

Discovery Report

FEMA Region X

Upper Spokane Watershed, HUC 17010305, Washington & Idaho, April 2013



FEMA

Prepared by



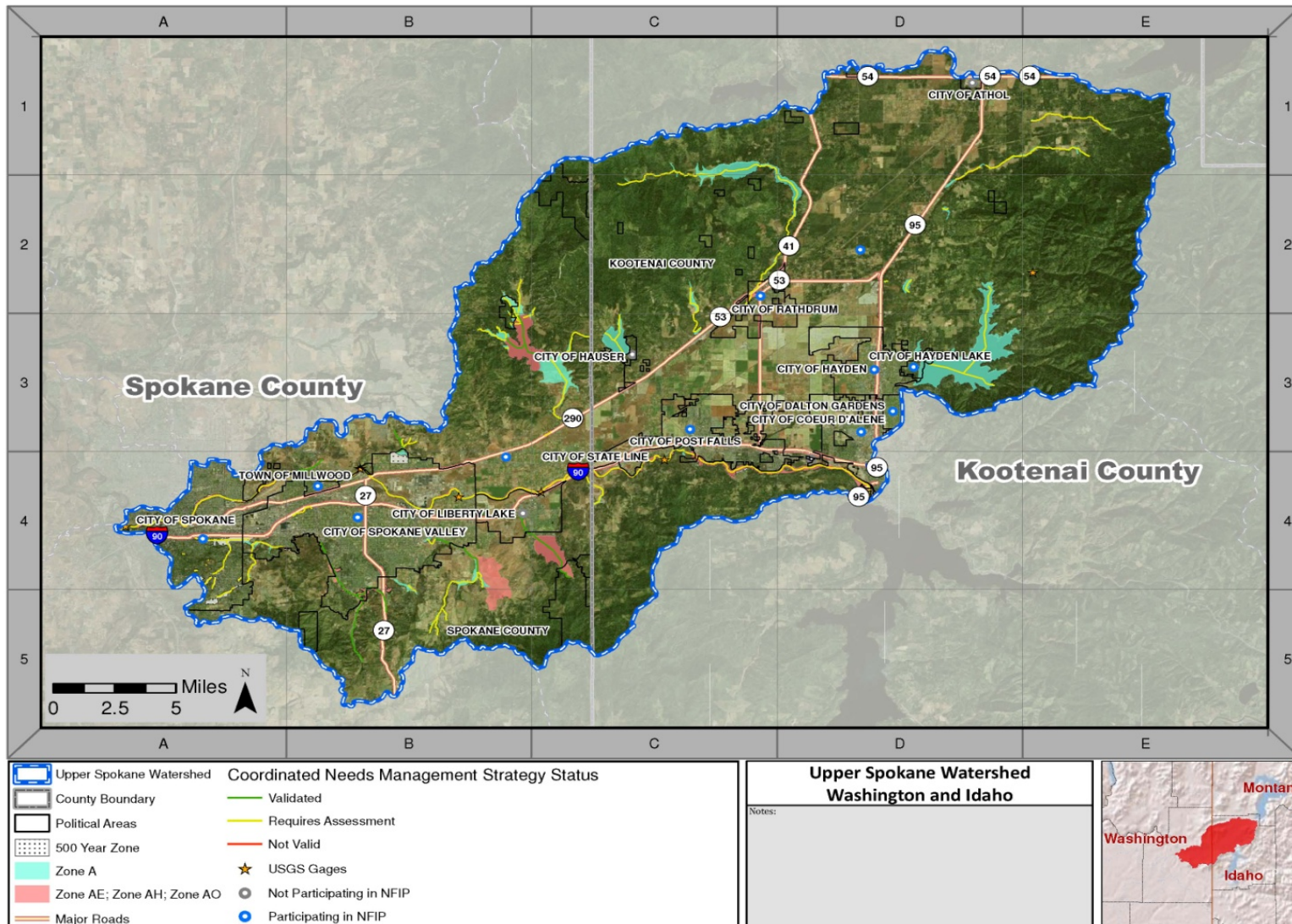
I. Watershed Description

The Upper Spokane Watershed is located in northeastern Washington and northwestern Idaho. The Upper Spokane Watershed has an area of 588 square miles and is heavily forested with areas of mountains and valleys. The largest flooding source is the Spokane River, a tributary to the Columbia River that is approximately 35 miles long, spanning the entire watershed. Hayden Lake is one of several natural lakes in northern Idaho and the largest lake in the Upper Spokane Watershed. The communities within the Upper Spokane Watershed and those communities participating in the National Flood Insurance Program (NFIP) are listed in the table below. Of the communities listed, those not participating in the NFIP program also elected not to participate in the Discovery process.

