



Elk City Landslide into the Clearwater River – Idaho Department of Transportation

# Discovery Report

FEMA Region X

Clearwater, Idaho, Latah, Lewis, and Nez Perce Counties and the Nez Perce Tribe, Idaho



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Prepared by

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# Executive Summary

## Clearwater Project Area: Clearwater, Idaho, Latah, Lewis, and Nez Perce Counties including the Nez Perce Tribal Lands

This report discusses risks and needs identified during the Clearwater Discovery process. A Discovery Report has two goals: to inform communities of their risks related to natural hazards, and to enable communities to take actions to reduce their risk.

State and local officials can use the data provided here to make their communities more resilient by updating a variety of local plans, communicating risk, informing the modification of development standards, identifying mitigation projects, and ultimately, taking action to reduce risk. The Federal Emergency Management Agency (FEMA) will hold several meetings with the community to help them through this process.

By first gaining a better understanding of existing local risk and mitigation actions during the Discovery phase, FEMA intends to work with communities to identify new mitigation actions and strengthen existing actions throughout the watershed. As a result of the Discovery process coordination, FEMA may select areas in the Clearwater project area for advanced study, other products, or mitigation activities.

FEMA's Risk Mapping, Assessment, and Planning (Risk MAP) projects begin with Discovery. The Clearwater Discovery Report provides users with a comprehensive understanding of historical flood risk, other natural hazards, and current mitigation activities within the watershed. The project area spans all of Clearwater, Latah, Idaho, Lewis, and Nez Perce Counties in Idaho, and the tribal lands of the Nez Perce Tribe. All incorporated jurisdictions, the five counties, and the Nez Perce Tribe were invited to participate in the Discovery effort.

The Discovery process for the Clearwater project area involved working with participating communities to collect extensive data and initiate outreach efforts with local stakeholders. All communities in the project area had the opportunity to participate in the Discovery process. The data collected during these initial efforts were reviewed by the communities and other stakeholders during telephone interviews with the Risk MAP team (FEMA staff, consultants, and State representatives). These discussions with communities and other stakeholders included conversations about the local economy, floodplain mapping needs, desired mitigation projects, and the identification of areas vulnerable to other hazards.

FEMA presented the results of the data collection and interviews to a larger stakeholder group at the Discovery Meetings that took place January 26 through 28, 2016, and held discussions on key questions regarding current and future community resilience. The participants also discussed a variety of natural hazards. The conversations raised additional issues and situations to be considered under future Risk MAP projects. The Clearwater project area communities developed a list of desired potential mitigation projects related to multi-hazard risk, outreach, and training needs.

The overall goal of Risk MAP is to deliver quality data that increase public awareness and lead to action that reduces risk to life and property. The Discovery process is the first of many collaborative steps toward this goal. FEMA encourages stakeholders to remain involved and will continue to communicate with the Clearwater project area communities to identify potential partnership opportunities for achieving resilience through mitigation action.

# I. Discovery and Risk MAP

The FEMA Risk MAP program helps make communities stronger by identifying actions they can take now to reduce their risk to natural hazards. Through Risk MAP, FEMA provides information to enhance local plans to reduce risk, improve outreach on actions communities can take to address that risk, and increase local resilience to hazards.

The Risk MAP program identifies a community’s risk by collaborating with community officials and local stakeholders, and asking about their existing capabilities to manage those risks. The program is intended to fill gaps that communities may have in managing the variety of hazards to which they are exposed. This is done by supplementing or enhancing hazard data availability, providing quantifiable assessments to identify vulnerable populations and essential facilities at risk, and by strengthening hazard mitigation planning efforts. Risk MAP products inform the public and are a vital planning resource to better prioritize potential mitigation actions, assist with future funding, and allow a community to better prepare for future events. This preparation lessens the hardships experienced when disasters occur, and enables a quicker recovery.

Figure 1: Risk MAP



Discovery is the first stage of the Risk MAP program. During Discovery, FEMA:

- gathers information about local hazards and hazard risks;
- reviews mitigation plans to understand local mitigation capabilities, hazard risk assessments, and current or future mitigation activities;
- supports communities within the watershed to develop a vision for the watershed’s future;
- collects information from communities about their hazard history, development plans, daily operations, and hazard management activities; and
- uses the information gathered to determine which areas of the watershed require mapping, risk assessment, or mitigation planning assistance through a Risk MAP project.

## II. Project Area Description

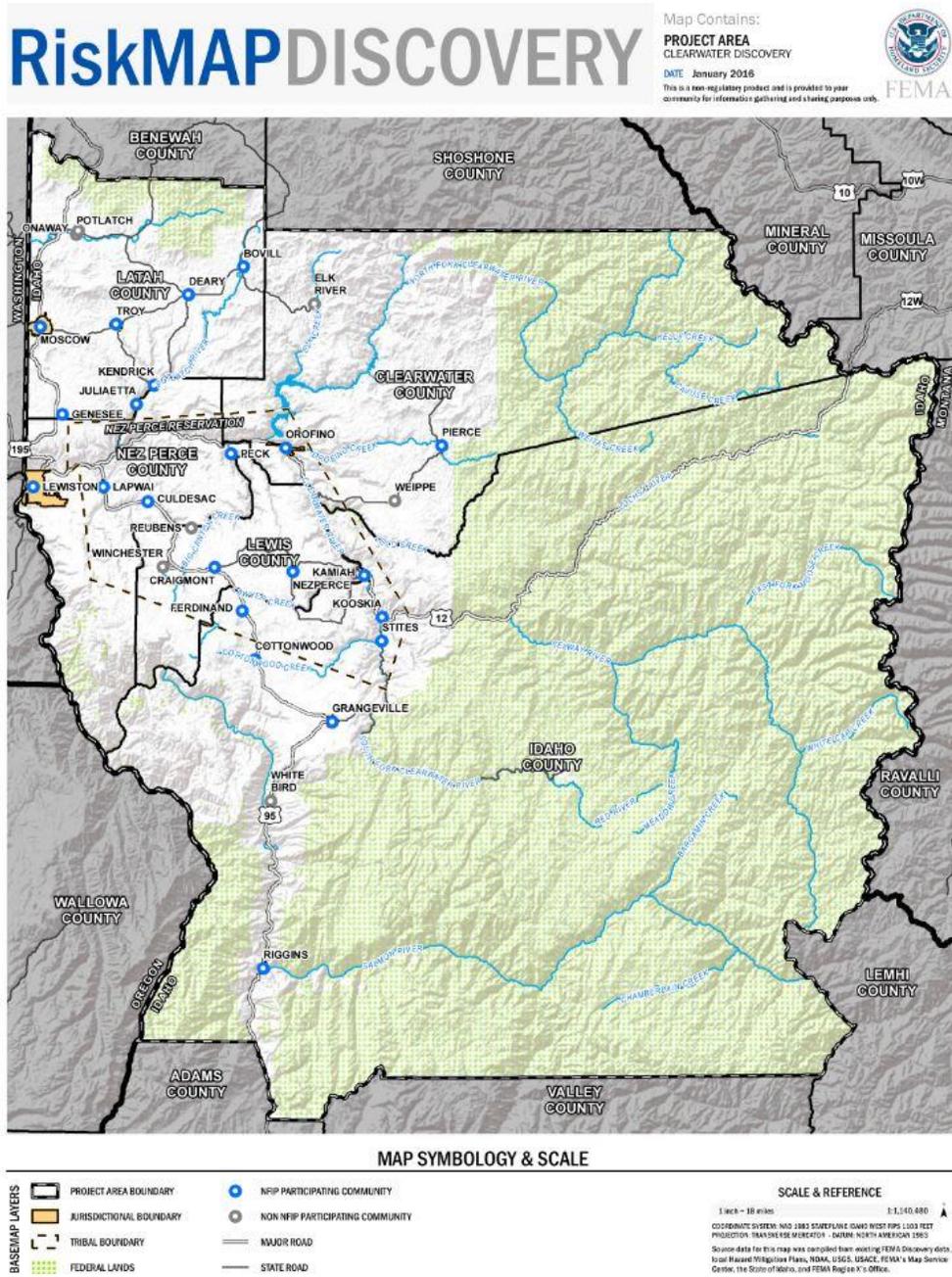
The Clearwater Watershed spans portions of Clearwater, Idaho; Latah, Lewis, and Nez Perce Counties; and the Nez Perce Tribe. FEMA extended the project area to include the entirety of the five intersecting counties, covering over 13,000 square miles of land (see Map 1 below). The project area is larger than the land areas of Connecticut, Puerto Rico, Delaware, and Rhode Island combined. The defining river is the Snake River, which meanders along the project area's western border, separating Idaho from Washington to the north and Oregon to the south. To the north, the Clearwater River, which originates at the confluence of the Lochsa and Selway Rivers, extends nearly 75 miles to its confluence with the Snake River in Lewiston. Further south, in Idaho County, the 425-mile-long Salmon River extends across mountainous terrain navigating west, then north into the confluence into the Snake River.

The landscape of the project area varies from east to west. Closer to the State borders of Washington and Oregon, the landscape is dry, hilly, and scattered with canyons. As one travels east, the landscape becomes more mountainous and forested. Large portions of land are covered by National Forests and Wilderness Areas. These include the Saint Joe National Forest to the north, the Clearwater National Forest to the northwest, the Selway-Bitterroot and Frank Church – River of No Return Wildernesses in the southeast, the Nez Perce and Poyette National Forests in the south-central region, and the Hells Canyon Wilderness in the southwest portion of the project area. The Nez Perce Reservation also covers a large area that includes portions of Clearwater, Idaho, Lewis, and Nez Perce Counties. Another feature of the project area is the Dworshak Dam, the United States' third tallest dam after the Oroville Dam in California and the Hoover Dam in Arizona and Nevada. The Dworshak Dam is used for flood control and hydroelectricity generation. Behind the dam is the Dworshak Reservoir, the largest water body within the project area.

No interstate highways traverse the region, but two main U.S. highways connect the counties. The major north-south route, US Highway 95, connects Moscow and Lewiston and continues south through Idaho County. US Highway 12 runs east-west, connecting Lewiston with Orofino, Kamiah, and Kooskia. US Highway 12 crosses the Clearwater River at multiple points and continues through the Clearwater National Forest into Montana. Other vital roadways include State Routes 3, 8, 11, 13, and 14, which network between the two U.S. highways or connect to remote communities.

Within the project area, there are 29 incorporated communities, five counties, and one tribe, resulting in 35 governing bodies. National Flood Insurance Program (NFIP) participants include Clearwater, Idaho, Latah, Lewis, and Nez Perce Counties, and 22 of the 29 incorporated communities. The communities of Elk River, Onaway, Potlatch, Reubens, Winchester, and the Nez Perce Tribe do not participate in the NFIP. The Cities of Weippe and White Bird are currently suspended from the NFIP as of December 1979 and July 1988, respectively.

Map 1: Clearwater Project Area Map



(See full size maps in Appendix E)

### III. Project Description and Methodology

FEMA Region X initiated the Discovery effort for the Clearwater Watershed in November 2015. Risk MAP Discovery is a process of data collection, mapmaking, and cooperative information exchange with community stakeholders to understand a watershed area, the risk to natural hazards, floodplain mapping needs, and other technical assistance that could be funded as part of this project.

Discovery is a rich collaboration between FEMA, consultants, and elected and appointed leaders at the State and local levels of government, leading to a thorough understanding of the natural and manmade hazards that communities face. This understanding leads to long-term strategies for mitigating the risk from these hazards.

