Discovery Report

FEMA Region X

Lower Henrys Watershed, Idaho

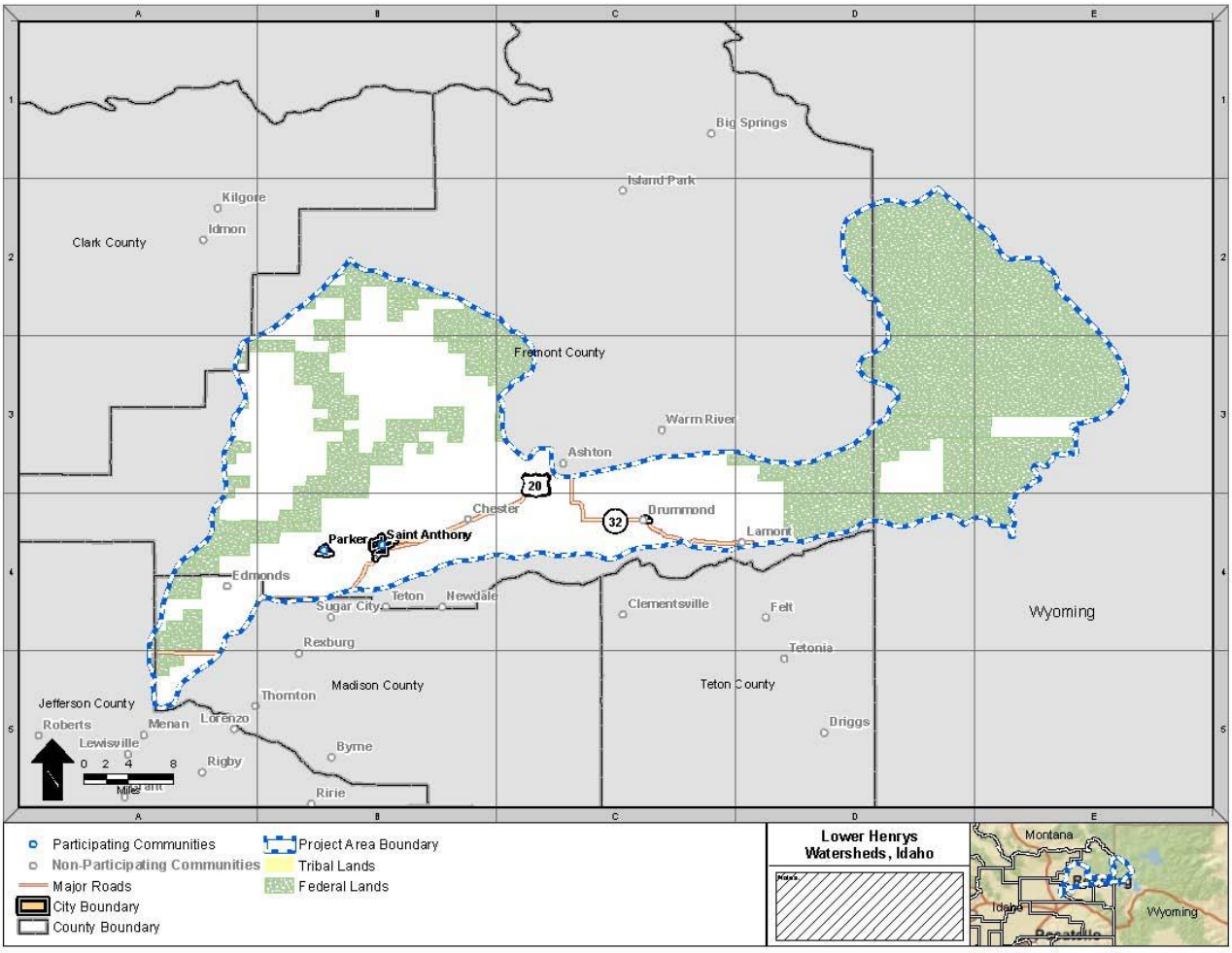
FEMA

Prepared by STARR

I. Watershed Description

The Henrys River watershed is predominantly located in northeast Idaho, adjacent to the state borders of Wyoming and Montana. The US Geological Survey (USGS) divides the Henrys River into two hydrologic units: the Upper Henrys and the Lower Henrys. The Lower Henrys watershed is delineated from Ashton to the confluence of the North Fork Teton River, and includes the tributaries west of the Henrys River to the confluence of the Snake River. This section of the Henrys River is roughly 45 miles long with a watershed area of approximately 1,046 square miles. The watershed consists mostly of federal lands managed by the U.S. Forest Service (USFS) to the east, and contains a mixture of privately owned agricultural and pasture fields through rural areas of the Snake River Plain. One reservoir lies at the eastern portion of the watershed in Wyoming: the Grassy Lake Reservoir, which drains to the Fall River and flows into the Henrys River northeast of Saint Anthony. National Flood Insurance Program (NFIP) participants in the Lower Henrys Watershed include Fremont and Madison Counties, and the city of Saint Anthony. There are no tribal areas within the watershed.

Map 1: Image of Lower Henrys Watershed Project Area Map *(full size maps in appendix)*



II. Project Description and Methodology

Discovery is the process of data collection, including information exchange between all governmental levels of stakeholders, spatial data presentation, and cooperative discussion with stakeholders to better understand the area, decide whether a flood risk project is appropriate, and if so, to collaborate on the project planning in detail. At this time, Discovery processes and requirements are still being defined; however, draft guidance is available from the draft *Appendix I – Discovery (fall 2010)*, and the draft *Meetings Guidance for FEMA Personnel (October 2010)*. In addition, there are several draft tools and templates at various stages of completion that were used to support the effort.

Region X initiated an extensive Discovery project in October 2010, with the Discovery of 24 watersheds/project areas in Idaho, Oregon, Washington, and Alaska, involving almost 200 communities. Essentially a pilot project for the Discovery process itself, RX Discovery involved data collection, community interviews, a meeting with stakeholders in the watershed, and development of recommendations based on an analysis of data and information gathered throughout the process.