Table 1. Community NFIP Participation Status

County	Community	Participating?
Kootenai	Athol, City of	No
	Coeur d'Alene, City of	Yes
	Dalton Gardens, City of	Yes
	Hauser, City of	No
	Hayden, City of	Yes
	Hayden Lake, City of	Yes
	Huetter, City of	No
	Kootenai County, Unincorporated Areas	Yes
	Post Falls, City of	Yes
	Rathdrum, City of	Yes
	State Line, City of	Yes
Spokane	Liberty Lake, City of	No
	Millwood, Town of	Yes
	Spokane County, Unincorporated Areas	Yes
	Spokane, City of	Yes
	Spokane Valley, City of	Yes

Map 1: Image of Upper Spokane Watershed Project Area Map (full size maps in Appendix E)



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 Risk MAP project is appropriate, and if so, to collaborate on the project planning in detail.

Region X initiated this Discovery effort in the spring of 2012 with 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.

Table 2. Data Sources for Upper Spokane Watershed

Data Types	Deliverable/Product	Source
Insurance Policies	Community Fact Sheet	Community Information System (CIS)
Mitigation Plans Status	Community Fact Sheet	FEMA
Repetitive Loss	Community Fact Sheet	Community Information System (CIS)
Zone B, C, and X Claims	Community Fact Sheet	Community Information System (CIS)
Letter of Map Change (LOMCs)	Community Fact Sheet (known clusters on Discovery Map Geo-Database)	Community Information System (CIS), Community contact
Declared Disasters	Community Fact Sheets	Data.gov: FEMA Disaster Declarations Summary
Hazards	Community Fact Sheets	Community Information System (CIS)
Past flood claims and repetitive loss properties	Community Fact Sheet	Community Information System (CIS)
HUC-8 Watershed	Discovery Map Geo-Database	USGS National Hydrography Dataset (NHD)
Jurisdictional Boundaries	Discovery Map Geo-Database	FEMA and Communities
Federal lands	Discovery Map Geo-Database	USGS National Atlas
Transportation Major and Minor (including airport and railroad)	Discovery Map Geo-Database	City of Spokane, Kootenai County, and Spokane County
Stream lines	Discovery Map Geo-Database	City of Spokane, Kootenai County, and Spokane County
Study Needs	Discovery Map Geo-Database	Coordinated Needs Management System (CNMS)

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Topographic data (Contours and LiDAR)	Discovery Map Geo-Database	City of Spokane, Kootenai County and Spokane County
HAZUS - Average Annualized Loss (AAL)	Discovery Map Geo-Database	HAZUS
Community or Tribal risk assessment data	Discovery Map Geo-Database	HAZUS
Local mitigation plans	Discovery Map Geo-Database	Kootenai and Spokane Counties
National and Regional flood control structures	Discovery Map Geo-Database	USACE
Regional flood control structures	Discovery Map Geo-Database	Washington Department of Ecology
Stream Gages	Discovery Map Geo-Database	U.S. Geological Survey (USGS)
Effective study data	Discovery Map Geo-Database	FEMA's Regional Flood Hazard Layer (RFHL)
Critical Facilities (Police, Fire, Hospitals, Emergency Operation Centers)	Discovery Map Geo-Database	Kootenai and Spokane Counties
Orthophotography	Discovery Map Geo-Database	Bing Maps Aerial - 2010
Building Footprints	Discovery Map Geo-Database	City of Spokane, City of Spokane Valley,
Urban Growth Boundary	Discovery Map Geo-Database	City of Spokane
Fire Districts	Discovery Map Geo-Database	City of Spokane
Historic Fires	Discovery Map Geo-Database	Washington Department of Natural Resources
Wildfire Risk Areas	Discovery Map Geo-Database	Idaho State Fire Plan
Parcels	Discovery Map Geo-Database	City of Spokane, Kootenai County, and Spokane County
Landslide	Discovery Map Geo-Database	Washington Department of Natural Resources
Land Use	Discovery Map Geo-Database	City of Spokane and Spokane County
Zoning	Discovery Map Geo-Database	City of Spokane Valley, Kootenai County, and Spokane County
Critical Habitat	Discovery Map Geo-Database	Kootenai County
Levee Centerline	Discovery Map Geo-Database	Kootenai County
Aquifer	Discovery Map Geo-Database	City of Spokane, City of Rathdrum
Contacts	Excel spreadsheet	Local websites, State/FEMA updates/Meeting sign-in sheets

The Upper Spokane Discovery data collection entailed a massive collection of tabular and spatial data for all communities from Federal, State, regional and local community sources. 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, 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.

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 with a Fact Sheet and an Interview Reference Map for their community. Communities were asked to identify “Areas of Concern” based on their local knowledge and analysis of the data shown on the map. The Areas of Concern (mapping needs, desired mitigation projects, etc.) were documented in the Discovery Geodatabase.

