

**Blaine County Multi-  
Jurisdictional  
All Hazard Mitigation  
Plan**

**April 2022**

## Executive Summary

The 2022 Blaine County All Hazard Mitigation Plan is an update of the 2015 Blaine County All Hazard Mitigation Plan. The 2022 update focuses on streamlining the 2022 plan. To fulfill federal requirements, the update includes reevaluation of hazards within the county that affect all local jurisdictions and update mitigation strategies. The 2022 plan complies with federal Disaster Mitigation Act mitigation planning requirements.

The Blaine County All Hazard Mitigation Planning project was led by Chris Corwin, Disaster Services Coordinator, Blaine County, who, under the direction of the Blaine County Commissioners and managed by the Blaine County Sheriff, is responsible for implementing the mitigation actions recommended in this plan and help other jurisdictions implement theirs as needed.

The Blaine County All Hazard Mitigation Planning Committee was comprised of members of the Blaine County Local Emergency Planning Committee (LEPC). The two methods of community involvement included: 1) an electronic based community questionnaire and 2) an invitation to attend local elected officials' briefings. Community participation was good for a small tourist county like Blaine County.

While the hazards in this plan equally effect all the jurisdictions in Blaine County, the projects to mitigate those disasters are different. The following cities or local taxation districts have participated in this Plan and have signed the plan.

- City of Bellevue
- City of Carey
- City of Hailey
- City of Ketchum
- City of Sun Valley
- Blaine County School District
- Flood Control District No. 9

In the 2022 Plan, some hazards were consolidated to develop a more comprehensive list of hazards to assess and rank based on risk. During the risk assessment of hazards, new data was added for each hazard and the hazard was assessed based on all historical data available. The updated risk assessment results are shown below:

Wildfire	H
Drought	H
Climate Change	H
Flooding	H
Cybersecurity	H

Communicable Disease	M
Severe Weather	M
Earthquake	M
Hazardous Materials	M
Avalanche	M
Sustained Power Outage	M
Terrorism/Violent Extremism	M
Structure Fire	L
Landslides	L
Dam Failure	L

Mitigation actions have been reviews and the state provided by the local jurisdictions. Goals and objectives, as developed during the initial planning process, were updated and additional mitigation actions were added to the plan.

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## Section 1. Planning Process

### Introduction

Blaine County and the incorporated cities that lie within the county boundaries are vulnerable to natural and man-made hazards that have the potential to cause serious harm to the health, welfare and security of its residents. The cost of response to and recovery from disaster events can be reduced when time, money and resources are used to mitigate their impacts and effects before the disaster occurs or re-occurs.

This plan seeks to identify the county's hazards, understand the vulnerabilities to those hazards and craft projects that, if implemented could significantly reduce the threats to life and property. The plan is based on the premise that hazard mitigation works. With increased attention to managing hazards, communities can reduce the threats to citizens. Through proper land use and emergency planning, communities can avoid creating new problems in the future. Many solutions can be implemented at minimal social impact.

This is not an emergency operations plan (EOP). The plan can certainly be used to identify weaknesses and refocus emergency response planning. Enhanced emergency response planning is an important strategy. The focus of this plan is to support better decision making, directed toward avoidance of future risk and to implement projects or activities that will reduce or eliminate current risks or damages.

### Plan Organization

This All Hazard Mitigation Plan (AHMP) is organized in the following manner:

- Section 1 – Planning Process. This section describes the process, scope, purpose and goals of the plan.
- Section 2 – County Profile. This section gives information about the county, including demographics, economics, cultural and geologic attributes.
- Section 3 – Risk Assessment. This section identifies and measures the risk of the hazards the county faces.
- Sections 4 and 5 – Mitigation Goals, Objectives, Strategy and Projects. This section presents the mitigation goals, objectives and corresponding projects of the county and other participating jurisdictions to reduce loss of life and property from the hazards identified in the risk assessment section.
- Section 6 – Plan Maintenance. This section discusses the county's plan of to update the mitigation goals, objectives and projects on a yearly basis. It also discusses the commitment to reviewing the entire plan on a 5-year basis

### Hazard Mitigation and Hazards

Hazard mitigation is defined as any cost-effective action(s) that has the effect of reducing, limiting, or preventing vulnerability of people, culture, property and the environment to potentially damaging, harmful or costly hazards. Hazard mitigation measures which can be used to eliminate or minimize the risk to life, culture and property fall into three categories:

- 1) Keep the hazard away from people, property and structures
- 2) Keep people, property or structures away from the hazard
- 3) Reduce the impact of the hazard on victims and property, i.e., insurance

Hazard mitigation measure must be practical, cost effective, and culturally, environmentally, and politically acceptable. Actions taken to limit the vulnerability of society to hazards must not in themselves be costlier than the anticipated damages.

The primary focus of hazard mitigation planning must be at the point at which capital investment and land use decisions are made, based on vulnerability. Capital investments, whether for homes, roads, public utilities, pipelines, power plants, or public works, determine to a large extent the nature and degree of the hazard vulnerability of a community. Once a capital facility is in place, very few opportunities will present themselves over the useful life of the facility to correct any errors in location or construction with respect to the hazard vulnerability. It is for this reason that zoning and other ordinances which manage development in high vulnerability areas, and building codes, which insure the new buildings are built to withstand the damaging forces of the hazards are often the most useful tools in mitigation that a jurisdiction can implement.

Since the priority to implement mitigation activities is usually very low in comparison to the perceived threat, some important mitigation measures take time to implement. Mitigation success can be achieved, however, if accurate information is portrayed through complete hazard identification and impact studies, followed by effective mitigation management.

The Federal Emergency Management Agency (FEMA) has identified specific hazards to be analyzed by each jurisdiction completing an All Hazard Mitigation Plan. The hazards analyzed in this plan include those required and other as selected by the county LEPC committee. The hazards analyzed are as follows:

Natural Hazards:

- Drought
- Severe Weather
- Flooding
- Dam Failure
- Earthquake
- Landslide/Mudslide
- Snow Avalanche
- Wildfire
- Climate Change

Non-Natural Hazards:

- Communicable Diseases
- Structural Fire
- Nuclear Event
- Hazardous Material/Nuclear Event
- Terrorism/Riot/Demonstration/Civil Disorder

## Participating Jurisdictions

This Plan covers all areas within Blaine County Idaho and the following taxing entities will adopt the plan:

- Cities of Bellevue
- Carey
- Hailey
- Ketchum
- Sun Valley
- Blaine County School District
- Flood Control District No. 9

## Blaine County All Hazard Mitigation Planning Committee

The Blaine County Multi-Jurisdiction All Hazard Mitigation Planning Committee was formed on October 10, 2019. Committee membership is comprised of representatives from the Blaine County Local Emergency Planning Committee, various jurisdictions department heads from the participating entities, representatives from the major utility providers, interested media, and members of the public. Minutes of the committee meetings are provided in Attachment 1.

The Committee Roster is provided below:

<b>Representative</b>	<b>Agency</b>	<b>Position</b>
Chris Corwin	Blaine County	Disaster Services Coordinator
Josh Jensen	SCPHD	Public Health Program Manager
Dan Schaffer	SCPHD	Planner
Sarah Parent	SCPHD	Training and Exercise Coordinator
Joy Prudek	St Lukes	PIO
Randy Hall	St Lukes	Emergency Management
Angenie McCleary	Blaine County	Commissioner
Jacob Greenberg	Blaine County	Commissioner
Dick Fosbury	Blaine County	Commissioner
Muffy Davis	Blaine County	Commissioner
Mandy Pomeroy	Blaine County	Administrator
Kristine Hilt	Blaine County	Flood Plain Manager
Will Fruehling	Blaine County Sheriff	Deputy Chief
Robin Stellers	Blaine County	Emergency Communications Director
Lynn Barker	Blaine County and Ketchum	Sustainability Manager
Nils Ribi	LEPC	Citizen
Stacy McLaughlin	West Magic Fire	Firefighter
Richard Kimball	Carey Fire Department	Chief
Robert Simpson	City of Carey	Water Supervisor



Ben Varner	Mountain Rides	Director
Taan Robran	Sun Valley Fire	Chief
Rich Bauer	North Blaine County Fire	Chief
Reid Black	Sun Valley Fire	Captain
Kim Orchard	Sun Valley Police	Chief
Travis Olsen	Sun Valley Police	Captain
Brittany Skelton	City of Sun Valley	Community Development
Pat McMahon	Sun Valley Water and Sewer	Director
MaryBeth Collins	Sun Valley Water and Sewer	
Jamie Shaw	Ketchum Police	Chief
Bill McLaughlin	Ketchum Fire	Chief
Brian Christiansen	City of Ketchum	Streets Director
Jade Riley	City of Ketchum	Administrator
Heather Dawson	City of Hailey	Administrator
Bryan Yeager	City of Hailey	Public Works Director
Lisa Horowitz	City of Hailey	Community Development Director
Steve England	City of Hailey Police	Chief
Mike Baldege	City of Hailey Fire	Chief
Diane Shay	City of Bellevue	Community Development Director
Greg Beaver	City of Bellevue Fire	Chief
Jason Calvin	City of Bellevue	Streets Supervisor
Dusty Lindt	City of Bellevue	Water Supervisor
Mynde Heil	City of Bellevue	Marshal
Amber Larna	Idaho Power	Local Energy Advisor
Heidi Novich	IOEM	Area Field Officer
Joe Yelda	Wood River Amateur Radio	President
Mike Higgs	Citizen	
Tim Axford	NOAA	Warning Coordination Meteorologist
Steve Guthrie	Friedman Airport	Airport Security Coordinator
David Doman	Intermountain Gas	District Manager
Nick Yturri	USFS	
Matt Filbert	USFS	
Ethan Davis	Sawtooth Avalanche	Forecaster
Jim Foudy	Blaine County School District	Superintendent
Ron Bateman	Wood River Fire and Rescue	Chief
Terry O Connor	Blaine County	EMS Director
Sarah Busdon	University of Idaho Extension	
Ryan Santo	Wood River Land Trust	

In addition to participation in the AHMP Committee each of the participating jurisdictions points of contact facilitated review of the individual city sections of the Plan including but not limited to, community vulnerability review, risk ranking, project definition, project status, and project prioritization. The input from each jurisdiction was included as requested in the appropriate sections of the Plan.

## AHMP Committee Meetings

Due to COVID, meetings were held virtually or in small groups with each jurisdiction. Also, jurisdictions were sent their current projects and asked to review the information for their cities independently.

Date: October 14, 2021

The LEPC began was informed that the All Hazard Mitigation Plan needed to be reviewed and updated be email. The following email was sent to each jurisdiction.

*Hello Officials,*

*As part of the All Hazards Mitigation Plan update, I need to meet with you all to talk about the mitigation projects that you have in the current mitigation plan and what projects you would like to add, delete or modify for the new plan. Early next week, I will send you a copy of the current projects and the results of the community survey I completed to give you some background information related to what projects you might want to consider.*

*I hope this time will work for a majority of you. I am on a bit of a time crunch and need to schedule this meeting sooner than later.*

*Please feel free to forward and invite any other individuals from your city that you feel would be beneficial to attend.*

*Thanks*

*Chris Corwin*

Date: 10/18/2021: Meeting with Sun Valley

Date: 10/19/2021: Meeting with Ketchum

Date: 10/20/2021: Meeting with Hailey

Date: 10/20/2021: Meeting with Blaine County

Date: 10/20/2021: Meeting with Bellevue

Date: 10/21/2021: Meeting with Carey

Date: 11/09/2021: Meeting with Blaine County School District

Date: 1/15/2021: Meeting with Flood Control District No. 9

## Plan Update Process

The following strategy was taken to update the plan. The plan update builds on the existing mitigation strategy developed during the 2015 planning process. All of the hazard analyses were updated.

The planning process began in October 2019 as a collaborative process involving local and regional organizations involved in hazard mitigation activities, agencies that regulate development, and neighboring communities. The planning effort began by utilizing and convening the countywide LEPC committee. The process was put on hold due to the COVID outbreak that hit our county in March of 2020. We started the process again in the Fall of 2021.

Members of the committee were asked to review the 2015 plan, providing feedback on mitigation projects, review existing hazards and risks, complete the online survey, and supply future mitigation projects for consideration. Due to the COVID pandemic, meetings were conducted in small group meetings. The committee also reviewed the draft prior to submittal to the state.

Following the update of the plan, the public was given a chance to review the final plan prior to submittal to the state. The community was given from XXX to XXX to review and provide comments on the plan. Correspondence is included in Attachment XXX.

The planning process included the following steps:

- Origination of Resources- Blaine County Disaster Services Coordinator (BCDSC) worked to develop a list of participants as well as a project timeline. This was later modified in conjunction with FEMA as Blaine County had petitioned for an extension due to the pandemic.
- Collection of Data- BCDSC coordinated the collection of new data about the extent and occurrences of hazards.
- Risk Assessment- Hazards risks were reassessed based on updated data and discussed at meetings prior to being accepted in the updated plan.
- Public Involvement- A plan to include the public was discussed and implemented through surveys, public meetings, and review and adoption of the plan.
- Mitigation Strategies- A working meeting was conducted to discuss past mitigation strategies and create new strategies that the community would like to see implemented.
- Drafting of the Report- Based on updated hazard data, public and committee input, the plan was drafted and sent to the public, state, and Federal Emergency Management Agency (FEMA) for review.
- Adoption of the Plan- Following all reviews, each jurisdiction adopted the plan.

## Review of Existing Plans

Existing county and city plans were reviewed and incorporated into the 2022 AHMP. The following plans were reviewed:

- Blaine County All Hazard Mitigation Plan (2015)

- Blaine County Comprehensive Plan (2021)
- Blaine County Community Wildfire Protection Plan (2021)
- Blaine County Transportation Plan (2021)
- City of Hailey Comprehensive Plan (2018)
- City of Ketchum Comprehensive Plan (2014)
- City of Bellevue Comprehensive Plan (2015)

## Identify Hazards

Blaine County hazards were identified and their frequency of occurrence evaluated using a number of resources including:

- The 2015 Blaine County All Hazard Mitigation Plan
- Hazard planning documents developed by State, Federal and private agencies
- National Weather Service weather data from the past 50 years
- Data from the United States Geological Survey (USGS) and the Idaho State Geological Survey (ISGS)

To determine frequency of occurrence, the historical analysis of hazardous events was conducted. One of the difficult tasks facing hazard mitigation professionals is the determination of the potential frequency of a natural hazard occurrence. Comparing historical facts against technically determined probability allows one to establish confidence, or not, in published scientific predictions. The process whereby the frequency is determined and then expressed in an expected reoccurrence interval (see below for an illustration), is based on research conducted at the University of South Carolina.

The estimated occurrence of the hazard is a useful element in the hazards assessment so one can distinguish between infrequent hazards, like volcano eruptions, from frequent hazards, such as flooding. This calculation provides a useful indicator of the relative importance of each of the hazards that affect the jurisdictions, individually or collectively. The frequency of occurrence is a straight-forward calculation from the historical data and the length of that record in years. The number of hazard occurrences is divided by the number of years in the record. This yields the probability of the event occurring in any given year. For instance, if hypothetical hazard "A" occurred 17 times in the County over the past 23 years, the probability of occurrence for that hazard in a given year would be  $17 / 23 = .739$ , or 73.9%. The reverse of this equation results in a reoccurrence interval in years. For example, the reoccurrence interval of this hazard is calculated as  $23 / 17 = 1.35$ . Hazard "A" can be expected to occur every 1.35 years. These frequencies are then correlated with magnitude to define the risk of a given hazard.

## Hazard Analysis

The risk analysis was updated using the information gathered. To determine the risk posed by each hazard, several kinds of information are required: 1) the number of historical occurrences, 2) the probability or likelihood of the hazard occurrence, at times without regard to hazard history, 3) vulnerability, expressed as the percentage of people and property that would be affected by the hazard event, 4) spatial extent, the geographical area of the community that might be impacted, and 5) the

magnitude or severity of impact based on an assessment in terms of fatalities, injuries, and property/economic losses. Tables illustrating this process are provided below.

**1) Historical Occurrence – Number of historical occurrences within community.**

Rating	Adjective Description	Number of Historical Occurrences (within 50 years)
0	None	Never occurred
1	Low	5 or few occurrences
2	Medium	6-9 occurrences
3	High	More than 10 occurrences

**2) Probability – Likelihood of the hazard occurrence, sometimes without regard to hazard history.**

Rating	Likelihood	Frequency of Occurrence
1	Rare	Probability of occurrence = one chance in the next 50+ years
2	Low	Probability of occurrence = at least one chance in the next 25-50 years
3	Medium	Probability of occurrence = at least one chance in the next 10-25 years
4	High	Probability of occurrence = at least one chance in the next 1 to 10 years

**3) Vulnerability –Percentage of people and property that would be affected by the hazard event.**

Rating	Magnitude	Percentage of People and Property Affected
1	Negligible	Less than 5%
2	Limited	5% to 10%
3	Critical	10% to 25%
4	Catastrophic	More than 25%

**4) Spatial Extent –The geographical area of the community that might be impacted.**

Rating	Magnitude	Percentage of jurisdiction affected
1	Negligible	Less than 10%
2	Limited	10% to 25%
3	Critical	25% to 50%
4	Catastrophic	More than 50%

**5) Magnitude (Severity of Impact) – Assessment of severity in terms of fatalities, injuries, and property/economic losses.**

Rating	Likelihood	Characteristics
1	Negligible	Few if any injuries or illness, Minor quality of life lost with little or no property damage, Brief interruption of facilities/services less than 4 hrs
2	Limited	Minor injuries and illness, Minor or short term property damage that does not threaten structural stability, Loss of essential facilities and services for 4 to 24 hours
3	Critical	Serious injury and illness, Major/ long term property damage; threatens structural stability, Shutdown of essential facilities and services for 24 to 72 hours
4	Catastrophic	Multiple deaths, Property destroyed or damaged beyond repair, Complete shutdown of essential facilities/services for 3+ days.

Risk assessment methods included the use of FEMA’s HAZUS but, because of limitations associated with this data, Blaine County’s own current GIS property valuation data was primarily used to generate loss estimates.

Risk assessment activities also included the mapping of hazard occurrences, at-risk structures, including critical facilities, and repetitive flood loss structures, land use, and populations.

### **Repetitive Loss**

Repetitive Loss designations are used to eliminate or reduce the damage to property and the disruption of life caused by repeated damage, such as flooding, of the same properties. The criteria to determine repetitive loss includes the following:

- Four or more losses of more than \$1,000 each in a 5 year period; or
- Two losses within a 10-year period that, in the aggregate, equal or exceed the current value of the insured property.

