FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 1 OF 3

BURNET COUNTY, TEXAS

AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BERTRAM, CITY OF*	481609
BURNET, CITY OF	480092
BURNET COUNTY, UNINCORPORATED AREAS	481209
COTTONWOOD SHORES, CITY OF	481614
GRANITE SHOALS, CITY OF	481149
HIGHLAND HAVEN, CITY OF	481676
HORSESHOE BAY, CITY OF	480149
MARBLE FALLS, CITY OF	480093
MEADOWLAKES, CITY OF	481613

*No Special Flood Hazard Areas Identified

FEMA

PRELIMINARY
02/15/2017

REVISED:

FLOOD INSURANCE STUDY NUMBER
48053CV001D

Version Number 2.3.3.3

TABLE OF CONTENTS
Volume 1

Volume 1, continued

Figures

Tables

Volume 2

Volume 2, continued

Tables

Exhibits

Volume 3
Exhibits

Published Separately

Flood Insurance Rate Map (FIRM)

FLOOD INSURANCE STUDY REPORT
BURNET COUNTY, TEXAS

SECTION 1.0 – INTRODUCTION

1.1 The National Flood Insurance Program

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

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

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

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

Participation in the NFIP is based on an agreement between local communities and the Federal Government. If a community adopts and enforces floodplain management regulations to reduce future flood risks to new construction and substantially improved structures in Special Flood Hazard Areas (SFHAs), the Federal Government will make flood insurance available within the community as a financial protection against flood losses. The community's floodplain management regulations must meet or exceed criteria established in accordance with Title 44 Code of Federal Regulations (CFR) Part 60, *Criteria for Land Management and Use*.

SFHAs are delineated on the community's Flood Insurance Rate Maps (FIRMs). Under the NFIP, buildings that were built before the flood hazard was identified on the community's FIRMs are generally referred to as "Pre-FIRM" buildings. When the NFIP was created, the U.S. Congress recognized that insurance for Pre-FIRM buildings would be prohibitively expensive if the premiums were not subsidized by the Federal

Government. Congress also recognized that most of these floodprone buildings were built by individuals who did not have sufficient knowledge of the flood hazard to make informed decisions. The NFIP requires that full actuarial rates reflecting the complete flood risk be charged on all buildings constructed or substantially improved on or after the effective date of the initial FIRM for the community or after December 31, 1974, whichever is later. These buildings are generally referred to as "Post-FIRM" buildings.

1.2 Purpose of this Flood Insurance Study Report

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

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

1.3 Jurisdictions Included in the Flood Insurance Study Project

This FIS Report covers the entire geographic area of Burnet County, Texas.

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

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

Table 1: Listing of NFIP Jurisdictions

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Bertram, City of[1]	481609	12070205	48053C0375F 48053C0525G	
Burnet, City of	480092	12070205, 12090205	48053C0338G 48053C0339G 48053C0340G 48053C0350F 48053C0460G 48053C0480G	

Table 1: Listing of NFIP Jurisdictions, continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Burnet, City of (continued)	480092	12070205, 12090205	48053C0500G	
Burnet County, Unincorporated Areas	481209	12070203, 12070205, 12090201, 12090205, 12090206	48053C0025F 48053C0050F 48053C0075F 48053C0100F 48053C0125F 48053C0150F 48053C0175F 48053C0200F 48053C0225F 48053C0250F 48053C0275F 48053C0300F 48053C0325G 48053C0338G 48053C0339G 48053C0340G 48053C0350F 48053C0375F 48053C0400F 48053C0425F[2] 48053C0450F 48053C0455G 48053C0460G 48053C0465G 48053C0470G 48053C0480G 48053C0500G 48053C0525G 48053C0550F 48053C0560F 48053C0576G 48053C0577G 48053C0578G 48053C0579G 48053C0581G	

Table 1: Listing of NFIP Jurisdictions, continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Burnet County, Unincorporated Areas (continued)	481209	12070203, 12070205, 12090201, 12090205, 12090206	48053C0582G 48053C0583G 48053C0584G 48053C0590G 48053C0595G 48053C0605G 48053C0610G 48053C0615G 48053C0620G 48053C0630G 48053C0640G 48053C0650F[2] 48053C0675G 48053C0681G 48053C0682G 48053C0683G 48053C0684G 48053C0700G 48053C0705F 48053C0725F[2]	
Cottonwood Shores, City of	481614	12090201, 12090205	48053C0579G 48053C0590G	
Granite Shoals, City of	481149	12090201	48053C0560F 48053C0576G 48053C0578G	
Highland Haven, City of	481676	12090201	48053C0560F	
Horseshoe Bay, City of	480149	12090201, 12090205	48053C0560F 48053C0578G 48053C0590G	
Marble Falls, City of	480093	12090205	48053C0470G 48053C0581G 48053C0582G 48053C0583G 48053C0584G 48053C0595G 48053C0605G	

Table 1: Listing of NFIP Jurisdictions, continued

Community	CID	HUC-8 Sub-Basin(s)	Located on FIRM Panel(s)	If Not Included, Location of Flood Hazard Data
Meadowlakes, City of	481613	12090205	48053C0583G 48053C0595G	

[1] No Special Flood Hazard Areas Identified

[2] Panel Not Printed

1.4 Considerations for using this Flood Insurance Study Report

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

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

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

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

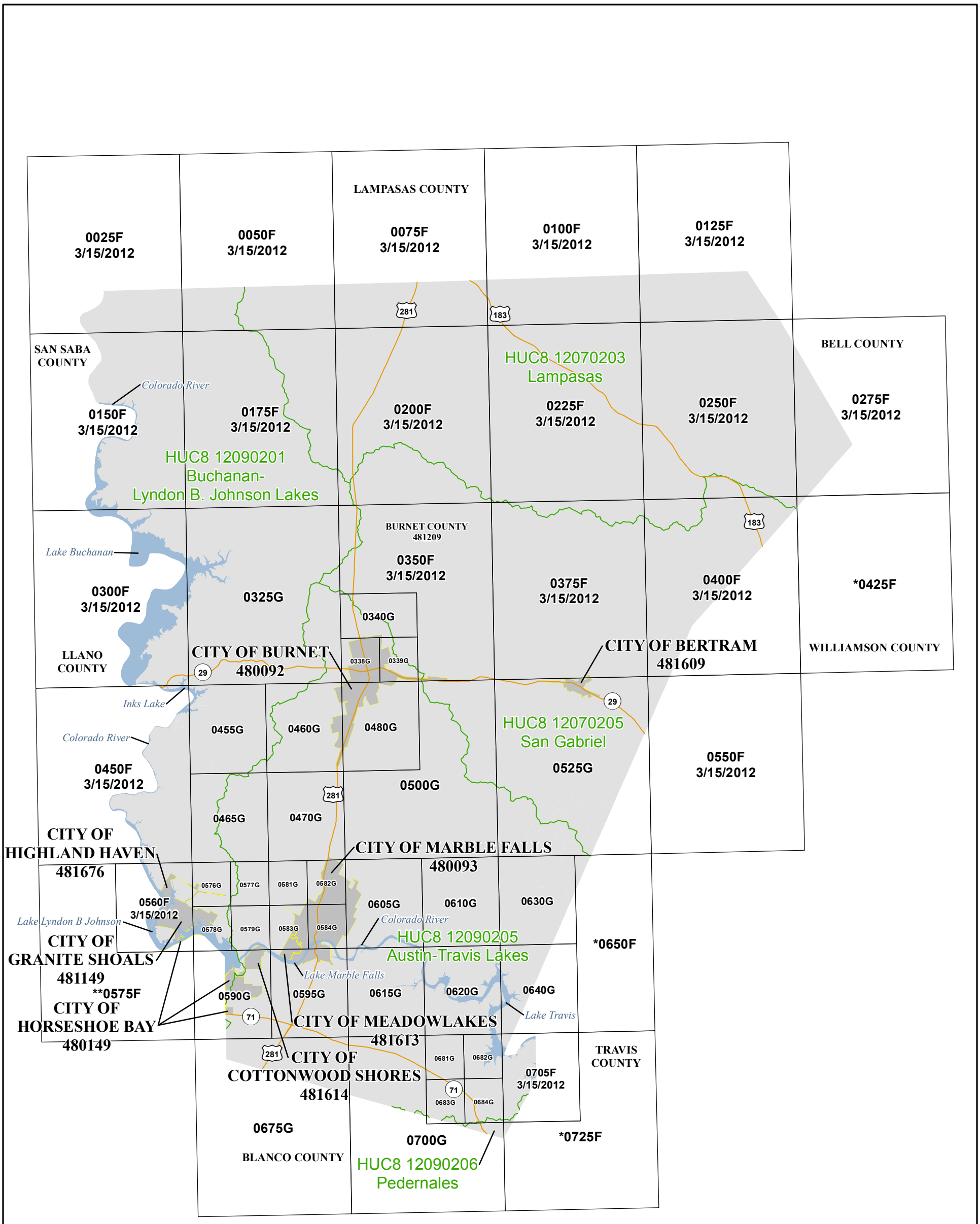
- New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for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

The initial Countywide FIS Report for Burnet County became effective on November 16, 1990. Refer to Table 28 for information about subsequent revisions to the FIRMs.

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

The FIRM Index in Figure 1 shows the overall FIRM panel layout within Burnet County, and also displays the panel number and effective date for each FIRM panel in the county. Other information shown on the FIRM Index includes community boundaries, flooding sources, watershed boundaries, and USGS HUC-8 codes.

Figure 1: FIRM Panel Index



ATTENTION: The corporate limits shown on this FIRM Index are based on the best information available at the time of publication. As such, they may be more current than those shown on FIRM panels issued before March 15, 2012.

N

1 inch = 25,000 feet 1:300,000

feet 0 7,000 14,000 28,000 42,000 56,000

Map Projection:
Lambert Conformal Conic, State Plane Texas Central Zone
FIPS 4203; North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

* PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS
** PANEL NOT PRINTED - AREA OUTSIDE COUNTY BOUNDARY

COUNTY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

BURNET COUNTY, TEXAS and Incorporated Areas

PANELS PRINTED:

0025, 0050, 0075, 0100, 0125, 0150, 0175, 0200, 0225, 0250, 0275, 0300, 0325, 0338, 0339, 0340, 0350, 0375, 0400, 0450, 0455, 0460, 0465, 0470, 0480, 0500, 0525, 0550, 0560, 0576, 0577, 0578, 0579, 0581, 0582, 0583, 0584, 0590, 0595, 0605, 0610, 0615, 0620, 0630, 0640, 0675, 0681, 0682, 0683, 0684, 0700, 0705

FEMA

PRELIMINARY
MAP NUMBER
48053CIND0D

MAP REVISED

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

Figure 2: FIRM Notes to Users

NOTES TO USERS

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

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

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

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

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

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

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

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

Figure 2. FIRM Notes to Users

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

PROJECTION INFORMATION: The projection used in the preparation of the map was Lambert Conformal Conic, State Plane Texas Central Zone FIPS 4203. The horizontal datum was the North American Datum of 1983 NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the FIRM.

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

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

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

BASE MAP INFORMATION: Base map information shown on the FIRM was provided by NFHL dated 2014, and CAPCOG, dated 2014 and 2016. For information about base maps, refer to Section 6.2 “Base Map” in this FIS Report.

