Discovery Report

Upper Saline Watershed, HUC - 08040203

Cleveland, Dallas, Garland, Grant, Hot Spring, Jefferson, Perry[1], Pulaski[1], Saline Counties, Arkansas

July 10, 2013

[1]No Special Flood Hazard Areas within the Watershed

FEMA

Arkansas Natural Resources Commission

tn Associates Ltd.

Project Area Community List

Community Name	CID
Cleveland County Communities	
Cleveland County Unincorporated Areas	050038
Dallas County Communities	
Dallas County Unincorporated Areas	050061
Garland County Communities	
Fountain Lake, Town of	050509
Garland County Unincorporated Areas	050433
Hot Springs, City of [1]	050084
Hot Springs Village [2]	N/A
Lonsdale, Town of	050586
Grant County Communities	
Grant County Unincorporated Areas	050434
Leola, Town of	050261
Poyen, Town of	050278
Prattsville, Town of	050279
Sheridan, City of	050367
Tull, Town of	050297
Hot Spring County Communities	
Hot Spring County Unincorporated Areas	050437
Rockport, Town of	050481
Jefferson County Communities	
Jefferson County Unincorporated Areas	050440
Perry County Communities	
Perry County Unincorporated Areas [1]	050165
Pulaski County Communities	
Pulaski County Unincorporated Areas [1]	050179
Saline County Communities	
Bauxite, Town of	050527
Benton, City of	050419
Bryant, City of	050308
East End [1, 2]	N/A
Haskell, City of	050416
Hot Springs Village [2]	N/A
Saline County Unincorporated Areas	050191
Traskwood, City of	050294

[1] Watershed includes small portion of community with no special flood hazard area.

[2] Unincorporated community.

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Supplemental Data

- Discovery Map
- RiskMap Mitigation Action Surveys from Discovery Meeting
- Discovery Meeting Sign-in Sheets
- Discovery Meeting Materials (Invitation Letter, Newsletter, Outreach Materials)
- Upper Saline Watershed Engagement Plan
- Digital Data

Acronyms and Abbreviations

ADEM	Arkansas Department of Emergency Management
AGFC	Arkansas Game and Fish Commission
AGIO	Arkansas Geographic Information Office
AHTD	Arkansas Highway and Transportation Department
ANRC	Arkansas Natural Resources Commission
BFE	base (1-percent-annual-chance) flood elevation
CFR	Code of Federal Regulations
cfs	cubic feet per second
CID	Community Identification number
CLOMR	Conditional Letter of Map Revision
CNMS	Coordinated Needs Management Strategy
CRS	Community Rating System
CTP	Cooperating Technical Partners Program
DFIRM	Digital Flood Insurance Rate Map
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FPA	Floodplain Administrator
FTN	FTN Associates, Ltd. (State Contractor)
GIS	geographic information system
HEC-1	Hydrologic Engineering Center – Hydrologic Model Program
HEC-2	Hydrologic Engineering Center – Hydraulic Model Program
HEC-HMS	Hydrologic Engineering Center – Hydrologic Modeling System
HEC-RAS	Hydrologic Engineering Center – River Analysis System
H&H	hydrologic and hydraulic
HMP	Hazard Mitigation Plan
HUC	Hydrologic Unit Code
HUC- 8	Hydrologic Unit Code for watershed unit with average size of 700 square miles
HUC-12	Hydrologic Unit Code for watershed unit with average size of 40 square miles
HWM	high water mark
LIDAR	Light Detection and Ranging System

Acronyms and Abbreviations (Cont'd)

LOMA	Letter of Map Amendment
LOMC	Letter of Map Change
LOMR	Letter of Map Revision
Map Mod	Map Modernization
MAS	Mapping Activity Statement
MAT	Mitigation Assessment Team
MDP	Master Drainage Plan
MXD	Map Exchange Document
NFIP	National Flood Insurance Program
NHD	National Hydrologic Dataset
NVUE	New Validated or Updated Engineering
Risk MAP	Risk Mapping, Assessment, and Planning
RL	Repetitive Loss
PMR	Physical Map Revision
RSC	Regional Service Center
SFHA	Special Flood Hazard Area
SHMO	State Hazard Mitigation Officer
SHP	ESRI Shape File
SRL	Severe Repetitive Loss
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey

I. Discovery Overview

The Federal Emergency Management Agency (FEMA) is currently implementing the Risk Mapping, Assessment, and Planning (Risk MAP) Program across the Nation. The purpose of Risk MAP is 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 the 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 State and Local entities, 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 provide State and Local entities with information needed to mitigate flood related risks.

The FEMA Region 6 office and the Arkansas Natural Resources Commission (ANRC) entered into a Cooperating Technical Partnership (CTP) for implementation of Risk MAP in the State of Arkansas. As part of this partnership, the ANRC and its contractor, FTN Associates, Ltd. (FTN), and along with AMEC Environment & Infrastructure (AMEC), began the Discovery process in the Upper Saline Watershed in October 2012 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. The watershed location can be seen in Figure 1 Watersheds and Communities.

Through the Discovery process, FEMA can determine which areas of the Hydrologic Unit Code (HUC) 8 watersheds may be examined 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 the included watershed community's flood risks are related to flood risk throughout the watershed. In Risk MAP, projects are analyzed on a watershed basis, so Discovery Meetings target numerous stakeholders from throughout the watershed on local, regional, State, and Federal levels.

In April 2013, FEMA and the State held a series of four Discovery Meetings in this watershed area. During Discovery, FEMA and the State reached out to local communities to:

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

WATERSHED AND COMMUNITIES MAP

UPPER SALINE RIVER WATERSHED (HUC 08040203)

County	Community	CID	Population
Cleveland	Cleveland County Unincorporated Areas	050038	8,689
Dallas	Dallas County Unincorporated Areas	050061	8,116
Garland	Fountain Lake, Town of	050433	209
Garland	Garland County Unincorporated Areas	050509	96,024
Garland	Hot Springs, City of	050084	35,193
Garland	Hot Springs Village	N/A	12,807
Garland	Lonsdale, Town of	050586	94
Grant	Grant County Unincorporated Areas	050434	17,853
Grant	Leola, Town of	050261	501
Grant	Poyen, Town of	050278	290
Grant	Prattsville, Town of	050279	306
Grant	Sheridan, City of	050367	4,603
Grant	Tull, Town of	050297	448
Hot Spring	Hot Spring County Unincorporated Areas	050437	32,923
Hot Spring	Rockport, Town of	050481	755
Jefferson	Jefferson County Unincorporated Areas	050440	77,435
Perry	Perry County Unincorporated Areas	050165	10,445
Pulaski	Pulaski County Unincorporated Areas	050179	382,748
Saline	Bauxite, Town of	050527	487
Saline	Benton, City of	050419	30,681
Saline	Bryant, City of	050308	16,688
Saline	East End	N/A	6,998
Saline	Haskell, City of	050416	3,990
Saline	Saline County Unincorporated Areas	050191	107,118
Saline	Traskwood, City of	050294	518

FEMA

N W E S

0 5 10 Miles

- County Seat
- Interstate
- Saline River and Major Reaches
- Other Waters
- Upper Saline River HUC 8
- City Limits
- County Boundaries

* Unincorporated Communities

Project Location

FIGURE 1

DATE: 3/11/2013

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The results of the Discovery process are presented in a Discovery Report, a watershed scale Discovery Map and the digital data that were gathered or developed during the fiscal year 2012 CTP Agreement, EMT-2012-CA-002, Mapping Activity Statement (MAS) 3, between FEMA and ANRC.

This document contains the Discovery Report. The digital data submitted with this report contains correspondence, exhibits used at the Discovery meetings, GIS data, mapping documents (PDF, shapefiles, personal geodatabases and ESRI ArcGIS 10.0 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

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. Risk decile is calculated from nine parameters including total population density, historical population growth, predicted population growth, housing units, flood policies, single claims, repetitive losses, repetitive loss properties and declared disasters.

The Upper Saline Watershed (HUC 08040203) encompasses an area of approximately 1,715 square miles and extends across nine counties (Cleveland, Dallas, Garland, Grant, Hot Spring, Jefferson, Perry, Pulaski, and Saline) in the central portion of the State. Major communities include the cities of Benton, Sheridan, portions of Bryant, and the majority of unincorporated Hot Springs Village. Smaller communities include Bauxite, Fountain Lake, Haskell, Leola, Lonsdale, Poyen, Prattsville, Rockport, Traskwood, and Tull. Portions of the City of Hot Springs, the community of East End, and the unincorporated areas of Perry and Pulaski Counties intersect a small portion of the watershed; however there are no Special Flood Hazard Areas (SFHAs) in these areas included in the Upper Saline Watershed and are listed to provide a complete reference of communities within the watershed only.

The Upper Saline Watershed was selected by the ANRC, the State's CTP with FEMA Region 6, for the reasons summarized below.

- Saline County includes the I-30 Corridor that links several communities to the Little Rock / North Little Rock metropolitan area. The communities of Benton and Bryant, as well as unincorporated Saline County, have seen extensive development as families and businesses migrate out from the urban centers to more suburban locations.
- The percent change in population from 2000 to 2010 for Saline County was between 25 – 49 %, which equates to a population increase of 20,000 to 39,000.
- The percent change in population from 2000 to 2010 for Grant County was between 10 – 24.9%, which equates to a population increase of 0 to 9,999.

- Flooding problems along Hurricane Creek have persisted for several years as development changes have likely impacted the hydrologic and hydraulic conditions of the Hurricane Creek watershed. These issues have escalated in some cases to threats of lawsuits.
- During the recent Map Modernization study for Saline County, the scoping process revealed community requests for a restudy of Hurricane Creek and Little Hurricane Creek. The countywide study revealed the need for a restudy due to mapping inconsistencies with new topography. At the time of the Saline countywide study, funding was not available for any restudies.
- Saline County has expressed an interest and potential cost sharing opportunity in the acquisition of quality topographic data for the unincorporated county.
- LIDAR data was collected for Grant County as part of a previous FEMA project. This data has not been processed. Partnering opportunities will be investigated in order to get this data processed and Grant County Flood Insurance Rate Maps (FIRMs) modernized.

FEMA looks to promote mitigation action within the watershed. After internal and partner review of the communities within the watershed, the following are overarching opportunities identified to promote community action within the watershed:

- Grant County has elevation data in a form that only requires final processing in order to provide detailed coverage, which could pave the way for Grant County to pursue a modernized Flood Insurance Rate Map,
- Portions of Saline County have elevation data, and the acquisition of additional coverage throughout the Saline County is being considered, and
- Mitigation activities to reduce risk to life and property are underway in the watershed.

Table 1 provides a status update for each community's NFIP participation, CRS rating, and current FIRMs. Eight of the counties and ten communities are participating in the NFIP. One of the counties and four communities are not participating in the NFIP. Additionally, two populated areas have been included below but are non-incorporated areas included in NFIP participating counties. Figure 1 shows the locations of all communities in the watershed.