## Quantify Risk

Once a hazard's risk has been evaluated, a picture of the over-all risk severity associated with that hazard emerges. The hazards with the highest total scores were considered the hazards of greatest concern for the County. The table below demonstrates the ranking of the eight natural hazards, with the priority hazards scoring highest and appearing in the light red rows, medium hazards appearing in light yellow, and the hazards ranking lowest appearing in green.

Once the numerical ranking was completed, a High/Medium/Low ranking system, the total score was then converted to a High/Medium/Low method of priority ranking.

## Rank Severity

To assist in prioritizing mitigation activities, the severities of all hazards considered in the Plan are ranked relative to one another using the above plotting scheme. Prioritization is also based on goals and objectives developed and approved by the Blaine County Board of County Commissioners.

## Develop Mitigation Strategy

As required by FEMA, this planning effort is centered on community supported hazard reduction goals to be implemented and evaluated based on measurable objectives. Mitigation projects are to be assessed against the established goals and objectives to ensure that the selected projects reduce risk as desired.

## Revise Plan

This plan meets and, in some instances, exceeds, the requirements set forth by FEMA for multi-hazard mitigation plans and Public Law 106-39- (44 CFR 201.6). The plan drafts were provided to the committee for electronic review. This plan includes information on plan adoption, including a promulgation page for the county and an agreement to participate page for each incorporated city and taxing entity.

## Plan Review

The initial plan review was conducted by the LEPC planning committee and the public during development. Once the plan was completed, it was submitted to the Idaho Office of Emergency Management (IOEM) Hazard Mitigation Officer and then to FEMA's Region 10's Hazard Mitigation Officer for review. The Blaine County Board of County Commissioners and other signatories also reviewed the plan in a parallel time frame.

## Participating Jurisdictions

The ability of the participating jurisdictions to implement mitigation strategies is critical to the success of the Mitigation Program. The following table provides an assessment of each participating jurisdictions' capabilities in relationship to the mitigation strategy. Additionally, each jurisdiction has planning processes which are in place to direct land use planning. Those documents were also reviewed and recommendations provided, which will lead to a synergistic approach to mitigation in the communities.

## Stakeholder Participation

Email correspondence was sent to several local and regional agencies involved in hazard mitigation activities, agencies that regulate development, and neighboring communities, including:

- Elected Officials
- US Forest Service
- Bureau of Land Management
- Canal Companies
- Fire Departments
- Hospital
- Health Department
- Idaho Office of Emergency Management
- US Army Corps of Engineers
- Law Enforcement
- Public Works
- Idaho Department of Transportation
- School District
- National Weather Service
- Idaho Department of Environmental Quality
- Wood River Amateur Radio Club

## Public Involvement

Public involvement in the All Hazard Mitigation Process has three distinct objectives: documenting risk perception, development of risk reduction requirements, and solicitation of support for mitigation actions.

The Blaine County LEPC is in itself the best form of Public Participation. All LEPC Meetings are open to the Public. They are held at the same time and place each month, the second Thursday at the Elk Horn Fire Station. Due to the COVID pandemic, public came in the form of electronic communications.

The Blaine County Multi-Jurisdiction All Hazard Mitigation Plan was posted on the Blaine County's LEPC Website for Public Review. The Public was given an opportunity to comment on the Plan via emails to LEPC Chairman email comments received were only from Elected Officials, Jurisdiction staff, and LEPC Committee Members. All Comments were addressed by the Committee during the review process. Meetings with the jurisdictions are listed above and sign in sheets can be found in Appendix A.

## Public Comment Period

A public comment period was held from April 1, 2022 to April 30, 2022 to allow community members an opportunity to review the draft plan. Notice of the review was provided at the meetings and the draft plan was sent out through email. Comments received were incorporated into the plan prior to submittal to the state for review. The final plan will be available on the Blaine County website and public libraries at adopting jurisdictions.



## Public Questionnaire

Risk perception is the subjective judgment that people make about the characteristics and severity of a risk. Several theories have been proposed to explain why the different people make different estimates of the magnitude of risks. Risk perception is a significant part of the public involvement section of the Blaine County All Hazard Mitigation planning process. An electronic survey was used to gather public input and to measure the public attitudes towards the risk posed by the hazards in Blaine County. The survey was administered to the members of the LEPC and members of the public. A total of 83 people responded to the survey. The questions and results can be found in Appendix B.

The top five hazards as perceived by the community are:

1. Wildfire
2. Drought
3. Severe Weather
4. Flood
5. Pandemic

## Continued Public Participation

Blaine County is dedicated to the concept of public involvement in the planning process, including the review and updating of the AHMP. Copies of the plan will be made available to the public through the county website and by appropriate county departments and outside agencies. To this end, public meetings will be held, when deemed necessary by the Blaine County Disaster Services Coordinator, providing a forum where the public can express concerns, opinions, or new alternatives. These will be recorded and considered by the committee when updating the plan. Under the direction of the Board of County Commissioners, the Blaine County Disaster Services Coordinator will be responsible for using county resources to publicize public meetings and to maintain public involvement.

## Section 2. County Profile

Blaine County ranks 16th among Idaho counties in population and 7th in area. It is home to the Sun Valley Resort and relies heavily on recreation and tourism to create employment. Blaine County also has a strong agricultural industry and has an ideal climate for growing Barley of the highest quality. Other agricultural commodities include: alfalfa, wheat, oil seed, seed potatoes, sheep, horses, and cattle. Incorporated cities include Bellevue, Carey, Hailey, Ketchum and Sun Valley. Unincorporated areas include: , Gannett, West Magic, East Magic, Picabo, Sawtooth City (Smiley Creek), and Triumph. The odd shape of Blaine County, with its projection south to the Snake River, was established in 1890 so that the mainline of the Union Pacific Railroad would pass through the County in an effort to send tax revenue into the County.

### Location

Blaine County is located in south central Idaho. The northern portion of the County is in the Sawtooth National Forest and Sawtooth National Recreation Area. Surrounding counties include Butte and Custer on the north; Camas on the west; Lincoln, Minidoka, and Cassia on the south; and Bingham and Power on the east.

### Topography and Geography

Topography in Blaine County varies greatly from the scenic high alpine country in the north to the desolate lava plains and desert mountains in the south. The Boulder and Smokey Mountains are in the northern portion of the County. The Smokey Mountains sit along the Blaine/Camas County border on the west. The Boulder Mountains sit along the Blaine/Custer County border on the east. The very southern reaches of the Sawtooth Valley are at the northern most tip of Blaine County. The Pioneer Mountains are south of the Boulder Mountains and sit along the Blaine/Custer/Butte County borders. The Wood River Valley sits between the Smokey and Boulder Mountains in the northern half of the County.

The Great Rift in the southeast portion of the County has unique lava formations similar to a lunar landscape. The Picabo Hills and Lava Hills are both located in southern Blaine County near US Highway 20.

Elevation in Blaine County ranges from 3,100 feet above sea level to 11,900 feet above sea level. Most of the populated areas are between 4,000 and 6,000 feet.

### Vegetation

Vegetation types in Blaine County are predominantly sage brush steppe, coniferous forest stands including Douglas fir and Lodgepole pine, scattered aspen stands associated with conifer stands, and cottonwood, willow, and alder riparian zones.

### Geology

Geology in northern Blaine County is very mixed. The Pioneer Mountains contain a core of gneiss overlain by younger Proterozoic and Paleozoic metamorphic rocks. The Pioneer Mountains were uplifted along the Wildhorse detachment fault during the Eocene and Oligocene, during and after

eruption of the Challis volcanic, which occupy much of the southern Boulder Mountains in the Little Wood River drainage. The upper plate of the detachment fault forms the bulk of the Pioneer Mountains and contains dark colored sand stone.

The Smokey Mountains, west of the Big Wood River, contain Paleozoic sedimentary rock of the Sun Valley group, intruded by the Cretaceous Idaho batholiths, and Eocene Challis granites. Lava flows, from the Challis volcanic, make up much of the Smokey Mountains west of Hailey and northwest of Ketchum.

The Boulder Mountains have Eocene pink granite at the base, overlain by sedimentary rocks and lava from the Challis volcanic. They were uplifted on a west-dipping normal fault which forms the scarp from Galena Summit to the Sawtooth National Recreation Area.

On the Snake River Plain in very southern Blaine County are Quaternary and Recent basalt flows. In southwestern Blaine County is the Magic Reservoir volcanic, a Miocene rhyolitic eruptive center. The Big Wood River runs through this area.

Geothermal activity in the form of natural hot springs is present in various areas of Blaine County.

The extent to which geothermal activity occurs in the area also suggests the possibility of additional geothermal sites as yet undiscovered. Utilization of these sites as an energy source may be of major importance to the area in the future.

Guyer Hot Springs, West of Ketchum, was developed in 1929. Still in use today, this system is utilized to heat homes and domestic water. To a lesser extent, the Hailey Hot Springs West of Hailey has been developed for similar use. Clarendon, Easley, and other springs are, or have been, developed for public and private recreational use. In most cases the full resource potential of these sites has not been realized.

Given the recreational orientation of the area and the potential need for additional energy sources, known and potential geothermal sites constitute a secondary natural resource.

## Climate

Blaine County has a 4-season climate. Summers have mild nights and warm days; winter has cold temperatures and snow. A plant killing freeze is received in the upper Wood River Valley by July 4 and again by August 20. Precipitation levels generally decrease from the higher mountain regions to the lower desert regions.

The following tables list the average maximum and minimum monthly temperatures, as well as monthly precipitation and snowfall for two weather stations in Blaine County: Ketchum Ranger Station and Stanley Area, as provided by the Pocatello Office of the National Weather Service.

Ketchum Ranger Station Data:

Mean Max Temperature												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
31.3	35	42.6	51.9	61.6	69.7	80	78.7	69	55.9	41.2	30.3	53.9

Mean Min Temperature												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
8	11.1	18.7	26.9	34.7	39.9	45.1	43.5	36.1	27.7	17.4	9.2	26.5
Mean Total Snowfall												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
27	17.2	10.5	3.2	0.2	0	0	0	0	1.6	10.3	32	102
Mean Total Precipitation												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
2.25	1.88	1.76	1.17	1.78	1.26	0.55	0.5	1.01	1.4	1.21	2.57	17.34

Stanley Ranger Station:

Mean Max Temperature												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
29.5	34.9	42.5	48.6	60.3	68.7	79.9	79.7	70	55.4	38.8	27.8	53
Mean Min Temperature												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
4.4	7.1	14.1	20.9	29.7	34.5	28.7	37	30.6	24.1	13.9	5.9	21.7
Mean Total Snowfall												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
15.2	12.8	1.9	5	0.9	0.2	0	0	0.4	2.4	9.9	13.8	50.3
Mean Total Precipitation												
Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1.74	1.32	2.2	1.69	1.49	1.6	0.63	0.48	1.01	1.59	2.19	1.92	17.86

The map below shows average annual precipitation for Blaine County. Some portions of Northern Blaine County receive as much as 40 inches of rain annually, while southern Blaine County receives approximately 8-14 inches annually.

Using the data tables for average low, average high, average mean temperatures and average precipitation for each month going back over the last 10 years, you really can't find any trends up or down. But if you examine the totality of the period of record (1938-2020) you do find these trends:

From 1938-2020 at Ketchum Ranger Station:

- Average low temperatures show a marked increase
- Average high temperatures show a very slight decrease
- Average mean temperatures show an increase due to those increased low temperatures
- Average precipitation totals show no trend
- Average snowfall shows a marked decrease

In summation, the data in Ketchum show a trend toward warmer nights and less snow overall. This data is consistent with climate change and it something that should be addressed as an increased risk.

## Land Ownership

Blaine County contains approximately 1,699,200 acres. The Federal Government owns approximately 77% of land in Blaine County. The US Forest Service owns land in northern Blaine County. The National Park Service (NPS) owns Craters of Moon National Monument and Preserve in Southern Blaine County. The Bureau of Land Management owns land in central and southern Blaine County. The BLM and the NPS jointly manage the area of Craters of the Moon National Park and Preserve. The State of Idaho owns approximately 3.5% of Blaine County, mostly in Central and Southern Blaine County scattered throughout BLM lands. Private lands consist of approximately 19.4% of Blaine County and are concentrated in the Wood River Valley and southern Blaine County.

## Land Use and Natural Resources

Land use in Blaine County is dominated by Rangeland and Forest land. Agricultural land only makes up 5.8 percent of land use. Barren land makes up 18.6 percent of Blaine County, and is mostly found in the lava fields of southern Blaine County.

Although not shown on the land use type table, recreation is another important land use in Blaine County. The large amounts of federal land and the private recreation establishments attract a large number of visitors each year.

Historically, mining was a significant natural resource to Blaine County. The Idaho Geological Survey has over 400 mines listed for Blaine County on their Mines and Prospects Database.

## History

Prospectors first entered the Wood River area soon after the beginning of the 1862 Boise Basin mining Boom. The County saw its first settlers in 1879 when farmers arrived in the Spring Creek area. The 1880 Wood River mining boom brought in a large influx of people including a significant number of Irish, Welsh, German, and Chinese immigrants. Towns like Bellevue and Hailey grew overnight in the frantic scramble for gold, silver, and lead. A smelting plant was constructed in Hailey in 1881, and smelting operations followed in other towns including Ketchum. The railroad arrived in 1884, and the mining boom reached its peak soon after. The boom began to lose its momentum when silver prices fell in the late 1880's and early 1890's. In 1895, established by combining Alturas and Logan Counties, Lincoln County was created out of Blaine County. Hailey was established as the county seat of Blaine County. During the early 1880's the communities of Bellevue, Carey, Picabo, and Gannet were also established.

During the 1880's Blaine County had a significant sheep industry as well. By 1900 more than two million sheep had been raised or trailed through the Wood River Valley. Between 1910 and 1920 more than one million head of sheep a year were trailed through the area. During this time Ketchum was one of the largest sheep shipping centers in the United States.

Later, when prices for metals stabilized, the North Star, Triumph, Muldoon, and Broadford mines once again became the largest employers of the county's male population. This remained true until the years of the Great Depression, which closed most of the area's major mines. The late 1930's and early World War II years saw a return of the mining prosperity. However, by 1957 many mines were closed and in 1970 the last major ore producer, The Silver Star Queen in the Broadford area closed.

Sun Valley resort was constructed in 1936 by the Union Pacific Railroad as an attempt to increase traffic on the passenger line. Steve Hannagan, UPRR publicist, launched a publicity campaign, and people, including celebrities from Hollywood, began to pour into the Wood River Valley. This was the start of the recreation boom for Blaine County which has continued to the present.

Since the original Sun Valley Resort opened, the County has become an important summer and winter recreation resort and year-round convention facility, as well as a much-desired place to live.

## Demographics

Blaine County has experienced strong, steady growth over the last decade. The population increased from 17,707 in 1996 to 21,501 in 2006 and to 21,329 in 2013. From 2006 to 2016, Blaine County saw the population dropped by 0.8%. This drop is not considered significant and the population appears to be stabilized. Since then, the population has steadily increased again. In the 2010 Census the population of Blaine County was 21,376 and in 2020 it is 24,272, an increase of 13.5%.

The table below shows the population change for the past ten years for the County as well as each incorporated city.

Location	Population 2010	Population 2020	% Change
Blaine County	21376	24272	13.55%
City of Bellevue	2287	2486	8.70%
City of Carey	604	649	7.45%
City of Hailey	7960	9161	15.09%
City of Ketchum	2689	2879	7.07%
City of Sun Valley	1406	1496	6.40%

As demonstrated above the population of Hailey has grown the most in the last 10 years. While the other parts of Blaine County have grown about the same amount over the past 10 years.

## Critical Infrastructure

Listed below is the facilities of the county, cities and school district.

### Blaine County Facilities

Blaine County has multiple facilities at multiple sites. A list of all the buildings and their locations are listed below.