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

NOTES FOR FIRM INDEX

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

Figure 2. FIRM Notes to Users

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

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

Figure 3: Map Legend for FIRM

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

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

Figure 3: Map Legend for FIRM

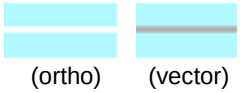
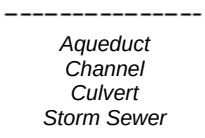
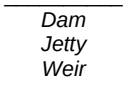
	Regulatory Floodway determined in Zone AE.
OTHER AREAS OF FLOOD HAZARD	
	Shaded Zone X: Areas of 0.2% annual chance flood hazards and areas of 1% annual chance flood hazards with average depths of less than 1 foot or with drainage areas less than 1 square mile.
	Future Conditions 1% Annual Chance Flood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

Figure 3: Map Legend for FIRM

	Levee, Dike, or Floodwall
Bridge	Bridge
COASTAL BARRIER RESOURCES SYSTEM (CBRS) AND OTHERWISE PROTECTED AREAS (OPA): *CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.*	
CBRS AREA 09/30/2009	Coastal Barrier Resources System Area: Labels are shown to clarify where this area shares a boundary with an incorporated area or overlaps with the floodway.
OTHERWISE PROTECTED AREA 09/30/2009	Otherwise Protected Area
REFERENCE MARKERS	
22.0	River mile Markers
CROSS SECTION & TRANSECT INFORMATION	
B 20.2	Lettered Cross Section with Regulatory Water Surface Elevation (BFE)
5280 21.1	Numbered Cross Section with Regulatory Water Surface Elevation (BFE)
17.5	Unlettered Cross Section with Regulatory Water Surface Elevation (BFE)
8	Coastal Transect
	Profile Baseline: Indicates the modeled flow path of a stream and is shown on FIRM panels for all valid studies with profiles or otherwise established base flood elevation.
	Coastal Transect Baseline: Used in the coastal flood hazard model to represent the 0.0-foot elevation contour and the starting point for the transect and the measuring point for the coastal mapping.
513	Base Flood Elevation Line
ZONE AE (EL 16)	Static Base Flood Elevation value (shown under zone label)

Figure 3: Map Legend for FIRM

ZONE AO (DEPTH 2)	Zone designation with Depth
ZONE AO (DEPTH 2) (VEL 15 FPS)	Zone designation with Depth and Velocity
BASE MAP FEATURES	
Missouri Creek	River, Stream or Other Hydrographic Feature
234	Interstate Highway
234	U.S. Highway
234	State Highway
234	County Highway
MAPLE LANE	Street, Road, Avenue Name, or Private Drive if shown on Flood Profile
RAILROAD	Railroad
	Horizontal Reference Grid Line
	Horizontal Reference Grid Ticks
+	Secondary Grid Crosshairs
Land Grant	Name of Land Grant
7	Section Number
R. 43 W. T. 22 N.	Range, Township Number
$^{42}76^{000m}$E	Horizontal Reference Grid Coordinates (UTM)
365000 FT	Horizontal Reference Grid Coordinates (State Plane)
80° 16' 52.5"	Corner Coordinates (Latitude, Longitude)

SECTION 2.0 – FLOODPLAIN MANAGEMENT APPLICATIONS

2.1 Floodplain Boundaries

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

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

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

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

Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic

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

Table 2: Flooding Sources Included in this FIS Report

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Alligator Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090205	7.50		N	A	2014
Backbone Creek	Burnet County, Unincorporated Areas	Just upstream of Backbone Creek Lane	Confluence of Mud Spring Creek	12090205	2.78		N	A	2015
Backbone Creek	Burnet County, Unincorporated Areas; Marble Falls, City of; Meadowlakes, City of	Confluence with Colorado River	Confluence with Coldspring Creek	12090205	2.60		Y	AE, X	2015
Backbone Creek[1]	Burnet County, Unincorporated Areas	Confluence with Coldspring Creek	1.46 miles upstream of the confluence of Sparerib Creek	12090205	3.76		Y	AE, X	2012
Backbone Creek	Burnet County, Unincorporated Areas	1.46 miles upstream of the confluence of Sparerib Creek	Just upstream of Backbone Creek Lane	12090205	2.77		Y	AE, X	1990
Backbone Creek Tributary 1	Burnet County, Unincorporated Areas; Marble Falls, City of; Meadowlakes, City of	Confluence with Backbone Creek	1,668 feet upstream of S Avenue S	12090205	0.51		Y	AE, X	2015
Backbone Creek Tributary 1	Burnet County, Unincorporated Areas	1,668 feet upstream of S Avenue S	2,400 feet upstream of Granite Mountain Trail	12090205	0.56		N	A	1990
Backbone Creek Tributary 2	Burnet County, Unincorporated Areas	0.875 miles upstream of Dam	1,122 feet upstream of Tokim Drive	12090205	0.81		N	A	2015
Backbone Creek Tributary 2	Burnet County, Unincorporated Areas; Marble Falls, City of	Confluence with Backbone Creek	1.14 miles upstream of FM 1431	12090205	1.34		Y	AE, X	2015
Backbone Creek Tributary 2	Burnet County, Unincorporated Areas; Marble Falls, City of	1.14 miles upstream of FM 1431	0.875 miles upstream of Dam	12090205	1.29		Y	AE, X	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Bear Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070205	9.60		N	A	1990
Beaver Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Buchanan)	7.18 miles upstream of the confluence with Colorado River (Lake Buchanan)	12090201	7.18		N	A	1990
Belaire Creek	Burnet County, Unincorporated Areas; Granite Shoals, City of; Horseshoe Bay, City of	Confluence with Colorado River (Lake Lyndon B. Johnson)	289 feet upstream of Oakhill Drive	12090201	1.28		Y	AE, X	1990
Berry Creek	Burnet County, Unincorporated Areas	Burnet/Williamson County boundary	3.70 miles upstream of Burnet/Williamson County boundary	12070205	3.70		N	A	1990
Clear Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Inks Lake)	8.37 miles upstream of the confluence with Colorado River (Inks Lake)	12090201	8.37		N	A	1990
Coldspring Creek	Burnet County, Unincorporated Areas	At CR 122 (downstream crossing)	0.56 miles upstream of CR 122 (upstream crossing)	12090205	0.56		N	A	2015
Coldspring Creek	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	At CR 122 (downstream crossing)	12090205	3.53		Y	AE, X	1990
Coldspring Tributary 1	Burnet County, Unincorporated Areas	Confluence with Coldspring Creek	0.52 miles upstream of the confluence with Coldspring Creek	12090205	0.52		N	A	2015
Coldspring Tributary 2	Burnet County, Unincorporated Areas	Confluence with Coldspring Creek	2,189 feet upstream of Railroad	12090205	0.46		N	A	2015

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Colorado River	Burnet County, Unincorporated Areas	Not provided	At the Burnet/Lampasas/San Saba County boundaries	12090201	11.91		N	AE, X	1990
Colorado River	Burnet County, Unincorporated Areas	Not provided	At Roy Inks Dam	12090201	9.27		N	AE, X	1990
Colorado River (Inks Lake)	Burnet County, Unincorporated Areas	At Roy Inks Dam	At Buchanan Dam	12090201	4.12		N	AE, X	1990
Colorado River (Lake Buchanan)	Burnet County, Unincorporated Areas	At Buchanan Dam	Not provided	12090201	1.99		N	AE, X	1990
Colorado River (Lake Lyndon B. Johnson)	Burnet County, Unincorporated Areas; Granite Shoals, City of; Highland Haven, City of; Horseshoe Bay, City of;	At Alvin Wirtz Dam	Not provided	12090201	12.03		N	AE, X	1990
Colorado River (Lake Marble Falls)	Burnet County, Unincorporated Areas; Cottonwood Shores, City of; Marble Falls, City of; Meadowlakes, City of	At Max Starcke Dam	At Alvin Wirtz Dam	12090205	26.24		N	AE, X	1990
Colorado River (Lake Travis)	Burnet County, Unincorporated Areas	At the Burnet/Travis County boundary	At Max Starcke Dam	12090205	15.59		N	AE, X	2007
Cow Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090205	8.96		N	A	2014
Daugherty Branch	Burnet County, Unincorporated Areas	2.31 miles upstream with Hamilton Creek	2.76 miles upstream with Hamilton Creek	12090205	0.45		N	A	2015
Daugherty Branch	Burnet, City of	Confluence with Hamilton Creek	0.99 miles upstream of the confluence with Hamilton Creek	12090205	0.99		Y	AE	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Daugherty Branch	Burnet, City of	0.99 miles upstream of the confluence with Hamilton Creek	1.53 miles upstream with Hamilton Creek	12090205	0.54		N	AO	1990
Daugherty Branch	Burnet, City of; Burnet County, Unincorporated Areas	1.86 miles upstream with Hamilton Creek	2.31 miles upstream with Hamilton Creek	12090205	0.45		Y	AE	1990
Daugherty Branch (Reservoir Above SCS Dam No. 1)	Burnet, City of; Burnet County, Unincorporated Areas	1.53 miles upstream with Hamilton Creek	1.86 miles upstream with Hamilton Creek	12090205	0.33		N	AE	1990
Daugherty Branch Tributaries	Burnet, City of; Burnet County, Unincorporated Areas	N/A	N/A	12090205	1.75		N	A	2015
Deep Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Lyndon B. Johnson)	655 feet upstream of N Wirtz Dam Road	12090205	1.50		N	A	2015
Deer Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River	8.34 miles upstream of the confluence with Colorado River	12090201	8.34		N	A	1990
Delaware Creek	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	1,825 feet upstream of CR 100 (upstream crossing)	12090205	3.02		N	A	2015
Delaware Creek Tributary 1	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Delaware Creek	215 feet upstream of CR 100	12090205	0.71		N	A	2015
Double Horn Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090205	13.76		N	A	2015
Dry Branch	Burnet County, Unincorporated Areas	520 feet upstream of Railroad	2,280 feet upstream of Railroad	12090205	0.32		N	A	2015
Dry Branch[1]	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	75 feet upstream of Paseo De Vaca	12090205	2.54		Y	AE, X	2012

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Dry Branch	Burnet County, Unincorporated Areas	75 feet upstream of Paseo De Vaca	520 feet upstream of Railroad	12090205	2.47		Y	AE, X	1990
Dry Branch Tributary 1	Burnet County, Unincorporated Areas	Confluence with Dry Branch	50 feet downstream of Dry Creek Trail	12090205	0.57		N	A	2015
Dry Branch Tributary 2	Burnet County, Unincorporated Areas	Confluence with Dry Branch	145 feet upstream of Lake Drive	12090205	0.73		N	A	2015
Dry Creek	Burnet County, Unincorporated Areas	1,870 feet upstream of the confluence of Dry Creek Tributary 1	1.43 miles upstream of the confluence of Dry Creek Tributary 1	12090205	1.78		N	A	2015
Dry Creek[1]	Burnet County, Unincorporated Areas	Confluence with Dry Branch	1,745 feet upstream of the confluence of Dry Creek Tributary 1	12090205	2.58		Y	AE, X	2012
Dry Creek	Burnet County, Unincorporated Areas	1,745 feet upstream of the confluence of Dry Creek Tributary 1	1,870 feet upstream of the confluence of Dry Creek Tributary 1	12090205	0.02		Y	AE, X	1990
Dry Creek Tributary 1	Burnet County, Unincorporated Areas	Confluence with Dry Creek	2,338 feet upstream of the confluence with Dry Creek	12090205	0.44		N	A	2015
Dry Creek Tributary 2	Burnet County, Unincorporated Areas	Confluence with Dry Creek	2,225 feet upstream of the confluence with Dry Creek	12090205	0.42		N	A	2015
East Branch Clear Creek	Burnet County, Unincorporated Areas	Burnet/Williamson County boundary	1.35 miles upstream of the Burnet/Williamson County boundary	12070205	1.35		N	A	1990
East Fork Sulphur Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070203	32.57		N	A	1990
Elm Creek	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Colorado River (Lake Lyndon B. Johnson)	900 feet upstream of Little Elm Road	12090201	3.75		Y	AE, X	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Elm Creek	Burnet County, Unincorporated Areas	900 feet upstream of Little Elm Road	0.98 miles upstream of April Lane	12090201	1.03		N	A	1990
Epsy Creek	Burnet County, Unincorporated Areas	Burnet/Lampasas County boundary	1.92 miles upstream of the Burnet/Lampasas County boundary	12070203	1.92		N	A	1990
Flatrock Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090205	19.66		N	A	2015
Greenwood Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090201	2.73		N	A	1990
Hamilton Creek	Burnet County, Unincorporated Areas	1.21 miles upstream of the confluence of Stream HC(B)-4	1.93 miles upstream of the confluence of Stream HC(B)-4	12090205	0.74		N	A	2015
Hamilton Creek	Burnet, City of; Burnet County, Unincorporated Areas	560 feet downstream of Delaware Creek	1.21 miles upstream of the confluence of Stream HC(B)-4	12090205	8.32		Y	AE, X	1990
Hamilton Creek (downstream) and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090205	29.96		N	A	2015
Hamilton Creek Tributary 1	Burnet County, Unincorporated Areas	0.79 miles upstream of the confluence with Hamilton Creek	1.52 miles upstream of the confluence with Hamilton Creek	12090205	0.73		N	A	2015
Hamilton Creek Tributary 1-1	Burnet County, Unincorporated Areas	Confluence with Hamilton Creek Tributary 1	1,467 feet upstream of the confluence with Hamilton Creek Tributary 1	12090205	0.28		N	A	2015
Hamilton Creek Tributary 5	Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	1.03 miles upstream of the confluence with Hamilton Creek	12090205	1.03		N	A	2015

