5
Y	22,209	45	391	11.5	673.5	673.5	673.8	0.4
Z	22,989	56	381	10.7	677.6	677.6	677.8	0.2
AA	23,922	50	306	14.8	684.2	684.2	684.2	0.0
AB	24,478	79	631	7.0	690.2	690.2	690.8	0.6
AC	24,852	121	470	13.6	695.4	695.4	695.4	0.0
AD	25,513	96	435	14.4	700.3	700.3	700.3	0.0

[1]Feet above confluence with Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

RUSSELL CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Russell Creek (Cont'd)								
AE	2,7035[1]	55.82	324.41	13.4	714.67	714.67	714.83	0.2
AF	2,7528[1]	83.42	413.78	10.7	718.93	718.93	719.83	0.9
Sabine Creek								
A	21,710[2]	1,120	9,276	1.5	530.1	530.1	530.6	0.5
B	23,415[2]	2,137	14,431	1.0	531.9	531.9	532.8	0.9
Sabine Creek Tributary B								
A	5,400[3]	147	378	4.5	578.9	578.9	579.4	0.5
B	7,525[3]	450	2,029	0.8	585.8	585.8	586.0	0.2
C	8,535[3]	753	1,709	1.0	587.4	587.4	588.1	0.7
D	9.375[3]	170	473	3.6	588.3	588.3	588.9	0.6

[1]Feet above confluence with Rowlett Creek

[2]Feet above Crenshaw Road

[3]Feet above mouth

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

RUSSELL CREEK - SABINE CREEK - SABINE CREEK TRIBUTARY B

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Sloan Creek								
A	4,280[1]	640	3,510	2.7	524.0	523.7[3]	524.5	0.5
B	6,600[1]	352	1,915	5.8	534.2	534.2	535.1	0.9
C	8,400[1]	125	1,072	9.8	540.5	540.5	541.3	0.8
D	8,590[1]	130	1,827	5.7	542.5	542.5	542.7	0.2
E	9,390[1]	286	2,421	4.3	543.3	543.3	544.2	0.9
F	12,000[1]	115	1,030	8.3	550.3	550.3	550.3	0.0
Spring Creek								
A	43,080[2]	885	7,166	4.7	560.5	560.5	561.3	0.8
B	44,490[2]	330	4,848	6.9	565.3	565.3	565.7	0.4
C	48,330[2]	645	6,910	4.8	573.3	573.3	574.0	0.7
D	49,840[2]	336	3,904	8.8	575.1	575.1	576.1	1.0
E	50,140[2]	233	4,123	8.6	581.0	581.0	581.1	0.1
F	51,885[2]	355	5,081	4.7	584.0	584.0	584.6	0.6
G	54,650[2]	191	3,329	7.4	586.8	586.8	587.1	0.3
H	55,980[2]	522	2,346	10.5	589.9	589.9	590.8	0.9
I	56,834[2]	169	2,387	6.5	594.8	594.8	594.8	0.0
J	58,377[2]	204	2,749	5.7	597.4	597.4	598.3	0.9
K	61,825[2]	156	2,298	6.6	607.4	607.4	607.4	0.0
L	62,983[2]	239	2,370	6.4	613.0	613.0	613.6	0.6
M	64,909[2]	119	1,634	9.2	616.7	616.7	617.7	1.0
N	66,000[2]	142	1,544	9.7	621.2	621.2	621.2	0.0
O	67,754[2]	171	2,052	7.3	627.9	627.9	628.4	0.5
P	71,034[2]	147	1,591	9.5	638.0	638.0	638.7	0.7
Q	72,782[2]	145	1,496	8.3	643.5	643.5	644.4	0.9
R	74,431[2]	137	1,491	8.3	649.4	649.4	650.2	0.8

[1]Feet above confluence with Wilson Creek
[2]Feet above confluence with Rowlett Creek
[3]Elevation not including backwater effects

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

SLOAN CREEK - SPRING CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Spring Creek (Cont'd)								
S	76,379[1]	151	1,465	8.5	657.3	657.3	658.0	0.7
T	77,450[1]	325	1,926	4.9	662.8	662.8	663.3	0.5
U	78,975[1]	177	1,155	8.2	667.2	667.2	667.3	0.1
V	81,328[1]	280	1,834	5.2	676.0	676.0	676.6	0.6
W	82,968[1]	274	1,851	5.1	682.4	682.4	683.1	0.7
X	84,558[1]	224	1,709	4.2	688.0	688.0	688.9	0.9
Y	85,772[1]	212	1,327	5.5	691.4	691.4	692.1	0.7
Z	87,530[1]	125	1,042	3.7	699.5	699.5	700.3	0.8
AA	89,844[1]	89	567	6.9	707.9	707.9	708.2	0.3
AB	92,791[1]	77	330	11.8	726.7	726.7	726.7	0.0
AC	95,160[1]	51	124	8.9	740.1	740.1	740.1	0.0
Spring Creek Tributary 4								
A	2[2]	22	146	7.6	571.7	556.4[4]	556.8	0.4
B	1,067[2]	23	134	8.2	575.7	575.7	576.0	0.3
C	1,289[2]	26	217	7.1	579.7	579.7	579.8	0.1
Stewart Creek								
A	72[3]	800	11,755	1.5	529.5	529.5	530.3	0.8
B	6,300[3]	700	5,072	3.5	534.6	534.6	535.2	0.6
C	11,140[3]	526	3,705	4.8	542.7	542.7	543.7	1.0
D	14,915[3]	427	3,245	3.5	558.0	558.0	558.5	0.5
E	20,380[3]	790	3,538	3.2	569.3	569.3	570.0	0.7

[1]Feet above confluence with Rowlett Creek
[2]Feet from confluence with Spring Creek
[3]Feet above State Highway 423
[4]Elevation computed without consideration of backwater effects from Spring Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