206 1st Ave, Hailey	Courthouse
	Courthouse Stairs and Balcony
Hot Springs Parking Lot, Ketchum	Boat Dock Bldg
E 1/2 lots 5,6,7,8, Blk 10	Carey County Shop
SWSE, Sec 14, Hailey	County Shop
1 S 21 E, Carey	Fire Station
Glendale Road, Hailey	Glendale Shop
Lots 13 Thru 22, Hailey	Hailey Courthouse
Lots 4,5,6, Hailey	Hailey Judicial Building
Lots 13&14, Hailey	Hailey McBride Building
201 2nd Ave S, Hailey	Judical Building
Ohio Gulch, Ketchum	Landfill Bldg
	Landfill Recycle Building
Blaine County, Hailey	Magic Sub Bldg
302 1st Ave S, Hailey	McBride Bldg
219 1st Ave South, Hailey	New County Annex
210 1st Ave S, Hailey	Sheriff's Ofc & Jail
City of Carey	Road & Bridge Shop
	Annex to Main Bldg & Bridge Bldg
	Weed Bldg
	Fair Exhibit 4H Bldg
	Fair Exhibit Bldg #2
	Fair Loafing Shed
	Fair Stock Bldg #1
	Fair Stock Bldg #2
	Fair Storage Bldg
	Weed Shop-Ofc Storage

### City of Bellevue Facilities

Lower WR Meadows	Lift Station & Equipment
S. Bell Business Park	Lift Station & Equipment
75 Martin Lane	Maintenance Building
117 Pine St	Marshall Office

No address	Old City Hall
Chestnut & 8th	Pumphouse
Chantrelle Sub	Pumphouse & Equipment
Hwy 75 & Riverview	Pumphouse & Equipment
No address	Sewer Plant/Equipment
No address	1 million gal water Tank
115 Pine St	City Hall
O'Donnell Park	Concession Stand
75 Martin Way	Lift Station

### City of Carey Facilities

20482 Main Street	City Hall/Water District Office
Section 3, Twp 2 S, R 21 E	Sewer House
	Storage Bldg at Sewer Plant
	Water Tank 165 gal
9 River Road	Water Tank 30,000 gal
Section 2 Twp 2 S R 21 E	Well House #1
9 River Lane	Well House #2

### City of Hailey Facilities

4297 Glenbrook Drive	Main Office/Lab
	Electrical Bldg/Generator
	Headworks
	Wastewater Treatment Plant
	Wastewater Treatment Plan Process Bldg/Basins
	Waste Treatment Shop
	Wastewater Treatment Digester
	Water Reservoir, 1Million Gallons
	Water Reservoir, 2Million Gallons
Northridge	Well Building
Snowfly Drive	Lift Station (Pmp HS)
N. Woodside	Pumphouse
N. Woodside	Pumphouse n/Chlorine Contact Chamber
3rd St South	Pumphouse
Silver St/River St	Pumphouse
War Eagle Dr	Pumping Station Riverside
Buttercup Road	Regulator Station
Indian Creek Road	Hydrogen and Bldg and Equipment
Indian Springs Canyon	Storage Tank



	Spring House
115 Main Street	City Hall PD/Library
218 N Main	Museum
617 S 3rd Street	Fire Station
Lawrence Heagle Park	2002 Playground Wood & Metal Structure
	Restrooms/Pavilion Lion/eq.
	Surplus Building
Deerfield Park	Playground Equipment
Eastridge & Buckhorn Dr	Foxmoor Park
Hwy 75 & Airport Way	Hailey Skate Park
Hop Porter Park	Pavilion
	Pavilion & Playground Eq Update
	Restroom
Lions Park	Pavilion, powerbox, playground equip
Hwy 75 & 4th	Roberta McKercher Park (RV Dumps)
1811 Merlin Loop	City Shop
Airport Way Lot 9 Blk 9	City Shop
Treaty Road	Turbine Tank
Main Street	Rodeo Grounds with Area and Bleachers
	Welcome Center

### City of Ketchum Facilities

480 East Ave N	City Hall
110 River Ranch Rd	Admn Building/Utilities Dept
	Aeration Basin/Utilities Dept
	Sludge Transfer Pump Bldg/Utilities Dept
	Truck Loading Bldg/Utilities Dept
	Bar Screen Bldg/Utilities Dept
	UV Disinfection Bldg/Utilities Dept
	Blower Bldg #2/Utilities Dept
	Sewer Operations Bldg/Utilities Dept
	Sewer Storage Bldg/Utilities Dept
	Effluent Filters Building
	Electrical Building
	Influent Pump/Utilities Dept
	Operations Bldg/Utilities Dept
	Aeration Basin/Utilities Dept
No address	Sludge Thickener Bldg/Utilities Dept
River Ranch Rd	Submersible Pump Bldg/Utilities Dept
1178 Warm Springs Rd	Pumphouse @ Parkwood/Utilities Dept

120 River Rock Rd	Pumphouse @ Big Wood/Utilities Dept
100 Park Circle West	Pumphouse @ Northwood Park/Utilities Dept
1197 Warm Springs Rd	Pumphouse @ Rotary Park/Utilities Dept
No address	Clarifier Bldg #1/Utilities Dept
No address	Clarifier Bldg #2/Utilities Dept
No address	Aerobic Digester Bldg/Utilities Dept
122 Saddle Road	Bigwood Booster/Utilities Dept
Trail Creek Well	Pumphouse @ Sun Valley/Utilities Dept
No address	Blower Bldg #1/Utilities Dept
1300 Warm Springs Rd	Water System Booster Station/Utilities Dept
260 10th St	Ketchum Street Dept/Street Dept
	New Street Dept Bldg/Street Dept
991 Warm Springs Rd	Old Street Bldg/Street Dept
531 5th Street	Bonning Cabin/Park Dept
120 1st St E	Building-Forest Service/Park Dept
Lewis ST	Church/ Park Dept
191 River St	Garage/Warehouse/Park Dept
580 Main ST	Memory Park/Park Dept
500 East Ave N	Ore Wagon Museum/Park Dept
120 First Ave S	Public Restroom FS/Parks Dept
900 Third Ave N	Atkinson Park Bldg/Restroom
171 River St	Bldg/Single Family Dwelling/Park Dept
Atkinson Park	Pumphouse @ Atkinson Park/ Park Dept
	Tennis Court/Equip/Parks Dept
	Bleachers/Park Dept
	Picnic Shelter/Parks Dept
900 Campus Way	Rental Dwlg/Dizzy's/Park Dept
1173 Warm Springs Road	Rotary Park Picnic Shelter/Parks Dept
	Rotary Park Restrooms/Parks Dept
131 River ST	Single Family Dwelling
180 First Street E	Ski Museum-FS/Parks Dept
100 First Street E	Warehouse/FS/Parks Dept

### City of Sun Valley Facilities

81 Elkhorn Road	City Hall
Morningstar & Arrowleaf	Elkhorn Fire Station
	Fire Station and Storage

## Public Services

### Sewer and Water

Water and sewer systems in Blaine County are under the jurisdiction of the South Central Health District.

Communities which are currently served by municipal water systems include: Ketchum, Sun Valley/Elkhorn, Hailey/Woodside, Bellevue, Picabo, and Carey. In addition to the municipal systems there are numerous community and non-community water systems serving trailer parks and subdivisions. Community water systems are those which serve at least ten (10) households or twenty-five residents. Non-community water systems serve less than ten (10) households or less than twenty-five (25) permanent residents. The majority of county residents use domestic wells for their water source.

Communities which are currently utilizing municipal sewage treatment plants include: Ketchum, Bellevue, Sun Valley/Elkhorn, Hailey/Woodside, and Carey area. In addition, Blaine County has several subdivisions, a major rest stop area at Timmerman junction, and trailer parks which are served by common underground sewage disposal fields or package plants.

### Solid Waste Management

Blaine County currently operates landfills at Ohio Gulch near Hailey, and a transfer station at Carey.

### Public Utilities

**Intermountain Gas** provides natural gas to residents and commercial customers in the Wood River Valley from the Sawtooth National Recreation Area on the north, to Bellevue on the South.

**CenturyLink** provides telecommunications services for residents and commercial customers in the Wood River Valley and Picabo areas.

**Frontier Telephone Company** provides telecommunications for residents and commercial customers in the Carey and Picabo area.

**Cox Communications** provides telecommunications in the Wood River Valley area.

### Electrical Power

**Idaho Power** serves the residents and commercial customers of Blaine County, with the exception of the Stanley Basin, with electrical power. The Stanley Basin, in the very northern tip of the County, is served by the **Salmon River Power Cooperative**.

Power outages are an *extremely high concern* for Blaine County. Various natural and manmade disasters can, and do affect the electrical infrastructure in the County. Currently there is no redundancy built into the major transmission lines that feed electricity into the County. To alleviate the consequences in the event of a power outage redundancy needs to be included in the overall structure of the power grid. This will need to be done in cooperation with Idaho Power and the Salmon River Power Cooperative.

The following hazards pose a threat to the electrical infrastructure in Blaine County.

- Severe Storms
- Earthquake

- Landslide/Mudslide
- Avalanche
- Wildland Fire

Of the aforementioned hazards, four are surface hazards; they occur above ground, and one (1), earthquake, occurs below ground, but affects infrastructure both above and below ground. The existing transmission lines are run above ground, which is a standard procedure.<sup>1</sup>

The southern half of the Wood River Valley, from Hailey south, is served by two transmission lines, giving it redundant power service a majority of the year. However, the northern part of the Valley is served by a single transmission line. When a storm, accident or wild fire damages the line, there is no alternative way to provide power to the Ketchum/Sun Valley area. Idaho Power maintains and patrols this single line to a much higher standard than most other transmission lines in its service territory for just this reason. The line is, however, over 50 years old and will require even greater care in the future.

The two transmission lines serving as far north as Hailey provide better dependability than would a single transmission line. Presently, the combination of these two lines can serve the most extreme peak usage in the Valley at any time. However, the lines individually do not have the capability to serve the entire valley load at winter peak. This means that if one of the lines was to be taken out-of-service during the winter when Valley loads are the highest, the remaining line would not be able to carry the entire Valley load. The load would have to be reduced through the use of rotational outages for the duration of the outage. Depending on the cause and extent of the damage that caused the line to go out-of-service, the rotational outages could extend for several days.

If the transmission line serving from the Wood River Transmission Station north to Ketchum/Sun Valley is taken out-of-service at any time of year, there would be no way to serve most of the load in the north end of the Valley. As mentioned before, an outage of this line could cause potential hardships to the citizens and businesses of the north Valley. Idaho Power maintains and patrols this line to a significantly higher degree than it does most other transmission lines in the Idaho Power system. But as this line ages, it will become more and more difficult to maintain its dependability. The line was built in 1962 and as the years go by, it can be expected that more failures will occur. And no matter how much maintenance is done on this line, forces of nature can cause it to fail.

Historically power outages have been the most costly consequence of natural disasters in Blaine County. By exposing the transmission lines to natural hazards that may occur in the area, it may cause extenuating circumstances. An acceptable method of mitigation is to bury the transmission lines to protect them from events when they occur. This strategy has successfully been used in Jackson County, Missouri and in the City of Tallahassee in Leon County Florida to reduce risk to the electrical system. According to the Wood River Electrical Plan:

“Idaho Power cannot construct underground facilities unless there are extenuating circumstances that would require it. These circumstances could include environmental issues, or land availability issues.”<sup>2</sup>

Though it is not a common practice to construct underground facilities, because of extenuating circumstances, such as risk posed by natural hazards, this measure can be taken.

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<sup>1</sup> Idaho Power, Wood River Electrical Plan. December 2007, Pg 15

<sup>2</sup> Idaho Power, Wood River Electrical Plan. December 2007, Pg 15

The Wood River Electrical Plan was developed through a collaborative process involving Idaho Power and a local Community Advisory Committee (CAC) in 2007 and referenced above. The purpose of the Plan is to identify the needed electrical system improvements to meet the Wood River Valley's electrical needs through build out. The CAC refined the Plan through 2012 based on stakeholder and public input from 40 presentations, 17 jurisdictional meetings, and 4 open house/ public presentations.

The CAC's priority since 2007 is Reliability, provided through redundancy. The recommendations for system improvement do not increase the amount of energy into the Valley, regardless of the energy source. Redundancy recommendations can run concurrently with renewable projects. Improvements strive to balance the "community's" tolerance for risk of an outage with viable solutions. The overall goal is to identify a feasible and fundable solution that meets energy reliability and community needs.

The CAC's Design Concept Recommendations include the need to improve reliability and reduce outage risk by:

- Strengthening the two existing 138 kV lines south of Hailey
- Adding a redundant 138 kV line between Hailey and Ketchum
  - Alternatives for the redundant 138kV line include:
    - Retaining the existing transmission line and locate the redundant line on a separate route from the existing line
    - Combining the new transmission line with existing distribution lines on new steel poles along the highway (results in a single line of poles)
    - Minimizing pole height as much as possible
    - Incorporating double circuit transmission in short distances only to reduce new visual impacts
    - Providing underground design options that respond to local aesthetic concerns<sup>3</sup>

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<sup>3</sup> Wood River Electrical Plan Background and Status, October 2014

Wood River & Ketchum 138kV lines outage history (Feb 2017-Feb 2022)				
Line	Off Date/Time	On Date/Time	Duration (hr:min)	Cause Description
KING-WDRI 138kV	3/9/2017 22:36:00	3/9/2017 22:36:55	0 days 0 hrs 0 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	3/25/2017 08:15:00	3/25/2017 08:15:10	0 days 0 hrs 0 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	4/1/2017 09:48:00	4/1/2017 11:35:00	0 days 1 hrs 47 mins	Maintenance and Construction
MPSN-WDRI 138kV	5/21/2017 16:44:00	5/21/2017 16:44:00	0 days 0 hrs 0 mins	TRIP/CLOSE - Unknown
MPSN-WDRI 138kV	5/21/2017 16:44:00	5/21/2017 17:41:00	0 days 0 hrs 57 mins	Unknown
KING-WDRI 138kV	6/5/2017 07:34:59	6/30/2017 11:32:00	25 days 3 hrs 57 mins	Maintenance and Construction
KING-WDRI 138kV	7/17/2017 08:14:00	10/6/2017 09:37:00	81 days 1 hrs 23 mins	Maintenance and Construction
KING-WDRI 138kV	9/19/2017 11:57:52	9/19/2017 12:13:45	0 days 0 hrs 15 mins	Foreign Interference
KING-WDRI 138kV	10/6/2017 09:37:00	7/17/2018 17:14:46	284 days 7 hrs 37 mins	Maintenance and Construction
KING-WDRI 138kV	11/30/2017 08:00	11/30/2017 12:48	0 days 4 hrs 48 mins	Equipment Failure
MPSN-WDRI 138kV	02/14/2018 12:47	02/14/2018 12:50	0 days 0 hrs 3 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	02/27/2018 14:20	02/27/2018 14:21	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	04/24/2018 22:29	04/24/2018 22:30	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
KING-WDRI 138kV	07/17/2018 17:12	07/17/2018 17:14	0 days 0 hrs 2 mins	Fire North of Richfield - Smoke
KING-WDRI 138kV	11/05/2018 08:00	11/08/2018 12:14	3 days 4 hrs 14 mins	Maintenance and Construction
MPSN-WDRI 138kV	11/24/2018 02:00	11/24/2018 02:01	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	11/24/2018 02:17	11/24/2018 02:18	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	11/24/2018 02:52	11/24/2018 02:53	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
KING-WDRI 138kV	02/23/2019 06:52	02/23/2019 06:54	0 days 0 hrs 2 mins	TRIP/CLOSE - Weather Related
KING-WDRI 138kV	02/23/2019 10:40	02/23/2019 16:13	0 days 5 hrs 33 mins	Equipment Failure
MPSN-WDRI 138kV	02/26/2019 02:07	02/26/2019 02:08	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	02/26/2019 02:21	02/26/2019 02:22	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	02/26/2019 02:22	02/26/2019 02:23	0 days 0 hrs 1 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	02/26/2019 02:49	02/28/2019 11:01	2 days 8 hrs 12 mins	Maintenance and Construction
MPSN-WDRI 138kV	03/19/2019 09:00	03/19/2019 12:28	0 days 3 hrs 28 mins	Maintenance and Construction
MPSN-WDRI 138kV	04/23/2019 10:00	04/23/2019 13:07	0 days 3 hrs 7 mins	Maintenance and Construction
KING-WDRI 138kV	07/16/2019 05:50	07/16/2019 05:51	0 days 0 hrs 1 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	08/03/2019 23:34	08/03/2019 23:35	0 days 0 hrs 1 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	08/05/2019 01:37	08/05/2019 01:38	0 days 0 hrs 1 mins	TRIP/CLOSE - Unknown
MPSN-WDRI 138kV	08/26/2019 09:00	10/14/2019 13:23	49 days 4 hrs 23 mins	Maintenance and Construction
KING-WDRI 138kV	11/20/2019 14:30	11/20/2019 15:21	0 days 0 hrs 51 mins	Equipment Failure
KING-WDRI 138kV	01/07/2020 17:44	01/07/2020 17:47	0 days 0 hrs 3 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	05/18/2020 09:00	05/22/2020 11:01	4 days 2 hrs 1 mins	Maintenance and Construction
MPSN-WDRI 138kV	05/20/2020 11:28	05/20/2020 12:20	0 days 0 hrs 52 mins	Equipment Failure
KCHM-WDRI 138kV	10/12/20 22:00	10/13/20 4:57	0 days 6 hrs 57 mins	Maintenance and Construction
MPSN-WDRI 138kV	11/13/2020 22:18	11/13/2020 23:52	0 days 1 hrs 34 mins	Unknown
KING-WDRI 138kV	12/04/2020 17:37	12/04/2020 17:39	0 days 0 hrs 2 mins	TRIP/CLOSE - Weather Related
MPSN-WDRI 138kV	04/08/2021 16:00	04/23/2021 12:19	14 days 20 hrs 19 mins	Maintenance and Construction
MPSN-WDRI 138kV	04/22/2021 09:00	04/23/2021 12:56	1 days 3 hrs 56 mins	Maintenance and Construction
MPSN-WDRI 138kV	05/27/2021 16:43	05/27/2021 16:45	0 days 0 hrs 2 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	06/01/2021 16:58	06/01/2021 17:01	0 days 0 hrs 3 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	07/12/2021 04:24	07/12/2021 05:06	0 days 0 hrs 42 mins	TRIP/CLOSE - Unknown
MPSN-WDRI 138kV	08/21/2021 18:31	08/21/2021 19:10	0 days 0 hrs 39 mins	TRIP/CLOSE - Unknown
KING-WDRI 138kV	09/13/2021 09:00	09/16/2021 10:16	3 days 1 hrs 16 mins	Maintenance and Construction
MPSN-WDRI 138kV	12/23/2021 16:20	12/24/2021 14:10	0 days 21 hrs 50 mins	TRIP/CLOSE - Weather Related

## Water Resources

### Surface Water

The two major rivers in Blaine County are the Big and Little Wood Rivers. The Big Wood River begins near Galena Summit and flows down the Big Wood River Valley through Ketchum, Hailey, and Bellevue. The Little Wood River begins in northern Blaine County Hyndman Peak. It flows down the Little Wood River Valley just east of the Big Wood River Valley. Smaller rivers and creeks include Camas Creek, Silver Creek, and Fish Creek.

Blaine County has numerous alpine lakes and reservoirs. The largest lakes are Alturas Lake, Pettit Lake, and Alice Lak, all found on the very northern tip of Blaine County. Large reservoirs include: Magic Reservoir at the confluence of Camas Creek and the Big Wood River, Carey Lake on the Little Wood River, and Fish Creek Reservoir on Fish Creek.

### Ground Water

The southern half of Blaine County is underlain by the Snake River Plain Aquifer. The area of the Big Wood River Valley is underlain by a valley-filled aquifer, which is an unconsolidated aquifer that holds water in pore spaces between grains of sand and gravel. The Snake River Plain Aquifer is a consolidated aquifer that holds water in the cracks and pore spaces of solid basalt rock.

### Irrigation

Company Name	Irrigation Acres	Source
Little Wood River Irrigation District	9,549 Acres	Little Wood River Reservoir
Lake Creek Meadows Homeowners Assn Inc	96.98 Acres	
Baseline Canal Co.	3,469 Acres	
Fish Creek Reservoir Co. Inc.	10,328.3 Acres	Fish Creek Reservoir
American Falls Reservoir Dist. #2	403.6 Acres	American Falls Reservoir

Blaine County Irrigation Companies

## Transportation

Major routes through Blaine County include US Highway 93/26, US Highway 20, and Idaho State Highway 75. US Highway 93/26 is a north/south route that connects the County with Shoshone and Twin Falls to the south, and Arco and Challis to the north via the City of Carey. US Highway 20 is an east/west route that connects the County to Mountain Home to the west and joins US 93/26 at Carey. State Highway 75 is a north/south route that connects the County to Shoshone to the south and Stanley to the north via the Big Wood River Valley. Loss of access to Highway 75 would be significantly detrimental to the Big Wood Valley.