Figure 1. Data Sources for Region X Discovery *(project-specific data sources in Appendix)*

Alaska State Geospatial Data Clearinghouse	FEMA Regional Office	National Oceanic and Atmospheric Administration (NOAA)
Oregon Department of Transportation	FEMA Map Service Center	NOAA Fisheries Service
Idaho Department of Transportation	FEMA Publications	NOAA National Geophysical Data Center
Idaho State Geospatial Data Clearinghouse	FEMA Community Information System	U.S. Army Corps of Engineers National Levee Database
Washington State Department of Transportation	FEMA Coordinated Needs Management System (CNMS)	U.S. Census Bureau
Community data, where available	FEMA HAZUS	U. S. Census - TIGER
Local, Regional, State website search	FEMA RX Inventory	U.S. Department of Agriculture
Developed based on community interview/meeting	FEMA Legacy Data	U.S. Fish and Wildlife Service
STARR	Data.gov	U.S. Geologic Survey
ESRI	National Atlas of the United States	

The Region X Discovery data collection entailed a massive collection of tabular and spatial data for all communities from Federal and State sources, as well as information collected through interviews with each community. The tabular data file in the Appendix provides detailed information about the data and its use in Discovery for this specific watershed. Data was used primarily in two ways – tabular data was documented on a Community Fact Sheet,

and spatial data was included in the Discovery Geodatabase, and is displayed on the Discovery maps, where appropriate. Full-sized Discovery maps are included in the appendix.

Figure 2. Fact Sheet, page 1, for Fremont County, Lower Henrys Watershed *(tabular data in appendix)*

FEMA RX Discovery: Teton/Lower Henrys/Upper Henrys Watersheds Page 1
Fact Sheet for Fremont County, Idaho

FEMA Community Identification (CID) number: 160061

Effective Flood Insurance Study (FIS) and/or Flood Insurance Rate Map (FIRM) *(FEMA Map Service Center)*

Effective Date:	FIS dated 3/18/91	Last Community Meeting:	4/23/1990
Level of Study:	Limited Detail and Approximate Riverine		

Floodplain Management Program *(FEMA Community Information System)*

Last Community Assistance Visit/Contact:	04/14/2005	Variances:	0

Community Rating System (CRS) Status *(FEMA CRS Publication, October 2010)*: Not Participating

Demographics *(U.S. Census, Year 2000 Data Collection)*

Population:	11,819	**Social Characteristics**	
Median Age:	32	Non-English Speakers:	11%
Elderly (65+):	12%	High School+ Education:	80%
Native:	1%	Bachelors+ Education:	12%

