

Discovery Report
Upper Trinity Watershed, HUC 8 – 12030105

*Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman,
and Navarro Counties, Texas*

October 18, 2013



Project Area Community List

Community Name*	CID
<i>Anderson County Communities</i>	
Anderson County Unincorporated Areas	480001
<i>Collin County Communities</i>	
Collin County Unincorporated Areas	480130
Carrollton, City of	480167
Dallas, City of	480171
Frisco, City of	480134
Plano, City of	480140
Richardson, City of	480184
<i>Dallas County Communities</i>	
Dallas County Unincorporated Areas	480165
Addison, Town of	481089
Balch Springs, City of	480166
Cedar Hill, City of	480168
Cockrell Hill, City of	480169
Combine, City of	480408
Dallas, City of	480171
Desoto, City of	480172
Duncanville, City of	480173
Ferris, City of	481076
Garland, City of	485471
Glenn Heights, City of	481265
Highland Park, Town of	480178
Hutchins, City of	480179
Irving, City of	480180
Lancaster, City of	480182
Mesquite, City of	485490
Ovilla, City of	481155
Richardson, City of	480184
Seagoville, City of	480187
University Park, City of	480189
Wilmer, City of	480190
<i>Denton County Communities</i>	
Dallas, City of	480171
<i>Ellis County Communities</i>	
Ellis County Unincorporated Areas	480798
Alma, Town of	481546

Community Name*	CID
Cedar Hill, City of	480168
Ennis, City of	480207
Ferris, City of	481076
Garrett, City of	480799
Glenn Heights, City of	481265
Midlothian, City of	480801
Oak Leaf, City of	481672
Ovilla, City of	481155
Palmer, City of	480209
Pecan Hill, City of	481673
Red Oak, City of	481650
Waxahachie, City of	480211
<i>Freestone County Communities</i>	
Freestone County Unincorporated Areas	480822
<i>Henderson County Communities</i>	
Henderson County Unincorporated Areas	481174
Seven Points, City of	480332
Tool, City of	481532
Trinidad, City of	480333
<i>Kaufman County Communities</i>	
Kaufman County Unincorporated Areas	480411
Combine, City of	480408
Cottonwood, City of	480292
Grays Prairie, City of	480302
Rosser, City of	480387
Scurry, City of	480241
Seagoville, City of	480187
<i>Navarro County Communities</i>	
Navarro County Unincorporated Areas	480950
Goodlow, City of	480250
Kerens, City of	480955
Powell, Town of	480390
Rice, City of	480957

*Communities without CIDs are not included.

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The basis and format of this document are derived from FEMA Guidelines and Standards, Procedure Memorandum (PMs), Operational Guidance, Regional Standard Operating Procedures (SOP), and current draft revisions and proposed guidance to include, but not limited to:

- *Guidelines and Standards: Appendix I - Discovery*
- *Guidelines and Standards: Appendix M – Data Capture Standards*
- *PM 56: Guidelines for Implementation of Coordinated Needs Management Strategy (CNMS)*
- *PM 59: Guidance for Implementation of Watershed-Based Studies*
- *PM 60: Guidance for Flood Risk Assessment Data Development and Analysis*

- *Operational Guidance No. 1-11: Risk MAP Guidance for Incorporating Mitigation Planning Technical Assistance and Training into Flood Risk Projects*
- *Operational Guidance No. 4-11: Risk MAP Meeting Guidance*
- *FEMA Region 6 Discovery & Project Pre-Planning SOP*

Any revisions or changes to this document will require prior authorization from FEMA Region 6.

Acronyms and Abbreviations

AAL	Average Annualized Loss
BFE	Base (1-percent-annual-chance) Flood Elevation
CAC	Community Assisted Call
CAV	Community Assisted Visit
CID	Community Identification number
CFR	Code of Federal Regulations
cfs	cubic feet per second
CNMS	Coordinated Needs Management Strategy
CRS	Community Rating System
DEM	Digital Elevation Model
DFW	Dallas-Fort Worth Metroplex
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FPA	Floodplain Administrator
GIS	geographic information system
HMP	Hazard Mitigation Plan
HUC	Hydrologic Unit Code
HWM	high water mark
LiDAR	Light Detection and Ranging System
LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
mi ²	Square Miles
MSC	Map Service Center
MXD	Map Exchange Document
NCTCOG	North Central Texas Council of Governments
NFIP	National Flood Insurance Program
NHD	National Hydrologic Dataset

NID	National Inventory of Dams
NRCS	Natural Resources Conservation Service
NVUE	New Validated or Updated Engineering
PM	Procedure Memorandum
RAMPP	Risk Assessment, Mapping and Planning Partners
Risk MAP	Risk Mapping, Assessment, and Planning
RL	Repetitive Loss
SFHA	Special Flood Hazard Area
SHMO	State Hazard Mitigation Officer
SHP	ESRI Shape File
SOP	Standard Operating Procedures
SRL	Severe Repetitive Loss
TNRIS	Texas Natural Resources Information System
TWDB	Texas Water Development Board
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
WWTP	Waste Water Treatment Plant

I. Discovery Overview

The Department of Homeland Security, Federal Emergency Management Agency (FEMA) is implementing the Risk Mapping, Assessment, and Planning (Risk MAP) Program across the Nation. The goals of Risk MAP are continued improvement of flood hazard information for the National Flood Insurance Program (NFIP); the promotion of increased national awareness and understanding of flood risk; and FEMA support of Federal, State, and local mitigation actions to reduce risk.

The vision and intent of the Risk MAP program is to, through collaboration with the State of Texas and local entities, to deliver quality data that increases public awareness and leads to mitigation actions that reduce risk to life and property. To achieve this vision, FEMA has transformed its traditional flood identification and mapping efforts into a more integrated process of more accurately identifying, assessing, communicating, planning, and mitigating flood risks. Risk MAP attempts to address gaps in flood hazard data and form a solid foundation for risk assessment, floodplain management, and providing State and local entities with information needed to mitigate flood related risks.

In partnership with the North Central Texas Council of Governments (NCTCOG) and the Texas Water Development Board (TWDB), the FEMA Region 6 Office began the Discovery process in the Upper Trinity Watershed, Elm Fork Trinity River Watershed, and Lower West Fork Watershed in November 2012. The goal of the Discovery process is to gather local information and readily available data to determine project viability and the need for Risk MAP products to assist in the movement of communities towards resilience. This report covers the Upper Trinity Watershed. The watershed location can be seen in Figure 1.

Through the Discovery process, FEMA can determine which areas of the Hydrologic Unit Code (HUC) 8 Discovery watersheds may or will be funded for further flood risk identification and assessment in a collaborative manner, taking into consideration the information collected from local communities during this process. Discovery initiates open lines of communication and relies on local involvement for productive discussions about flood risk. The process provides a forum for a watershed-wide effort to understand how each watershed community's flood risks are related to flood risk throughout the watershed. The Discovery process includes stakeholder meetings with representatives from all levels of government (local, regional, State and Federal). In this manner, the Discovery Meeting helps support the watershed focus of the Risk MAP program encouraging collaboration across political and jurisdictional boundaries. Consequently, this watershed included two Discovery Meetings inside the watershed and four others that could be attended in adjacent watersheds.

In May 2013 and June 2013, FEMA and the State held a series of six Discovery Meetings in the three watersheds that cover the Dallas-Fort Worth Metroplex (DFW). During Discovery, FEMA and the State reached out to local communities to:

- Gather information about local flood risk and flood hazards.
- Review current and historic mitigation plans to understand local mitigation capabilities, hazard risk assessments, and current or future mitigation activities.
- Include multi-disciplinary staff from within their community to participate and assist in the development of a watershed vision.

The results of the Discovery process are presented in a Discovery Report, which includes a watershed-scale Discovery Map and the digital data that was gathered or developed during the

process under FEMA Indefinite Delivery Indefinite Quantity Contract HSFEHQ-09-D-0369, Task Order HSFE06-11-J-0001. This document is the Discovery Report. The digital data submitted (on a DVD) with this report contain correspondence, exhibits used at the Discovery meetings, geographic information system (GIS) data, mapping documents (PDF, shapefiles, personal geodatabases and ESRI ArcGIS 10 Map Exchange Documents [MXDs]), or other supplemental digital information. Graphics in this Discovery Report are available as larger format graphics files for printing and as GIS data that may be printed and used at any map scale.

i. Watershed Selection

The Upper Trinity Watershed, HUC 12030105, was selected for Discovery. This section describes the criteria used to make this selection. For the Discovery process, watersheds are selected and analyzed at the HUC-8 level and evaluated using three major factors (or trifecta factors): population, topographic data availability, and risk decile. Decile risk was calculated from nine parameters including total population density, historical population growth, predicted population growth, housing units, flood policies, single claims, repetitive losses, RL properties, and declared disasters.

The Upper Trinity Watershed encompasses an area of approximately 1,370 square miles and extends across nine counties in the northeast part of Texas. Major communities include the cities of Dallas, Plano, Garland, and Irving. There are no Native American or Federal lands in the Watershed.

Table 1 provides a status update for each community's NFIP participation, Community Rating System (CRS) rating, and current Flood Insurance Rate Maps (FIRMs). All but seven communities in this watershed participate in the NFIP. Figure 1 shows the locations of all communities in the watershed.

Table 1: NFIP Status of Project Area Communities

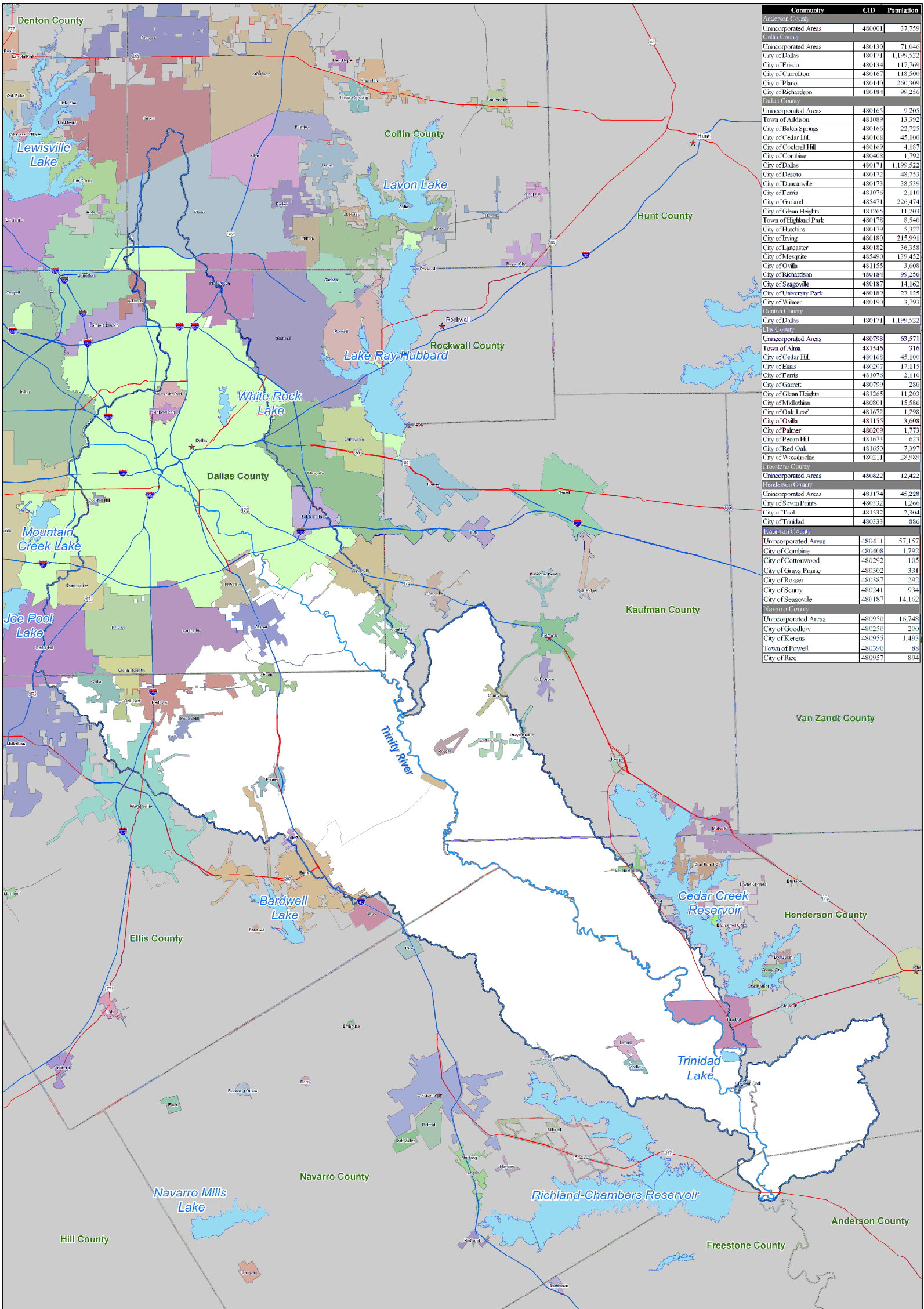
County	Community Name	CID	Participating Community	CRS	FIRM Date	FIRM Status	Population (2010 Census)
Anderson	Unincorporated Areas	480001	Yes	N/A	2/3/2010	Original	37,759
Collin	Carrollton	480167	Yes	7	4/18/2011	Revised	118,500
Collin	Dallas	480171	Yes	N/A	7/3/2012	Revised	1,199,522
Collin	Frisco	480134	Yes	N/A	4/18/2011	Revised	117,769
Collin	Plano	480140	Yes	5	4/18/2011	Revised	260,309
Collin	Richardson	480184	Yes	7	6/2/2009	Revised	99,256
Collin	Unincorporated Areas	480130	Yes	N/A	6/2/2009	Revised	71,046
Dallas	Addison	481089	Yes	N/A	8/23/2001	Revised	13,392
Dallas	Balch Springs	480166	Yes	N/A	8/23/2001	Revised	22,725
Dallas	Cedar Hill	480168	Yes	N/A	6/3/2013	Revised	45,100
Dallas	Cockrell Hill	480169	Yes	N/A	8/23/2001	Revised	4,187
Dallas	Combine	480408	No	N/A	7/3/2012	Revised	1,792
Dallas	Dallas	480171	Yes	N/A	7/3/2012	Revised	1,199,522

County	Community Name	CID	Participating Community	CRS	FIRM Date	FIRM Status	Population (2010 Census)
Dallas	Desoto	480172	Yes	N/A	8/23/2001	Revised	48,753
Dallas	Duncanville	480173	Yes	7	8/23/2001	Revised	38,539
Dallas	Ferris	481076	Yes	N/A	6/3/2013	Revised	2,110
Dallas	Garland	485471	Yes	7	6/2/2009	Revised	226,474
Dallas	Glenn Heights	481265	Yes	N/A	6/3/2013	Revised	11,203
Dallas	Highland Park	480178	Yes	N/A	8/23/2001	Revised	8,540
Dallas	Hutchins	480179	Yes	N/A	8/4/2004	Revised	5,327
Dallas	Irving	480180	Yes	N/A	8/23/2001	Revised	215,991
Dallas	Lancaster	480182	Yes	N/A	8/23/2001	Revised	36,358
Dallas	Mesquite	485490	Yes	N/A	7/3/2012	Revised	139,452
Dallas	Ovilla	481155	Yes	N/A	6/3/2013	Revised	3,608
Dallas	Richardson	480184	Yes	7	6/2/2009	Revised	99,256
Dallas	Seagoville	480187	Yes	N/A	7/3/2012	Revised	14,162
Dallas	Unincorporated Areas	480165	Yes	N/A	6/16/2005	Revised	9,205
Dallas	University Park	480189	Yes	N/A	8/23/2001	Revised	23,125
Dallas	Wilmer	480190	Yes	N/A	8/23/2001	Revised	3,793
Denton	Dallas	480171	Yes	N/A	7/3/2012	Revised	1,199,522
Ellis	Alma	481546	No	N/A	6/3/2013	Revised	316
Ellis	Cedar Hill	480168	Yes	N/A	6/3/2013	Revised	45,100
Ellis	Ennis	480207	Yes	N/A	6/3/2013	Revised	17,115
Ellis	Ferris	481076	Yes	N/A	6/3/2013	Revised	2,110
Ellis	Garrett	480799	No	N/A	6/3/2013	All Zone C & X Published FIRM	280
Ellis	Glenn Heights	481265	Yes	N/A	6/3/2013	Revised	11,203
Ellis	Midlothian	480801	Yes	N/A	6/3/2013	Revised	15,586
Ellis	Oak Leaf	481672	Yes	N/A	6/3/2013	Revised	1,298
Ellis	Ovilla	481155	Yes	N/A	6/3/2013	Revised	3,608
Ellis	Palmer	480209	Yes	N/A	6/3/2013	Revised	1,773
Ellis	Pecan Hill	481673	Yes	N/A	6/3/2013	Revised	623
Ellis	Red Oak	481650	Yes	N/A	6/3/2013	Revised	7,397
Ellis	Unincorporated Areas	480798	Yes	N/A	6/3/2013	Revised	63,571
Ellis	Waxahachie	480211	Yes	N/A	6/3/2013	Revised	28,989
Freestone	Unincorporated Areas	480822	Yes	N/A	9/1/2007	All Zone A, C and X - Original FIRM by Letter	12,422
Henderson	Seven Points	480332	Yes	N/A	7/3/2012	Revised	1,266
Henderson	Tool	481532	Yes	N/A	4/5/2010	Revised	2,304

County	Community Name	CID	Participating Community	CRS	FIRM Date	FIRM Status	Population (2010 Census)
Henderson	Trinidad	480333	Yes	N/A	4/5/2010	All Zone A, C and X - No Elevation Determined	886
Henderson	Unincorporated Areas	481174	Yes	N/A	4/5/2010	Revised	45,228
Kaufman	Combine	480408	No	N/A	7/3/2012	Revised	1,792
Kaufman	Cottonwood	480292	Yes	N/A	7/3/2012	All Zone A, C and X - No Elevation Determined	105
Kaufman	Grays Prairie	480302	No	N/A	7/3/2012	All Zone A, C and X - No Elevation Determined	331
Kaufman	Rosser	480387	No	N/A	7/3/2012	All Zone A, C and X - No Elevation Determined	292
Kaufman	Scurry	480241	Yes	N/A	7/3/2012	All Zone A, C and X - No Elevation Determined	934
Kaufman	Seagoville	480187	Yes	N/A	7/3/2012	Revised	14,162
Kaufman	Unincorporated Areas	480411	Yes	N/A	7/3/2012	Revised	57,157
Navarro	Goodlow	480250	No	N/A	6/5/2012	All Zone A, C and X - No Elevation Determined	200
Navarro	Kerens	480955	Yes	N/A	6/5/2012	All Zone A, C and X - No Elevation Determined	1,493
Navarro	Powell	480390	Yes	N/A	6/5/2012	All Zone A, C and X - No Elevation Determined	88
Navarro	Rice	480957	Yes	N/A	6/5/2012	All Zone A, C and X - No Elevation Determined	894
Navarro	Unincorporated Areas	480950	Yes	N/A	6/5/2012	Revised	16,748

Figure 1: Watershed and Communities

Discovery Map: Upper Trinity Watershed Locator Map



Community	CID	Population
Denton County		
Unincorporated Areas	480001	37,759
Collin County		
Unincorporated Areas	480130	71,048
City of Dallas	480171	1,199,522
City of Frisco	480134	117,769
City of Carrollton	480167	118,500
City of Plano	480140	260,309
City of Richardson	480184	99,256
Dallas County		
Unincorporated Areas	480165	9,203
Town of Addison	481089	13,392
City of Balch Springs	480166	22,725
City of Cedar Hill	480168	45,100
City of Cockrell Hill	480169	4,187
City of Combine	480408	1,792
City of Dallas	480171	1,199,522
City of Desoto	480172	48,753
City of Duncanville	480173	38,539
City of Ferris	481076	2,110
City of Garland	485471	226,474
City of Glen Heights	481265	11,203
Town of Highland Park	480178	8,540
City of Huachuca	480179	5,327
City of Irving	480180	215,991
City of Lancaster	480182	36,358
City of Mesquite	485490	139,452
City of Ovilla	481155	3,608
City of Richardson	480184	99,256
City of Seagoville	480187	14,162
City of University Park	480189	23,125
City of Wilmer	480190	3,793
Denton County		
City of Dallas	480171	1,199,522
Rockwall County		
Unincorporated Areas	480708	63,571
Town of Alvin	481546	316
City of Cedar Hill	480168	45,100
City of Ennis	480207	17,113
City of Ferris	481076	2,110
City of Garrett	480799	280
City of Glen Heights	481265	11,203
City of Mellotham	480801	15,586
City of Oak Leaf	481672	1,298
City of Ovilla	481155	3,608
City of Palmer	480209	1,773
City of Pecan Hill	481673	623
City of Red Oak	481650	7,397
City of Wacahatchie	480211	28,989
Freestone County		
Unincorporated Areas	480822	12,422
Henderson County		
Unincorporated Areas	481174	45,228
City of Seven Points	480332	1,266
City of Tool	481532	2,304
City of Trinidad	480333	886
Kaufman County		
Unincorporated Areas	480411	57,157
City of Combine	480408	1,792
City of Cottonwood	480202	103
City of Grays Prairie	480302	331
City of Rosser	480387	292
City of Seagoville	480241	934
City of Seagoville	480187	14,162
Navarro County		
Unincorporated Areas	480950	16,748
City of Goodlow	480250	200
City of Kerens	480955	1,493
Town of Powell	480390	88
City of Rice	480957	894

MAP SYMBOLOLOGY

Flood Hazard Areas
Source: FEMA

- HUC-8
- Trinity River
- County Boundary
- Municipal Boundary
- Primary Limited Access or Interstate
- Primary US and State Highway
- County Seat

NOTES TO USERS

All information on this map came from public data. Imagery, roads, and political boundaries were supplied by the Texas Natural Resources Information System and ESRI. Hydrographic Features (Streams and HUC Boundaries) were provided by USGS National Hydrography Dataset (NHD) or delineated using USGS NED data.

For more information about the data displayed on this map please contact:
FEMA Region 6 Regional Support Center
723 South Interstate 35E, Suite 230
Denton, Texas 76205

WATERSHED LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM
DISCOVERY MAP: LOCATOR

UPPER TRINITY WATERSHED, TEXAS

FEMA
HUC-8 Code
12030105
RELEASE DATE
May 2013



The Trinity River is the primary river in the Upper Trinity Watershed, which begins at the confluence of the Elm Fork Trinity River and the West Fork Trinity River in Dallas County. The Trinity River flows through Texas and drains into Trinity Bay and Galveston Bay, which drains into the Gulf of Mexico. The watershed lies within the Oaks and Prairies ecological region, which is a transitional area for many plants and animals, whose ranges extend northward into Great Plains or eastward into the forests. Average annual rainfall averages 28 to 40 inches per year, with peaks occurring in May or June. The landscape is gently rolling to hilly. The area is predominantly covered with oak trees and interspersed with grassland. Crop production and cattle ranching are the primary agricultural industries in most parts of the watershed (Texas Parks and Wildlife http://www.tpwd.state.tx.us/kids/about_texas/regions/prairies_and_lakes/big_kids/).