Approximately 450 miles of local roads are maintained by the County, of which approximately 125 are paved. Most of these county roads originally serviced the first settler's farms or mines. They primarily follow section lines dividing farms and ranches, or run up the canyons off the Big Wood River. Each of the cities except Carey are responsible for the transportation needs within its annexed boundaries.

## Bridges

There are approximately 75 public bridges in Blaine County. All bridges are currently have rating of fair to good according to the Idaho Department of Transportation.

## Airports

Blaine County has one major airport, The Friedman Memorial Airport (FMA). It is operated under a joint powers agreement between the City of Hailey and Blaine County. There are other small airports in the county in Carey, Picabo, Magic Reservoir and Smiley Creek.

## Housing

According to the United States 2020 Census data there are 15,600 housing units in Blaine County. Of these, 29.9% were renter occupied housing units and 70.1% were owner occupied housing units. New residential construction has been substantial in Blaine County during the past two years, with the average sale price of a home increasing at a higher rate than earnings or personal income.



## Section 3. Risk Assessment

An all hazard risk assessment is an integral part of the core functions of emergency management, which include (1) prepare, (2) respond, (3) recover, and (4) mitigate. Emergency Management is a vital part of a community's ability to evaluate hazards facing the community and where mitigation action can be focused.

Hazards that pose a threat to human life, health and well-being are myriad and no attempt is made here to compile an exhaustive list. Those that are addressed in disaster planning are generally categorized as "natural" or "non-natural." FEMA contains a thorough discussion of hazards in section entitled "FEMA's Multi-Hazard Identification and Risk Assessment (MHIRA)". Some hazards are a threat to all geographic areas, while others (e.g., tsunami in coastal regions) are not. Hazards that have been identified as significant in this county and that are considered in the AHMP include:

### Natural Hazards:

- Drought
- Severe Weather
- Flooding
- Dam Failure
- Earthquake
- Landslide/Mudslide
- Snow Avalanche
- Wildfire
- Climate Change

### Non-Natural Hazards:

- Communicable Diseases
- Structural Fire
- Nuclear Event
- Hazardous Material/Nuclear Event
- Terrorism/Riot/Demonstration/Civil Disorder

## Hazard Profile

The following information was gathered for each hazard:

- Hazard Description – Description of the hazard.
- Historical Frequency – Data to support how often the hazard has occurred.
- Hazard Impact – Potential impacts of the hazard on the community.
- Loss Estimates – Loss estimates from each hazard.

## Limitations

Hazards analysis is complicated and should be considered an initial step in evaluating the community's hazards. Hazard analysis provides valuable information to help identify goals, prioritize actions, plan and

prepare, and recover and mitigate future hazards. Hazards assessment is not an exact science and cannot predict future hazards or their impacts. As the community and climate changes, so do the hazards and impacts.

### Hazard Loss Modeling

To supplement the risk analysis, hazard loss modeling was utilized. The updated HAZUS, a regional multi-hazard loss estimation model that was developed by FEMA and the National Institute of Building Sciences (NIBS), along with Geographical Information System (GIS) mapping, was used to estimate the losses from potential flood and earthquakes. HAZUS estimates losses related to damage before, during or after the disaster occurs.

### Hazard Risk Determination

Due to the complexity of assessing potential risk from each hazard, the risk determination of each hazard was based on the probability of the hazard event occurring and its potential impacts. At the fundamental level, a risk is a function of frequency and consequence. While defining the frequency of a hazard is straightforward, measuring consequences is more complex. Previous ratings, hazard modeling, GIS data, and planning committee members were used to measure consequences of hazards.

## Severe Weather

Hazard Overview: Severe Weather		
Location:	County-wide	
Frequency/Previous Occurrence:	High	
Impact/Consequence:	Medium	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Medium	Medium	Medium
Sun Valley	Ketchum	Hailey
Medium	Medium	Medium
Blaine County School District	Flood Control Dist. 9	
Medium	Medium	

The impacts of weather hazards may be widespread or more localized; however, all have the potential to be severe and directly life-threatening. Historical weather data are generally available in sufficient detail over long time periods, allowing for reasonably accurate risk assessments for planning purposes.

Severe weather includes those hazards that are found at all time of the year in Blaine County. This includes extreme temperatures, lightning, hail, wind, tornado, and winter storms. Each hazard is examined independently; however, it is recognized that these hazards typically occur together.

### Probability of Future Occurrence:

Based on previous events throughout the county, as listed below in the tables below, there is 100% probability that severe weather will occur each year in Blaine County.

**Repetitive Loss:**

Severe weather occurs frequently in Blaine County and it is assumed that there are repetitive losses especially caused by straight line wind damage; however, this type of loss is not reported to a single point and thus hard to track and quantify.

**Extreme Heat****Description**

The term “extreme heat,” sometimes called “heat wave,” is to some extent a relative one describing a period when weather conditions include temperatures and humidity significantly higher than those usual for a particular geographic area. The National Weather Service (NWS) issues alerts to the public based on its Heat Index, which takes both temperature and humidity into account (see Figure 4.1.7). The NWS will initiate alert procedures when the High is expected to exceed 105°- 110°F (depending on local climate) for at least two consecutive days. The effects of extreme heat are often exacerbated in large urban areas due to the heat island effect and because stagnant atmospheric conditions may trap pollutants. Extreme heat conditions are not common to Idaho where, in general, humidity is low and weather patterns vary.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2002	28.1	31.9	39.0	58.7	67.1	78.3	88.8	81.5	74.1	57.6	45.3	36.6	57.3
2003	37.1	38.6	49.8	53.6	66.8	78.1	91.1	86.2	75.3	66.3	39.3	35.4	59.8
2004	27.2	30.0	49.8	57.5	64.2	75.9	84.5	80.1	72.2	57.7	43.4	33.6	56.3
2005	31.3	35.5	46.4	55.7	61.8	69.1	86.7	84.3	72.3	61.0	43.2	30.1	56.5
2006	32.3	29.3	39.8	55.7	68.4	80.5	90.7	79.9	73.3	58.6	42.1	32.1	56.9
2007	29.1	39.4	52.9	57.8	70.3	79.7	92.6	85.7	71.6	55.6	47.0	29.8	59.3
2008	26.2	32.4	38.1	50.6	65.9	75.3	86.7	83.5	74.6	59.1	48.4	31.3	56.0
2009	30.2	34.0	41.6	55.0	68.0	70.8	85.8	81.4	79.5	52.7	42.7	26.6	55.7
2010	33.1	33.4	43.7	54.1	57.8	71.1	83.1	80.9	75.9	62.7	40.0	32.6	55.7
2011	27.7	31.9	41.9	49.7	60.5	71.8	85.1	85.1	78.3	59.9	40.2	35.1	55.6
2012	34.8	34.0	46.8	60.8	66.9	76.4	87.5	85.7	76.7	59.1	46.4	31.9	58.9
2013	25.4	35.6	47.4	57.3	67.3	76.9	90.7	89.8	75.7	58.7	48.6	28.5	58.5
2014	37.1	37.0	48.9	59.9	70.5	75.8	89.0	81.0	76.7	66.7	42.9	38.0	60.3
2015	31.6	45.0	56.9	59.5	66.5	83.7	83.3	85.4	77.5	69.1	41.9	27.8	60.7
2016	29.1	34.5	47.5	63.7	64.6	79.6	84.6	85.9	71.7	60.7	51.7	25.5	58.3
2017	22.0	36.5	44.3	55.0	67.3	77.8	90.1	87.4	73.6	58.0	47.3	35.9	57.9
2018	40.1	38.3	42.3	58.6	71.4	76.2	89.2	86.6	78.1	59.3	45.4	30.8	59.7
2019	32.5	29.8	40.0	57.7	64.1	74.5	86.3	87.1	85.8	54.3	47.8	31.8	57.6
2020	31.1	34.2	46.4	43.5	68.3	73.3	84.6	89.3	79.5	62.3	46.3	34.4	57.8
2021	36.0	33.9	48.6	56.9	68.3	85.4	92.5	83.1	78.3	61.4	47.7	35.8	60.7
2022	24.4	30.4	36.2	M	M	M	M	M	M	M	M	M	30.3
<b>Mean</b>	30.8	34.5	45.2	56.1	66.3	76.5	87.6	84.5	76.0	60.0	44.9	32.2	56.7

### Historical Frequencies

There have been no recorded days in which the temperature in Blaine County has reached or exceeded 105 degrees Fahrenheit. A heat wave encompassed all of southeastern Idaho from July 10 -15, 2002. Several records were set including 102 degrees at Picabo and 98 degrees at Ketchum. Since 2010 there has been 5 days where the temperature has been 90 degrees or higher.

### Impacts

The primary impact of extreme heat is on human health causing such disorders as sunstroke, heat exhaustion, and heat cramps. Particularly susceptible are the elderly, small children, and persons with chronic illnesses. There are also undoubtedly indirect and chronic health effects from extreme heat the magnitude of which are difficult or impossible to estimate. Environmental effects can include loss of wildlife and vegetation and increased probability of wildfires.

### Loss Estimates

Extreme heat places high demands on electrical power supplies that can lead to blackouts or brownouts. Economic impacts result from such factors as increased energy prices, loss of business as people avoid leaving their homes to avoid the heat, and agricultural losses.

## Lightning

### Description

Lightning is defined by the NWS as, “A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground, or between the ground and a cloud.” A lightning discharge may be over five miles in length, generate temperatures upwards of 50,000oF, and carry 50,000 volts of electrical potential. Lightning is most often associated with thunderstorm clouds, but lightning can strike as far as five to ten miles from a storm. Thunder is caused by the rapid expansion of air heated by a lightning strike. Cloud-to-ground lightning strikes occur with much less frequency in the northwestern U.S. than in other parts of the country.

### Historical Frequencies

There are thousands of lightning strikes that occur in Blaine County in any given year, but only a small percentage cause damage. The Table below shows the number of thunderstorm lightning events over a 33 year period. According to the historical frequency of this record, one can expect at least a major thunderstorm with lightning every 1.4 years.

### Lighting Events

Cause	Number of Years	Number of Events	Return Interval
Thunderstorm	33	24	1.38 Years

### Impacts

Lightning is the second most deadly weather phenomenon in the U.S., being second only to floods. On average, sixty to seventy deaths per year are attributed to lightning nationally, and in Idaho the average is less than one per year. Despite the enormous energy carried by lightning, only about 10% of strikes are fatal. Injuries include central nervous system damage, burns, cardiac effects, hearing loss, and trauma. The effects of central nervous system injuries tend to be long-lasting and severe, leading to such disorders as depression, alcoholism, and chronic fatigue and in some cases to suicide. Lightning also strikes structures causing fires and damaging electrical equipment. Wildland fires are often initiated by lightning strikes, as are petroleum storage tank fires. About one third of all power outages are lightning-related.

### Loss Estimates

The magnitude of economic loss is difficult to estimate. Government figures suggest annual national costs at around \$30 million, but some researchers find evidence that losses may be in the billions of dollars.

## Hail

### Description

The NWS definition of “hail” is: Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud. Its size can vary from the defined minimum, a little over a quarter of an inch, up to 4.5 inches or larger. “Severe hail” is defined as being 0.75 inches or more in diameter. The largest hailstones are formed in supercell thunderstorms because of their sustained updrafts and long duration. Hail and severe hail are relatively uncommon in Idaho. In the ten-year period from 1986 to 1995 the national weather service recorded severe hail in Idaho on 113 occasions while in the same time period severe hail was recorded in Colorado nearly 1,400 times.

### Historical Frequencies

The following table provides a return interval for thunderstorms with damaging hail as reported by the National Weather Service between 1960 and 2022.

Cause	Number of Years	Number of Events	Return Interval
Thunderstorm	57	12	4.75 Years

### Impacts

Deaths and injuries do happen but are rare.

### Loss Estimates

Economic loss can be extensive, especially to agricultural based economies. Hail is very damaging to crops. Severe hail may cause extensive property damage including damage to vehicle paint and bodywork, glass, shingles and roofs, plastic surfaces, etc. Hail loss nationally is estimated at over one billion dollars annually.

## Tornado

### Description

F-scale	Class	Wind speed	Description	
		mph	km/h	
F0	weak	65-85	105-137	Gale

F1	weak	86-110	138-177	Moderate
F2	strong	111-135	178-217	Significant
F3	strong	136-165	218-266	Severe
F4	violent	166-200	267-322	Devastating
F5	violent	> 200	> 322	Incredible

The NWS describes tornado as, “a violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground. It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena.” Like hail, most tornadoes are spawned by supercell thunderstorms. They usually last only a few minutes, although some have lasted more than an hour and traveled several miles. Wind speeds within tornadoes are estimated based on the damage caused and expressed using the Enhanced Fujita (EF) Scale.

### Historical Frequencies

The table below lists recorded tornado and funnel cloud events in Blaine County. There have been 7 recorded tornado, or funnel cloud, events in Blaine County from 1960-2022. The last one occurred in 2006.

Cause	Number of Years	Number of Events	Return Interval
Thunderstorms	31	7	4.4 Years

Funnel Clouds are associated with a rotating column of air extending from the base of a cloud. If a funnel cloud touches the ground, it becomes a tornado. For this reason funnel cloud events were included in the frequency table.

Idaho has relatively few tornadoes, averaging three reported per year between 1953 and 2014. Tornadoes of F2 strength or greater are extremely rare in Idaho.

### Impacts

Loss of utilities (primarily due to fallen trees) is common following tornadoes and, depending on circumstances, communities might be deprived of almost any kind of goods and services including food, water, and medical care. Agriculturally, crop and livestock loss is also possible as is loss of timber production.

### Loss Estimates

There has been \$125,000 reported loss in the community from damage caused by Tornado activity.

## Straight Line Winds

### Description

The term “straight line wind” is used to describe any wind not associated with rotation, particularly tornadoes. Of concern is “high wind,” defined by the NWS as, “Sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration.” Like tornadoes, strong, straight line winds are generated by thunderstorms, and they can cause similar damage. Straight line wind speeds can approach 150 mph, equivalent to those in an F3 tornado.

#### Historical Frequencies

From 1960 through 2021 there were 96 damaging wind events were reported by the National Weather Service.

Cause	Number of Years	Number of Events	Return Interval
Wind	61	96	0.63 Years

A significant wind event occurred on July 31, 2013 in Carey. Several gusts in excess of 58 mph occurred on the 31st of July from thunderstorm winds.

#### Impacts

The impacts of straight line winds are virtually the same as those from tornadoes with similar wind speeds. The damage is distinguishable from that of a tornado only in that the debris is generally deposited in nearly parallel rows. Downbursts are particularly hazardous to aircraft in flight.

#### Loss Estimates

Since 1916 there has been some reported damage due to straight line or downburst damage in Blaine County, but no estimates were given.

## Extreme Cold

#### Description

“Extreme cold” is another of the terms describing hazards that must be defined relative to what is considered normal in a given locale. What might be considered extreme cold varies considerably in the State of Idaho where normal winter temperatures in the southwest are appreciably more moderate than those in the northwest and far north. Very cold temperatures become a particular hazard when accompanied by winds of 10 mph or greater. The NWS has developed a formula for calculating “wind chill” based on temperature and wind speed, and in this region issues wind chill advisories when the wind chill temperature is predicted to be -10oF or less with winds of 10 mph or higher for one hour or more. Wind chill warnings are issued when wind chill temperature will be -20oF or less with winds of 10 mph or higher for one hour or more. As with extreme heat, extreme cold is of greatest concern when the condition persists for an extended period of time.

#### Historical Frequencies



Data from two NWS weather stations were analyzed in the frequency analysis. The station at Ketchum recorded 205 days in which the temperature reached or fell below 10 degrees Fahrenheit (2010-2014). The chart in the Table below shows the frequency of extreme cold events, which can be expected to occur at least every year.

Location	No. of Years	No. of Events	Frequency
Ketchum	5	205	0.02 years or 41 days a year below 10 degree F.

In years in which an extreme cold event occurs, it is likely that there will be more than one event in the winter months which are defined as January – March and November - December. A cold cluster is days where the low temperature is 10 degrees F or below for more than 3 days. Because of the cluster factor the frequency of extreme cold events in Blaine County is 0.65 months. The longest cluster of cold days was 13 days in January 2013.

### Impacts

Health effects of exposure to extreme cold include hypothermia and frostbite, both of which can be life-threatening. Infants and the elderly are most susceptible. In the United States, nearly 700 deaths are directly attributed to hypothermia annually.

### Loss Estimates

Extreme cold may cause loss of wildlife and vegetation, and kill livestock and other domestic animals. Economic loss may result from flooding due to burst pipes, large demands on energy resources, and diminished business activity. River flooding may take place as a result of the formation of ice jams.

## Winter Storm

### Description

The NWS describes “Winter Storm” as weather conditions that produce heavy snow or significant ice accumulations. For purposes of this analysis Severe Winter Storm is defined as any winter condition where the potential exists for a blizzard (winds  $\geq$  35mph and falling/drifting snow frequently reduce visibility  $<$  ¼ mile, for 2 hrs or more) heavy snowfall (valleys 6 inches or more snowfall in 24 hrs mountains 9 inches or more snowfall in 24 hrs), ice storm, and/or strong winds.

### Historical Frequencies

The following table lists the frequency of heavy snow events (6 inches or more in a 24 hour period) for two weather stations in Blaine County;

Location	No. of Years	No. of Events	Return Interval
Blaine County	52	38	1.36 Years

While winter storms happen multiple times every year in Blaine County. The southern part of the County doesn't experience the number of storms that the northern portion does, but winter storms are still prevalent. Severe winter storms as defined above have a return interval of 1.36 years.

## Impacts

The impacts of the very cold temperatures that may accompany a severe winter storm are discussed above. Other life-threatening impacts are numerous. Motorists may be stranded by road closures or may be trapped in their automobiles in heavy snow and/or low visibility conditions. Bad road conditions cause automobiles to go out of control. People can be trapped in homes or buildings for long periods of time without food, heat, and utilities. Those who are ill may be deprived of medical care by being stranded, or through loss of utilities and lack of personnel at care facilities. Use of heaters in automobiles and buildings by those who are stranded may result in fires or carbon monoxide poisoning. Fires during winter storm conditions are a particular hazard because fire service response is hindered or prevented by road conditions, and because water supplies may be frozen. Disaster Services may also not be available if telephone service is lost. People who attempt to walk to safety through winter storm conditions often become disoriented and lost. Downed power lines not only deprive the community of electricity for heat and light, but pose an electrocution hazard. Death and injury may also occur if heavy snow accumulation causes roofs to collapse.