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Hamilton Creek Tributary 6	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	1.73 miles upstream of the confluence with Hamilton Creek	12090205	1.73		N	A	2015
Hamilton Creek Tributary 7	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	2,410 feet upstream of the confluence with Hamilton Creek	12090205	0.46		N	A	2015
Hamilton Creek Tributary 8	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	0.71 miles upstream of the confluence with Hamilton Creek	12090205	0.71		N	A	2015
Hamilton Creek Tributary 9	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	1.42 miles upstream of the confluence with Hamilton Creek	12090205	1.42		N	A	2015
Hamilton Creek Tributary 10	Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	2,082 feet upstream of the confluence with Hamilton Creek	12090205	0.39		N	A	2015
Hamilton Creek Tributary 11	Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	2,011 feet upstream of the confluence with Hamilton Creek	12090205	0.38		N	A	2015
Haynie Branch	Burnet, City of; Burnet County, Unincorporated Areas	260 feet upstream of Geneva Lane	1,205 feet upstream of Geneva Lane	12090205	0.18		N	A	2015
Haynie Branch	Burnet, City of	Confluence with Hamilton Creek	260 feet upstream of Geneva Lane	12090205	1.93		Y	AE	1990
Hickory Creek	Burnet County, Unincorporated Areas	2.31 miles upstream of Colorado River (Lake Travis)	1.13 miles upstream of E FM 1431	12090205	2.59		N	A	2015
Honey Creek 1	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	4.42 miles upstream of the confluence with Hamilton Creek	12090205	4.42		N	A	2014

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Hylton Branch	Burnet County, Unincorporated Areas	Confluence with Colorado River (Inks Lake)	0.94 miles upstream of the confluence with Colorado River (Inks Lake)	12090201	0.94		N	A	1990
Lampasas River and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070203	99.00		N	A	1990
Little Cypress Creek	Burnet County, Unincorporated Areas	1.6 miles upstream of the confluence with Colorado River	1.56 miles upstream of Dam	12090205	5.22		N	AE, X	2015
Little Cypress Creek Tributary 1	Burnet County, Unincorporated Areas	Confluence with Little Cypress Creek	1,280 feet upstream of Electric Trail	12090205	1.50		N	AE, X	2015
Little Cypress Creek Tributary 2	Burnet County, Unincorporated Areas	Confluence with Little Cypress Creek	1.54 miles upstream of the confluence with Little Cypress Creek	12090205	1.54		N	AE, X	2015
Long Branch 1	Burnet County, Unincorporated Areas	Confluence with Honey Creek 1	665 feet upstream of Amber Oaks	12090205	2.01		N	A	2014
McCrea Branch	Burnet County, Unincorporated Areas	Burnet/Lampasas County boundary	1.39 miles upstream of the Burnet/Lampasas County boundary	12090201	1.39		N	A	1990
McDaniel Branch	Burnet County, Unincorporated Areas	Confluence with Mill Creek	2.74 miles upstream of the confluence with Mill Creek	12070203	2.74		N	A	1990
Mesquite Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070203	36.71		N	A	1990
Mill Creek (East)	Burnet County, Unincorporated Areas	Burnet/Bell County boundary	7.32 miles upstream of the Burnet/Bell County boundary	12070203	7.32		N	A	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Mill Creek (West)	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Lyndon B. Johnson)	1.61 miles upstream of the confluence with Colorado River (Lake Lyndon B. Johnson)	12090201	1.61		N	A	1990
Morgans Creek and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12090201	22.20		N	A	1990
Mud Spring Creek	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	1,896 feet upstream of the confluence with Backbone Creek	12090205	0.36		N	A	2015
North Fork San Gabriel River and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070205	85.05		N	A	1990
Peters Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River	2.68 miles upstream of the confluence with Colorado River	12090201	2.68		N	A	1990
Post Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Travis)	3.07 feet upstream of the confluence with Colorado River (Lake Travis)	12090205	3.07		N	A	2015
Rattlesnake Branch	Burnet County, Unincorporated Areas	Burnet/Lampasas County boundary	0.98 miles upstream of the Burnet/Lampasas County boundary	12090201	0.98		N	A	1990
South Fork San Gabriel River and Tributaries	Burnet County, Unincorporated Areas	N/A	N/A	12070205	22.85		N	A	1990
Sparerib Creek[1]	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	0.54 miles above Field Crest Drive	12090205	1.44		Y	AE, X	2012
Sparerib Creek	Burnet County, Unincorporated Areas	0.54 miles above Field Crest Drive	0.55 miles upstream of Railroad	12090205	2.46		Y	AE, X	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Spring Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Inks Lake)	5.61 miles upstream of the onfluence with Colorado River (Inks Lake)	12090201	5.61		N	A	1990
Station Creek and Tributaries	Burnet County, Unincorporated Areas; Granite Shoals, City of; Highland Haven, City of	N/A	N/A	12090201	12.75		N	A	1990
Stream BC-3	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	870 feet upstream of Timber Ridge Road	12090205	2.77		Y	AE, X	1990
Stream BC-3 Tributary 1	Burnet County, Unincorporated Areas	Confluence with Stream BC-3	1.24 miles upstream of the confluence with Stream BC-3	12090205	1.24		N	A	2015
Stream DC-1	Burnet County, Unincorporated Areas	Confluence with Dry Creek	0.71 miles upstream of the confluence with Dry Creek	12090205	0.71		Y	AE, X	1990
Stream DC-2[1]	Burnet County, Unincorporated Areas	Confluence with Dry Creek	1.06 miles upstream of the confluence with Dry Creek	12090205	1.06		Y	AE, X	2012
Stream DC-2	Burnet County, Unincorporated Areas	1.06 miles upstream of the confluence with Dry Creek	50 feet upstream of County Road 144B	12090205	1.09		Y	AE, X	1990
Stream EC-1	Granite Shoals, City of	Confluence with Elm Creek	22 feet upstream of E Greencastle Drive	12090201	0.98		Y	AE, X	1990
Stream EC-1	Burnet County, Unincorporated Areas; Granite Shoals, City of	22 feet upstream of E Greencastle Drive	637 feet upstream of E Greencastle Drive	12090201	0.12		N	A	1990
Stream EC-2	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Elm Creek	602 feet upstream of Forest Hill Drive	12090201	0.59		Y	AE, X	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Stream EC-2	Burnet County, Unincorporated Areas	602 feet upstream of Forest Hill Drive	295 feet upstream of Poverty Road	12090201	0.06		N	A	1990
Stream EC-3	Granite Shoals, City of	Confluence with Stream EC-4	1,360 feet upstream of the confluence with Elm Creek	12090201	0.26		Y	AE, X	1990
Stream EC-4	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Elm Creek	1.09 miles upstream of the confluence with Elm Creek	12090201	1.09		Y	AE, X	1990
Stream EC-5	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Elm Creek	42 feet upstream of Prairie Creek Road	12090201	0.85		Y	AE, X	1990
Stream EC-6	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Elm Creek	819 feet upstream of Windsong Street	12090201	1.33		Y	AE, X	1990
Stream EC-7	Burnet County, Unincorporated Areas; Granite Shoals, City of	Confluence with Elm Creek	0.75 miles upstream of the confluence with Elm Creek	12090201	0.75		Y	AE, X	1990
Stream HC(B)-1	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	732 feet upstream of S Water Street/U.S. Highway 281	12090205	1.86		Y	AE, X	1990
Stream HC(B)-2	Burnet, City of; Burnet County, Unincorporated Areas	0.90 miles upstream of the confluence with Hamilton Creek	1.09 miles upstream of the confluence with Hamilton Creek	12090205	1.09		N	A	2015
Stream HC(B)-2	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	0.90 miles upstream of the confluence with Hamilton Creek	12090205	0.90		Y	AE	1990
Stream HC(B)-3	Burnet, City of; Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	0.94 miles upstream of the confluence with Hamilton Creek	12090205	0.94		Y	AE, X	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Stream HC(B)-4	Burnet County, Unincorporated Areas	Confluence with Hamilton Creek	0.96 miles upstream of the confluence with Hamilton Creek	12090205	0.96		Y	AE, X	1990
Stream HC(B)-4 Tributary 1	Burnet County, Unincorporated Areas	Confluence with Stream HC(B)-4	2,302 feet upstream of the confluence with Stream HC(B)-4	12090205	0.44		N	A	2015
Stream HC(B)-4 Tributary 2	Burnet County, Unincorporated Areas	Confluence with Stream HC(B)-4	0.96 miles upstream of the confluence with Stream HC(B)-4	12090205	0.96		N	A	2015
Stream HC(B)-4 Tributary 2-1	Burnet County, Unincorporated Areas	Confluence with Stream HC(B)-4 Tributary 2	1,002 feet upstream of the confluence with Stream HC(B)-4 Tributary 2	12090205	0.19		N	A	2015
Stream WC-1	Burnet County, Unincorporated Areas	Confluence with Williams Creek	0.51 miles upstream of FM 1980	12090205	0.97		Y	AE, X	1990
Stream WC-1 Tributary 1	Burnet County, Unincorporated Areas	Confluence with Stream WC-1	2,522 feet upstream of the confluence with Stream WC-1	12090205	0.48		N	A	2015
Sycamore Branch	Burnet County, Unincorporated Areas	Confluence with Colorado River	0.69 miles upstream of the confluence with Colorado River	12090201	0.69		N	A	1990
Sycamore Creek	Burnet County, Unincorporated Areas	Confluence with Little Cypress Creek	2,310 feet upstream of the confluence with Sycamore Creek Tributary 2	12090205	1.75		N	AE, X	2015
Sycamore Creek Tributary 1	Burnet County, Unincorporated Areas	Confluence with Sycamore Creek	2,216 feet upstream of the confluence with Sycamore Creek	12090205	0.42		N	AE, X	2015
Sycamore Creek Tributary 2	Burnet County, Unincorporated Areas	Confluence with Sycamore Creek	2,195 feet upstream of the confluence with Sycamore Creek	12090205	0.42		N	AE, X	2015

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Sycamore Creek 1	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Travis)	0.98 miles upstream of the confluence of Sycamore Creek 1 Tributary 1	12090205	6.05		N	A	2015
Sycamore Creek 1 Tributary 1	Burnet County, Unincorporated Areas	Confluence with Sycamore Creek 1	1,500 feet upstream of Sycamore Creek 1	12090205	0.28		N	A	2015
Sycamore Springs Creek	Burnet County, Unincorporated Areas	Burnet/Williamson County boundary	3.21 miles upstream of the Burnet/Williamson County boundary	12070205	3.21		N	A	1990
Tiger Creek	Burnet County, Unincorporated Areas	Confluence with Colorado River (Lake Marble Falls)	2.75 miles upstream of the confluence with Colorado River (Lake Marble Falls)	12090205	2.72		N	A	2015
Unnamed Tributary (Marble Falls)	Burnet County, Unincorporated Areas; Marble Falls, City of	Confluence with Backbone Creek	1.12 miles upstream of the confluence with Backbone Creek	12090205	1.12		N	A	2013
Vann Branch	Burnet County, Unincorporated Areas	Confluence with Rattlesnake Branch	0.89 miles upstream of the confluence with Rattlesnake Branch	12090201	0.89		N	A	1990
West Branch Clear Creek	Burnet County, Unincorporated Areas	Burnet/Williamson County boundary	1.65 miles upstream of the Burnet/Williamson County boundary	12070205	1.65		N	A	1990
Whitman Branch	Marble Falls, City of	Confluence with Backbone Creek	60 feet downstream of Resource Parkway	12090205	4.42		Y	AE, X	2015
Whitman Branch	Marble Falls, City of	60 feet downstream of Resource Parkway	0.64 miles upstream of Resource Parkway	12090205	0.63		N	A	1990