The climate in central Texas is subtropical, characterized by hot, high-humidity summers and mild winters. The floodplains throughout the watershed are devoted to agriculture, with the exceptions of population centers, such as the DFW area.

The area in the vicinity of the watershed is mostly flat, with fertile floodplain. The western edge of the Austin Chalk Formation, which is a limestone escarpment, runs north-south, through Dallas County. The northern part of the watershed is urban around the DFW area, with agricultural lands in the central areas of the watershed. The area around Trinity River is covered by Water Oak, Elm, and Hackberry Trees. The southern part of the watershed is mostly rural with Post Oak Woods and grasslands. There are approximately 350 U.S. Environmental Protection Agency (EPA) remediation sites within the watershed, most concentrated around the northern and northwestern portions of the watershed.

There are two lakes within the watershed: White Rock Lake in the City of Dallas and Trinidad Lake near City of Trinidad. White Rock Lake is located about five miles northeast of downtown Dallas in Dallas County, on White Rock Creek, which is a tributary to Trinity River. The lake is owned and operated by the city of Dallas, to supply a small part of the city's municipal water needs, and to cool a steam-electric generation plant. White Rock Dam is an earth filled structure with a concrete service/emergency spillway. Located on White Rock Lake, the dam was originally built for stormwater control and municipal water supply, but it is currently owned and operated by City of Dallas and is used for recreational purposes. Trinidad Lake is the smallest lake in the Trinity River Basin; it is located two miles south of Trinidad in southwestern Henderson County. Trinidad Lake Dam, which is located on this lake, is owned and operated by the TXU Generation Company LLP for a steam-electric generation plant (Texas Water Development Board <http://www.twdb.state.tx.us/surfacewater/index.asp>).

Population

The population in this watershed was 3,055,293, based on U.S. Census data for 2010. The Upper Trinity Watershed covers a portion of DFW, one of the watershed's highest population centers (population: 2,377,273). DFW encompasses 12 counties and is the economic and cultural hub of north Texas. Eight densely populated areas are within the Upper Trinity watershed, including the Cities of Dallas, Plano, Garland, Irving, Mesquite, Carrollton, Frisco, and Richardson (in order of decreasing population). Figure 2 shows the population densities within the Upper Trinity Watershed based on U.S. Census Data for 2010.

Risk Decile

The level of flood risk can be calculated by two methods rank at a National level which includes all watersheds or rank at the Region 6 level which includes only the watershed within the Region. Risk deciles are calculated from nine parameters, including total population density, historical population growth, predicted population growth, housing units, flood policies, single claims, RLs, RL properties, and declared disasters.

A risk decile is calculated at the HUC8 watershed level. The scale of risk decile ranking is 1 to 10, with 1 being the highest and 10 being the lowest ranking for a portion of the watershed. Risk factor rank and overall rank is calculated from the Upper Trinity watershed (HUC8) rank in relation to all other HUC 8 watershed nationally and/or regionally. Table 2 lists the overall rankings of the Upper Trinity Watershed when compared nationally and regionally to other HUC 8 watersheds.

Table 2: Watershed Risk Factor Rankings

Upper Trinity Watershed Selection Rankings			
National Risk Factor Rank:	58.5	Region 6 Risk Factor Rank:	6
National Risk Decile:	1	Region 6 Risk Decile:	1
Average Annualized Loss:	\$160,000,000	Average Annualized Loss:	\$160,000,000
National Average Annualized Loss Rank:	56	Region 6 Average Annualized Loss Rank:	9
National Overall Rank:	33	Region 6 Overall Rank:	8

The area in the vicinity of the DFW is mostly urban, and a majority of the cities in this area were developed for residential and commercial purposes. Figure 3 shows the relative percent of urban cover for areas within the watershed. As seen in Figure 3, the northern part of the watershed is mostly urban, whereas most of the central and southern regions of the watershed are primarily rural.

The population growth within the watershed in the past five years has been mainly around the DFW area, the City of Garrett, and the City of Ennis in Ellis County. The growth in the DFW area is a mixture of retail, commercial, institutional, and residential. Figure 4 (Urban Changes Last Five Years) shows changes in urbanization within the watershed in the past five years.

Figure 2: Population Density in the Watershed

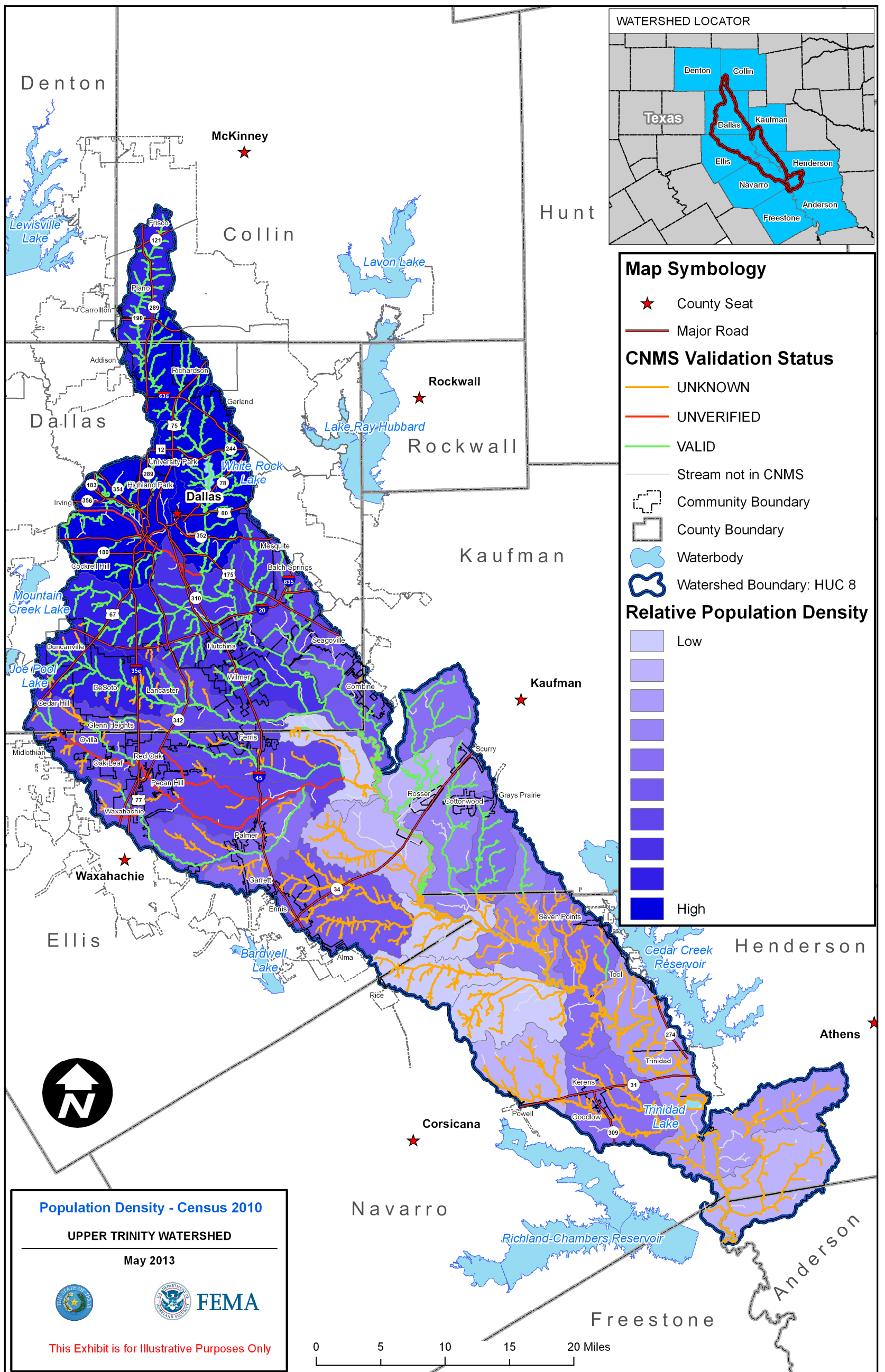


Figure 3: Current Percent Urban Coverage

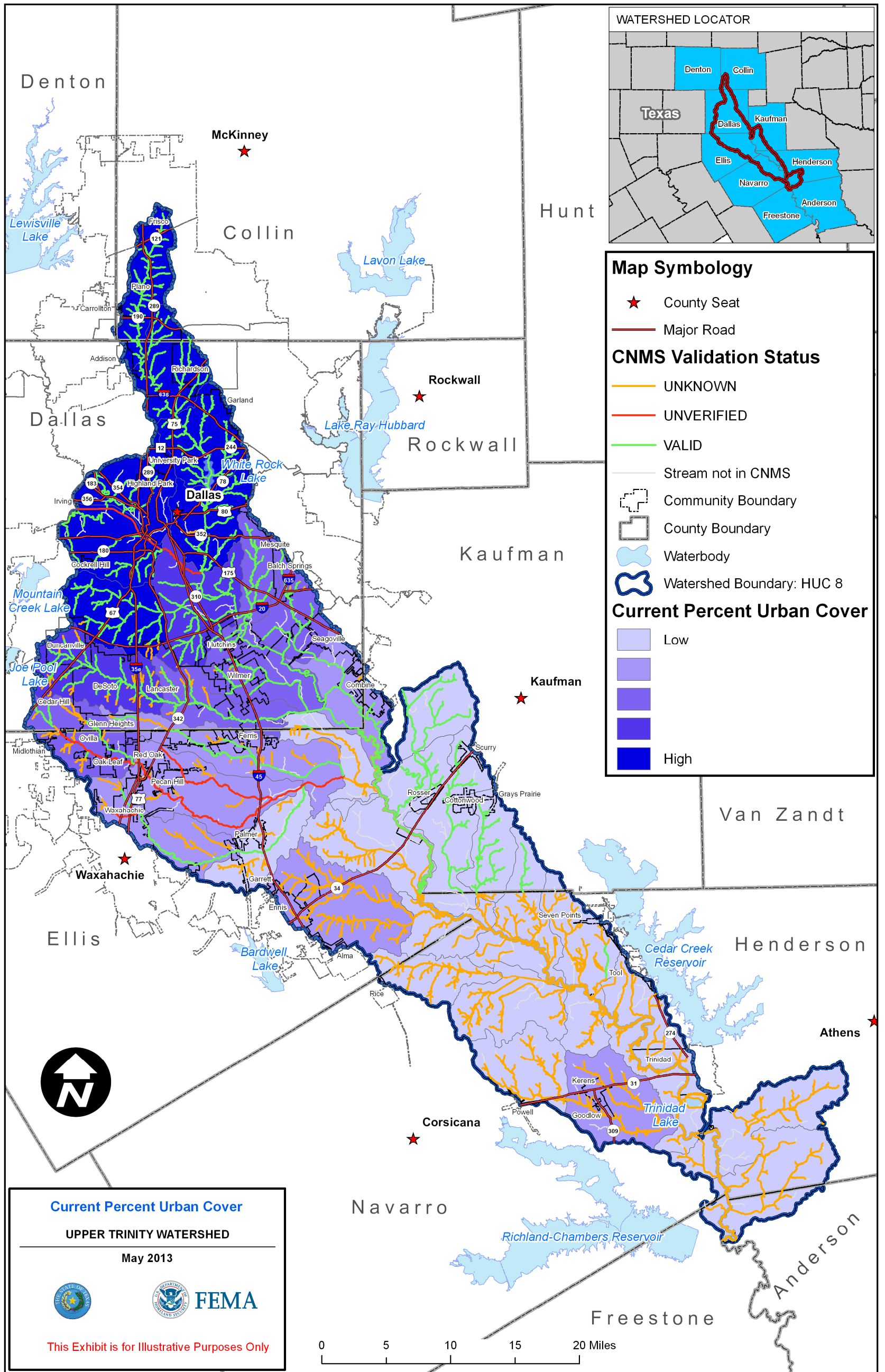


Figure 4: Urban Changes Last Five Years

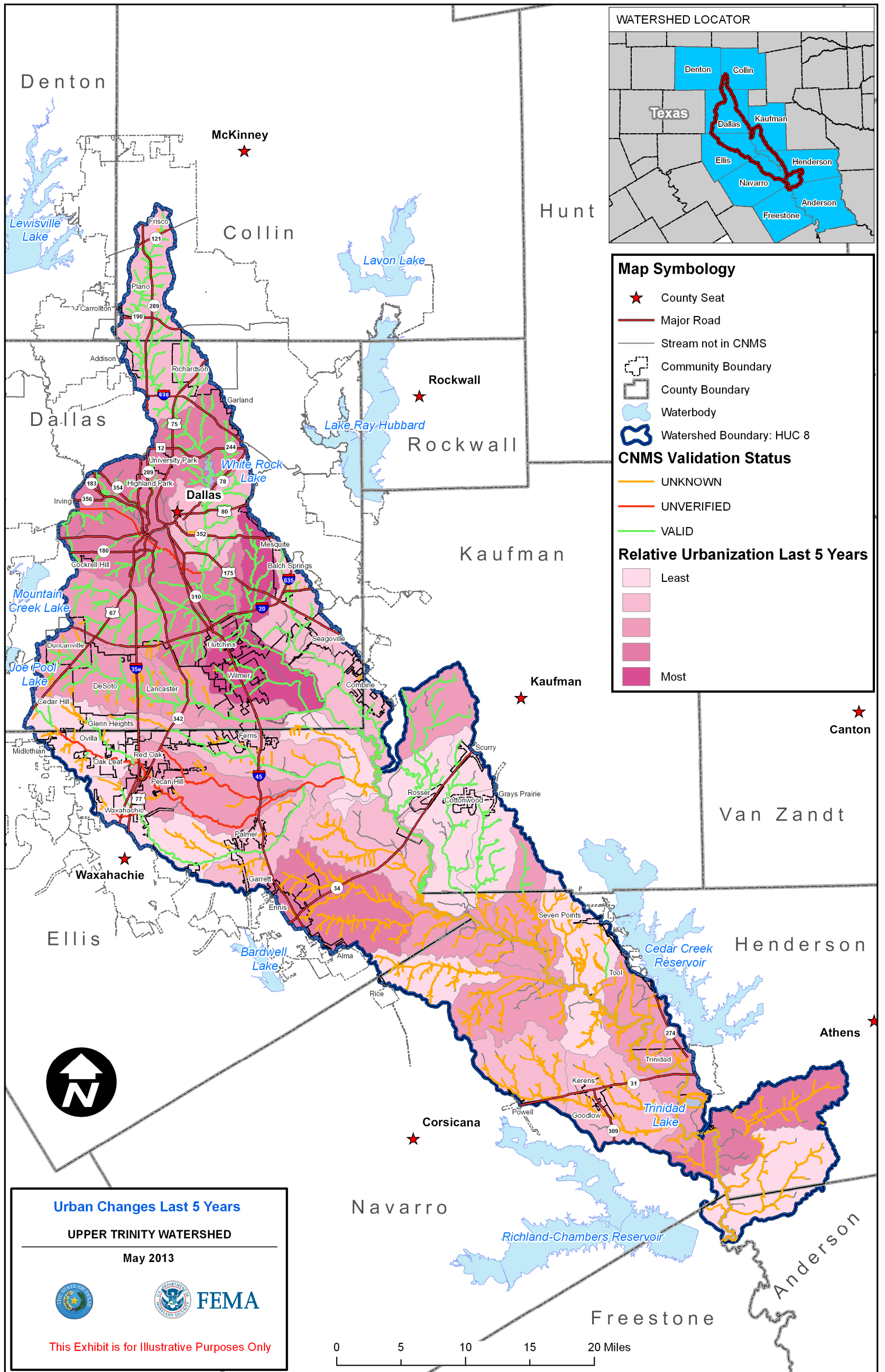


Table 3 lists the number of NFIP insurance claims since 1978 for the portions of the communities within the Watershed. Of the insurance claims filed within the watershed, 60 percent have been filed in the DFW area. Figure 5 depicts the distribution of NFIP insurance claims within the Upper Trinity Watershed.

Table 3: Total NFIP Insurance Claims

Total NFIP Insurance Claims by Community	
Community**	Claims
Anderson County*	2
Balch Springs	84
Carrollton	51
Cedar Hill	13
Collin County*	24
Dallas	639
Dallas County*	60
Desoto	98
Duncanville	44
Ellis County*	37
Ennis	9
Frisco	4
Garland	308
Glenn Heights	4
Henderson County*	13
Highland Park	19
Hutchins	3
Irving	117
Kaufman County*	6
Lancaster	107
Mesquite	84
Navarro County*	2
Oak Leaf	2
Ovilla	1
Plano	50
Red Oak	2
Richardson	8
Seagoville	1
Trinidad	1
University Park	4
Waxahachie	12

*Unincorporated Areas of the County

**If a community is not listed, then it has had no claims.

In addition to NFIP claims, there are several locations of [RL or Severe Repetitive Loss (SRL)] properties within the Upper Trinity Watershed. Table 4 summarizes RL and SRL claims by county

and community within the Watershed. A number of these locations appear to be concentrated in the City of Dallas and the City of Garland.

Figure 6 shows the approximate locations of these losses. These losses are also displayed on the Discovery Map included in the supplemental digital data.

Table 4: Repetitive or Severe Repetitive Loss within the Watershed

Repetitive Losses/Severe Repetitive Losses By Community			
Community**	Number of Properties	Total Claims	Average Number of Claims Per Property
Anderson County*	1	2	2.0
Balch Springs	18	50	2.8
Carrollton	2	6	3.0
Collin County*	2	5	2.5
Dallas	55	170	3.1
Dallas County*	3	10	3.3
Desoto	9	22	2.4
Ellis County*	4	11	2.8
Garland	52	161	3.1
Henderson County*	1	4	4.0
Highland Park	1	6	6.0
Irving	9	24	2.7
Lancaster	10	32	3.2
Mesquite	8	23	2.9
Plano	6	15	2.5
Red Oak	1	2	2.0
Waxahachie	2	7	3.5

*Unincorporated Areas of the County

**If a community is not listed, then it has had no RLs.

Figure 5: Single Claims in the Watershed

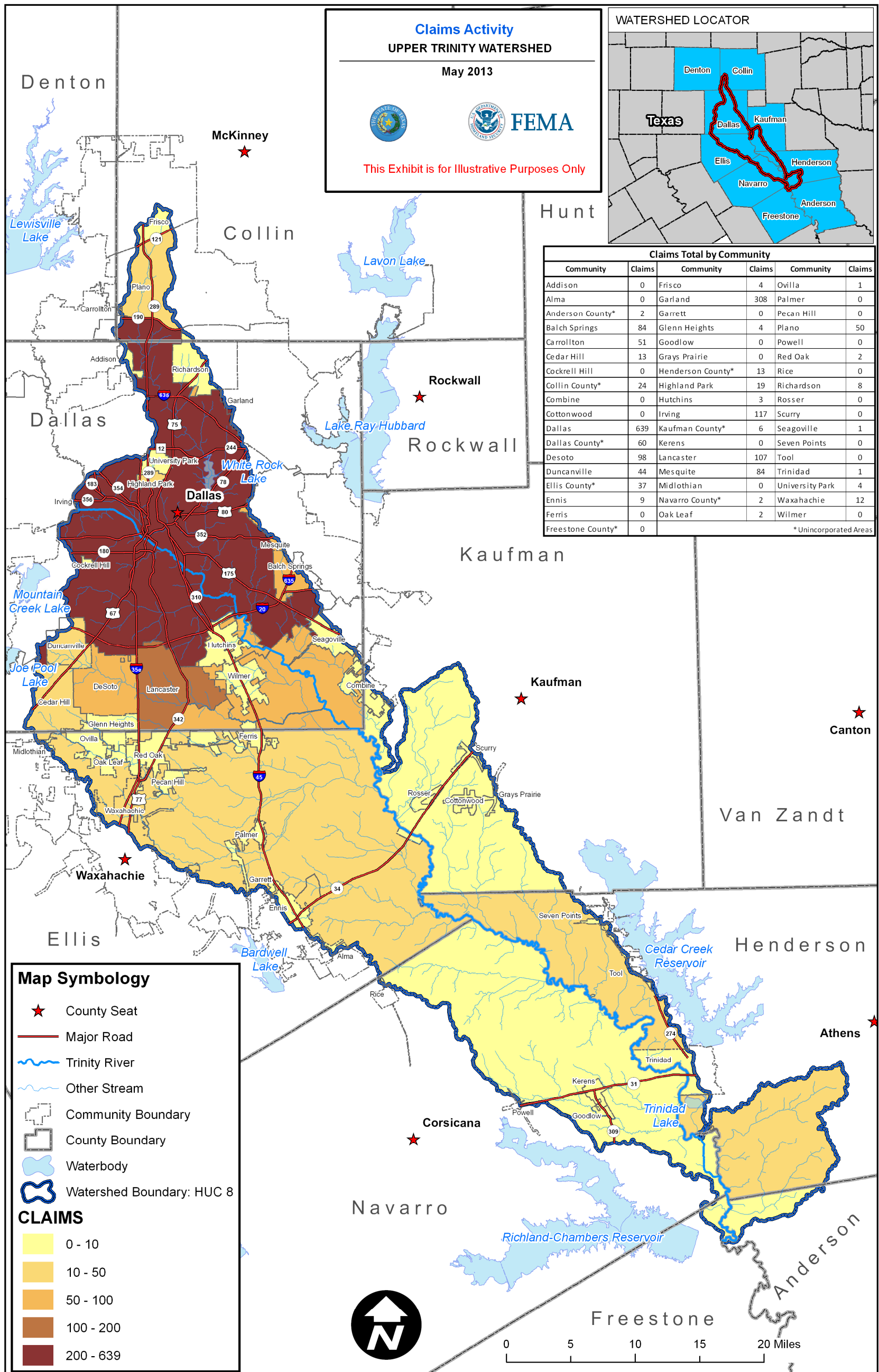
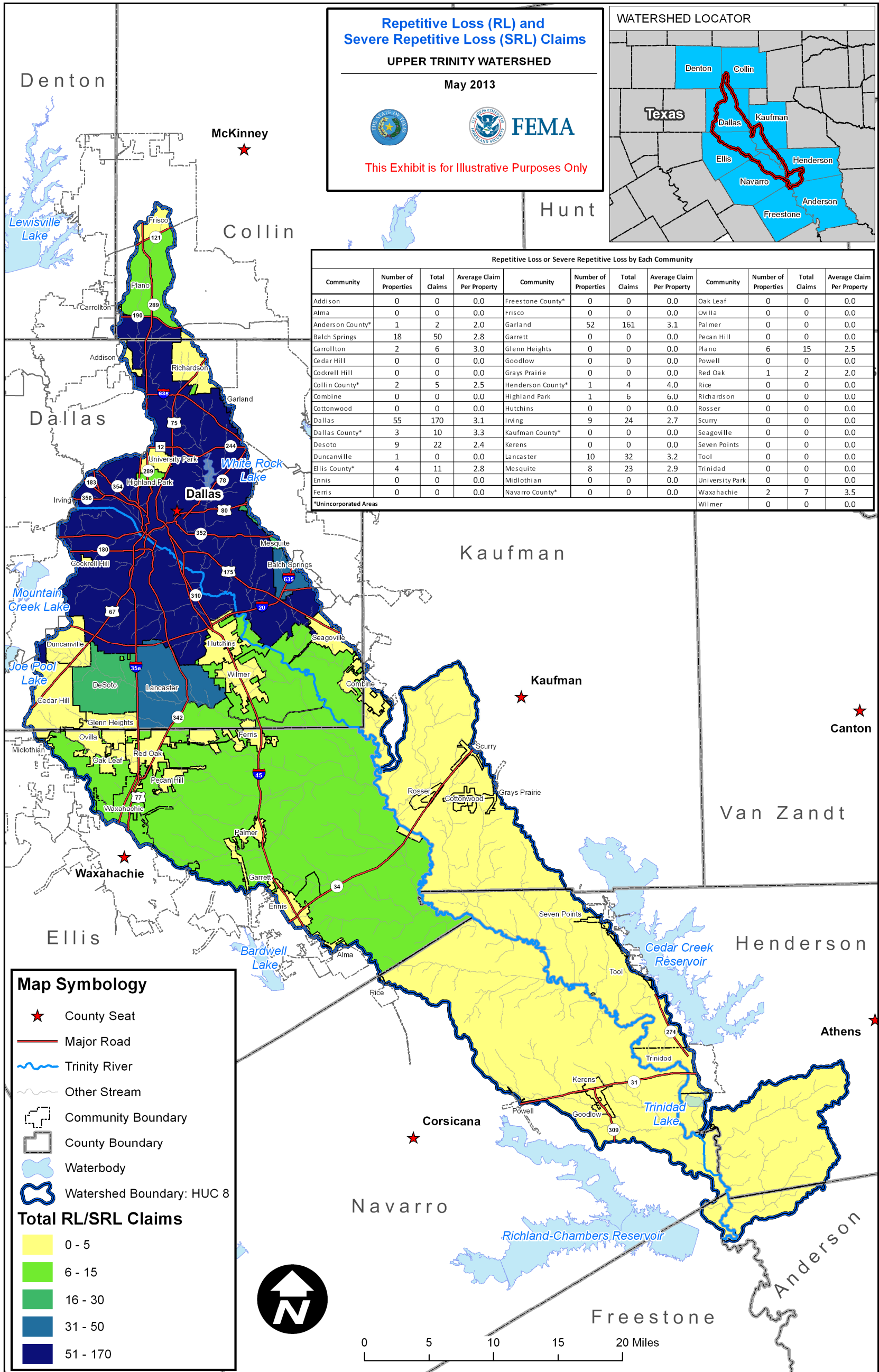


Figure 6: Repetitive and Severe Repetitive Losses



The Upper Trinity Watershed has a history of flooding as demonstrated by 33 presidential disaster declarations since 1965; 17 of these were issued in the past 10 years. The State Mitigation Plan asserts that flooding was one of the main causes of 21 of these disaster declarations since 1965. The most recent was Hurricane Gustav, which was declared on August 29, 2008, immediately followed by Hurricane Ike on September 13, 2008. Table 5 lists recent presidential disaster declarations for multiple hazards within the Watershed.