Industrial *(U.S. Census, Year 2000 Data Collection)*

Population in labor force:	63%	Median income:	$33,424

Top 5 Industries:	16%	Educational and health services
	13%	Manufacturing
	12%	Retail
	11%	Agriculture, forestry, fishing and hunting, and mining
	8%	Arts, entertainment, recreation, accommodation and food services

Presidentially-Declared Disasters *(FEMA Region X)*

Flood-Related Countywide Total *(Coastal/Severe Storms, Flooding, Land/Mudslides)*:	2
Other Hazards:	None

Insurance *(FEMA Community Information System)*

Total Policies:	15	Total Premiums:	$ 14,442
A Zone Policies:	8	Total Coverage:	$ 3,868,200
V Zone Policies:	0		

Mitigation Plans *(FEMA Region X, January 2011)*

Fremont County Hazard Mitigation Plan	Effective:	12/18/2008
	Expires:	12/17/2013
Idaho State Hazard Mitigation Plan	Effective:	11/02/10
	Expires:	11/02/13

Mitigation Projects *(FEMA, data.gov)*: None Identified

Levees and Other Flood Control Structures *(USACE Levee Databases, aerial photo review)*: None Identified

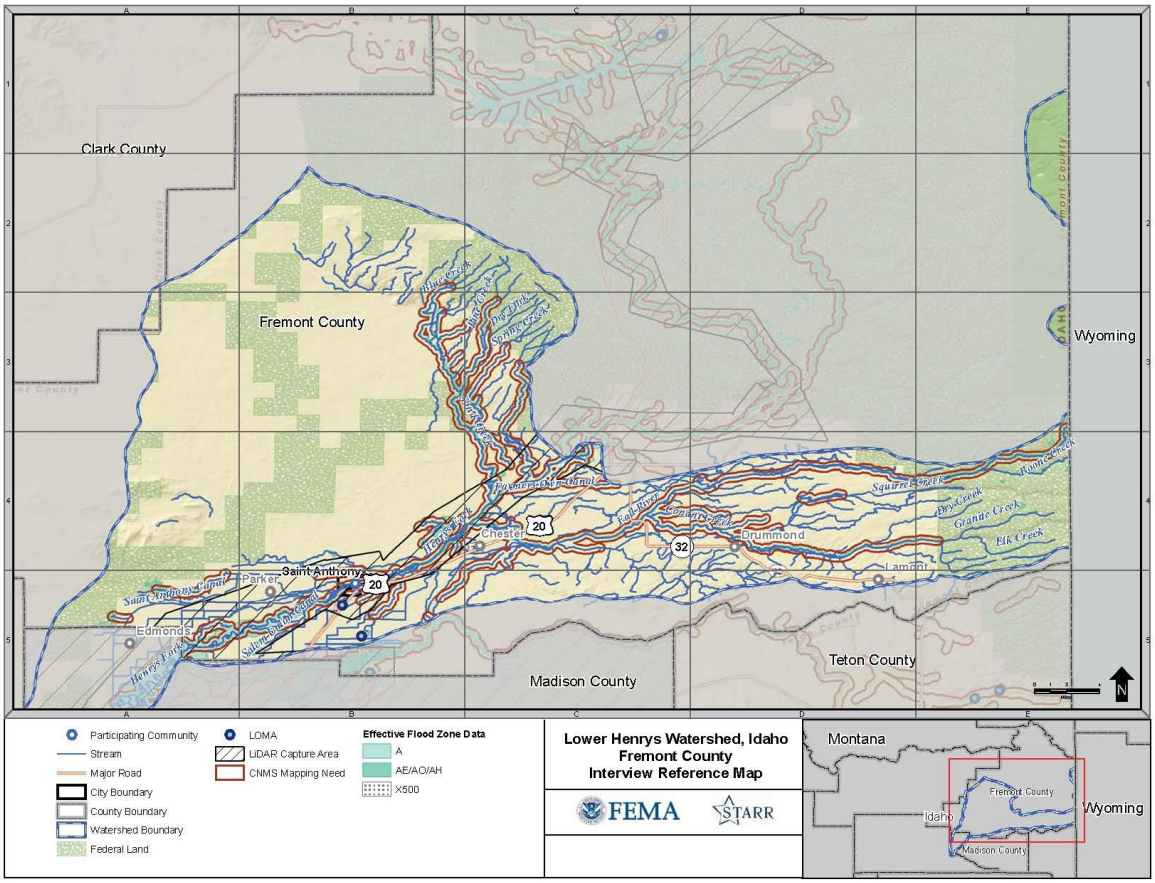
Environmentally Sensitive Areas *(FEMA RX, State and local data)*