Table 1: NFIP Status of Project Area Communities

County	Community Name	Community Identification Number (CID)	Participating Community?	CRS Rating
Cleveland	Cleveland County Unincorporated Areas	050038	No	N/A
Dallas	Dallas County Unincorporated Areas	050061	Yes	N/A
Garland	Fountain Lake, Town of	050433	No	N/A
Garland	Garland County Unincorporated Areas	050509	Yes	9
Garland	Hot Springs, City of [1]	050084	Yes	9
Garland	Hot Springs Village [2]	N/A	Yes	N/A
Garland	Lonsdale, Town of	050586	Yes	N/A
Grant	Grant County Unincorporated Areas	050434	Yes	N/A
Grant	Leola, Town of	050261	Yes	N/A
Grant	Poyen, Town of	050278	Yes	N/A
Grant	Prattsville, Town of	050279	Yes	N/A
Grant	Sheridan, City of	050367	Yes	N/A
Grant	Tull, Town of	050297	No	N/A
Hot Spring	Hot Spring County Unincorporated Areas	050437	Yes	N/A
Hot Spring	Rockport, Town of [1]	050481	Yes	N/A
Jefferson	Jefferson County Unincorporated Areas	050440	Yes	N/A
Perry	Perry County Unincorporated Areas [1]	050165	Yes	N/A
Pulaski	Pulaski County Unincorporated Areas [1]	050179	Yes	N/A
Saline	Bauxite, Town of	050527	No	N/A
Saline	Benton, City of	050419	Yes	8
Saline	Bryant, City of	050308	Yes	9
Saline	East End [1, 2]	N/A	Yes	N/A
Saline	Haskell, City of	050416	Yes	N/A
Saline	Hot Springs Village [2]	N/A	Yes	N/A
Saline	Saline County Unincorporated Areas	050191	Yes	N/A
Saline	Traskwood, City of	050294	No	N/A

[1] Watershed includes small portion of community with no special flood hazard area.
[2] Unincorporated community.

Drainage and Flooding

The primary river in the watershed is the Saline River. The Saline River has its origins in the Ouachita Mountains in Saline County. The Saline River is the primary drainage in the central Arkansas counties, which flows south until it joins the Ouachita River in southeast Arkansas. The Ouachita River ultimately joins the Black and Red Rivers in north-central Louisiana, which then confluences to the Mississippi River.

In recent years, heavy rains in have caused flooding that has shut down streets and businesses throughout portions of the Upper Saline Watershed. Flood problems are present primarily along the Saline River, in the vicinity of road crossings, and urban areas. In Saline County and the cities of Benton and Bryant, flood problems have persisted along the Saline River, McNeil Creek, Willow Depot Creek, Salt Creek, and Hurricane Creek. In the City of Sheridan, within Grant County, flooding problems are present. Currently, the city of Sheridan and Grant County are managing their floodplains with non-modernized FIRMs dating back to 1983 and 1991 respectively.

There are no levees in the watershed that are shown to provide protection from the base flood on the Flood Insurance Rate Maps (FIRMS).

Additionally, many of the counties and communities within the watershed have undergone or are still going through FEMA's Map Modernization (Map Mod) program to update their FIRMs.
Table 4 provides a status update for each community's current FIRMs.

Population

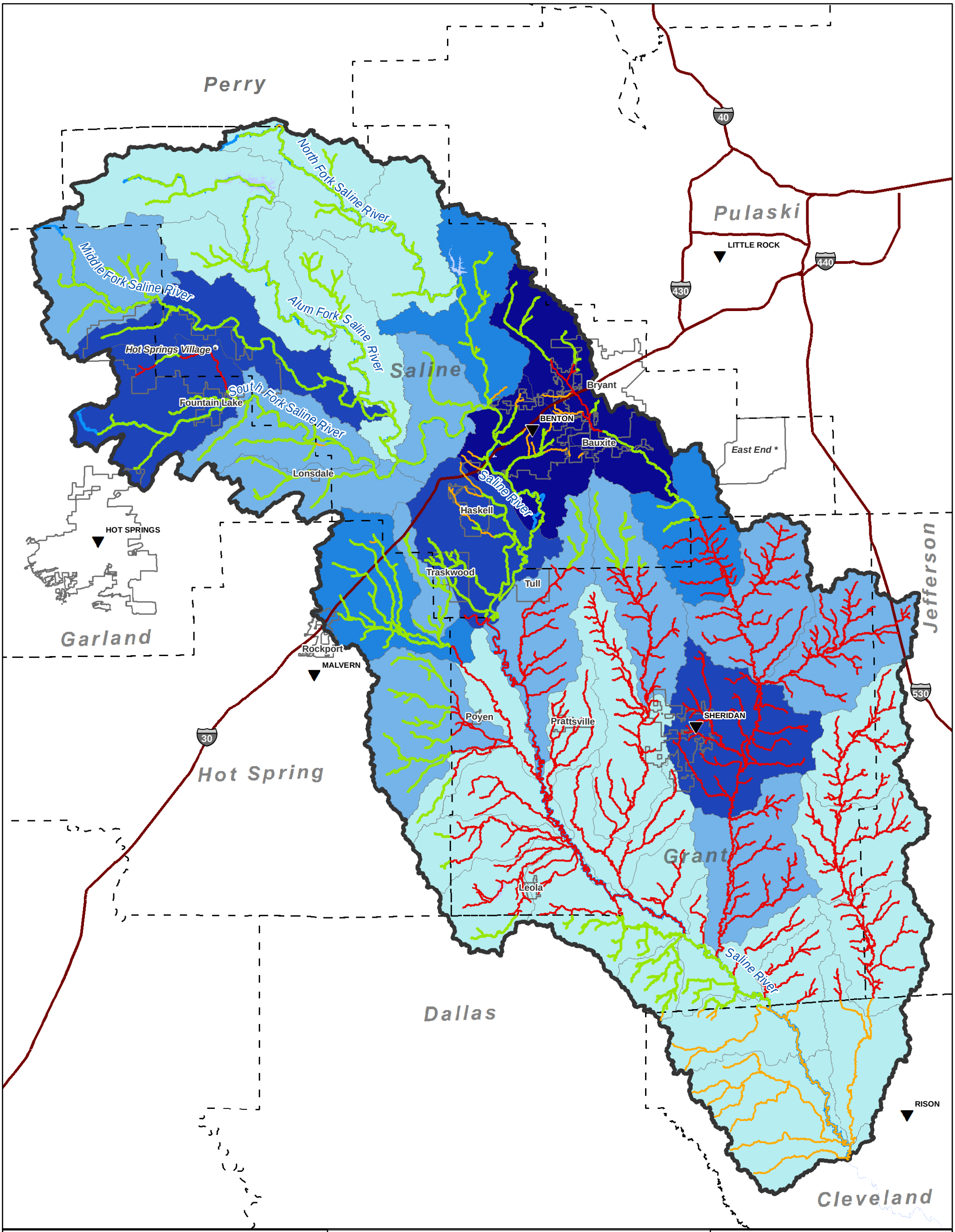
The population in this watershed totals 114,426 people, based on the 2010 U.S Census. The City of Benton is the watershed's highest population center (population: 30,618). There are portions of 16 populated areas inside this watershed. Figure 2 shows the population densities within the Upper Saline Watershed based on 2010 U.S. Census Data.

Risk Decile

Risk decile is calculated from 9 parameters including total population density, historical population growth, predicted population growth, housing units, flood policies, single claims, repetitive losses, repetitive loss properties and declared disasters. The scale is 1-10, 1 being the highest and 10 being the lowest. The measured amount of risk (or risk decile) for the Upper Saline Watershed is 3. Nationally, this HUC's risk decile rating ranks in the top 25% of all HUC-8s in the United States and in Region 6.

Landuse

The landuse of the Upper Saline Watershed is predominantly rural and forested, although the surrounding areas, including Benton and Bryant, along Interstate 30 corridor have seen large increases in development and population over the last 10 years. In addition to the Interstate 30 corridor, there are population centers in the communities of Sheridan and Hot Springs Village. The terrain ranges from relatively steep and irregular terrain in the northwest portion of the watershed, which includes the Ouachita National Forest, to the gently rolling terrain of the Gulf Coastal Plain in the southeast. Figure 3 identifies the relative percent urban cover for areas within the watershed from 2006, while Figure 4 shows the changes in the percent urban coverage that have occurred in the watershed from 2001 - 2006.



POPULATION DENSITY (2010)

UPPER SALINE RIVER WATERSHED (HUC 08040203)

FEMA

N W E S

0 5 10 Miles

- County Seat
- Interstate
- Saline River and Major Reaches
- Upper Saline River HUC 8
- City Limits

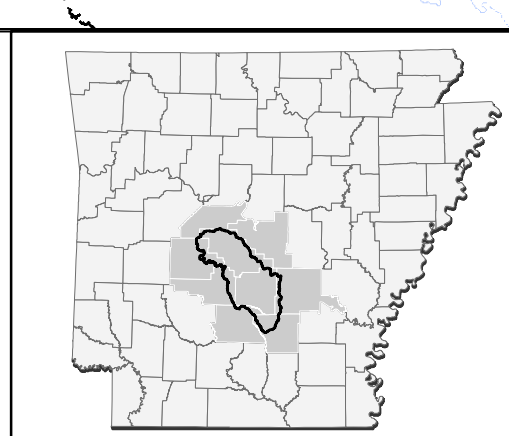
* Unincorporated Communities

CNMS Validation Status

- Unverified
- Assessed
- Valid
- County Boundaries

Population Density - 2010 Census

- 34 - 1,550
- 1,551 - 3,132
- 3,133 - 5,697
- 5,698 - 11,429
- 11,430 - 30,039



Project Location

FIGURE 2

DATE: 3/11/2013

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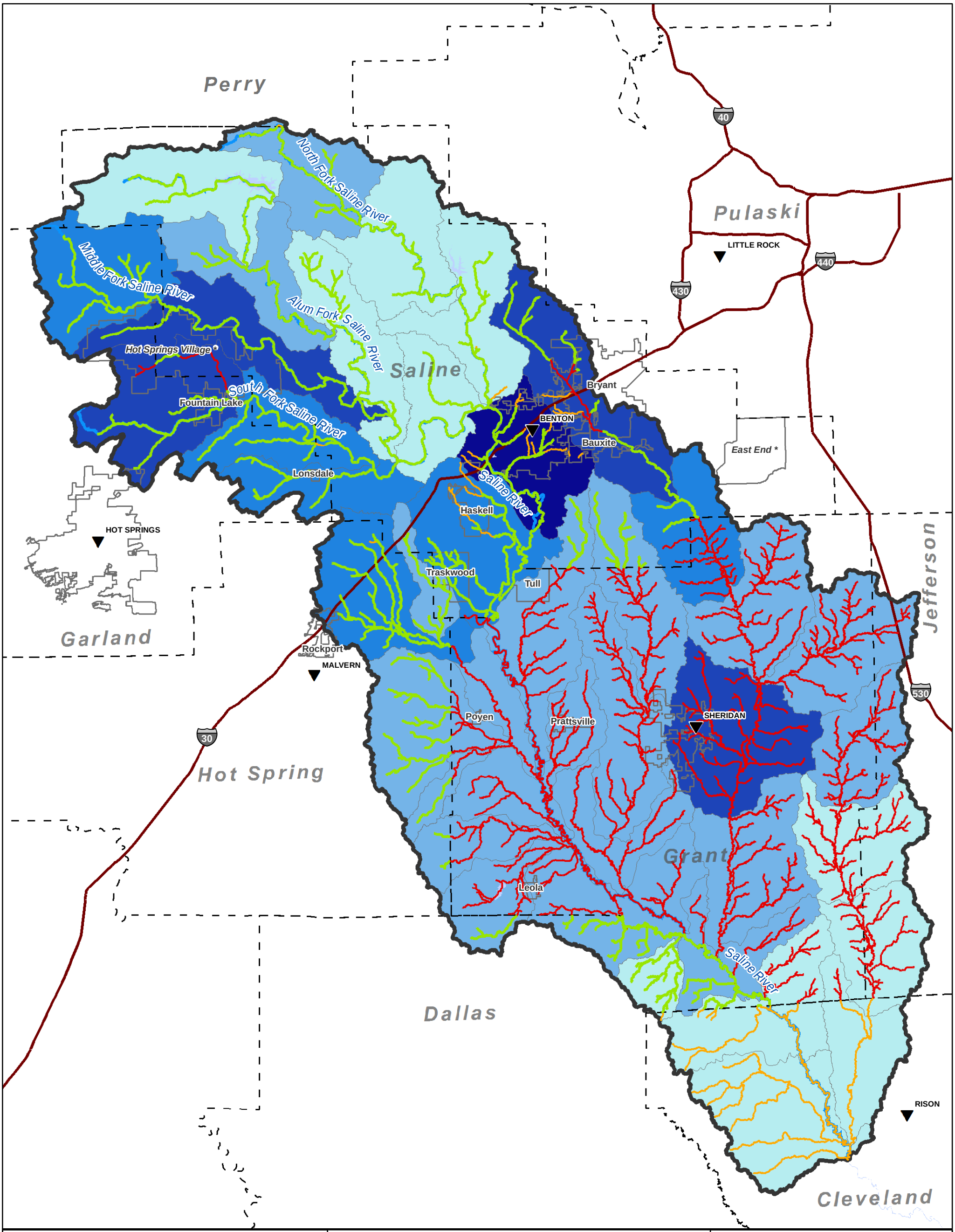
Table 2: Community FIRM Status