Table 5: Presidential Disaster Declarations in the Watershed

Date of Declaration	Watershed Counties Declared	For Hazard
06/19/1965	Freestone, Navarro	Tornadoes and Flooding
05/12/1966	Anderson, Collin, Dallas, Freestone, Henderson, Navarro	Severe Storms and Flooding
03/12/1973	Navarro	High Winds, Tornadoes and Flooding
11/30/1974	Anderson, Denton	Severe Storms and Flooding
07/28/1979	Dallas	Storms and Flash Floods
11/20/1987	Anderson	Severe Storms and Tornadoes
05/19/1989	Anderson, Collin, Dallas, Denton, Ellis, Henderson, Kaufman, Navarro	Severe Storms, Tornadoes and Flooding
05/02/1990	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Severe Storms, Tornadoes and Flooding
12/26/1991	Anderson, Dallas, Freestone, Henderson	Severe Thunderstorms
09/10/1993	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Extreme Fire Hazard
04/29/1994	Dallas	Severe Storms and Tornadoes
02/23/1996	Anderson, Dallas, Denton	Extreme Fire Hazard
08/26/1998	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Tropical Storm Charley
08/31/1999	Ellis	Midlothian Fire
09/01/1999	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Extreme Fire Hazards
06/09/2001	Anderson	TX-Tropical Storm Allison 06-06-2001
02/01/2003	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Loss of Space Shuttle Columbia
09/02/2005	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Hurricane Katrina Evacuation
09/21/2005	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Hurricane Rita
09/24/2005	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Hurricane Rita
01/11/2006	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Extreme Wildfire Threat
02/05/2006	Ellis	Venus Fire Complex
06/27/2006	Denton	North Trinity Fire
05/01/2007	Denton	Severe Storms and Tornadoes
06/29/2007	Anderson, Collin, Denton, Ellis, Henderson, Kaufman, Navarro,	Severe Storms, Tornadoes, and Flooding
08/18/2007	Dallas	Hurricane Dean
03/14/2008	Anderson, Collin, Dallas, Denton, Ellis, Freestone, Henderson, Kaufman, Navarro	Wildfires

Date of Declaration	Watershed Counties Declared	For Hazard
08/29/2008	Collin, Dallas, Denton, Navarro	Hurricane Gustav
09/10/2008	Anderson, Collin, Dallas, Denton, Ellis, Henderson, Kaufman, Navarro	Hurricane Ike
09/13/2008	Anderson	Hurricane Ike
06/18/2011	Ellis	County Line Fire
07/01/2011	Anderson	Wildfires
09/09/2011	Anderson, Henderson, Navarro	Wildfires

Topographic Data

Recent or pending planned acquisitions of topographic data have been made for Collin, Dallas, Denton, Ellis, Hill, Kaufman, and Navarro Counties. Topographic data obtained from Light Detection and Radar (LiDAR) sources, provided by TWDB and NCTCOG, covers about 95-percent of the entire watershed. TNRIS LiDAR data collected in 2009 is available for the entire area of Dallas County, and for a portion of Collin, Ellis and Kaufman Counties. TNRIS LiDAR data collected in 2013 is available for portions of Ellis, Hill, and Navarro Counties. TNRIS LiDAR data collected in 2011 is available for the portion of Kaufman County that lies within the Watershed, and for small portions of Collin, Ellis, and Navarro Counties, along the Watershed boundary. NCTCOG LiDAR data collected in 2001 is available for a small portion in the northern part of Ellis County that falls within the Watershed. Areas that are lacking updated topographic information are most of Anderson, Ellis, Freestone, Henderson, and Navarro Counties. Only the U.S. Geological Survey (USGS) 10-meter Digital Elevation Model (DEM) data is available for these missing areas; it may be used for hydrologic modeling and approximate studies and mapping, but is not suitable for detailed hydraulic modeling and floodplain mapping.

Coordinated Needs Management Strategy

Significant streams in this Watershed include the Trinity River, along with Bear Creek, Bridge Creek, Caney Creek, Elm Fork Trinity River, Grays Creek, Grove Creek, Parsons Slough, Prairie Creek, Red Oak Creek, Rush Creek, Smith Creek, Tenmile Creek, Turkey Creek, Turtle Creek, Village Creek, West Fork Trinity River, White Rock Creek, and Wildcat Creek. In addition to significant streams, White Rock Lake is a significant water resource within the Watershed. The USGS provides a National Flow Accumulation Grid that can be used to identify stream miles that reflect drainage areas of 1 square mile (1 mi²) from available topographic data. This stream mileage may be used to gain a sense of the total potential stream miles for a watershed. Using the National Flow Accumulation Grid, there are approximately 1,147 stream-miles in the Upper Trinity Watershed.

The Coordinated Needs Management Strategy (CNMS) Inventory provides a snapshot of the status and attributes of currently studied streams existing within FEMA’s floodplain study inventory. In general, the stream mileage shown in CNMS reflects those streams with a drainage area of approximately 1 mi² with designated effective Special Flood Hazard Areas (SFHA). CNMS does not reflect the total potential number of stream miles to be studied within a watershed.

In addition to listing the miles of studied stream segments within a watershed, CNMS identifies or records certain physiological, climatological, or engineering methodological factors that may have changed since the date of the effective study. The stream miles shown in CNMS are attributed with both a Validation Status and Status Type that when considered over the geographic area of interest (e.g., a HUC 8 watershed), helps decision-makers to evaluate the condition of a given study or group of studies. One such FEMA-sponsored evaluation includes the New Validated or

Updated Engineering (NVUE) metric. NVUE is one of the primary metric systems that FEMA utilizes to understand which studies are considered valid in CNMS.

The NVUE metric is used as an indicator the status of studies for FEMA's mapped SFHA inventory. For those studies that are categorized as "unverified," typically one or more factors have changed since the SFHA became effective, or the study may have a deficiency warranting restudy. CNMS stream mileage categorized as "Requires Assessment" have been determined to require further input to determine their validity – often because they represent paper inventory or non-modernized studies. CNMS aids in identifying areas to consider for study during the Discovery process by highlighting needs on a map, quantifying them (sum of the mileage), and providing further categorization of these needs in order to differentiate factors that identify the needs.

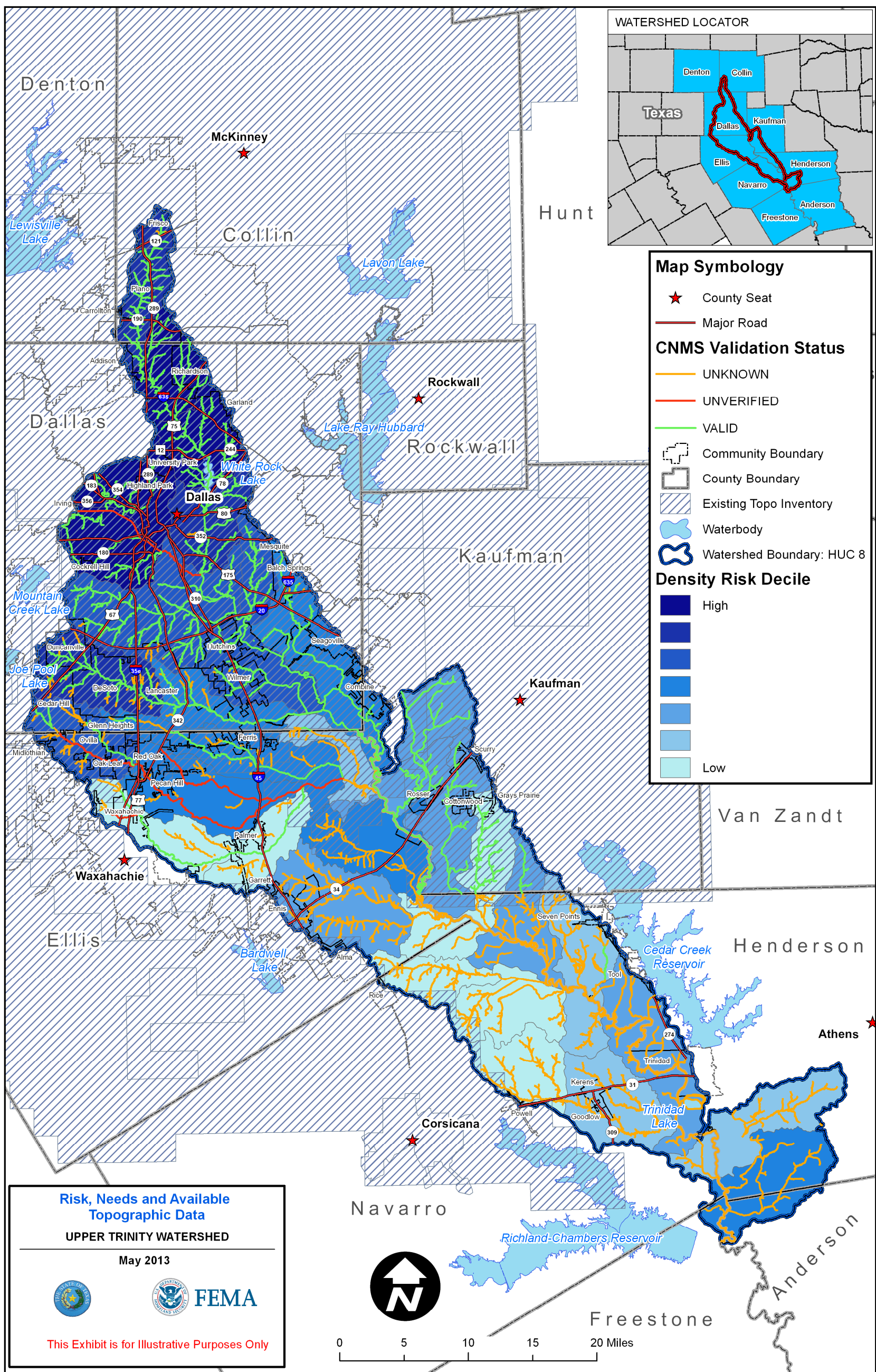
Table 6 compares the National Hydrologic Dataset (NHD) data to the CNMS data and summarizes the Validated NVUE stream mileage from CNMS for the watershed.

Table 6: NVUE Approximate Stream Mileage in the Watershed

NVUE Validation	Stream Miles
NHD Streams (streams with a drainage area of greater than 1 mi ²)	1,147
CNMS Streams (streams with effective SFHA)	1,592
Stream Miles not accounted for in CNMS	N/A
CNMS Valid Zone AE/AH	555
CNMS Valid Zone A	135
CNMS Unverified Zone AE / AH	59
CNMS Unverified Zone A	0
CNMS Zone AE / AH Requiring Further Assessment or in the process of being studied	0
CNMS Zone A Requiring Further Assessment (Unverified)	833

Using these criteria from CNMS, within the Upper Trinity Watershed approximately 59 miles of Zone AE areas were identified as unverified. Streams included in the unverified grouping include Brushy Creek, Red Oak Creek, South Grove Creek, and a portion of Trinity River, with approximately 59 miles of Zone AE flagged as requiring further assessment or in the process of being studied with ongoing projects. Additionally, 555 miles of Zone AH and Zone AE, and 135 miles of Zone A, in the Watershed were characterized as being Valid under the NVUE metrics. [Figure 7](#) provides a snapshot of CNMS factors for each stream segment, the HUC 12 risk decile, and the availability of topographic data. The combination of these three factors resulted in the selection of Upper Trinity Watershed for a Discovery Project.

Figure 7: Risk, Need and Available Topographic Data



II. Discovery Efforts

i. Engagement Plan

Pre-Discovery Community Engagement

Table 7 provides the members of the Regional Project Team.

Table 7: Regional Project Team

Organization	Name/E-Mail	Responsibility
FEMA R6 – Risk Analysis (Engineering & Mapping)	Shona Gibson shona.gibson@fema.dhs.gov	Project Monitor – Engineering and Mapping Lead
FEMA R6 – Risk Analysis (Mitigation Planning)	Pat Schaffer pat.schaffer@fema.dhs.gov	Mitigation Planning Support
FEMA R6 – Floodplain Management & Insurance	Dale Hoff dale.hoff@fema.dhs.gov	Compliance and Insurance Specialist
FEMA R6 – Hazard Mitigation Assistance	Brianne Schmidtke brianne.schmidtke@fema.dhs.gov	Hazard Mitigation Grant Specialist
FEMA R6 – Hazard Mitigation Assistance	Marty Chester marty.chester@fema.dhs.gov	Non-Disaster Grants Specialist
FEMA R6 – Outreach	Diane Howe diane.howe@fema.dhs.gov	Outreach Specialist
Cooperating Technical Partners – North Central Texas Council of Governments (NCTCOG)	Jack Tidwell	CTP
Cooperating Technical Partners – North Central Texas Council of Governments (NCTCOG)	Leo Valencia	CTP
Cooperating Technical Partners – North Central Texas Council of Governments (NCTCOG)	Jessica Baker	CTP
State of Texas– NFIP Coordinator	Michael Segner micheal.segner@twdb.state.tx.us	State Partner
State of Texas - State Hazard Mitigation Officer	Frank Cantu frank.cantu@dps.state.tx.us	State Partner
Production and Technical Services Contractor – Risk Assessment, Mapping, and Planning Partners (RAMPP)	Barrett Goodwin bgoodwin@dewberry.com	RAMPP Study Manager

FEMA and the Regional Project Team were in contact with all Watershed stakeholders via letters, email, and phone calls before this Discovery meeting to request local participation. In addition to

assistance with scheduling the Discovery Meeting, local stakeholders were asked to help identify additional key people who should be included in the Discovery process and acquire any data that would assist in the risk identification and assessment for the Upper Trinity Watershed. A detailed list of communities; local officials; and Federal, State, and regional agencies invited to participate in the Discovery Process is included with the supplemental digital data accompanying this report; see DVD\ 12030105\Discovery\2-Discovery_Meeting\Correspondence.

In preparation for the Discovery meeting, the Regional Project Team:

- Gathered information about local flood risk and flood hazards
- Reviewed mitigation plans to understand local mitigation capabilities, hazard risk assessments, current or future mitigation activities, and areas of mitigation interest
- Encouraged communities within the Watershed to develop a vision for its future
- Used all information gathered to determine which areas of the Watershed may require further study through a Risk MAP project

The Regional Project Team began outreach efforts to the local governments within the Watershed and to Congressional and public officials, to inform them of the Discovery process and to invite them to participate and contribute information about the Watershed and about water resource concerns. The following key steps taken before the Discovery workshops:

- Initial Coordination meeting with FEMA, the State of Texas [NFIP Coordinator and State Hazard Mitigation Officer (SHMO)], and contract personnel to set the stage for co-participation, sharing of the meeting, and to establish potential meeting times and locations
- Information and invitation letters mailed to the CEO, other key personnel in the communities, and other local stakeholders, approximately 90 in total
- Initial calls by Risk Assessment, Mapping, and Planning Partners (RAMPP) staff members to request information that may be pertinent to the Watershed
- FEMA follow-up with email with meeting information
- FEMA follow-up with phone calls to personally invite communities and remind them of the meeting details and logistics to ensure the major Watershed stakeholders will attend
- FEMA internal coordination for meeting attendees to support the project
- U.S. Army Corps of Engineers (USACE) invited to actively participate as an active member of the project team
- Congressional briefing before the meeting
- Media briefing before the meeting - or as determined appropriate by External Affairs (Public Affairs)

Discussions were held with Watershed stakeholders about potential partnership opportunities, as well as their help in identifying flood risk throughout the Watershed. Table 8 shows previous correspondence FEMA Region 6 has had with communities within the Upper Trinity Watershed. Community Assisted Visits (CAVs) and Community Assisted Calls (CACs) are conducted by either FEMA or State staff as needed. CAV or CACs are conducted to checkup with local communities on NFIP enforcement and regulations and note any particular issues that came from that communication.

Table 8: FEMA History of Engagement

Community Name	Type of Engagement	Date	Agency	Comments
Addison	CAC	12/8/2009	STATE	NFIP checkup
Alma	N/A	N/A	N/A	N/A
Anderson County*	CAC	3/27/2012	STATE	NFIP checkup
	CAC	12/2/2009	STATE	NFIP checkup
	CAC	3/12/2008	STATE	Serious problems
	CAC	8/22/1996	STATE	No permit system
	CAC	10/27/1992	STATE	No permit system
Balch Springs	CAC	2/22/2012	STATE	NFIP checkup
	CAC	7/27/2009	STATE	NFIP checkup
	CAC	3/27/2008	STATE	Minor problems
	CAV	7/29/2000	STATE	No problems
Carrollton	CAC	12/14/2012	STATE	NFIP checkup
	CAC	1/18/2011	FEMA	Serious problems
	CAC	3/11/2009	STATE	NFIP checkup
	CAC	8/6/2007	FEMA	Minor problems
	CAC	6/26/2006	STATE	NFIP checkup
	CAV	8/29/2000	STATE	No problems
	CAV	5/21/1991	FEMA	No problems
Cedar Hill	CAC	12/13/2012	STATE	NFIP checkup
	CAC	6/17/2008	STATE	Serious problems
	CAC	5/29/2007	STATE	Minor problems
	CAV	8/29/2000	STATE	No problems
Cockrell Hill	CAC	6/12/2008	STATE	NFIP checkup
	CAC	7/10/2006	STATE	NFIP checkup
	CAC	9/11/1996	FEMA	NFIP checkup
Collin County*	CAC	2/13/2009	STATE	NFIP checkup
	CAC	9/8/1995	STATE	NFIP checkup
Combine	N/A	N/A	N/A	N/A
Cottonwood	CAC	6/4/2012	STATE	Minor problems
Dallas	CAC	12/21/2012	STATE	NFIP checkup
	CAC	7/14/2008	STATE	NFIP checkup
	CAC	8/6/2007	FEMA	Potential violations
	CAV	5/4/1998	FEMA	Minor problems
	CAC	8/7/1996	STATE	NFIP checkup
Dallas County*	CAC	1/15/2013	STATE	NFIP checkup
	CAC	8/11/2009	STATE	NFIP checkup
	CAC	8/7/1996	STATE	NFIP checkup
	CAC	7/17/1996	STATE	NFIP checkup
Desoto	CAC	5/16/2012	STATE	NFIP checkup
	CAC	6/12/2008	STATE	Minor problems
	CAC	5/25/2007	STATE	NFIP checkup
	CAV	7/14/2006	STATE	Minor problems
Duncanville	CAC	12/17/2012	STATE	NFIP checkup
	CAC	6/9/2008	STATE	NFIP checkup
	CAC	7/24/2006	STATE	NFIP checkup
	CAV	7/14/2006	STATE	Minor problems

Community Name	Type of Engagement	Date	Agency	Comments
Ellis County *	CAC	3/8/2012	STATE	NFIP checkup
	CAC	3/3/2011	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/15/2008	STATE	Minor problems
	CAC	7/28/2006	STATE	Minor problems
	CAV	9/7/2000	STATE	Minor problems
Ennis	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/11/2008	STATE	NFIP checkup
	CAC	7/31/2006	STATE	NFIP checkup
	CAV	9/5/2000	STATE	No problems
	CAC	9/20/1993	FEMA	NFIP checkup
Ferris	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/25/2008	STATE	Minor problems
	CAV	9/5/2000	STATE	NFIP checkup
	CAC	7/11/1996	STATE	Potential violations
	CAC	2/5/1992	STATE	Serious problems
	CAV	2/5/1992	STATE	Serious problems
Freestone County*	CAC	4/17/2013	STATE	Minor problems
	CAC	5/31/2007	STATE	Serious problems
Frisco	CAV	6/3/2013	STATE	Minor problems
	CAC	3/30/2012	STATE	NFIP checkup
	CAC	3/10/2009	STATE	NFIP checkup
	CAC	8/6/2007	FEMA	NFIP checkup
	CAC	9/23/2004	STATE	NFIP checkup
	CAV	5/15/2000	STATE	No problems
Garland	CAC	12/17/2012	STATE	NFIP checkup
	CAC	6/17/2008	STATE	Minor problems
	CAC	5/15/1996	STATE	NFIP checkup
	CAV	7/17/1993	FEMA	Potential violations
Garrett	N/A	N/A	N/A	N/A
Glenn Heights	CAC	12/14/2012	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	6/3/2008	STATE	NFIP checkup
	CAC	8/19/1994	STATE	Serious problems
Goodlow	N/A	N/A	N/A	N/A
Grays Prairie	N/A	N/A	N/A	N/A
Henderson County*	CAC	5/7/2013	STATE	NFIP checkup
	CAC	10/8/2008	STATE	Minor problems
	CAC	8/14/2007	FEMA	NFIP checkup
	CAC	5/19/2006	STATE	Serious problems
Highland Park	CAC	12/14/2012	STATE	NFIP checkup
	CAC	9/10/2009	STATE	NFIP checkup
	CAC	9/23/1996	STATE	NFIP checkup
Hutchins	CAC	12/14/2012	STATE	Minor problems
	CAC	5/28/2008	STATE	NFIP checkup
	CAC	6/4/1996	STATE	Potential violations
Irving	CAV	1/9/2012	STATE	Potential violations
	CAC	9/21/2011	STATE	NFIP checkup
	CAC	8/6/2009	STATE	NFIP checkup
	CAC	6/13/2007	STATE	Minor problems