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

Flooding Source	Community	Downstream Limit	Upstream Limit	HUC-8 Sub-Basin(s)	Length (mi) (streams or coastlines)	Area (mi^2) (estuaries or ponding)	Floodway (Y/N)	Zone shown on FIRM	Date of Analysis
Whitman Branch Tributary 1 (downstream)	Marble Falls, City of	Confluence with Whitman Branch	100 feet downstream of the confluence with Whitman Branch Tributary 1-1	12090205	0.86		Y	AE, X	2015
Whitman Branch Tributary 1 (upstream)	Marble Falls, City of	100 feet downstream of confluence with Whitman Branch Tributary 1-1	Downstream of Park Ridge Drive	12090205	1.04		N	AE, X	2015
Whitman Branch Tributary 1-1	Marble Falls, City of	Confluence with Whitman Branch Tributary 1	1,610 feet upstream of Wildflower Boulevard	12090205	0.49		N	AE, X	2015
Whitman Branch Tributary 2	Marble Falls, City of	Confluence with Whitman Branch	0.70 miles upstream of the confluence with Whitman Branch	12090205	0.70		N	A	2015
Williams Branch	Burnet County, Unincorporated Areas	Burnet/Williamson County boundary	1.08 miles upstream of the Burnet/Williamson County boundary	12070205	1.08		N	A	1990
Williams Creek	Burnet County, Unincorporated Areas	0.72 miles upstream of FM 1980	1.86 miles upstream of FM 1980	12090205	1.41		N	A	2015
Williams Creek	Burnet County, Unincorporated Areas	Confluence with Backbone Creek	0.72 miles upstream of FM 1980	12090205	0.72		Y	AE, X	1990
Williams Creek Tributary 1	Burnet County, Unincorporated Areas	Confluence with Williams Creek	0.81 miles upstream of the confluence with Williams Creek	12090205	0.81		N	A	2015

[1] Source was redelineated using the effective modeling information

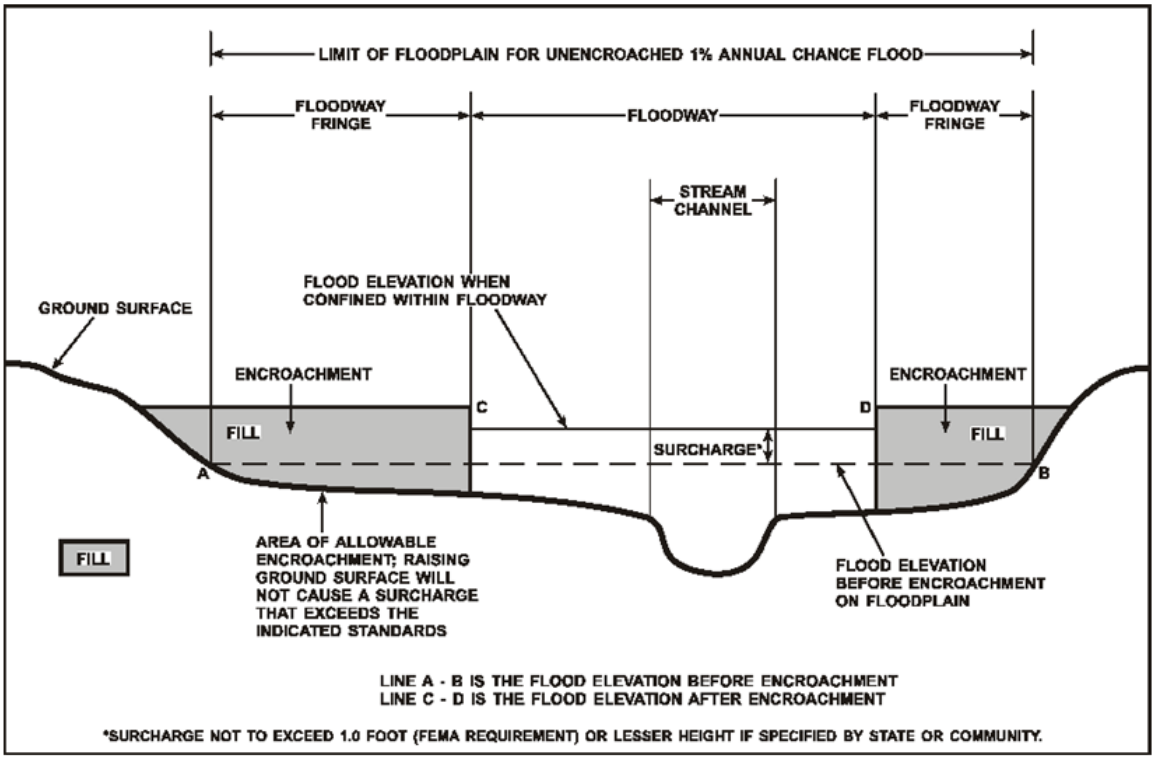
2.2 Floodways

Encroachment on floodplains, such as structures and fill, reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard.

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

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

Figure 4: Floodway Schematic



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

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

2.3 Base Flood Elevations

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

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

2.4 Non-Encroachment Zones

This section is not applicable to this Flood Risk Project.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this Flood Risk Project.

2.5.1 Water Elevations and the Effects of Waves

This section is not applicable to this Flood Risk Project.

Figure 5: Wave Runup Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

This section is not applicable to this Flood Risk Project.

2.5.3 Coastal High Hazard Areas

This section is not applicable to this Flood Risk Project.

Figure 6: Coastal Transect Schematic

[Not Applicable to this Flood Risk Project]

2.5.4 Limit of Moderate Wave Action

This section is not applicable to this Flood Risk Project.

SECTION 3.0 – INSURANCE APPLICATIONS

3.1 National Flood Insurance Program Insurance Zones

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

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

Table 3 lists the flood insurance zones in Burnet County.

Table 3: Flood Zone Designations by Community

Community	Flood Zone(s)
Bertram, City of	X
Burnet, City of	A, AE, AO, X
Burnet County, Unincorporated Areas	A, AE, X
Cottonwood Shores, City of	AE, X
Granite Shoals, City of	A, AE, X
Highland Haven, City of	A, AE, X
Horseshoe Bay, City of	AE, X
Marble Falls, City of	A, AE, X
Meadowlakes, City of	A, AE, X

3.2 Coastal Barrier Resources System

This section is not applicable to this Flood Risk Project.

Table 4: Coastal Barrier Resources System Information

[Not Applicable to this Flood Risk Project]

SECTION 4.0 – AREA STUDIED

4.1 Basin Description

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

Table 5: Basin Characteristics

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
Austin-Travis Lakes	12090205	Colorado River	Located in Blanco, Burnet, Hays, Llano, Travis, and Williamson counties. It begins at Alvin Wirtz Dam, which forms Lake Marble Falls in Burnet County, and flows southeast through the City of Austin in Travis County.	1,241
Buchanan-Lyndon B. Johnson Lakes	12090201	Colorado River	Located in Blanco, Burnet, Gillespie, Lampasas, Llano, Mills, and San Saba counties.	1,270
Lampasas	12070203	Lampasas River	The Lampasas River is characterized by relatively low water levels most of the time and is situated within a predominantly rural and agricultural landscape. Land use within the watershed is mostly rural, with grasslands and row crops (LRWPP 2013).	1,512
Pedernales	12090206	Pedernales River	Encompases 815,000 acres mainly in Blanco and Gillespie counties. It is also located in Burnet, Hayes, Kendall, Kerr, Kimble, and Travis counties. The Pedernales River starts in the southeastern corner of Kimble County, and flows east emptying into Lake Travis in Travis County.	1,280

Table 5: Basin Characteristics, continued

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description of Affected Area	Drainage Area (square miles)
San Gabriel	12070205	San Gabriel River	Located in Burnet, Milam, and Williamson counties. It begins in central Milam County at the confluence with Little River and extends west splitting into North, Russell, Middle, and South forks. The area is mostly wooded and flows through the Balcones Escarpment and Blackland Prairie.	1,367

4.2 Principal Flood Problems

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

Table 6: Principal Flood Problems

Flooding Source	Description of Flood Problems
All Flooding Sources in Burnet County	Heavy rainfall from storms along weather fronts is the major cause of flooding, primarily during the spring and summer months. Major flooding can be produced by the intense rainfall usually associated with localized thunderstorms. These thunderstorms may occur at any time during the year, but are more prevalent in the spring and summer months.

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

Table 7: Historic Flooding Elevations

Flooding Source	Location	Historic Peak (Feet NAVD88)	Event Date	Approximate Recurrence Interval (years)	Source of Data
Whitman Branch	Marble Falls, City of	*	2007	*	FIS, 2012

*Data not available

4.3 Non-Levee Flood Protection Measures

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

Table 8: Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Colorado River	Alvin Wirtz Dam	Dam	Lake Lyndon B. Johnson on the Colorado River	Completed in 1951, this project is owned and operated by the Lower Colorado River Authority primarily for the purpose of generating hydroelectric power (LCRA 2008).
Colorado River	Buchanan Dam	Dam	Buchanan Lake on the Colorado River between Burnet and Llano Counties	Completed in 1938 under the conservation program of the Colorado River Authority. The lake has a capacity of 876,000 acre-feet (LCRA 2008).
Colorado River	Mansfield Dam	Dam	Lake Travis on the Colorado River, 10 miles northwest of Austin	The lake has a capacity of 1,131,000 acre-feet and is used for flood control, irrigation, and as a source of water power for the generation of electric current (LCRA 2008).
Colorado River	Max Starcke Dam	Dam	Upper end of Lake Travis on the Colorado River	Completed in 1951, the primary use is to generate hydroelectric power. The lake has a capacity of 6,400 acre-feet (LCRA 2008).
Colorado River	Roys Inks Dam	Dam	10 miles west of the City of Burnet on the Colorado River; four miles below Buchanan Dam	Constructed in 1938, the dam has no floodgates. A small amount of water can be released through hydroelectric generation, but the bulk of floodwaters pass over an uncontrolled spillway. The lake has a 15,000 acre-feet capacity (LCRA 2008).
Colorado River	Roys Inks Dam	Dam	10 miles west of the City of Burnet on the Colorado River; four miles below Buchanan Dam	Constructed in 1938, the dam has no floodgates. A small amount of water can be released through hydroelectric generation, but the bulk of floodwaters pass over an uncontrolled spillway. The lake has a 15,000 acre-feet capacity (LCRA 2008).

Table 8: Non-Levee Flood Protection Measures, continued

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Colorado River	Tom Miller Dam	Dam	Lake Austin on the Colorado River at the western edge of the corporate limits of the City of Austin in Travis County.	Constructed in 1940 by the Lower Colorado River Authority as a flood control, electric power-generating, and municipal supply project. The lake has a 22,000 acre-feet capacity (LCRA 2008).
Daughtery Branch	SCS Dam No. 1	Dam	Within the City of Burnet on Daugherty Branch	Constructed by SCS.
Hamilton Creek	SCS Dam No. 2	Dam	On Hamilton Creek	Constructed by SCS.
Stream HC(B)-4	SCS Dam No. 3	Dam	On Stream HC(B)-4	Constructed by SCS.