SPRING CREEK - SPRING CREEK TRIBUTARY 4 - STEWART 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
Stewart Creek (Cont'd)								
F	26,600[1]	500	2,838	4.0	587.3	587.3	587.8	0.5
G	32,500[1]	375	1,819	3.7	605.6	605.6	606.0	0.4
H	34,932[1]	174	698	9.7	628.2	628.2	628.4	0.2
I	37,800[1]	92	688	6.5	641.3	641.3	642.0	0.7
J	44,000[1]	84	602	8.3	672.5	672.5	672.8	0.3
K	47,700[1]	95	380	6.5	696.7	696.7	696.9	0.2
Stewart Creek Tributary 1								
F	28,620[2]	245	852	4.8	618.4	618.4	619.1	0.7
G	30,960[2]	63	377	7.7	626.7	626.7	627.4	0.7
H	32,860[2]	70	300	9.1	645.0	645.0	645.0	0.0
Stewart Creek Tributary 2								
C	8,500[2]	550	872	1.3	639.6	639.6	639.6	0.0
Stewart Creek Tributary 3								
B	29,308[3]	53	231	10.0	606.1	606.1	606.1	0.0
C	32,840[3]	64	298	6.4	626.7	626.7	627.7	1.0
D	34,910[3]	131	414	3.6	643.8	643.8	644.2	0.4
E	36,365[3]	48	195	7.6	660.6	660.6	660.7	0.1

[1]Feet above confluence with Rowlett Creek
[2]Feet above confluence with Stewart Creek Tributary 1
[3]Feet above State Route 423 (on Stewart Creek)

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

STEWART CREEK – STEWART CREEK TRIBUTARY 1 – STEWART CREEK TRIBUTARY 2 – STEWART CREEK TRIBUTARY 3

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stewart Creek Tributary 3 (Cont'd)								
F	37,133[1]	28	129	11.4	673.6	673.6	674.0	0.4
G	38,213[1]	76	271	5.4	685.7	685.7	686.0	0.3
H	39,703[1]	151	439	3.4	701.4	701.4	701.7	0.3
Stewart Creek								
A	37,915[1]	148	485	3.1	647.0	647.0	647.9	0.9
B	40,290[1]	46	269	5.6	665.3	665.3	665.9	0.6
C	40,617[1]	5	204	7.1	665.3	665.3	666.3	1.0
D	40,885[1]	60	270	4.2	669.2	669.2	669.2	0.0
E	41,893[1]	33	147	7.7	676.8	676.8	676.9	0.1
F	42,435[1]	53	163	6.9	682.4	682.4	682.4	0.0
G	43,011[1]	89	368	2.6	691.5	691.5	691.5	0.0
H	44,307[1]	48	94	8.0	706.2	706.2	706.2	0.0
Stream IC-1								
G	16,680[2]	76	156	8.0	631.9	631.9	631.9	0.0
Stream IC-1A								
D	6,790[3]	99	253	5.9	637.2	637.2	637.2	0.0

[1]Feet above State Highway 423 (on Stewart Creek)
[2]Feet from the confluence with Indian Creek
[3]Feet above confluence with Stream IC-1

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STEWART CREEK TRIBUTARY 3 - STEWART CREEK TRIBUTARY 4 - STREAM IC-1 - STREAM IC-1A

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
Stream 2D8								
A	1,700[1]	253	1,081	6.6	534.7	534.7	535.7	1.0
B	3,150[1]	84	697	8.9	544.2	544.2	545.2	1.0
C	3,710[1]	89	1,009	6.1	551.4	551.4	552.2	0.8
D	5,000[1]	74	607	10.2	556.5	556.5	557.4	0.9
E	6,240[1]	87	866	7.2	566.0	566.0	566.3	0.3
F	7,000[1]	84	828	6.8	568.6	568.6	569.4	0.8
G	7,620[1]	59	441	6.5	570.5	570.5	571.5	1.0
H	8,420[1]	52	359	7.9	582.2	582.2	583.2	1.0
I	9,255[1]	63	296	8.6	593.0	593.0	593.0	0.0
Stream 2D9								
A	170[2]	67	350	6.6	542.6	542.6	543.6	1.0
B	830[2]	70	583	3.9	551.9	551.9	552.9	1.0
C	1,840[2]	70	745	3.1	561.0	561.0	562.0	1.0
D	2,310[2]	45	334	6.9	561.4	561.4	562.4	1.0
E	3,020[2]	35	208	8.4	571.3	571.3	571.3	0.0
F	3,670[2]	41	215	5.6	576.5	576.5	576.6	0.1

[1]Feet above confluence with Rowlett Creek
[2]Feet above confluence with Stream 2D8

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2D8 – STREAM 2D9

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
Stream 2D10								
A	310[1]	47	275	10.0	573.3	573.3	573.3	0.0
B	1,050[1]	115	394	7.0	587.4	587.4	587.4	0.0
C	1,650[1]	28	145	13.1	596.7	596.7	596.7	0.0
D	2,000[1]	85	618	3.1	608.1	608.1	609.1	1.0
Stream 2D11								
A	680[2]	94	274	9.9	559.5	559.5	559.5	0.0
B	2,280[2]	43	357	7.6	576.6	576.6	576.7	0.1
C	2,950[2]	35	198	13.7	582.9	582.9	582.9	0.0
D	3,990[2]	57	352	7.7	598.8	598.8	598.8	0.0
E	5,620[2]	55	368	4.4	609.8	609.8	610.3	0.5
F	6,080[2]	41	214	7.5	611.5	611.5	612.1	0.6
G	7,570[2]	75	354	4.8	625.9	625.9	626.3	0.4
Stream 2D12								
A	640[3]	47	213	5.2	561.6	560.7[4]	561.7	1.0
B	1,380[3]	61	218	5.1	566.0	566.0	566.7	0.7
Stream 2D15								
A	1,470[3]	91	288	3.6	574.7	574.7	575.7	1.0
B	2,590[3]	82	230	4.6	583.0	583.0	583.0	0.0
C	4,400[3]	70	214	3.3	607.2	607.2	608.0	0.8

[1]Feet above confluence with Stream 2D8
[2]Feet above confluence with Brown Branch
[3]Feet above confluence with Rowlett Creek
[4]Elevation computed without consideration of backwater effects from Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2D10 – STREAM 2D11 – STREAM 2D12 – STREAM 2D15

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
Stream 2D16								
A	1,060[1]	65	264	4.6	577.2	575.0[5]	576.0	1.0
B	1,980[1]	77	528	2.3	585.5	585.5	586.3	0.8
C	2,875[1]	75	324	2.9	595.3	595.3	595.3	0.0
D	4,450[1]	59	170	5.6	605.8	605.8	605.8	0.0
E	6,240[1]	48	191	3.7	631.0	631.0	632.0	1.0
Stream 2E7								
A	3,640[2]	53	117	2.6	518.5	518.5	519.5	1.0
Stream 2F1								
A	550[3]	62	157	7.6	604.1	600.2[6]	600.2	0.0
B	2,160[3]	135	316	3.8	628.8	628.8	628.8	0.0
Stream 2G2								
A	1,350[4]	33	135	5.9	608.9	608.9	608.9	0.0
B	3,000[4]	35	104	7.2	630.0	630.0	630.0	0.0
Stream 2G3								
A	1,550[4]	21	51	5.3	624.5	624.5	624.5	0.0
B	2,880[4]	55	301	5.3	645.5	645.5	646.4	0.9
Stream 2G5								
A	3,260[4]	104	334	3.4	642.5	642.5	642.5	0.0
B	4,700[4]	190	279	2.8	655.1	655.1	655.1	0.0