Community Name	Type of Engagement	Date	Agency	Comments
	CAC	9/23/1996	STATE	NFIP checkup
Kaufman County*	CAC	8/8/2013	STATE	NFIP checkup
	CAC	4/16/2010	STATE	NFIP checkup
	CAC	8/1/2008	STATE	NFIP checkup
	CAC	7/31/2006	STATE	NFIP checkup
	CAC	4/24/2001	STATE	NFIP checkup
	CAC	8/22/1994	STATE	NFIP checkup
Kerens	CAC	5/3/2010	STATE	NFIP checkup
	CAC	6/14/2007	STATE	Serious problems
	CAC	7/15/1994	STATE	Serious problems
Lancaster	CAC	3/20/2008	STATE	NFIP checkup
	CAV	12/17/2004	FEMA	No problems
	CAC	9/23/1996	STATE	NFIP checkup
Mesquite	CAC	7/31/2013	STATE	NFIP checkup
	CAC	6/11/2012	STATE	NFIP checkup
	CAC	6/18/2008	STATE	Minor problems
	CAC	2/17/2005	STATE	Minor problems
	CAC	6/4/1996	STATE	NFIP checkup
Midlothian	CAC	3/22/2013	STATE	NFIP checkup
	CAC	2/22/2012	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAV	8/21/2008	STATE	No problems
	CAC	6/6/2008	STATE	NFIP checkup
	CAC	6/26/2006	STATE	NFIP checkup
	CAC	9/6/2000	STATE	No problems
	CAV	8/15/1996	FEMA	Potential violations
Navarro County*	CAC	5/3/2010	STATE	NFIP checkup
	CAC	7/9/2007	STATE	NFIP checkup
Oak Leaf	CAC	3/22/2013	STATE	NFIP checkup
	CAC	6/24/2010	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/22/2008	STATE	NFIP checkup
	CAC	6/26/2006	STATE	Minor problems
Ovilla	CAC	12/14/2012	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/23/2008	STATE	Minor problems
	CAC	6/29/2006	STATE	NFIP checkup
	CAC	5/2/1996	STATE	NFIP checkup
	CAV	7/13/1992	STATE	Potential violations
Palmer	CAC	3/25/2013	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/9/2008	STATE	Minor problems
Pecan Hill	CAC	3/27/2013	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
Plano	CAV	1/3/2013	STATE	NFIP checkup
	CAC	2/22/2011	STATE	No problems
	CAC	3/10/2009	STATE	NFIP checkup
	CAC	8/3/2007	FEMA	NFIP checkup
	CAC	9/12/1995	STATE	NFIP checkup
Powell	CAC	5/18/2010	STATE	NFIP checkup

Community Name	Type of Engagement	Date	Agency	Comments
Red Oak	CAC	3/26/2013	STATE	NFIP checkup
	CAC	6/5/2008	STATE	Minor problems
	CAC	7/17/2007	STATE	Minor problems
	CAC	3/11/2004	STATE	NFIP checkup
	CAC	8/30/1995	STATE	NFIP checkup
Richardson	CAV	3/25/2012	STATE	No problems
	CAC	3/11/2009	STATE	NFIP checkup
	CAC	8/3/2007	FEMA	NFIP checkup
	CAC	7/16/2007	STATE	NFIP checkup
Rice	CAC	8/8/2007	STATE	NFIP checkup
Rosser	N/A	N/A	N/A	N/A
Scurry	CAC	4/16/2010	STATE	NFIP checkup
Seagoville	CAC	1/8/2013	STATE	NFIP checkup
	CAC	3/27/2008	STATE	Minor problems
	CAC	7/19/2007	STATE	Serious problems
Seven Points	CAC	5/8/2013	STATE	NFIP checkup
	CAC	9/23/2008	STATE	Minor problems
Tool	CAC	5/9/2013	STATE	NFIP checkup
	CAC	8/13/2007	STATE	NFIP checkup
Trinidad	CAC	4/12/2012	STATE	NFIP checkup
	CAC	9/24/2008	STATE	NFIP checkup
	CAC	8/20/2007	FEMA	NFIP checkup
	CAC	7/14/1994	STATE	Minor problems
University Park	CAC	12/17/2012	STATE	NFIP checkup
	CAC	9/10/2009	STATE	NFIP checkup
	CAC	8/19/1994	STATE	NFIP checkup
Waxahachie	CAC	4/2/2013	STATE	NFIP checkup
	CAC	4/27/2010	STATE	NFIP checkup
	CAC	4/15/2008	STATE	Minor problems
	CAC	9/23/1996	STATE	NFIP checkup
Wilmer	CAC	6/3/2008	STATE	Minor problems
	CAC	4/23/1995	STATE	Minor problems

Mitigation plan status was assessed to determine a communities current mitigation planning and capabilities. Table 9 provides information about current mitigation plan status by community.

Table 9: Mitigation Plan Status

Community Name	Community Mitigation Action:	Hazard Mitigation Plan Name:	Plan Status:	Plan Approved	Plan Expires
Addison	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Alma	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A

Community Name	Community Mitigation Action:	Hazard Mitigation Plan Name:	Plan Status:	Plan Approved	Plan Expires
Anderson County*	See Mitigation Action Tracker	Anderson County Hazard Mitigation Plan (HMP)	Approved	4/30/2012	4/30/2017
Balch Springs	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Carrollton	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Cedar Hill	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Cockrell Hill	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Collin County*	See Mitigation Action Tracker	Collin County HMP	Approved	5/31/2011	5/30/2016
Combine	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A
Cottonwood	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A
Dallas	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Dallas County*	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Desoto	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Duncanville	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Ellis County *	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Ennis	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Ferris	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Freestone County*	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Frisco	See Mitigation Action Tracker	Collin County and City of Frisco HMP	Approved	5/31/2011	5/30/2016
Garland	See Mitigation Action Tracker	City of Garland HMP	Approved	7/2/2012	7/2/2017
Garrett	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Glenn Heights	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A

Community Name	Community Mitigation Action:	Hazard Mitigation Plan Name:	Plan Status:	Plan Approved	Plan Expires
Goodlow	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Grays Prairie	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A
Henderson County*	See Mitigation Action Tracker	Henderson County HMP	Approved	10/6/2011	10/5/2016
Highland Park	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Hutchins	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Irving	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Kaufman County*	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A
Kerens	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Lancaster	See Mitigation Action Tracker	Dallas County HMP	Expired	1/12/2009	1/2/2014
Mesquite	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Midlothian	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Navarro County*	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Oak Leaf	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Ovilla	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Palmer	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Pecan Hill	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Plano	See Mitigation Action Tracker	City of Plano, TX HMP	Expired	4/7/2008	4/7/2013
Powell	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Red Oak	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Rice	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Richardson	See Mitigation Action Tracker	City of Richardson, TX HMP	Expired	10/9/2008	10/9/2013
Rosser	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A
Scurry	See Mitigation Action Tracker	Kaufman County HMP	Under Development	N/A	N/A

Community Name	Community Mitigation Action:	Hazard Mitigation Plan Name:	Plan Status:	Plan Approved	Plan Expires
Seagoville	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Seven Points	See Mitigation Action Tracker	Henderson County HMP	Approved	10/6/2011	10/5/2016
Tool	See Mitigation Action Tracker	Henderson County	10/6/2011	10/5/2016	Y
Trinidad	See Mitigation Action Tracker	Henderson County	10/6/2011	10/5/2016	Y
University Park	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Waxahachie	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A
Wilmer	See Mitigation Action Tracker	No Plan	N/A	N/A	N/A

* Unincorporated Areas of the County

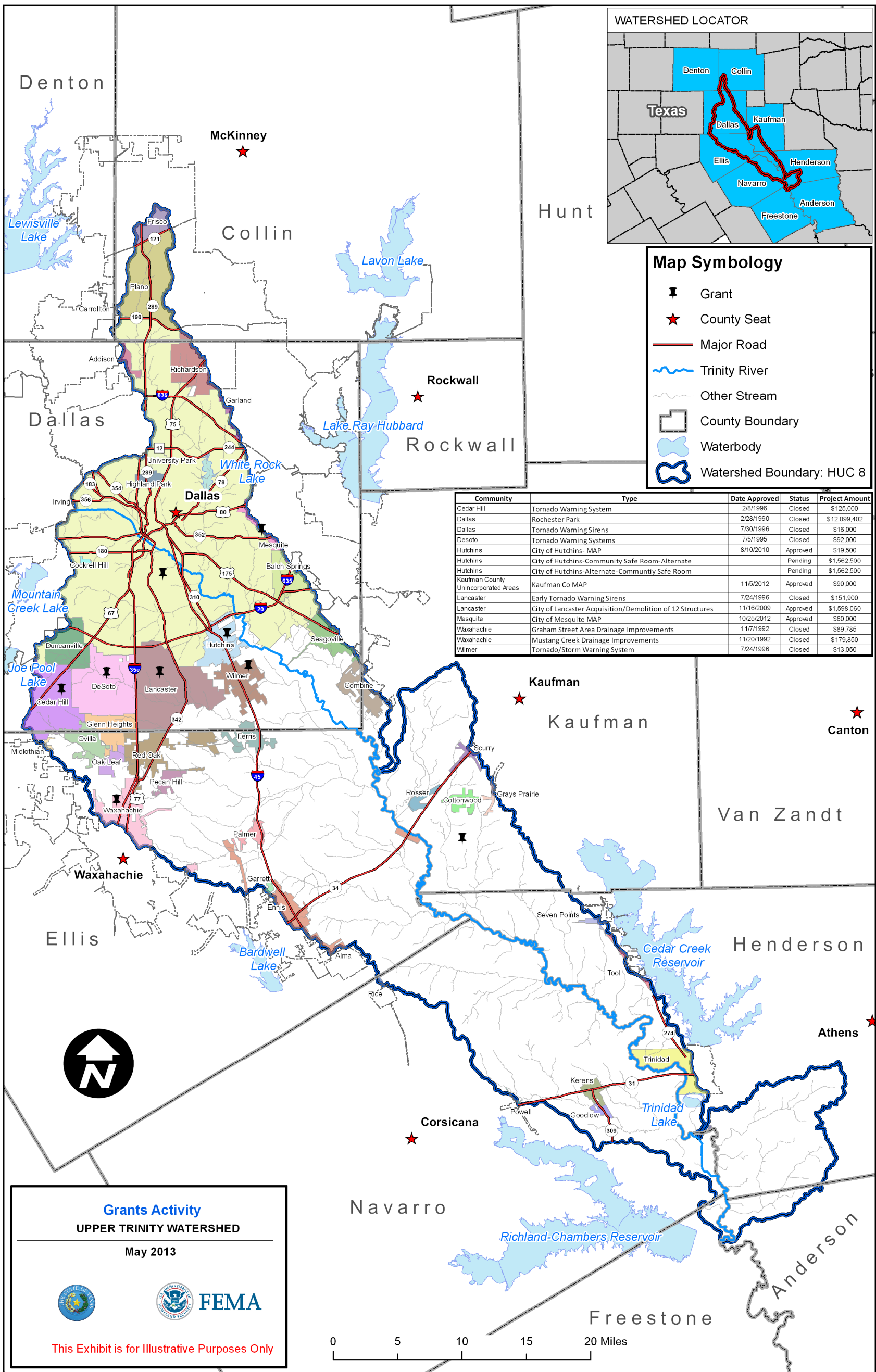
Figure 8 displays the locations mitigation grant activities in the Upper Trinity Watershed that have been approved by FEMA. Table 10 lists the type of mitigation activities by community. The map and table also show two pending grant activities. Additional grant requests may be underway at both the State and local level within the Watershed that are not represented in Figure 8 or Table 10.

Table 10: Grant Activity

Community	Type	Date Approved	Status	Project Amount
Cedar Hill	Tornado Warning System	2/8/1996	Closed	\$125,000
Dallas	Rochester Park	2/28/1990	Closed	\$12,099,402
Dallas	Tornado Warning Sirens	7/30/1996	Closed	\$16,000
Desoto	Tornado Warning Systems	7/5/1995	Closed	\$92,000
Hutchins	City of Hutchins- Mapping Activity Plan	8/10/2010	Approved	\$19,500
Hutchins	City of Hutchins- Community Safe Room- Alternate	N/A	Pending	\$1,562,500
Hutchins	City of Hutchins-Alternate- Community Safe Room	N/A	Pending	\$1,562,500
Kaufman County Unincorporated Areas	Kaufman Co MAP	11/5/2012	Approved	\$90,000
Lancaster	Early Tornado Warning Sirens	7/24/1996	Closed	\$151,900
Lancaster	City of Lancaster Acquisition/Demolition Of 12 Structures	11/16/2009	Approved	\$1,598,060
Mesquite	City of Mesquite MAP	10/25/2012	Approved	\$60,000

Community	Type	Date Approved	Status	Project Amount
Waxahachie	Graham Street Area Drainage Improvements	11/7/1992	Closed	\$89,785
Waxahachie	Mustang Creek Drainage Improvements	11/20/1992	Closed	\$179,850
Wilmer	Tornado/Storm Warning System	7/24/1996	Closed	\$13,050

Figure 8: Grants Activity



Pre-Discovery Congressional and Media Engagement

In order to achieve success with any Region 6 Risk MAP project, members of Congress and their staff members, as well as the media, must be aware of and understand the study process. Working with FEMA Region 6 External Affairs to inform both legislators and the media improves credibility and opens the door to understanding risk in a more holistic, comprehensive manner. An initial briefing for the legislators occurred approximately 8 weeks prior to the Discovery meeting.

Table 11: Congressional Information

U.S. Senator		Term Expiration	FEMA History of Engagement
John Cornyn		2015	Congressional WebEx for Discovery was conducted.
Ted Cruz		2019	Congressional WebEx for Discovery was conducted.
U.S. Representative	District Number	Term Expiration	FEMA History of Engagement
Sam Johnson	3	2015	Congressional WebEx for Discovery was conducted.
Jeb Hensarling	5	2015	Congressional WebEx for Discovery was conducted.
Joe Barton	6	2015	Congressional WebEx for Discovery was conducted.
Kenny Marchant	24	2015	Congressional WebEx for Discovery was conducted.
Eddie Bernice Johnson	30	2015	Congressional WebEx for Discovery was conducted.
Pete Sessions	32	2015	Congressional WebEx for Discovery was conducted.

Contact information for the communities shown in Table 1 and additional stakeholders can be found with the supplemental digital data.

ii. Discovery Meeting

Six three-hour Discovery meetings or workshops were held at various locations throughout the Upper Trinity Watershed, Elm Fork Trinity River Watershed, and Lower West Fork Watershed between May 28 and June 27, 2013. Workshop times and locations are shown in Table 12. Each Workshop site was prepared with a series of stations, envisioned as an interactive setting for the Regional Project Team and Discovery Workshop attendees to listen, discuss, and document any issues for the Watershed.

Table 12: Project Discovery Workshop Times and Locations

Watershed	Workshop	Date and Time	Location
Elm Fork Trinity	1	May 28, 2013 9:00 am- 12:00 pm	Gainesville Civic Center 311 South Weaver Street Gainesville, TX 76240
	2	June 25, 2013 9:00 am- 12:00 pm	Frisco Senior Center 6670 Moore Street Frisco, TX 75034
Lower West Trinity	1	May 29, 2013 9:00 am- 12:00 pm	Tarrant County Public Health Administration Office 1101 South Main Street Fort Worth, TX 76104
	2	June 26, 2013 9:00 am- 12:00 pm	Chandor Gardens 711 West Lee Avenue Weatherford, TX 76086
Upper Trinity	1	May 30, 2013 1:30 pm- 4:30 pm	Trinity River Audubon Center 6500 Great Trinity Forest Way Dallas, TX 75217
	2	June 27, 2013 9:00 am- 12:00 pm	Oran White Civic Center 701 N. Tool Drive Tool, TX 75143

Those in attendance at the Tool, TX workshop included representative(s) from Anderson County, Dallas County, City of Dallas, City of DeSoto, City of Duncanville, Ellis County, City of Ennis, Henderson County, Navarro County, City of Plano, City of Seven Points, City of Tool, City of University Park, and the City of Waxahachie. There was also representative(s) that attended the Dallas, TX workshop and included Dallas County, City of Dallas, City of DeSoto, City of Duncanville, City of Garland, Kaufman County, City of Lancaster, City of Palmer, City of Plano, and City of Richardson. Several communities are located partly within other watersheds in addition to the Upper Trinity watershed and attended the Elm Fork Trinity Workshop in Frisco, TX and included City of Dallas, City of Frisco, City of Plano, and City of University Park. FEMA staff and representatives greeted each attendee as they arrived. Attendees rotated around the following four Discovery stations.

- Community Benefits and Grant Opportunities (*Grants station*) – Maps of current floodplain-related grants; risk, needs, and topographic availability; RL/SRL properties; Letters of Map Change (LOMCs); urban changes over the last five years; and single claims. The station also had handouts on various FEMA grant programs.
- Mitigation Planning and Mitigation Activities (*Planning station*) – Handouts on mitigation plans, understanding Risk MAP and determining risk.
- NFIP Community Actions (*Compliance and Mitigation station*) – Effective FIRMs, Flood Insurance Study (FIS) reports, and LOMCs; maps of RL/SRL properties; single claims; and urban changes over the last five years.
- Risk Identification and Communication (*Mapping station*) – Maps of risk/need/topographic availability, LOMCs, population density in the watershed, urban change in the watershed, estimated dollar exposure of parcels near SFHA areas, high-water marks and low water crossings.

At each station, attendees were asked to actively contribute information about concerns in the Watershed by identifying a relevant location on the large Watershed map and then providing a short explanation on the comment form. The activity at the stations was intended to be interactive where attendees and staff at the stations worked together to listen, discuss, and document any topical items for the Watershed. Members of the Regional Project Team (FEMA, State of Texas, and RAMPP) were at the stations to answer questions and engage the attendees. During each Upper Trinity Watershed workshop, Regional Project Team members requested that attendees provide any additional information within two weeks after the workshop.

Each station was equipped with a series of large-format Watershed maps with an aerial photo base map, Watershed boundary, community boundaries, and road names to assist in identifying areas of concern. Stations had several 11-inches by 17-inch (11 x 17) laminated maps of the Watershed with thematic information related to the Watershed. In addition, FEMA handouts and flyers were provided to communities to reinforce the information being provided at each station.

Information sheets were collected at each station for locations that were identified and labeled on the Discovery Watershed maps. These information sheets are part of the external files included with this report; see DVD\2-Discovery_Meeting\Workshops\Workshop_1_Dallas or Workshop_2_Tool\Discovery_Meeting_Information_Collection_sheets.PDF.

iii. Discovery Implementation

All Discovery Workshops were attended by local stakeholders. A full list of attendees is provided in the sign-in sheets included with the supplemental digital data accompanying this report. Some attendees included:

- Local community elected officials and councilpersons
- Local floodplain managers, emergency management staff, community planners, and public works staff

It should be noted that community officials from some communities were unable to attend the Upper Trinity Watershed Discovery Workshops. Although these communities were not represented at the Workshops, officials were contacted through phone calls, emails, and letters, and were mailed community packets that contained copies of the materials presented at the workshops. Communities not represented at the workshops were City of Balch Springs, City of Cockrell Hill, City of Cottonwood, City of Ferris, Freestone County, City of Garrett, City of Glenn Heights, City of Goodlow, Village of Grays Prairie, Town of Highland Park, City of Hutchins, City of Kerens, City of Mesquite, City of Oak Leaf, City of Ovilla, City of Pecan Hill, Town of Powell, City of Red Oak, City of Rice, City of Rosser, City of Scurry, City of Seagoville, City of Trinidad, and City of Wilmer.

The Workshops afforded personal, interactive communication, with attendees at each station. The Project Team interviewed attendees and discussed areas of positive mitigation and areas of continuing concern for the Watershed as a whole. As attendees visited each station, they not only discussed their own local concerns but also listened to the concerns of others in the Watershed.

Attendees were polled by the FEMA Project Monitor as they exited the Workshop. Verbal feedback from the attendees indicated they felt the Workshop was an opportunity to express their issues and concerns for the Watershed. Many attendees were appreciative of the chance to speak with the various Regional Project Team members from FEMA and the State of Texas. The community perception conveyed to FEMA was that attendees felt more engaged in the process undertaken to help determine needs and projects in the Watershed.

iv. Data Gathering Overview

Information about the Upper Trinity Watershed was gathered both prior to and interactively during the Discovery Workshops. The City of Duncanville, City of Glenn Heights, and the City of Red Oak submitted data prior to the Discovery Workshop. Much of the data collected in pre-discovery was obtained from FEMA or other national datasets. At the Discovery workshops, data was received from City of Frisco and City of Seagoville. Additional data was collected from TNRIS, NCTCOG, USGS, U.S. Census, National Inventory of Dams (NID) and local communities via their public web sites. Even though some communities were unable to attend these meetings, many were able to provide information through phone conversations, mail, and email. Table 13 summarizes the data collected prior to the Discovery Workshop and the primary sources of the data.

During the pre-Discovery process phone calls were made to local Floodplain Administrators (FPAs), Emergency Managers, and Mitigation planners to collect current and proposed mitigation actions. This data was collected in spreadsheets and will be used by FEMA to track mitigation actions within the Region. The final spreadsheets are included in the supplemental digital data.