## Loss Estimates

Economic impacts arise from numerous sources including: hindered transportation of goods and services, flooding due to burst water pipes, forced closing of businesses, inability of employees to reach the workplace, damage to homes and structures, automobiles and other belongings by downed trees and branches, loss of livestock and vegetation, and many others.

## DROUGHT

Hazard Overview: Drought		
Location:	County-wide	
Frequency/Previous Occurrence:	Medium	
Impact/Consequence:	High	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	High	High
Sun Valley	Ketchum	Hailey
High	High	High
Blaine County School District	Flood Control Dist. 9	
Rare	Rare	

Drought is an expected phase in the climactic cycle of almost any geographical region. Certainly, that is the case in the State of Idaho. Objective, quantitative definitions for drought exist, but most authorities

agree that, because of the many factors contributing to it and because its onset and relief are slow and indistinct, none is entirely satisfactory. According to the National Drought Mitigation Center, drought “originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector.” What is clear is that a condition perceived as “drought” in a given location is the result of a significant decrease in water supply relative to what is “normal” in that area.

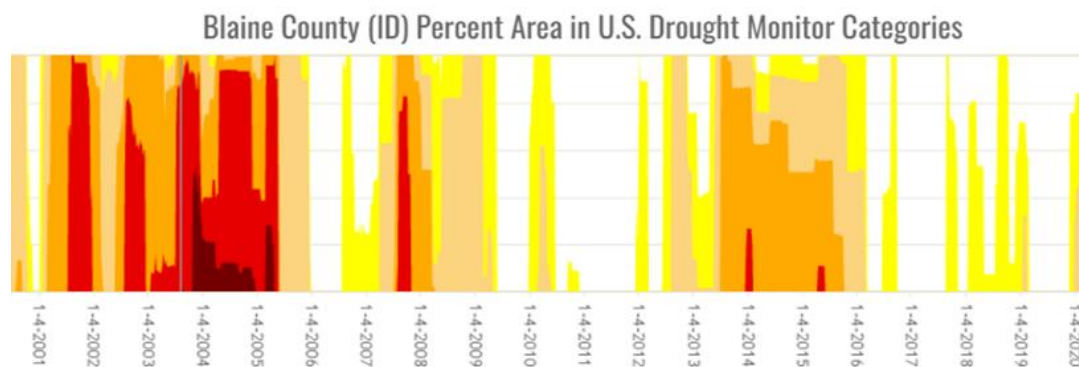
It should be noted that water supply is not only controlled by precipitation (amount, frequency, and intensity), but also by other factors including evaporation (which is increased by higher than normal heat and winds), transpiration, and human use. According to the NOAA National Climactic Data Center, parts of the State of Idaho experienced moderate to extreme drought conditions from the years 2010 through 2014 (see annual maps). Drought Emergency Declarations were issued for various counties by the Idaho Department of Water Resources in the years 2010-2014. Idaho’s only Federal Drought Emergency Declaration was issued in 1977. Blaine County declared Drought Emergencies in 2010, 2012, 2013, and 2014.

### **Historical Frequencies**

The Idaho Department of Water Resources reports that meteorological drought conditions (a period of low precipitation) existed in the State approximately 30% of the time during the period 1931-1982. Principal drought in Idaho, indicated by stream flow records, occurred during 1929-41, 1944-45, 1959-61, 1977, and 1987-92. The most prolonged drought in Idaho was during the 1930s. For most of the State, that drought lasted for 11 years (1929-41) despite greater than average stream flows in 1932 and 1938. In 1977, the worst single year on record, a severe water shortage occurred throughout Idaho and the West. Stream flows were below normal from 1979 to 1981. A Federal Declaration was issued in 1977 for the State of Idaho as well as Blaine County .

According to the Idaho Department of Water Resources (IDWR) the following Drought Emergency Declarations were issued for Blaine County since 2009:

- April 14, 2010
- July 16, 2012
- May 14, 2013
- April 24, 2014
- May 26, 2020
- April 15, 2021



## Impacts

Drought is agriculture's most expensive, frequent, and widespread form of natural disaster. The current drought in the interior West is part of a multi-year drought that began in 1999, worsened in 2000, and has continued, with some interruptions thus far into 2004. As a result, the drought in the West was slow to develop, and likewise, will be slow to recede.

Drought produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area experiencing physical drought. This complexity exists because water is integral to our ability to produce goods and provide services.

Impacts are commonly referred to as direct or indirect. Reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitat are a few examples of direct impacts. The consequences of these impacts illustrate indirect impacts. For example, a reduction in crop, rangeland, and forest productivity may result in reduced income for farmers and agribusiness, increased prices for food and timber, unemployment, reduced tax revenues because of reduced expenditures, increased crime, foreclosures on bank loans to farmers and businesses, migration, and disaster relief programs. Direct or primary impacts are usually biophysical. Conceptually speaking, the more removed the impact from the cause, the more complex the link to the cause. In fact, the web of impacts becomes so diffuse that it is very difficult to come up with financial estimates of damages. The impacts of drought can be categorized as economic, environmental, or social.

Many economic impacts occur in agricultural and related sectors because of the reliance of these sectors on surface and subsurface water supplies. In addition to obvious losses in yields in crop and livestock production, drought is associated with increases in insect infestations, plant disease, and wind erosion. Droughts also bring increased problems with insects, diseases to forests, and reduced growth. The incidence of forest and range fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk.

## Loss Estimates

Income loss is another indicator used in assessing the impacts of drought because so many sectors are affected. Reduced income for farmers has a ripple effect. Retailers and others who provide goods and services to farmers face reduced business. This leads to unemployment, increased credit risk for financial institutions, capital shortfalls, and loss of tax revenue for local, State, and Federal government. Less discretionary income affects the recreation and tourism industries. Prices for food, energy, and

other products increase as supplies are reduced. In some cases, local shortages of certain goods result in the need to import these goods from outside the stricken region. Reduced water supply impairs the navigability of rivers and results in increased transportation costs because products must be transported by rail or truck. Hydropower production may also be curtailed significantly.

## Climate Change

Hazard Overview: Climate Change		
Location:	County-wide	
Frequency/Previous Occurrence:	Low	
Impact/Consequence:	High	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	High	High
Sun Valley	Ketchum	Hailey
High	High	High
Blaine County School District	Flood Control Dist. 9	
High	High	

Climate Change, also often referred to as “Global Warming,” describes an ongoing process of increasing global temperatures that do not follow historical trends of what a natural climate cycle looks like, which comes with many further effects. Since the onset of the industrial revolution in the late 1700s and the widespread use of fuels that emit carbon dioxide and other greenhouse gases, humans have been steadily increasing the amount of these gases in our atmosphere, which leads to more heat energy from the sun being trapped near Earth’s surface, raising temperatures.

Rapid temperature changes, with the planet warming about one degree Fahrenheit over the last 50 years (EPA, 2016), has caused major shifts in weather patterns that can be very difficult to predict and adapt to, given the timeframe in which the changes have occurred. While some areas may face similar changes to their weather patterns, different regions and local climates face unique combinations and severity of these changes, meaning each area must adapt according to the local effects that are being faced. Extreme weather events are being seen more commonly and the severity is increasing. Climate change influences droughts, wildfires, floods, blizzards, and land/mudslides, along with a plethora of non-weather-related issues. Blaine County, and Idaho as a whole, are particularly susceptible to all these extreme weather events events, as they have been historically prevalent even without climate change being as drastic as it is today.

### Historical Frequencies

Unlike other hazards, climate change is not an event, but rather a process that has been ongoing for centuries. It does have a general beginning period, but has not ended, and will not for long time, making it a unique hazard. Not only is it unique in this regard, but it is also one completely manufactured by humans as opposed to something out of our control, and it affects the entire planet, not just one

localized area. This instance of climate change is the only large-scale, man-made shift in climate conditions in history, giving us little experience to base our responses off.

## Impacts

Much of the threat that climate change poses to humans comes from the change that it has brought to extreme weather events. In many areas and for many events, the scale, duration, frequency, and severity are simultaneously increasing, making them much more devastating to us and the infrastructure that we have in place. In Blaine County and across Idaho, this has been seen very recently in two of Blaine's four most threatening hazards: wildfires and droughts; and the frequency of extreme weather events are forecast to further escalate (Idaho Climate-Economy). Droughts and wildfires often occur simultaneously, as the overly dry conditions increase an area's susceptibility to burning. Areas can quickly be devastated by this combination of events.

Idaho is the nation's leader as the most heavily burned state, with an average of almost 1% of the total land being burned per year since 1984, which is likely to double in the coming years (EPA, 2016). This is largely due to ongoing drought conditions, but pests like pine beetles are becoming more common with higher temperatures, which also increase the susceptibility of trees to burn (EPA, 2016). Wildfires pose threats not only to infrastructure and industries such as logging and agriculture, but also serve as positive reinforcers of climate change by reducing the amount of carbon dioxide removed from the atmosphere by trees and other plants, furthering warming effects and the dry conditions that allow fires to thrive. Wildfires produce higher levels of air pollution, too, which can lead to immediate and long-term health problems, especially for at-risk populations and those with underlying respiratory issues. This can be especially damaging in communities that enjoy lots of outdoor recreational activities, as those in Blaine County do.

2021 was a record-breaking year and one that stood out in many regards pertaining to the drought that was faced in Idaho. Here are some notable facts about the 2021 drought outlined in the Idaho Drought Update (Hoekema, 2021):

- Idaho saw an exceptionally severe spring drought
- Second driest year on record from March-July, only behind 1924
- The statewide record was set for the average temperature across June and July
- Fifth driest statewide year on record
- In the 2021 water year (October 2020-September 2021), February was the only month that recorded an average temperature lower than the 1991-2020 average
- The highest average temperature from June-July ever recorded occurred in each of Idaho's five major basins
- As of July 2021, Blaine County, along with almost the entire state of Idaho, is experiencing an exceptional drought (D4), the most severe classification

This drought was unprecedented and completely unplanned for because it was not preceded by a lack of snow, which all other recent, major droughts in Idaho have been. This highlights the unpredictability in weather patterns that climate change is causing; signs that we have relied on in the past to predict future conditions are becoming less certain. What is certain is that weather patterns are going to continue to change. Idaho is predicted to see less snowpack, with precipitation likely increasing in the winter and spring, mainly in the form of rain, and decreasing in the summer (Idaho Climate-Economy).

More rain-on-snow events could also increase the likelihood of landslides and mudslides (Idaho Climate-Economy). Along with the reduced summer precipitation, increased evaporation and transpiration will decrease streamflow, leading to decreased hydroelectric capabilities in the months where demand is already highest and will only go up with a growing population and higher temperatures (Idaho Climate-Economy).

## Loss Estimates

Climate Change brings about losses in almost every area. Droughts can place financial strain on the agricultural industry as well as on food security. Wildfires can devastate existing infrastructure, leading to staggering financial losses as well as a lack of safety for affected communities and emotional and/or physical harm to community members. Energy infrastructure may be destroyed by wildfires or severe storms; a loss of power can be fatal under the wrong conditions but can also cause financial losses when electricity is necessary, such as in the dairy industry for refrigeration. Outside of direct impacts to humans, climate change also causes great harm to biodiversity in any given area. Fish populations are dying as stream temperatures increase, and lower water levels make rivers less navigable for spawning. Potential spread of desert land may leave areas covered in plant life barren, aside from a select few species. It is difficult to pinpoint where the losses that climate change produces begin or end.

## Flooding

Hazard Overview: Flooding		
Location:	County-wide	
Frequency/Previous Occurrence:	Medium	
Impact/Consequence:	High	
Community Vulnerability:	High	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	High	High
Sun Valley	Ketchum	Hailey
High	High	High
Blaine County School District	Flood Control Dist. 9	
Rare	High	

Flooding is defined by NWS as “the inundation of normally dry areas as a result of increased water levels in an established water course.” River flooding, the condition where the river rises to overflow its natural banks, may occur due to a number of causes including prolonged, general rainfall, locally intense thunderstorms, snowmelt, and ice jams. In addition to these natural events, there are a number of factors controlled by human activity that may cause or contribute to flooding. These include dam failure, levee failure, and activities that increase the rate and amount of runoff such as paving, reducing ground cover, and clearing forested areas. Flooding is a periodic event along most rivers with the frequency depending on local conditions and controls such as dams and levees. The land along rivers that is identified as being susceptible to flooding is called the floodplain. The Federal standard for floodplain management under the National Flood Insurance Plan (NIFP) is the “100-year floodplain.”

This area is chosen using historical data such that in any given year there is a one percent chance of a “Base Flood” (also known as “100-year Flood” or “Regulatory Flood”). A Base Flood is one that covers or exceeds the 100-year floodplain. In Idaho, flooding most commonly occurs in the spring of the year and is caused by snowmelt. Floods occur in Idaho every one to two years and are considered the most serious and costly natural hazard affecting the State. In the twenty-five years from 1976 to 2000 there were five Federal and twenty-eight State disaster declarations due to flooding. The amount of damage caused by a flood is influenced by the speed and volume of the water flow, the length of time the impacted area is inundated, the amount of sediment and debris carried and deposited, and the amount of erosion that may take place.

Flooding is a dynamic natural process. Along rivers, streams, and coastal bluffs a cycle of erosion and deposition is continuously rearranging and rejuvenating the aquatic and terrestrial systems. Although many plants, animals, and insects have evolved to accommodate and take advantage of these ever-changing environments, property and infrastructure damage often occurs when people develop coastal areas and floodplains and natural processes are altered or ignored.

Flooding can also threaten life, safety, and health and often results in substantial damage to infrastructure, homes, and other property. The extent of damage caused by a flood depends on the topography, soils and vegetation in an area, the depth and duration of flooding, velocity of flow, rate of rise, and the amount and type of development in the floodplain.

### **Flood Terminology**

A number of flood-related terms are frequently used in this plan and are defined below.

**Flood Insurance Study (FIS):** A Flood Insurance Study is the official report provided by the Federal Insurance Administration, which provides flood profiles, the flood boundary-floodway map, and the water surface elevation of the estimated 100-year base flood.

**Flood Insurance Rate Map (FIRM):** The Flood Insurance Rate Maps (FIRM) are the official maps on which the Federal Insurance Administration has delineated both the areas of special flood hazards and the risk premium zones applicable to the community.

**100-year Base Flood:** Base Flood means the flood having a 1% chance of being equaled or exceeded in any given year. (Also referred to as the “100-year flood”.)

**Floodplain:** A floodplain is land adjacent to a lake, river, stream, estuary, or other water body that is subject to flooding. If left undisturbed, the floodplain serves to store and discharge excess floodwater. In riverine systems, the floodplain includes the floodway.

**Floodway:** “Floodway” means the channel of a river or other watercourse and the adjacent areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot.

### **Types of Flooding**

Flooding can occur in a number of ways, and many times are not independent of each other and can occur simultaneously during a flood event: The Types of Flooding considered for this Plan include:



- heavy rainfall
- urban storm water overflow
- rapid snowmelt
- rising ground-water (generally in conjunction with heavy prolonged rainfall and saturated conditions)
- riverine ice jams
- flash floods
- fluctuating lake levels
- alluvial fan flooding

## River or Stream Flooding

### Description

River flooding, the condition where the river rises to overflow its natural banks, may occur due to a number of causes including prolonged, general rainfall, locally intense thunderstorms, snowmelt, and ice jams.

### Historical Frequencies

The National Weather Service recognized flood level for the Little Wood River at Carey is 5.8 ft. The USGS stream gage at that location has recorded for 86 years. The figure below illustrates the historic crests over that time.

#### Little Wood near Carey (FS = 5.8ft)

Historic Crests	
(1)	8.95 ft on 04/27/1952
(2)	8.69 ft on 12/23/1964
(3)	7.41 ft on 05/12/1958
(4)	7.20 ft on 04/22/1950
(5)	7.12 ft on 04/15/1943
(6)	7.01 ft on 04/23/1969
(7)	6.97 ft on 05/30/1983
(8)	6.78 ft on 05/19/1957
(9)	6.71 ft on 05/19/2005
(10)	6.57 ft on 05/14/1971
(11)	6.47 ft on 05/26/1967
(12)	6.33 ft on 03/30/1974
(13)	6.33 ft on 03/22/2018
(14)	6.21 ft on 06/10/1963
(15)	6.05 ft on 04/26/1980
(16)	5.91 ft on 05/17/1975
(17)	5.82 ft on 04/29/1951



The NWS recognized flood level for the Big Wood River at Hailey is 5 ft. The USGS stream gage at that location has recorded for 98 years. The figure below illustrates the historic crests over that time.