[1]Feet above confluence with Rowlett Creek
[2]Feet above confluence with Long Branch
[3]Feet above confluence with Watters Branch
[4]Feet above confluence with Cottonwood Creek No. 1
[5]Elevation computed without consideration of backwater effects from Rowlett Creek
[6]Elevation computed without consideration of backwater effects from Watters Branch

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2D16 – STREAM 2E7 – STREAM 2F1 – STREAM 2G2 – STREAM 2G3 – STREAM 2G5

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 2H3								
A	285 [1]	36	138	11.0	602.0	594.7[3]	594.7	0.0
B	883 [1]	64	166	9.1	609.6	609.6	609.6	0.0
C	1824 [1]	26	133	11.4	614.0	614.0	614.0	0.0
D	2796 [1]	97	191	8.0	626.2	626.2	626.2	0.0
Stream 2I8								
A	1,352[2]	101	300	2.7	574.0	574.0	574.0	0.0
B	2,055[2]	81	183	4.4	581.5	581.5	581.5	0.0
C	3,451[2]	130	497	1.6	604.0	604.0	604.0	0.0
D	4,417[2]	93	216	3.8	611.0	611.0	611.0	0.0
Stream 2I9								
A	1,290[2]	46	261	9.2	640.0	640.0	641.0	1.0
B	2,080[2]	70	402	6.0	648.5	648.5	648.9	0.4
C	3,275[2]	64	267	5.6	655.5	655.5	655.6	0.1
D	4,280[2]	49	224	6.7	662.5	662.5	662.5	0.0
Stream 2I11								
A	1,290[2]	44	244	8.2	688.0	687.3[4]	688.3	1.0
B	3,200[2]	98	218	8.7	700.0	700.0	700.0	0.0
Stream 2I12								
A	1,358[2]	94	447	3.1	686.0	686.0	686.0	0.0
B	2,824[2]	55	207	3.6	696.9	696.9	697.1	0.2
C	3,254[2]	44	114	6.6	697.5	697.5	697.5	0.0

[1]Feet above confluence with Pittman Creek

[2]Feet above confluence with Spring Creek

[3]Elevations computed without consideration of backwater effects from Pittman Creek

[4]Elevations computed without consideration of backwater effects from Spring Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2H3 - STREAM 2I8 - STREAM 2I9 - STREAM 2I11 - STREAM 2I12

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 2L1								
A	220[1]	33	184	13.8	672.1	672.1	672.1	0.0
B	320[1]	33	188	13.6	674.0	674.0	674.0	0.0
C	2,310[1]	73	245	5.5	684.6	684.6	684.8	0.2
D	2,480[1]	61	149	9.0	687.0	687.0	687.0	0.0
Stream 5B13								
A	9,911[2]	250	476	3.1	686.8	686.8	686.8	0.0
B	10,173[2]	*	469	3.2	690.1[4]	690.1	690.1	0.0
C	10,648[2]	*	338	4.4	690.3[4]	690.3	690.3	0.0
D	10,955[2]	183	340	3.5	691.5	691.5	691.5	0.0
E	11,403[2]	*	153	5.4	693.8[4]	693.8	693.8	0.0
F	11,903[2]	*	138	6.0	696.1[4]	696.1	696.1	0.0
Stream 5B14								
A	2,655[3]	67	125	7.8	683.3	683.3	684.2	0.9
B	3,055[3]	66	171	5.7	687.3	687.3	688.0	0.7

[1]Feet above confluence with Prairie Creek

[2]Feet above confluence with McKamy Branch

[3]Feet above confluence with Stream 5B13

[4]100-year flood discharge contained in channel

*Floodway coincident with channel banks

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 2L1 - STREAM 5B13 - STREAM 5B14

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B18								
A	143	38	188	12.9	608.7	604.6 [2]	604.6	0.0
B	513	50	356	6.8	617.2	617.2	617.2	0.0
C	720	40	330	7.4	619.1	619.1	619.9	0.8
D	1,191	43	253	9.6	623.4	623.4	623.9	0.5
E	1,512	136	726	3.4	626.9	626.9	626.9	0.0
F	1,975	55	229	10.6	628.7	628.7	628.8	0.1
G	3,490	45	211	11.5	640.9	640.9	641.0	0.1
Stream 5B19								
A	1,095	112	500	3.1	610.6	608.7	609.5	0.8
B	1,579	103	571	2.7	611.8	611.8	612.5	0.7
C	2,343	53	226	6.8	617.3	617.3	617.3	0.0
D	2,534	44	203	7.5	618.3	618.3	618.4	0.1
E	3,307	62	235	6.5	628.5	628.5	628.5	0.0
Stream 5B20								
A	1,134	39	301	5.8	612.6	612.6	612.6	0.0
B	1,554	52	450	4.0	616.3	616.3	616.4	0.1
C	2,420	86	389	4.6	618.8	618.8	619.0	0.2
D	2,785	208	1,060	1.7	631.1	631.1	631.1	0.0
E	3,381	88	340	5.3	632.8	632.8	632.9	0.1
F	3,761	173	1,090	1.6	645.0	645.0	645.0	0.0
G	4,327	64	323	5.5	645.0	645.0	645.0	0.0
H	5,267	49	236	7.6	650.7	650.7	650.7	0.0
I	6,158	70	267	6.7	659.9	659.9	660.0	0.1

[1]Feet above confluence with White Rock Creek

[2]Elevation computed without consideration of backwater effects from White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B18 - STREAM 5B19 - STREAM 5B20