Table 13: Data Collection Summary – Pre-Discovery Workshop

Data Location	Data Custodian	Data Set Description
Watershed-wide	FEMA	Effective FIRM and FIS and backup information available from FEMA’s Map Service Center (MSC) and FEMA Library
Watershed-wide	FEMA	LOMC locations from FEMA’s MSC and FEMA Library
Watershed-wide	FEMA	Locations of RL/SRL properties and Claims
Watershed-wide	FEMA	Location of Grants being funded
Watershed-wide	FEMA	Participation in the NFIP CRS ratings
Watershed-wide	FEMA	Disaster Declarations
Watershed-wide	FEMA	CNMS information
Watershed-wide	FEMA	Average Annualized Loss (AAL) data
Watershed-wide	FEMA	Approved HMPs
Watershed-wide	FEMA, TNRIS	Location of available or planned areas of updated LiDAR or other topographic data
Watershed-wide	FEMA, U.S. Census, TNRIS	Transportation features
Watershed-wide	FEMA, TNRIS	Boundaries (Community, County and State)
Watershed-wide	U.S. Census	Populated places and population characteristics
Watershed-wide	TNRIS	High-water marks and low water crossings
Watershed-wide	USGS	Watershed HUC (8 & 12) boundaries, NHD streams, stream gage information, land use and land cover
Watershed-wide	U.S. Department of Agriculture	National Agriculture Imagery Program Aerial Imagery
Watershed-wide	Local FPAs, Mitigation Planners and Emergency Managers, FEMA	Mitigation Actions identified by local stakeholders and collected by phone call
Watershed-wide	USACE National Inventory of Dams (NID)	NID

At the Discovery Workshop stations, attendees completed data information sheets and placed stickers on the hard-copy maps to identify the approximate locations of their concern within the Watershed. This information was later captured in GIS format (ESRI Personal Geodatabase, point features named "*Datasheet_Locations*"), and the data from the forms was matched with each point location on the Watershed maps. Data from all of the stations was compiled into a single dataset. The watershed collection maps with the sticker locations as well as the individual comment forms are included in the supplemental digital data accompanying this report.

Table 14 summarizes the comments that were made at each of the stations. If the same comment was made at different stations by the same attendee, it is only listed once. If multiple attendees made the same comment, the "Information Provided By" column lists more than one attendee. Item numbers tie directly back to the GIS data and the data collection sheets. In addition, data collected in pre-Discovery and from calls with local community officials have also been placed in GIS format and is shown on the watershed collection. Discovery data collection continued after the Discovery Workshop as additional datasets were provided. These datasets are also included in Table 14. Some comments collected at the Discovery Workshop reflect on areas outside of the Upper Trinity Watershed. This information was collected for future use in future Discovery efforts and is noted below.

Table 14: Data Collection Summary – During and After Discovery Workshop

Item	Flooding Source	Information Provided By	Discovery Workshop Comment Summary
1	Hickory Creek	Balch Springs	Hickory Creek Flood Protection Planning Study. Balch Springs also provided their Comprehensive Study and Plan.
2	multiple	Dallas	Dallas provided City of Dallas Multi-Year Risk Map Plan Completed Detailed Stream Studies (FY10-12), City of Dallas Multi-Year Risk Map Completed Risk MAP Product Locations (FY10-12), City of Dallas Multi-Year Risk Map Plan, Dallas Mitigation Action Measure 1 (Flood Protection and Storm Drainage Needs Inventory), Dallas Mitigation Action Measure 2 (Mitigation Successes).
3	multiple	Duncanville	Duncanville provided a map that lists of 27 drainage capital improvements as part of the Department of Public Works Drainage Capital Improvements Program from Fiscal Years 2003 – 2018. Duncanville provided a listing of their Flood Study Inventory, which list eight entries dating from 1968 to 2006. Duncanville submitted supplemental data to their Flood Inventory for the last entry from July 2006 for the Bentle Branch Stream and Stormwater Master Plan Update.
4	Red Oak Creek	Ellis County	Hydraulic design and rehabilitation of the bridge on Hampton Road that crosses Red Oak Creek, Precinct Four of Ellis County.
5	multiple	Frisco	Frisco provided modeling for the Stewart Creek watershed. These flooding sources are modeled to a 100-year ultimate land use condition, they use these for regulating the NFIP, development, and building code requirements within the City.
6	multiple	Glenn Heights	Bear Creek Tributary heavy debris and brush removed, rock riprap installed to reduce erosion. Indian Creek at Westmoreland and Bear Creek Road, west side of Westmoreland Road residences were flooding from storm water in an adjacent drainage ditch. Culverts and rip-rap installed and eliminated the problem, water diverted into Indian Creek. Gateway subdivision has an existing Creek that was cleaned out due to localized flooding issues. Glenn Heights adopted FEMA ordinance for establishing regulations designed to reduce flood losses, Paragraph 60.3 (d).
7	Community-wide	Red Oak	Sent ordinance in which Red Oak officially amended their existing Flood Damage Prevention Ordinance in order to approve floodplain management measures that satisfy 44 Code of Federal Regulations (44 CFR) Section 60.3(d).

Item	Flooding Source	Information Provided By	Discovery Workshop Comment Summary
8	Community-wide	Seagoville	Seagoville provided a copy of their Technical Construction Standards and Specifications for Design of Street and Alley Paving, Water and Sanitary Sewer Mains, and Storm Sewer Facilities dated January 2011.
9	multiple	Seven Points	Seven Points provided a spreadsheet that outlines high-water problem areas, cross streets, and culvert size. The Mayor pointed out that in most cases the problem can be traced back to under-sizing of culverts.

All supporting information, data and files for this report are included in the supplemental digital data submitted with this report. The directory structure is as shown the in the following list of the files, folders and associated data.

12030105\Discovery

- Transmittal letter
- RAMPP Quality Validation Form

\Project_Discovery_Initiation

- Community Contact List
- Project Team Information
- **\GIS**
 - Political Areas SHP file
 - Transportation SHP file
 - HUC boundary SHP file

\Discovery_Meeting

- Meeting agenda / summary
- Meeting attendance record
- **\Correspondence**
 - Invitation letters, notification letters, thank-you letters, etc.
- **\Photos**
 - Photos from Discovery Workshop at Trinity River Audubon Center
- **\Workshops**
 - Handouts for Printing
 - Workshop_1_Dallas
 - Discovery Meeting Information Collection Sheets
 - Discovery Meeting Attendance Sign-In Sheets
 - Workshop_2_Tool
 - Discovery Meeting Information Collection Sheets
 - Discovery Meeting Data Collection Maps

\Post_Discovery

- Discovery Map(s) (final)
 - Discovery Map (Flood Risk) – Watershed information with AAL
 - Discovery Map (Flood Hazard) – Watershed information with effective SFHAs
- Discovery Report (final)
- National Metrics
- Geospatial Data Summary

\Supplemental_Data

- Engagement Plan
- Metadata file
- **\Discovery Meeting Exhibits**
- **\GIS** – The following folders contain GIS files to create Exhibits or Discovery Maps (shapefiles, personal geodatabases and ESRI ArcGIS 9.3.1 MXDs)
 - Shapefiles
 - MXDs
- **\Mitigation Action Tracker\Mitigation_Action_Capture**

- \News Articles
- \Other Data - collected during Discovery (community supplied exhibits, reports, etc.).
 - \Balch Springs
 - \Combine
 - \Dallas
 - \Duncanville
 - \Ellis County
 - \Ennis
 - \Frisco
 - \Glenn Heights
 - \Henderson County
 - \Lancaster
 - \Red Oak
 - \Seagoville
 - \Seven Points

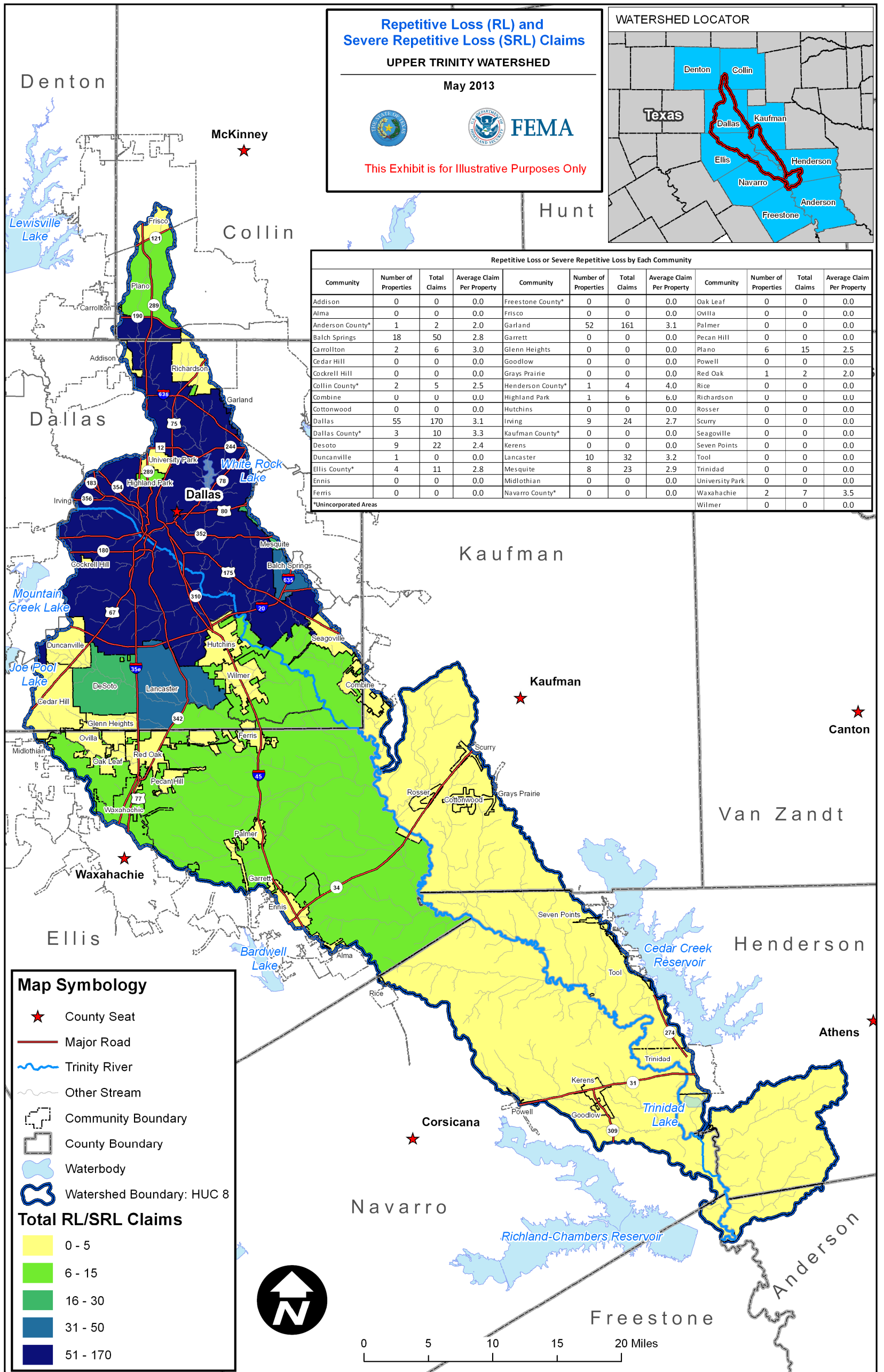
III. Watershed Findings

This watershed contains structures (dams/levees) that are managed by the local counties or communities. Below is a listing of these structures.

- Anderson County - none within the Upper Trinity Watershed
- Collin County – multiple communities - multiple dams (retention/detention) – concrete reinforced, earthen, in some cases immediately upstream of structures
- Dallas County - City of Dallas – Central WWTP Levee
- Dallas County - City of Dallas – Dallas Floodway Levee
- Dallas County - City of Dallas – McCommas Levee
- Dallas County - City of Dallas – Rochester Levee
- Dallas County - City of Dallas – South WWTP Levee
- Dallas County - City of Dallas – White Rock Lake Dam
- Denton County – none within the Upper Trinity Watershed
- Ellis County – multiple dams (earthen)
- Ellis County - Soil Conservation Service – multiple dams (earthen)
- Henderson County – Trinidad Lake Dam (earthen) Texas Power and Light
- Henderson County - multiple dams (earthen)
- Henderson County - Soil Conservation Service – multiple dams (earthen)
- Kaufman County – multiple dams (earthen), in some cases immediately upstream of structures
- Navarro County - City of Kerens – Kerens City Lake (earthen)
- Navarro County - Hoffer Lake Dam (earthen)
- Navarro County - Soil Conservation Service – multiple dams (earthen)

In addition to NFIP claims, there are several RL and SRL locations within the Upper Trinity Watershed (see Figure 9). A concentration of these locations appears in the DFW area and Ellis County.

Figure 9: Repetitive Loss (RL) and Severe Repetitive Loss (SRL) Claims



i. Engineering Review of Community Comments

After the Discovery Meetings, additional engineering overview analysis helps focus and more clearly identify key areas flagged as being of concern or of interest for future projects or actions in the watershed. The post-Discovery review is targeted to areas within the watershed that have been identified as needing some type of mitigation action going forward. The Discovery process may have eliminated the need to further explore particular areas within the watershed, a full engineering analysis was not conducted, but a limited engineering review was performed. The details provided in this section of the report add to the documents that support the need for further mitigation actions or studies in particularly streams, reaches, or communities within the Upper Trinity River Watershed.

Any engineering related comments provided by the communities during the Discovery were initially validated. Comments were reviewed both in terms of hydrologic or hydraulic issues within the Watershed and with any general floodplain or Base Flood Elevation (BFE) related comments. Any supporting appeal or protest information, correspondence from communities, or anecdotal information was researched and expanded on as a concern if impacts to hydrologic analysis were substantiated.

ii. Discovery Hydrology

A limited review of hydrologic information was performed for post-Discovery analysis within the Upper Trinity Watershed. This research was performed by senior engineering staff who often relied on engineering judgment, some limited analysis, and regional experience to create an overview of the state of hydrologic information for this Watershed. It was not within the scope of this project to request all back-up modeling for the communities in the Watershed. These hydrologic reviews were focused on:

- Review of peak discharges in the watershed
- Limited gage analysis for the watershed

For the Watershed as a whole, the 1-percent-annual-chance peak discharges were reviewed for all streams within a community and across community boundaries in order to look for discharge anomalies. In addition, comparison of Letter of Map Revision (LOMR) discharges to that of effective discharges within the same area could indicate that the effective discharges may be suspect on a more global basis. Any notes were added if these changes can be eliminated as a concern due to hydrologic factors including local flood control structures, detention, flow break-outs, sinks, or other natural or manmade factors that may significantly alter hydrology flows. Finally, a Watershed-wide, high-level gage analysis was reviewed comparing the information on any available gages within the watershed that had appropriate historical information to discharges shown in the effective FIS for streams with gages. This analysis could potentially flag any anomalies that would indicate that the hydrology may be out of date, too high, or too low for sub-basin areas within the watershed.

Review of Peak Discharges

Peak discharges were reviewed based on available FIS reports, hydraulics models, flow gages, and available LOMRs within the watershed at the crossing of SHFA areas at corporate limits (County, City, and Town). A comparison of discharges was made for the same streams across community boundaries in Table 15. With this analysis, it was revealed that there are discrepancies at the corporate boundaries between Collin County and Dallas County at White Rock Creek, Cottonwood Creek, and McKamy Branch. Discrepancies also exist at the Dallas County and Ellis County boundary at Trinity River, Little Creek and Red Oak Creek. No hydrology data is available for the streams with a Zone A designation, so these were not reviewed.

White Rock Creek in Dallas County was restudied by detailed methods shown in a FIS report to go effective in 2014, and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Collin County is 34,400 cubic feet per second (cfs). However, the peak 1-percent-annual-chance discharge at White Rock Creek in Collin County, which is upstream from Dallas County, is 27,900 cfs. This discharge is from the Collin County FIS report dated 2009. Due to a 23% discrepancy in discharge, restudy of hydrology at White Rock Creek at Collin County would be recommended.

Cottonwood Creek in Dallas County was restudied by detailed methods shown in a FIS report to go effective in 2014, and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Collin County is 1,850 cfs. However, the peak 1-percent-annual-chance discharge at Cottonwood Creek in Collin County, which is upstream from Dallas County, is 1,500 cfs. This discharge is from the Collin County FIS report dated 2009. Restudy of hydrology at Cottonwood Creek at Collin County would be recommended.

McKamy Branch in Dallas County was restudied by detailed methods shown in a FIS report to go effective in 2014 and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Collin County is 2,050 cfs. However, the peak 1-percent-annual-chance discharge at McKamy Branch in Collin County, which is upstream from Dallas County, is 2,150 cfs. This discharge is from the Collin County FIS report dated 2009. Restudy of hydrology at McKamy Branch at Collin County would be recommended.

Trinity River in Dallas County was restudied by detailed methods shown in a Preliminary FIS report dated 2014, and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Ellis County is 119,300 cfs. However, the peak 1-percent-annual-chance discharge at Trinity River in Ellis County, which is downstream from the Dallas County, is 109,000 cfs. This discharge is from the Ellis County FIS report dated 2013. Restudy of hydrology at Trinity River at Ellis County would be recommended.

Little Creek in Dallas County was restudied by detailed methods shown in a FIS report to go effective in 2014 and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Ellis County is 11,100 cfs. However, the peak 1-percent-annual-chance discharge at Little Creek in Ellis County, which

is downstream from Dallas County, is 5,707 cfs. This discharge is from the Ellis County FIS report dated 2013. Restudy of hydrology at Little Creek at Ellis County would be recommended.

Red Oak Creek in Dallas County was restudied by detailed methods shown in a FIS report to go effective in 2014, and the discharges were revised. The peak 1-percent-annual-chance discharge at the county boundary between Dallas County and Ellis County is 10,100 cfs. However, the peak 1-percent-annual-chance discharge at Red Oak Creek in Ellis County, which is downstream from Dallas County, is 5,792 cfs. This discharge is from the Ellis County FIS report dated 2013. Restudy of hydrology at Red Oak Creek at Ellis County would be recommended.

Table 15: Discharge Comparison at Community Limits

Stream Name	County/Parish	Effective one-percent annual chance discharge (cfs)	Discharge % difference	Effective Discharges Source	Notes
White Rock Creek	Collin	27,900	-23%	FIS report	FIS dated 2009
White Rock Creek	Dallas	34,400	+23%	FIS report	FIS dated 2014
Cottonwood Creek	Collin	1,500	-23%	FIS report	FIS dated 2009
Cottonwood Creek	Dallas	1,850	+23%	FIS report	FIS dated 2014
McKamy Branch	Collin	2,150	+5%	FIS report	FIS dated 2009
McKamy Branch	Dallas	2,050	-5%	FIS report	FIS dated 2014
Trinity River	Dallas	119,300	+9%	FIS report	FIS dated 2014
Trinity River	Ellis	109,000	-9%	FIS report	FIS dated 2013
Little Creek	Dallas	11,100	+94%	FIS report	FIS dated 2014
Little Creek	Ellis	5,707	-94%	FIS report	FIS dated 2013
Red Oak Creek	Dallas	10,100	+74%	FIS report	FIS dated 2014
Red Oak Creek	Ellis	5,792	-74%	FIS report	FIS dated 2013

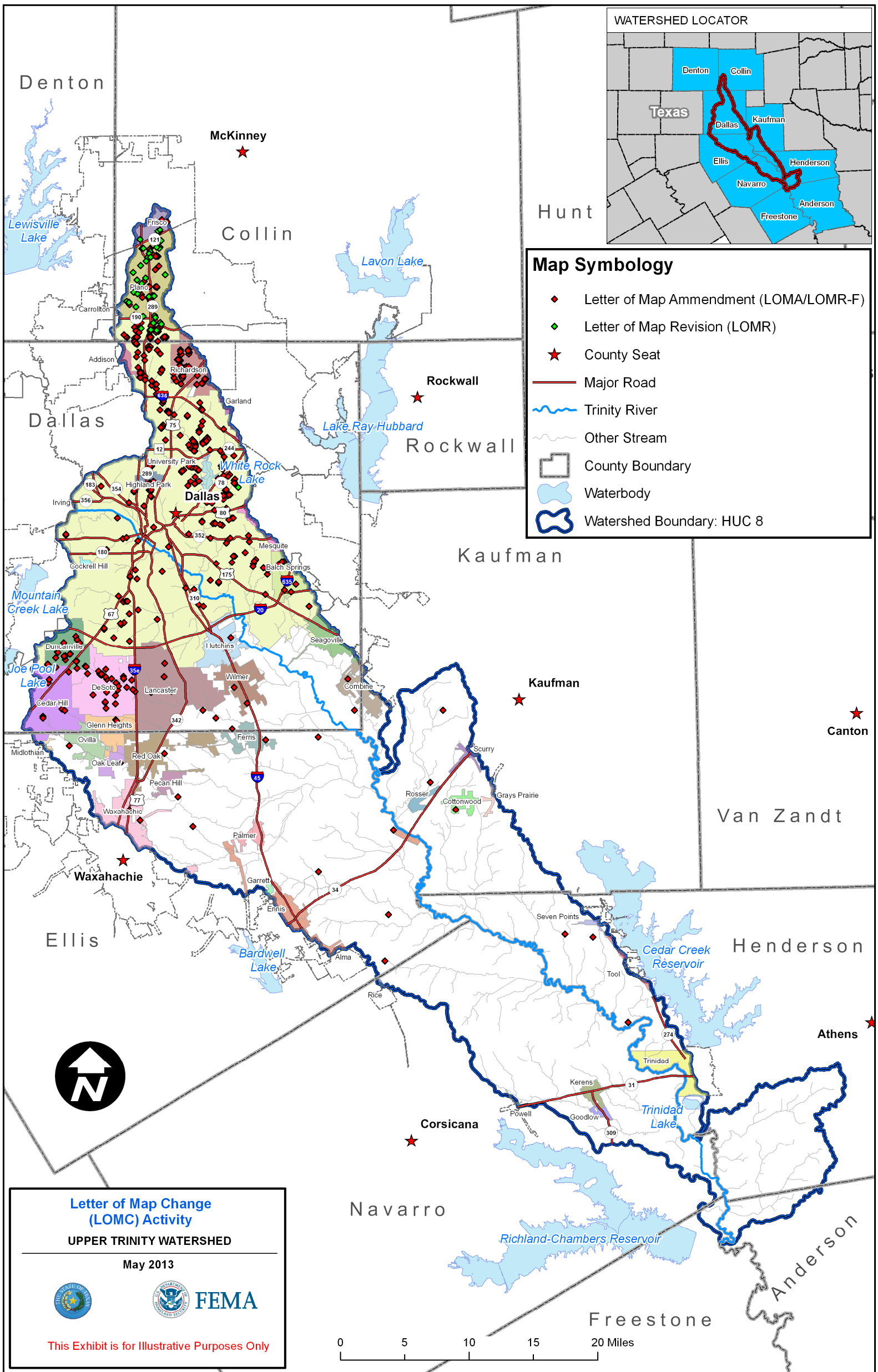
Table 16 lists any LOMRs for the Upper Trinity Watershed that have an impact on hydrology. There is only one LOMR that revised hydrology but this LOMR has not been completed.

Table 16: LOMRs that Revise Hydrology within the Watershed

Stream Name	Case number	Basis of request	Notes
South Prong of Fivemile Creek	12-06-1271P	Hydrology, Hydraulics and New Topography.	Not completed

Letters of Map Amendments (LOMAs) and LOMRs are also distributed throughout the Watershed, but appear to be concentrated in the Cities of Dallas, Richardson, Plano, and the Town of Addison. Refer to Figure 10 for the location of these LOMCs.