*Table 1: Data Sources for Region X Discovery*

Clearwater and Latah County, City of Lewiston GIS Departments	Idaho Bureau of Homeland Security	National Weather Service
ESRI	Idaho Department of Lands	U.S. Army Corps of Engineers National Levee Database
FEMA Community Information System (CIS)	Idaho Department of Water Resources	U.S. Census Bureau
FEMA Coordinated Needs Management System (CNMS)	Idaho Geologic Survey	U.S. Department of Agriculture
FEMA Map Service Center	Idaho LiDAR Consortium	U.S. Geological Survey
FEMA Publications	INSIDE Idaho	
FEMA Regional Office	National Atlas of the United States	
	National Oceanic and Atmospheric Administration (NOAA)	

*(See project-specific data sources in Appendix D)*

#### i. Discovery Phases

The Discovery process includes four phases. The first is a comprehensive collection of tabular data (spreadsheets, databases) and spatial data (maps, GIS layers) from State and Federal sources for all communities in the Clearwater project area (see Table 1). Local data (Table 2) are then paired with State and Federal data through interviews with each community. Using this information, the Risk MAP team develops Community Fact Sheets and Discovery Maps (included in the appendices).

*Table 2: Local Data Requests for Region X Communities*

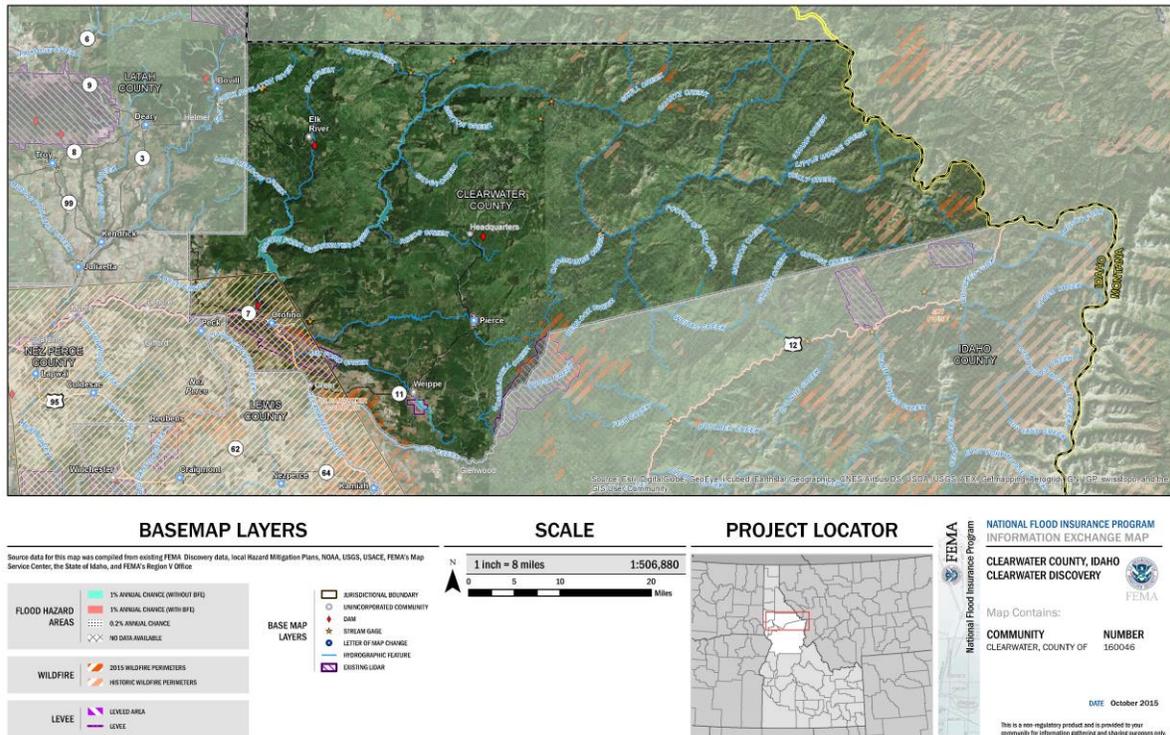
Areas of nuisance flooding	Stormwater management activities	Boundary, hydrography, and transportation layers
Historical local flooding mitigation activities and grant projects, ongoing and planned	Community ordinances	Flood study and risk assessment needs
Comprehensive plans	Infrastructure information, especially for levees and new bridges, dams, culverts, and road improvements	Regional watershed plans
Local development and floodplain management plans	Building footprints or parcel data	Details of the current hazard risk communication process
	Elevation data	

Figure 2: Fact Sheet for Clearwater County, Idaho (tabular data in Appendix C)

 <b>FEMA</b>	
<b>COMMUNITY FACT SHEET</b>	
CID: 160046	
County of Clearwater   Clearwater County, ID   Region X	
NFIP Participation Status: Participating	
<b>Effective Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM)</b>	
<i>(FEMA Community Information System, July 2015)</i>	
Effective Date: FIS dated 11/15/1979	Map Adoption Date: 05/15/1980
Highest Level of Study: D	
<b>Floodplain Management Program</b>	
<i>(FEMA Community Information System, July 2015)</i>	
Last FEMA Community Assistance Visit/Contact: 08/16/2004	
<b>Community Rating System (CRS) Status: Data Unavailable</b>	
<i>(FEMA Community Information System, July 2015)</i>	
<b>Population</b>	
<i>(FEMA Community Information System, July 2015)</i>	
Population: 8,176	
<b>Presidentially-Declared Disasters: Clearwater County</b>	
<i>(FEMA Declarations, data.gov, June 2015)</i>	
Flood-Related Countywide Total: 5	
All Hazards: Flood, Fire, Severe Storm(s), Volcano	
<b>Insurance</b>	
<i>(FEMA Community Information System, July 2015)</i>	
Total Premiums: \$ 8,481	Total Policies in Force: 16
Coverage (in thousands): \$ 1,383 k	Total Claims: 4
<b>Repetitive and Flood Losses</b>	
<i>(FEMA Community Information System, July 2015)</i>	
Total Claims: 3	Repetitive Loss Structures: 0
Total Flood Loss: \$ 4,112	Total Rep Losses: \$ 0
<b>Public Assistance: Clearwater County</b>	
<i>(Public Assistance Funded Projects, data.gov, June 2015)</i>	
Damage Categories: Debris Removal, Protective Measures, Roads & Bridges	
Project Amount: \$ 114,632	Total Obligated: \$ 85,974
	
160046 - County of Clearwater   Clearwater County, ID   Region X	

Community officials receive copies of these materials prior to Phase 2, when they are asked to review and comment on this initial analysis during an in-person or telephone interview with the Risk MAP team. Through their local knowledge and experience, community officials add tremendously to the overall understanding of the project area and its history, economy, hazards, and opportunities. Specific “Areas of Concern” are identified during Phase 2. These can include floodplain mapping needs, desired flood mitigation projects, and the identification of areas in the community that are vulnerable to particular hazards.

Map 2: Community Interview Reference Map for Clearwater County



Using information from the Information Exchange in Phase 2 and the community’s hazard mitigation plan, the Risk MAP team developed Community Summary Sheets for each community in the watershed. These documents, shown below, were used during the Discovery Meeting in Phase 3 to facilitate conversation and confirm each community’s hazards of interest.

Figure 3: Community Summary Sheet for Clearwater County



**COMMUNITY:** Clearwater County

**COUNTY:** Clearwater

**COMMUNITY CONTACT**

Don Gardner, Emergency Manager (attended Pre-Discovery webinar)  
 Bobbi Kaufman, Floodplain Administrator (attended Pre-Discovery webinar)  
 Angela Vanderpas, GIS (attended Pre-Discovery webinar)  
 Kim Norris, GIS (attended Pre-Discovery webinar)  
 Rob Simon, Road and Bridge Supervisor (attended Pre-Discovery webinar)  
 Don Ebert, Commissioner, Chair (attended Pre-Discovery webinar)

**COMMUNITY OVERVIEW**

Clearwater County has a diverse landscape that includes steep rugged mountains, large canyons, farmland, woodland, and the Clearwater River and its tributaries. The major population centers in the county are Elk River, Orofino, Pierce, and Weippe. The western part of Clearwater County includes the dune - like topography of the Palouse hills. Elevation ranges from about 1,000 feet above sea level to about 8,000 feet. Dworshak Dam creates a reservoir on the North Fork of the Clearwater River. Clearwater County's landscape makes flooding, landslide, and wildland fires the highest risk hazards.

**PRE-DISCOVERY INTERVIEW SUMMARY, 11/06/2015**

- The county does not have LiDAR data.
- In the summer of 2015, Clearwater County experienced two fires: the Clearwater Complex Lawyer Branch Fire and the Municipal Fire, which resulted in Fire Management Assistance Grants (FMAG) and potential Hazard Mitigation Grant Program (HMGP) funding of over \$600,000 coordinated through Idaho Bureau of Homeland Security.
- The county conducts Firewise activities, and the Burned Area Emergency Response (BAER) team has provided a written response to the wildfires.
- The county has a high incidence and risk of landslide at and around residential developments and roadways.
- Riverine flooding from the Clearwater River and Orofino Creek and ice jams floods on the Clearwater River have historically been the most costly to the city.

**HAZARD MITIGATION PLAN (HMP) REVIEW**

The effective Clearwater County HMP is dated January 2011 and will expire on July 13, 2016. The plan is currently undergoing an update that is expected to take effect in 2016.

**HAZARDS PROFILED**

The 2011 Clearwater County HMP identifies and profiles the following nine hazards. As expressed during the Information Exchange Webinar, Flood, Landslide, and Wildland Fire are considered primary hazards of concern and are shown in blue with further discussion below.

- |                          |                                  |                              |
|--------------------------|----------------------------------|------------------------------|
| 1. <b>Flood</b>          | 4. <b>Wildland Fire</b>          | 7. <b>Avalanche</b>          |
| 2. <b>Landslide</b>      | 5. <b>Extended Power Outages</b> | 8. <b>Geological Hazards</b> |
| 3. <b>Severe Weather</b> | 6. <b>Hazardous Materials</b>    | 9. <b>Dam Failure</b>        |