### Big Wood at Hailey (FS = 5ft)

Historic Crests	
(1)	8.36 ft on 05/07/2017
(2)	7.93 ft on 05/30/1983
(3)	7.92 ft on 05/21/2006
(4)	7.72 ft on 05/25/1967
(5)	7.20 ft on 06/16/1974
(6)	6.94 ft on 06/18/1982
(7)	6.82 ft on 05/30/1986
(8)	6.80 ft on 05/14/1982
(9)	6.60 ft on 06/05/1997
(10)	6.46 ft on 05/26/1969
(11)	6.44 ft on 06/07/1975
(12)	6.25 ft on 05/25/1958
(13)	6.17 ft on 05/31/2003
(14)	6.02 ft on 06/06/1995
(15)	5.96 ft on 05/20/2005
(16)	5.93 ft on 06/12/1965
(17)	5.90 ft on 06/07/2019
(18)	5.82 ft on 06/10/1996
(19)	5.71 ft on 06/19/1999
(20)	5.61 ft on 04/27/2012
(21)	5.25 ft on 05/21/1993
(22)	5.12 ft on 05/26/2018
(23)	5.06 ft on 06/24/2011

There is a 7% chance each year that the Little Wood River will flood at Carey, and a 25% chance that the Big Wood River will flood at Hailey. Hailey can expect one event at least every four years and Carey can

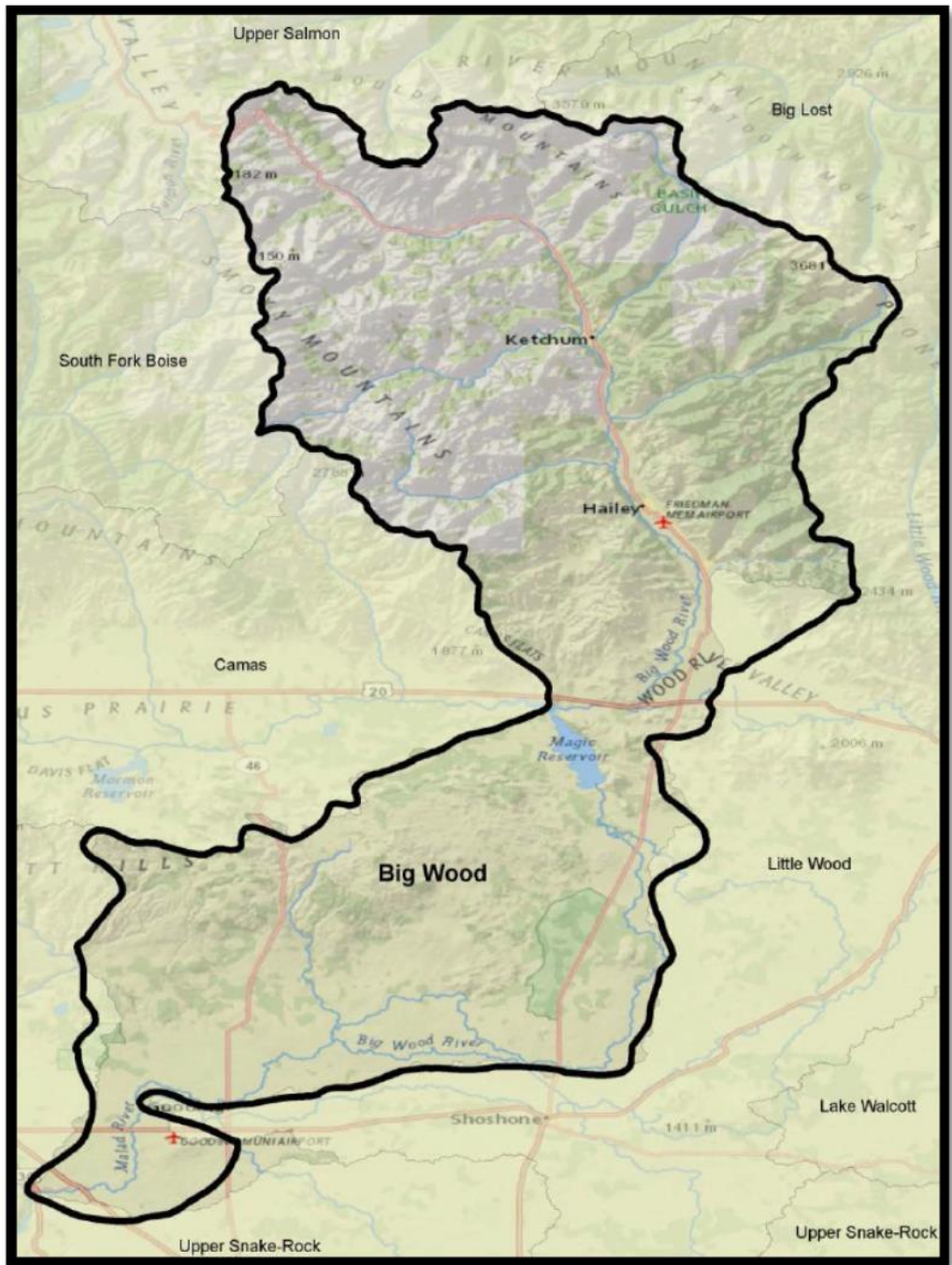
### Impacts

Human death and injury sometimes occur as a result of river flooding but are not common. Human hazards during flooding include drowning, electrocution due to downed power lines, leaking gas lines, fires and explosions, hazardous chemicals, and displaced wildlife. Economic loss and disruption of social systems are often enormous. Floods may destroy or damage structures, furnishings, business assets including records, crops, livestock, roads and highways, and railways. They often deprive large areas of electric service, potable water supplies, wastewater treatment, communications, and many other community services including medical care, and may do so for long periods of time.

### Loss Estimates

The Flood Insurance Rate Map (FIRM) for Blaine County is presented below. The Watershed Overview Map on the next page represents that Big Wood Watershed. The information that follows that figure is taken directly from the Flood Risk Report, For the Big Wood Watershed Study Area prepared in April 12, 2014 by the Army Corp of Engineers. Note the information following the watershed map provides information generated by the ACE on the expected losses in the communities affected in the watershed. Individual community information is found in the Community Vulnerability Section of this Plan.

### Watershed Overview Map





## Dam Failure

Hazard Overview: Dam Failure		
Location:	Localized	
Frequency/Previous Occurrence:	Rare	
Impact/Consequence:	High	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Rare	Medium	Rare
Sun Valley	Ketchum	Hailey
Medium	Medium	Rare
Blaine County School District	Flood Control Dist. 9	
Rare	Medium	

### Description

Dam failure is the unintended release of impounded waters. Dams can fail for one or a combination of the following reasons:

- Overtopping caused by floods that exceed the capacity of the dam
- Deliberate acts of sabotage
- Structural failure of materials used in dam construction
- Poor design and/or construction methods
- Movement and/or failure of the foundation supporting the dam
- Settlement and cracking of concrete or embankment dams
- Piping and internal erosion of soil in embankment dams
- Inadequate maintenance and upkeep

Failures may be categorized into two types; component failure of a structure that does not result in a significant reservoir release, and uncontrolled breach failure that lead to a significant release. With an uncontrolled breach failure of a manmade dam there is a sudden release of the impounded water, sometimes with little warning. The ensuing flood wave and flooding have enormous destructive power. The Idaho Department of Water Resources (IDWR) is responsible for dam safety in this State. The program is described as follows (from the “Dam Safety Program,” IDWR web site) :

Dams 10 feet or higher or which store more than 50 acre feet of water are regulated by the Idaho Department of Water Resources (as are mine tailings impoundment structures). Idaho currently has 546 water storage dams and 21 mine tailings structures that are regulated by IDWR for safety. The Dam Safety Section inspects these dams or tailing structures every other year unless one has a particular problem. Copies of all inspection reports for each of the dams and tailing structures are available at the IDWR State Office in Boise. Inspection reports are also available at the four IDWR Regional Offices for dams and tailing structures located in their specific regions.

### Dam Classifications

Each dam inspected by Idaho Water Resources is given both a size and risk classification.

### **Size Classification**

Small – 3: Twenty (20) feet high or less and a storage capacity of less than one hundred (100) acre feet of water.

Intermediate – 2: More than twenty (20) but less than forty (40) feet high or with a storage capacity of one hundred (100) to four thousand (4,000) acre feet of water.

Large – 1: Forty (40) feet high or more or with a storage capacity of more than four thousand (4,000) acre feet of water.

### **Risk Classification**

This classification is used by IDWR to classify potential losses and damages anticipated in down-stream areas that could be attributable to failure of a dam during typical flow conditions.

Low Risk – 3: No permanent structures for human habitation; Minor damage to land, crops, agricultural, commercial or industrial facilities, transportation, utilities, or other public facilities or values.

Significant Risk – 2: No concentrated urban development, one (1) or more permanent structures for human habitation which are potentially inundated with flood water at a depth of two (2) ft. or less or at a velocity of two (2) ft. per second or less. Significant damage to land, crops, agricultural, commercial or industrial facilities, loss of use and/or damage to transportation, utilities, or other public facilities or values.

High Risk – 1: Urban development, or any permanent structure for human habitation which are potentially inundated with flood water at a depth of more than two (2) ft., or at a velocity of more than two (2) ft. per second. Major damage to land, crops, agricultural, commercial or industrial facilities, loss of use and/or damage to transportation, utilities, or other public facilities or values.

### **Purposes Categories:**

N-Industrial, B-Mining, O-Other, C-Commercial, P-Power, D-Domestic, Q-Fire Protection, E-Erosion Control, F-Flood Control, S-Stockwater, G-Wildlife Protection, T-Mine Tailings, H-Fish Propagation, I-Irrigation, J-Stockwater and Irrigation, K-Domestic, Stock and Irrigation, L-Domestic and Irrigation, M-Municipal Supply

### **Dam Type**

Earth- Earth Fill, Rock- Rock Filled, CNGRV- Concrete Gravity, CNAR-Concrete Arch, MCNAR-Multiple Concrete Arch, TMCRB-Timber Crib, SLBT-lab and Buttress, RKMAS- Rock Masonry, Metal-Metal Sheet Pile, AUXDAM-Auxiliary Dam

Name	Stream	Purpose	Risk Category	Size Category	Type	Storage Capacity(Acre Ft.)	Height(Ft.)
Trail Creek	Trail Creek	HR	1	3	TMCRB	81	18
Stanislaw Waterski Lake	Big Wood River (OS)	IR	2	3	EARTH	70	10
Magic	Big Wood River	IP	1	1	EARTH	191,500	113
Campbell	TR-Little Wood River	J	3	2	EARTH	550	13.3
Sonner	Canyon Creek	SG	3	2	EARTH	300	7
Little Wood	Little Wood River	I	1	1	EARTH	30,000	117
Quigley Creek	Quigley Creek	I	3	3	EARTH	20	12
Gimlet	TR-Big Wood River	A	2	3	EARTH	16	19.9
Indian Creek	Indian Creek	I	2	3	EARTH	19	14
Fish Creek	Fish Creek	I	1	1	MCNAR	12,743	88

#### Dams in Blaine County

Source [http://www.idwr.idaho.gov/water/stream\\_dam/dams/Dams.pdf](http://www.idwr.idaho.gov/water/stream_dam/dams/Dams.pdf)

#### Historical Frequencies

There has been one recorded dam failure in Blaine County. On April 26, 1982 two small earthen dams collapsed under high spring runoff, flooding the area around Carey with two feet of water. 100 acres of farmland and over 24 homes and businesses were flooded, and bridge abutments had to be shored up after floodwaters ate away part of the stream bank. It is also reported that the Quigley Dam failed in the early to mid-1960's which impacted the City of Bellevue; losses were not given for the event.

#### Impacts

A failure of Little Wood River Dam or Fish Creek Reservoir would cause flooding in the Carey area. A failure at the Trail Creek Dam in Sun Valley could cause flooding in Sun Valley and in Ketchum.

#### Loss Estimates

A failure on the Little Wood River Dam would have devastating consequences in Blaine County and the City of Carey. According to the Bureau of Reclamation maps, there would only be 1.6 hours of warning time before the first flood wave reached the City of Carey. The following loss estimates were derived

from a GIS overlay of the inundation zone and the County parcel layer. There is a total of 823 land parcels in the inundation zone with a combined market value of \$27,593,399.

Assuming a 2 foot average flood depth the loss to structures in the inundation zone would be \$5,647,058 the contents loss would be \$8,278,019 for a total estimated loss of \$13,925,077. (Calculated using FEMA How-to Guide #2, page 4-12 )

## Wildfire

Hazard Overview: Wildfire		
Location:	County-wide	
Frequency/Previous Occurrence:	High	
Impact/Consequence:	High	
Community Vulnerability:	High	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	High	High
Sun Valley	Ketchum	Hailey
High	High	High
Blaine County School District	Flood Control Dist. 9	
High	High	

Wildfire is defined by the USDA Forest service as, “A fire naturally caused or caused by humans, that is not meeting land management objectives.” It is generally thought of as an uncontrolled fire involving vegetative fuels occurring in wildland areas. Such fires are classified for hazard analysis purposes as either “Wildland” or “Wildland Urban Interface” fires. Wildland fires occur in areas that are undeveloped except for the presence of roads, railroads, and power lines, while Wildland Urban Interface fires occur where structures or other human development meets, or is intermingled with the wildland or vegetative fuels. Wildland fire is currently considered a natural and necessary component of wildland ecology and, as such, is most often allowed to progress to the extent that it does not threaten inhabited areas or human interests and well-being. At the Wildland Urban Interface (WUI), vigorous attempts are made to control fires but this becomes an increasingly difficult challenge as more and more development for recreational and living purposes takes place in wildland areas. Some wildland fires are ignited naturally (almost exclusively by lightning), but most ignitions are a result of human activities, either careless or intentional. The rapidity with which a wildland fire spreads, and the intensity with which it burns, is controlled by a number of factors including:

- Weather - wind speed and direction, temperature, precipitation
- Terrain – fires burn most rapidly upslope
- Type of vegetation
- Condition of vegetation – dryness
- Fuel load – the amount and density of vegetation
- Human attempts to suppress



In Idaho, fire was once an integral function of the majority of ecosystems. The seasonal cycling of fire across the landscape was as regular as the July, August, and September lightning storms plying across the canyons and mountains. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition. The fires burned from 1 to 47 years apart, with most at 5 to 20-year intervals. With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age. Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation in the Columbia Basin for thousands of years.

### Historical Frequencies

Between the years 1980 and 2022 there were a total of 1026 recorded wildfires in Blaine County. A breakdown of the number of fires per year in Blaine County is given in the table below. Wildland fires occur multiple times per year in the county.

Year	Number of Fires	Acres Burned
1980	26	6,832
1981	43	3,431
1982	25	49,477
1983	15	11,347
1984	8	220
1985	17	2,608
1986	22	6,271
1987	27	7,321
1988	32	5,377
1989	44	3,673
1990	33	10,794
1991	41	13,331
1992	43	47,734
1993	12	200
1994	38	36,340
1995	33	7,590
1996	37	233,933
1997	19	384
1998	25	289
1999	35	203,216
2000	29	1,377
2001	29	1,244
2002	36	3,964
2003	25	6,797
2004	24	494
2005	33	49,756

2006	24	4,369
2007	30	60,675
2008	18	17,730
2009	12	125
2010	18	240
2011	19	756
2012	27	8,763
2013	17	101,456
2014	14	34,607
2015	16	4772
2016	14	77,900
2017	12	5906
2018	17	65,414
2019	14	989
2020	14	927
2021	12	570

## Impacts

Wildland fires threaten the lives of anyone in their path including hikers, campers, and other recreational users and, where suppression efforts are made, firefighters. Enormous volumes of smoke and airborne particulate materials are produced that can affect the health of persons for many miles downwind. Nearer to the fire, smoke reduces visibility, disrupting traffic and increasing the likelihood of highway accidents. As a result of wildland fire there may be changes in water quality in the area, and erosion rates may increase along with increased rainfall runoff and flash flood threat, and decreased rainfall interception and infiltration. Indirect impacts include losses to tourism, recreational and timber interests, and loss of wildlife habitat. Wildland Urban Interface fires have most, or all of the above impacts, as well as those of structural fires including injury and loss of life, loss of structures, and loss of contents. Agricultural losses may also be sustained including livestock, crops, fencing, and equipment.

## Loss Estimates

A GIS overlay operation was used to determine the number and value of land parcels that lie within the wildland urban interface. The following table represents the results of that analysis:

Hazard	No of Parcels Affected	Value of Affected Parcels
Wildland Fire	15,651	\$3,952,436,281

As experienced with the Castle Rock Fire (2007), the losses cannot be based solely on private property loss, but also the loss due to response, economic losses due to business and tourism interruption, and harvestable timber, to name a few.

## Earthquake

Hazard Overview: Earthquake		
Location:	County-wide	
Frequency/Previous Occurrence:	Medium	
Impact/Consequence:	Medium	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Medium	Medium	Medium
Sun Valley	Ketchum	Hailey
Medium	Medium	Medium
Blaine County School District	Flood Control Dist. 9	
Medium	Medium	

The U.S. Geological Survey (USGS) defines earthquake as: “Ground shaking caused by the sudden release of accumulated strain by an abrupt shift of rock along a fracture in the Earth or by volcanic or magmatic activity, or other sudden stress changes in the Earth.” The hazards associated with earthquake are essentially secondary to ground shaking (also called seismic waves) which may cause buildings to collapse, displacement or cracking of the earth’s surface, flooding as a result of damage to dams or levees, and fires from ruptured gas lines, downed power lines and other sources. Earthquakes cause both vertical and horizontal ground shaking which varies both in amplitude (the amount of displacement of the seismic waves) and frequency (the number of seismic waves per unit time), usually lasting less than thirty seconds. Earthquakes are measured both in terms of their inherent “magnitude” and in terms of their local “intensity.”

The magnitude of an earthquake is essentially a relative estimate of the total amount of seismic energy released and may be expressed using the familiar “Richter Scale” or using the “moment magnitude scale” now favored by most technical authorities. Both the Richter Scale and the moment magnitude scale are based on logarithmic formulae meaning that a difference of one unit on the scales represents about a thirty-fold difference in amount of energy released (and, therefore, potential to do damage). On either scale, significant damage can be expected from earthquakes with a magnitude of about 5.0 or higher. What determines the amount of damage that might occur in any given location, however, is not the magnitude of the earthquake but the intensity at that particular place. Earthquake intensity decreases with distance from the earthquake’s “epicenter” (its focal point), but also depends on local geologic features such as depth of sediment and bedrock layers. Intensity is most commonly expressed using the “Modified Mercalli Intensity Scale.” This measure describes earthquake intensity on an arbitrary, descriptive, twelve degree scale (expressed as Roman numerals from I to XII) with significant damage beginning at around level VII. Mercalli intensity is assigned based on eyewitness accounts. More quantitatively, intensity may be measured in terms of “peak ground acceleration” (PGA) expressed relative to the acceleration of gravity (g) and determined by seismographic instruments.

While Mercalli and PGA intensities are arrived at differently, they correlate reasonably well. While the locations most susceptible to earthquakes are known, there is little ability to predict an earthquake in the short term.

### Historical Frequencies

The following table lists earthquakes that have been felt in Blaine County from 2014 to 2021. There have been 47 earthquakes felt in Blaine County over a period of 98 years, and 5 within the last 7 years. There is a 47.9% chance of an earthquake felt in Blaine County, and a reoccurrence interval of 2.1 years. It should be noted that only 1 of the earthquakes felt in Blaine County had an epicenter in the County.

Date	Time	Depth	Magnitude
6/25/2020	05:20:59 Z	7.54	4.6
4/1/2020	00:27:41 Z	10	4.8
3/31/2020	23:52:30 Z	12.06	6.5
1/3/2015	17:44:03 Z	8.5	5
4/13/2014	00:04:39 Z	3.5	4.8

### Impacts

Earthquakes are capable of catastrophic consequences, especially in urban areas. Worldwide, earthquakes have been known to cost thousands of lives and enormous economic and social losses. In minor earthquakes, damage may be done only to household goods, merchandise, and other building contents and people are occasionally injured or killed by falling objects. More violent earthquakes may cause the full or partial collapse of buildings, bridges and overpasses, and other structures. Fires due to broken gas lines, downed power lines, and other sources are common following an earthquake and often account for much of the damage. Economic losses arise from destruction of structures and infrastructure, interruption of business activity, and innumerable other sources. Utilities may be lost for long periods of time and all modes of transportation may be disrupted. Disaster Services, including medical, may be both disabled and overwhelmed. In addition to broken gas lines, other hazardous materials may be released.