Figure 10: Letter of Map Changes (LOMCs)



Frequency Analysis

Frequency analysis can be used to determine if conditions within a given watershed have changed over time. This could be a further indicator of updates needed for other flooding sources within the watershed. Frequency analyses were performed using PeakFQ computer software for all the gages with the number of records greater than 10 within the Upper Trinity Watershed. The comparison between discharges from the FIS and from gage analysis was made and listed in Table 17. The discharges from gage analysis are significantly different from the effective FIS discharges at some locations. The number of peaks in record at gages ranges from 11 to 106. Most gages do not have records for recent years except the gages at Trinity River and White Rock Creek. At this time, a gage frequency analysis is only recommended for gages at Trinity River and White Rock Creek and is not recommended for other gages because of the relatively low number of peaks on record and lack of recent year records.

Table 17: Summary of Hydrologic Analysis

Stream Name	Drainage Area from USGS Gage (mi ²)	Effective discharges Source	Effective 1-percent annual chance discharge (cfs)	95 confidence limits lower (cfs) (Gage)	1-percent annual chance discharge from PeakFQ (Gage)	95% confidence limits upper (cfs) (Gage)	Number of peaks in record	Year begin – Year End
White Rock Ck. at Keller Springs Rd	29.4	FIS	35,000	20,600	34,000	77,970	18	1962-1979
White Rock Ck. at Greenville Ave.	66.4	FIS	55,400	41,020	52,390	72,340	46	1962-2011
White Rock Ck. at White RK LK	100	FIS	42,800	27,240	44,200	98,380	17	1962-1979
McKamy Branch at Preston Rd	6.77	FIS	13,700	6,618	10,380	21,930	17	1962-1978
Cottonwood Ck at Forest lane	8.5	FIS	18,100	14,620	25,030	61,890	17	1962-1978
Floyd Br at Forest Lane	4.17	FIS	8,800	6,435	9,562	18,810	16	1962-1978
Ash Ck at Highland Rd	6.92	FIS	13,575	8,165	11,270	19,200	16	1963-1978
Turtle Ck at Dallas	7.98	FIS	13,000	8,002	9,992	13,510	43	1947-1991
Cedar Ck at Bonnie View Rd	9.42	FIS	18,650	8,890	11,870	19,610	14	1965-1978
Cedar Ck Res Spillway Outflow nr Trinidad	1,007	N/A	N/A	106,700	182,200	443,400	17	1966-1982
Fivemile Ck at US Hwy 77W	14.3	FIS	20,200	12,500	19,320	41,430	14	1965-1977
Fivemile Ck at Lancaster Rd	37.9	FIS	44,600	14,400	19,680	34,150	13	1965-1977
Woody Br at US Hwy 77	10.3	FIS	18,000	7,926	10,570	17,470	14	1966-1978
Prairie Ck at US Hwy 175	9.03	FIS	12,250	5,342	7,038	10,440	33	1976-2012
Tenmile Ck at SH 342	52.8	FIS	46,600	14,120	19,710	37,050	11	1969-1979
Trinity River at Dallas	6106	FIS	115,200	110,000	137,300	179,500	106	1904-2012
Trinity River below Dallas	6,278	FIS	119,300	64,960	82,540	113,200	53	1957-2012

Stream Name	Drainage Area from USGS Gage (mi ²)	Effective discharges Source	Effective 1-percent annual chance discharge (cfs)	95 confidence limits lower (cfs) (Gage)	1-percent annual chance discharge from PeakFQ (Gage)	95% confidence limits upper (cfs) (Gage)	Number of peaks in record	Year begin – Year End
Trinity River near Rosser	8,147	N/A	N/A	108,900	137,400	184,000	76	1908-2012
Trinity River at Trinidad	8,538	N/A	N/A	83,700	105,200	142,300	48	1965-2012

iii. Discovery Hydraulics and Floodplain Analysis

Hydraulics, floodplain, and floodways were reviewed based on the FIS reports, available hydraulic models, and FIRMs. As a result of the research, no hydraulic modeling data was available for the streams in the Zone A floodplains within the Watershed, and research could not conclude if any redelineated streams within the Watershed were model-based. Models that support Zone A areas and redelineated streams may be available in the FEMA Library. The CNMS data also did not reflect any model-backed Zone A areas or redelineated streams for this watershed.

With this limited hydraulic analysis, and with engineering judgment, several disconnects in both BFEs and floodplain boundaries were identified for a few streams, with the majority of these issues located at county boundaries. Table 18 identifies any recent LOMCs in the Watershed that have impacted hydraulics and may have created disconnects up and downstream.

Table 18: LOMRs that Revise Hydraulics within the Watershed

Stream Name	Case number	Basis of request	Notes
Stream 5B5	11-06-0684R	Hydraulics, New Topo	N/A
Tenmile Creek and stream 3A8	11-06-1645R	Hydraulics, Floodway and New Topo	N/A
Horne Branch	11-06-3271P	Hydraulics, Floodway and New Topo	Fill placement and new topography (in)
South Prong of Fivemile Creek	12-06-1271P	Hydrology, Hydraulics and New Topo	Not completed
Stream 5B29	12-06-2231P	Hydraulics, New Topo	Fill placement, channelization, and new topography (not in)
Turtle Creek	12-06-3367P	Hydraulics, New Topo	Bridge, fill placement, excavation, and new topography(not in)
Tenmile Creek, Stream 3A8	12-06-3277P	Hydraulics, New Topo	Fill placement and new topography (not in)
White Rock Creek	12-06-4168P	Hydraulics, New Topo	N/A
Stream 6A1	13-06-1142P	Hydraulics, Floodway and New Topo	Bridge, fill placement, and new topography(not in)
Newton Creek and Sheppard Branch	13-06-2373P	Hydraulics, New Topo	Not completed

The LOMRs listed in Table 18 that are available were reviewed. These LOMRs impact hydraulics, but did not create disconnections up and downstream. Some LOMRs listed in Table 17 that are not available or not completed were not reviewed. The LOMRs listed in Table 17 are not incorporated into their respective FIS.

In addition, mismatches at corporate limits or county boundaries often appear when community-based FIRMs and FISs are compiled together. Several mismatches at corporate limits are apparent, including:

- The hydraulics at the county boundary between Collin County and Dallas County at White Rock Creek and Cottonwood Creek results in a discrepancy with the BFEs. The difference in BFE at the county boundary is over 3.0 feet. The BFE is lower upstream at Collin County and is higher downstream at Dallas County. This observation is consistent with hydrology reviews of high flow at Dallas County and low flow at Collin County (see Table 15).
- The Zone AE floodplains do not match at the county boundary between Collin County and Dallas County at White Rock Creek, Hall Branch, and Cottonwood Creek crossing the county boundary. The floodway does not match at Cottonwood Creek crossing the county boundary.
- The Zone AE floodplains do not match at the county boundary between Dallas County and Kaufman County for the Trinity River. On the Dallas County side the floodplain is defined as Zone AE but on the Kaufman County side the floodplain is defined as Zone A. There is no hydrology and hydraulics data available to review for Trinity River at Kaufman County.
- The Zone A floodplains do not match at the county boundary between Dallas County and Ellis County for Old Tenmile Creek, Old Tenmile Creek Tributary 3, and No Name Creek. There is no hydrology and hydraulics data available to review for these streams.
- The Zone AE floodplains do not match at the county boundary between Dallas County and Ellis County for Bear Creek. On the Dallas County side the floodplain is defined as Zone A but on the Ellis County side the floodplain is defined as Zone AE. There is no hydrology and hydraulics data available to review for Red Oak Creek at Dallas County.
- The Zone AE floodplains do not match at the county boundary between Dallas County and Ellis County for Red Oak Creek. On the Dallas County side the floodplain is defined as Zone A but on the Ellis County side the floodplain is defined as Zone A. There is no hydrology and hydraulics data available to review for Bear Creek at Dallas County.

iv. Discovery CNMS Analysis

Table 19 shows the detailed study streams in the Upper Trinity Watershed that have failed one or more validation elements during the CNMS stream-reach-level validation process. The CNMS validation elements attempt to identify changes to the Physical Environment, Climate and Engineering Methodologies since the date of the Effective Analysis (which is different from the Effective issuance date). Per the CNMS validation process, the study is considered as having a need or assigned an “Unverified” status if one of seven critical elements fail, or if four or more of the 10 secondary elements fail during stream reach level validation.

Table 19: CNMS Analysis

Stream Name	County/Parish	Validation Status	Failed CNMS Elements
Brushy Creek (12.2 miles)	Ellis County	Unverified	C5, C6, S6, S10
Red Oak Creek (31 miles)	Ellis County	Unverified	C6, S6, S10
South Grove Creek (3.2 miles)	Ellis County	Unverified	C5, S4, S10
Trinity River (12.5 miles)	Dallas County	Unverified	Not Provided

Table 20 provides a description of the validation elements that failed as identified in the CNMS database.

Table 20: CNMS Category Descriptions

Element Name	Issue being identified by the Element	Element Description
C5_CHANN	Critical Element 5, Channel Reconfiguration. Current channel reconfiguration outside effective SFHA? (NO/YES/UNKNOWN)	This YES/NO field is to capture whether or not any channel reconfiguration outside the effective SFHA has been observed since the effective analysis was completed.
C6_HSTR	Critical Element 6, Hydraulic Change 2. 5 or more new or removed hydraulic structures (bridge/culvert) that impact BFEs? (NO/YES/UNKNOWN)	This YES/NO field is to capture whether or not 5 or more new or removed hydraulic structures (bridge/culvert) that impact BFEs have been observed since the effective analysis was completed. Consider any combination of new and removed of 5 or more structures (i.e., 3 new and 3 removed). This should not be used to supersede the LOMR Letter of Map Revision process.
S6_TOPO	Secondary Element 6, Topography Data. Availability of better topography/bathymetry? (NO/YES/UNKNOWN)	This YES/NO field is to capture whether or not there are new topographic data meeting FEMA minimum standards available since the effective study.
S10_REGEQ	Secondary Element 10, Regression Equation. New regression equations available? (NO/YES/UNKNOWN)	The originator of the CNMS record should have professional knowledge of this situation. This information may come to light following the release of a new study that includes a new regression model.

Summary of CNMS Concerns

Brush Creek, Red Oak Creek, and South Grove Creek represent the only deficient Zone AE detail studies within this Watershed. This equates to 46.5 stream miles that should be considered in order to bring the study current and meet the requirements of NVUE. It should be noted that these flooding sources are covered by high resolution LiDAR terrain data that is either available or will be available.

IV. Watershed Options

In conjunction with the assessment of risk, need, and the availability of topographic data, as well as the input of stakeholders within in this Watershed, future projects within the Upper Trinity Watershed are recommended. FEMA encourages mitigation action within the Watershed. After internal and partner review of the communities within the Watershed, the following opportunities have been identified to promote community action within the Watershed.

Table 21 lists some potential needs in the Watershed and actions that could be taken under each of the four areas discussed during the Discovery meetings, including:

- Risk Identification and Communication – traditional flood studies and data updates
- NFIP Community Actions – insurance-related mitigation or information
- Mitigation Planning and Mitigation Actions – items related to planning updates
- Community Benefits and Grant Opportunities – outreach and disaster activities as well as non-flooding hazards like safe room information

Table 21: Potential Watershed Activities

Risk Identification and Communication
<ul style="list-style-type: none"> • Cottonwood Creek at the Collin/Dallas County line has a discrepancy in discharges between the two counties' FIS. • Cottonwood Creek at the Collin/Dallas county line has a 3-foot difference in BFE, lower at the upstream end and higher at the downstream end. • Cottonwood Creek Collin/Dallas county line: Zone AE floodplain does not match. Floodway does not match. • White Rock Creek discharge frequency analysis show significant differences from the effective FIS discharges. • White Rock Creek at the Collin/Dallas county line has a 3-foot difference in BFE, lower at the upstream end and higher at the downstream end. • White Rock Creek Collin/Dallas county line Zone AE floodplain does not match. • McKamy Branch at the Collin/Dallas County line has a discrepancy in discharges between the two counties FIS. • Trinity River discharge frequency analysis show significant differences from the effective FIS discharges. • Trinity River at the Dallas/Ellis County line has a discrepancy in discharges between the two counties' FIS. • Little Creek at the Dallas/Ellis County line has a discrepancy in discharges between the two counties FIS. • Red Oak Creek at the Dallas/Ellis County line has a discrepancy in discharges between the two counties' FIS. • There are 10 LOMRs that are not incorporated into the current FIRMs dated from 2011 to 2013. • Hall Branch Collin/Dallas county line Zone AE floodplain does not match. • Trinity River Dallas/Kaufman County line Zone AE floodplain does not match. In Dallas County defined as Zone AE, on the Kaufman County side defined as Zone A. • At the Dallas/Ellis County line the Zone A floodplains do not match: Old Tenmile Creek, Old Tenmile Creek Tributary 3, and No Name Creek. • At the Dallas/Ellis County line these Zone AE these floodplains do not match: Bear Creek, Red Oak Creek. In Dallas County defined as Zone A, on the Ellis County side defined as Zone AE. • Trinity River in Dallas County has a CNMS status of "Unverified." This area is within the Dallas Floodway leveed area. • Brushy Creek in Ellis County has a CNMS status of "Unverified." • Red Oak Creek in Ellis County has a CNMS status of "Unverified." • South Grove Creek in Ellis County has a CNMS status of "Unverified."

NFIP Community Actions

- Presentation to non-participating communities on benefits of joining the NFIP, including Cities of Combine, Garrett, Goodlow, Grays Prairie, and Rosser, and the Town of Alma.
- Presentation about the CRS to interested communities.
- Explore with communities the cause and mitigation for high levels of NFIP RL/SRL claims including: City of Dallas, City of Garland, City of Balch Springs, City of Lancaster, City of Irving, City of Mesquite, City of Desoto, City of Plano, City of Waxahachie, City of Carrollton, Town of Highland Park, and Town of Red Oak. Also Anderson, Collin, Dallas, Ellis, and Henderson Counties.
- Explore with communities concentration of LOMCs along these flooding sources in Dallas County: Ten Mile Creek and its tributaries, White Rock Creek and its tributaries, Elam Creek, Prairie Creek, and Hickory Creek.
- Review dam and levee failure information for the Dallas Floodway Levees and White Rock Creek dam.

Mitigation Planning and Mitigation Actions

- The following communities have no HMP, initiate HMP outreach for Cities of Balch Springs, Carrollton, Cockrell Hill, Ennis, Ferris, Glenn Heights, Hutchins, Kerens, Mesquite, Midlothian, Oak Leaf, Ovilla, Palmer, Pecan Hill, Red Oak, Rice, Seagoville, University Park, Waxahachie, Wilmer, and Towns of Highland Park and Powell, and Ellis, Freestone, Navarro Counties. This could include providing actions captured during Discovery that could be used in the plan.
- City of Plano HMP has expired, initiate HMP outreach for City of Plano; plan expired 4/7/2013. This could include adding actions captured during Discovery.
- The following communities have HMPs that are about to expire, initiate HMP outreach for City of Richardson plan expires 10/9/2013, Dallas County including Cities of Cedar Hill, Dallas, Desoto, Duncanville, Irving, and Lancaster plan expires 1/2/2014. This could include adding actions captured during Discovery.
- Facilitate finalizing the HMP for Kaufman County including Cities of Combine, Cottonwood, Grays Prairie, Rosser, and Scurry. This could include adding actions captured during Discovery.
- Facilitate HMP action advancement for action either identified in their effective plan or those captured during Discovery for the following communities: Anderson County, Collin County, Henderson County, Cities of Frisco, Garland, and Seven Points.
- Mitigation actions identified and captured during Discovery facilitate advancement.
- Mitigation planning for communities experiencing RL/SRL claims.

Community Benefits and Grant Opportunities

- Additional communities joining the NFIP
- Community outreach improved
- Increase facilitation for HMP Grant applications
- Expedite the grant approval process
- Local drainage and flooding issues identified
- Local drainage and flooding issues addressed
- Reduction of higher risk decile areas
- Updated and current flood hazard information for communities
- Increased visibility of NFIP information
- Outreach for the RL/SRL properties
- Outreach for the LOMC clusters
- Outreach to local associations, Chambers of Commerce, and local insurance industry
- Assist in HMP generation and implementation of action(s)
- Assist smaller communities to acquire GIS software and training
- Provide information on safe rooms for interested communities

Table 22 provides specific evaluation guidelines for streams or areas that could benefit from additional study. Any FEMA-based metrics that would be met if the need or issue was addressed are noted, as well as any current FEMA map actions that would affect the activity. Any comments or concerns raised by a stakeholder during the Discovery process that could be tied to one of the needs or actions for the Watershed are also noted. Some needs/actions are listed that were not raised by any specific community but were identified as general improvements that could be made in the Upper Trinity Watershed to meet general FEMA regional goals.

Needs are identified as being on the critical path as High, Medium, or Low priority or as a task that could be assigned to a State or local community to complete. These definitions are also included in Table 22.

- **High** – The local community would immediately benefit from the action and FEMA’s metrics would also be met.
- **Medium** – The local community would benefit over the longer term from the action and a portion of FEMA’s metrics may be met.
- **Low** – The local community activities can continue without this revision and FEMA’s metrics are not affected.
- **Community Action** – The activity would be more appropriate as a community-led action rather than a FEMA-led action.

Table 22: Metrics and Rankings of Needs

*Community political boundary in more than one watershed and more detail information was collected by the Cooperating Technical Partner, North Central Texas Council of Governments and can be found in either the Elm Fork Trinity Watershed or Lower West Fork Trinity Watershed Discovery deliverables.

**Information collected at Discovery workshop from Community input; these can be spatially located in the Discovery database.

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
A	Ellis County - Brushy Creek – Zone AE “Unverified” within CNMS, needs restudy	<ul style="list-style-type: none"> • CNMS “Identified” this need • Currently mapped as Zone AE • Current study is from 1984 Natural Resources Conservation Service (NRCS) study • Potential to update 12.3 miles of detail stream to be NVUE compliant 	<ul style="list-style-type: none"> • None • FIRM Date: 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	High	No Specific Comment
B	Ellis County – Red Oak Creek – Zone AE “Unverified” within CNMS, needs restudy	<ul style="list-style-type: none"> • CNMS “Identified” this need • Currently mapped as Zone AE • Current study is from 1984 NRCS study • Potential to update 31.3 miles of detail stream to be NVUE compliant 	<ul style="list-style-type: none"> • None • FIRM Date: 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	High	No Specific Comment
C	Ellis County – South Grove Creek – Zone AE “Unverified” within CNMS, needs restudy	<ul style="list-style-type: none"> • CNMS “Identified” this need • Currently mapped as Zone AE • Current study is from 1984 NRCS study • Potential to update 3.2 miles of detail stream to be NVUE compliant 	<ul style="list-style-type: none"> • None • FIRM Date: 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	High	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
D	Dallas County – Trinity River – Zone AE “Unverified” within CNMS, needs restudy	<ul style="list-style-type: none"> • CNMS “Identified” this need • Currently mapped as Zone AE • Current study is from 1980 NRCS study • Potential to update 12.5 miles of detail stream to be NVUE compliant • Frequency analysis was conducted and the discharge from gage analysis is significantly different from the effective FIS discharge. 	<ul style="list-style-type: none"> • None • FIRM Date: 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	High	No Specific Comment
E	Cottonwood Creek – Collin/Dallas County line – discharge, BFE, and floodplain mapping issue	<ul style="list-style-type: none"> • Discovery engineering review “Identified” this need • Cottonwood Creek restudied in Dallas County FIS dated 2014, Collin County study from FIS dated 2009 • Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 1,850 cfs • Upstream in Collin County same location discharge is 1,500 cfs • Frequency analysis was conducted and the discharge from gage analysis is significantly different from the effective FIS discharge. 	<ul style="list-style-type: none"> • None • FIRM Date: Collin County 06/02/2009, Dallas County 03/17/2014 • FIRM Status: Revised 	<ul style="list-style-type: none"> • FEMA potential increase data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
F	White Rock Creek – Collin/Dallas County line – discharge, BFE, and floodplain mapping issue	<ul style="list-style-type: none"> Discovery engineering review “Identified” this need White Rock Creek restudied in Dallas County FIS dated 2014, Collin County study from FIS dated 2009 Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 34,400 cfs Upstream in Collin County same location discharge is 27,900 cfs Frequency analysis was conducted and the discharge from gage analysis is significantly different from the effective FIS discharge. 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/02/2009, Dallas County 03/17/2014 FIRM Status: Revised 	<ul style="list-style-type: none"> FEMA potential increase data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
G	McKamy Branch – Collin/Dallas County line – discharge issue	<ul style="list-style-type: none"> Discovery engineering review “Identified” this need McKamy Branch restudied in Dallas County FIS dated 2014, Collin County study from FIS dated 2009 Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 2,050 cfs Upstream in Collin County same location discharge is 2,150 cfs Frequency analysis was conducted and the discharge from gage analysis is significantly different from the effective FIS discharge. 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/02/2009, Dallas County 03/17/2014 FIRM Status: Revised 	<ul style="list-style-type: none"> FEMA potential increase data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
H	Trinity River – Dallas/Ellis County line – discharge issue	<ul style="list-style-type: none"> Discovery engineering review “Identified” this need Trinity River restudied in Dallas County FIS dated 2014, Ellis County study from FIS dated 2013 Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 119,300 cfs Downstream in Ellis County same location discharge is 109,000 cfs Frequency analysis was conducted and the discharge from gage analysis is significantly different from the effective FIS discharge. 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 03/17/2014, Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> FEMA potential increase data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
I	Little Creek – Dallas/Ellis County line – discharge issue	<ul style="list-style-type: none"> Discovery engineering review “Identified” this need Little Creek restudied in Dallas County FIS dated 2014, Ellis County study from FIS dated 2013 Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 11,100 cfs Downstream in Ellis County same location discharge is 5,707 cfs 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 03/17/2014, Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> FEMA potential increase data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
J	Red Oak Creek – Dallas/Ellis County line – discharge issue	<ul style="list-style-type: none"> Discovery engineering review “Identified” this need Red Oak Creek restudied in Dallas County FIS dated 2014, Ellis County study from FIS dated 2013 Peak 1-percent-annual-chance discharge at county boundary from Dallas study is 10,100 cfs Downstream in Ellis County same location discharge is 5,792 cfs 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 03/17/2014, Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> FEMA potential increase data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
K	*Addison, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
L	Alma, Town of	<ul style="list-style-type: none"> Not Participating in the NFIP No Hazard Mitigation Plan Community is flood prone Per community they may be interested in partnering with Ellis County to develop HMP Per community no current or planned development Per community no real flooding issues, one creek that does flood has not overtopped road 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013, FIRM Status: None 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
M	Anderson County	<ul style="list-style-type: none"> Per mitigation plan education and outreach all hazards Per mitigation plan improve early warning system Per mitigation plan brush and debris removal plan and implementation annually Per mitigation plan improve regulation for floodplain development Per mitigation plan dam inundation area development restrictions Per community neighborhood along Trinity River in Tucker is repetitive loss neighborhood. Floods frequently and FPA states neighborhood is no longer eligible for FEMA assistance Per community must have had an unsuccessful buy-out in Tucker neighborhood Per community, items listed above in the HMP have been implemented and are revisited every 5 years Per community ongoing debris removal There is a railroad bridge being upgraded to facilitate higher capacity 	<ul style="list-style-type: none"> None FIRM Date: Anderson County 02/03/2010 FIRM Status: Original 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
N	Balch Springs, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
O	*Carrollton, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/2/2009 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
P	*Cedar Hill, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
Q	Cockrell Hill, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan Per community may want to partner with other communities to develop HMP due to lack of funds Per community, city is very small and not located in a floodplain Per community they have inadequate drainage system that needs to be upgraded Per community current system creates nuisance flooding and minor road closures Per community runoff from Dallas could create flood damage without improvements Per community no new or planned development 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium /Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
R	Collin County	<ul style="list-style-type: none"> • Per HMP improve warning system • Per HMP conduct vulnerability assessment and inundation study on NRCS flood retention structures. Implement mitigation items identified in the study • Per HMP education and outreach for all hazards • Per HMP assess vulnerability of structures in floodplain • Per HMP develop and implement acquisition project • Per HMP adopt new building codes – wind • Per HMP implement TX safe room rebate program • Per community HMP identifies 29 county roads with low water crossings that at times need to be barricaded during flash flood events • Per community install gates at low water crossings, currently pursuing funds to mitigate low water crossings 	<ul style="list-style-type: none"> • None • FIRM Date: Collin County 06/2/2009 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
S	Combine, City of	<ul style="list-style-type: none"> • Not Participating in the NFIP • Hazard Mitigation Plan under development • **Per community, City council has not approved joining NFIP • **Per community would like more detailed mapping to help join the NFIP, Elm Fork Trinity is Zone A, Zone A may be making community hesitant to join, there are also several unmapped areas • **Per community homes in the floodplain, low water crossings, and major culvert issues • **Per community levee partially washed away • **Per community there are neighborhoods and structures that receive repetitive loss or severe repetitive loss. • **Per community, City has historical flooding, high water marks HWM, and low water crossing LWC data available. • **Per community, existing levee along and near the Trinity River owned and operated by the Bois D’ Arc Island Levee Improvement District of Dallas and Kaufman Counties has damages and is of concern. Levee is possibly an agricultural levee that appears to have several locations that will breach. USACE can verify if it is a Federal levee or not. • **Per community, does not currently use GIS. Can look across other departments and Kaufman County to see if there is staff that can be leveraged from utilities, E911, NCTCOG. 	<ul style="list-style-type: none"> • None • FIRM Date: Kaufman County 07/03/2012 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Community eligibility for Federal/ State grants • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium /Community Action	9, 10, 11, 12