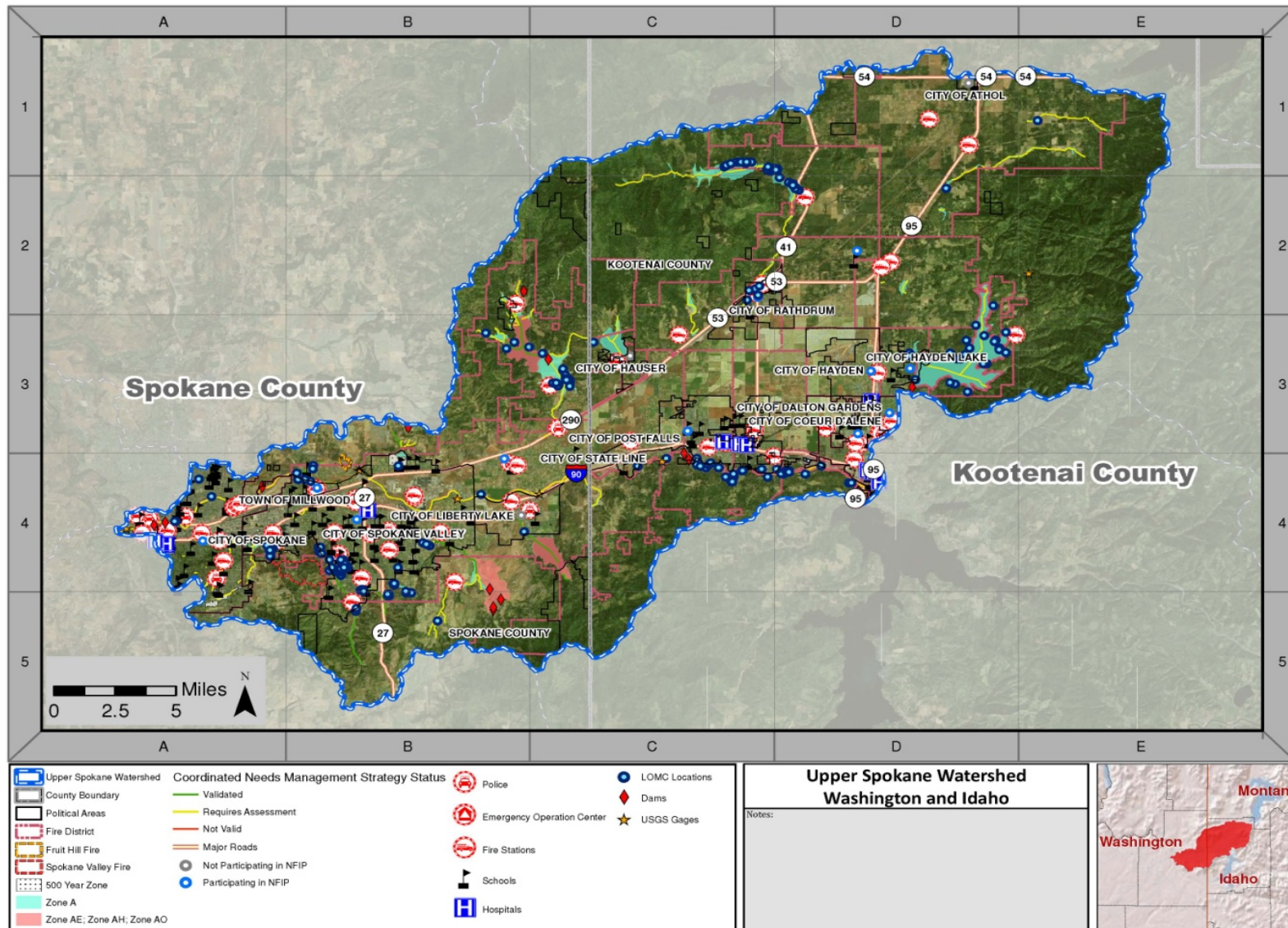
Figure 1. Fact Sheet for Spokane County (All Fact Sheets in Appendix C)

Region X Discovery Factsheet: Upper Spokane Watershed			
SPOKANE COUNTY		Status:	Participating
Spokane County		Current Map Date:	7/6/2010
CID: 530174		Reg-Level:	D
LOMCs: 305		CAC Date: 3/28/2007	
CRS: No		CAV Date: 11/7/2003	
Demographics - All Communities			
Total Population (Year 2010):	208916	Language Other than English (%):	7.9
Median Age:	35	High school graduate or higher (%):	24.9
65 Years and Over (%):	12.8	Bachelors degree or higher (%):	17.3
Native American (%):	2		
Industrial			
Population in Labor Force:	104861	Top Industry: 26.1%	
		Educational services, health care and social assistance	
Median income (Household):	\$40367		
Presidentially Declared Disasters: Spokane County			
Disaster Types:	Flood, Fire, Volcano, Snow, Severe Storm, Drought		
Most Recent Disaster:	Flooding		
Most Recent Disaster Date:	5/15/2008		
National Flood Insurance Program			
Total Premiums:	\$203915	No of BCX Claims:	0
Total Coverage:	\$60046500	No of Variances:	0
Number of Policies:	278	No of Rep Losses:	0
A-Zone:	134		
Levees and Flood Control Structures			
Levees	N/A		
Environmentally Sensitive, Tribal, and Coastal Areas			
Environmentally Sensitive Areas Present:	N/A		
Historic Fires:	Spokane Valley, 1006 acres (2008); Fruit Hill, 116 acres (2006)		
Landslides:	Shallow Undifferentiated		
Mitigation and Grants			
HMP: Spokane County Hazard Mitigation Plan: Approved – May 27, 2007, Expires – May 27, 2012			
Other Plans: Spokane County, Washington Community Wildfire Protection Plan – March 2009			
FMA/ HMGP Grants:			
Purchase Generator and Equipment, Flood control, and Local Hazard Mitigation Plan			
Approximate Federal Share/Cost – \$564,000/\$1,609,000			