Endangered/Critical Species:	None Identified
Wetlands/Shorelines:	None Identified
CoBRAs and OPAs:	None Identified

Tribal Areas *(Bureau of Land Management)*: None Identified

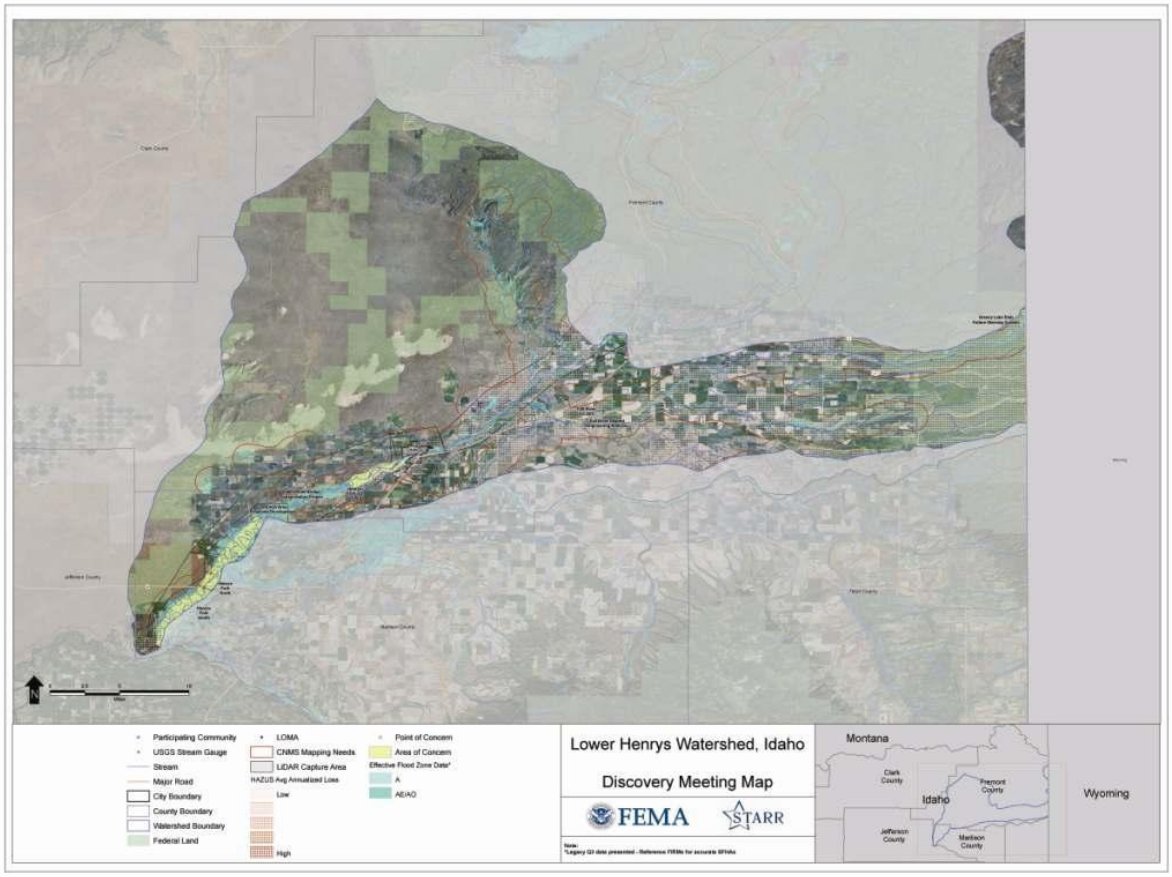
The second phase of the Region X Discovery effort involved a review of the collected data with community officials through a phone interview, and a request for additional information. Prior to the interview, community officials received information about the Discovery process, and a Fact Sheet and Interview Reference Map for their community. Communities were asked to identify "Areas and Points of Concern" based on their local knowledge and analysis of the data shown on the map. The Areas and Points of Concern (mapping needs, desired mitigation projects, etc.) were documented in the Discovery Geodatabase and discussed during the Discovery Meeting.