4.4 Levees

This section is not applicable to this Flood Risk Project.

Table 9: Levees

[Not Applicable to this Flood Risk Project]

SECTION 5.0 – ENGINEERING METHODS

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

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

5.1 Hydrologic Analyses

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

A summary of the discharges is provided in Table 10. A summary of stillwater elevations developed for non-coastal flooding sources is provided in Table 11. Stream gage information is provided in Table 12.

Table 10: Summary of Discharges

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Backbone Creek	At the confluence with Colorado River (Lake Marble Falls)	40.25	17,100	22,570	27,730	33,710	51,010
Backbone Creek	Approximately 380 feet downstream of Whitman Branch	40.13	17,230	22,680	27,960	34,060	51,220
Backbone Creek	Approximately 90 feet upstream of Whitman Branch	33.95	15,960	21,190	25,670	29,550	42,360
Backbone Creek	Approximately 260 feet downstream of South Avenue North	33.90	16,050	21,380	25,850	29,630	42,530
Backbone Creek	Approximately 50 feet downstream of the confluence of Backbone Creek Tributary	33.80	16,080	21,470	25,940	26,660	42,660
Backbone Creek	Approximately 45 feet downstream of Railroad	32.40	15,980	21,360	25,790	29,450	42,090
Backbone Creek	Approximately 570 feet upstream of Unnamed Tributary (Marble Falls)	31.80	15,910	21,270	25,660	29,290	41,550
Backbone Creek	Approximately 260 feet downstream of 2nd Street	31.77	15,960	21,340	25,720	29,330	41,700

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Backbone Creek	Approximately 1,375 feet downstream of the confluence with Backbone Creek Tributary 2	31.61	16,020	21,370	25,750	29,330	41,800
Backbone Creek	Approximately 1,555 feet upstream of FM 1431	29.93	15,670	21,130	25,390	28,640	39,330
Backbone Creek	Above the confluence of Coldspring Creek	27.73	14,500	*	21,300	24,950	30,200
Backbone Creek	Above the confluence of Williams Creek	25.28	14,000	*	20,350	23,800	28,800
Backbone Creek	Above the confluence of Dry Branch	16.10	9,450	*	14,300	16,850	20,850
Backbone Creek	Below the confluence of Sparerib Creek	15.87	9,600	*	14,550	17,200	21,250
Backbone Creek	Above the confluence of Sparerib Creek	12.51	7,300	*	10,650	12,400	14,900
Backbone Creek	Below the confluence of Stream BC-3	11.94	7,900	*	11,400	13,250	15,850
Backbone Creek	Above the confluence of Stream BC-3	6.27	4,450	*	6,400	7,400	8,850
Backbone Creek	Above County Road 120	5.89	4,800	*	6,750	7,800	9,200

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Backbone Creek	Approximately 3,200 feet above Railroad	5.32	4,700	*	6,550	7,500	8,800
Backbone Creek Tributary 1	At the confluence with Backbone Creek	1.39	1,730	2,410	3,000	3,640	5,180
Backbone Creek Tributary 1	Approximately 60 feet downstream of Avenue S	1.19	1,620	2,840	2,840	3,390	4,800
Backbone Creek Tributary 1	Approximately 940 feet upstream of Avenue S	0.47	820	1,340	1,340	1,530	2,100
Backbone Creek Tributary 1	Approximately 1,082 feet upstream of Avenue S	0.45	820	1,330	1,330	1,520	2,090
Backbone Creek Tributary 2	At the confluence of Backbone Creek	1.68	1,610	2,250	2,820	3,360	5,080
Backbone Creek Tributary 2	Approximately 4,210 feet upstream of the confluence with Backbone Creek	1.38	1,700	2,330	2,860	3,410	4,480
Backbone Creek Tributary 2	Approximately 5,700 feet above Broadway Street	1.42	1,550	*	2,150	2,450	2,850
Backbone Creek Tributary 2	At County Road 122	1.14	1,350	*	1,850	2,100	2,400

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Belaire Creek	At the confluence with the Colorado River at Lake Lyndon B. Johnson	0.29	550	*	700	800	900
Coldspring Creek	Above the confluence with Backbone Creek	2.82	2,280	*	3,260	3,780	4,450
Coldspring Creek	Above the unnamed tributary on right bank and County Road 122	2.45	2,020	*	2,860	3,330	3,980
Coldspring Creek	Approximately 6,120 feet upstream of County Road 122 and below unnamed tributaries on left bank	2.05	1,850	*	2,600	2,970	3,490
Coldspring Creek	Approximately 6,100 feet upstream of County Road 122 and above unnamed tributaries on right bank	1.59	1,490	*	2,090	2,390	2,800
Coldspring Creek	Above the unnamed tributary on left bank at lower water crossing	1.02	1,510	*	2,050	2,300	2,620
Colorado River[1]	At Burnet/Travis County line	*	20,600	*	75,200	68,900	337,400
Colorado River[1]	At Max Starcke Dam	*	158,300	*	316,900	356,100	418,000
Colorado River[1]	At Alvin Wirtz Dam	*	117,938	*	59,824	330,269	481,505

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Colorado River[1]	At Inks Dam	*	66,865	*	126,756	161,410	304,101
Daugherty Branch	At the confluence with Hamilton Creek	2.54	1,160	*	1,570	1,770	2,020
Daugherty Branch	At North Wood Street	2.26	860	*	1,150	1,290	1,490
Daugherty Branch	At FM 983/East Graves Street	1.90	500	*	660	750	850
Daugherty Branch	Outflow from SCS Dam No. 1	1.75	100	*	120	355	820
Daugherty Branch	Inflow to SCS Dam No. 1	1.75	2.910	*	3,910	4,370	4,960
Daugherty Branch	Downstream of the confluence of left bank tributary located approximately 1,300 feet upstream of SCS Dam No. 1	1.16	1,850	*	2,490	2,790	3,170
Daugherty Branch	Upstream of the confluence of left bank tributary located approximately 1,300 feet upstream of SCS Dam No. 1	0.76	1,190	*	1,600	1,790	2,030
Dry Branch	Above the confluence with Backbone Creek	8.91	5,050	*	6,900	7,750	9,000

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Dry Branch	Below the confluence of Dry Creek	8.78	5,150	*	7,000	7,900	9,200
Dry Branch	Above the confluence of Dry Creek	5.34	3,150	*	4,000	4,350	4,800
Dry Branch	Below theunnamed tributary on right bank immediately above County Road	4.74	3,790	*	5,430	6,280	7,610
Dry Branch	Below the unnamed tributary on right bank, approximately 1,200 feet above private road low water crossing	4.43	3,770	*	5,360	6,180	7,320
Dry Branch	Approximately 500 feet above Railroad	3.77	3,540	*	4,930	5,630	6,590
Dry Creek	At the confluence with Dry Branch	3.44	2,350	*	3,440	4,000	4,830
Dry Creek	Below the confluence of DC-1	3.21	2,270	*	3,320	3,880	4,660
Dry Creek	Below the confluence of DC-2	1.68	1,200	*	1,730	2,000	2,400
Dry Creek	Approximately 3,350 feet above the confluence of DC-2	1.33	1,060	*	1,490	1,710	2,020
Elm Creek	Below the confluence of Stream EC-1	5.97	4,280	*	6,100	7,050	8,500

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Elm Creek	At Lake Lyndon B. Johnson	5.40	3,800	*	5,550	6,450	7,700
Elm Creek	Below the confluence of Stream EC-2	5.10	3,650	*	5,350	6,200	7,400
Elm Creek	Above the confluence of Stream EC-2	4.84	3,500	*	5,100	5,950	7,100
Elm Creek	Above the confluence of Stream EC-4	4.03	3,000	*	4,300	5,000	5,950
Elm Creek	Below the confluence of Stream EC-5	4.01	2,950	*	4,300	5,000	6,000
Elm Creek	Below the confluence of Stream EC-6	3.36	2,550	*	3,700	4,250	5,100
Elm Creek	Above the confluence of Stream EC-6	2.66	2,850	*	2,900	3,400	4,050
Elm Creek	Below the confluence of Stream EC-7	2.61	2,850	*	2,950	3,400	4,050
Elm Creek	Above the confluence of Stream EC-7	1.66	1,250	*	1,800	2,100	2,500
Hamilton Creek	Downstream of the confluence of left bank tributary located approximately 200 feet downstream of confluence of Stream BC(B)-1	22.62	12,380	*	18,110	21,200	25,640

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hamilton Creek	Downstream of the confluence of Stream HC(B)-1	18.17	9,250	*	13,710	16,130	19,640
Hamilton Creek	Upstream of the confluence of Stream HC(B)-1	16.56	8,300	*	12,220	14,400	17,570
Hamilton Creek	Downstream of the confluence of Haynie Branch	13.73	8,800	*	12,420	14,350	17,090
Hamilton Creek	Upstream of the confluence of Haynie Branch	12.72	7,910	*	11,210	12,970	15,480
Hamilton Creek	Donwstream of the confluence of Stream HC(B)-2	12.17	7,860	*	11,060	12,760	15,220
Hamilton Creek	Upstream of the confluence of Daughtery Branch	9.09	6,850	*	9,600	11,080	13,000
Hamilton Creek	Downstream the of confluence of the right bank tributary located approximately 1,600 feet upstream of the confluence of Daugherty Branch	9.01	6,800	*	9,570	11,100	13,090

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hamilton Creek	Upstream of the confluence of the right bank tributary located approximately 1,600 feet upstream of the confluence of Daugherty Branch	8.71	6,640	*	9,280	10,680	12,590
Hamilton Creek	Downstream of the confluence of Stream HC(B)-3	8.22	6,740	*	9,340	10,670	12,390
Hamilton Creek	Upstream of the confluence of Stream HC(B)-3	7.25	5,610	*	7,800	8,920	10,380
Hamilton Creek	Upstream of the confluence of the right bank tributary located approximately 900 feet upstream of the confluence of Stream HC(B)-3	6.21	4,430	*	6,190	7,070	8,240
Hamilton Creek	Downstream of the confluence of Stream HC(B)-4 and adjacent left bank tributary	5.19	3,760	*	5,180	5,870	6,730
Hamilton Creek	Upstream of the confluence of Stream HC(B)-4 and adjacent left bank tributary	1.94	420	*	585	670	915

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Hamilton Creek	At outflow from SCS Dam No. 2	1.65	105	*	125	395	835
Hamilton Creek	At inflow to SCS Dam No. 2	1.65	2,350	*	3,180	3,580	4,070
Haynie Branch	At the confluence with Hamilton Creek	1.01	1,540	*	2,210	2,390	2,740
Haynie Branch	At East Polk Street	0.54	1,030	*	1,410	1,570	1,810
Haynie Branch	Approximately 1,600 feet downstream of the eastern corporate limits of the City of Burnett	0.23	590	*	770	850	1,030
Little Cypress Creek	At the confluence with Colorado River (Lake Travis)	13.72	5,083	7,969	10,661	14,047	24,501
Little Cypress Creek	Approximately 1.93 miles upstream of the confluence with Colorado River (Lake Travis)	13.44	4,949	7,744	10,347	13,616	23,688
Little Cypress Creek	Approximately 377 feet upstream of the confluence with Little Cypress Creek Tributary 1	10.36	4,026	6,245	8,294	10,852	18,668

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Little Cypress Creek	Approximately 280 feet upstream of the confluence with Little Cypress Creek Tributary 2	7.98	3,347	5,153	6,810	8,870	15,122
Little Cypress Creek	Approximately 290 feet upstream of the confluence with Sycamore Creek	4.25	2,757	4,277	5,684	7,461	12,913
Little Cypress Creek	Approximately 110 feet downstream of State Highway 71	3.67	2,078	3,149	4,118	5,317	8,907
Little Cypress Creek	Approximately 2.23 miles upstream of the confluence with Sycamore Creek	2.74	1,765	2,262	3,470	4,470	7,453
Little Cypress Creek	Approximately 3.39 miles upstream of the confluence with Sycamore Creek	1.62	1,191	1,760	2,264	2,881	4,684
Little Cypress Creek Tributary 1	At the confluence with Little Cypress Creek	2.29	1,381	2,045	2,634	3,352	5,453
Little Cypress Creek Tributary 1	Approximately 0.70 miles upstream of the confluence with Little Cypress Creek	1.86	1,049	1,520	1,928	2,419	3,820