Figure 2. Fact Sheet for Kootenai County (All Fact Sheets in Appendix C)

Region X Discovery Factsheet: Upper Spokane Watershed			
KOOTENAI COUNTY		Status:	Participating
Kootenai County		Current Map Date:	5/3/2010
CID: 160076		Reg-Level:	D
LOMCs: 253		CAC Date: 3/19/2002	
CRS: Yes	Class: 6	CAV Date: 6/23/2009	
Demographics - All Communities			
Total Population (Year 2010):	138494	Language Other than English (%):	2.5
Median Age:	38.9	High school graduate or higher (%):	43
65 Years and Over (%):	8	Bachelors degree or higher (%):	8.6
Native American (%):	3		
Industrial			
Population in Labor Force:	68647	Top Industry: 19.3%	
		Educational services, health care and social assistance	
Median income (Household):	\$46336		
Presidentially Declared Disasters: Kootenai County			
Disaster Types:	Flood, Fire, Volcano, Severe Storm		
Most Recent Disaster:	Flooding		
Most Recent Disaster Date:	5/15/2008		
National Flood Insurance Program			
Total Premiums:	\$217529	No of BCX Claims:	0
Total Coverage:	\$63005900	No of Variances:	0
Number of Policies:	284	No of Rep Losses:	8
A-Zone:	174		
Levees and Flood Control Structures			
Levees	N/A		
Environmentally Sensitive, Tribal, and Coastal Areas			
Environmentally Sensitive Areas Present:	Bull Trout – Coeur D’ Alene Lake		
	West Slope Cut Throat Trout – Hayden Lake		
	Aquifer - Rathdrum		
Mitigation and Grants			
HMP: Kootenai County Hazard Mitigation Plan: Approved – May 27, 2010, Expires – May 27, 2015			
Other Plans: Kootenai County Wildland Urban Interface, Fire Mitigation Plan			
FMA/ HMGP Grants:			
Elevation and Relocation of Structures, Mitigation Plan, Culverts, Flood Control, Seismic Retrofitting, Education, Spillway, and Vegetation Management, Culvert replacement (Gordon Memorial Bridge replaced culvert)			
Approximate Federal Share/Cost – \$1,213,000/\$3,830,000			

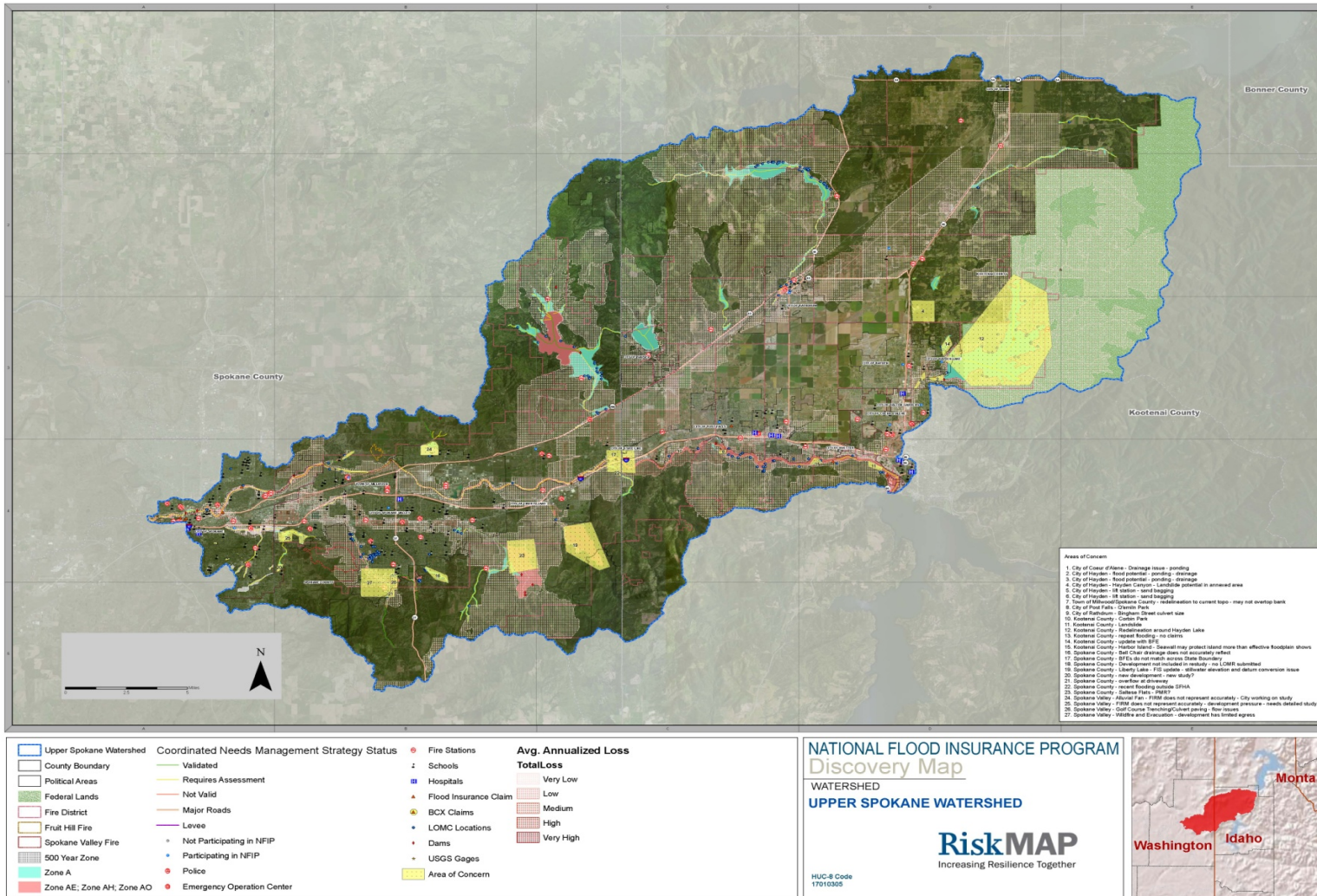
Map 2. Image of Interview Reference Map for Upper Spokane Watershed (Interview Reference Maps in Appendix C)