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B21								
A	719[1]	262	598	3.7	614.3	613.2[3]	613.3	0.1
B	977[1]	114	547	4.0	616.4	616.4	617.3	0.9
C	2,028[1]	84	500	4.4	619.6	619.6	619.8	0.2
D	2,201[1]	110	370	6.0	624.7	624.7	624.8	0.1
E	3,174[1]	75	320	6.9	627.0	627.0	627.0	0.0
F	3,366[1]	58	280	7.8	630.0	630.0	630.5	0.5
G	3,616[1]	66	383	5.8	633.3	633.3	633.6	0.3
H	3,914[1]	131	503	1.7	640.6	640.6	640.6	0.0
Stream 5B22								
A	345[2]	76	211	6.9	640.6	639.7[4]	639.7	0.0
B	594[2]	102	480	3.0	643.6	643.6	643.6	0.0
C	738[2]	107	592	2.5	644.9	644.9	645.5	0.6
D	1,052[2]	80	412	3.5	645.0	645.0	645.6	0.6
E	1,264[2]	127	409	3.6	652.4	652.4	652.4	0.0
F	1,490[2]	171	952	1.5	656.1	656.1	656.6	0.5
Stream 5B23								
A	1,019[1]	101	396	5.3	623.1	623.1	623.1	0.0
B	1,441[1]	44	180	11.6	624.5	624.5	624.6	0.1
C	2,186[1]	92	270	7.8	638.1	638.1	638.1	0.0
D	2,591[1]	62	172	12.1	640.5	640.5	640.5	0.0
E	3,064[1]	118	391	5.4	648.1	648.1	648.1	0.0

[1]Feet above confluence with White Rock Creek

[2]Feet above confluence with Stream 5B21

[3]Elevation computed without consideration of backwater effects from White Rock Creek

[4]Elevation computed without consideration of backwater effects from Stream 5B21

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B21 - STREAM 5B22 - STREAM 5B23

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B24								
A	874	121	776	3.3	628.8	628.8	628.8	0.0
B	1,905	118	292	8.8	638.2	638.2	638.2	0.0
C	2,123	167	1,183	2.2	646.5	646.5	646.7	0.2
D	2,607	569	3,197	0.8	661.0	661.0	661.0	0.0
E	3,576	139	515	5.0	661.1	661.1	661.1	0.0
F	4,416	73	335	7.7	667.1	667.1	667.1	0.0
G	5,628	50	217	11.9	682.3	682.3	682.4	0.1
Stream 5B25								
A	113	118	371	6.1	630.0	625.3[2]	625.3	0.0
B	900	161	956	2.4	639.4	639.4	639.4	0.0
C	1,868	78	400	5.6	644.6	644.6	644.7	0.1
D	2,789	208	662	3.4	656.2	656.2	656.2	0.0
E	3,524	153	727	3.1	661.7	661.7	661.7	0.0
F	3,993	224	1,049	2.2	669.4	669.4	669.4	0.0
G	4,636	121	864	2.6	673.2	673.2	673.2	0.0
H	5,324	157	645	3.5	677.9	677.9	678.9	1.0
I	6,502	71	292	7.7	686.9	686.9	687.5	0.6
Stream 5B26								
A	1,022	68	481	3.2	634.4	634.4[2]	634.5	0.1
B	1,360	76	471	3.3	636.7	636.7	636.9	0.2
C	2,285	37	140	11.1	643.1	643.1	643.1	0.0
D	2,468	77	384	4.0	648.2	648.2	648.7	0.5
E	2,806	32	149	10.4	647.9	647.9	648.0	0.1

[1]Feet above confluence with White Rock Creek

[2]Elevation computed without consideration of backwater effects from White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B24 - STREAM 5B25 - STREAM 5B26

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B26 (Cont'd)								
F	3,247[1]	39	171	9.1	654.7	654.7	654.9	0.2
G	4,416[1]	38	197	7.9	665.8	665.8	665.9	0.1
Stream 5B27								
A	1,075[1]	130	506	8.0	635.8	635.8	636.0	0.2
B	1,531[1]	363	1,904	2.1	645.3	645.3	645.7	0.4
C	2,619[1]	207	781	5.2	648.3	648.3	648.3	0.0
D	3,397[1]	165	690	5.9	651.3	651.3	651.4	0.1
E	4,150[1]	150	769	5.3	660.4	660.4	660.5	0.1
F	4,809[1]	266	1,107	3.7	667.2	667.2	667.2	0.0
G	5,844[1]	165	741	5.5	667.5	667.5	667.6	0.1
H	6,949[1]	91	358	11.3	680.7	680.7	680.7	0.0
I	8,021[1]	159	1,113	3.6	693.8	693.8	694.1	0.3
J	9,265[1]	94	364	11.1	697.0	697.0	697.1	0.1
K	10,397[1]	84	453	8.9	703.4	703.4	703.5	0.1
L	10,790[1]	128	781	5.2	711.4	711.4	711.6	0.2
Stream 5B28								
A	280[2]	167	1406	2.5	639.5	639.1[3]	639.5	0.4
B	500[2]	175	685	4.9	648.0	648.0	648.3	0.3
C	815[2]	76	534	5.1	664.3	664.3	665.2	0.9
D	1,025[2]	105	364	6.6	672.2	672.2	672.7	0.5
E	1,400[2]	105	349	5.2	681.0	681.0	681.3	0.3
F	1,615[2]	84	277	5.8	687.7	687.7	687.8	0.1

[1]Feet above confluence with White Rock Creek

[2]Feet above confluence with Stream 5B27

[3]Elevation computed without consideration of backwater effects from White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B26 - STREAM 5B27 - STREAM 5B28

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B29								
A	555	81	520	6.2	637.8	636.1[2]	636.4	0.3
B	1,274	65	394	8.2	640.4	640.4	641.4	1.0
C	1,580	223	1,557	2.1	650.0	650.0	650.3	0.3
D	2,626	150	889	3.6	650.7	650.7	651.7	1.0
E	3,605	142	440	7.3	657.7	657.7	658.3	0.6
F	4,651	92	635	5.1	664.2	664.2	665.2	1.0
G	5,604	161	769	4.2	671.5	671.5	672.5	1.0
H	6,765	140	660	4.9	675.8	675.8	676.7	0.9
I	7,813	161	701	4.6	681.2	681.2	681.9	0.7
J	9,007	130	781	4.1	686.7	686.7	687.7	1.0
K	9,614	120	762	4.2	690.1	690.1	691.0	0.9
Stream 5B30								
A	516	175	1,381	2.5	650.6	646.2[2]	647.0	0.8
B	1,631	82	356	9.5	652.9	652.9	652.9	0.0
C	3,053	86	558	6.1	666.6	666.6	666.7	0.1
D	3,960	78	483	7.0	670.0	670.0	670.1	0.1
E	4,838	45	312	9.2	675.3	675.3	675.3	0.0
F	5,540	63	347	8.3	681.7	681.7	681.7	0.0
G	6,682	57	309	9.3	689.6	689.6	689.7	0.1
H	7,814	147	527	5.5	697.7	697.7	697.7	0.0
I	8,852	100	384	7.5	700.4	700.4	700.4	0.0
J	9,166	113	420	6.9	704.5	704.5	704.5	0.0
K	9,924	222	624	4.6	713.3	713.3	713.3	0.0
L	11,022	70	358	8.0	716.3	716.3	717.2	0.9