### Loss Estimates

HAZUS was used to estimate losses for a probabilistic magnitude 7 earthquake that affects Blaine County. The model estimates that about 84 buildings will be at least moderately damaged. This is over 1.00 % of the total number of buildings in the region. There are an estimated 0 buildings that will be damaged beyond repair.

HAZUS estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 1 household to be displaced due to the earthquake. Of these, 0 people (out of a total population of 18,991 will seek temporary shelter in public shelters.

The total building-related losses were \$3.88M (millions of dollars); 18 % of the estimated losses or \$.71M was related to the business interruption of the region. Total loss to structures is estimated to be

\$3.17M. By far, the largest loss was sustained by the residential occupancies which made up over 66 % of the total loss.

HAZUS estimates that there will be a \$1.7M loss to the transportation systems.

## Landslide

Hazard Overview: Landslide		
Location:	County-wide	
Frequency/Previous Occurrence:	Rare	
Impact/Consequence:	Low	
Community Vulnerability:	Low	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Low	Low	Low
Sun Valley	Ketchum	Hailey
Low	Low	Low
Blaine County School District	Flood Control Dist. 9	
Low	Low	

The term “landslide” encompasses several types of occurrence (including mudslides) in which slope-forming materials such as rock and soil move downward under the influence of gravity. Such downward movement may occur as the result of an increase in the weight of slope-forming materials, an increase in the gradient (angle) of the slope, a decrease in the forces resisting downward motion (friction or material strength), or a combination of these factors. Factors that may trigger a landslide include: weather related events such as heavy rainfall (one of the most common contributors), erosion, and freeze-thaw weakening of geologic structures, human causes such as excavation and mining, deforestation, vibration from explosions or other sources, and such geologic causes as earthquake, volcanic activity, and shearing or fissuring. The speed of descent ranges from sudden and rapid to an almost imperceptibly slow creep where effects are only observable over a period of months or years.

### Historical Frequencies

Since the Beaver Creek which wildfire occurred in 2013 there have been several reports of damaging mudslides in Blaine County. According to the landslide potential map above, there is a potential for landslides in various parts of the County. The potential for wildfire in these areas exacerbates this hazard. It is apparent that landslides are underreported in Blaine County because the impact doesn't require outside assistance.

### Impacts

- Some of the many direct and indirect impacts of landslides are:
- Human and animal deaths and injuries and resulting productivity losses
- Damage or destruction of structures
- Destruction or blockage of roadways and resulting transportation interruption

- Loss of, or reduced land usage
- Loss of industrial, agricultural, and forest productivity
- Reduced property values in areas threatened by landslide
- Loss of tourist revenues and recreational opportunities
- Damage or destroyed infrastructure and utilities
- Damming or alteration of the course of streams and resulting flooding
- Reduced water quality

### Loss Estimate

Losses due to Landslide events are generally tied to the repair of roadways, or the removal of all debris on roadways.

Blaine County has 231.6 miles of roadway that could be potentially impacted or damaged in some manner by landslides. Most of these roads are in the back country. The County estimates that back county replacement value is \$750,000 per mile. The total vulnerability based on that estimate would be \$173.7 Million; however, landslides are usually considered a local event, and thus it is difficult to predict the actual repair or replacement costs for a single event.

### Avalanche

Hazard Overview: Avalanche		
Location:	Localized	
Frequency/Previous Occurrence:	High	
Impact/Consequence:	Medium	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	Rare	Medium
Sun Valley	Ketchum	Hailey
Medium	High	Low
Blaine County School District	Flood Control Dist. 9	
High	Medium	

Snow avalanches are common in mountainous terrain where heavy snowfall accumulates on steep slopes. Avalanches generally occur on slopes between 30 and 45 degrees with 38 degrees being the “ideal” slope for development of avalanche conditions. They are often categorized as either “loose snow” or “slab” types. While the exact moment of an avalanche cannot be predicted, avalanche conditions are readily recognizable, and avalanches tend to recur on the same slopes year after year.

### Historical Frequencies

### Impacts

It is common for avalanche impacts to be somewhat limited. Because avalanches usually occur in remote areas, the most frequent victims are recreational users of the slopes on which they occur. Of those who die in avalanches, approximately one third of the deaths are as a result of trauma while the remaining two thirds are from suffocation. Trauma may be the result of being carried into obstructions such as boulders and trees or over cliffs, or from rocks, trees, or large chunks of snow being carried downward at high speed. Avalanches may also damage or destroy structures, break power lines, block roadways and railroads, and damage trees and vegetation.

#### Loss Estimates

Snow avalanches occur primarily in the back country of Blaine County. As with landslides, losses from snow avalanches come from damage to roadways, and the resulting snow and debris removal costs.

## Terrorism/Cybersecurity/Violent Extremism

Hazard Overview: Terrorism/Cyber/Extremism		
Location:	Localized	
Frequency/Previous Occurrence:	High	
Impact/Consequence:	High	
Community Vulnerability:	High	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
High	High	High
Sun Valley	Ketchum	Hailey
High	High	High
Blaine County School District	Flood Control Dist. 9	
High	High	

Terrorism as an insider threat is an unlawful use of force and violence by employees or others closely associated with organizations, against those organizations to promote a political or social objective. In particular, insiders will use their familiarity of an organization's structure, security, building layout, and other knowledge to maximize casualties or sabotage systems.

### Cyber Terrorism Definition

The Department of Homeland Security National Cybersecurity and Communications Integration Center advises that "insider threats, to include sabotage, theft, espionage, fraud, and competitive advantage are often carried out through abusing access rights, theft of materials, and mishandling physical devices." Threats can also result from employee carelessness or policy violations that allow system access to malicious outsiders. These activities typically persist over time, and occur in all types of work environments, ranging from private companies to government agencies.

Cyberspace and its underlying infrastructure are vulnerable to a wide range of risks stemming from both physical and cyber threats and hazards. Sophisticated cyber actors and nation-states exploit vulnerabilities to steal information and money and are developing capabilities to disrupt, destroy, or threaten the delivery of essential services. Cyberspace is particularly difficult to secure due to a number of factors: the ability of malicious actors to operate from anywhere in the world, the linkages between cyberspace and physical systems, and the difficulty of reducing vulnerabilities and consequences in complex cyber networks. Of growing concern is the cyber threat to critical infrastructure, which is increasingly subject to sophisticated cyber intrusions that pose new risks. As information technology becomes increasingly integrated with physical infrastructure operations, there is increased risk for wide scale or high-consequence events that could cause harm or disrupt services upon which our economy and the daily lives of millions of Americans depend. In light of the risk and potential consequences of cyber events, strengthening the security and resilience of cyberspace has become an important homeland security mission.

### **Domestic Violent Extremism**

The primary terrorist threat inside the United States will stem from lone offenders and small cells of individuals, including Domestic Violent Extremists (DVEs) and foreign terrorist-inspired Homegrown Violent Extremists (HVEs). Some U.S.-based violent extremists have capitalized on increased social and political tensions in 2020, which will drive an elevated threat environment at least through early 2021. Violent extremists will continue to target individuals or institutions that represent symbols of their grievances, as well as grievances based on political affiliation or perceived policy positions.

### **Historical Frequencies**

There are a number of recent cyber-attacks in Blaine County. But due to privacy laws, they are not documented. There has been no state sponsored terrorism attacks or domestic violent extremism situations in Blaine County at the time of this assessment.

### **Impacts**

The emotional impacts of fear, dread, anger, outrage, etc., serve to compound the enormous physical, economic, and social damage. The continuing terrorist threat itself has a profound impact on many aspects of everyday life in this country and on the U.S. economy.

### **Loss Estimates**

Specific loss estimates are not provided due to security policies.

Cyber terrorism threats to the U.S. result in significant economic losses. But the threat against financial institutions is only part of the problem. Also of serious concern are threats to critical infrastructure, the theft of intellectual property, and supply chain issues.

U.S. critical infrastructure faces a growing cyber threat due to advancements in the availability and sophistication of malicious software tools and the fact that new technologies raise new security issues that cannot always be addressed prior to adoption. The increasing automation of our critical infrastructures provides more cyber access points for adversaries to exploit.



## Hazardous Materials

Hazard Overview: Hazardous Materials		
Location:	Localized	
Frequency/Previous Occurrence:	Low	
Impact/Consequence:	Medium	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Medium	Medium	Medium
Sun Valley	Ketchum	Hailey
Medium	Medium	Medium
Blaine County School District	Flood Control Dist. 9	
Medium	Rare	

Substances that, because of their chemical or physical characteristics, are hazardous to humans and living organisms, property, and the environment, are regulated by the U.S. Environmental Protection Agency (EPA), and when transported in commerce, by the U.S. Department of Transportation (DOT). EPA regulations address “hazardous substances” and “extremely hazardous substances”.

EPA chooses to specifically list hazardous substances and extremely hazardous substances rather than providing objective definitions. Hazardous substances, as listed, are generally materials that, if released into the environment, tend to persist for long periods and pose long-term health hazards for living organisms. They are primarily chronic, rather than acute health hazards. Regulations require that spills of these materials into the environment in amounts at or above their individual “reportable quantities” must be reported to the EPA. Extremely hazardous substances, on the other hand, while also generally toxic materials, are acute health hazards that, when released, are immediately dangerous to the life of humans and animals as well as causing serious damage to the environment. There are currently 355 specifically listed extremely hazardous substances listed along with their individual “threshold planning quantities” (TPQ). When facilities have these materials in quantities at or above the TPQ, they must submit “Tier II” information to appropriate State and/or local agencies to facilitate emergency planning.

There are 10 facilities in Blaine County that submitted Tier II information. Hazardous materials are also very commonly stocked and used by businesses in smaller quantities than those required to submit Tier II reports, as well as by private individuals. Thus, it is reasonably safe to consider the entire County and its inhabitants to be exposed to risk from hazardous materials. In spite of their widespread use, however, hazardous materials events are relatively rare and even more rarely cause death, injury, or large-scale property damage. To some extent this is due to the fact that such hazards are very effectively addressed by inspections, regulations, codes, and safety procedures, as well as by specialized emergency response training.

### Historical Frequencies

No large scale Hazardous Materials events have occurred in Blaine County in the past 10 years. Small fuel and other material spills have occurred on multiple occasions.

### **Impacts**

Because hazardous materials are so widely used, stored, and transported, a hazardous material event could take place almost anywhere. Further, many hazardous materials are used, stored, and transported in very large quantities so that the impacts of an event may be widespread and powerful. Regulations and safety practices make such large scale events unlikely, but smaller scale incidents may have severe impacts including:

- Human deaths, injuries, and permanent disabilities
- Livestock/animal deaths
- Destruction of vegetation and crops
- Property damage and destruction
- Pollution of groundwater, drinking water supplies, and the environment
- Contamination of foodstuffs, property, land and structures
- Temporary or long-term closure of transportation routes and/or facilities
- Loss of business and industrial productivity
- Utility outages
- Clean-up and restoration costs
- Losses and inconvenience due to evacuation
- Loss of valuable chemical product

The single largest hazardous material in Blaine County is surrounding the anhydrous ammonia storage at the Sun Valley Ice Rink. See map on preceding page. It is estimated that there are 2,444 people located in the defined PAD that may require evacuation.

### **Loss Estimates**

Losses due to the release of Hazardous Materials is linked specifically to two (2) areas; 1) Response, including evacuation, and 2) Clean Up. Blaine County has not had a significant hazardous materials incident; however, releases of hydrocarbon fuels are a constant threat.

## Sustained Power Outage

Hazard Overview: Sustained Power Outage		
Location:	County-wide	
Frequency/Previous Occurrence:	Low	
Impact/Consequence:	Medium	
Community Vulnerability:	Medium	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Medium	Medium	Medium
Sun Valley	Ketchum	Hailey
Medium	Medium	Medium
Blaine County School District	Flood Control Dist. 9	
Medium	Rare	

The Nation's energy sector consists of thousands of geographically dispersed and connected electricity, oil, and natural gas assets. The sector provides for and relies on the Nation's transportation, water, information technology (IT), communications, finance, government, and other critical infrastructures (CIs). Likewise, CI sectors reciprocally depend on energy— especially electricity. The private sector owns and operates the majority of the Nation's energy infrastructure. For this reason, private sector energy asset owners and operators are responsible for developing their own emergency plans and conducting training and exercises to validate and test their procedures. In most cases, energy asset owners and operators are also responsible for the stabilization, restoration, and reestablishment of normal operations at their facilities following a disruption. Fortunately, electric companies in the United States have well-developed protocols that address business continuity, and they are subject to mandatory federal reliability standards that ensure operational reliability. Even though utilities operate under different business models and ownership structures, asset owners and operators function in an integrated manner.

As mentioned in the public utilities section, power outages are an *extremely high concern* for Blaine County. Various natural and manmade disasters can, and do affect the electrical infrastructure in the County. Currently there is no redundancy built into the major transmission lines that feed electricity into the County.

### Historical Frequencies

Sustained power outages are very rare in Blaine County. The last extended power outage was in December 2009. Other short term power outages were discussed in the public utilities section.

### Impacts

Electricity is essential for daily life. Basic functions, including communication, transportation, food, housing, water, and healthcare, are dependent upon it. As reliance on electricity continues to grow, a significant disruption to the electric grid may put lives, the economy, and the environment in danger. Power outages have previously affected critical services in other CI sectors, such as fuel production and

transportation, water and wastewater facilities, mass transit, and public health, and provide context for interdependencies and cascading effects across CI sectors for a long-term power outage.

### Loss Estimates

It is difficult to calculate the losses due to a sustained power outage. It would be based on too many variables at the time of the power outage, like winter vs summer and length of time the power was out.

## Communicable Disease

Hazard Overview: Communicable Disease/Pandemic		
Location:	County-wide	
Frequency/Previous Occurrence:	Low	
Impact/Consequence:	High	
Community Vulnerability:	High	
Overall Hazard Ranking by Jurisdiction		
Blaine County	Carey	Bellevue
Medium	Medium	Medium
Sun Valley	Ketchum	Hailey
Medium	Medium	Medium
Blaine County School District	Flood Control Dist. 9	
Medium	Medium	

Epidemic is defined as a disease that appears as new cases in the human population at a rate, during a given time period and location, that substantially exceeds the number expected. It is, thus, a relative term and there is no quantitative criterion for designating a health crisis as an epidemic. In addition to its application to infectious diseases, the term is sometimes used to describe outbreaks of other adverse health effects including those stemming from chemical exposure, sociological problems, and psychological disorders. A “pandemic” is a worldwide epidemic while the term “outbreak” may be applied to more geographically limited medical problems as, for instance, in a single community rather than statewide or nationwide. The term “cluster” is often used with reference to non-communicable diseases.

Health agencies closely monitor for diseases having potential to cause an epidemic, and seek to develop immunizations and eliminate vectors. While this effort has been remarkably successful, there are many diseases of concern, and the HIV/AIDS pandemic is still not controlled despite more than 25 years of effort since recognition of the disease in 1981. When disease control efforts are relaxed, diseases controlled in the past can resurface and become a recurring epidemic (i.e. whooping cough).

### Historic Communicable Disease Outbreak Events

The 1918 -1920 Spanish Flu:

The first cases of Spanish Flu were reported in Canyon County (northwest of Boise) on September 30, 1918. Within three weeks, the disease was raging all across the State. The numbers of deaths in the

State and in Blaine County are unknown but it is estimated that 675,000 Americans died during the epidemic and that 20 to 40 million died worldwide.

#### Asian Flu 1957 -1958:

First identified in China, this virus caused roughly 70,000 deaths in the United States during the 1957-58 seasons. Because this strain has not circulated in humans since 1968, no one under 30 years old has immunity to this strain.

#### Hong Kong Flu 1968-1969:

First detected in Hong Kong in early 1968 and spread to the United States later that year. The Hong Kong Flu killed about 34,000 people in the United States and one million people worldwide.

#### SARS - 2003

#### Swine Flu – 2009

#### Ebola – 2014

#### SARS CoV 2 - 2019

### Impacts

The following are potential impacts from a worldwide pandemic event. The impacts in Blaine County would be similar on a local level.

- Rapid Spread
- Health Care Systems Overloaded
- Medical Supplies Inadequate
- Economic and Social Disruption

### Loss Estimates

Historically, epidemics have claimed far more lives than any other type of disaster. While modern epidemiology and medical advances make the decimation of populations much less likely, new forms of disease continue to appear. The potential, therefore, exists for epidemics to cause widespread loss of life and disability, overwhelm medical resources, and have tremendous economic impacts.

Schools, business districts, and other public areas may be shut down for a period of time to reduce exposure to the disease. This has the potential to completely devastate the local economy.

## Section 4 Mitigation Goals and Objectives

The goals from the 2017 AHMP and the goals developed by each jurisdiction for their projects for this 2022 update are being merged together to develop broader all-encompassing goals for the 2022 AHMP. The broader set of goals and priorities are made to enable the planning committee to better prioritize the individual actions/projects, and to drive what new actions are needed. This will also streamline the AHMP document. The goals also reflect input from the online survey and committee meetings.

The overall goals include:

1. Prevent loss of life and reduce personal injury from future hazards.
  - Identify natural and non-natural hazards that threaten life in Blaine County.
2. Reduce loss and damage to critical facilities and private and public property.
  - Implement forward-looking standards, codes and construction procedures to protect life and property.
  - Implement programs and projects to protect lives by making homes, businesses, essential facilities, critical infrastructure and other property more resistant to losses from the identified hazards.
3. Increase public awareness and preparedness to reduce exposure to hazards.
  - Conduct educational and outreach programs to various community groups in the county.
  - Provide informational items, partnerships opportunities, and funding resource information to assist in implementing mitigation activities.
4. Increase communication and cooperation among local, state and federal agencies.
  - Continue to develop and strengthen multi-jurisdictional coordination and cooperation in emergency services and planning.
5. Continue to incorporate hazard mitigation into county and city plans and policies when applicable.
  - Provide information, educational opportunities and funding resource information to implement mitigation actions.