County	Community Name	Community Identification Number (CID)	FIRM Date	FIRM Status
Cleveland	Cleveland County Unincorporated Areas	050038	02/02/2012	ALL ZONE A, X No Elevations; Modernized Partial Countywide, Cities of Rison and Kingsland only
Dallas	Dallas County Unincorporated Areas	050061	07/17/2012	ALL ZONE A, X No Elevations; Modernized Countywide
Garland	Fountain Lake, Town of	050433	01/20/2012	REVISED; Modernized Countywide
Garland	Garland County Unincorporated Areas	050509	01/20/2012	REVISED; Modernized Countywide
Garland	Hot Springs, City of [1]	050084	01/20/2012	REVISED; Modernized Countywide
Garland	Hot Springs Village [2]	N/A	01/20/2012	REVISED; Modernized Countywide
Garland	Lonsdale, Town of	050586	01/20/2012	REVISED; Modernized Countywide
Grant	Grant County Unincorporated Areas	050434	02/01/1991	ALL ZONE A, X No Elevations; Not Modernized; 05/10/1977 FHBM converted to FIRM 02/01/1991
Grant	Leola, Town of	050261	N/A	Not Mapped
Grant	Poyen, Town of	050278	11/23/1982	Not Modernized
Grant	Prattsville, Town of	050279	11/01/1985	Not Modernized
Grant	Sheridan, City of	050367	01/18/1983	ALL ZONE A, X No Elevations; Not Modernized
Grant	Tull, Town of	050297	02/01/1991	Not Mapped
Hot Spring	Hot Spring County Unincorporated Areas	050437	03/03/2011	REVISED; Modernized Countywide
Hot Spring	Rockport, Town of [1]	050481	03/03/2011	REVISED; Modernized Countywide
Jefferson	Jefferson County Unincorporated Areas	050440	03/16/2009	REVISED; Modernized Countywide
Perry	Perry County Unincorporated Areas [1]	050165	06/20/2000	REVISED; Not Modernized
Pulaski	Pulaski County Unincorporated Areas [1]	050179	10/19/2001	REVISED; Preliminary, Modernized Countywide Maps Issued 09/21/2007
Saline	Bauxite, Town of	050527	06/19/2012	REVISED; Modernized Countywide
Saline	Benton, City of	050419	06/19/2012	REVISED; Modernized Countywide
Saline	Bryant, City of	050308	06/19/2012	REVISED; Modernized Countywide
Saline	East End [2]	N/A	06/19/2012	REVISED; Modernized Countywide
Saline	Haskell, City of	050416	06/19/2012	REVISED; Modernized Countywide
Saline	Hot Springs Village [2]	N/A	06/19/2012	REVISED; Modernized Countywide
Saline	Saline County Unincorporated Areas	050191	06/19/2012	REVISED; Modernized Countywide
Saline	Traskwood, City of	050294	06/19/2012	REVISED; Modernized Countywide

[1] Watershed includes small portion of community with no special flood hazard area.

[2] Unincorporated community.



PERCENT URBAN COVER (2006)

UPPER SALINE RIVER WATERSHED (HUC 08040203)

FEMA

0 5 10 Miles

N W E S

County Seat
Interstate
Saline River and Major Reaches
Upper Saline River HUC 8

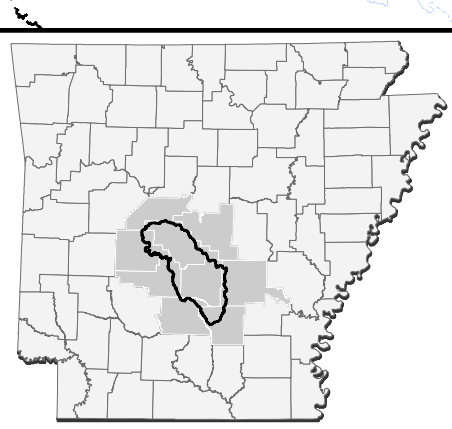
* Unincorporated Communities

CNMS Validation Status

Unverified
Assessed
Valid
City Limits
County Boundaries

Current Percent Urban Cover (2006)

2.3% - 3.8%
3.9% - 5.2%
5.3% - 7.6%
7.7% - 17%
17.1% - 29.8%



Project Location

FIGURE 3

DATE: 3/11/2013

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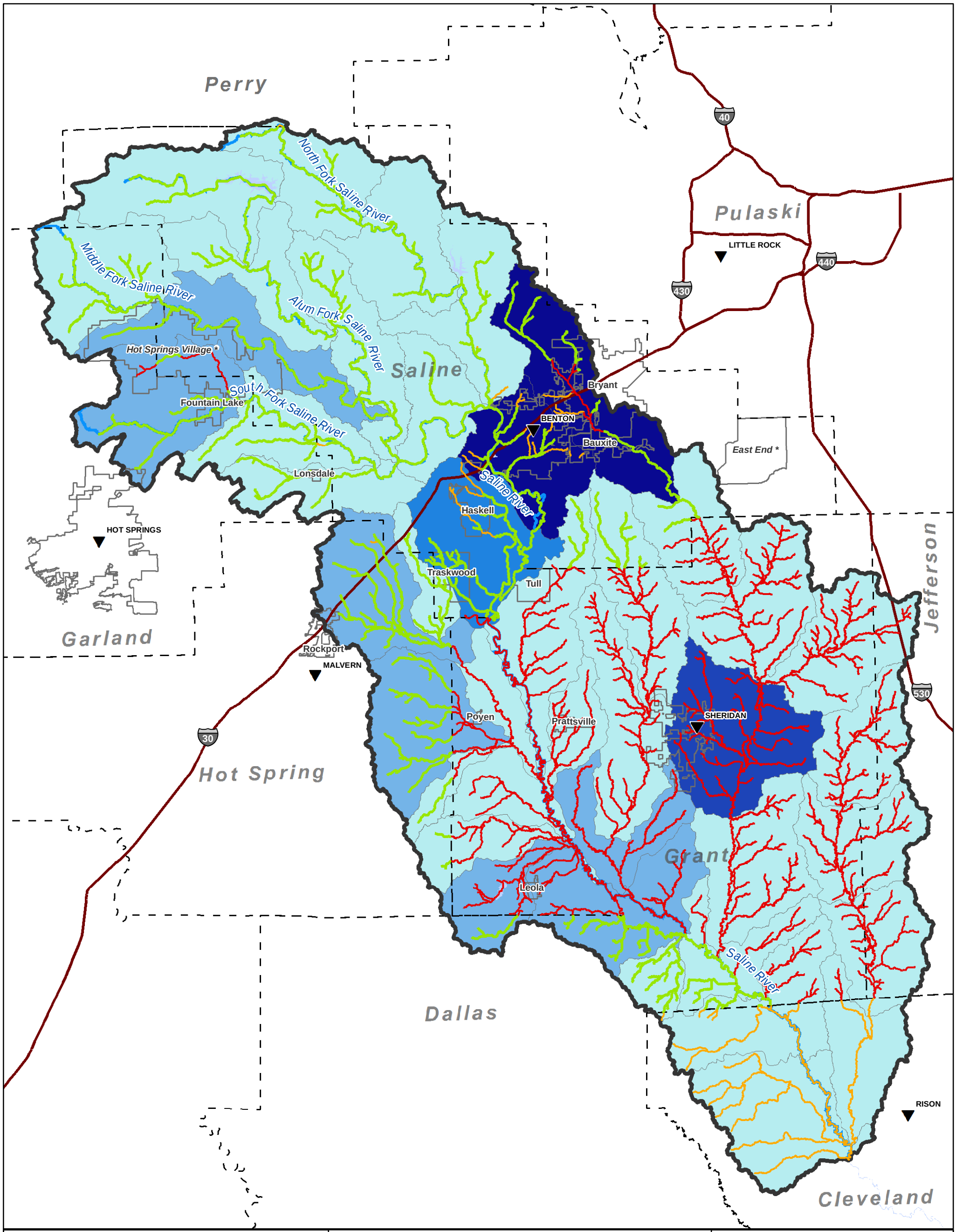
URBAN CHANGES (2001 - 2006)

UPPER SALINE RIVER WATERSHED (HUC 08040203)



- County Seat
- Interstate
- Saline River and Major Reaches
- City Limits
- Upper Saline River HUC 8

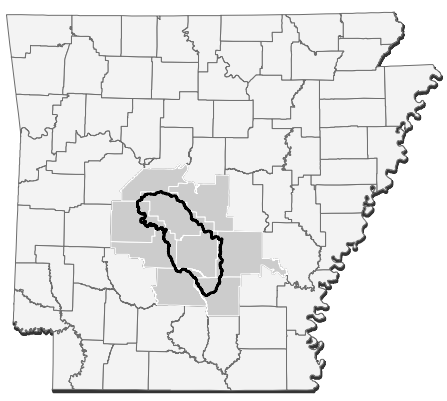
* Unincorporated Communities

CNMS Validation Status

- Unverified
- Assessed
- Valid
- County Boundaries

Urban Change (2001 - 2006)

Least → Most



Project Location

FIGURE 4

DATE: 3/11/2013

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Insurance Claims

Table 3 lists the number of NFIP insurance claims for the communities that touch the Upper Saline Watershed. Due to limitations on the physical locations of the claims data, the graphical data was developed using claims located by zip code, however claims used are for the entire zip code and not necessarily confined to the boundary of the Upper Saline Watershed. Additionally, no claims data have been provided for Perry or Pulaski Counties, as the area contained within the watershed does not contain Special Flood Hazard Areas. Of the insurance claims easily identified within the watershed, the majority occur in the cities of Benton and Bryant. Figure 5 provides a graphical representation of the NFIP insurance claims activity by HUC-12 subbasins within the Upper Saline Watershed.