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Little Cypress Creek Tributary 1	Approximately 1.44 miles upstream of the confluence with Little Cypress Creek	0.76	541	756	936	1,148	1,733
Little Cypress Creek Tributary 2	At the confluence with Little Cypress Creek	2.12	1,051	1,518	1,921	2,401	3,769
Little Cypress Creek Tributary 2	Approximately 40 feet downstream of CR 408N	1.68	971	1,404	1,777	2,225	3,502
Little Cypress Creek Tributary 2	Approximately 1,670 feet upstream of CR 408N	1.50	845	1,208	1,519	1,889	2,932
Sparerib Creek	Above the confluence with Backbone Creek	3.36	2,700	*	4,350	5,400	7,050
Sparerib Creek	Above the right bank tributary	2.98	2,550	*	3,650	4,300	5,150
Sparerib Creek	At Railroad upstream of County Route 120	1.99	2,500	*	3,400	3,850	4,400
Stream BC-3	Above the confluence with Backbone Creek	5.67	3,800	*	5,450	6,300	7,600
Stream BC-3	Above Railroad and below left bank tributary	4.88	3,450	*	4,950	5,750	6,850
Stream BC-3	Above FM 1855/County Road 120 and below left bank tributary	2.37	1,700	*	2,400	2,800	3,300

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Stream BC-3	Approximately 1,700 feet above Railroad	1.61	1,400	*	1,950	2,250	2,650
Stream DC-1	Above the confluence of Dry Creek	0.36	480	*	650	740	840
Stream DC- 2	At the confluence with Dry Creek	1.06	950	*	1,360	1,570	1,850
Stream DC- 2	Approximately 6,300 feet above the confluence with Dry Creek	0.71	970	*	1,060	1,204	1,400
Stream EC-1	At the confluence with Elm Creek at Lake Lyndon B. Johnson	0.57	850	*	1,150	1,300	1,500
Stream EC-1	At Baker Drive	0.32	550	*	700	800	900
Stream EC-2	At the confluence with Elm Creek	0.26	350	*	500	550	650
Stream EC-2	At headwaters	0.21	300	*	450	500	550
Stream EC-3	At the confluence with Stream EC-4	0.26	400	*	550	600	700
Stream EC-4	At the confluence with Elm Creek	0.80	850	*	1,200	1,400	1,600
Stream EC-4	Approximately 750 feet downstream of View Lane	0.25	400	*	500	550	650

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Stream EC-5	At the confluence with Elm Creek	0.57	700	*	950	1,050	1,250
Stream EC-5	At headwaters	0.41	600	*	800	900	1,050
Stream EC-6	At the confluence with Elm Creek	0.70	750	*	1,050	1,200	1,400
Stream EC-6	At West FM 1431	0.55	700	*	950	1,100	1,250
Stream EC-7	At the confluence with Elm Creek	0.95	900	*	1,250	1,450	1,700
Stream EC-7	At headwaters	0.79	750	*	1,050	1,250	1,450
Stream HC(B)-1	At the confluence with Hamilton Creek	1.61	1,720	*	2,380	2,700	3,160
Stream HC(B)-1	At U.S. Highway 281/ South Water Street	0.91	1,520	*	2,030	2,270	2,570
Stream HC(B)-2	At the confluence with Hamilton Creek	0.53	960	*	1,280	1,440	1,650
Stream HC(B)-2	Approximately 500 feet downstream of north-western corporate limits of City of Burnet	0.26	630	*	820	910	1,090
Stream HC(B)-3	At the confluence with Hamilton Creek	0.97	1,420	*	1,920	2,170	2,470
Stream HC(B)-3	At Old San Saba Road	0.64	970	*	1,300	1,460	1,660

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Stream HC(B)-4	At the confluence with Hamilton Creek	2.24	2,110	*	2,870	3,240	3,810
Stream HC(B)-4	Upstream of the left bank tributary located approximately 250 feet upstream of the confluence with Hamilton Creek	1.61	1,370	*	1,860	2,100	2,500
Stream HC(B)-4	Upstream of the left bank tributary located approximately 2,700 feet upstream of the confluence with Hamilton Creek	0.78	590	*	800	900	1,230
Stream HC(B)-4	At outflow from SCS Dam No. 3	0.63	100	*	115	120	415
Stream HC(B)-4	At inflow into SCS Dam No. 3	0.63	1,330	*	1,760	1,960	2,280
Stream WC-1	At Railroad and above right bank tributary	0.40	500	*	700	800	900
Sycamore Creek	At the confluence with Little Cypress Creek	3.49	1,912	2,881	3,752	4,824	8,015
Sycamore Creek	Approximately 95 feet downstream of State Highway 71	2.90	1,730	2,599	3,378	4,338	7,187

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Sycamore Creek	Approximately 30 feet downstream of CR 408S	2.47	1,420	2,102	2,705	3,440	5,588
Sycamore Creek	Approximately 415 feet upstream of CR 408S	1.48	1,111	1,635	2,098	2,663	4,311
Sycamore Creek Tributary 1	At the confluence with Sycamore Creek	0.51	518	730	909	1,125	1725
Sycamore Creek Tributary 1	Approximately 1,275 feet upstream of the confluence with Sycamore Creek	0.46	466	652	807	994	1509
Sycamore Creek Tributary 1	Approximately 1,415 feet upstream of the confluence with Sycamore Creek	0.03	30	34	36	38	42
Sycamore Creek Tributary 2	At the confluence with Sycamore Creek	0.80	707	1,015	1,279	1,599	2,507
Whitman Branch	At the confluence with Backbone Creek	6.18	4,000	5,560	7,000	8,500	12,210
Whitman Branch	Just downstream of 2nd Street	6.05	3,970	5,570	7,030	8,540	12,210
Whitman Branch	Approximately 550 feet downstream of Footbridge	5.94	3,980	5,600	7,060	8,530	12,190

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Whitman Branch	Approximately 120 feet upstream of the confluence of Whitman Branch Tributary 1	4.57	3,400	4,950	6,190	7,420	10,520
Whitman Branch	Approximately 280 feet upstream of FM 1431	4.48	3,390	4,940	6,190	7,390	10,490
Whitman Branch	Approximately 535 feet downstream of U.S. Highway 281	4.24	3,340	4,860	6,060	7,250	10,270
Whitman Branch	Approximately 1,490 feet upsteam of U.S. Highway 281	4.04	3,340	4,900	6,050	7,250	10,200
Whitman Branch	Approximately 290 feet downstream of Commerce Street	3.78	3,310	4,830	5,940	7,120	10,020
Whitman Branch	Approximately 1,575 feet upstream of Nature Heights Drive	3.18	3,280	4,550	5,490	6,490	9,060
Whitman Branch	Approximately 570 feet upstream of the confluence of Whitman Branch Tributary 1	0.94	1,000	1,340	1,610	1,900	2,690
Whitman Branch	Approximately 0.48 milees upstream of the confluence of Whitman Branch Tributary 1	0.69	860	1,160	1,400	1,650	2,310

Table 10: Summary of Discharges, continued

Flooding Source	Location	Drainage Area (Square Miles)	Peak Discharge (cfs)				
			10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Whitman Branch Tributary 1 (downstream)	At the confluence of Whitman Branch	1.37	2,270	2,950	3,510	4,120	5,660
Whitman Branch Tributary 1 (downstream)	Approxiately 245 feet downstream of FM 1431	1.21	2,000	2,620	3,140	3,680	5,070
Whitman Branch Tributary 1 (downstream)	Approximately 190 feet downstream of 12th Street	0.83	1,190	1,580	1,890	2,230	3,090
Whitman Branch Tributary 1 (upstream)	Approximately 1,000 feet upstream of 12th Street	0.57	414	572	702	855	1,271
Whitman Branch Tributary 1-1	At the confluence with Whitman Branch Tributary 1	0.27	264	355	429	551	743
Williams Creek	Above the confluence with Backbone Creek	2.22	2,000	*	2,750	3,100	3,600
Williams Creek	Below the confluence of Stream WC-1	2.07	1,850	*	2,550	2,900	3,300
Williams Creek	Above the confluence of Stream WC-1	1.28	1,100	*	1,600	1,700	2,000
Williams Creek	Approximately 3,900 feet above FM 1980	0.92	1,000	*	1,400	1,600	1,850

*Data not available

[1]Discharges affected by operational plan of Highland Lakes System

Figure 1: Frequency Discharge-Drainage Area Curves

[Not Applicable to this Flood Risk Project]

Table 1: Summary of Non-Coastal Stillwater Elevations

Flooding Source	Location	Elevations (feet NAVD88)				
		10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Lake Travis	From Burnet County boundary to 600 feet downstream of Max Starcke Dam	697.0	*	716.7	722.0	732.7

Table 12: Stream Gage Information used to Determine Discharges

Flooding Source	Gage Identifier	Agency that Maintains Gage	Site Name	Drainage Area (Square Miles)	Period of Record	
					From	To
Llano River	08151500	USGS	Llano Rv at Llano, TX	4,197	06/04/1935	2002
San Saba River	08146000	USGS	San Saba Rv at San Saba, TX	3,046	10/01/1915	2002
Lake Buchanan	08148000	USGS	LCRA Lk Buchanan nr Burnet, TX	31,828	03/03/1982	03/03/1982
Lake Travis	08154500	USGS	LCRA Lk Travis nr Austin, TX	38,755	09/01/1940	09/30/1992
Colorado River	08159200	USGS	Colorado Rv at Bastrop, TX	39,979	07/1869	2002
Colorado River	08162000	USGS	Colorado Rv at Wharton, TX	42,003	12/13/1913	2002

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Base flood elevations on the FIRM represent the elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations. These whole-foot elevations may not exactly reflect the elevations derived from the hydraulic analyses. Flood elevations shown on the FIRM are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM. The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

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

A summary of the methods used in hydraulic analyses performed for this project is provided in Table 13. Roughness coefficients are provided in Table 14. Roughness coefficients are values representing the frictional resistance water experiences when

passing overland or through a channel. They are used in the calculations to determine water surface elevations. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation.