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
T	Combine, City of	<ul style="list-style-type: none"> **Per community, city needs Master Drainage Plan and Stormwater Management Plan. **Per community, City has several undersized culverts and narrow bridge openings that cause flooding and overtop frequently. 	<ul style="list-style-type: none"> None FIRM Date: Kaufman County 07/03/2012, FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
U	*Coppell, City of	<ul style="list-style-type: none"> Per mitigation plan eliminate new floodplain development through ordinance Per mitigation plan education and outreach all hazards Per mitigation implement safe room rebate program Per mitigation acquisition of remaining structures in floodplain 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
V	*Cottonwood, City of	<ul style="list-style-type: none"> Hazard Mitigation Plan under development 	<ul style="list-style-type: none"> None FIRM Date: Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
W	Dallas, City of	<ul style="list-style-type: none"> • Per mitigation plan conduct dam inundation studies to mitigate risk/damages • Per mitigation plan improve levee systems • Per mitigation plan wetland restoration and land acquisition throughout city, specifically Cadillac Heights in SW Dallas is in Upper Trinity Watershed • Per mitigation plan improve warning system • Per mitigation plan adopt stricter building codes (tornadoes) • Per mitigation plan implement safe room rebate program • Per mitigation plan development of Trinity River Basin with improvements to levee system (ongoing) along with improvements to floodways in planned development • Per mitigation plan conduct earthquake vulnerability study • Per mitigation plan additional concrete side walls, bridges, and/or improvements at a locations on Whitehurst Drive, 11th Street, Deep Hill Circle, Fair Oaks Crossing, Greenville Avenue, Church Road, Skillman Street, and Langdale Circle • Per mitigation plan channel improvements at South Fork Ash Creek and John West • Per mitigation plan improve bridge at Ash Creek Tributary and Providence • Per mitigation plan channel improvements at Cedar Creek Bridge and Clarendon • Per mitigation plan replace bridge at Cedar Creek Bridge and Moore, and at Tyler • Per HMP add two culverts at Cedar Creek and Polk, 2 culverts at Winnetka Bridge, Cooms Creek Bridge, and Brooklynell acquisition and install bridge at Cooms Creek and Plymouth 	<ul style="list-style-type: none"> • None • FIRM Date: Dallas County 06/16/2005 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
X	Dallas, City of	<ul style="list-style-type: none"> • Per community not significant development in the floodplain • Per community multiple projects are prioritized to implement • Per community HMP actions were tailored more toward Dallas County and are still relevant • **Per community, city was questioning the availability of the Collin County FIRMs on the MSC website, they do not see the current effective FIRMs • **Per community, city will follow-up with NCTCOG about the Safe Room rebate program, program identified during the Upper Trinity Discovery workshop • **Per community discussion about buyouts and any disadvantages, HMGP to help fund buyouts and how it would work in a larger community such as Dallas 	<ul style="list-style-type: none"> • None • FIRM Date: Dallas County 06/16/2005 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	13, 14, 15
Y	*Dallas County	<ul style="list-style-type: none"> • Per mitigation plan conduct earthquake study • Per mitigation plan improve warning system • Per mitigation plan implement safe room rebate program • Per mitigation plan floodplain improvements with no specifics 	<ul style="list-style-type: none"> • None • FIRM Date: Dallas County 06/16/2005 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
Z	DeSoto, City of	<ul style="list-style-type: none"> Per mitigation plan improve master drainage plan and identify projects to implement Per mitigation plan improve warning system Per mitigation plan require new development to implement detention/retention to offset additional runoff Per mitigation adopt stricter building codes (tornado) Per mitigation plan education outreach all hazards Per mitigation plan implement safe room rebate program 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
AB	DeSoto, City of	<ul style="list-style-type: none"> **Per community ongoing work on Tenmile Creek mapped Zone AE. City can provide additional information on Zone A areas 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	16
AC	Duncanville, City of	<ul style="list-style-type: none"> Per mitigation plan improve warning system Per mitigation plan adopt stricter building codes (tornado) Per mitigation plan implement safe room rebate program Per mitigation plan update master drainage plan annually Per mitigation plan manage storm water into Tenmile Creek Per mitigation plan education and outreach for all hazards 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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AD	Duncanville, City of	<ul style="list-style-type: none"> **Per community drainage CIPs provided by the City, identified 27 sites, data provided digitally 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	17
AE	*Ellis County	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AF	*Ellis County	<ul style="list-style-type: none"> **Issue with culvert elevations along Red Oak Creek and tributaries **Bend before bridge, headwalls washed out. Bridge to be rehabilitated, County has no power to inspect elevations (outside Upper Trinity Watershed) **Hampton Road bridge over Red Oak Creek, easy to overtop bridge, does not take much 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	69, 70, 71
AG	Ennis, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

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AH	Ennis, City of	<ul style="list-style-type: none"> • **Per community municipal airport cutoff by Zone A, concerned as local CareFlight is stationed here and adjacent to a large lake and dam. (outside Upper Trinity Watershed) • **Per community new flood maps have Zone A inundating much more homes than previously. Concerned that they are incorrect due to the upstream contributing area is so small and being controlled by a dam. (outside Upper Trinity Watershed) • **Per community flooding occurs in this location, lift station present in Zone A, request for Zone AE • **Per community Zone A has increased in size considerably. (outside Upper Trinity Watershed) • **Per community mitigation activity indentified interested in joining the CRS program 	<ul style="list-style-type: none"> • None • FIRM Date: Ellis County 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	18, 19, 20, 21, 22
AI	Ferris, City of	<ul style="list-style-type: none"> • No Hazard Mitigation Plan 	<ul style="list-style-type: none"> • None • FIRM Date: Ellis County 06/03/2013 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Community eligibility for Federal/ State grants • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

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AJ	Freestone County	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Freestone County 09/01/2007 FIRM Status: All Zone A, C and X - Original FIRM by Letter 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AK	Frisco, City of	<ul style="list-style-type: none"> Per mitigation plan improve warning system, project is ongoing Per mitigation plan complete earthquake study and identify mitigation opportunities, project is ongoing Per mitigation plan education and outreach for all hazards, project is ongoing Per mitigation plan implement safe room rebate program Per mitigation plan develop and implement system for maintaining right-of-ways, clear of tree limbs/brush growth (winter storm) Per community has developed flood modeling and floodplains for future conditions Per community has very restrictive development in these floodplain Per community developers along creeks are required to submit flood study with current and future land use assumptions Per community during large rain events small portion of 4th Army Memorial Road at Phillips Community Park floods, barricades required to divert traffic Per community need to install high water warning 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/02/2009 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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AL	Garland, City of	<ul style="list-style-type: none"> • Per mitigation plan implement TX safe room rebate program • Per mitigation plan adopt new building codes (wind) • Per mitigation plan purchase and distribute weather radios • Per mitigation plan Stream 2C3 and 2C4 channel improvements • Per mitigation plan Country Club Estates channel improvements • Per mitigation plan Keen Branch channel improvements • Per mitigation plan generators at critical facilities • Per mitigation plan install outdoor warning system • Per mitigation A/C rebate program • Per mitigation plan education outreach for all hazards • Per mitigation plan improvement to west pressure plane of the water distribution system • Per mitigation plan new East zone water tower 	<ul style="list-style-type: none"> • None • FIRM Date: Collin County 06/02/2009 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
AM	Garland, City of	<ul style="list-style-type: none"> • **Per community, city to send information on repetitive losses • **Per community mitigation activity identified through CIP, Streams 2C3 and 2C4 channel improvements. (outside Upper Trinity Watershed) • **Per community mitigation activity identified through CIP, County Club Estates storm sewer improvements. (outside Upper Trinity Watershed) 	<ul style="list-style-type: none"> • None • FIRM Date: Collin County 06/02/2009 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	23, 24, 25

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AN	Garrett, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AO	Glenn Heights, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AP	*Goodlow, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Navarro County 06/05/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AQ	*Grays Prairie, Village of	<ul style="list-style-type: none"> Hazard Mitigation Plan under development 	<ul style="list-style-type: none"> None FIRM Date: Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AR	Henderson County	<ul style="list-style-type: none"> • Per mitigation plan adopt stricter floodplain ordinance requirements • Per mitigation education and outreach all hazards • Per mitigation improved warning systems and coordination • Per mitigation plan, mitigate flood prone critical facilities • Per mitigation plan improve existing public dams (County and Trinidad only) • Per mitigation plan harden public structures (wind) • Per mitigation plan develop community tornado shelters • Per community adopt new regulation significantly restricting development in the floodplain • Per community no current development pressure in the floodplain 	<ul style="list-style-type: none"> • None • FIRM Date: Henderson County 04/05/2010 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AS	Henderson County	<ul style="list-style-type: none"> • **Property owner located on Bevo Trail is located in the floodplain from Cedar Creek Reservoir, topography based on USGS 10 foot contours. Recommend LiDAR around this and other major Texas lakes. (outside Upper Trinity Watershed) • **Coffee City is not in the NFIP. (outside Upper Trinity Watershed) • **Coon Creek all Zone A, uses old information on old topography, request to redelineate new information. (outside Upper Trinity Watershed) • **Catfish Creek all Zone A, uses old information on old topography, request to redelineate new information. (outside Upper Trinity Watershed) • **There have been issues getting permits for new pipeline. (outside Upper Trinity Watershed) • **County received 12 inches of rain in 10 hrs, 10 houses affected that are in the 100 year floodplain. (outside Upper Trinity Watershed) • **Huge area upstream of Holland Road, within the City of Eustace is within the 100 year floodplain, affects many properties. (outside Upper Trinity Watershed) • **Coordinate spillway operations with Tarrant Regional Water District with spillway up Trinity River backs-up and floods, when released fast water and dry areas flood rapidly. Affects City of Trinidad, suggest "co management" • **Communities largest populated pre-FIRM housing downstream of flooding issues, between Trinity River and Cedar Creek • **Northwest Henderson County has experienced two 100 year floods since 2007 	<ul style="list-style-type: none"> • None • FIRM Date: Henderson County 04/05/2010 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium/ Community Action	72,73, 74, 75, 76, 77, 78, 79, 80, 81

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AT	Henderson County	<ul style="list-style-type: none"> • **Entire area flooded HWY 85 near Trinity Hills, forested area, emergency management difficult during flood events. Major flood in 2007 demonstrated this, no helicopter access • **Base map elements may need to be updated in this area • **Lakeway Estates temporary culvert for emergency fix will be washed out in next flood. Route cutoff during flooding, main entrance to subdivision. (outside Upper Trinity Watershed) • **New elementary school build, no permit or coordination made with the County. (outside Upper Trinity Watershed) • **Dixie Isle flooding problem due to neighborhood grading to build. Currently older homes are lower and newer grading is piling up higher areas, manmade structures are in Zone A areas with no permit requirements. (outside Upper Trinity Watershed) • **Dam failure on private lake at the end of 2010 caused flooding downstream. (outside Upper Trinity Watershed) • **Flood problems from the Lake Athens dam during flooding events, there are a lot of LOMAs in this area. (outside Upper Trinity Watershed) • **Briarwood Bay subdivision roads are bad, frequently washed out. (outside Upper Trinity Watershed) • **New subdivision part is within the County and part in Berryville. (outside Upper Trinity Watershed) • **City of Brownsboro was suspended from the NFIP for a long time, currently enrolled in the NFIP. (outside Upper Trinity Watershed) 	<ul style="list-style-type: none"> • None • FIRM Date: Henderson County 04/05/2010 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium/ Community Action	82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AU	Henderson County	<ul style="list-style-type: none"> **City of Chandler has all new construction with grading of homes, is causing flooding on both sides of the flooding source. (outside Upper Trinity Watershed) Mitigation activity identified, County wants to explore avenues for SRL property acquisitions Mitigation activity identified, join CRS 	<ul style="list-style-type: none"> None FIRM Date: Henderson County 04/05/2010 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium/ Community Action	94, 95
AV	Highland Park, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
AW	Hutchins, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AX	*Irving, City of	<ul style="list-style-type: none"> Per mitigation plan dam inundation studies with action items Per mitigation plan LOMR to remove 56 homes and 90 manufactured homes from the floodplain Per mitigation plan excavation/rehabilitation of linear pond on West Irving Creek from Rogers Road to MacArthur Blvd. through Tim Markwood Park Per mitigation plan channel improvements on Delaware Creek from live Oak to Cripple Creek Per mitigation plan replace Cripple Creek Bridge Per mitigation plan improve warning system Per mitigation plan implement safe room rebate program 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
AY	Kaufman County	<ul style="list-style-type: none"> Hazard Mitigation Plan under development 	<ul style="list-style-type: none"> None FIRM Date: Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
AZ	Kaufman County	<ul style="list-style-type: none"> • **Levee maintained by landowner, 25%-30% compromised by overgrown trees growing into the levee, signs of feral hog ruts (outside Upper Trinity Watershed). • **Bois de Arc levee has breached, owner Bois de Arc Levee District, on private land in the County. Population and approximately 60 mobile homes potentially affected in Dallas County, impacts Combine, TX • **Mitigation activity identified, safe room rebate program through the Emergency Management Office • **Mitigation activity identified, joining the CRS program 	<ul style="list-style-type: none"> • None • FIRM Date: Kaufman County 07/03/2012 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	96, 97, 98, 99
BA	Kerens, City of	<ul style="list-style-type: none"> • No Hazard Mitigation Plan 	<ul style="list-style-type: none"> • None • FIRM Date: Navarro County 06/05/2012 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Community eligibility for Federal/ State grants • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BB	Lancaster, City of	<ul style="list-style-type: none"> • Per mitigation plan improvements to storm water drainage system, no specifics • Per mitigation plan adopt stricter building codes (tornado) • Per mitigation plan improve warning system • Per mitigation plan identify land for conservation • Per mitigation plan acquisition and relocation along Tenmile Creek 	<ul style="list-style-type: none"> • None • FIRM Date: Dallas County 06/16/2005 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BC	Lancaster, City of	<ul style="list-style-type: none"> • **Per community there is industrial development and need provide a copy of the drainage plan for this area • **Per community new development along Floyd Branch requiring a new study, currently working with the City of Dallas. AECOMM working with Dallas • **Per community commercial area needs a new bridge • **Per community repetitive flooding issues on Tenmile Creek in residential areas • **Per community flooding issues along Tenmile Creek, HMGP and City funds to buyout homes from XS AS to XS BA, 12 properties are “approved” • **Per community flooding issues along Deep Creek, a few homes were bought out • **Per community mitigation activity update existing emergency management plan • **Per community mitigation activity interested in joining CRS • **Per community mitigation activity scoped CIP drainage improvements on Tenmile Creek once funding is available. Freese & Nichols did study with recommendations, acquisition plan • **Per community new culvert/bridge install along Nokomis Road through USACE property • **Per community received HMG in 2004 due to flood in 2004 somewhere around 100 year event 	<ul style="list-style-type: none"> • None • FIRM Date: Dallas County 06/16/2005 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Identified as an action • FEMA potential increase NVUE data quality • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium/ Community Action	29, 30, 31, 32, 33, 34, 35, 36

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BD	Mesquite, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BE	*Midlothian, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BF	Navarro County	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Navarro County 06/05/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BG	Navarro County	<ul style="list-style-type: none"> **Mitigation activity scoped, plans for dams, currently looking at Lake Dawson. (outside Upper Trinity Watershed) 	<ul style="list-style-type: none"> None FIRM Date: Navarro County 06/05/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	100

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	Location of Need/Project	Details				
	<u>Evaluation Guide</u> High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action					
BH	Oak Leaf, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BI	Ovilla, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BJ	Palmer, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BK	Palmer, Town of	<ul style="list-style-type: none"> **Per community recent and ongoing subdivision and school developments throughout the community is making flood elevation determination difficult as land use is changing rapidly **Per community mitigation activity interested in safe room rebate program 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	37, 38

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BL	Pecan Hill, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BM	*Plano, City of	<ul style="list-style-type: none"> Per mitigation plan retrofit recreation centers for community safe rooms Per mitigation plan tree trimming, winter storms Per mitigation develop and implement debris management plan Per mitigation plan become Storm Ready Community Per mitigation plan retrofit Emergency Operations Center roof to prevent hail damage Per mitigation plan install surge protection at critical facilities Per mitigation plan install generators at sewer lift stations Per mitigation plan, mitigate repetitive loss properties Per mitigation plan education and outreach for multiple hazards Per mitigation plan improvements to Pittman Creek to facilitate 100 year storm (outside Upper Trinity Watershed) 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/2/2009 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BN	*Plano, City of	<ul style="list-style-type: none"> **Per community, City has a CRS rating of 5, would like to know how to determine if insurance premium discount is being applied to community policy holders. A perspective from the insurance industry would be helpful **Per community, City wants to understand how the ongoing Discovery effort will affect the current Physical Map Revision **Per community, City would like a “How to apply for a LOMA” flyer to include in letters to the residences that could be impacted before maps go effective **Per community mitigation activity emergency overflow is lower than the overflow, could cause a basis for an appeal 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/2/2009 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	39, 40, 41, 42
BO	*Powell, Town of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Navarro County 06/05/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BP	Red Oak, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BQ	*Rice, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Navarro County 06/05/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BR	Richardson, City of	<ul style="list-style-type: none"> Per mitigation plan education and outreach for multiple hazards Per mitigation plan improve CRS rating Per mitigation plan improvements and erosion control at Cottonwood Creek (outside Upper Trinity Watershed) Per mitigation plan improvements and erosion control, other high risk areas not specified Per mitigation plan assess storm drainage system Conduct drainage studies and implement actions resulting from study 	<ul style="list-style-type: none"> None FIRM Date: Collin County 06/2/2009 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BS	Richardson, City of	<ul style="list-style-type: none"> • **Duck Creek at Stream 2C7 there is an issue at the Dallas/Collin County FIRMs with a new study on these streams. The City is coordinating with Michael Baker. (outside Upper Trinity Watershed) • **Prairie Creek updated study by CDM. (outside Upper Trinity Watershed) • **Spring Creek updated study by CDM. (outside Upper Trinity Watershed) • **Mitigation activity identified, update HMP which expires 10/13/2013 • **Mitigation activity identified, more stream gages in urban areas • **Mitigation activities ongoing, UTD detention projects, bridge improvements within the City. 	<ul style="list-style-type: none"> • None • FIRM Date: Collin County 06/2/2009 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	43, 44, 45, 46, 47, 48
BT	*Rosser, City of	<ul style="list-style-type: none"> • Hazard Mitigation Plan under development 	<ul style="list-style-type: none"> • None • FIRM Date: Kaufman County 07/03/2012 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Community eligibility for Federal/ State grants • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
BU	*Scurry, City of	<ul style="list-style-type: none"> • Hazard Mitigation Plan under development 	<ul style="list-style-type: none"> • None • FIRM Date: Kaufman County 07/03/2012 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • Community eligibility for Federal/ State grants • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

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	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BV	Seagoville, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005, Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
BW	Seagoville, City of	<ul style="list-style-type: none"> **Trinity Levee (East Fork) information is not shown on the FIRM. (outside Upper Trinity Watershed) **There is a creek through the middle of town that is on privately owned land. City would like USACE or someone to come in and clean it out, but it is on private land. (outside Upper Trinity Watershed) **Repetitive flooding in the Larry Drive, Barry area mobile homes. Grant (CDBGD) from Dallas Co. to redo the road, storm water improvements. (outside Upper Trinity Watershed) 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005, Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	8, 49, 50

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	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BX	Seven Points, City of	<ul style="list-style-type: none"> • Per mitigation plan adopt stricter floodplain ordinance requirements • Per mitigation plan education and outreach all hazards • Per mitigation plan improved warning systems and coordination • Per mitigation plan, mitigate flood prone critical facilities • Per mitigation plan improve existing public dams (County and Trinidad only) • Per mitigation plan harden public structures (wind) • Per mitigation plan develop community tornado shelters • Per community included in the HMP east and central areas of City are growing • Per community several roads that are not in the floodplain are subject to flooding including: Querum Lane, Jess Hinton at Pritchett Lane, and the bridge over Persimmon Creek and Veterans Lane 	<ul style="list-style-type: none"> • None • FIRM Date: Henderson County 04/05/2010 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BY	Seven Points, City of	<ul style="list-style-type: none"> • **Persim Branch should be labeled Persimmon Creek on effective FIRM. (outside Upper Trinity Watershed) • **Duran Lane should be labeled Quiram Road on effective FIRM. • **Erosion issue, overpass washout 3-4 feet. 48 inch culvert currently conveys flooding, needs a bridge. Also two 36 inch culverts. These two locations overtop in heavy flooding, blocks evacuation. Only route through this part of the County. (outside Upper Trinity Watershed) • **HWY 274 toward City drainage ditch/culvert through property clogs with debris and causes backup. Caused by Texas Department of Transportation and Development debris left after installation of a new culvert. • **Significant flooding at Kelly Ditch to highway. Ditch goes down makes a circle, floods apartments. Terminates at HWY 334, does not go under HWY 334. (outside Upper Trinity Watershed) • **Quiram Creek always floods, destroys the road, channel dug over 40 years ago. • **High water area near with culverts that appear undersized, spreadsheet includes 58 separate areas. 	<ul style="list-style-type: none"> • None • FIRM Date: Henderson County 04/05/2010 • FIRM Status: Revised 	<ul style="list-style-type: none"> • Community’s ability to mitigate risk • FEMA increase public Awareness of risk management • FEMA increase public Action toward managing flood risk 	Medium/ Community Action	51, 52, 53, 54, 55, 56, 57, 58