# Clearwater County

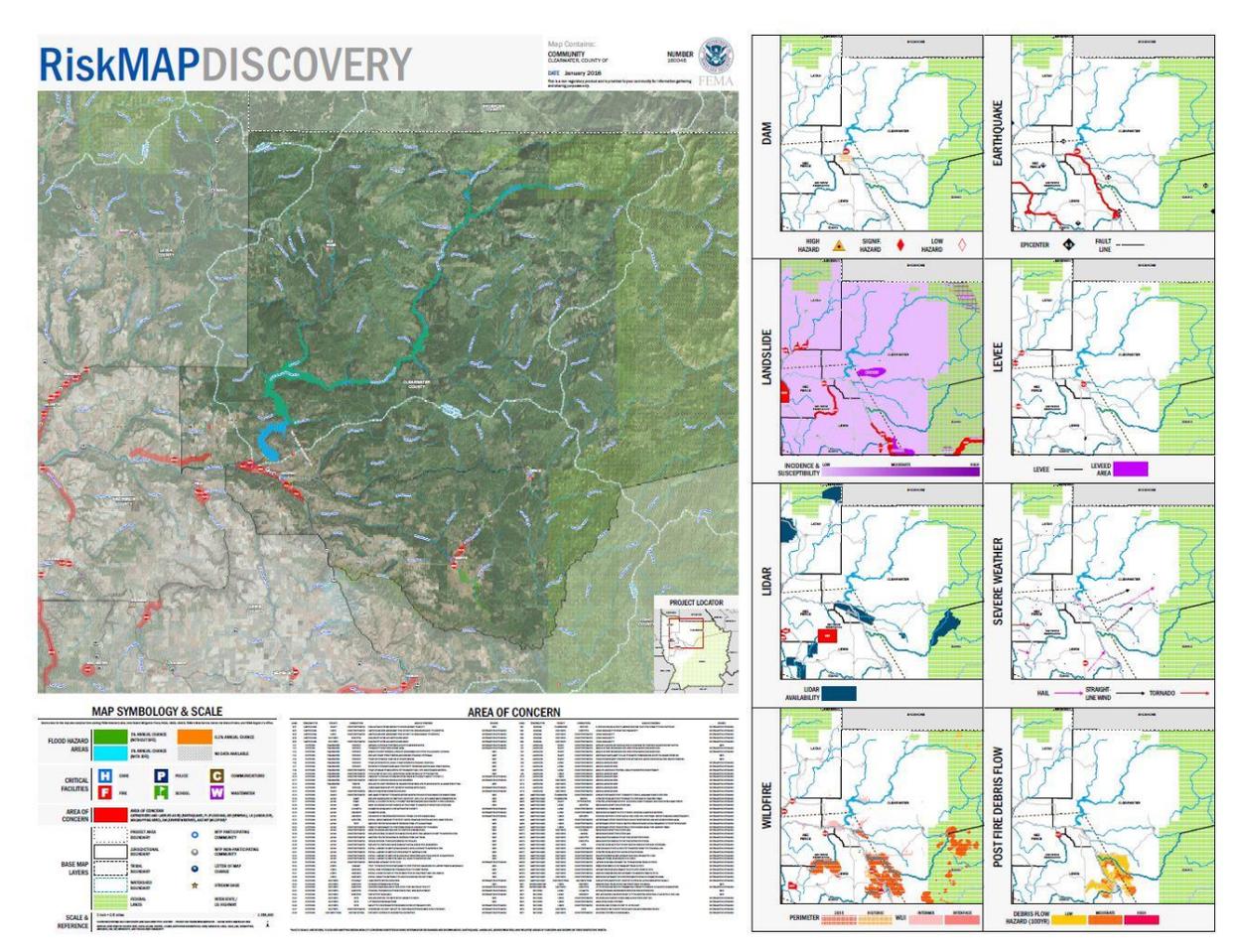
## Priority Hazard Profile Summaries (HMP 2011)

<p><b>Flood</b></p>	<ul style="list-style-type: none"> <li>• Significant flood events occurred in Clearwater County in 1933, 1934, 1948, 1957, 1964, 1972, and most recently in 1996 and 1997.</li> <li>• Clearwater County is prone to riverine flooding, flash flooding, and ice/debris flows and jams.</li> <li>• Riverine flooding is prevalent along the Clearwater River and all its tributaries. Rain-on-snow events can contribute to riverine flooding throughout the county.</li> <li>• Flash flooding typically results from summer thunderstorms with little warning and has short term impacts on blocking roads and overwhelming drainage basins.</li> <li>• Debris flows from agricultural fields, erosion, and natural obstructions have caused jams that exacerbate flooding.</li> <li>• There are approximately 357 parcels and 168 improvements, with a total improvement exposure value of \$11.6 million, within the Special Flood Hazard Area (SFHA) in unincorporated areas of Clearwater County.</li> <li>• Most of the structures in the SFHA for the unincorporated areas of Clearwater County are located along the Clearwater River and Orofino Creek just outside the city limits of Orofino.</li> <li>• The Ahsahka community has the largest concentration of structures in the SFHA in Clearwater County, representing more than half the improvement exposure value at \$6 million.</li> <li>• Critical infrastructure located within the SFHA includes both the Idaho State and Dworshak Fish Hatcheries, a Clearwater Power substation, the Dent Bridge, the Ahsahka Bridge, the Clearwater - Paper Timber Protective Association office in Headquarters, U.S. Highway 12, and the Highway 12 Bridges at Orofino and Greer.</li> </ul>
<p><b>Landslide</b></p>	<ul style="list-style-type: none"> <li>• Small landslides and road slumps were common throughout the county due to saturated soils during the 1996 - 97 flood events.</li> <li>• There are currently 175 improvements, with a total estimated value of \$16.4 M, located in the Clearwater County Landslide Impact Zones. Areas at risk of landslide and alluvial fans include Fords Creek, Grangemont, Ahsahka, Greer, and Gilbert Grade.</li> </ul>
<p><b>Wildfire</b></p>	<ul style="list-style-type: none"> <li>• Homes built in forested areas without an adequate defensible space or fire resistant landscaping have the highest risk of loss.</li> <li>• Many homes are located on high-risk one-way in/one-way out roads and driveways that could become threatened by wildfire, increasing the likelihood of residents becoming trapped.</li> <li>• Clearwater County's growth, particularly in and around Orofino, is increasing the number and value of resources at risk, as more homes are built in the midst of fire prone fuels.</li> </ul>



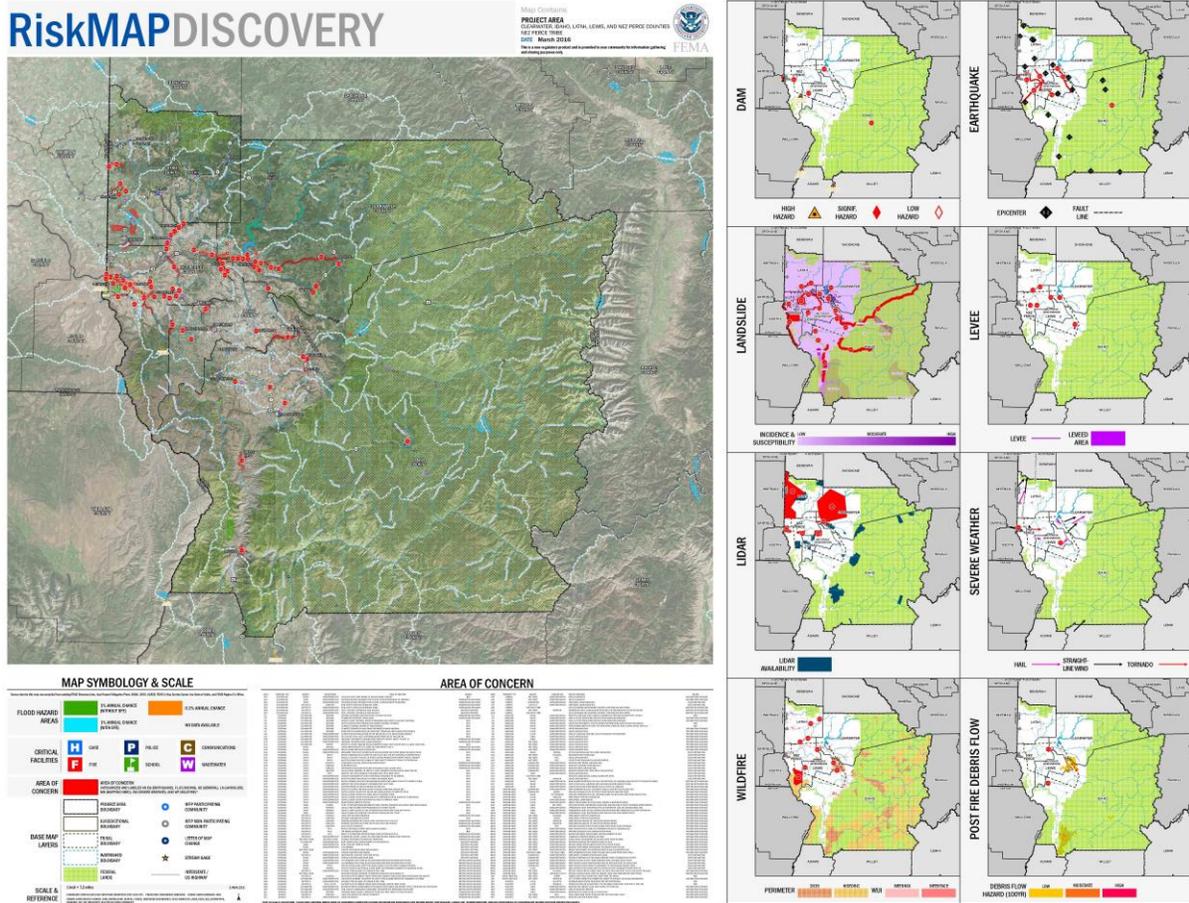
Phase 3 of the Discovery process is the Discovery Meeting, which is designed to facilitate discussion and build consensus about study and risk assessment needs, mitigation project needs, desired compliance support, and local flood risk awareness efforts. Attendees—including representatives from all project area communities and other stakeholders—cooperatively identify possible solutions for the “Areas of Concern” shown on the Discovery Meeting Map. These might include floodplain studies, flood mitigation projects, enforcement of various regulations, and training for community officials. New issues for further study might also be identified through this discussion.

Map 3: Discovery Meeting Map for Clearwater County



The fourth and final phase of the Discovery process integrates the ideas gathered from community interviews and Discovery Meetings with GIS mapping and data analysis to create a set of recommendations for further action. These recommendations could include specific risk-management projects, mitigation strategies for communities to consider, identification of funding sources, and suggested priorities. If a Risk MAP project is desired for this area, the Discovery process will develop project scope(s), subject to available funding, and project charters, indicating the roles and responsibilities of all affected stakeholders.

Map 4: Final Discovery Map of the Clearwater Discovery Project Area



## IV. Risk MAP Needs

Discovery Meeting participants thoroughly discussed the results of the data collection and interviews at the community events held January 26 through 28, 2016. The following sections include issues and situations that exist in the Clearwater project area that can be considered Risk MAP needs, to be addressed with Risk MAP projects. A list of the Discovery Meeting participants and background information on the issues discussed can be found in the interview notes, meeting notes, and other files included in Appendices A, B, C, and D.

### i. The Nez Perce Tribe

The Discovery project team conducted a telephone interview with officials from the Nez Perce Tribe on December 4, 2015, to discuss Risk MAP goals, the Discovery process, and potential risk mitigation projects. Tribal officials met with FEMA on January 26, 2016, for an in-person Discovery Meeting. The Tribe has several projects in the planning stages that could eventually be coordinated with a future Risk MAP project. The Tribe expressed interest in landslide risk assessments, floodplain mapping (especially in the Lawyer Creek area), and Light Detection and Ranging (LiDAR) collection. The Tribe is interested in updating the mitigation plan and applying for Fire Management Assistance Grants following the recent wildfires in the area.

Further coordination and preliminary requirements are necessary for the Nez Perce Tribe to proceed with any risk assessment or mitigation effort. FEMA will continue to assist tribal leadership with this effort.

### ii. Resilience

During the Clearwater Watershed Discovery Meetings, community representatives were asked to introduce themselves and answer one of two questions:

1. How do you contribute to the resilience of your community?
2. How would you like to see resilience increased in your community?

Their responses are presented in Table 3:

*Table 3: Community Representatives' Contribution to Resilience*

JURISDICTION	REPRESENTATIVE	WAYS CURRENTLY CONTRIBUTING TO RESILIENCE	WAYS RESILIENCE CAN BE INCREASED
Lewis County Emergency Management	Bob West	The county has established an active mitigation plan, successful volunteer organizations, and the WUNCCIL (Wildfire Unmet Need Clearwater Committee Idaho Lewis).	Exercise mitigation plan annually.