The third step in the Discovery effort is to hold Discovery Meetings and facilitate discussion and data analysis of study needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts. For the Discovery Meetings, staff from FEMA Region X and the Region X Service Center (RSC) visited each of the communities that are participating in this effort. The purpose of these meetings was to meet the community officials involved in the Discovery effort to continue the discussions that were started during the community interviews and to collect additional community data that will aid in Discovery effort. Following the community meetings it was determined that the following communities desired a specific Engineering Needs meeting: Coeur d'Alene, Millwood, Spokane Valley, Spokane County and Kootenai County. The purpose of the Engineering Needs meeting was to revisit the hydrologic and hydraulic needs for these communities to verify that all needs were captured in the Discovery Database. The meetings were conducted using an interactive telephone interview with the engineering staff at the communities and engineers at FEMA and the RSC.

The fourth phase of the Discovery effort involved an analysis of the data and information collected and discussed during the interviews, subsequent community visits, Engineering Needs meetings, 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 conversations. If a Risk MAP project is to be initiated in this watershed, the report will be used to identify a project scope and sign a Partnership Agreement which will indicate that all affected stakeholders agree to the terms of a funded project, including communication and data responsibilities.

Map 3. Image of Upper Spokane Watershed Final Discovery Map (Full Size Map in Appendix E)



III. Risk MAP Needs

The results of the data collection and interviews were thoroughly discussed through the Discovery process. The following sections include issues and situations that exist in the Upper Spokane Watershed communities that can be considered Risk MAP Needs, to be potentially 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 Appendices.

i. Current Studies and Plans

Hazard Mitigation

The Spokane County Multi-Jurisdiction All Hazard Mitigation Plan is a hazard mitigation plan that includes the unincorporated areas of Spokane County, the City of Spokane, the City of Spokane Valley and the City of Cheney. Portions of the Cities of Spokane and Cheney are outside of the Upper Spokane Watershed. The plan expired in May 2012. The communities are in the process of having the mitigation plan updated.

The Kootenai County Multi-Jurisdiction Hazard Mitigation Plan was completed in November of 2009 and contains information relative to the hazards and vulnerabilities faced by the residents of the county. It integrates a fire mitigation plan, a flood mitigation plan and the proposed County Comprehensive Plan. It is formulated in support of the FEMA National Flood Insurance Program.

Emergency Management

Spokane County Comprehensive Emergency Management Plan updated in December of 2009 is intended as a comprehensive framework for local mitigation, preparedness, response, and recovery activities.

The Kootenai County Emergency Operations Plan completed in May 2009 is the official plan for intergovernmental emergency operations. This plan coordinates the efforts of the county, the cities, the highway, school and fire protection districts, as well as other governmental agencies, and volunteer organizations prior to, during, and after the actual occurrence of a natural or man-made disaster. The Local Emergency Planning Committee maintains the Emergency Operations Plan.

The Spokane Disaster Committee includes local agencies, private citizens, and others that meet monthly. The Alliance for Business Continuity and Disaster Preparedness Group includes the Chamber of Commerce and regularly sends out a test message to businesses for disaster preparedness. [Spokane County]

Wildfire

A Community Wildfire Protection Plan was developed for Spokane County in March of 2009. Kootenai County also has the Wildland Urban Interface Fire Mitigation Plan. These plans represent the efforts and cooperation of a number of organizations and agencies; through collaboration and commitments of people working together, they aim to improve preparedness for wildfire events while reducing risk factors.

Flood Studies

Spokane County's Flood Insurance Study and Flood Insurance Rate Maps (FIRMs) last revision is dated July 2010. The Spokane County communities have both detailed and approximate riverine

analyses. The Final Community Meeting was held in November of 2008. The Final Community Meeting, originally called the Final Community Coordination Officer (CCO) Meeting, defines the final meeting held to discuss the floodplain maps, Flood Insurance Study and National Flood Insurance Program regulations with the community officials before the maps are finalized.