Table 3: Total NFIP Insurance Claims

Total NFIP Insurance Claims by Community	
Community	**Claims**
Bauxite, Town of	0
Benton, City of	52
Bryant, City of	18
Fountain Lake, Town of	0
Haskell, City of	0
Hot Springs, City of	152
Leola, Town of	0
Lonsdale, Town of	1
Poyen, Town of	0
Prattsville, Town of	0
Rockport, Town of	0
Sheridan, City of	3
Traskwood, City of	0
Tull, Town of	0
Cleveland County Unincorporated Areas	1
Dallas County Unincorporated Areas	0
Garland County Unincorporated Areas	44
Grant County Unincorporated Areas	7
Hot Spring County Unincorporated Areas	6
Jefferson County Unincorporated Areas	158
Saline County Unincorporated Areas	81

CLAIMS ACTIVITY

UPPER SALINE RIVER WATERSHED (HUC 08040203)

Claim Totals [1]					
By Community				By County	
Community	Claims [2]	Community	Claims [2]	Community	Claims [2]
Bauxite, Town of	0	Lonsdale, Town of	1	Cleveland County Unincorporated Areas	1
Benton, City of	52	Poyen, Town of	0	Dallas County Unincorporated Areas	0
Bryant, City of	18	Prattsville, Town of	0	Garland County Unincorporated Areas	44
Fountain Lake, Town of	0	Rockport, Town of	0	Grant County Unincorporated Areas	7
Haskell, City of	0	Sheridan, City of	3	Hot Spring County Unincorporated Areas	6
Hot Springs, City of	152	Traskwood, City of	0	Jefferson County Unincorporated Areas	158
Leola, Town of	0	Tull, Town of	0	Saline County Unincorporated Areas	81

[1] Reported totals for entire community

[2] Total Claims (1978 - 2012)

Amount of Claims

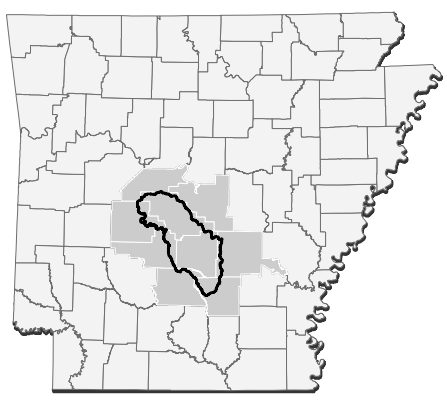
- No Claims
- Least (< 25)
- 26 - 75
- 76 - 150
- Most (> 150)

- Repetitive Loss
- Severe Repetitive Loss
- County Seat
- Interstate
- Saline River and Major Reaches
- Other Waters
- City Limits
- County Boundaries
- Upper Saline River HUC 8

N W E S

0 5 10 Miles

* Unincorporated Communities



Project Location

FIGURE 5

DATE: 3/11/2013

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In addition to NFIP claims activity, there are several Repetitive Loss (RL) or Severe Repetitive Loss (SRL) properties within the Upper Saline Watershed. The main concentration of these properties is in or around the cities of Benton, Bryant, and Sheridan, as shown in Figure 6.

Table 4 summarizes RL and SRL claims by county and community within the Watershed. 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 Claim Per Property**
Benton, City of	5 *	23	4.6
Bryant, City of	2	4	2.0
Sheridan, City of	1	2	2.0
Grant County Unincorporated Areas	1	2	2.0
Saline County Unincorporated Areas	3	10	3.3

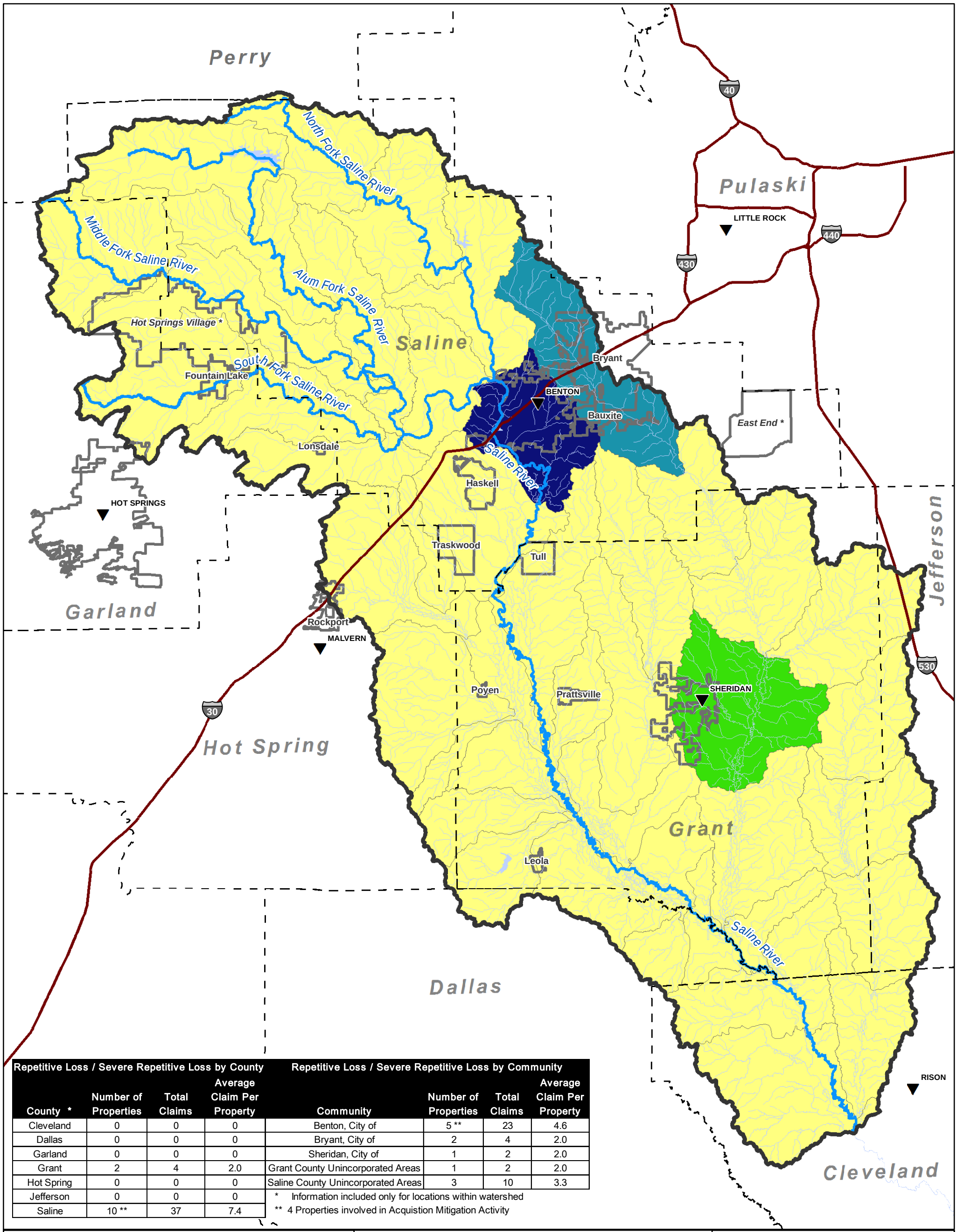
* 4 Properties involved in Acquisition Mitigation Activity

The Upper Saline Watershed has had a history of flooding as demonstrated by numerous presidential disaster declarations issued in the past. Table 5 lists disaster declarations for multiple hazards within the watershed.

Table 5: Disaster Declarations in the Watershed

Watershed Counties Declared	Number of Disaster Declarations per Hazard *					
	Flood	**Hurricane**	**Ice Storm**	**Snow Storm**	**Tornado**	**Severe Storm**
Cleveland County	3	1	1	1	--	5
Dallas County	3	1	1	--	--	5
Garland County	3	1	1	--	1	4
Grant County	1	1	1	--	1	6
Hot Spring County	1	1	1	--	1	7
Jefferson County	5	--	1	--	--	6
Saline County	2	1	1	--	1	8

* Time period of 1965 - January 2013



Repetitive Loss / Severe Repetitive Loss by County				Repetitive Loss / Severe Repetitive Loss by Community			
County *	Number of Properties	Total Claims	Average Claim Per Property	Community	Number of Properties	Total Claims	Average Claim Per Property
Cleveland	0	0	0	Benton, City of	5 **	23	4.6
Dallas	0	0	0	Bryant, City of	2	4	2.0
Garland	0	0	0	Sheridan, City of	1	2	2.0
Grant	2	4	2.0	Grant County Unincorporated Areas	1	2	2.0
Hot Spring	0	0	0	Saline County Unincorporated Areas	3	10	3.3
Jefferson	0	0	0				
Saline	10 **	37	7.4				

* Information included only for locations within watershed

** 4 Properties involved in Acquistion Mitigation Activity

REPETITIVE LOSS (RL) AND SEVERE REPETITIVE LOSS (SRL) CLAIMS

UPPER SALINE RIVER WATERSHED (HUC 08040203)

FEMA

0 5 10 Miles

N W E S

- County Seat
- Interstate
- Saline River and Major Reaches
- Other Waters
- City Limits
- County Boundaries
- Upper Saline River HUC 8

* Unincorporated Communities

Total RL/SRL Claims

- 0
- 1 - 2
- 3 - 4
- 5 - 10

Project Location

FIGURE 6

DATE: 5/15/2013

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Watershed Rankings

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. The risk decile is calculated from nine parameters including total population density, historical population growth, predicted population growth, housing units, flood policies, single claims, repetitive losses, repetitive loss properties and declared disasters. The scale of Risk Decile ranking is 1-10 with 1 being the highest and 10 being the lowest ranking for a portion of the watershed. Table 6 lists the overall rankings of the Upper Saline Watershed when compared nationally and regionally to other HUC-8 watersheds. This information, along with rankings of smaller HUC-12 subbasins, helps identify stream segments or locations where risk evaluation can be targeted. The combination of factors was important in the selection of this watershed for a Discovery Project.

Table 6: Watershed Risk Factor Rankings

Upper Saline Watershed Selection Rankings			
National Risk Factor Rank:	N/A	Region 6 Risk Factor Rank:	200
National Risk Decile:	3	Region 6 Risk Decile:	3
Average Annualized Loss:	$13,144,000	Average Annualized Loss:	$13,144,000
National Average Annualized Loss Rank:	N/A	Region 6 Average Annualized Loss Rank:	286
National Overall Rank:	525	Region 6 Overall Rank:	61

Topographic Data

Recent acquisitions of topographic data have been made for Grant County, although the data has not yet been processed for use. Based on the recent Map Mod studies conducted, additional and usable topographic data has been identified for the cities of Benton, Bryant, and Hot Springs. Topographic coverage totals are at about 45 percent of the entire watershed. Areas that are noted to be lacking updated topographic information are Saline County, with the exception of the cities of Benton and Bryant, Garland County, with the exception of Hot Springs, and incorporated and unincorporated areas of Hot Spring, Jefferson, and Cleveland counties within the watershed. Only the USGS 10-meter DEM data is available for these missing areas and is not suitable for detailed study modeling and floodplain mapping.

Coordinated Needs Management Strategy

Significant streams in this watershed include the Saline River, Middle Fork Saline River, Alum Fork Saline River, North Fork Saline River, and Hurricane Creek. In addition to the significant streams, Lakes Winona, Coronado, Balboa, DeSoto, Cortez, and Hurricane Lake are just a few of the significant water resources within the watershed. The USGS provides a National Hydrologic Dataset (NHD) that can be used to identify stream miles that reflect drainage areas of one square mile from available topographic data. The NHD stream mileage may be used to gain a sense of the total potential stream miles for a watershed. Using the NHD, there are approximately 4,967 miles of streams in the Upper Saline 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 streams with an approximately one-square mile drainage area and that currently have effective Special Flood Hazard Areas (SFHA) designated for them. CNMS does not reflect the total potential of stream miles to be studied within a watershed.

In addition to listing the miles of studied streams within a watershed, CNMS documents 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 an evaluation of a Validation Status and Status Type that allows an examination of the condition of a given study or group of studies. Studies which are considered Valid in CNMS are the only studies which contribute to the New Validated or Updated Engineering (NVUE) metric.

The NVUE metric is used as an indicator of the status of studies for FEMA's mapped SFHA Inventory. Those studies which are categorized as 'unverified', typically indicate that there are some factor(s) of change since the SFHA became effective or may have a deficiency warranting restudy. CNMS stream mileage categorized as 'Requires Assessment' indicates further input is needed 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 (mileage), and providing further categorization of these needs in order to differentiate factors that identify the needs.

Table 7 compares the NHD data to the CNMS data and summarizes the Validated NVUE stream mileage from CNMS for the watershed.