JURISDICTION	REPRESENTATIVE	WAYS CURRENTLY CONTRIBUTING TO RESILIENCE	WAYS RESILIENCE CAN BE INCREASED
Clearwater County GIS / City of Lewiston GIS	Angela VanderPas	The county has robust IT infrastructure; 911 set-up is redundant and resilient for power, software, and hardware.	Standardize GIS attributes across the region. Create a list of potential mitigation solutions for region with identified partnerships. Improve response capabilities for locals in the area. Develop and provide outreach for flood insurance to allow citizens to make an informed choice.
City of Kamiah, Mayor	Dale Schneider	The city has an online presence for maps and has ability to create incident maps quickly.	
Clearwater County Emergency Management	Don Gardner	The county has active amateur (ham) radio; ham radio club in Kamiah.	Better National Weather Service repeaters and gauges from U.S. Geological Survey (USGS). Would like to be part of the conversation about LiDAR products and outcomes. Need more streamlined online paperwork from the Federal government.
Idaho Department of Lands	Zoanne Anderson	Interagency fire protection, with close Federal, Tribal, and local partner collaboration including the Bureau of Land Management; the Forest Service; Nez Perce Tribe; and Lewis, Nez Perce, Clearwater, and Idaho Counties.	Need better communication systems and better cell phone service. Need identification of evacuation routes.
Idaho County Emergency Management	Jerry Zumalt		Better coordination between State, Federal, and local government for awareness and utilization of available resources.
City of Peck	Nancy Greene		Improve coordination and communication with counties. Address expectations from citizens about how the city will help during an event.
Latah County		Has a Memorandum of Understanding (MOU) for first responders, which advances coordination with other counties.	Need MOUs for subject matter experts outside of first responders. Obtain landslide hazard maps to improve the issuing of building permits. Provide education to landowners before building.
Nez Perce County		The county provides initial assessments on private lands after a flood/fire event and	Access to resources in other counties, such as a Burned Area Emergency Response

JURISDICTION	REPRESENTATIVE	WAYS CURRENTLY CONTRIBUTING TO RESILIENCE	WAYS RESILIENCE CAN BE INCREASED
		disseminates information to appropriate entities.	(BAER) team. Desires mutual agreements. Interested in various formats of GIS information.
Nez Perce Tribe	Laurie Ames	Designated an emergency planner to increase capacity for resilience.	Create tribal mitigation plan, improve coordination and communication with counties, increase communication of hazard risks to community, and identify land use designations.
Nez Perce Tribe	John Wheaton	Pre-planning and outreach; expanded Ethernet capabilities, broadband, and communication services.	
Nez Perce Tribe	Kevin Brackney	Using Hazus-MH to identify flood hazards in unmapped areas.	Reviewing encroachments in the floodplain and limiting development in landslide hazard areas.
Nez Perce Tribe	Kim Cannon		Identify land use designations.
Nez Perce Tribe	Gabriel Bohnee		Improving capability for tying in regular maintenance with hazard mitigation.
Nez Perce Tribe	Aaron Miles	Hired an emergency planner and recently completed a Threat and Hazard Identification and Risk Assessment.	Better cross-jurisdictional communication with neighboring communities and counties.
Nez Perce Tribe	Julie Simpson	Works in coordination with Social Services to identify vulnerable populations during times of poor air quality.	Identify clean air facilities where people can seek refuge during fires and other times of poor air quality.

Figure 4: Lewis County and the City of Kamiah work with Brett Holt, FEMA Mitigation Planner.



Figure 5: Clearwater County work with Kelly Stone, FEMA Risk Analyst.



Figure 6: Ryan McDaniel, Idaho Risk MAP Coordinator, and Kelly Stone, FEMA Risk Analyst, give a presentation in Lewiston.



### iii. Floodplain Studies and Risk Assessment

The communities listed in Table 4—five counties, 29 local jurisdictions, and one tribe—were included as part of the Discovery process for the Clearwater Discovery project. Table 4 lists the most recent Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM) updates for each community, notes whether the study included detailed floodplain analyses, and provides the local FIRM or Flood Hazard Boundary Map (FHBM) status.

Table 4: Clearwater Watershed Most Recent FIRM and FIS

COUNTY / TRIBE	COMMUNITY	LATEST FIRM	LATEST FIS	BASE FLOOD ELEVATIONS	FIRM/FHBM STATUS
Clearwater	Clearwater, County of	5/15/1980	11/15/1979	Y	Original/Superseded by FIRM
Clearwater	Elk River, City of	N/A	N/A	N/A	Not Participating/Never Mapped
Clearwater	Orofino, City of	12/2/1980	6/2/1980	Y	Original/Superseded by FIRM
Clearwater	Pierce, City of	8/29/1978	N/A	N	Participating/All Zone A, C, and X - No Elevation Determined
Clearwater	Weippe, City of	12/4/1979	6/4/1979	Y	Original/Superseded by FIRM
Idaho	Cottonwood, City of	5/1/1985	N/A	N	Participating/All Zone A, C, and X - No Elevation Determined
Idaho	Ferdinand, City of	6/5/1985	N/A	N	Participating/All Zone A, C, and X - No Elevation Determined
Idaho	Grangeville, City of	6/1/1984	12/1/1983	Y	Original/Superseded by FIRM
Idaho	Idaho, County of	8/23/2001	8/23/2001	Y	Original/Superseded by FIRM
Idaho	Kooskia, City of	3/18/1985	3/18/1985	Y	Original/Superseded by FIRM

COUNTY / TRIBE	COMMUNITY	LATEST FIRM	LATEST FIS	BASE FLOOD ELEVATIONS	FIRM/FHBM STATUS
Idaho	Riggins, City of	12/19/1997	N/A	N	Participating/Original/Never Mapped
Idaho	Stites, City of	4/15/1988	4/15/1988	Y	Original/Superseded by FIRM
Idaho	White Bird, City of	9/18/1986	N/A	N	Suspended/All Zone A, C, and X - No Elevation Determined
Latah	Bovill, City of	12/18/1979	12/18/1979	Y	Original/Superseded by FIRM
Latah	Deary, City of	6/5/1985	N/A	N	Participating/All Zone A, C, and X - No Elevation Determined
Latah	Genesee, City of	12/18/1979	6/18/1979	Y	Original/Superseded by FIRM
Latah	Juliaetta, City of	3/4/1980	9/4/1979	Y	Original/Superseded by FIRM
Latah	Kendrick, City of	2/1/1980	8/1/1979	Y	Original/Superseded by FIRM
Latah	Latah, County of	4/15/2002	4/15/2002	Y	Revised/Superseded by FIRM
Latah	Moscow, City of	4/15/2002	4/15/2002	Y	Revised/Superseded by FIRM
Latah	Onaway, City of	N/A	N/A	N/A	Not Participating/No Published FIRM/FHBM Rescinded
Latah	Potlatch, City of	N/A	N/A	N/A	Not Participating/No Published FIRM/FHBM Rescinded
Latah	Troy, City of	12/18/1979	6/18/1979	Y	Original/Superseded by FIRM
Lewis	Craigmont, City of	2/5/1986	N/A	N	Participating/All Zone A, C, and X - Superseded by FIRM
Lewis	Kamahia, City of	8/19/1985	8/19/1985	Y	Original/Superseded by FIRM
Lewis	Lewis, County of	N/A	N/A	N/A	Participating/All Zone A, C, and X - No Published FIRM/Never Mapped
Lewis	Nezperce, City of	8/3/1989	8/3/1989	Y	Original/Never Mapped
Lewis	Reubens, City of	N/A	N/A	N/A	Original/Superseded by FIRM
Lewis	Winchester, City of	N/A	N/A	N/A	Not Participating/Never Mapped
Nez Perce	Culdesac, City of	1/20/1982	7/20/1981	Y	Original/Superseded by FIRM
Nez Perce	Lapwai, City of	8/1/1983	2/1/1983	Y	Original/Superseded by FIRM
Nez Perce	Lewiston, City of	1/20/1982	7/20/1981	Y	Original/Superseded by FIRM
Nez Perce	Nez Perce, County of	4/4/1983	2/1/1983	Y	Original/Superseded by FIRM
Nez Perce	Peck, City of	1/20/1982	1/20/1982	Y	Original/Superseded by FIRM
Nez Perce Tribe	---	9/27/1991	8/23/2001	Y	Original/Superseded by FIRM

FEMA’s vision for the Risk MAP program is to deliver quality data that increase public awareness and lead to mitigation actions that reduce risk to life and property. To accomplish this, high quality topographic data, including the leveraging of existing (or acquiring additional) LiDAR topographic data, are essential in any future Risk MAP project. Existing LiDAR data are available in select areas across the five-county study area. The Idaho LiDAR consortium identified LiDAR availability in areas along the Snake and Clearwater Rivers, portions of the Nez Perce Reservation, and areas in the vicinity of past wildfires and timber activity. During the Discovery process, additional LiDAR data were identified in the City of Lewiston and select portions of Nez Perce County, including Lapwai Creek, Rock Creek, and Big Canyon Creek. LiDAR production has been funded recently by the USGS 3D Elevation Program, as well as by Nez Perce County, Nez Perce Tribe, and FEMA.

Additional partners are being added to the project and the area of acquisition is currently under development. Depending on the available funding, FEMA ultimately hopes to capture LiDAR within the entire watershed and beyond.

Reviewing levees is a critical component of any new flood study. Certified levees that comply with NFIP regulations may provide protection from a 1-percent-annual-chance flood. During the Discovery process, it was noted that all five counties have at least one levee. Community levees were identified through a combination of the U.S. Army Corps of Engineers (USACE) National Levee Database, information obtained during the Community Interviews, as well as review of existing FIRMs and FIS reports. Maps of each National Levee Database levee in the project area are available in the Discovery Report Appendices. Table 5 identifies the levee or dike name, flood source, community, and levee data source. Additional levees or dikes that are not identified below may exist within the project area.

*Table 5: Project Area Levees*

COUNTY / TRIBE	COMMUNITY	LEVEE / DIKE	FLOOD SOURCE	SOURCE	INSPECTION RATING*	PL 84-99 REHABILITATION PROGRAM**
Clearwater	Orofino, City of	Orofino	Clearwater River	National Levee Database	Minimally Acceptable	Active
Clearwater	Unincorporated Area	Unnamed	Grasshopper Creek	Flood Insurance Rate Map (1600461030B)	---	---
Idaho	Kooskia, City of	Kooskia Middle Fork	Middle Fork Clearwater River	National Levee Database	Minimally Acceptable	Active
Idaho	Kooskia, City of	Kooskia South Fork	South Fork Clearwater River	National Levee Database	Minimally Acceptable	Active
Idaho	Stites, City of	Stites North	South Fork Clearwater River	National Levee Database	---	---
Idaho	Stites, City of	Stites South	South Fork Clearwater River	National Levee Database	Minimally Acceptable	Inactive
Idaho	White Bird, City of	White Bird (Left Bank)	White Bird Creek	National Levee Database	Unacceptable	Inactive
Idaho	White Bird, City of	White Bird (Right Bank)	White Bird Creek	National Levee Database	Unacceptable	Inactive
Latah	Juliaetta, City of	Unnamed (part of a flood mitigation project by baseball fields)	Potlatch River	Community Interview	---	---
Latah	Kendrick, City of	Bear Creek	Bear Creek	National Levee Database	Minimally Acceptable	Active
Latah	Kendrick, City of	Kendrick	Potlatch River	National Levee Database	Minimally Acceptable	Active
Latah	Kendrick, City of	Kendrick Economic Development Association Project	Potlatch River	National Levee Database	Minimally Acceptable	Active

COUNTY / TRIBE	COMMUNITY	LEVEE / DIKE	FLOOD SOURCE	SOURCE	INSPECTION RATING*	PL 84-99 REHABILITATION PROGRAM**
Latah	Kendrick, City of	Unnamed (opposing bank of Kendrick levees)	Potlatch River	Community Interview	---	---
Latah	Unincorporated Area	Potlatch Junction (Deep Creek)	Deep Creek	National Levee Database	Minimally Acceptable	Active
Lewis	Kamiah, City of	Unnamed (identified in Flood Insurance Study)	Lawyer Creek and Clearwater River	Flood Insurance Study	---	---
Lewis	Nezperce, City of	Nez Perce	Long Hollow Creek	National Levee Database	Unacceptable	Inactive
Lewis	Unincorporated Areas	Slickpoo (St. Joseph)	Mission Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Culdesac, City of	Culdesac	Lapwai Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Lapwai, City of	Unnamed (identified in Flood Insurance Study)	Lapwai Creek and Lapwai Creek Upper Overflow (near railroad embankment)	Flood Insurance Study	---	---
Nez Perce	Lewiston, City of	Lewiston Dike	Clearwater River and Snake River	Flood Insurance Rate Map	---	---
Nez Perce	Peck, City of	Peck #1 (Left Bank – Upper)	Big Canyon Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Peck, City of	Peck #2 (Left Bank – Lower)	Big Canyon Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Peck, City of	Peck #3 (Left Bank – Downstream)	Big Canyon Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Unincorporated Areas	Cottonwood Church	Cottonwood Creek	National Levee Database	Minimally Acceptable	Active
Nez Perce	Unincorporated Areas	Sweetwater	Lapwai Creek	Community Interview	---	---

\*Definitions for Levee System Inspection Ratings are available here:

<http://www.usace.army.mil/Missions/CivilWorks/LeveeSafetyProgram/LeveeInspections.aspx>

\*\*Under the authority of the Flood Control and Coastal Emergency Act (PL 84-99), an eligible flood protection system can be rehabilitated if damaged by a flood event.