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
BZ	Tool, City of	<ul style="list-style-type: none"> Per mitigation plan adopt stricter floodplain ordinance requirements Per mitigation plan education and outreach all hazards Per mitigation plan improved warning systems and coordination Per mitigation plan mitigate flood prone critical facilities Per mitigation plan improve existing public dams (County and Trinidad only) Per mitigation plan harden public structures (wind) Per mitigation plan develop community tornado shelters Per community, city has a plan to join the NFIP 	<ul style="list-style-type: none"> None FIRM Date: Henderson County 04/05/2010 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
CA	Tool, City of	<ul style="list-style-type: none"> **Floods over HWY 31 at Cedar Creek. (outside Upper Trinity Watershed) **Flooding issues on Old River Road near Trinity River and Henderson/Navarro County line **Culvert needs replacing near Lake Drive and Arnold Hills. (outside Upper Trinity Watershed) **Pritchett Road culvert needs replacing to reduce flooding. (outside Upper Trinity Watershed) **Flooding issue around Trinity Hill Road, houses are on 9 foot pilings, whole subdivision experiences flooding 	<ul style="list-style-type: none"> None FIRM Date: Henderson County 04/05/2010 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	59, 60, 61, 62, 63

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
CB	Trinidad, City of	<ul style="list-style-type: none"> Per mitigation plan adopt stricter floodplain ordinance requirements Per mitigation plan education and outreach all hazards Per mitigation plan improved warning systems and coordination Per mitigation plan mitigate flood prone critical facilities Per mitigation plan improve existing public dams (County and Trinidad only) Per mitigation plan harden public structures (wind) Per mitigation plan develop community tornado shelters Per community no development pressure in the floodplain Per community potential flooding could occur on the east side of FM 1667 if developed in the future 	<ul style="list-style-type: none"> None FIRM Date: Henderson County 04/05/2010 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Community Action	No Specific Comment
CC	University Park, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan Per community city is working with County on HMP Per community the city has adopted stricter ordinance and building codes Per community extensive redevelopment is of concern for floodplain impact Per community Turtle Creek drainage improvements may be implemented 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005, Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium/Community Action	No Specific Comment

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
CD	University Park, City of	<ul style="list-style-type: none"> **Would like detail study extended to the upstream end of Stream 6A2 **Would like detail study extended to the upstream end of Turtle Creek 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005, Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA potential increase NVUE data quality FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	64, 65
CE	Waxahachie, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 Dallas County 06/16/2005 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment
CF	Waxahachie, City of	<ul style="list-style-type: none"> **One unstudied reach where pre-FIRM subdivision is located--Pecan Valley subdivision. Preliminary study completed to estimate BFE in subdivision. **Localized minor flooding located in areas where there is no development **Mitigation activity identified, interested in partnering with Ellis County to develop HMP ** Mitigation activity identified, may want to develop safe room rebate Grant after completing HMP 	<ul style="list-style-type: none"> None FIRM Date: Ellis County 06/03/2013 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium/ Community Action	66, 67, 68

Item	Description of Need		Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation	Relates to Community Comment Number
	Location of Need/Project	Details				
	<p><u>Evaluation Guide</u></p> <p>High – Local community would immediately benefit from the action, and FEMA’s metrics would also be met</p> <p>Medium – Local community would benefit over the longer term from the action, and a portion of FEMA’s metrics may be met</p> <p>Low – Local community activities can continue without this revision, and FEMA’s metrics are not impacted</p> <p>Community Action – Activity would be more appropriate as a community-led action rather than a FEMA-led action</p>					
CG	Wilmer, City of	<ul style="list-style-type: none"> No Hazard Mitigation Plan 	<ul style="list-style-type: none"> None FIRM Date: Dallas County 06/16/2005, Kaufman County 07/03/2012 FIRM Status: Revised 	<ul style="list-style-type: none"> Community’s ability to mitigate risk Community eligibility for Federal/ State grants FEMA increase public Awareness of risk management FEMA increase public Action toward managing flood risk 	Medium	No Specific Comment

*Community political boundary in more than one watershed and more detail information was collected by the Cooperating Technical Partner, North Central Texas Council of Governments and can be found in either the Elm Fork Trinity Watershed or Lower West Fork Trinity Watershed Discovery deliverables.

**Information collected at Discovery workshop from Community input; these can be spatially located in the Discovery database.

i. Project Prioritization

These flood risk projects are initiated and cataloged at a HUC-8 unit. This means that when a project is initiated, all flood hazards within the HUC-8 were evaluated to determine the project scope within HUC-8 (12030105) Upper Trinity Watershed boundary. Evaluation means that risk, need, available data, and desired output products were assessed for the entire HUC-8. Evaluation does not mean the actual development of new or updated flood risk products, only the assessment of what products would be required to fulfill the identified needs in light of the level of risk. Unmet needs are cataloged in the CNMS database.

This section includes a review of the Watershed and the data collected throughout the Discovery effort to identify, for FEMA Region 6, the State of Texas, and communities, project possibilities for the watershed to engage in the development of the next phase of the Risk MAP Process (Project Area Selection to Resilience Meeting). The identified watershed projects were reviewed for NVUE, Risk Communication, and Mitigation Actions & Technical Assistance.

Table 23 outlines items discovered through research, community interviews, and Discovery workshops and are directly related to flooding sources and Risk Analysis. Some of these items could enhance NVUE requirements within Region 6.

Table 23: Risk Analysis by Community

No	County	Community	Comment	Metric	Zone	NVUE
1	Collin County / Dallas County	Richardson, City of	Collin County and Dallas County coordination - Cottonwood Creek – Collin/Dallas County line – discharge, BFE, and floodplain mapping issue	None	AE	None (compliant)
2	Collin County / Dallas County	Dallas, City of / Plano, City of	Collin County and Dallas County coordination - White Rock Creek – Collin/Dallas County line – discharge, BFE, and floodplain mapping issue	None	AE	None (compliant)
3	Collin County / Dallas County	Dallas, City of / Plano, City of	Collin County and Dallas County coordination - McKamy Branch – Collin/Dallas County line – discharge issue	None	AE	None (compliant)
4	Dallas County	Dallas County Unincorporated Areas	Trinity River – Zone AE “Unverified” within CNMS, needs restudy	NVUE	AE	12.5 miles
5	Dallas County	Lancaster, City of	Lancaster, City of - *Per community new development along Floyd Branch requiring a new study, currently working with the City of Dallas. AECOMM working with Dallas	None	AE	None (compliant)
6	Dallas County	University Park, City of	University Park, City of - *Would like detail study extended to the upstream end of Stream 6A2	NVUE	AE	0.25 miles
7	Dallas County	University Park, City of	University Park, City of - *Would like detail study extended to the upstream end of Turtle Creek	NVUE	AE	0.12 miles
8	Dallas County/Ellis County		Dallas County and Ellis County coordination - Trinity River – Dallas/Ellis County line – discharge issue; Tool, City of - *Flooding issue around Trinity Hill Road, houses are on 9 foot pilings, whole subdivision experiences flooding; Tool, City of - **Flooding issues on Old River Road near Trinity River and Henderson/Navarro County line	NVUE	A	22.0 miles

No	County	Community	Comment	Metric	Zone	NVUE
9	Dallas County/Ellis County		Dallas County and Ellis County coordination - Little Creek – Dallas/Ellis County line – discharge issue	None	AE	None (compliant)
10	Dallas County/Ellis County	Cedar Hill, Ovilla, Palmer, Pecan Hill, Red Oak, Ellis County Unincorporated Areas	Dallas County and Ellis County coordination - Red Oak Creek – Dallas/Ellis County line – discharge issue; Red Oak Creek – Zone AE “Unverified” within CNMS, needs restudy	NVUE	AE	31.6 miles
11	Kaufman County	Combine, City of	Combine, City of – Elm Fork Trinity is Zone A would like a detail study of this flooding source in their community	NVUE	A to AE	32.4
12	Ellis County	Red Oak, City of / Pecan Hill, City of, Ellis County Unincorporated Areas	Brushy Creek – Zone AE “Unverified” within CNMS, needs restudy	NVUE	AE	12.4 miles
13	Ellis County	Waxahachie, City of	South Grove Creek – Zone AE “Unverified” within CNMS, needs restudy	NVUE	AE	3.2 miles
14	Henderson County	Seven Points, City of	Seven Points, City of - Per community several roads that are not in the floodplain are subject to flooding including: Quirum Lane, Jess Hinton at Pritchett Lane (outside Upper Trinity Watershed), and the bridge over Persimmon Creek and Veterans Lane.	NVUE	A	2.5 miles

Table 24 outlines items discovered through research, community interviews, and Discovery workshops. These are directly related to mitigation and planning within the communities. These items, if addressed, will enhance mitigation action requirements within Region 6. Mitigation action requirements include action measure 1 which is when a mitigation action item is identified and action measure 2 when a identified mitigation action is advanced through implementation.

Table 24: Hazard Mitigation Plan Assistance

County	Community	Hazard Mitigation Plan	Metric⁺	% Metric*
Collin County	Carrollton, City of	No	Action Measure 2	7.98%
Dallas County	Addison, Town of	No	Action Measure 2	0.90%
Dallas County	Balch Springs, City of	No	Action Measure 2	1.53%
Dallas County	Cedar Hill, City of	No	Action Measure 2	3.04%
Dallas County	Cockrell Hill, City of	No	Action Measure 2	0.28%
Dallas County	Highland Park, Town of	No	Action Measure 2	0.58%
Dallas County	Hutchins, City of	No	Action Measure 2	0.36%
Dallas County	Mesquite, City of	No	Action Measure 2	9.39%
Dallas County	Seagoville, City of	No	Action Measure 2	0.95%
Dallas County	University Park, City of	No	Action Measure 2	1.56%
Dallas County	Wilmer, City of	No	Action Measure 2	0.26%
Ellis County	Ellis County Unincorporated Areas	No	Action Measure 2	4.28%
Ellis County	Alma, Town of	No	Action Measure 2	0.02%
Ellis County	Ennis, City of	No	Action Measure 2	1.15%
Ellis County	Ferris, City of	No	Action Measure 2	0.14%
Ellis County	Garrett, Town of	No	Action Measure 2	0.02%
Ellis County	Glenn Heights, Town of	No	Action Measure 2	0.75%
Ellis County	Midlothian, City of	No	Action Measure 2	1.05%
Ellis County	Oak Leaf, City of	No	Action Measure 2	0.09%
Ellis County	Ovilla, City of	No	Action Measure 2	0.24%
Ellis County	Palmer, Town of	No	Action Measure 2	0.12%
Ellis County	Pecan Hill, City of	No	Action Measure 2	0.04%
Ellis County	Red Oak, City of	No	Action Measure 2	0.50%
Ellis County	Waxahachie, City of	No	Action Measure 2	1.95%
Freestone County	Freestone County Unincorporated Areas	No	Action Measure 2	0.84%
Navarro County	Navarro County Unincorporated Areas	No	Action Measure 2	1.13%
Navarro County	Goodlow, City of	No	Action Measure 2	0.01%
Navarro County	Kerens, City of	No	Action Measure 2	0.10%

County	Community	Hazard Mitigation Plan	Metric ⁺	% Metric [*]
Navarro County	Powell, Town of	No	Action Measure 2	0.01%
Navarro County	Rice, City of	No	Action Measure 2	0.06%

*% Metric is estimate of Action Measure 2 gained at the watershed level by dividing the population of the community by the total population of the watershed.

⁺Action Measure 2 is not attained by having a HMP, but HMP may identify mitigation action(s) that would meet the Action Measure 2 metric

Table 25 outlines items discovered through research, community interviews, and Discovery workshops. These are directly related to flood mapping and insurance within the communities. These items, if addressed, will enhance mitigation action requirements within Region 6.

Table 25: Join NFIP Assistance

County	Community	Participating in the NFIP	Metric	% Metric [*]
Ellis County	Alma, Town of	No	Action Measure 2	0.02%
Dallas/Kaufman	Combine, City of	No	Action Measure 2	0.12%
Henderson	Tool, City of	No	Action Measure 2	0.16%

*% Metric is estimate of Action Measure 2 gained at the watershed level by dividing the population of the community by the total population of the watershed.

Table 26 outlines items discovered through research, community interviews, and Discovery workshops. These are directly related to risk analysis, mitigation and planning, grants, and flood mapping and insurance within the communities. These items, if addressed, will enhance action awareness requirements within Region 6.

Table 26: Repetitive Loss / Severe Repetitive Loss Assistance

County	Community	RL/SRL	Properties / Losses	Comment	Metric	% Metric+
Dallas/Kaufman	**Combine, City of	YES	UNKNOWN		Action Measure 2	0.12%
Henderson	Henderson County Unincorporated Areas	YES	1/1		Action Measure 2	3.05%
Dallas	Lancaster, City of	YES	12/39	2 properties mitigated	Action Measure 2	2.45%
Collin/Denton	*Plano, City of	YES	Outside Upper Trinity Watershed		Action Measure 2	17.53%
Ellis	Ellis County Unincorporated Areas	YES	1/5		Action Measure 2	4.28%
Dallas	Dallas, City of	YES	60/175	15 properties mitigated	Action Measure 2	80.79%
Ellis	Red Oak, City of	YES	1/2		Action Measure 2	0.50%
Ellis	Oak Leaf, City of	YES	3/6		Action Measure 2	0.09%
Dallas	University Park, City of	YES	1/3		Action Measure 2	1.56%
Dallas	DeSoto, City of	YES	9/22		Action Measure 2	3.28%
Dallas	Highland Park, Town of	YES	1/6		Action Measure 2	0.58%
Dallas	Duncanville, City of	YES	3/8	2 properties mitigated	Action Measure 2	2.60%
Dallas	Balch Springs	YES	18/51		Action Measure 2	1.53%

*Outside Upper Trinity Watershed

**Per community

+% Metric is estimate of Action Measure 2 gained at the watershed level

Table 27 outlines items discovered through research, community interviews, and Discovery workshops. These are directly related to risk analysis, mitigation and planning, grants, and flood mapping and insurance within the communities. These items, if addressed, will enhance action awareness requirements within Region 6.

Table 27: Join CRS Assistance

County	Community	CRS	Comment	Metric	% Metric*
Ellis	Ennis, City of	NO	No Hazard Mitigation Plan	Action Measure 2	1.15%
Kaufman	Kaufman County Unincorporated Areas	NO	Hazard Mitigation Plan in progress	Action Measure 2	3.85%
Dallas	Lancaster, City of	NO	Has Hazard Mitigation Plan	Action Measure 2	2.45%

*% Metric is estimate of Action Measure 2 gained at the watershed level

Table 28 outlines items discovered through community interviews, and Discovery workshops. These are directly related to risk analysis, mitigation and planning, grants, and flood mapping and insurance within the communities. These items, if addressed, will enhance action awareness requirements within Region 6.

Table 28: Technical Training and Outreach

County	Community	Comment
Dallas/Kaufman	Combine, City of	GIS training to floodplain administrator and select staff, awareness metric could be met.
Dallas	Lancaster, City of	Lancaster wants to update their existing emergency management plan, potential mitigation action measure could be identified and action metrics could be met.
Henderson	Henderson County Unincorporated Areas	Coordinate spillway operations with Tarrant Regional Water District. With spillway up Trinity River backs-up and floods, when released fast water and dry areas flood rapidly. Affects City of Trinidad, community recommends a "co-management" approach. Awareness metric could be met.

The fundamental difference between the countywide process and the watershed process for flood hazard studies is only that the watershed boundary replaces the county boundary for the evaluation of projects. As a rule, watershed projects will be initiated on the same watershed boundary for prioritization and sequencing. Through CNMS research, community interviews, and Discovery

workshops, several options are presented based on information from the items listed in Table 23. It is important to note that all items in Table 23 can be considered priorities. These recommendation took into consideration three key elements:

- *Hydrology: Procedure Memorandum 59 states that the entire watershed should be studied and what approach should be used through the watershed based on the findings of the Discovery efforts.*
- *Connectivity Review: Are there mainline stream and major tributaries through larger communities. Are there hydraulic disconnects along the stream?*
- *Consistent in Study Approach: Is the hydrology and hydraulics approach consistent throughout the study reach? Is it appropriate?*

Table 29 lists descriptions of the recommendation, and Figure 11 shows their locations. These are FEMA recommendations based on known community information and input from communities during the Discovery process for the Upper Trinity, TX watershed. Recommendation took into consideration community input and requirements of current FEMA Guidelines & Standards.

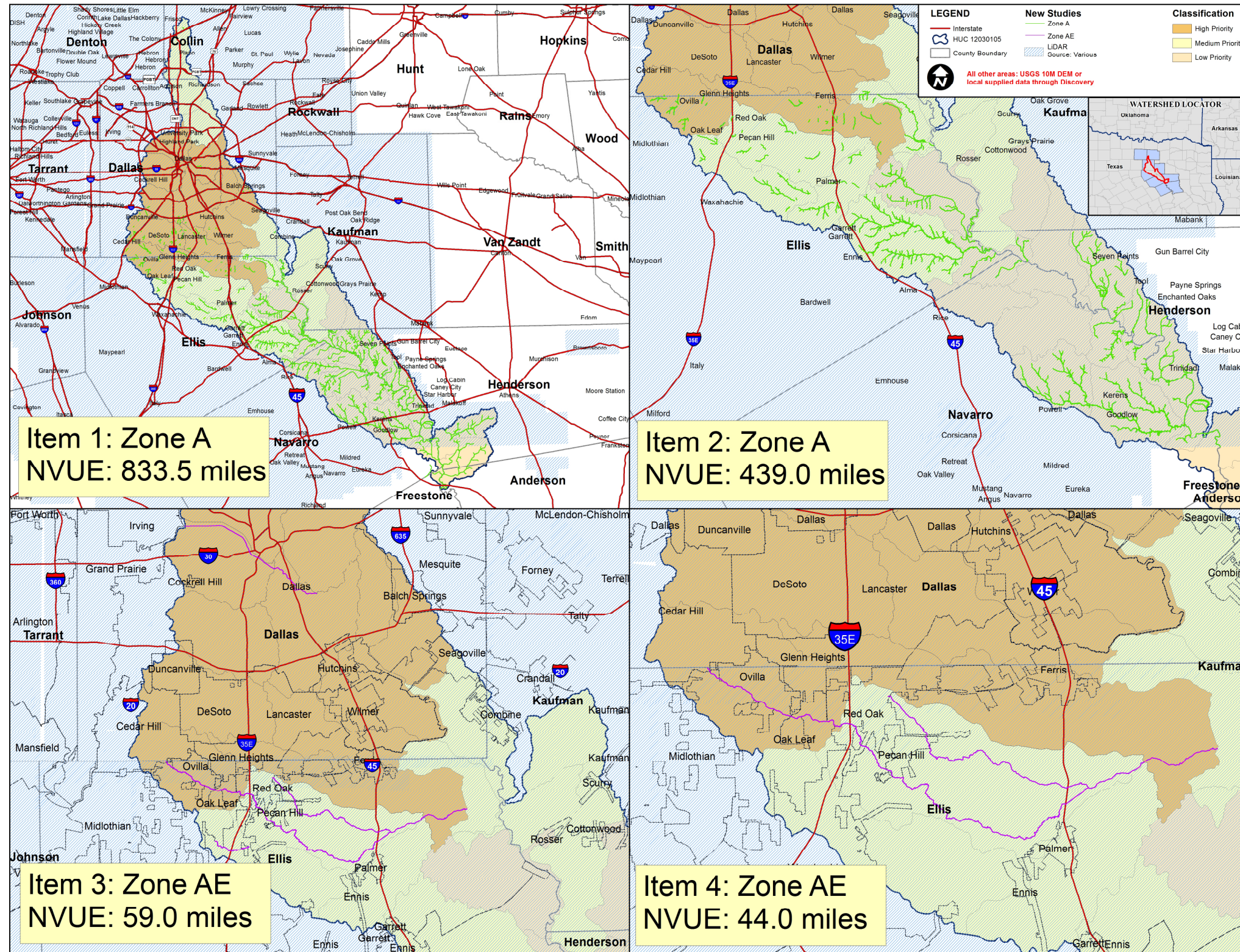
Table 29: Upper Trinity Watershed (Discovery recommendations)

Item	Location	Recommendation	Metric	Zone	NVUE	Refers to # in Table 23: Risk Analysis by Community
1	Anderson, Collin, Dallas, Ellis, Freestone, Henderson, Kaufman, Navarro Counties	Watershed-wide CNMS “UNKNOWN” Zone A	NVUE	A	833.5 miles	8, 14
2	Dallas, Ellis, Henderson, Kaufman, Navarro	CNMS “UNKNOWN” Zone A selected for HUC 12 connectivity and some areas that where community concerns during Discovery	NVUE	A	439.0 miles	8, 14
3	Dallas, Ellis Counties	Watershed-wide CNMS “UNVERIFIED” Zone AE (Brushy Creek, Red Oak Creek, South Grove Creek, Trinity River)	NVUE	AE	59.0 miles	4, 10, 12, 13

Item	Location	Recommendation	Metric	Zone	NVUE	Refers to # in Table 23: Risk Analysis by Community
4	Ellis County	CNMS “UNKNOWN” Zone AE brought about as a community concern (Brushy Creek and Red Oak Creek)	NVUE	AE	44.0 miles	10, 12
N/A	Project Specific Area	Updated Risk Assessment with study information (Flood Risk Report, Flood Risk Map, and Flood Risk Database).	Action measure 2	N/A	N/A	N/A
N/A	HUC-8 12030105	Community specific outreach and technical assistance: Table 24, Table 25, Table 26, Table 27, Table 28	Action measure 2	N/A	N/A	N/A

Figure 11 show geographically items 1-4 and their location within the Upper Trinity Watershed. In addition the figure illustrates the potential increase in NVUE ‘Valid’ stream miles and what Discovery input informed the recommendation.

Figure 11: Upper Trinity Watershed (Discovery recommendation)



In conclusion the Discovery process has outlined areas that need attention within the Upper Trinity watershed. Of significant importance are the items presented within the disciplines of Risk Analysis, Mitigation and Planning, Flood Mapping and Insurance, and Grants. Through implementation of all or some of these recommendations, the watershed communities can interact in a shared responsibility toward understanding and mitigating risk in a clear path toward resiliency. FEMA Region 6 offers a path to this resiliency through implementation of a regional framework. It is within this framework that the watershed can move from Discovery to assessing these recommendations within the RiskMap process path.