Map 2. Image of Interview Reference Map for Fremont County, Lower Henrys Watershed



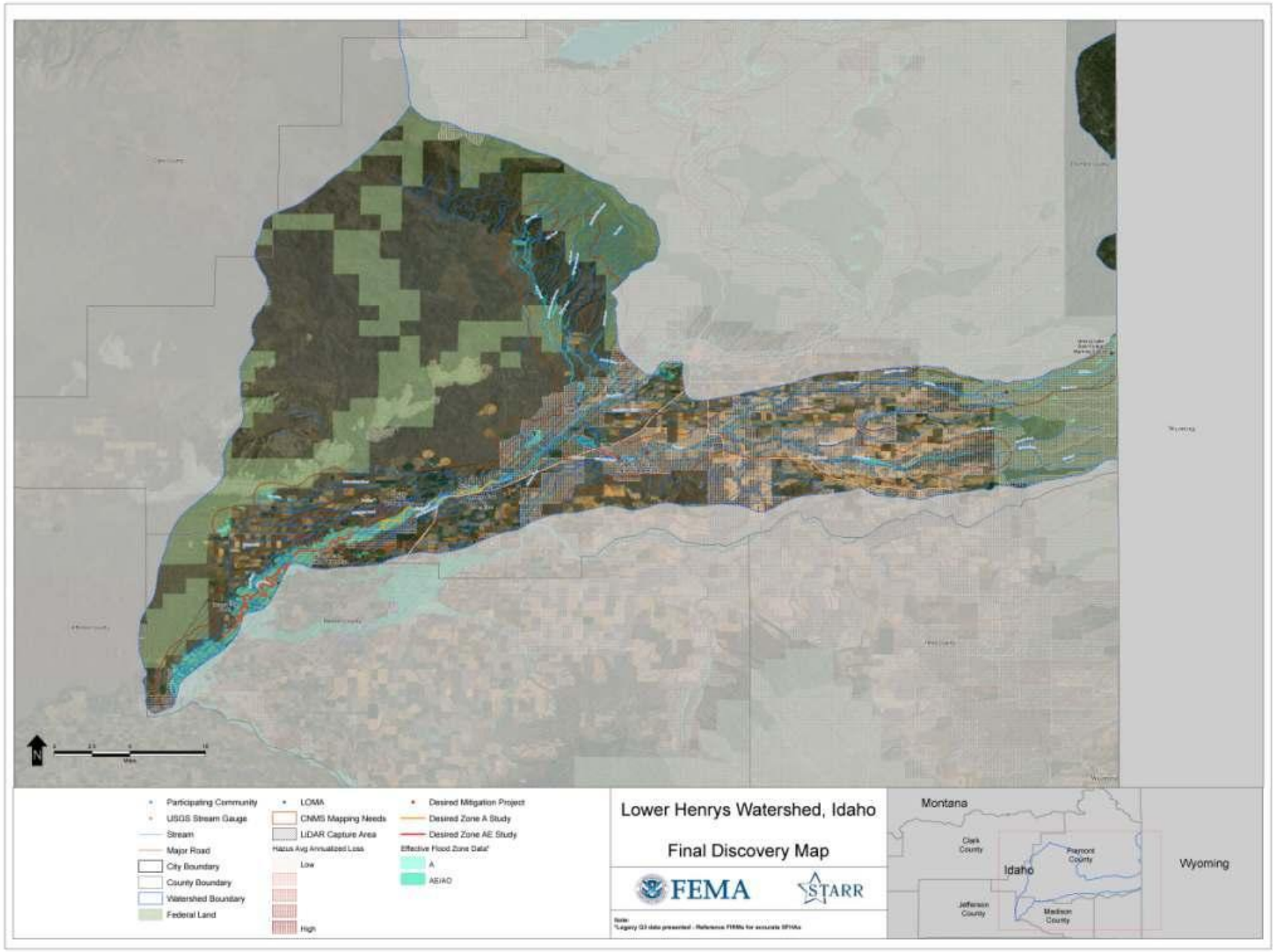
The third step was to hold a watershed-wide Discovery Meeting and facilitate discussion and data analysis of study needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts. The discussion was stimulated using the Discovery Geodatabase display of relevant data. Attendees, including all affected communities and selected other stakeholders, cooperatively identified possible solutions for the Areas and Points of Concern shown on the Discovery Meeting Map. Solutions included recommendations of floodplain studies, mitigation projects, compliance issues, and ideas on how to improve the local flood risk communication programs.