Table 7: NVUE Approximate Stream Mileage in the Watershed

NVUE Validation	Stream Miles
NHD Streams (streams with a drainage area of greater than one square mile)	**4,967**
CNMS Streams (streams with effective SFHA)	**1,710**
Stream Miles not accounted for in CNMS	**3,257**
CNMS Valid Zone AE / AH	70.3
CNMS Valid Zone A	524.1
CNMS Unverified Zone AE / AH	13.3
CNMS Unverified Zone A	977.5
CNMS Zone AE / AH Requiring Further Assessment or in the process of being studied	0.0
CNMS Zone A Requiring Further Assessment	0.0
All Stream Miles not accounted for in CNMS as there are no effective SFHAs (sum of the below)	124.8
Stream Miles not accounted for in CNMS that would fall in land that ***could be*** developed	124.8
Stream Miles not accounted for in CNMS that would fall in land that ***could not*** *be* developed	0.0

Within the Upper Saline watershed, and using these criteria from CNMS, approximately 977.0 miles of Zone A and 13.3 miles of Zone AE areas were identified as being "unverified" and candidates for updated analysis. Streams included in the unverified grouping include Hurricane Creek, Little Hurricane Creek, and Cedar Creek / Lake Balboa. Additionally, approximately 524.1 miles of Zone A and approximately 70.3 miles of Zone AE in the watershed were characterized as being Valid and included in the NVUE metrics. Zone A areas identified as unverified is due to the absence of hydraulic model data or other analysis known to support the mapping.

Figure 7 provides a snapshot of CNMS factors or needs 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 Saline Watershed for a Discovery Project.

RISK, NEEDS, AND TOPOGRAPHIC DATA

UPPER SALINE RIVER WATERSHED (HUC 08040203)

Perry
Pulaski
Saline
Garland
Hot Spring
Grant
Dallas
Cleveland
Jefferson

North Fork Saline River
Middle Fork Saline River
Alum Fork Saline River
South Fork Saline River
Saline River

Hot Springs Village *
Fountain Lake
Lonsdale
Bryant
BENTON
Bauxite
East End *
Haskell
Traskwood
Tull
Rockport
MALVERN
HOT SPRINGS
Poyen
Prattsville
SHERIDAN
Leola
RISON
LITTLE ROCK

40
430
440
30
530

FEMA

0 5 10 Miles

N W E S

- County Seat
- Interstate
- Saline River and Major Reaches
- Existing Topographic Data
- City Limits
- County Boundaries
- Requested Study Areas
- Upper Saline River HUC 8

CNMS Validation Status
- Unverified
- Assessed
- Valid

Density Risk Decile
- High
- Low

* Unincorporated Communities

Project Location

FIGURE 7

DATE: 5/15/2013

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Congressional Representation

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 and understand the study process. Not only will their understanding enable them to communicate effectively about the study details and process, it allows for greater collaboration and coordination. Within the Upper Saline Watershed, there are 2 U.S. Senators, 2 members from the U.S. House of Representatives, 7 State Senators, and 13 members of the State House of Representatives.

Table 8 and Table 9 provide a tabular summary of the U.S. and State Congressionals for the Upper Saline Watershed while Figures 8 - 10 provide a graphical summary of the U.S. and State Congressional district boundaries.

While there are no levees that provide protection from the 1-percent-annual-chance floodplain within the Upper Saline Watershed, U.S. Senators Pryor and Boozman are active with regards to FEMA committees and policies. For example, U.S. Congressionals from Arkansas have either co-sponsored legislation to suspend FIRMs for Levee Maintenance or been a vocal opposition to FEMA's levee policies. Additionally, Senator Pryor serves on the Homeland Security and Governmental Affairs Committee and has also helped draft a bill to "Protect Arkansas from FEMA Mistakes".

Table 8: U.S. Congressionals

U.S. Senators			
Name	**Address**	**Phone**	**Email**
Mark Pryor (D)	The River Market 500 Clinton Ave, Ste 401 Little Rock, AR 72201	(501) 326-6336	http://www.pryor.senate.gov/public/index.cfm?p=ContactMe
John Boozman (R)	1401 W. Capitol Ave. Plaza F Little Rock, AR 72201	(501) 372-7153	http://www.boozman.senate.gov/public/index.cfm/contact
U.S. Representatives			
Name	**Address**	**Phone**	**Email**
Tim Griffin (R) District 2	1501 N. University, Ste 150 Little Rock, AR 72207	(501) 324-6029	https://griffin.house.gov/contact-me/email-me
Tom Cotton (R) District 4	Hot Springs Federal Bldg 101 Reserve St. Ste 307 Hot Springs, AR 71901	(501) 520-5892	https://cotton.house.gov/contact/email-me

Table 9: State Congressionals

State Senators [1]				
District	**Name**	**Address**	**Phone**	**Email**
12	Bruce Maloch (D)	650 Columbia Road 258 Magnolia, AR 71753	(870) 235-7040	bruce.maloch@senate.ar.gov
13	Alan Clark (R)	P.O. Box 211 Lonsdale, AR 72087	(501) 262-3360	alan.clark@senate.ar.gov
14	Bill Sample (R)	2340 North Highway 7 Hot Springs, AR 71909	(501) 321-0040	bill.sample@senate.ar.gov
15	David J. Sanders (R)	Room 320 State Capitol Little Rock, AR 72201	(501) 682-6107	davidjamessanders@gmail.com
25	Stephanie Flowers (D)	104 Main Street Pine Bluff, AR 71601	(870) 535-1032	stephanie.flowers@senate.ar.gov
27	Bobby J. Pierce (D)	587 Grant 758 Sheridan, AR 72150	(870) 942-1031	bobby.pierce@senate.ar.gov
33	Jeremy Hutchinson (R)	201 East North Street Benton, AR 72015	(501) 773-3760	jeremy.hutchinson@senate.ar.gov
State Representatives [1]				
District	**Name**	**Address**	**Phone**	**Email**
8	Jeff Wardlaw (D)	801 East Church Street Warren, AR 71671	(870) 226-9501	jeff@jeffwardlaw.com
10	Mike Holcomb (D)	9108 Sulphur Springs Rd Pine Bluff, AR 71603	(870) 879-6135	mike.holcomb@arkansashouse.org
15	Ken Bragg (R)	63 Pinecrest Circle Sheridan, AR 72150	(870) 942-5269	kenbragg@windstream.net
16	James L. Word (D)	6503 Little Dove Drive Pine Bluff, AR 71603	(870) 543-6391	jword@aaasea.org
21	Terry Rice (R)	P.O. Box 2195 Waldron, AR 72958	(479) 637-3100	terry.rice@arkansashouse.org
22	Bruce Westerman (R)	P.O. Box 1399 Hot Springs, AR 71902	(501) 321-2276	bwforarkansas@hughes.net
23	Ann Clemmer (R)	7415 Camille Drive Benton, AR 72019	(501) 316-0364	avclemmer@sbcglobal.net
25	John T. Vines (D)	123 Market Street Hot Springs, AR 71901	(501) 624-1252	jtvines13@sbcglobal.net
26	David Kizzia (D)	124 West 2nd Street Malvern, AR 72104	(501) 337-9959	david.kizzia@arkansashouse.org
27	Andy Mayberry (R)	3022 E Woodson Lateral Road, Hansley, AR 72065	(501) 888-3522	andymayberry@windstream.net
28	Kim Hammer (R)	1411 Edgehill Benton, AR 72015	(501) 840-3841	kimdhammer@yahoo.com
31	Andy Davis (R)	P.O. Box 30248 Little Rock, AR 72260	(501) 837-5109	andy.davis@arkansashouse.org
73	John Catlett (D)	11732 West Highway 28 Rover, AR 72860	(479) 495-9662	John.Catlett@arkansashouse.org

[1] State Congressionals listed by District Number.

U.S. CONGRESSIONAL MAP

UPPER SALINE RIVER WATERSHED (HUC 08040203)

U.S. Congressional District Representatives
U.S. House of Representatives
District 2: Tim Griffin (R)
District 4: Tom Cotton (R)
U.S. Senators
Mark Pryor (D)
John Boozman (R)

FEMA

N W E S

0 5 10 Miles

- County Seat
- Interstate
- Saline River and Major Reaches
- Other Waters
- Upper Saline River HUC 8
- Congressional District Boundaries
- City Limits
- County Boundaries

* Unincorporated Communities

Project Location

FIGURE 8

DATE: 5/15/2013

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Perry
Pulaski
Saline
Garland
Hot Spring
Grant
Dallas
Cleveland
Jefferson
Lonoke
Perry
Pulaski
Saline
Garland
Hot Spring
Grant
Dallas
Cleveland
Jefferson
Lonoke
73
40
31
21
440
430
22
23
27
28
25
16
530
26
30
15
10
8
North Fork Saline River
Middle Fork Saline River
Alum Fork Saline River
South Fork Saline River
Saline River
Saline River
Saline River
LITTLE ROCK
Hot Springs Village *
Fountain Lake
Lonsdale
Bryant
BENTON
Bauxite
East End *
Haskell
Traskwood
Tull
HOT SPRINGS
Rockport
MALVERN
Poyen
Prattsville
SHERIDAN
Leola
RISON

State Congressional District Representatives
House of Representatives
District 8: Jeff Wardlaw (D)
District 10: Mike Holcomb (D)
District 15: Ken Bragg (R)
District 16: James L. Word (D)
District 21: Terry Rice (R)
District 22: Bruce Westerman (R)
District 23: Ann V. Clemmer (R)
District 25: John T. Vines (D)
District 26: David Kizzia (D)
District 27: Andy Mayberry (R)
District 28: Kim Hammer (R)
District 31: Andy Davis (R)
District 73: John Catlett (D)

STATE HOUSE OF REPRESENTATIVES MAP

UPPER SALINE RIVER WATERSHED (HUC 08040203)

FEMA

tn Associates Ltd.

N W E S

0 5 10 Miles

County Seat
Interstate
Saline River and Major Reaches
Other Waters
City Limits
County Boundaries
State House District Boundaries
Upper Saline River HUC 8

* Unincorporated Communities

Project Location

FIGURE 9

DATE: 6/5/2013

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STATE SENATOR MAP

UPPER SALINE RIVER WATERSHED (HUC 08040203)

State Congressional District Representatives
Senators
District 12: Bruce Maloch (D)
District 13: Alan Clark (R)
District 14: Bill Sample (R)
District 15: David J. Sanders (R)
District 25: Stephanie Flowers (D)
District 27: Bobby J. Pierce (D)
District 33: Jeremy Hutchinson (R)

FEMA

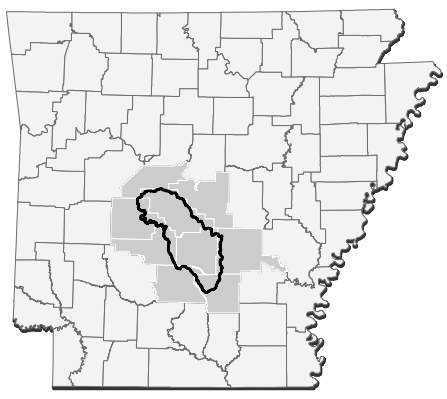
tn Associates Ltd.

N W E S

0 5 10 Miles

- County Seat
- Interstate
- Saline River and Major Reaches
- Other Waters
- City Limits
- County Boundaries
- State Senate District Boundaries
- Upper Saline River HUC 8

* Unincorporated Communities



Project Location

FIGURE 10

DATE: 6/5/2013

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II. Discovery Efforts

i. Engagement Plan

Pre-Discovery Community Engagement

The CTP Project Team, Table 10, was in contact with watershed stakeholders via letters, email, and phone calls before this Discovery meeting to request local participation. In addition to assisting scheduling the meeting, locals were asked to help identify additional key people who should be included in the Discovery process and acquire any data that will assist in the risk identification and assessment for the Upper Saline Watershed. A detailed list of Communities, local officials, federal, state and regional agencies that were invited to participate in the Discovery Process is included with the supplemental digital data accompanying this report.