The final Discovery Map should be referenced to view spatial data that may indicate study needs. Items of interest include the areas of concern identified by State and local officials, critical facilities, existing floodplains, Letters of Map Change (LOMCs), dam failures, erosion, landslides, new mapping, historic fires, and flooding.

Discovery action and follow-up items are not particularly subjugated to floodplain mapping needs, but to risk assessment as a whole. These risk assessment items, based on community stakeholder responses, are summarized in Table 6 (flood mapping needs) and Table 7 (additional hazard risk assessments).

Table 6: Clearwater Flood Mapping Needs

COUNTY / TRIBE	COMMUNITY	STUDY LENGTH (miles)	LOCATION DESCRIPTION	FLOOD STUDY TYPE
Clearwater	Unincorporated Areas	0.51 MI	New approximate study needed between the Dworshak Dam and Idaho 7. Currently Zone D; area may have flood risk.	Approximate (New)
Clearwater	Unincorporated Areas	26.89 MI	Revised approximate study along Orofino Creek; leverage USACE study.	Approximate (Updated)
Clearwater	Unincorporated Areas	2.89 MI	New detailed study from city boundary to upstream of Rhodes Creek.	Detailed (New)
Clearwater	Unincorporated Areas	4.14 MI	New detailed study from existing limit of detailed study to Cook Creek.	Detailed (New)
Clearwater	Unincorporated Areas	13.37 MI	Redelineate the Clearwater River with LiDAR.	Detailed (Redelineation)
Clearwater	Unincorporated Areas	6.46 MI	Revised detailed study along Orofino Creek; leverage USACE study.	Detailed (Updated)
Clearwater	Weippe, City of	2.52 MI	Updated detailed study to reflect flood risk of Jim Ford Creek.	Detailed (Updated)
Idaho	Cottonwood, City of	0.38 MI	Updated approximate study needed; water jumps the bank and floods Main Street.	Approximate (Updated)
Idaho	Kamiah, City of	2.14 MI	Updated detailed study to reflect flood risk of Lawyer Creek from confluence of the Clearwater River, upstream to the limit of existing detailed study.	Detailed (Updated)
Idaho	Unincorporated Areas	5.78 MI	Updated approximate study to reflect flood risk from limit of detailed study of Lawyer Creek to limit of approximate study 5.78 miles upstream.	Approximate (Updated)
Latah	Moscow, City of	4.50 MI	Redelineate effective detailed floodplain.	Detailed (Redelineation)
Latah	Unincorporated Areas	4.03 MI	New detailed study from limit of detailed study upstream to Ilders Rest Road.	Detailed (New)
Latah	Unincorporated Areas	2.45 MI	New bridge, Letter of Map Revision needed.	Detailed (Updated)
Latah	Unincorporated Areas	8.22 MI	Bridge replacement in 2017/18 will require a map revision.	Detailed (Updated)
Lewis	Nezperce, City of	1.78 MI	Detailed restudy floodplain along Long Hollow Creek. Recent drainage improvements.	Detailed (Updated)
Lewis	Unincorporated Areas	1.74 MI	Approximate study identifying the Special Flood Hazard Area (SFHA) of Winchester Lake and surrounding area.	Approximate (New)
Lewis	Unincorporated Areas	6.35 MI	Approximate study of Big Canyon Creek from wildfire perimeter to county boundary.	Approximate (New)
Lewis	Unincorporated Areas	12.43 MI	Approximate study identifying SFHA along Mission Creek.	Approximate (New)
Nez Perce	Culdesac, City of	2.22 MI	Identify flood risk of Lapwai Creek in a new detailed study; data available in this area.	Detailed (New)

COUNTY / TRIBE	COMMUNITY	STUDY LENGTH (miles)	LOCATION DESCRIPTION	FLOOD STUDY TYPE
Nez Perce	Culdesac, City of	2.24 MI	Redelineate the effective floodplain.	Detailed (Redelineation)
Nez Perce	Lapwai, City of	2.12 MI	Redelineate the effective floodplain.	Detailed (Redelineation)
Nez Perce	Lewiston, City of	0.97 MI	Redelineation needed to capture detention ponds.	Detailed (Redelineation)
Nez Perce	Lewiston, City of	0.43 MI	Redelineation needed to capture detention ponds.	Detailed (Redelineation)
Nez Perce	Lewiston, City of	14.08 MI	Revised detailed flood study of Lindsay Creek (and surrounding tributaries).	Detailed (Updated)
Nez Perce	Peck, City of	2.04 MI	Updated detailed study of Big Canyon Creek in Peck and upstream.	Detailed (Updated)
Nez Perce	Unincorporated Areas	11.21 MI	Bridge replacement on Sunnyside Bench Road in unmapped area.	Approximate (New)
Nez Perce	Unincorporated Areas	5.81 MI	Webb Road rebuild on Tammany Creek in 2015.	Approximate (Updated)
Nez Perce	Unincorporated Areas	6.11 MI	Wancher bridge replacement and realignment in 1995.	Approximate (Updated)
Nez Perce	Unincorporated Areas	9.15 MI	New detailed study along Cottonwood Creek to South Tom Beall Road.	Detailed (New)
Nez Perce	Unincorporated Areas	8.66 MI	Updated detailed study along the Potlatch River.	Detailed (Updated)
Nez Perce	Unincorporated Areas	1.73 MI	Mission Creek bridge replacement on Mission Creek in 2016.	Detailed (Updated)
Nez Perce	Unincorporated Areas	2.70 MI	McGary bridge replacement on the Potlatch River in 2016.	Detailed (Updated)
Nez Perce	Unincorporated Areas	5.30 MI	Tammany Creek Road rebuild in 1990s.	Detailed (Updated)
Nez Perce	Unincorporated Areas	5.56 MI	Lapwai Road realignment on Cougar Ridge Creek in 2000s.	Detailed (Updated)
Nez Perce Tribe	---	18.49 MI	New approximate study; identify flood risk along irrigation canals	Approximate (New)

Based on the Coordinated Needs Management Survey (CNMS) data for the Clearwater Watershed communities, there are approximately 1,725 miles of existing approximate flood zones and 168 miles of existing detailed flood zones. Outside of the specific identified mapping needs during the Discovery process, Discovery participants across the project area provided a consensus about whether a future Risk MAP flood study is funded:

Unless identified above or at a later point in time, for areas with LiDAR coverage, it is suggested to fund Mass Zone A in the unincorporated areas of Clearwater, Idaho, Latah, Lewis, and Nez Perce Counties (including areas belonging to the Nez Perce Tribe) that have existing Zone A designations. Detailed areas identified as Zone A1-A30 or Zone AE in unincorporated areas will require further review to identify whether redelineation—the

process of adjusting existing floodplain boundaries to reflect better topography—is an available option. Within incorporated communities, the same methodology applies. Existing Zone A designations should utilize Mass Zone A, while further review is needed to determine if redelineation is an option in detailed areas.

The following additional resources can be leveraged to assist with new flood studies in the region (additional data in Appendix D):

- Orofino Creek (upstream of Orofino): Pending USACE Study
- Nez Perce County (various streams): March 23, 2016 stream flow information
- Lewiston (Clearwater River): USACE “Area Protected” depth grids
- Lewiston Orchards Irrigation District: real-time stream flow information available through the Bureau of Reclamation

Depending on available funding, further prioritization outside of the identified areas in Table 6 should be considered with local stakeholders and community officials.

Table 7 identifies additional hazard risk assessments that were acquired during the community information exchanges and the Discovery Meetings.

*Table 7: Clearwater Hazard Risk Assessments*

COUNTY / TRIBE	COMMUNITY	LOCATION DESCRIPTION	STUDY TYPE
Clearwater	---	Dam failure vulnerability risk assessment requested for Dworshak Dam.	Dam Failure Analysis
Latah	---	Assess landslide risk along Idaho 99 from Deobald Road to Brady Gulch.	Landslide Identification
Latah	---	Assess landslide risk along the Potlatch River from Kendrick to north of Cedar Creek.	Landslide Identification
Latah	---	Assess landslide risk along Idaho 3 from Kendrick to Jones Road.	Landslide Identification
Latah	---	Detailed vegetation classification to assist with wildfire hazard identification.	Wildfire Assessment
Lewis	---	Dam failure vulnerability risk assessment requested for Winchester Lake Dam.	Dam Failure Analysis
Lewis	---	Earthquake risk assessment for US Highway 95 from Ferdinand to Lewiston.	Hazus Level II
Lewis	---	Earthquake risk assessment for US Highway 12 from Kamiah to Orofino.	Hazus Level II
Lewis	---	Assess landslide risk along US Highway 12 from Kamiah to Pardee Road.	Landslide Identification
Nez Perce	Lewiston, City of	Dam failure vulnerability risk assessment requested for Reservoir A (Mann Lake) Dam.	Dam Failure Analysis
Nez Perce	Lewiston, City of	Assess landslide risk between Lindsay Creek and Warner Way.	Landslide Identification
Nez Perce	Lewiston, City of	Ponding concerns on landward side of dike.	Water-Surface Elevation / Depth Grids

COUNTY / TRIBE	COMMUNITY	LOCATION DESCRIPTION	STUDY TYPE
Nez Perce	Peck, City of	Assess landslide risk east of Big Canyon Creek.	Landslide Identification
Nez Perce	---	Dam failure vulnerability risk assessment requested for Dworshak Dam.	Dam Failure Analysis
Nez Perce	---	Assess landslide risk along the Snake River from Lewiston south to the Salmon River.	Landslide Identification
Nez Perce	---	Assess landslide risk in the Waha area.	Landslide Identification
Nez Perce	---	Assess landslide risk at Lewis County boundary along Big Canyon Creek.	Landslide Identification
Nez Perce	---	Assess landslide risk on Angel Ridge Road from Peck to 2 miles outside the city limits.	Landslide Identification
Nez Perce	---	Detailed vegetation classification to assist with wildfire hazard identification.	Wildfire Assessment
Nez Perce Tribe	---	Assess landslide risk to facilities located on alluvial fans.	Landslide Identification
Nez Perce Tribe	---	Assess potential blockages from debris flow along Lawyer Creek.	Culvert and Bridge Assessment

Landslide identification was the chief hazard concern shared across all project area communities. Local landslide data are available for select quadrangles in Clearwater, Latah, Lewis, and Nez Perce Counties, but participants in the Discovery process expressed a need to expand on existing data and refine assessments based on better topography as it becomes available. Landslide assessments can also assist in defining potential sedimentation and debris flows into local rivers and streams.

Dam failure assessments for the Dworshak Dam and Reservoir A Dam were a concern for communities and counties located downstream. Due to its size, the Dworshak Dam would have a catastrophic impact on the region if a dam failure occurred.