Map 3. Image of the Lower Henrys Watershed Discovery Meeting Map



The fourth phase of the Discovery effort involved an analysis of the data and information collected and discussed at the meeting, and recommendations as to the future relationship and activities between FEMA and the watershed communities. The Final Discovery Map indicates desired study areas and mitigation project locations, and the Discovery Report documents the results of data collection and conversation. If a Risk MAP project is to be initiated in this watershed, Discovery will be concluded with the finalization of a project scope and signed Project Charters, which indicate that all affected stakeholders agree to the terms of a funded project, including communication and data responsibilities.

Map 4. Image of Lower Henrys Watershed Final Discovery Map



III. Risk MAP Needs

The results of the data collection and interviews were thoroughly discussed at the Discovery Meeting. The following sections include issues and situations that exist in the Lower Henrys Watershed communities that can be considered Risk MAP Needs, to be addressed with Risk MAP projects. Details and background on all issues can be found in the interview notes, meeting notes, and other files included in the appendix.

i. Floodplain Studies

The primary flooding concerns in the watershed are rain on snow and rain on frozen ground events. Additionally, there is significant potential for ice jams to divert flows from the river channels into adjacent irrigation canals, which can cause canal breaches.

Fremont and Madison Counties' Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) were last updated in 1991, which contains limited detailed and approximate riverine analyses. St. Anthony does not have a FIS, but their FIRM panel was last updated in 1990. The last community meeting in the watershed was a Final Meeting held in April 1990.

The Final Discovery Map should be referenced to view spatial data that may be indicative of study needs. The CNMS data suggested that a number of flooding sources in the watershed should be updated, particularly the Henrys Fork and its main tributaries. No claims have been made in the B, C, or X zones in the Lower Henrys Watershed during the communities' participation in the NFIP. In addition, no repetitive losses were identified in the watershed. There have been only a few scattered LOMAs issued across the watershed, none of which are clustered or indicating a significant new study need.

Light Detection and Ranging (LiDAR) data has been collected along the entire reach of the Lower Henrys Fork. The existing data, along with additional planned LiDAR capture areas, will be available for new studies through the Idaho Department of Water Resources. FEMA and the state of Idaho have prioritized the area between the Snake River and the state of Montana for LiDAR collection.

Levees were identified through a combination of local floodplain administrator interviews, the U.S. Army Corps of Engineers (USACE) National Levee Database, FEMA's Regional Flood Hazard Layers, and Mid-Term Levee Inventory. No levees were identified in the watershed. However, levees exist adjacent to the southwest corner of the watershed along the South Fork of the Snake River in the Teton Watershed. These levees, known as the Heise-Roberts levees, were built and certified by the USACE; however, Madison County indicated that FEMA desires to de-certify the levees, causing much concern for the county and residents along the Snake River floodplain.

Some areas were identified by community officials as needing a detailed or approximate riverine study. The desired study areas are shown on the Final Discovery Map and listed below.

Table 1: Lower Henrys Watershed Mapping Needs

STUDY AREA	STUDY LENGTH (miles)	LOCATION DESCRIPTION	STUDY TYPE	PRIORITY
Fall River	1.3	From US Highway 20 to the East Chester Bridge	Detailed Zone AE	High
Henrys Fork North	11.2	Extending 11.2 miles upstream of the State Highway 33 Bridge	Detailed Zone AE	High
Henrys Fork Ice Jam East	2.3	Extending 2.3 miles upstream from the confluence with Egin Canal	Detailed Zone AE	High
Henrys Fork - Salem Parker Hwy	4.4	Southwest of Parker, extending 4.4 miles upstream from N 1900 E St bridge	Detailed Zone AE	High
Henrys Fork Ice Jam West	4.4	Extending 4.4 miles upstream from S 12th W St in St. Anthony	Detailed Zone AE	Medium

ii. Mitigation Projects

Fremont and Madison Counties have each prepared *Hazard Mitigation Plans (HMP),* which have been adopted by their respective incorporated communities. The Fremont County HMP became effective on 12/18/2008 and will expire on 12/17/2013, while the Madison County HMP became effective on 2/26/2009 and will expire on 2/26/2014.