[1]Feet above confluence with White Rock Creek

[2]Elevation computed without consideration of backwater effects from White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B29 - STREAM 5B30

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B31								
A	742	79	364	6.9	658.0	658.0	658.1	0.1
B	1815	76	460	5.4	666.6	666.6	666.7	0.1
C	2535	85	443	5.7	673.6	673.6	673.6	0.0
D	3413	100	269	9.3	681.9	681.9	681.9	0.0
E	3958	105	618	4.0	690.9	690.9	690.9	0.0
F	4763	85	259	9.7	691.4	691.4	691.4	0.0
G	5483	88	377	6.6	698.1	698.1	698.2	0.1
H	6366	56	251	10.0	702.9	702.9	702.9	0.0
I	6971	59	394	3.3	711.7	711.7	711.7	0.0
Stream 5B32								
A	889	77	243	7.5	659.5	659.5	659.5	0.0
B	1,302	60	185	9.9	665.6	665.6	665.6	0.0
Stream 5B33								
A	672	96	131	6.6	666.1	665.2[2]	665.2	0.0
B	1,009	48	127	6.8	674.7	674.7	674.8	0.1
C	1,682	26	97	8.9	679.0	679.0	679.0	0.0
Stream 5B34								
A	560	92	183	8.1	666.8	666.8	666.8	0.0
B	1,409	113	325	4.6	672.6	672.6	673.2	0.6
C	1,777	117	533	2.8	677.6	677.6	678.3	0.7
D	2,583	116	307	4.9	682.6	682.6	682.6	0.0
E	3,038	85	381	3.9	686.1	686.1	686.2	0.1
F	3,761	103	636	2.3	695.5	695.5	696.0	0.5

[1]Feet above confluence with White Rock Creek

[2]Elevation computed without consideration of backwater effects from White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B31 - STREAM 5B32 - STREAM 5B33 - STREAM 5B34

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Stream 5B35								
A	264[1]	39	158	11.6	672.1	667.4[4]	667.4	0.0
B	988[1]	64	201	9.2	674.5	674.5	674.6	0.1
C	2,021[1]	48	374	4.9	684.5	684.5	684.5	0.0
D	2,988[1]	95	302	6.1	694.4	694.4	694.9	0.5
E	3,994[1]	59	270	6.8	701.3	701.3	701.4	0.1
F	5,024[1]	61	223	8.3	707.6	707.6	707.7	0.1
Stream 5B36								
A	1,142[1]	99	796	7.0	677.3	677.3	678.1	0.8
B	1,989[1]	63	508	10.9	680.2	680.2	680.7	0.5
C	2,892[1]	100	692	8.0	687.2	687.2	687.3	0.1
D	3,939[1]	140	1,339	3.2	690.3	690.3	690.9	0.6
E	4,875[1]	111	508	8.5	693.4	693.4	693.5	0.1
F	6,394[1]	193	955	4.5	706.5	706.5	706.5	0.0
Stream 5B37								
A	463[1]	51	272	7.5	688.8	686.6[3]	686.6	0.0
B	1,030[1]	67	292	7.0	693.6	693.6	693.6	0.0
C	2,223[1]	40	179	11.5	706.9	706.9	707.3	0.4
D	3,229[1]	54	205	10.0	712.9	712.9	713.0	0.1
Tributary to Stream 5B13								
A	325[2]	*	141	1.8	693.8[4]	693.8	693.8	0.0
Warden Creek								
A	83[3]	47	164	9.0	552.6	551.1[5]	551.5	0.4
B	1,780[3]	70	234	6.3	570.1	570.1	570.9	0.8
C	3,009[3]	49	167	4.6	587.2	587.2	587.2	0.0
D	3,895[3]	56	154	4.9	601.2	601.2	601.4	0.2
E	4,518[3]	83	125	6.1	608.0	608.0	608.2	0.2

[1]Feet above the confluence with White Rock Creek

[2]Feet above confluence with Stream 5B13

[3]Feet from the intersection with Wilson Creek Parkway

[4]Elevation computed without consideration of backwater effects from White Rock Creek

[5]Elevation computed without consideration of backwater effects from Wilson Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

STREAM 5B35 - STREAM 5B36 - STREAM 5B37 - TRIBUTARY TO STREAM 5B13 - WARDEN CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Watters Branch								
A	124	521	1,683	3.1	584.8	573.5[2]	574.5	1.0
B	1,142	116	611	8.3	584.8	574.6[2]	575.5	0.9
C	2,748	236	1,425	3.6	584.8	581.4[2]	582.4	1.0
D	5,707	115	932	5.4	590.7	590.7	591.3	0.6
E	6,597	122	908	5.2	593.4	593.4	593.6	0.2
F	8,674	65	638	6.9	600.2	600.2	600.4	0.2
G	10,037	52	516	8.6	605.5	605.5	605.8	0.3
H	11,669	69	619	6.4	612.3	612.3	612.5	0.2
I	13,032	81	617	6.4	618.1	618.1	618.2	0.1
J	14,466	77	573	6.0	623.7	623.7	623.7	0.0
K	16,692	70	691	5.0	634.2	634.2	635.2	1.0
L	17,778	85	645	5.4	639.2	639.2	639.5	0.3
M	18,890	113	702	3.9	642.1	642.1	642.2	0.1
N	20,672	46	381	7.1	654.7	654.7	655.3	0.6
O	21,958	82	562	4.8	661.9	661.9	662.1	0.2
P	23,072	62	511	5.3	664.8	664.8	665.1	0.3
Q	24,882	50	331	6.0	671.1	671.1	671.4	0.3
R	26,818	72	249	5.3	683.5	683.5	683.6	0.1
S	28,381	105	285	4.6	690.8	690.8	690.9	0.1
West Rowlett Creek								
A	68	879	3,886	3.2	609.2	607.1[2]	608.1	1.0
B	1,272	496	1,936	6.7	609.2	609.2	610.2	1.0
C	2,681	87	1,100	11.8	611.7	611.7	612.5	0.8