Kootenai County's Flood Insurance Study and FIRMs were last updated in 2010. The Kootenai County communities have both detailed and approximate riverine analyses. The last community meeting in the watershed was held in June 2009.

FEMA's Coordinated Needs Management Strategy (CNMS) database was created in 2011 for Region X to coordinate the management of future floodplain mapping needs. This database tracks and identifies the status and needs of existing floodplain studies based on change indicators that may have occurred since the date of the analysis. FEMA's CNMS database is used in conjunction with the list of priorities that each State has developed to help prioritize future floodplain study needs.

ii. Hazards Events

Wildfire

The 2008 Valley View fire was extensive, impacting over 1,200 acres. The 1991 Firestorm event was very widespread throughout Spokane and Kootenai County. Other known wildfire events include the 2006 Fruit Hill fire and the 1987 Hangman Hills fire, but specific details regarding the magnitude of these events could not be obtained.

Several communities including Kootenai County, City of Spokane, and the City of Spokane Valley have concerns regarding wildfire evacuation routes. Many of the communities facing increased wildfire risks feel their residents would benefit from additional outreach tools regarding fire prevention, perceived risks, and defensible space opportunities.

Severe Weather

In November, 1996 there was a severe ice storm in the Inland Northwest. Freezing rain formed into ice on trees and power lines. The weight of the ice caused power lines and tree limbs to snap. Falling trees damaged homes and businesses. The snapping of power lines left many without power for two weeks. There was approximately \$860,000 in property damage from the storm. In the winter of 2008-2009, there was a major snow and ice storm that was catastrophic for Eastern Washington and Northwestern Idaho. During major snow and ice storms, feet of snow fall over relatively short durations of time that cause roofs to collapse, impede transportation, and cause power outages. It is not uncommon for power to be out for many days from severe storms.

Environmentally Sensitive Areas

The primary environmentally sensitive area of concern is the Rathdrum Prairie Aquifer. This aquifer is the sole source of drinking water for the region. With the Spokane River feeding the aquifer, the local officials are concerned with the potential for a hazardous materials spill from the railroad and the movement of contaminants down the river undermining the water quality within the aquifer. A second concern for local officials is the stability of aquifer levels. The aquifer extends into the adjacent Little Spokane Watershed through a basalt layer. A cleft in the basalt

layer holds the aquifer level constant. If this cleft becomes compromised, the aquifer levels would be affected impacting the entire watershed.

Earthquake

In 2001, Spokane County experienced a series of small earthquake-like tremors. In 2003, an earthquake was reported along the Washington-Idaho Boarder. Minimal structural damage was reported and there were no fatalities.

Landslide

The only landslide data available is historic landslide information for a region outside of the City of Coeur d'Alene limits. The Cities of Hayden and Dalton Gardens have mapped regions of excessive slopes with landslide potential in the Hayden Canyon area. There is less concern by local officials for future landslide events based on the lack of recent events and minimal development on steep slopes. Some communities such as the Town of Millwood have a city ordinance preventing development in these regions. A landslide risk location map is included in the hazard mitigation plan.

Hazardous Materials

The transport of hazardous materials is a major industry in this region and the potential for hazardous materials incidents are a great concern for Kootenai County officials. The scene of an incident can be chaotic and time is of the essence when making critical decisions to protect the surrounding environment and prevent any leaching of materials into the aquifer. The City of Rathdrum is also concerned about hazardous materials spills in the event of a railroad accident.

The City of Millwood in Spokane County also has major railway transportation lines. Derailment and hazmat issues are of concern from cargo transport and refueling.

Infrastructure

The sanitary sewer infrastructure is vulnerable in the City of Hayden. The entire system is pumped out of the watershed through the use of multiple lift stations. If one pump system fails, sections of the city will have sanitary sewer backups until the pump can be replaced or a backup system is operational.

Flood

There are several isolated areas identified within the watershed that may not accurately address flooding risks according to local officials:

- Bell Chair Drainage in Spokane County
- Forker Draw Alluvial Fan area in Spokane Valley
- Spokane River Base Flood Elevations at the Washington/Idaho border
- Saltese Flats in Spokane County

The Saltese Flats in Spokane County have previously been identified as an area with flooding risk. A Preliminary Map Revision (PMR) is expected for this region and work is currently underway for this project.

There have been 13 flood insurance claims made in the Upper Spokane Watershed during the communities' participation in the NFIP and none of the claims have been repetitive losses. There

have been many Letters of Map Change (LOMC) issued across the watershed with clusters near the following locations:

- Chester Creek
- Spokane River (near the Town of Millwood)
- Newman Lake in Spokane County and the Spokane River
- Hayden Lake
- Twin Lakes
- Rathdrum Creek in Kootenai County

Higher quality topography, such as LiDAR, is limited to Spokane County including the Cities of Spokane, Liberty Lake, State Line, Spokane Valley and the Town of Millwood. LiDAR for this area was collected in 2007 and 2008 and has more recently been collected for the City of Spokane in 2010. Floodplain redelineation using more accurate topography will reduce the number of LOMRs required when a region is remapped.