Table 10: CTP Upper Saline Watershed Project Team

Name	Organization	Project Role
Michael Borengasser	State of Arkansas / ANRC	CTP Coordinator / Project Manager / State NFIP Coordinator
Matthew DuBois	FEMA Region 6	Project Monitor – FEMA Engineering And Mapping Lead
Linda Johnson	FTN	CTP Contractor / Project Manager
MaryBeth Breed	FTN	CTP Contractor / Asst. Project Manager
Lee Beshoner	FTN	CTP Contractor
Stephen Noe	AMEC	CTP Sub-Contractor
Alicia Williams	AMEC	CTP Sub-Contractor
Josh Rogers	State Of Arkansas / ADEM	State Hazard Mitigation Officer
Veronica Villalobos-Pogue	ADEM	Federal Grants Coordinator

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

- Gathered information about local flood risk and flood hazards
- Used all information gathered to determine which areas of the watershed may require further study through a Risk MAP project
- Mapped Grant Activity in the Watershed,
- Mapped Claims Activity in the Watershed by Zip code,
- Mapped Percent Urban Cover in the Watershed,
- Mapped Density of Parcels Potentially at Risk in the Watershed,
- Mapped Urban Change from 2001 – 2006, and
- Mapped Population Density in the Watershed.

Discussions are being held with other state and federal agencies about potential partnership opportunities, as well as enlisting their help in identifying flood risk throughout the watershed.

FEMA's activity with the communities in the Upper Saline Watershed is summarized in Table 11, FEMA History of Engagement and Table 12, Mitigation Plan Status.

Table 11: FEMA History of Engagement

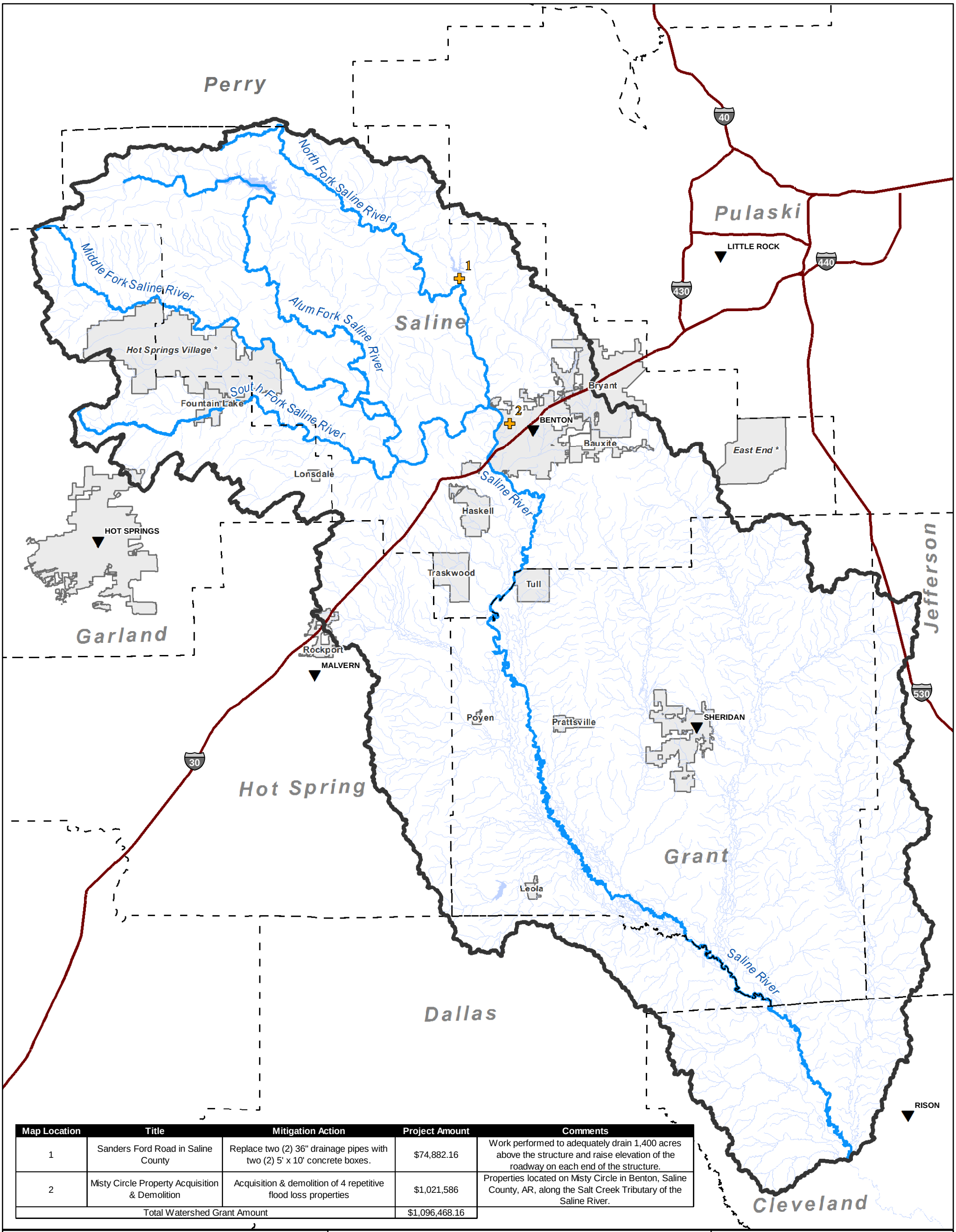
Community Name	Type of Engagement	Date	Agency	Comments
Cleveland County, Cities of Rison & Kingsland	Map Modernization (partial)	February 2012	FEMA	
Dallas County	Map Modernization	July 2012	FEMA	
Garland County	Map Modernization	January 2010	FEMA	
Grant County	LIDAR data collected	October 2010	FEMA	Elevation data yet to be processed
Hot Spring County	Map Modernization	March 2011	FEMA	
Jefferson County	Map Modernization	March 2009	FEMA	
Saline County	Map Modernization	June 2012	FEMA	

Table 12: Mitigation Plan Status

Community Name	Hazard Mitigation Plan Name:	Plan Status:	Plan Expires
Cleveland County	NA	Approved / Expired	03/03/13
Dallas County	NA	Approved	07/14/2014
Garland County	NA	Approved	06/11/2014
Grant County	NA	Approved / Expired	03/03/2013
Hot Spring County	NA	Approved	09/04/2013
Jefferson County	--	NONE	--
Saline County	NA	Approved	09/03/2013

The CTP Project Team discussed and encouraged the counties that attended the Discovery Meetings to initiate the process for updating their Hazard Mitigation Plans (HMPs). Several of the Counties confirmed they have been in discussions with ADEM concerning grant opportunities and general assistance with their HMPs.

Figure 11 displays the locations and types of mitigation grant activity in the Upper Saline Watershed. There may be additional grants being pursued at both the state and local level within the watershed that have not been identified.



Map Location	Title	Mitigation Action	Project Amount	Comments
1	Sanders Ford Road in Saline County	Replace two (2) 36" drainage pipes with two (2) 5' x 10' concrete boxes.	$74,882.16	Work performed to adequately drain 1,400 acres above the structure and raise elevation of the roadway on each end of the structure.
2	Misty Circle Property Acquisition & Demolition	Acquisition & demolition of 4 repetitive flood loss properties	$1,021,586	Properties located on Misty Circle in Benton, Saline County, AR, along the Salt Creek Tributary of the Saline River.
Total Watershed Grant Amount			$1,096,468.16	

GRANT ACTIVITY

UPPER SALINE RIVER WATERSHED (HUC 08040203)

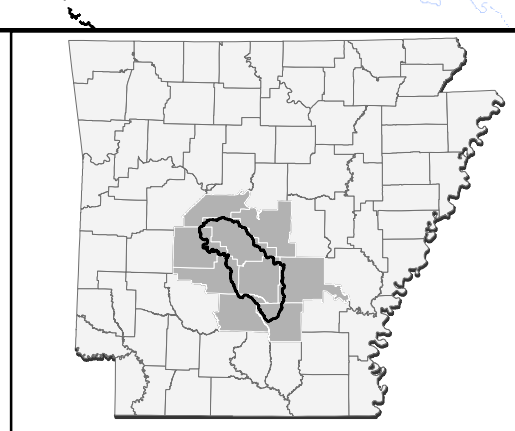
FEMA

N W E S

0 5 10 Miles

Grant Location
County Seat
Interstate
Saline River and Major Reaches
Other Waters
City Limits
Upper Saline River HUC 8
County Boundaries

* Unincorporated Communities



Project Location

FIGURE 11

DATE: 6/5/2013

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ii. Pre-Discovery Data Collection

For the Upper Saline Watershed's Discovery Report and Map, multiple datasets were used. The following tabular summary Table 13 was developed to document the data used and its sources.

Table 13: Data Collection for the Watershed

Data Types	Deliverable/Product	Source
Average Annualized Loss Data	Discovery Map Geodatabase	FEMA Region 6
Boundaries: Community	Discovery Map Geodatabase	AHTD
Boundaries: Congressionals	Discovery Map Geodatabase	AGIO
Boundaries: County and State	Discovery Map Geodatabase	AHTD
Boundaries: Effective Flooding	Discovery Map Geodatabase	FEMA
Boundaries: Topographic Data	Discovery Map Geodatabase	FEMA / AGIO
Boundaries: Wildlife Management Areas	Discovery Map Geodatabase	AGFC / USDA Forestry Service
Boundaries: Watersheds	Discovery Map Geodatabase	USGS NHD
Census Blocks	Discovery Map Geodatabase	U.S. Census Bureau
Claims / Loss Data	Discovery Map Geodatabase	ADEM / ANRC
Contacts	Spreadsheet	Local Web Sites, State/FEMA Updates
Community Rating System (CRS)	Discovery Report	FEMA's "Community Rating System Communities and Their Classes"
CNMS Data	Discovery Map Geodatabase	FEMA / FTN
Dams and Levees	Discovery Map Geodatabase	USACE / ANRC
Grant Locations	Discovery Map Geodatabase	ADEM
Letters of Map Change	Discovery Map Geodatabase	FEMA
Points of Concern / S_Requests_AR_Upper Saline	Discovery Map Geodatabase	FTN
Stream Gages	Discovery Map Geodatabase	USGS
Transportation Lines	Discovery Map Geodatabase	U.S. Census Bureau / ESRI /AGIO

iii. Discovery Meeting

As part of the process for the Upper Saline Watershed, four 2-hour Discovery meetings were held at various locations throughout the Watershed April 23 - 24, 2013. Meeting times and locations are shown in Table 14. Each meeting site was prepared with a series of stations, intended to allow interaction of the CTP and Project Team and Discovery meeting attendees to learn about the RiskMap Program, and discuss and document any issues for the Upper Saline Watershed.

Table 14: Project Discovery Meeting Times and Locations

Meeting	Date and Time	Location
1	Tuesday April 23, 2013 9:00 – 11:00 AM	Ponce de Leon Center (Ouachita Room) 1101 DeSoto Boulevard Hot Springs Village, AR 71909
2	Tuesday April 23, 2013 5:00 – 7:00 PM	Gene Moss Building 913 East Sevier Street Benton, AR 72015
3	Wednesday April 24, 2013 9:00 pm – 11:00 AM	The Center of Bryant in Bishop Park 6401 Boone Road Bryant, AR 72022
4	Wednesday April 24, 2013 2:00 – 4:00 PM	Grant County Emergency Management Office 130 Grant 74 Sheridan, AR 72150

Mike Borengasser, ANRC CTP Coordinator, as well as various other Discovery Meeting personnel from ADEM and FTN, greeted each attendee as they arrived. The Discovery Meeting started with a brief presentation of the RiskMAP program and the intended results of the Discovery Activities. Following the presentation we asked the community representatives to collectively talk with our Hazard Mitigation Team (ADEM) and our Risk Identification Team (ANRC / FTN / AMEC) to review past projects, discuss current projects, and evaluate project opportunities that were specific to mitigation actions. Items discussed included some or all of the following:

- Community Benefits and Grant Opportunities – Maps of current floodplain-related grants; risk, needs and topographic availability; RL/SRL properties; letters of map change (LOMCs); urban changes over the last 5 years; and single claims. The station also had handouts on various FEMA grant programs.
- Mitigation Planning and Mitigation Activities – Mitigation plans, understanding Risk MAP and determining risk.
- NFIP Information – Effective FIRMs, FIS and LOMCs; maps of RL/SRL properties; single claims; and urban changes over the last 5 years.
- Risk Identification and Communication – 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.