[1]Feet above confluence with Rowlett Creek

[2]Elevation computed without consideration of backwater effects from Rowlett Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WATTERS BRANCH - WEST ROWLETT CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
West Rowlett Creek (Cont'd)								
D	4,779[1]	459	2,935	4.4	619.7	619.7	620.7	1.0
E	6,110[1]	121	1,589	5.4	623.5	623.5	624.5	1.0
F	7,020[1]	118	1,363	6.1	625.7	625.7	626.6	0.9
G	8,083[1]	171	1,449	5.8	629.5	629.5	630.5	1.0
H	9,132[1]	297	2,231	3.8	633.9	633.9	634.9	1.0
I	13,900[1]	111	1,287	9.5	653.1	653.1	654.0	0.9
J	16,447[1]	187	2,229	5.5	662.5	662.5	663.2	0.7
K	20,300[1]	146	682	15.0	678.0	678.0	678.7	0.7
L	23,220[1]	88	888	5.7	691.0	691.0	691.4	0.4
M	26,570[1]	79	509	10.0	706.9	706.9	707.1	0.2
N	28,730[1]	338	1,673	3.0	725.0	725.0	725.5	0.5
White Rock Creek								
A	158,000[2]	229	3,339	8.4	606.5	606.5	607.5	1.0
B	159,059[2]	320	3,725	7.5	610.2	610.2	610.6	0.4
C	159,871[2]	509	6,172	4.5	613.9	613.9	614.1	0.2
D	161,981[2]	448	4,074	6.9	614.9	614.9	615.5	0.6
E	163,099[2]	510	3,755	7.5	617.2	617.2	617.2	0.0
F	164,004[2]	228	4,072	7.2	622.7	622.7	623.3	0.6
G	165,076[2]	491	6,267	4.7	625.7	625.7	626.2	0.5
H	166,011[2]	445	5,209	5.7	626.2	626.2	626.7	0.5
I	166,835[2]	628	5,296	5.6	627.0	627.0	627.8	0.8
J	168,047[2]	652	4,773	5.3	629.9	629.9	630.2	0.3

[1]Feet above confluence with Rowlett Creek

[2]Feet above confluence with Trinity River

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WEST ROWLETT CREEK - WHITE ROCK CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
White Rock Creek (Cont'd)								
K	168,928	390	3,259	7.8	631.5	631.5	632.1	0.6
L	169,889	487	4,226	6.0	633.3	633.3	633.6	0.3
M	171,029	521	4,168	6.1	635.4	635.4	635.8	0.4
N	171,912	544	4,973	5.1	636.7	636.7	637.3	0.6
O	172,750	567	4,322	5.4	637.8	637.8	638.1	0.3
P	174,177	330	2,410	9.8	640.9	640.9	641.0	0.1
Q	174,951	403	3,750	6.3	644.4	644.4	645.0	0.6
R	175,901	390	3,631	6.5	646.3	646.3	646.8	0.5
S	176,913	396	5,473	4.3	650.6	650.6	651.1	0.5
T	177,901	388	3,022	7.0	649.9	649.9	650.7	0.8
U	178,718	346	2,207	9.6	652.7	652.7	652.9	0.2
V	179,976	294	2,763	7.6	655.6	655.6	655.8	0.2
W	181,052	580	5,239	4.0	657.3	657.3	657.7	0.4
X	181,878	531	5,535	3.4	657.8	657.8	658.3	0.5
Y	183,083	299	3,691	4.5	665.7	665.7	665.8	0.1
Z	184,014	283	4,789	3.5	666.0	666.0	666.1	0.1
AA	184,953	221	3,311	5.0	666.0	666.0	666.2	0.2
AB	185,963	362	2,032	8.2	667.8	667.8	667.9	0.1
AC	186,931	204	2,393	7.0	671.9	671.9	672.0	0.1
AD	187,771	391	2,474	5.0	675.0	675.0	675.0	0.0
AE	188,941	423	2,149	5.7	681.1	681.1	682.0	0.9
AF	190,149	283	2,183	5.6	683.1	683.1	683.8	0.7
AG	191,008	373	2,483	4.9	686.1	686.1	686.4	0.3
AH	191,821	278	2,107	5.8	688.1	688.1	688.1	0.0

[1]Feet above confluence with Trinity River

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WHITE ROCK CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
White Rock Creek (Cont'd)								
AI	192,971[1]	245	1,943	5.3	692.0	692.0	692.6	0.6
AJ	193,950[1]	260	1,575	6.5	694.2	694.2	694.6	0.4
AK	195,227[1]	258	1,616	6.4	698.1	698.1	698.7	0.6
AL	196,107[1]	394	2,509	3.1	701.2	701.2	701.8	0.6
AM	196,856[1]	289	1,536	5.1	703.3	703.3	703.4	0.1
AN	197,545[1]	237	1,384	6.4	704.6	704.6	705.1	0.5
AO	198,857[1]	267	1,411	5.6	709.8	709.8	710.2	0.4
AP	199,988[1]	118	939	6.7	711.9	711.9	712.3	0.4
AQ	200,988[1]	228	877	7.2	716.2	716.2	716.2	0.0
AR	202,015[1]	215	1,457	4.3	722.2	722.2	722.7	0.5
AS	202,859[1]	464	2,463	1.8	724.2	724.2	724.9	0.7
AT	203,919[1]	420	2,336	1.9	726.6	726.6	726.6	0.0
AU	205,044[1]	211	920	4.9	727.5	727.5	727.6	0.1
AV	206,047[1]	102	236	10.4	730.1	730.1	730.1	0.0
AW	206,895[1]	72	302	8.1	734.7	734.7	734.7	0.0
AX	208,088[1]	84	292	8.4	740.0	740.0	740.0	0.0
White Rock Creek (East)								
A	3,400[2]	784	5,403	2.2	491.0	491.0	491.9	0.9
B	5,000[2]	642	4,140	2.9	492.7	492.7	493.7	1.0
C	6,600[2]	710	4,021	3.0	495.5	495.5	496.5	1.0
D	8,740[2]	508	2,948	4.1	500.8	500.8	501.8	1.0
E	10,440[2]	636	3,393	3.6	504.8	504.8	505.8	1.0
F	12,440[2]	760	3,506	3.5	509.7	509.7	510.5	0.8
G	13,550[2]	415	2,970	4.1	515.0	515.0	515.8	0.8