Table 13: Summary of Hydrologic and Hydraulic Analyses

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Alligator Creek and Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2014	A	
Backbone Creek	Just upstream of Backbone Creek Lane	Confluence of Mud Spring Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Backbone Creek	Confluence with Colorado River	Confluence with Coldspring Creek	HEC-HMS 3.5	HEC-RAS 4.1	2015	AE w/ Floodway	
Backbone Creek	Confluence with Coldspring Creek	Just upstream of Backbone Creek Lane	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Portion of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Backbone Creek Tributary 1	Confluence with Backbone Creek	1,668 feet upstream of S Avenue S	HEC-HMS 3.5	HEC-RAS 4.1	2015	AE w/ Floodway	
Backbone Creek Tributary 1	1,668 feet upstream of S Avenue S	2,400 feet upstream of Granite Mountain Trail	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Backbone Creek Tributary 2	0.875 miles upstream of Dam	1,122 feet upstream of Tokim Drive	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Backbone Creek Tributary 2	Confluence with Backbone Creek	1.14 miles upstream of FM 1431	HEC-HMS 3.5	HEC-RAS 4.1	2015	AE w/ Floodway	
Backbone Creek Tributary 2	1.14 miles upstream of FM 1431	0.875 miles upstream of Dam	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Bear Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Beaver Creek	Confluence with Colorado River (Lake Buchanan)	7.18 miles upstream of the confluence with Colorado River (Lake Buchanan)	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Belaire Creek	Confluence with Colorado River (Lake Lyndon B. Johnson)	289 feet upstream of Oakhill Drive	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Berry Creek	Burnet/Williamson County boundary	3.70 miles upstream of Burnet/Williamson County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Clear Creek	Confluence with Colorado River (Inks Lake)	8.37 miles upstream of the confluence with Colorado River (Inks Lake)	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Coldspring Creek	At CR 122 (downstream crossing)	0.56 miles upstream of CR 122 (upstream crossing)	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Coldspring Creek	Confluence with Backbone Creek	At CR 122 (downstream crossing)	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Majority of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Coldspring Tributary 1	Confluence with Coldspring Creek	0.52 miles upstream of the confluence with Coldspring Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Coldspring Tributary 2	Confluence with Coldspring Creek	2,189 feet upstream of Railroad	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Colorado River	Not provided	At the Burnet/Lampasas/ San Saba County boundaries	Statistical analysis	LCRA model	1990	AE	The flood hydrographs for the Colorado River were derived from statistical analysis of peak and volume discharges. The statistical results were combined to define balanced hydrographs, where the probability of peak flow is consistent with the probability of 1-day, 2-day, 3-day, or 4-day volumes within the hydrographs. The 100-year flood for the Llano River at Llano was routed to the confluence with the Colorado River. The routed 100-year Llano River hydrograph was deducted from the 100-year Colorado River hydrograph (below the confluence) to obtain a coincident hydrograph on the Colorado River (above the confluence). A second iteration was obtained by deducting the 100-year Colorado River hydrograph (above the confluence) from the 100-year Colorado River hydrograph (below the confluence) to obtain the coincident hydrograph from the Llano River. Both iterations were routed by the Lower Colorado River Authority (LCRA) model and the highest water surfaces obtained were used for the base (100-year) flood elevations.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Colorado River (continued)	Not provided	At the Burnet/Lampasas/ San Saba County boundaries	Statistical analysis	LCRA model	1990	AE	It should be noted that the Llano River 100-year flood routing established the critical water-surface elevations for the base flood on the Colorado River from river mile 403.74 downstream to the Pedernales River confluence with the Colorado River. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Colorado River	Not provided	At Roy Inks Dam	Statistical analysis	LCRA model	1990	AE	The flood hydrographs for the Colorado River were derived from statistical analysis of peak and volume discharges. The statistical results were combined to define balanced hydrographs, where the probability of peak flow is consistent with the probability of 1-day, 2-day, 3-day, or 4-day volumes within the hydrographs. The 100-year flood for the Llano River at Llano was routed to the confluence with the Colorado River. The routed 100-year Llano River hydrograph was deducted from the 100-year Colorado River hydrograph (below the confluence) to obtain a coincident hydrograph on the Colorado River (above the confluence). A second iteration was obtained by deducting the 100-year Colorado River hydrograph (above the confluence) from the 100-year Colorado River hydrograph (below the confluence) to obtain the coincident hydrograph from the Llano River. Both iterations were routed by the Lower Colorado River Authority (LCRA) model and the highest water surfaces obtained were used for the base (100-year) flood elevations.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Colorado River (continued)	Not provided	At Roy Inks Dam	Statistical analysis	LCRA model	1990	AE	It should be noted that the Llano River 100-year flood routing established the critical water-surface elevations for the base flood on the Colorado River from river mile 403.74 downstream to the Pedernales River confluence with the Colorado River. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Colorado River (Inks Lake)	At Roy Inks Dam	At Buchanan Dam	Statistical analysis	LCRA model and HEC-5	1990	AE	The LCRA prepared the hydraulic analysis for the Highland Lakes system using the LCRA flood routing model, a version of the Dynamic Wave Operation (DWOPER) computer model with spillway gate opening routines. The National Weather Service DWOPER model is a one-dimensional unsteady flow flood routing model to determine the water-surface elevations along a river system. Flood flow hydrographs for different frequencies were developed from probability analyses of instantaneous peak flow and 1- to 40-day volumes, and used as upstream boundary condition. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Colorado River (Lake Buchanan)	At Buchanan Dam	Not provided	Statistical analysis	LCRA model and HEC-5	1990	AE	The LCRA prepared the hydraulic analysis for the Highland Lakes system using the LCRA flood routing model, a version of the Dynamic Wave Operation (DWOPER) computer model with spillway gate opening routines.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Colorado River (Lake Buchanan) (continued)	At Buchanan Dam	Not provided	Statistical analysis	LCRA model and HEC-5	1990	AE	The National Weather Service DWOPER model is a one-dimensional unsteady flow flood routing model to determine the water-surface elevations along a river system. Flood flow hydrographs for different frequencies were developed from probability analyses of instantaneous peak flow and 1- to 40-day volumes, and used as upstream boundary condition. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Colorado River (Lake Lyndon B. Johnson)	At Alvin Wirtz Dam	Not provided	Statistical analysis	LCRA model and HEC-5	1990	AE	The LCRA prepared the hydraulic analysis for the Highland Lakes system using the LCRA flood routing model, a version of the Dynamic Wave Operation (DWOPER) computer model with spillway gate opening routines. The National Weather Service DWOPER model is a one-dimensional unsteady flow flood routing model to determine the water-surface elevations along a river system. Flood flow hydrographs for different frequencies were developed from probability analyses of instantaneous peak flow and 1- to 40-day volumes, and used as upstream boundary condition. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Colorado River (Lake Marble Falls)	At Max Starcke Dam	At Alvin Wirtz Dam	Statistical analysis	LCRA model and HEC-5	1990	AE	The LCRA prepared the hydraulic analysis for the Highland Lakes system using the LCRA flood routing model, a version of the Dynamic Wave Operation (DWOPER) computer model with spillway gate opening routines. The National Weather Service DWOPER model is a one-dimensional unsteady flow flood routing model to determine the water-surface elevations along a river system. Flood flow hydrographs for different frequencies were developed from probability analyses of instantaneous peak flow and 1- to 40-day volumes, and used as upstream boundary condition. The flood hazard information was redelineated based on newly developed topographic data in the 2003 revision. No new flood hazard analysis was performed.
Colorado River (Lake Travis)	At the Burnet/Travis County boundary	At Max Starcke Dam	Statistical analysis	LCRA model, HEC-5, HEC-RAS 3.1.2, Joint Probability, and a SUPER simulation	2007	AE	The LCRA prepared the hydraulic analysis for the Highland Lakes system using the LCRA flood routing model, a version of the Dynamic Wave Operation (DWOPER) computer model with spillway gate opening routines. The National Weather Service DWOPER model is a one-dimensional unsteady flow flood routing model to determine the water-surface elevations along a river system. Flood flow hydrographs for different frequencies were developed from probability analyses of instantaneous peak flow and 1- to 40-day volumes, and used as upstream boundary condition. Reservoir operations were simulated for the LCRA Flood Damage Evaluation Project (FDEP) study utilizing HEC-5 models (USACE 1998).