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. Attendees and the project team worked together to listen, discuss, and document any notable items for the watershed. Members of the Project Team (ANRC, ADEM, FTN, and AMEC)

were available to answer questions and engage the attendees. During each Discovery Meeting, the Project Team members requested that attendees provide any additional information within 30 days of the meeting.

The Upper Saline Watershed Engagement Plan, draft Discovery Report, and several large-format watershed maps were displayed, along with active GIS projects with community boundaries and road names to assist in identifying areas of concern.

Information sheets were collected from the communities and these information sheets are included in the external files included with this report.

iv. Discovery Implementation

All Discovery Meetings were attended by a number of local stakeholders. The communities / organizations represented at the Discovery Meetings are included in Table 15.

Table 15: Communities and Organizations Represented at the Discovery Meetings

Community/Organization Represented	Community/Organization Represented
AHTD	Jefferson County
Benton, City of	Saline County
Bryant, City of	Sheridan, City of
Central Arkansas Planning & Development District (CAPDD)	Tull, Town of
Dallas County	JP 11 – Garland County Quorum Court
Garland County	AR Senator Alan Clark, District 13
Grant County	Representative of U.S. Senator Mark Pryor's Office
Haskell, City of	Representative of U.S. Congressman Tim Griffin's Office, District 2
Hot Springs, City of	Representative of U.S. Congressman Tom Cotton's Office, District 4
Hot Springs Village	

It should be noted that no community officials attended the Discovery Meetings from several communities as noted in Table 16.

Table 16: Communities Not Represented at the Upper Saline Discovery Meetings

Community Not Represented	Community Not Represented
Bauxite, Town of	Lonsdale, Town of
Cleveland County	Poyen, Town of
Fountain Lake, Town of	Prattsville, Town of
Hot Spring County	Rockport, Town of
Leola, Town of	Traskwood, Town of

The Meetings afforded personal, interactive communication with the Project Team. The Project Team interviewed attendees and discussed areas of positive mitigation and areas of continuing concern for the Watershed as a whole.

v. Data Gathering Overview

A RiskMap Mitigation Action Survey from FEMA Region 6 was modified to serve as a data collection tool at the Discovery Meetings. These completed surveys are provided in the supplemental data section for review and consideration.

Prior to the Discovery Meeting, the City of Haskell submitted a detailed summary of mitigation actions in progress, descriptions of areas where flooding is occurring, and requested mapping update locations. Additional data was provided at the Discovery Meeting by the Haskell representative.

Information about the Upper Saline Watershed was gathered both prior to and after the Discovery Meetings. Much of data collected in pre-discovery was obtained from FEMA or other public and/or national datasets. Table 17 summarizes the data collected prior to the Discovery Meeting and the primary sources of the data.

Table 17: Data Collection Summary – Pre-Discovery Meeting

Data Location	Data Custodian	Data Set Description
Watershed-wide	FEMA Map Service Center (MSC)	Special Flood Hazard Areas, FEMA's Map Service Center
Watershed-wide	FEMA MSC & Region 6	LOMC locations
Watershed-wide	FEMA, ANRC & ADEM	Locations of RL/SRL properties and Claims
Watershed-wide	FEMA & ADEM	Location of Grants being funded
Watershed-wide	FEMA & ANRC	Participation in the NFIP, Community Rating System (CRS) ratings
Watershed-wide	FEMA	Disaster Declarations
Watershed-wide	FEMA Region 6	CNMS information
Watershed-wide	FEMA Region 6	AAL data
Watershed-wide	ADEM	Approved HMPs

Data Location	Data Custodian	Data Set Description
Watershed-wide	FEMA Region 6 & NRCS	Location of available or planned areas of updated LIDAR or other topographic data
Statewide	AGIO	Transportation and Political Boundary features
Watershed-wide	U.S. Census & AGIO	Populated places and population characteristics
Watershed-wide	USGS	Watershed HUC (8 & 12) boundaries, NHD streams, stream gage information, land use and land cover
Watershed-wide	AGIO	Imagery
Statewide	AGIO	US and State Congressional Districts and their elected representatives

Table 18 summarizes the comments that were collected at the Discovery Meeting specific to a flooding source.

Table 18: Data Collection Summary - During and After Discovery Meeting

Flooding Source	Information Provided By	Discovery Workshop Comment Summary
Hurricane Creek & its Tributaries	Benton, Bryant, and Saline County	Watershed development likely not reflected in current SFHA; multiple map revisions have occurred in this subbasin; Bryant will be pursuing hydrologic study for Boone Road Improvements (located on Hurricane Creek); Benton has several drainage improvement projects where structure survey data is available
Lake Balboa / Cedar Creek	Hot Springs Village, Saline County & Garland County	Cedar Creek SFHA does not reflect the Lake Balboa (Saline County is in process of submitting for LOMR which will update only the Saline County portion of FIRMs)
Willow Depot Creek & Tributaries	Benton	Drainage improvements have been completed; concrete channel walls failing on a tributary
Multiple	Saline County	Bridge replacement projects w/AHTD (Caney Creek, Lake Winona Rd)
Saline River & Tributaries	Town of Tull	AHTD bridge replaced Hwy 291 bridge over Saline River, mitigation attempts made to Hwy 291/Davis Branch crossing (east of Saline River) – still overtopped; Hwy 291 overtopped west of Saline River limits access to town
Mud Creek	Town of Tull	Grant County Highway 62 overtopped at Mud Creek, east side of Tull
N/A	Town of Tull	Considering joining the NFIP, never mapped, SFHA would likely be added, based on review of existing SFHA for unincorporated areas of county, with Grant Co DFIRM production
Trace Creek	Haskell, Saline County	Drainage improvements / mitigation to address flooding in Meadow Creek, Timberlake, and Silver Springs subdivisions; HWMs available on Trace Creek; repeated flooding along Trace Creek needs to be mitigated; LOMR processed. Currently Zone A SFHA, needs detail / elevations / floodway

Flooding Source	Information Provided By	Discovery Workshop Comment Summary
All	Grant County, City of Sheridan	Needs modernized map and updated SFHAs; several county drainage improvement projects, however no survey or hydraulic analyses available; LIDAR has been flown for Grant County, needs to be processed; City of Sheridan was provided with contours so it appears the City limits have been processed.

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.

08040203\Upper Saline Watershed Discovery

\Project_Discovery_Initiation

- Discovery Invitation Letter
- Pre-Discovery Newsletter

\Discovery_Meeting

- Meeting Sign In Sheets
- Discovery Meeting Information Collection Sheets
- **\Correspondence**
  - Follow-up correspondence

\Post_Discovery

- Discovery Map(s) (final)
- Discovery Report (final)

\Supplemental_Data

- Engagement Plan
- Metadata file

\GIS – The following folders contain GIS files to create Exhibits or Discovery Maps (shapefiles, personal geodatabases and ESRI ArcGIS MXDs)

- Shapefiles
- MXDs
- GDB

\Outreach

- RiskMAP Discovery
- RiskMap Flood Risk Products
- What is RiskMAP Factsheet (7/19/2012)

III. Watershed Findings

In addition to NFIP claims, there are several locations of RL/SRL within the Upper Saline Watershed. A concentration of these locations appears in the Cities of Benton and Bryant within two HUC-12 areas, Depot Creek – Saline River (080402030703) and Little Hurricane Creek - Hurricane Creek (080402030402), and in the City of Sheridan within one HUC-12 area, Ray Creek - Hurricane Creek (080402030406). Figure 6 shows the total RL/SRL claims based on HUC-12 boundaries.

Letters of Map Amendment and Revisions are also distributed throughout the watershed, but appear to be concentrated in the Cities of Benton and Bryant, and Hot Springs Village, and located along Little Hurricane Creek, Hurricane Creek, Willow Depot Creek, and the lakes in Hot Springs Village, please refer to Figure 12 for the location of these Letter of Map Change (LOMC).

LETTER OF MAP CHANGE (LOMC) ACTIVITY

UPPER SALINE RIVER WATERSHED
(HUC 08040203)

FEMA

0 5 10 Miles

N W E S

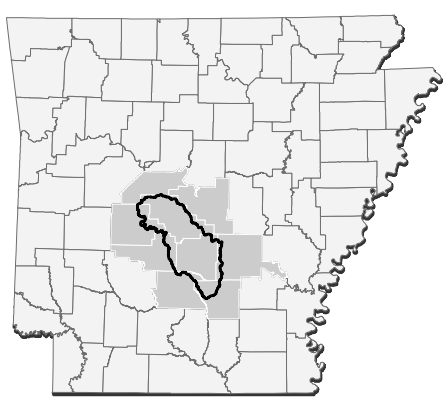
- County Seat
- Letters of Map Revision (LOMR)
- Letters of Map Amendment (LOMA)
- Letters of Map Revision Based on Fill (LOMR-F)

* Unincorporated Communities

- Interstate
- Saline River and Major Reaches
- City Limits
- County Boundaries
- Upper Saline River HUC 8

CNMS Validation Status

- Unverified
- Assessed
- Valid



Project Location

FIGURE 12

DATE: 4/16/2013

S:\projects\03015-0005-003\gis\doc\map\Discovery_Maps\Upper_Saline_Discovery_Figure_12.mxd

i. CNMS Analysis

A CNMS analysis was performed in preparation for the Discovery Meeting. Table 19 shows the detailed study streams in the Upper Saline 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 (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. The "unverified" status may also have been identified as a community identified need during the Scoping Process that was not able to be addressed during Map Modernization or that was identified during the Map Modernization Project.

Table 19: "Unverified" Detailed Streams per CNMS Analysis

Stream Name	County	Validation Status	Failed CNMS Elements
Cedar Creek	Garland / Saline	Unverified	C4, C5, S4, S7
Hurricane Creek	Garland / Saline	Unverified	C3, C5, S2, S4, S5, S6, S7
Little Hurricane Creek	Garland / Saline	Unverified	C3, S6, S7
Hurricane Creek Tributaries	Garland / Saline	Unverified	C3, S2, S6, S7

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

Table 20: CNMS Category Descriptions

Element Name	Element Description	Issue being identified by the Element
C3	Model methodology no longer appropriate	Hurricane Creek system, different models developed for different parts of system, no single continuous model available
C4	Significant hydraulic change	On Cedar Creek, Lake Balboa and Lake Balboa dam not reflected in SFHA
C5	Channel reconfiguration	Cedar Creek & Hurricane Creek: channel reconfigurations have been identified that are not reflected in the SFHA
S2	Repetitive loss	Hurricane Creek & Tributaries, several rep loss properties are located along these systems, some are currently in acquisition project
S4	Hydraulic structures added or removed (1 to 5)	The number of hydraulic structures identified in the FIS is not consistent with what appears to be located along Cedar Creek & Hurricane Creek
S5	Channel improvements	Hurricane Creek has undergone channel improvements in several locations
S6	Topographic data	New topographic data is available in the Cities of Benton and Bryant, which includes a large portion of the Hurricane Creek sub-watershed
S7	Vegetation or land use changes	The Upper Saline Watershed has undergone significant growth and development which would indicate changes in vegetation and landuse in the watershed has not been applied to these systems.

Additional information for each of the identified stream segments, Cedar Creek and Hurricane Creek and its tributaries, are included on the Mitigation Action Survey completed by the local stakeholders at the Discovery Meetings. The Mitigation Action Surveys are included in the supplemental data section.