[1]Feet above confluence with Trinity River

[2]Feet above mouth

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WHITE ROCK CREEK - WHITE ROCK CREEK (EAST)

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
White Rock Creek (East) (Cont'd)								
H	14,830[1]	231	1,704	5.6	518.1	518.1	519.1	1.0
I	15,670[1]	305	3,109	3.1	523.5	523.5	524.5	1.0
J	16,340[1]	100	1,099	8.7	523.6	523.6	524.3	0.7
K	17,530[1]	73	918	6.7	526.8	526.8	527.7	0.9
L	19,640[1]	85	756	8.2	532.4	532.4	533.2	0.8
M	21,260[1]	57	602	10.3	540.3	540.3	540.3	0.0
N	23,080[1]	81	1,139	5.4	551.4	551.4	552.4	1.0
O	24,650[1]	87	668	9.3	556.6	556.6	556.7	0.1
P	27,000[1]	74	693	8.9	571.0	571.0	571.0	0.0
Q	28,550[1]	72	850	7.3	583.0	583.0	583.0	0.0
White Rock Creek Tributary 1								
A	1,120[2]	72	107	6.9	696.7	696.7	696.7	0.0
B	2,243[2]	36	124	6.0	704.4	704.4	704.7	0.3
C	2,715[2]	35	149	5.0	706.9	706.9	707.0	0.1
White Rock Creek Tributary 2								
A	855[3]	74	175	5.3	697.9	697.9	697.9	0.0
B	1,973[3]	36	129	7.2	709.3	709.3	710.1	0.8
White Rock Creek Tributary 3								
A	998[3]	144	470	6.5	703.2	703.2	703.3	0.1
B	2,014[3]	83	415	7.4	709.2	709.2	709.6	0.4
C	2,960[3]	109	634	4.8	717.7	717.7	717.7	0.0
D	4,087[3]	103	910	3.4	728.5	728.5	728.7	0.2
E	4,634[3]	63	402	7.6	728.7	728.7	728.9	0.2

[1]Feet above mouth

[2]Feet above confluence with Stream 5B36

[3]Feet above confluence with White Rock Creek

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WHITE ROCK CREEK (EAST) - WHITE ROCK CREEK TRIBUTARY 1 - WHITE ROCK CREEK TRIBUTARY 2 - WHITE ROCK CREEK TRIBUTARY 3

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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
Wilson Creek								
A	32,650[1]	1,550	14,420	2.1	522.2	522.2	523.1	0.9
B	39,850[1]	2,948	19,564	1.6	524.8	524.8	525.6	0.8
C	44,550[1]	1,585	10,956	2.8	527.3	527.3	528.1	0.8
D	47,470[1]	1,700	10,847	2.9	530.6	530.6	531.5	0.9
E	50,550[2]	860	7,373	4.2	538.1	538.1	538.4	0.3
F	53,245[2]	460	4,604	6.7	542.8	542.8	543.3	0.5
G	56,179[1]	440	4,671	6.6	543.8	543.8	544.8	1.0
H	58,344[1]	2,000	12,817	2.4	544.7	544.7	545.4	0.7
I	58,714[1]	1,600	13,720	2.9	546.9	546.9	547.3	0.4
J	61,016[1]	1,030	7,097	7.5	548.1	548.1	548.7	0.6
K	61, 22[1]	950	6,547	6.3	548.5	548.5	549.3	0.8
L	65,251[1]	1,180	8,300	4.8	552.3	552.3	553.2	0.9
M	68,006[1]	540	3,808	6.2	556.2	556.2	556.2	0.0
N	68,429[1]	850	7,646	3.1	559.0	559.0	559.2	0.2
O	76,560[1]	1,398	8,946	2.6	568.5	568.5	569.0	0.5
P	78,335[1]	700	5,516	4.2	572.7	572.7	572.9	0.2
Q	85,524[1]	1,017	5,457	4.5	579.0	579.0	579.1	0.1
R	88,800[1]	1,166	4,948	5.0	582.8	582.8	583.4	0.6
S	93,950[1]	1,600	8,956	2.8	594.1	594.1	595.0	0.9
T	97,050[1]	160	8,177	2.4	600.4	600.4	600.6	0.2
U	99,275[1]	879	2,818	7.0	602.0	602.0	602.1	0.1
V	102,200[1]	761	4,326	4.6	610.6	610.6	611.1	0.5
W	107,400[1]	584	2,887	6.8	622.7	622.7	623.5	0.8

[1]Feet above confluence with East Fork Trinity River

[2]Follows Profile Baseline

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WILSON CREEK

FLOODING SOURCE		FLOODWAY			1-PERCENT-ANNUAL-CHANCE 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**
Wilson Creek (Cont'd)								
X	112,450	123	1,769	7.4	634.9	634.9	635.3	0.4
Y	113,375	124	1,831	7.1	636.9	636.9	637.4	0.5
Z	114,940	104	1,510	8.6	639.8	639.8	640.2	0.4
AA	115,600	113	1,445	9.0	641.6	641.6	641.8	0.2
AB	116,580	131	1,588	8.2	644.8	644.8	644.9	0.1

[1]Feet above confluence with East Fork Trinity River

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

FLOODWAY DATA

WILSON CREEK

The area between the floodway and 1-percent annual-chance-floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1-percent-annual-chance flood by more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1.