Earthquake risk assessments for major transportation corridors and bridges were requested by Idaho and Lewis Counties. The counties are concerned about the impacts of a moderate earthquake on the region's limited existing transportation routes.

To assist with future wildfire mitigation and forest management, both Latah and Nez Perce Counties requested detailed vegetation classifications derived from newly flown LiDAR. If LiDAR data are available, a vegetation classification can be utilized to determine the inventory of various species and areas most vulnerable to wildfire.

The City of Lewiston requested non-regulatory flood risk products to assist in planning for the potential effects of flooding on the landward side of the dike that separates the city from the Clearwater and Snake Rivers.

## iv. Mitigation Projects

Mitigation plans in the project area are available at the county level and typically include all the incorporated and unincorporated communities within each county. As of January 2016, Idaho County and Nez Perce County are revising their previously expired hazard mitigation plans. The Nez Perce Tribe is currently updating their FEMA-approved Tribal Multi-Hazard Mitigation Plan. Latah, Clearwater, and Lewis Counties have up-to-date hazard mitigation plans.

Additional hazard mitigation studies for the Clearwater Watershed are listed below:

- Burned Area Emergency Response (BAER) Report, Lawyer Complex Fire, underway
- Burned Area Emergency Response (BAER) Report, Fisher Fire, underway
- Idaho County Wildland-Urban Interface Wildfire Mitigation Plan, 2009 (incorporated into the Idaho County All-Hazard Mitigation Plan)
- Idaho Flood and Seismic Risk Portfolio, 2012
- Idaho State Hazard Mitigation Plan, 2013

The high-priority mitigation actions for potential desired projects listed below were identified on a countywide level:

- Continue to develop and implement public education programs.
- Participate in the NFIP.
- Encourage residents to purchase flood insurance to protect their homes.
- Work with FEMA to update the FIRMs.
- Update the Multi-Hazard Mitigation Plans for Idaho County and Nez Perce County.
- Identify landslide risk and create a landslide mitigation program.
- Work with State and Federal agencies on completing the BAER assessments.
- Evaluate water systems for emergency power needs.
- Improve, restore, and realign infrastructure along flooding sources to alleviate high water at roadways.
- Continue to develop land use policies and strategies, as well as enforce existing policies.

*Table 8: Community Hazards and Mitigation Actions*

COUNTY / TRIBE	COMMUNITY	DESCRIPTION	MITIGATION ACTION
Clearwater	---	Wildfire assessment and analysis.	BAER Team Assessment
Clearwater	---	Assess emergency response processes and procedures.	Hazard Mitigation Plan Update
Clearwater	---	Evaluate need for emergency backup power on water systems.	Purchase Generators
Clearwater	---	Create defensible space.	Obtain funding and identify areas
Clearwater	---	Need better outreach to constituents on hazards (fire, flood, enforcement, etc.).	Increase Hazard Education and Risk Awareness
Clearwater	Orofino, City of	Need to alleviate high water flooding at US Highway 12 and 115 <sup>th</sup> Street.	Culvert Assessment

COUNTY / TRIBE	COMMUNITY	DESCRIPTION	MITIGATION ACTION
Clearwater	Orofino, City of	Channel realignment/restoration.	Obtain funding
Idaho	---	High priority for LiDAR and geologic mapping along Highway 40 in Elk City.	Purchase LiDAR
Idaho	---	Earthquake building mitigation for existing structures.	Seismic retrofit of historic buildings
Latah	---	Enforce existing land use and development policy.	Permitting and zoning regulation
Latah	---	Assess and hardwire the Latah County Fairgrounds to use a portable generator.	Procure generators and retrofit property
Latah	---	Develop a landslide hazard identification and mitigation program.	Assess landslide risk
Latah	Potlatch, City of	Maintain culvert and the Potlatch Junction levee next to US Highway 95.	Update flood control measures
Lewis	---	Need to communicate hazard risk before and during an event.	Develop and improve hazard warning system, train county officials, disseminate risk-related materials
Lewis	---	All-Hazard Risk Assessment.	Update county hazard mitigation plan
Nez Perce	---	All-Hazard Risk Assessment.	Update hazard mitigation plan
Nez Perce Tribe	---	Need to communicate risk to the community.	Obtain materials for distribution within the community; coordinate communication with nearby jurisdictions
Nez Perce Tribe	---	Reduce the possibility of damage from dam failure.	Develop warning system, inundation maps, and interagency cooperation agreement
Nez Perce Tribe	---	Reduce drought damage.	Develop water conservation ordinance
Nez Perce Tribe	---	Standardize the method in which data are stored.	Create a virtual and physical library that contains all study data

Additionally, the following potential hazard mitigation activities were identified or described in greater detail during the Discovery process:

*Table 9: Discovery Identified Mitigation Opportunities in the Clearwater Project Area*

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Clearwater	---	Frequent flooding of Grasshopper Creek poses a direct impact to Idaho 11.			X				

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Clearwater	---	Mitigate Dents Bridge landslide risk.				X			
Clearwater	---	Mitigate Cavendish landslide risk.				X			
Clearwater	---	Mitigate Greer landslide risk.				X			
Clearwater	---	New stream gage along Orofino Creek required.			X		X		
Clearwater	---	Review potential improvements for Main Street Bridge and identify its effect on the modeled floodplain.			X				
Clearwater	---	Fix culvert at Mile 12.825.			X				
Clearwater	---	Repair Dent Bridge at Mile 9.50.			X				
Clearwater	---	Bank stabilization to reduce bank erosion on the Brandt Mill site is needed.		X					
Clearwater	Orofino, City of	General flooding concerns along the Clearwater River.			X				
Clearwater	Orofino, City of	Assess culvert crossing, develop engineered solution to alleviate flooding.			X				
Clearwater	Orofino, City of	Replace Forest Street Bridge and reshape channel upstream.			X				
Clearwater	Orofino, City of	Complete channel shaping at Noah's Bridge.			X				
Clearwater	Orofino, City of	Complete Konkolville mill pump diversion and reshape channel.			X				
Clearwater	Orofino, City of	Flooding along the Clearwater River affects the local fish hatchery.			X				
Clearwater	Orofino, City of	Unmapped levee. Review levee for NFIP compliance.			X				
Clearwater	Orofino, City of	Construct cross vane above Main Street Bridge.		X	X				
Clearwater	Weippe, City of	Replace culvert crossing on Grasshopper Creek at Eighth Avenue with a larger structure.			X				
Idaho	---	Ice damming occurs across the county.			X				
Idaho	---	Cottonwood and Three Mile Creek flood yearly with rain on snow melt.			X				
Idaho	---	Mitigate landslide issues along US Highway 95 through Salmon River Canyon.				X			

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Idaho	---	US Highway 12 is at risk to landslide, possibly cutting off residents from outside communities.				X			
Idaho	---	Assess and implement a plan to remove an overhanging bluff on Graves Creek Road.				X			
Idaho	---	Develop/implement strategy for mitigating landslide issues along Graves Creek Road.				X			
Idaho	---	Main Salmon River Road still has the potential to slide/mass waste after the fire with debris.				X			
Idaho	---	Leitch Creek has a landslide area and mass wasting when it slides.				X			
Idaho	---	Carrot Ridge and surrounding rail is at risk to landslide.				X			
Idaho	---	Stream scouring near Riggins.		X					
Idaho	---	Stream scouring near White Bird.		X					
Idaho	---	Implement strategy to remove excess vegetation and other debris on Graves Creek.		X	X				
Idaho	Kooskia, City of	Active landslide area needs mitigation.				X			
Idaho	Kooskia, City of	Levees maintained by city, work in tandem with USACE. Review levee for NFIP compliance.			X				
Idaho	Kooskia, City of	Update culverts and pipes in levees, work on obtaining easements to maintain levees.			X				
Idaho	Stites, City of	Update, repair, and certify the levees along the South Fork Clearwater River.			X				
Latah	---	Improve the State Highway 9 crossing over Flat Creek.			X				
Latah	---	Bridge replacement scheduled for 2017–2018.			X				
Latah	---	Obtain funding to replace bridge on Viola Road.			X				
Latah	---	Raise the grade and replace culvert on Greiser Road.			X				
Latah	---	Replace double culverts on Danielson Road with one larger culvert to improve flow.			X				
Latah	---	Replace culverts and raise grade at Eikum, Danielson, and Berger Roads.			X				
Latah	---	Install larger culverts at Miller and Lenville Roads to improve flow.			X				

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Latah	---	Install larger culverts at Jones Road to improve flow.			X				
Latah	---	Install larger culverts on Blaine Road at Renfrows and on Blaine Road at Martinson.			X				
Latah	---	Install larger culverts on Fern Hill Road to improve flow.			X				
Latah	---	Stability assessment of Cow Creek from US Highway 95 to Genesee.		X		X			
Latah	Deary, City of	Raise the grade on First Avenue at Pine Creek to remove it from the floodplain.			X				
Latah	Deary, City of	Replace inadequate culverts on Line Street; 1st, 2nd, 5th, 6th Avenues; Park Street; and Reservoir Road.			X				
Latah	Deary, City of	Install a culvert at railroad fill to direct water drainage and prevent flood and erosion.		X	X				
Latah	Juliaetta, City of	Unmapped levee and flood mitigation project. Review levee for NFIP compliance.			X				
Latah	Juliaetta, City of	Extend and upgrade water resources for fire suppression.						X	
Latah	Kendrick, City of	Unmapped levee. Review levee for NFIP compliance.			X				
Latah	Kendrick, City of	Expansion of wastewater ponds in possible flood hazard area.			X				
Latah	Kendrick, City of	Replace water line across Highway 3 to the Brock Industrial Plant with a 10-inch line.							X
Latah	Moscow, City of	Install jersey barriers to protect Avista transfer station and Williams pipeline.							X
Latah	Troy, City of	Improve State Highway 8 crossing over Little Bear Creek.			X				
Lewis	---	Wildfire and smoke closed areas along Idaho 162 south of Kamiah.						X	
Lewis	---	West and south of Winchester are areas of wildfire concern.						X	
Lewis	---	Wildfire and smoke closed areas along US Highway 12.						X	
Lewis	Kamiah, City of	Continue to develop, fund, and implement flood control measures on Lawyer Creek.			X				
Lewis	Nezperce, City of	Install new stormwater pipe and manholes to divert water.			X				
Lewis	Nezperce, City of	Install a new culvert at the intersection of Pine Street and Second Avenue.			X				

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Lewis	Nezperce, City of	Install drain tile between Seventh and Eighth Avenues on Oak Street.			X				
Nez Perce	---	Upgrade stream gages to stream in real time.			X		X		
Nez Perce	---	Undersized culvert at Ridge Road southeast of Peck may be impacted by long-term post-fire debris flow.			X	X		X	
Nez Perce	---	Waha is an area of wildfire concern.						X	
Nez Perce	Culdesac, City of	Periodic mudslides and mudflows affect local cropland.			X	X			
Nez Perce	Culdesac, City of	Review levee for NFIP compliance.			X				
Nez Perce	Culdesac, City of	Develop plan to remove vegetation along Lapwai Creek levees while preserving fish habitat.			X				
Nez Perce	Lewiston, City of	Stormwater assessment for entire community is ongoing.			X				
Nez Perce	Lewiston, City of	Drinking water is vulnerable with no built-in redundancies in case of failure.	X		X		X		
Nez Perce	Lewiston, City of	Upgrade stormwater system.			X				
Nez Perce	Lewiston, City of	Install backup generators to support lift stations that could be without commercial power.			X		X		
Nez Perce	Peck, City of	Lift bridge over Bear Creek.			X				
Nez Perce	Peck, City of	Culverts regularly fill with debris.			X	X			
Nez Perce	Peck, City of	Develop plan to remove vegetation along Big Canyon Creek levees.			X				
Nez Perce	Peck, City of	Educate public about wildfire and defensible space.						X	
Nez Perce	Peck, City of	Mitigate impact of long-term post-fire debris flow upstream of Peck.			X	X		X	
Nez Perce	Peck, City of	Replace existing culverts with larger structures.			X				
Nez Perce Tribe	---	Historic flooding of residential properties.			X				
Nez Perce Tribe	---	Cherry Lane Bridge needs replacement.			X				
Nez Perce Tribe	---	Mitigate landslide risk along the Clearwater River.				X			

COUNTY / TRIBE	COMMUNITY	MITIGATION OPPORTUNITY	EARTHQUAKE	EROSION	FLOOD	LANDSLIDE	SEVERE WEATHER	WILDFIRE	OTHER
Nez Perce Tribe	---	Restore railroad corridor to improve floodplain functionality.			X				
Nez Perce Tribe	---	Lack of erosion and sediment control affecting fish hatcheries.		X					

# HAZARD IMPACT



Figure 7: February 18, 2016 landslide across State Highway 14



Figure 8: Highway 14 Detour (Lewiston Tribune)

On February 18, 2016, a landslide that crossed State Highway 14 left the already-remote Elk City isolated. The debris field is 20 to 30 feet deep above the road and contains boulders weighing as much as 20 to 30 tons. Newsome Creek Forest Road 1199 is the only detour around the landslide. Assessing landslide risk and mitigating areas of potential landslide impact were mentioned at the Clearwater Discovery Meetings by several participating counties and communities.