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Colorado River (Lake Travis) (continued)	At the Burnet/Travis County boundary	At Max Starcke Dam	Statistical analysis	LCRA model, HEC-5, HEC-RAS 3.1.2, Joint Probability, and a SUPER simulation	2007	AE	All six Highland Lakes and Town Lake were included in the HEC-5 models developed for the study. Lake Travis is the only flood control reservoir in the system. A combination of a 70-year period-of-record SUPER model simulation (USACE 1973), a joint probability analysis, an investigation into previous studies, and HEC-5 modeling was utilized to determine the Lake Travis frequency pool elevations for the FDEP study. Separate HEC-RAS models were developed for each of the gated Highland Lake reservoirs, and model designations were assigned corresponding to the name of the reservoir of stream gauge at its downstream end. The Lake Travis model extends from the Max Starke Dam to the Mansfield Dam in Travis County.
Cow Creek and Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2014	A	
Daughtery Branch	2.31 miles upstream with Hamilton Creek	2.76 miles upstream with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Daughtery Branch	Confluence with Hamilton Creek	0.99 miles upstream of the confluence with Hamilton Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Daughtery Branch	0.99 miles upstream of the confluence with Hamilton Creek	1.53 miles upstream with Hamilton Creek	NUDALLAS	HEC-2	1990	AO	
Daughtery Branch	1.86 miles upstream with Hamilton Creek	2.31 miles upstream with Hamilton Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Daugherty Branch (Reservoir Above SCS Dam No. 1)	1.53 miles upstream with Hamilton Creek	1.86 miles upstream with Hamilton Creek	Modified PULS and HEC-1	HEC-2	1990	AE	The starting water-surface elevation used a known value taken from the modified PULS reservoir routing procedure.
Daugherty Branch Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Deep Creek	Confluence with Colorado River (Lake Lyndon B. Johnson)	655 feet upstream of N Wirtz Dam Road	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Deer Creek	Confluence with Colorado River	8.34 miles upstream of the confluence with Colorado River	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Delaware Creek	Confluence with Hamilton Creek	1,825 feet upstream of CR 100 (upstream crossing)	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Delware Creek Tributary 1	Confluence with Delaware Creek	215 feet upstream of CR 100	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Double Horn Creek and Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Dry Branch	520 feet upstream of Railroad	2,280 feet upstream of Railroad	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Dry Branch	Confluence with Backbone Creek	520 feet upstream of Railroad	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Portion of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Dry Branch Tributary 1	Confluence with Dry Branch	50 feet downstream of Dry Creek Trail	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Dry Branch Tributary 2	Confluence with Dry Branch	145 feet upstream of Lake Drive	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Dry Creek	1,870 feet upstream of the confluence of Dry Creek Tributary 1	1.43 miles upstream of the confluence of Dry Creek Tributary 1	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Dry Creek	Confluence with Dry Branch	1,870 feet upstream of the confluence of Dry Creek Tributary 1	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Portion of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Dry Creek Tributary 1	Confluence with Dry Creek	2,338 feet upstream of the confluence with Dry Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Dry Creek Tributary 2	Confluence with Dry Creek	2,225 feet upstream of the confluence with Dry Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
East Branch Clear Creek	Burnet/Williamson County boundary	1.35 miles upstream of the Burnet/Williamson County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
East Fork Sulphur Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Elm Creek	Confluence with Colorado River (Lake Lyndon B. Johnson)	900 feet upstream of Little Elm Road	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Elm Creek	900 feet upstream of Little Elm Road	0.98 miles upstream of April Lane	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Epsy Creek	Burnet/Lampasas County boundary	1.92 miles upstream of the Burnet/Lampasas County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Flatrock Creek and Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Greenwood Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Hamilton Creek	1.21 miles upstream of the confluence of Stream HC(B)-4	1.93 miles upstream of the confluence of Stream HC(B)-4	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek	560 feet downstream of Delaware Creek	1.21 miles upstream of the confluence of Stream HC(B)-4	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Hamilton Creek (downstream) and Tributaries	N/A	N/A	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 1	0.79 miles upstream of the confluence with Hamilton Creek	1.52 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Hamilton Creek Tributary 1-1	Confluence with Hamilton Creek Tributary 1	1,467 feet upstream of the confluence with Hamilton Creek Tributary 1	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 5	Confluence with Hamilton Creek	1.03 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 6	Confluence with Hamilton Creek	1.73 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 7	Confluence with Hamilton Creek	2,410 feet upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Hamilton Creek Tributary 8	Confluence with Hamilton Creek	0.71 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 9	Confluence with Hamilton Creek	1.42 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 10	Confluence with Hamilton Creek	2,082 feet upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Hamilton Creek Tributary 11	Confluence with Hamilton Creek	2,011 feet upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Haynie Branch	260 feet upstream of Geneva Lane	1,205 feet upstream of Geneva Lane	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Haynie Branch	Confluence with Hamilton Creek	260 feet upstream of Geneva Lane	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Hickory Creek	2.31 miles upstream of Colorado River (Lake Travis)	1.13 miles upstream of E FM 1431	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Honey Creek 1	Confluence with Hamilton Creek	4.42 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2014	A	
Hylton Branch	Confluence with Colorado River (Inks Lake)	0.94 miles upstream of the confluence with Colorado River (Inks Lake)	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Lampasas River and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Little Cypress Creek	1.6 miles upstream of the confluence with Colorado River	1.56 miles upstream of Dam	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	AE, X	
Little Cypress Creek Tributary 1	Confluence with Little Cypress Creek	1,280 feet upstream of Electric Trail	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	AE, X	
Little Cypress Creek Tributary 2	Confluence with Little Cypress Creek	1.54 miles upstream of the confluence with Little Cypress Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	AE, X	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Long Branch 1	Confluence with Honey Creek 1	665 feet upstream of Amber Oaks	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2014	A	
McCrea Branch	Burnet/Lampasas County boundary	1.39 miles upstream of the Burnet/Lampasas County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
McDaniel Branch	Confluence with Mill Creek	2.74 miles upstream of the confluence with Mill Creek	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Mesquite Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Mill Creek (East)	Burnet/Bell County boundary	7.32 miles upstream of the Burnet/Bell County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Mill Creek (West)	Confluence with Colorado River (Lake Lyndon B. Johnson)	1.61 miles upstream of the confluence with Colorado River (Lake Lyndon B. Johnson)	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Morgans Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Mud Spring Creek	Confluence with Backbone Creek	1,896 feet upstream of the confluence with Backbone Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
North Fork San Gabriel River and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Peters Creek	Confluence with Colorado River	2.68 miles upstream of the confluence with Colorado River	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Post Creek	Confluence with Colorado River (Lake Travis)	3.07 feet upstream of the confluence with Colorado River (Lake Travis)	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Rattlesnake Branch	Burnet/Lampasas County boundary	0.98 miles upstream of the Burnet/Lampasas County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
South Fork San Gabriel River and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Sparerib Creek	Confluence with Backbone Creek	0.55 miles upstream of Railroad	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Portion of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Spring Creek	Confluence with Colorado River (Inks Lake)	5.61 miles upstream of the onfluence with Colorado River (Inks Lake)	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Station Creek and Tributaries	N/A	N/A	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream BC-3	Confluence with Backbone Creek	870 feet upstream of Timber Ridge Road	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Stream BC-3 Tributary 1	Confluence with Stream BC-3	1.24 miles upstream of the confluence with Stream BC-3	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Stream DC-1	Confluence with Dry Creek	0.71 miles upstream of the confluence with Dry Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stream DC-2	Confluence with Dry Creek	50 feet upstream of County Road 144B	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. Portion of the flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-1	Confluence with Elm Creek	22 feet upstream of E Greencastle Drive	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-1	22 feet upstream of E Greencastle Drive	637 feet upstream of E Greencastle Drive	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-2	Confluence with Elm Creek	602 feet upstream of Forest Hill Drive	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-2	602 feet upstream of Forest Hill Drive	295 feet upstream of Poverty Road	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-3	Confluence with Stream EC-4	1,360 feet upstream of the confluence with Elm Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stream EC-4	Confluence with Elm Creek	1.09 miles upstream of the confluence with Elm Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-5	Confluence with Elm Creek	42 feet upstream of Prairie Creek Road	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-6	Confluence with Elm Creek	819 feet upstream of Windsong Street	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream EC-7	Confluence with Elm Creek	0.75 miles upstream of the confluence with Elm Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream HC(B)-1	Confluence with Hamilton Creek	732 feet upstream of S Water Street/U.S. Highway 281	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stream HC(B)-2	0.90 miles upstream of the confluence with Hamilton Creek	1.09 miles upstream of the confluence with Hamilton Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Stream HC(B)-2	Confluence with Hamilton Creek	0.90 miles upstream of the confluence with Hamilton Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Stream HC(B)-3	Confluence with Hamilton Creek	0.94 miles upstream of the confluence with Hamilton Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Stream HC(B)-4	Confluence with Hamilton Creek	0.96 miles upstream of the confluence with Hamilton Creek	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method.
Stream HC(B)-4 Tributary 1	Confluence with Stream HC(B)-4	2,302 feet upstream of the confluence with Stream HC(B)-4	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Stream HC(B)-4 Tributary 2	Confluence with Stream HC(B)-4	0.96 miles upstream of the confluence with Stream HC(B)-4	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Stream HC(B)-4 Tributary 2-1	Confluence with Stream HC(B)-4 Tributary 2	1,002 feet upstream of the confluence with Stream HC(B)-4 Tributary 2	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Stream WC-1	Confluence with Williams Creek	0.51 miles upstream of FM 1980	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Stream WC-1 Tributary 1	Confluence with Stream WC-1	2,522 feet upstream of the confluence with Stream WC-1	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Sycamore Branch	Confluence with Colorado River	0.69 miles upstream of the confluence with Colorado River	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Sycamore Creek	Confluence with Little Cypress Creek	2,310 feet upstream of the confluence with Sycamore Creek Tributary 2		HEC-RAS 4.1	2015	AE	
Sycamore Creek Tributary 1	Confluence with Sycamore Creek	2,216 feet upstream of the confluence with Sycamore Creek		HEC-RAS 4.1	2015	AE	
Sycamore Creek Tributary 2	Confluence with Sycamore Creek	2,195 feet upstream of the confluence with Sycamore Creek		HEC-RAS 4.1	2015	AE	
Sycamore Creek 1	Confluence with Colorado River (Lake Travis)	0.98 miles upstream of the confluence of Sycamore Creek 1 Tributary 1	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Sycamore Creek 1 Tributary 1	Confluence with Sycamore Creek 1	1,500 feet upstream of Sycamore Creek 1	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Sycamore Springs Creek	Burnet/Williamson County boundary	3.21 miles upstream of the Burnet/Williamson County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Tiger Creek	Confluence with Colorado River (Lake Marble Falls)	2.75 miles upstream of the confluence with Colorado River (Lake Marble Falls)	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Unnamed Tributary (Marble Falls)	Confluence with Backbone Creek	1.12 miles upstream of the confluence with Backbone Creek	HEC-HMS 3.5	HEC-RAS 4.1	2013	A	
Vann Branch	Confluence with Rattlesnake Branch	0.89 miles upstream of the confluence with Rattlesnake Branch	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
West Branch Clear Creek	Burnet/Williamson County boundary	1.65 miles upstream of the Burnet/Williamson County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Whitman Branch	Confluence with Backbone Creek	60 feet downstream of Resource Parkway	HEC-HMS 3.5	HEC-RAS 4.1	2015	AE w/ Floodway	
Whitman Branch	60 feet downstream of Resource Parkway	0.64 miles upstream of Resource Parkway	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Whitman Branch Tributary 1 (downstream)	Confluence with Whitman Branch	100 feet downstream of confluence with Whitman Branch Tributary 1-1	HEC-HMS 3.5	HEC-RAS 4.1	2015	AE w/ Floodway	

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Whitman Branch Tributary 1 (upstream)	100 feet downstream of confluence with Whitman Branch Tributary 1-1	Downstream of Park Ridge Road	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	AE	
Whitman Branch Tributary 1-1	Confluence with Whitman Branch Tributary 1	1,610 feet upstream of Wildflower Boulevard	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	AE	
Whitman Branch Tributary 2	Confluence with Whitman Branch	0.70 miles upstream of the confluence with Whitman Branch	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Williams Branch	Burnet/Williamson County boundary	1.08 miles upstream of the Burnet/Williamson County boundary	*	*	1990	A	The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.

Table 13: Summary of Hydrologic and Hydraulic Analyses, continued

Flooding Source	Study Limits Downstream Limit	Study Limits Upstream Limit	Hydrologic Model or Method Used	Hydraulic Model or Method Used	Date Analyses Completed	Flood Zone on FIRM	Special Considerations
Williams Creek	0.72 miles upstream of FM 1980	1.86 miles upstream of FM 1980	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	
Williams Creek	Confluence with Backbone Creek	0.72 miles upstream of FM 1980	NUDALLAS	HEC-2	1990	AE w/ Floodway	Starting water-surface elevations were obtained using the slope/area method. The flood hazard information was redelineated based on newly developed topographic data in the 2012 revision. No new flood hazard analysis was performed.
Williams Creek Tributary 1	Confluence with Williams Creek	0.81 miles upstream of the confluence with Williams Creek	Texas Undeveloped Watershed Regression Equations and Urban Regression Equation	HEC-RAS 4.1	2015	A	

*Data not available

Table 14: Roughness Coefficients

Flooding Source	Channel "n"	Overbank "n"
Backbone Creek	0.040-0.080	0.040-0.120
Backbone Creek Tributary 1	0.045-0.065	0.060-0.120
Backbone Creek Tributary 2	0.045-0.075	0.060-0.120
Coldspring Creek	0.070-0.085	0.055-0.070
Colorado River	0.025	0.030-0.095
Daugherty Branch	0.045-0.050	0.060-0.070
Dry Branch	0.060-0.080	0.060-0.065
Dry Creek	0.060-0.080	0.055-0.065
Hamilton Creek	0.040-0.065	0.055-0.085
Haynie Branch	0.045-0.065	0.065-0.080
Little Cypress Creek	0.040-0.055	0.055-0.120
Little Cypress Creek Tributary 1	0.045-0.055	0.060-0.120
Little Cypress Creek Tributary 2	0.045-0.060	0.050-0.120
Sparerib Creek	0.065-0.075	0.060-0.065
Stream BC-3	0.060-0.080	0.055-0.065
Stream DC-1	0.060	0.055
Stream DC-2	0.060-0.075	0.050-0.065
Stream HC(B)-2	0.060-0.065	0.055-0.080
Stream HC(B)-3	0.050-0.060	0.065-0.080
Stream WB-1	0.075	0.060-0.065
Stream WC-1	0.070	0.060
Sycamore Creek	0.050	0.055-0.110
Sycamore Creek Tributary 1	0.050-0.055	0.060-0.110
Sycamore Creek Tributary 2	0.050	0.055-0.10
Whitman Branch	0.040-0.080	0.055-0.120
Whitman Branch Tributary 1 (downstream)	0.045-0.060	0.060-0.120
Whitman Branch Tributary 1 (upstream)	0.050-0.055	0.060-0.120
Whitman Branch Tributary 1-1	0.050	0.060-0.120
Williams Creek	0.075	0.060-0.065

5.3 Coastal Analyses

This section is not applicable to this Flood Risk Project.

Table 15: Summary of Coastal Analyses

[Not Applicable to this Flood Risk Project]

5.3.1 Total Stillwater Elevations

This section is not applicable to this Flood Risk Project.

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

[Not Applicable to this Flood Risk Project]

Table 16: Tide Gage Analysis Specifics

[Not Applicable to this Flood Risk Project]

5.3.2 Waves

This section is not applicable to this Flood Risk Project.

5.3.3 Coastal Erosion

This section is not applicable to this Flood Risk Project.

5.3.4 Wave Hazard Analyses

This section is not applicable to this Flood Risk Project.

Table 17: Coastal Transect Parameters

[Not Applicable to this Flood Risk Project]

Figure 9: Transect Location Map

[Not Applicable to this Flood Risk Project]

5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

Table 18: Summary of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

Table 19: Results of Alluvial Fan Analyses

[Not Applicable to this Flood Risk Project]

SECTION 6.0 – MAPPING METHODS

6.1 Vertical and Horizontal Control

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

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey (NGS) at the following address:

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

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

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

A countywide conversion factor of +0.26 feet was calculated for Burnet County.

Table 20: Countywide Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

Table 21: Stream-Based Vertical Datum Conversion

[Not Applicable to this Flood Risk Project]

6.2 Base Map

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

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

Table 22: Base Map Sources

Data Type	Data Provider	Data Date	Data Scale	Data Description
Political boundaries	FEMA	2016	N/A	Municipal and county boundaries derived from NFHL data
Surface Water Features	FEMA	2016	N/A	Streams, rivers, and lakes were derived from NFHL data
Transportation Features	State Center for Geographic Information	2016	N/A	Railroads were derived from U.S. Department of Transportation
Transportation Features	State Center for Geographic Information	2014	N/A	Roads were derived from Capital Area Council of Governments GIS (CAPCOG)