Inundation maps are available for the Island Park and Ashton Dams located upstream of the watershed, but not for Grassy Lake Dam, which is located in Wyoming. If an inundation map for the Grassy Lake Dam is developed by Region VIII, then a Level I or II Hazus run using all three maps would be beneficial to and desired by the communities.

The communities expressed interest in performing an earthquake Hazus Level 2 run. They are interested in how Risk MAP products can tie into response and recovery planning. There is a significant concern regarding potential flooding impacts to future developments and how risk will be communicated to the developers and homeowners, as well as how to mitigate the risks.

The following mitigation needs were identified at the meeting as desired projects within the Lower Henrys Watershed:

- Grassy Lake Dam failure warning system (high priority) – for areas downstream of the dam on the Fall River
- Fall River ice jam engineering analysis (high priority) – from Highway 20 to the East Chester Bridge
- Sand Creek ponds failure risk assessment (high priority) – about 1 mile upstream of confluence with Henrys Fork
- Enterprise Canal breach risk assessment – at confluence with Fall River, about 3 miles upstream of the Highway 20 bridge
- Yellowstone Canal breach risk assessment – about 1.5 miles downstream from the confluence of Falls River and Boone Creek

iii. Compliance

Data collected from CIS indicated that none of the communities in the Lower Henrys Watershed had any variances to their floodplain management ordinances, so it may be assumed that the communities are regulating to at least the minimum criteria required by FEMA. The most recent FEMA Community Assistance Contact/Visit was in March 2009 with Madison County, prior to that was an April 2005 visit with Fremont County and St. Anthony. No trainings or other compliance support were requested.

iv. Communications

In interviews, all communities indicated that they were interested in learning more about Risk MAP's communications support, and were open to a future meeting with FEMA to learn about how they can improve their flood risk communication program. Currently, none of the communities in the watershed participate in the Community Rating System program.

Madison County has experienced rapid growth in the last decade, growing from 27,467 residents in 2000 to 37,536 residents in 2010. Fremont County remained relatively stable, growing from 11,819 in 2000 to 13,242 in 2010. The city of Saint Anthony's population was 3,342 in 2000 (2010 city census data was not available). According to the 2000 census, the median age of residents of the watershed is 28 years, with approximately 10% of the population over 65 years old, an average of 5% non-English speakers, and less than 1% Native Americans. Approximately 82% of the population holds a high school diploma and around 16% have a college degree. Roughly 59% of residents over age 16 that desired employment were working, with a median annual income of approximately $32,351. Residents across the watershed work primarily in educational, health, and social services, as well as manufacturing and retail trade.

IV. Close

Local officials in the communities were interested in the Discovery process and Risk MAP and open to learning more about how they can begin to develop resiliency to flood events. They identified several areas for map updates and areas in which they could use additional FEMA support. It is recommended that the guidance document outlining the types of Mitigation Planning Technical Support that can be included in Risk MAP projects be evaluated with communities, once finalized. The local officials in the Lower Henrys Watershed would benefit from the implementation of Risk MAP projects.

V. Appendix – Discovery Files

Communications

- Contacts
  - Stakeholders
  - Notification Dates
- Notifications/Invitations
  - A National Notification
  - B Regional Notification
  - C State Legislator Notification
  - C Congressional Notification
  - D Community Notification
  - E Floodplain Administrator Interview Request
  - Meeting Notes Distribution
  - Meeting Reminder

Community Interviews

- Fact Sheet
- ***Interview Reference Maps***
- Interview Notes
- Locally-Provided Documents

Discovery Meeting

- Agenda
- Presentation
- Sign-In Sheet
- ***Discovery Meeting Map***
- Meeting Notes
- Draft Project Charter

Report

- Report
- ***Project Area Map***
- ***Final Discovery Map***
- Tabular Data, including Data Sources and Mapping Needs
- Geodatabase
- Database Updates