## v. Compliance

The FEMA Community Assistance Contact (CAC) data collected from FEMA’s Community Information System (CIS) shows that the most recent CACs occurred in 2008 in the Cities of Peck, Culdesac, Lapwai, and Lewiston, which are all within Nez Perce County. The CAC is a telephone call or brief visit to an NFIP community for the purpose of establishing or re-establishing contact to determine if any program-related problems exist and to offer assistance. Some of the earliest CACs took place in 1985 with the Cities of Deary and Ferdinand. The Cities of Elk River, Onaway, Pierce, Potlatch, Reubens, Weippe, White Bird, and Winchester, as well as the Nez Perce Tribe, have never had a CAC.

Community Assistance Visits (CAVs) took place in the project area as recently as 2016 for Lewis County, while the earliest CAV occurred in the City of Pierce in 1994. The CAV is a scheduled visit to an NFIP community to conduct a comprehensive assessment of the community’s floodplain management program and its knowledge and understanding of the floodplain management requirements of the NFIP. The Cities of Elk River, Juliaetta, Onaway, Potlatch, Reubens, Weippe, White Bird, and Winchester have never had a CAV. The Nez Perce Tribe has also never had a CAV.

Nez Perce County and the City of Moscow currently participate in the Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premium rates are discounted community-wide to reflect the reduced flood risk resulting from the community actions. The City of Moscow began participating in 2009 and Nez Perce County began participating in 2014. No other communities in the project area participate in the CRS.

*Table 10: NFIP Compliance and CRS*

COUNTY / TRIBE	JURISDICTION	CAV	CAC	CRS
Clearwater	Elk River, City of	---	---	No
Clearwater	Orofino, City of	3/13/2005	5/13/2005	No
Clearwater	Pierce, City of	---	9/27/1994	No
Clearwater	Unincorporated Areas	8/16/2004	3/13/1996	No
Clearwater	Weippe, City of	---	---	No
Idaho	Cottonwood, City of	8/11/2004	3/14/1996	No
Idaho	Ferdinand, City of	4/1/1985	3/14/1996	No
Idaho	Grangeville, City of	8/1/2000	8/14/2002	No
Idaho	Kooskia, City of	5/13/2005	3/18/2002	No
Idaho	Riggins, City of	8/17/2004	4/13/2010	No
Idaho	Stites, City of	6/17/1999	7/17/2002	No
Idaho	Unincorporated Areas	8/14/2003	5/25/2007	No
Idaho	White Bird, City of	---	---	No
Latah	Bovill, City of	5/11/2005	7/24/2002	No
Latah	Deary, City of	4/1/1985	3/14/1996	No
Latah	Genesee, City of	7/20/1999	3/15/1996	No
Latah	Juliaetta, City of	2/15/2003	N/A	No
Latah	Kendrick, City of	2/5/2003	3/18/1996	No
Latah	Moscow, City of	4/3/2013	N/A	10/1/2009

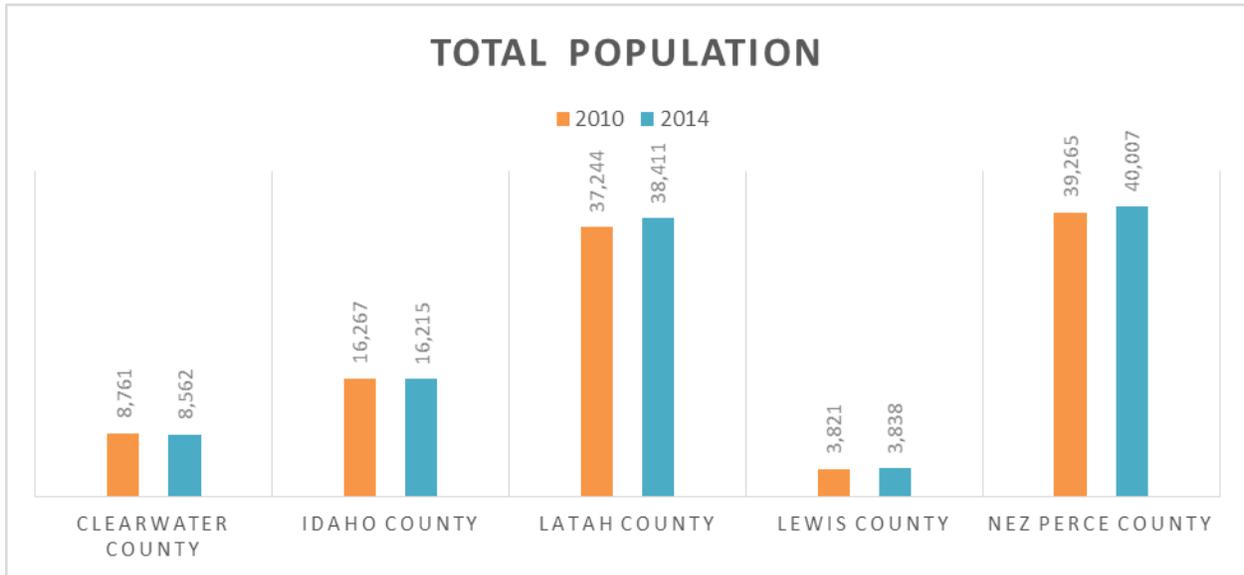
COUNTY / TRIBE	JURISDICTION	CAV	CAC	CRS
Latah	Onaway, City of	---	---	N/A
Latah	Potlatch, City of	2/4/2003	3/22/1996	No
Latah	Troy, City of	8/13/2004	3/14/1996	No
Latah	Unincorporated Areas	8/10/2004	5/12/2005	No
Lewis	Craigmont, City of	5/13/2005	2/28/2002	No
Lewis	Kamiah, City of	8/2/2000	3/2/2016	No
Lewis	Nezperce, City of	N/A	N/A	No
Lewis	Reubens, City of	---	---	N/A
Lewis	Unincorporated Areas	8/2/2000	6/26/2012	No
Lewis	Winchester, City of	9/25/2008	3/14/1996	No
Nez Perce	Culdesac, City of	9/25/2008	9/25/2008	No
Nez Perce	Lapwai, City of	9/26/2008	3/10/2005	No
Nez Perce	Lewiston, City of	10/11/2001	9/24/2008	No
Nez Perce	Peck, City of	N/A	N/A	No
Nez Perce	Unincorporated Areas	9/23/2008	3/20/1996	5/1/2014
Nez Perce Tribe	---	---	---	N/A

## vi. Communication

In the scheduled interviews, all communities indicated that they were interested in learning more about Risk MAP's communication support. Local representatives stated they were open to a future meeting with FEMA to learn how they can improve their communication program through outreach targeted to individuals at risk from flood, landslide, wildfire, earthquake, severe storm, and manmade hazards.

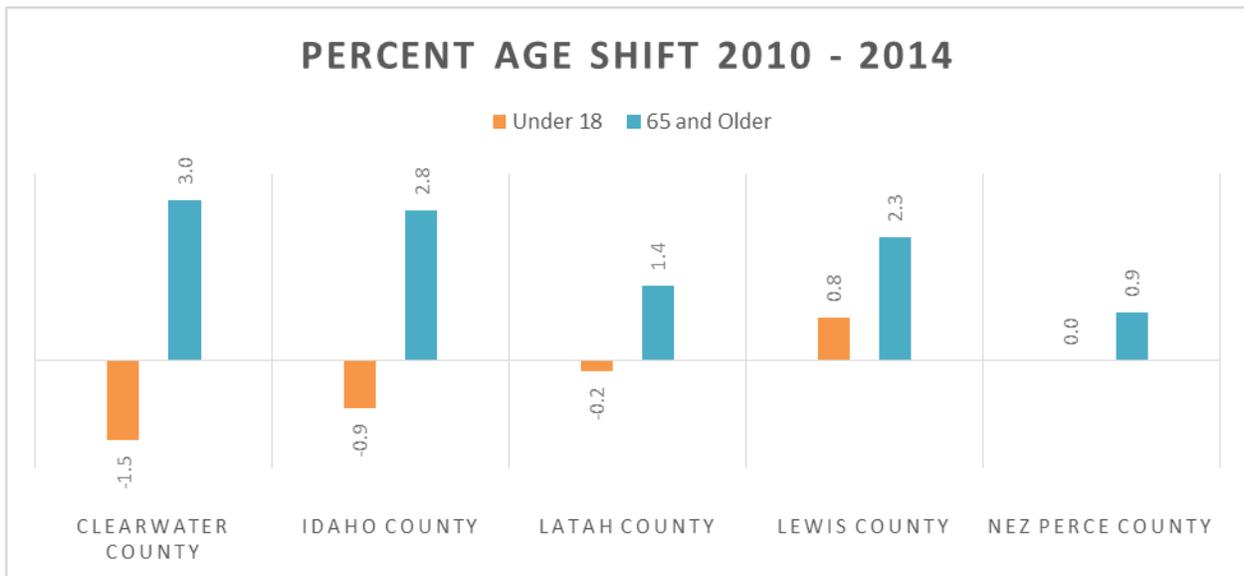
The five-county project area has a total estimated population of 107,033 residents as of 2014. Most of the project area is rural and sparsely populated, especially going east toward Montana. The urban core is located at the confluence of the Snake and Clearwater Rivers, in the project area's largest community, Lewiston, which has 30,363 residents. Moscow, home of the University of Idaho, is the second largest community, with 22,170 residents. No other project area community has a population more than 10,000 people. Of the five counties, Latah County is experiencing the highest population growth. Between 2010 and 2014, the population increased by 3.1-percent. In contrast, Idaho County and Clearwater County have declining populations during that same period, at -0.3 percent and -2.4 percent, respectively. Below is a demographic summary showing the total population changes between 2010 and 2014 at the county level.

Figure 9: Populations of Clearwater, Idaho, Latah, Lewis, and Nez Perce Counties, 2010 and 2014



All counties are experiencing growth in their elderly populations. Clearwater County had the largest increase in residents aged 65 and older, with a 3.0-percent increase between 2010 and 2014. The percentage of people younger than 18 is gradually declining or remaining stagnant in all five counties. The sharpest drop between 2010 and 2014 was in Clearwater County, with a 1.5-percent decrease in residents younger than 18. Statewide, Idaho had an increase of 0.9 percent in its population 65 and older, and a 0.6-percent decrease in residents younger than 18.