The City of Coeur d'Alene identified a levee along Lake Coeur d'Alene. The City has started conversations with FEMA over what data would be needed to certify this levee. Two other levees were identified by community staff during the interviews. One levee is associated with the Newman Lake Flood Control District and the other with the Saltese Flats.

Kootenai County identified the spillway to Hayden Lake as a concern. The spillway is part of a mitigation project that is funded with a mitigation grant.

The City of Post Falls and Kootenai County identified a seawall protecting Harbor Island that may protect the island more than the effective floodplain currently shows. It is unlikely that this seawall could be certified as a levee based on the structural elements needed for certification. This specific concern is likely not actionable.

Additional Hazard Events

According to the Spokane County Multi-Jurisdiction All Hazard Mitigation Plan, older hazard events not discussed in community meetings include the 1996 Ice Storm, the 1996 Bowie Lake Fire, the 2001 drought season, and the 2001 3.5+ earthquake all made national news headlines.

iii. Mitigation Projects and Areas of Concern

Mitigation Projects

There are several potential, desired, and in progress mitigation projects that were identified by the communities. These include the following:

- City of Coeur d’Alene – several wildfire fuel mitigation projects
- City of Hayden – USACE flood protection mitigation project
- Spokane County – Community Wildfire Protection Plan (CWPP) group and the Washington Department of Natural Resources (DNR) are in collaboration to acquire funding for wildfire mitigation projects

Areas of Concern

As determined through correspondence with local officials, the areas of concern are listed below by community. The concerns are labeled with ID numbers corresponding to the specific concern’s location on the Final Discovery Map.

Table 3. Areas of Concern for Kootenai County, Idaho

Hazard	Issue	ID
Coeur d’Alene		
Environmentally Sensitive Area	The community is concerned with lake and river water quality.	N/A
Fire	Communications infrastructure enhancement measures are desired by the county.	N/A
Fire	Maintaining fire mitigation measures is of concern.	N/A
Flood	There is an area of ponding caused by a drainage issue.	1
Severe Storms	Long term power outages are experienced during severe storms.	N/A
Dalton Gardens		
Environmentally Sensitive Area	Tottens Pond located in the northeast corner of the city on private land and is an environmentally sensitive area.	N/A
Fire	Canfield Mountain is a wildfire risk. One resident lives on the mountain.	N/A
Hayden		
Environmentally Sensitive Area	Isolated wetlands exist along the northeast corner and southeast corner of the city limits.	N/A
Flood	Earthen dams are located along the lake at the city boundary.	N/A
Flood	There is a flood potential from ponding caused by drainage issues in this area.	2,3
Infrastructure	All sanitary sewers are pumped out of the City of Hayden. Sand bagging efforts around lift stations have been required for protection of these facilities from flooding.	5,6
Landslide	Hayden Canyon area in the northeast section of Hayden has significant slopes and is a concern for landslides.	4
Hayden Lake		
Environmentally Sensitive Area	Hayden Lake – Water Quality	N/A

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Table 3. Areas of Concern for Kootenai County, Idaho (Continued from previous page)

Kootenai County		
All Hazards	Assistance may be requested to update the multi-jurisdictional hazard mitigation plan.	N/A
Environmentally Sensitive Area	Isolated wetlands exist and are environmentally sensitive areas that need protection.	N/A
Fire	Communications infrastructure enhancement measures are desired by the county.	N/A
Fire	Wildfire evacuation routes are of concern within the county.	N/A
Flood	An update is requested here to add Base Flood Elevations.	14
Flood	Hazel's Creek 500-year floodplain revision is requested in this area.	N/A
Flood	Several LOMAs exist around Hayden Lake. A redelineation of the lake is needed if more detailed topography exists.	12
Flood	There is a nuisance flooding area in the City of Hauser in a farming region. This is an area of repeated flooding but no claims have been submitted since they are not part of the NFIP.	13
Landslide	There is a potential for landslide risk in this area.	11
Severe Storms	Formal plan for shelter operations is of interest to community leaders.	N/A
Severe Storms	Resources are exhausted (man power, financial, materials) during widespread disasters. There are no backups or relief plan currently in place.	N/A
Severe Storms	Snow volume management plan.	N/A
Severe Storms	Transportation needs assistance and communications enhancement during disasters is of interest to community leaders.	N/A
Post Falls		
All Hazards	Communications and outreach support during and after disasters are of interest by community officials.	N/A
Environmentally Sensitive Area	Corbin Park and Q'emiln Park	8,10
Fire	Moderate to high fire risks exist in open field areas and north of HWY 53 and south of Spokane River. Local officials are interested in outreach and education for home owners on fire prevention and defensible space.	N/A
Flood	Harbor Island Seawall protects the island from flooding.	15
Rathdrum		
All Hazards	Communications infrastructure enhancement is of interest by community officials for outreach.	N/A
Aquifer	The Willow Creek dike is critical for groundwater recharge.	N/A
Flood	The Bingham Street culvert size is inadequate according to local officials.	9
Flood	There is major development occurring in the southern portion of the city. This may be an area that should be mapped in more detail for flooding.	N/A
Severe Storms	High winds causing drifting snow are a concern to community leaders. Additional snow volume management planning may be of interest.	N/A