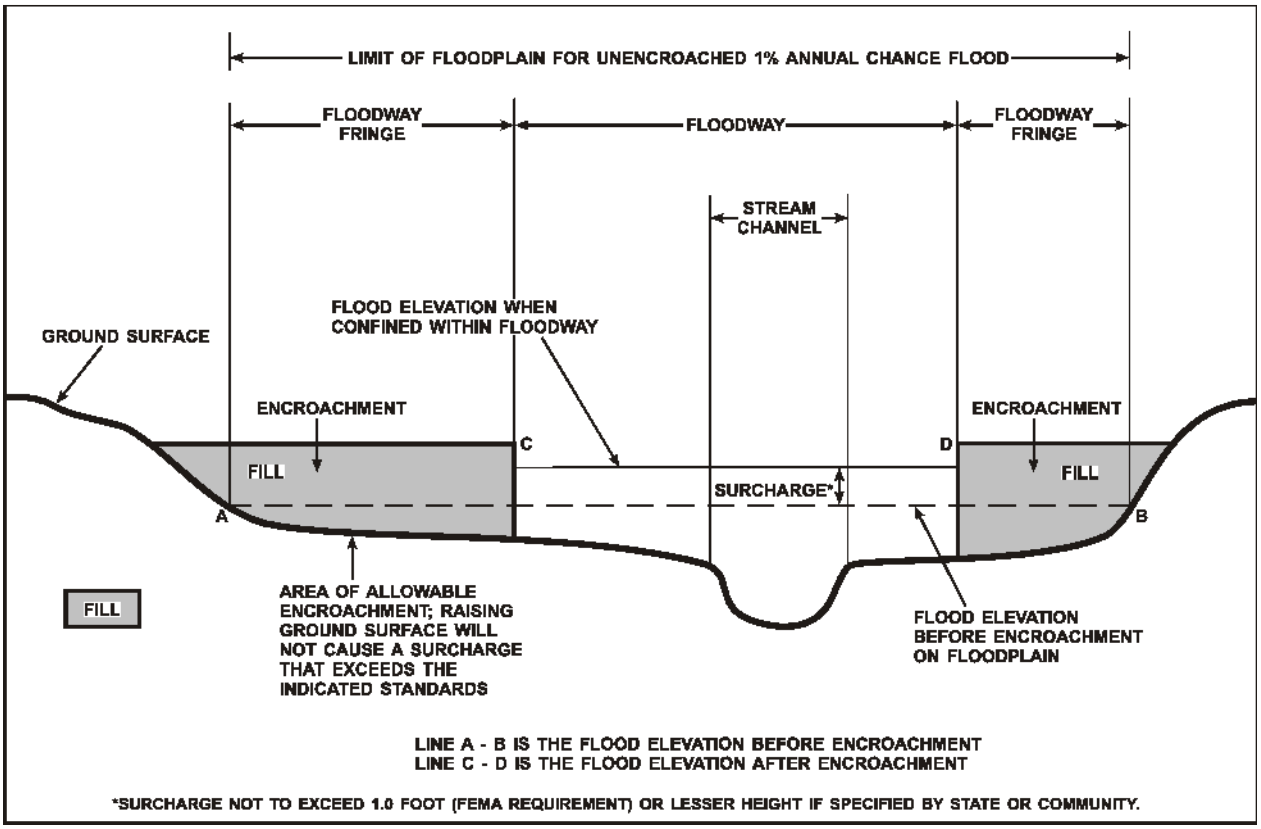

Figure 1 - Floodway Schematic

5.0 INSURANCE APPLICATIONS

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

Zone A

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

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot 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, and to areas of 1-percent annual chance flooding where average depths are less than 1 foot, areas of 1-percent annual chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1- percent annual chance flood by levees. No base flood elevations or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

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

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

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

The current FIRM presents flooding information for the entire geographic area of Collin County. Previously, separate Flood Hazard Boundary Maps and/or FIRMs were prepared for each identified flood-prone incorporated community 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, up to and including this countywide FIS, are presented in Table 6, "Community Map History."

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Allen, City of	December 20, 1974	None	June 1, 1978	April 2, 1991
Anna, City of	April 23, 1976	None	April 2, 1991	
Blue Ridge, Town of	July 11, 1975	None	April 2, 1991	
Carrollton, City of	June 28, 1974	June 6, 1978	July 16, 1980	January 2, 1991 November 15, 1984
Celina, City of	April 12, 1974	February 20, 1976	November 1, 1979	April 2, 1991
Dallas, City of	January 10, 1975	February 11, 1977 July 8, 1980	March 16, 1983	July 2, 1991

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Fairview, Town of	January 10, 1975	None	November 1, 1979	April 2, 1991
Farmersville, City of	July 11, 1975	None	April 2, 1991	
Frisco, City of	January 24, 1975	None	June 18, 1980	April 2, 1991
Garland, City of	April 16, 1971	None	July 1, 1974	August 15, 1990 April 15, 1988 April 30, 1986 March 15, 1984 November 1, 1979 October 3, 1975
Josephine, City of	May 28, 1976	None	January 2, 1980	April 2, 1991

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Lavon, Town of	May 23, 1978	November 20, 2979	April 2, 1991	May 13, 1991
Lowry Crossing, City of	December 6, 1977 (Collin County)	None	March 16, 1981 (Collin County)	August 22, 1991 April 2, 1991
Lucas, City of	April 2, 1991	None	April 2, 1991	
McKinney, City of	May 24, 1974	May 28, 1976	June 18, 1980	April 2, 1991
Melissa, City of	April 2, 1991	None	April 2, 1991	
Murphy, City of	December 7, 1973	August 20, 1976 November 22, 1977	April 1, 1980	April 2, 1991

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Nevada, City of	January 19, 1996	None	January 19, 1996	
New Hope, City of	January 19, 1996	None	January 19, 1996	
Parker, City of	October 1, 1976	September 6, 1977	August 15, 1979	April 2, 1991
Plano, City of	May 10, 1974	None	January 2, 1980	April 2, 1991 August 19, 1987 February 19, 1986 August 5, 1985
Princeton, City of	July 25, 1975	None	March 16, 1988	April 2, 1991
Prosper, Town of	June 21, 1974	June 30, 1976	May 4, 1982	April 2, 1991
Richardson, City of	May 24, 1974	May 17, 1977	December 4, 1979	July 2, 1991

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Royse City, City of	June 28, 1974	June 25, 1976	July 16, 1980	
Sachse, City of	February 22, 1974	None	September 1,1978	
St. Paul, Town of	June 6, 1978	None	April 2, 1991	
Van Alstyne, Town of	May 18, 1992	None	May 18, 1992	
Westminster, Town of	November 5, 1976	None	April 2, 1991	
Weston, City of	May 23, 1978	November 13, 1979	April 2, 1991	

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX
AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISION DATE(S)	FLOOD INSURANCE RATE MAP EFFECTIVE DATE	FLOOD INSURANCE RATE MAP REVISION DATE(S)
Wylie, City of	November 12, 1976	None	June 4, 1980	April 2, 1991 March 2, 1989
Unincorporated Areas, Collin County	December 6, 1977	None	March 16, 1981	April 2, 1991
	Converted to vector digital data by a digitizing process	None	September 4, 1991	

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

COLLIN COUNTY, TX AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

7.0 OTHER STUDIES

FISs have been completed for Denton and Rockwall Counties and is currently being prepared for Dallas County. The results of these studies will be in general agreement with the results of this study.

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

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.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting FEMA Region VI, Federal Regional and Mitigation Division, 800 North Loop 288, Denton, Texas 76209.

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