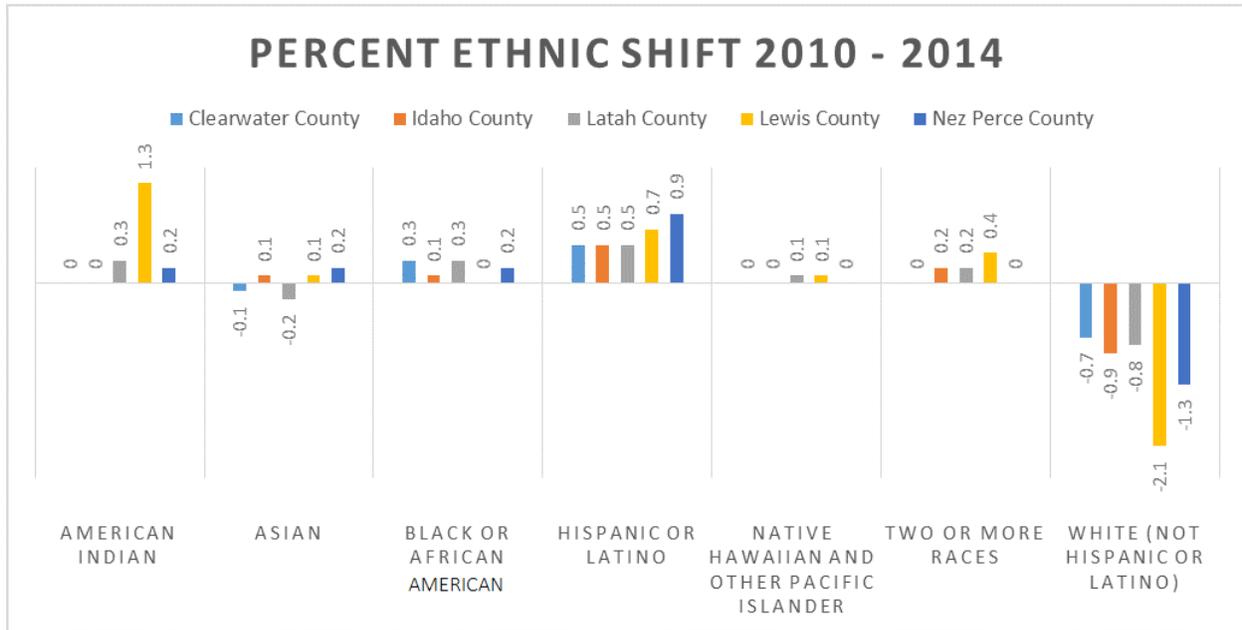
Figure 10: Shift in Percentage of County Residents Younger than 18 and 65 and Older, 2010–2014



In the five-county project area, at least 90 percent of the population identifies as White, with significant populations of Hispanic or Latino and American Indian accounting for most of the remaining population. Between 2010 and 2014, there have been minor shifts away from identifying as White, with slight increases in Black or African American, American Indian, Hispanic or Latino identification, and Two or More Races. Lewis County is experiencing the largest shift, as more people are identifying as

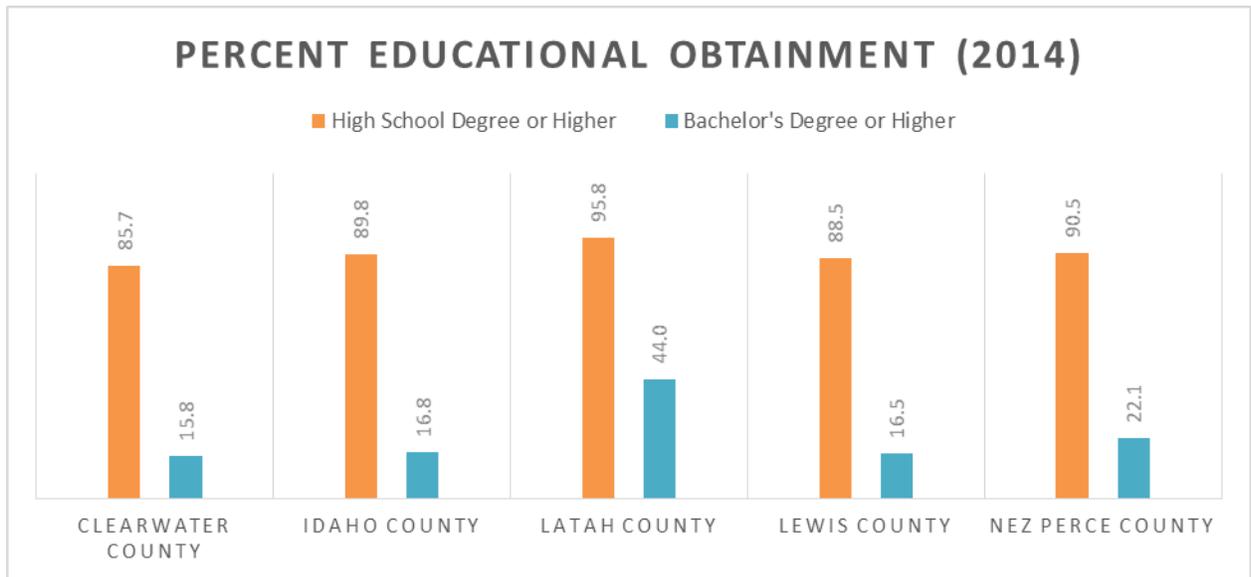
American Indian, Hispanic or Latino, or Two or More Races. Nez Perce County has also experienced a larger shift in the Hispanic or Latino population over the past few years. Across Idaho, there is minimal change in ethnic identification. The number of residents who identified themselves as White grew by 2.7 percent between 2010 and 2014. The resident population who reported Asian ethnicity also increased by 0.2 percent. No other group has a shift greater than 0.1 percent. With increasing Hispanic populations, bilingual outreach materials and communication methods provide additional opportunities to reach this portion of the growing population.

Figure 11: Shift in Reported Ethnicity of County Residents, 2010-2014



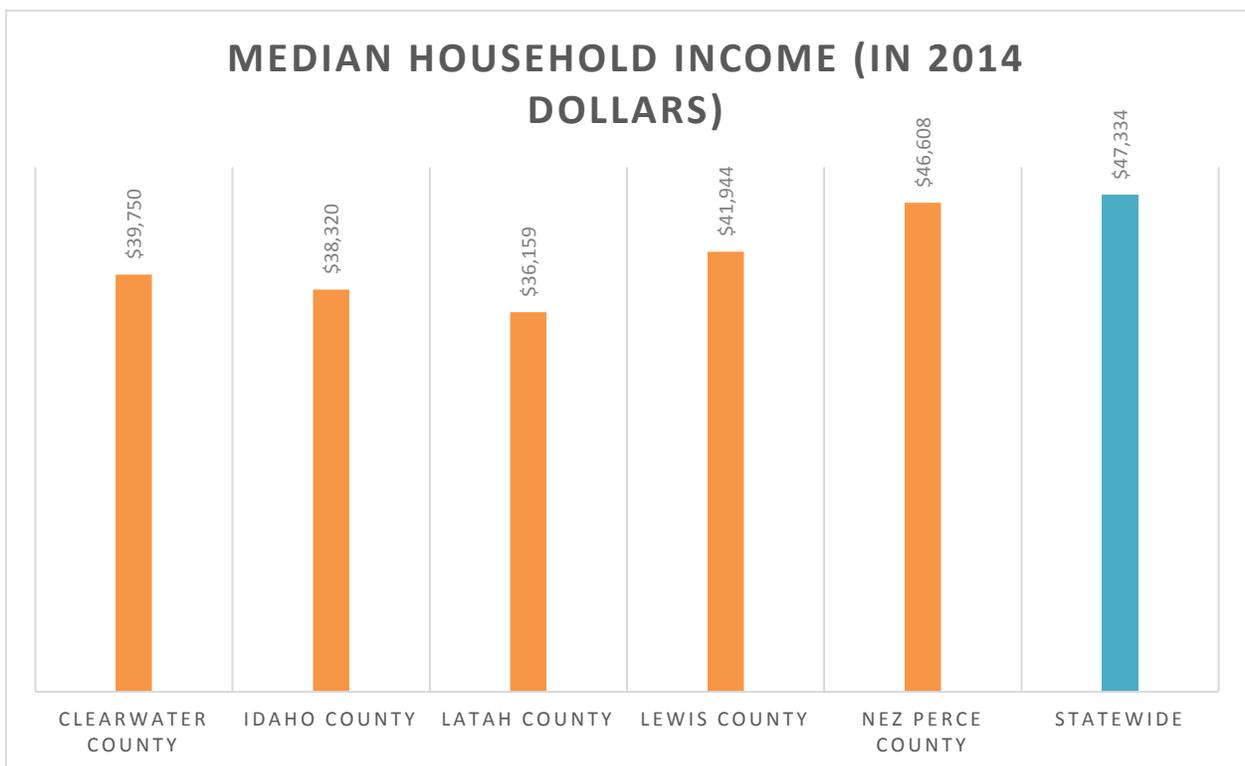
Latah County has the highest percentage of residents who have a high school diploma or higher (95.8 percent) and bachelor’s degree or higher (44.0 percent) in the project area. The remaining four counties have varying percentages of high school degree completion (85.7 percent to 90.5 percent) and bachelor’s degree or higher (15.8 percent to 22.1 percent). For comparison, the statewide average of people who have a high school degree or higher is 89.1 percent, while the average of those who have a bachelor’s degree or higher is 25.4 percent.

Figure 12: Percentage of County Residents with a High School Degree, Bachelor's Degree, or Higher, 2014



Median household incomes vary considerably depending on the county. In the five-county project area, no county exceeds the statewide median household income of \$47,334 per year. Nez Perce County has the highest median household income (\$46,608). Latah County has the lowest median household income (\$36,159).

Figure 13: Median Household Income for Idaho State Residents and Five Counties, 2014



Local officials expressed interest in learning more about how to provide and effectively communicate multi-hazard risk information to residents. With the available demographic information, FEMA can assist community representatives in establishing better connections and delivery methods to keep the public informed, engaged, and aware of the risks presented by multiple hazards in the area, while understanding the audience the Agency wishes to reach.

## V. Close

Local officials in the project area communities were receptive to Risk MAP and fully engaged in the Discovery process. Counties, local jurisdictions, and the Nez Perce Tribe were open to learning more about how they can develop resilience to flood, seismic, wildfire, severe storm, landslide, and manmade events. They identified areas for map updates and areas where they could use additional FEMA technical support. Further mitigation strategies should be included in future Risk MAP projects so they can be evaluated and implemented by communities. Additionally, local officials would benefit from the implementation of Risk MAP projects outside of the standard regulatory products, for future planning as well as risk communication and engagement.

## VI. Appendix – Discovery Files

The Discovery Report appendices are stored electronically in their respective folders that accompany the Discovery Report.

Appendix A – Project Team Contact Information

Appendix B – Stakeholder Contact Information

- Community Stakeholder Contact Information

Appendix C – Discovery Interviews/Meetings

- Information Exchange Fact Sheets
- Information Exchange Maps
- Information Exchange Notes

Appendix D – Discovery Meeting

- Discovery Meeting Materials
- Provided Materials – FEMA
- Provided Materials – State
- Provided Materials – Local
- Provided Materials – Other

Appendix E – Discovery Report

- Areas of Mitigation Interest Database
- Discovery Geodatabase
- Final Discovery Figures
- Final Discovery Map
- Project Area Map

Appendix F – Effective FIRM, FIS, LOMCs

- Clearwater County
- Idaho County
- Latah County
- Lewis County
- Nez Perce County
- LOMCs

Appendix G – Levees

- National Levee Database