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 Saline Watershed are recommended. Both FEMA and their CTP Partner, ANRC, look to promote mitigation action within the watershed. After internal and partner review of the communities within the watershed, the following are overarching opportunities 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 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 – discuss potential opportunities specific to property acquisition

Table 21: Potential Watershed Activities

Risk Identification and Communication
• Flood Map updates to Hurricane Creek and its tributaries (including some currently unmapped). • Cedar Creek SFHA does not reflect Lake Balboa in Hot Springs Village (Garland and Saline Counties). • Grant County FIRM modernization. • Updates to SFHA's along Trace Creek, Willow Depot Creek, and Tributaries of Saline River where there are currently none identified.
NFIP Community Actions
• Follow-up with the Town of Tull regarding joining the NFIP.
Mitigation Planning and Mitigation Actions
• ADEM provided the local stakeholder communities the current status of their County HMP and when/if it is expiring. They also discussed any grant opportunities that may exist in those counties where a current disaster declaration is still active. Grant County, Dallas County, Saline County, and Jefferson County were present and encouraged to initiate the required steps to start updating (or starting) their HMP.
Community Benefits and Grant Opportunities
• ADEM talked with and provided information to the local stakeholders on grant opportunities and encouraged considering property acquisition activities for properties at risk.

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 Saline 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

Priority Item	Description of Need Evaluation Guide **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 Location of Need/Project	Details	Impacts From Any Current Map Actions	FEMA Metric or Community Benefit	Evaluation
1	Hurricane Creek and its tributaries located in Unincorporated Saline County and the Cities of Benton and Bryant HUC-12: Little Hurricane Creek – Hurricane Creek	The Hurricane Creek Watershed is in need of updated hydrology and hydraulics. The watershed is located in an area that has undergone rapid development. Projects have been identified that can be used to assist, via data sharing, cost sharing, and in-kind services, in the re-study of this subbasin. The bulk of the sub-watershed includes 2-foot topographic data. The estimated stream mileage to be updated is greater than 7-miles and would affect several FIRM panels.	The area of interest is within the Little Hurricane Creek – Hurricane Creek HUC-12 subbasin. The subbasin could be restudied, including detailed hydrologic and hydraulic analysis, to reflect current conditions and provide an updated SFHA. The Zone A tributaries would be updated to detailed studies, providing the communities with much needed BFEs. The SFHA updates would ultimately be addressed through a partial map revision (PMR). The City of Bryant is currently planning a road improvement mitigation project that will include updates to the Hurricane Creek hydrologic model. Components of this project could be used for cost-sharing. There continues to be LOMC activity which contributes to a piecemeal approach in updating the SFHA without analyzing overall impacts.	Conversion of approximately 7 to 9 miles of "Unverified" Zone AE, to NVUE compliant. Mitigative actions are underway including acquisition of several repetitive loss structures.	HIGH
2	Grant County, AR LIDAR Processing and Map Modernization	LIDAR topographic data acquired through a FEMA contract for Grant County is awaiting processing. Once data can be processed, the Grant County SFHAs can be revised through model backed approximate, enhanced approximate, and/or detailed studies to provide the unincorporated and incorporated areas of Grant County access to a modernized FIRM with NVUE compliant stream miles.	Grant County SFHAs are all Zone A with no digital backing to assist in base flood elevation determinations. Available topographic data is limited to USGS elevation data with typical contour intervals of 10-feet. By processing the LIDAR to provide topographic data to an accuracy of 2-ft contouring the modernization and DFIRM product will vastly improve the floodplain management for all of the communities in Grant County. The County is actively seeking opportunities internally to assist in the cost of the project.	Conversion of 918 miles of "Unverified" Zone A to NVUE compliant stream miles.	HIGH
3	Saline County, AR LIDAR acquisition and processing	Unincorporated Saline County and the smaller incorporated community's available topographic data are limited to USGS elevation data with typical contour intervals of 10-feet. Quality elevation data will aid the County and smaller communities with more accurate elevation data to accompany their Zone A SFHAs. This includes Hot Springs Village, which has had increased development due to its retirement community status and has had many LOMAs filed in recent years.	Unincorporated Saline County's SFHAs are all Zone A based on USGS elevation data with typical contour intervals of 10-feet. LIDAR acquisition is expected to provide topographic data to an accuracy of 2-ft contouring to improve the floodplain management for the County and all of the smaller communities. The County is actively seeking opportunities internally to assist in the cost of the project.	Improved floodplain management and quality data	HIGH

Priority Item	Description of Need Evaluation Guide **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 **Location of Need/Project**	**Details**	**Impacts From Any Current Map Actions**	**FEMA Metric or Community Benefit**	**Evaluation**
4	Hot Springs Village, Saline and Garland Counties HUC-12: Cedar Creek - South Fork Saline River	In the unincorporated community of Hot Springs Village (Saline and Garland Counties) several lakes have been built that may or may not be reflected appropriately in the SFHA's. A review of the effective mapping and lakes will assist in determining where updated hydrologic & hydraulic studies are needed to update SFHAsand convert from Zone A to Zone AE. Cedar Creek is the source of Lake Balboa, and neither the lake nor the dam is included in the SFHA of Cedar Creek. A portion of this is being addressed in an active LOMR.	Currently a partial LOMR is underway for Cedar Creek around Lake Balboa within Saline County, hopefully taking the lake and dam into consideration. Additional grant funding could assist in extending the partial update to include not only Saline County but also Garland County . There are multiple LOMAs along Lake Balboa. Updated topographic data for Saline County would improve the quality of this study.	Conversion of approximately 4 miles of "Unverified" Zone AE and 1 mile of "Unverified" Zone A to NVUE compliant. Improved floodplain management and quality data	HIGH
5	City of Haskell, Saline County HUC-12: Trace Creek - Saline River	The City of Haskell and Saline County have identified several creeks that have demonstrated flood risks that need updated flood maps. These include Trace Creek and tributaries and Dodson Creek and tributaries. Several of these tributary creeks are currently not mapped.	Updated topographic data for Saline County would improve the quality of these requested studies. Some of the areas where flooding is occurring have been mitigated through grants with the State of AR and City of Haskell. This area of the county has experienced rapid growth in the last 10 years. The City of Haskell has contributed to mitigation projects in several areas of the city where flooding has occurred. A detailed floodplain analysis for the portion of Trace Creek that extends from the southeast city limit of Haskell upstream approximately 2.3 miles is under review by FEMA as a LOMR that has been submitted on behalf of the City Haskell, which demonstrates the City's commitment to obtaining quality flood data for floodplain management.	Identify floodprone areas not currently identified by SFHA. Incorporate completed LOMR for Trace Creek. Improved floodplain management and quality data. Add approximately 5 miles of NVUE compliant mileage.	HIGH
6	City of Benton and Saline County HUC-12: Depot Creek – Saline River	The City of Benton and Saline County have identified several creeks that have demonstrated flood risks that are currently not mapped. These include tributaries of the Saline River and Willow Depot Creek.	Updated topographic data for Saline County would improve the quality of these requested studies. This area of the county has experienced growth pressure in the last 10 years that is continuing.	Identify floodprone areas not currently identified by SFHA. Improved floodplain management and quality data. Add approximately 6 miles of NVUE compliant mileage	MEDIUM

i. Project Prioritization

During the Discovery process, flood risk projects are intended to be initiated and cataloged at a HUC-8 level. This means that when a project is initiated, all flood hazards within the HUC-8 will be evaluated to determine the project scope within that HUC-8 boundary. Evaluation means that risk, need, available data, and desired output products are 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 must be cataloged in the Coordinated Needs Management Strategy Database (CNMS).

Once the entire HUC-8 has been evaluated, the Region, using input and recommendation from the Upper Saline Project Team and specifically the ANRC, who is the CTP of FEMA, will select the project tasks necessary to respond to the identified levels of risk and need. The CTP and the Region is expected to maximize the amount and usefulness of project work to be performed in any HUC-8, but is not expected to perform every project task and meet all needs in every watershed.

As a result of the Discovery process the following two projects have been identified as being high priority projects for consideration in the FY13 FEMA grant cycle based on current / planned community projects and cost-sharing capabilities.

1. Hurricane Creek and its tributaries - updated hydrologic and hydraulic analysis and subsequent Physical Map Revision (PMR) in Unincorporated Saline County and the Cities of Benton and Bryant and the Town of Bauxite (HUC-12: Little Hurricane Creek – Hurricane Creek). This proposed PMR project would result in the converting approximately 7 to 9 miles of "Unverified" Zone AE, to NVUE compliant. The project is located in a sub-watershed where mitigative actions are underway including acquisition of several repetitive loss structures. The City of Bryant is currently planning a road improvement mitigation project, involving the Boone Road crossing over Hurricane Creek, to reduce flooding and road closures. The City's project will include updated hydrology and survey data acquisition that will be considered direct cost-sharing for the PMR project. The City's project is funded, and they anticipate the project kick-off during summer 2013.

2. Grant County, AR LIDAR - topographic data was acquired through a FEMA contract and is awaiting processing. Once data can be processed, the Grant County SFHAs can be revised through model backed approximate, enhanced approximate, and/or detailed studies to provide the unincorporated and incorporated areas of Grant County access to a modernized FIRM with NVUE compliant stream miles. The County is actively seeking opportunities internally to assist in the cost of the project.

The following four projects (No. 3 – No. 6) have been identified as being a high or medium priority for consideration in the FY14 FEMA grant cycle based on the willingness of FEMA and Saline County to discuss the partnering opportunity for topographic data collection and processing. Upon agreement of topographic acquisition, these remaining projects for flood map updates (No. 3 – No. 6) would be considered, and the CTP and communities would have the opportunity to better define the partnering needs and cost-sharing opportunities.

3. Unincorporated Saline County's SFHAs are all Zone A based on USGS elevation data with typical contour intervals of 10-feet. LIDAR acquisition is expected to provide topographic data to an accuracy of 2-ft contouring to improve the floodplain management for the County and all of the smaller communities. The County is actively seeking opportunities internally to assist in the cost of the project. Saline County has experienced a great deal of growth and development in the last 10-years as more of the Little Rock Metropolitan Area expands.

4. In the unincorporated community of Hot Springs Village (Saline and Garland Counties) several lakes have been built that may or may not be reflected appropriately in the SFHA's. A review of the effective mapping and lakes will assist in determining where updated hydrologic & hydraulic studies are needed to update SFHAs and convert from Zone A to Zone AE. Currently a partial LOMR is underway for Cedar Creek around Lake Balboa, within Saline County, that is hopefully taking the lake and dam into consideration. There are multiple LOMAs along Lake Balboa indicative of a large number of properties and homes located in this approximate SFHA. Updated topographic data for Saline County would be necessary for quality data and mapping.

5. The City of Haskell and Saline County have identified several creeks that have demonstrated flood risks that need updated flood maps. These include Trace Creek and tributaries and Dodson Creek and tributaries. Several of these tributary creeks are currently not mapped. Updated topographic data for Saline County would improve the quality of these requested studies. Some of the areas where flooding is occurring have been mitigated through grants with the State of AR and City of Haskell. This area of the county has experienced rapid growth in the last 10 years. The City of Haskell has contributed to mitigation projects in several areas of the city where flooding has occurred. A detailed floodplain analysis for the portion of Trace Creek that extends from the southeast city limit of Haskell upstream approximately 2.3 miles is under review by FEMA as a LOMR that has been submitted on behalf of the City Haskell, which demonstrates the City's commitment to obtaining quality flood data for floodplain management.

6. The City of Benton and Saline County have identified several creeks that have demonstrated flood risks that are currently not mapped. These include tributaries of the Saline River and Willow Depot Creek. Updated topographic data for Saline County would improve the quality of these requested studies.

Supplemental Data:

Discovery Map

RiskMap Mitigation Action Surveys from Discovery Meeting

Discovery Meeting Sign-in Sheets

Discovery Meeting Materials (Invitation Letter, Newsletter, Outreach Materials)

Upper Saline Watershed Engagement Plan

Digital Data