Table 4. Areas of Concern for Spokane County, Washington

Hazard	Issue	ID
Millwood		
All Hazards	The community is interested in having additional communication tools and templates.	N/A
Flood	A redelineosa of the floodplain to current topography is a suggested need from community leaders along the Spokane River. This area likely does not overtop the bank.	7
Spokane		
All Hazards	The community is interested in having additional communication tools and templates.	N/A
Environmentally Sensitive Area	Well head protection zone are currently being mapped.	N/A
Fire	The Ponderosa development has limited egress which could be a wildfire evacuation issue for local residents.	27
Fire	There are higher fire risks in the northeast portion of the city. There is existing and new development occurring here. This may be an area for additional outreach to home owners on fire prevention and defensible space.	N/A
Flood	A cluster of LOMRs exist just south of the river in the city. This could be an area to be considered for future mitigation efforts and/or remapping.	N/A
Flood	There are channel migration issues in this region according to local officials.	N/A
Spokane County		
Fire	Increased outreach tools are requested to help increase public awareness.	N/A
Fire	Wildfire evacuation routes are of concern within the county.	N/A
Flood	A new development area exists, is not included in the previous restudy, and a LOMR has not been submitted.	18
Flood	Bell Chair Drainage	16
Flood	Channel migration issues are a concern in this area according to local officials.	N/A
Flood	Glenrose Creek is a new development and a restudy in this area may be needed.	20
Flood	Liberty Lake may need a FIS update. There is a stillwater elevation and datum conversion issue.	19
Flood	Recent flooding has occurred outside the Special Flood Hazard Area.	22
Flood	The Saltese Flats restudy is currently underway.	23
Flood	The Washington/Idaho border has a BFE mismatch within the effective floodplain models.	17
Flood	There is a possible culvert that is undersized. There is an overflow at this driveway.	21
Spokane Valley		
Fire	Additional outreach tools are of interest to the community leaders. There are perceived higher levels of fire paranoia from residents.	N/A
Fire	Wildfire evacuation routes are of concern.	N/A
Flood	Glenrose Creek - This area is under development pressure and there is incorrect Zone A mapping. A detailed study is requested.	25
Flood	The Forker Draw Alluvial Fan is currently being restudied by the City.	24
Flood	The Ponderosa development has limited egress which could be a wildfire evacuation issue for local residents.	27
Flood	There is golf course trenching and culvert paving that is causing flow issues. This is an NFIP compliance issue.	26

iv. **Compliance**

Data collected from the Community Information System (CIS) indicated that none of the communities in the Upper Spokane 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 the NFIP.

v. **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 natural hazard risk communication program.

The local officials were all interested in learning more about how to provide natural hazard risk information to residents. Specifically, community representatives indicated the need for a 'local champion' for new flood studies to keep the public informed and to allow public input throughout the process.

Varying forms of communication strategies are used across the watershed from primary communication tools such as door to door outreach (Rathdrum) and local media to more elaborate tools such as a reverse 911 system (Kootenai County, Coeur d'Alene, Millwood, Spokane, Spokane Valley, Hayden, Post Falls, Rathdrum), social media (Coeur d'Alene), Smartphone alerts (Hayden) and an electronic reader board (Millwood).

Many of the communities within the Upper Spokane Watershed make use of their community websites to provide information and outreach. Additional outreach groups include the Spokane Aquifer Joint Board dedicated to protecting the public water supply through coordinating efforts, sponsoring studies and investigations including the Wellhead Protection Program [www.spokaneaquifer.org].

Additional community outreach sites include county Community Indicators for both Spokane and Kootenai. The goals of these sites are similar and exist to give residents insight into what counties are doing to raise living standards and the quality of life in areas which include several factors such as the environment.

IV. **Close**

Local officials in the communities were very interested in the Risk MAP Discovery process and are open to learning more about how they can begin to develop resilience to all hazard events. Natural hazards cannot be avoided fully. Through Discovery and the Risk MAP process, communities can begin to develop resilience by increasing the desire to promote action to reduce the impacts of hazards and facilitate recovery. They identified several areas for FIRM updates and areas in which they could use additional FEMA support. The local officials in Spokane County and Kootenai County would benefit from the implementation of future Risk MAP projects such as hazard mitigation planning technical assistance and enhanced public outreach materials.

V. Appendix – Discovery Files

The Discovery Report appendices are stored digitally under their respective folders on the flash drive that accompanies the Discovery Report.

Appendix A – Project Team Contact Information

Appendix B – Stakeholder Contact Information and Meeting Invitations

- Community Stakeholder Contact Information
- Meeting Invitations and Notification

Appendix C – Discovery Interviews

- Community Factsheets
- Community Interview Notes
- Community Interview Reference Maps
- Locally-Provided Documents
- Presentation

Appendix D – Discovery Meetings

- Discovery Meeting Notes

Appendix E – Discovery Report

- Discovery Geodatabase
- Final Discovery Map
- Project Area Map

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