## Section 5 Mitigation Action and Implementation

The core of a strong mitigation plan is identifying and implementing mitigation strategy. The mitigation strategy serves as the map for minimizing the potential losses identified in the risk assessment. The mitigation strategy describes how the community will accomplish the overall purpose of the planning process. Mitigation action identified in the 2017 AHMP were updated and new projects were identified, evaluated and prioritized.

This section is broken down by jurisdiction. Each jurisdiction has identified the projects they are willing to work on to mitigate the effects of the hazards they feel are of greatest concern to them.

The following jurisdictions demonstrated their participation and commitment to the plan by identifying, modifying and completing projects/actions:

- Blaine County
- Blaine County School District
- City of Carey
- Flood Control District
- City of Hailey
- City of Ketchum
- City of Sun Valley

Prioritization was based on a scale of high, medium and low. Each hazard was ranked as listed above by the committee members as a group and then each jurisdiction prioritized their own projects.

### Bellevue

Severe Weather	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Reduce the impact of long periods of extended cold, due to power outages, or interruption of other heating fuels.	Reduce impacts from winter storms	Survey Critical Infrastructure to determine its snow load capacity. This project could conceivably be combined with the earthquake seismic assessment	City Engineer	ROM - Undetermined 2015 - Conduct engineering analysis to determine scope and costs	

	Communicate Drought Information	Develop Communications Channel (Social Media) for City Residents that can be used for emergency preparedness and updates	Mayor / City Council	ROM - No Cost 2015 - Coordinate with Blaine County LEPC	
	Drought	Update city water system	Mayor/City Council	In Progress	
Flooding					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
The City of Bellevue will continue to participate in the National Flood Insurance Program	Maintain the NFIP requirements	Seek CRS status for the city	Floodplain Administrator	No Cost 2016 - Seek CRS status	Opting Out
		Complete Floodplain Manager Certification Program	Floodplain Administrator	No Cost 2016 - Seek CRS status	Ongoing
		Design better drainage of areas that are prone to sheet flooding	Floodplain Administrator	\$100,000 2023 - Develop plan 2024 - Execute plan	New
		Howard Preserve River Restoration	Floodplain Administrator		
General Hazards					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status



Develop a viable Continuity of Government Plan	Improve Disaster Response	Develop a comprehensive Continuity of Government Plan (COOP)	Mayor/City Council Planning Department	\$10,000 2023 - Develop COOP	On-going
<b>Cybersecurity</b>					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
To mitigate downtime and loss of resources due to a cyber attack.	Reduce the damages of a cyber attack	Hold and attend cyber security trainings	Everyone	Various Costs 2022 - Continue cybersecurity training for all employees	On-going
	Improve resiliency to a cyber attack	Install cyber security devices and policies	Bellevue IT	\$100,00 2022 - Complete cyber analysis 2023 - Install plan and devices	New
<b>Wildfire</b>					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
Reduce the losses of live and property caused by wildfire	Improve Wildland Urban interface planning	Fuel Reduction projects as identified in the Community Wildfire Protection Plan	Fire Department	Costs Vary based on project On-going Planning	On-going
		Develop a GIS based Fuel Model that can be used in Fire Response	Fire Department and Disaster Services	\$25,000 2023 - Work with IDL to develop data	On-going

		Bellevue 6h and 7th St, Hillside, Prevention/Education , FD/VFD assist, prescribed fire, mechanical, chemical, seeding/planting	Fire Department		Completed
	Reduce potential loss of life due to wildfire	Develop an evacuation plan	Fire Department	\$25,000 2023 - Find contractor 2024 - Develop plan	New
Communicable Disease					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
Be prepared to adequately respond to citizen's long term needs during an extended outbreak of disease	Improve pandemic response	Store necessary health care supplies and secure distribution points for citizens and guests of Bellevue in a home care situation.	SCPHD	Unknown Costs 2023 - Determine Need 2024 - Seek funding 2025 - Purchase Supplies	On-going
Climate Change					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
Reduce the impact of climate change	Reduce the emissions of the city	Become 100% clean electricity by 2035	City County	Unknown Costs	New

		Build a micro-grid to power and back up power for city water treatment plan.	City County	\$500,000 2023 - Develop plan for micro-grid 2024 - Apply for grant 2025 - Build micro-grid	New
<b>Geological</b>					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
Reduce potential damage to county infrastructure and structures	Reduce damages to Bellevue buildings to prevent the city from doing business	Earthquake Protection or Hardening County facilities	City Council	\$500,000	New
		Complete Avalanche Study of the slopes around Bellevue	Community Development	\$50,000	New

## Blaine County

Severe Weather					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will develop methods to mitigate the losses due to severe weather in the County.	Improve the Safety of County Roads and Bridges	Install temporary Windbreaks in areas where blowing snow occurs along Highway 75 between Bellevue and south county line	ITD	\$50,000 2016 - Identify funding 2017 - Install Fencing	On-Going
		Install Seasonal Road Signage	Road and Bridge	\$30,000	Completed
Flooding					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will develop actions that will reduce the damage to County infrastructure due to flash and stream flooding.	Maintain the NFIP Requirements	Maintain CRS Status for the County	Floodplain Administrator	No Cost	No longer pursuing this project
		Complete Floodplain Manager Certification Program	Floodplain Administrator	No Cost	Completed

		Construct Injection Capability for floodwaters on Big Wood River	Ground Water Districts and Flood Control District	\$500,000 2016 - Engineer Solution	Ongoing
		Conduct a study for recharge in flood prone areas	Ground Water Districts and Flood Control District	\$50,000	Ongoing
		Install Culverts to protect roadways along HWY 26 in the Carey Area	State of Idaho, ITD	\$150,000 2015 - Place on future schedule 2016 - Seek funding	Ongoing
	Improve Drainage System	Continue Culvert and Bridge Maintenance/ Placement and Gravel Road	ITD	Cost Undetermined but ongoing Blaine County Road and Bridge	Ongoing
	Provide Big Wood River Flood Fight Capability	Stockpile Temporary flood fight materials at the W. Glendale BCRB Shop	Blaine County Road and Bridge	\$200,000	Ongoing
	Big Wood River Flood Mitigation Broadford RD	Stream bank stabilization of west bank of Bellevue Bridge on Broadford Road.	Blaine County and Flood Control District	\$125,000	Completed

	Big Wood River Flood Mitigation for Hospital Bridge	Stream bank stabilization of upstream Southwest bank BCRD RR Bridge Hospital Drive	Blaine County and Flood Control District	\$450,000	No longer pursuing this project
	Flood Warnings Along County Roads	Purchase Road Closed, and Water over Road Signs	Blaine County R&B	\$30,000	Completed
	Big Wood River Flood Mitigation and Protection of utilities for Highway 75 near Lake Creek	Stream bank stabilization of east bank along Highway 75 road right of way.	ITD and Flood Control District	\$450,000 Schedule to be determined	Ongoing
	Big Wood River Flood Mitigation	Complete a reach wide study of Big Wood River for future planning and flood risk mitigation and reduction	Blaine County	\$175,000	Completed
		Revise and update stream alteration permit codes	Blaine County	Staff Time	Ongoing

	Big Wood River Flood Mitigation and Protection of Point of Diversion near Hiawatha Canal	Stream bank stabilization of Big Wood River near the Hiawatha Canal point of diversion	Hiawatha Canal and Flood Control District	\$300,000	Completed
	Big Wood River Flood Mitigation and Protection of roadway near Angela Drive	Stream bank stabilization of Big Wood River near Angela Drive	Blaine County	\$250,000	No longer pursuing this project
	Big Wood River Flood Mitigation and Protection of Glendale Bridge	Stream bank stabilization of Big Wood River near Glendale Bridge	Flood Control District	\$250,000	Completed
	Big Wood River Stream Restoration and Protection of Pedestrian Bridge	Stream bank stabilization of Big Wood River near Colorado Gulch Pedestrian Bridge	Blaine County and Wood River Land Trust	\$800,000 2021 - Finalize Design with FEMA 2022 - Finish work	Ongoing
	Reduce Damage from overland flooding due to rain on snow events	Repair and improve drainage along Ohio Gulch Road	Blaine County Road and Bridge	\$10,000 Design, permitting and construction	Ongoing
		Complete Culvert Capacity Study	Blaine County Road and Bridge	\$10,000 Design, permitting and construction	Ongoing

	Reduce damage from flooding after wildfires	Sharps Fire Stream Restoration	Blaine County	\$100,000	Ongoing
Geological					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will reduce potential damage to county infrastructure and structures	Reduce damages to Blaine County buildings to prevent the county from doing business	Earthquake Protection or Hardening County facilities	Blaine County	\$250,000	Completed
Climate Change					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Reduce the damages and effects of climate change	Provide backup power in the cases of power outages.	Install power backup systems on county public safety infrastructure.	County, Fire and EMS Districts, Sun Valley Institute	\$50,000 Ongoing	Ongoing



		Complete project scoping to determine best options for developing micro-grids in the county to provide power to critical infrastructure.	Sustainability Manager	\$300,000	New
Wildfire					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will reduce the losses caused by wildfire	Improve Protection through the proper use of Ordinances, Codes, mutual aid agreements and MOUs	Continue to review and support amendments to the Blaine County Fire Protection Ordinance and Hillside Ordinance which establishes road widths, access, water supply, and building modifications suitable to ensure new structures are better protected.	Blaine County Commissioner s, P & Z Administrator and Fire Districts	Staff Time	Completed

		Consider an overlay district for the WUI areas in the County Comprehensive Plan	P & Z Administrator	Staff Time	Ongoing
		Develop Memorandums of Understanding for Blaine County lands not within a fire district	Disaster Services, Blaine County Commissioners	Staff Time	Ongoing
		Develop Coordination Code, Operations and Restrictions	Disaster Services, Blaine County Commissioners	Staff Time	No longer pursuing this project
	Improve access to areas prone to Wildland Fire	Maintain a listing of roads, bridges, cattle guards, culverts, and other limiting conditions and incorporate improvements into the County Transportation Plan	Fire Districts, Blaine County	Staff Time	Completed

	Conduct Roadside Vegetation Treatments to reduce flammable fuels immediately adjacent to roads in high risk areas.	Develop a standard practice for roadside vegetation management.	Fire Districts, Blaine County	Staff Time	Ongoing
Blaine County will reduce fuels in the Wildland Urban Interface	Implement a countywide fuels reduction program	Complete projects stated within Blaine County Idaho Community Wildfire Protection Plan, Attachment 2 of AHMP	All Blaine County Fire Protection Districts, Blaine County	Staff Time	Ongoing
	Update and Improve Road Signing and Rural Addressing	Install Road Signs as prescribed by NFPA Standards	Blaine County	Staff Time	Ongoing
Biological					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM\$</b>	<b>Status</b>
Blaine County will seek to reduce the exposure of humans and animals to infectious diseases.	Identify risks from potential communicable disease threats	Develop a plan & methodology to protect from communicable disease threats	Health District Blaine County Idaho Department of Agriculture	Undetermined Costs	Ongoing

Terrorism/Violent Extremism					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will identify measures to protect critical County infrastructure, facilities, and digital systems from potential terror incidents	Identify and protect potential terrorism targets.	Conduct a County Terrorism assessment on all infrastructure, facilities, and digital systems.	All County Departments	Undetermined Costs Ongoing schedule	Ongoing
	Increase ability to respond to violent extremism events	Complete A.L.E.R.T.S training	Law Enforcement	\$10,000	Ongoing
General					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County will improve interoperable communications .	Improve interoperable communications	Improve interoperable communications for all first responders	Blaine County and Fire Districts	\$1,000,000 2022 - Conduct radio communications study 2024 - Purchase needed equipment	Ongoing

		Design and build radio communication s system on Galena Summit	Blaine County, BCSO, and Fire Districts	\$500,000 to \$1,000,000 Timing dependent on funding availability	Ongoing
To continue government operations durning and after a disaster	Improve disaster response	Develop a viable continuity of government plan	County Administrator and Disaster Services and IT	\$10,000 2015 - Seek consultants for planning	Ongoing

Blaine County School District

Geological					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
		Develop a listing of schools and public buildings that need to be seismically retrofitted	Building official	Undetermined Costs	Ongoing
Terrorism/ Cyber Security/ Domestic Extremism					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Blaine County School District will identify measures to protect school property, facilities, and digital systems from potential terror and domestic incidents	Identify and protect potential targets.	Conduct a Terrorism assessment on all infrastructure, facilities, and digital systems.	Blaine County School District	Undetermined Costs Ongoing schedule	Ongoing

Carey

Severe Weather					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City will examine ways to mitigate drought.	Reduce impacts from drought conditions	Develop a gravity feed water supply system for the City	Mayor & Council		
Flooding					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Carey will continue to participate in the National Flood Insurance Program.	Maintain the NFIP Requirements	Seek CRS Status for the City	Floodplain Administrator	No Cost 2023 – Seek CRS Status	On-going
		Complete Floodplain Manager Certification Program	Floodplain Administrator	No Cost 2023 – Complete Certification	
Wildfire					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status

Reduce the losses caused by wildfires, and their impact on persons affected by them.	Improve Wildland Urban Interface Planning	Develop a GIS Based Fuel Model that can be used in Fire Response	Carey Fire District	ROM – \$25,000 2023 – Work with WUI Committee to develop joint project	
Other					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Protect City Utility Systems	Protect Systems from Unauthorized Access	Install Locked Fencing Around City Utility Systems	Mayor and Council	ROM – \$5,000 2023 – Install Fencing	



## Flood Control District No. 9

Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
Flood Control District No. 9 will develop actions that will reduce the damage to County infrastructure due to flash and stream flooding.	Big Wood River Flood Mitigation	Stream bank stabilization of west bank of Bellevue Bridge on Broadford Road.	Blaine County and Flood Control District	\$125,000	Completed
		Stream bank stabilization of upstream Southwest bank BCRD RR Bridge Hospital Drive	Blaine County and Flood Control District	\$450,000	No longer pursuing this project
		Stream bank stabilization of east bank along Highway 75 road right of way.	ITD and Flood Control District	\$450,000 Schedule to be determined	Ongoing

City of Hailey

Severe Weather					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status
Reduce the impact of long periods of extended cold, due to power outages, or interruption of other heating fuels.	Emergency Sheltering	Identify a community shelter and develop an MOU with the owner for use during an emergency.	HPD	Work in Progress	Work in Progress
Reduce impacts from winter storms	Protect from Effects of Unscheduled Outages	Continue to use public works generators to assist in water supply demands during a power outage. Use HPD generator as needed.	Public Works , HPD		

		<p>Monitor cross-contamination and backflow in the clean drinking water for the City of Hailey.</p> <p>Emphasize water rate conservation structure. Install public water supply.</p>	Public Works	Public Water \$1 Million	
	Drought Planning				
Flooding					
			Responsible Entity(s)	Planning Horizon/RO M\$	Status
Goal	Objective	Project			
Study, plan, implement and/or participate in flood mitigation efforts	Mitigate flood hazards affecting public infrastructure and properties	Conduct feasible and appropriate mitigation projects associated with the Draper Preserve and river channel adjacent to Della View subdivision	Public Works Mayor and City Council	\$200,000 - \$500,000 2017-2019 \$1,500,000 2022-2027	
Reduce property damage from flooding	Mitigate flood hazards affecting private property		Community Development	Done - 2019	

Continue to participate in the National Flood Insurance Program		Continue to work with FEMA on the new Quigley Floodplain	Public Works and Community Development		
Geological					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status
Reduce potential damage to city infrastructure and structures.	Protect Infrastructure	Perform a Structural Engineering Survey to identify City and public buildings that need to be seismically retrofitted.	City Engineer	ROM – Undetermined 2025 – Conduct Engineering Analysis to determine scope and costs Need to update the dates	
		Seismically retrofit critical buildings and infrastructure. (Fire station is done.)	City Engineer	ROM – Undetermined 2025 – Conduct Engineering Analysis to determine scope and costs	
Avalanche/Landslide					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status

Reduce the potential of deaths or injury by prohibiting construction of structures on “Red Zone” areas and limiting development in “Blue Zone” avalanche areas.	Avalanche/Landslide Protection	Perform a landslide identification study	City Engineer	ROM – \$15,000 2015 – Secure Funding 2016 – Conduct Study	
		Develop a public awareness campaign to increase the awareness of avalanche/landslide areas through informational programs and signage.	Mayor / City Council	No Cost 2025 – Provide Education Materials on the Blaine County LEPC Website	
Wildfire					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM\$</b>	<b>Status</b>
Reduce the losses caused by wildfires, and their impact on persons affected by them.	Improve Wildland Urban Interface Planning	Develop a GIS Based Fuel Model that can be used in Fire Response	Fire Department	ROM – \$25,000 Work with WUI Committee to develop joint project	

		Bigwood River, West Hailey Prevention/education, FD/VFD assist, prescribed fire, mechanical, chemical, seeding/planting	Hailey City Fire Department	Ongoing – Fire Adaptive Program	
Biological – Pandemic Flu					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM\$</b>	<b>Status</b>
Be prepared to adequately respond to citizen’s long-term needs during an extended outbreak of disease or famine.	Improve Pandemic Preparedness	Store necessary health care supplies for citizens and guests of Hailey, in a home care situation.	SCPHD	ROM – Unknown 2025 Determine Need 2026 Set Policy 2027 Purchase Supplies	
		Continue hybrid public meetings as needed for public safety.			
		Use Emergency Powers as needed to protect public safety.			
Terrorism					

Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status
Reduce the impact of terrorism or vandalism	Protect Community Infrastructure	Develop methods to secure critical infrastructure	Public Works		
Reduce cybersecurity risk		Monitor and practice cybersecurity needs	Admin		
Other					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status
Develop a viable Continuity of Government Plan	Improve Disaster Response	Develop a comprehensive Continuity of Government plan	Mayor / City Council	ROM - \$5000 2026 Include as a planning activity	
		Construct Fuel Storage at the Street Department Shop	Public Works		
Critical staff workforce shortages		Secure temporary/transitional workforce housing	Mayor / City Council		
		Work towards designated human resource officer	Mayor / City Council		

## City of Ketchum

Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status
The City of Ketchum will work for increased flood protection of and minimization of flood damage to structures and infrastructure in the city limits.	Reduce flood insurance claims and damage	Continue to refine floodplain ordinance for effectiveness and compliance	Floodplain Administrator	Long-Term	Ongoing
	Mitigate flood damage due to events that threaten or overload municipal systems.	Study drainage systems, conduct formal risk assessment studies (including drainage systems, potable water delivery system and wastewater system) and develop Master Plan	Utilities/Floodplain Administrator/Streets & Facilities	Long-Term	Ongoing
		Mitigate bank overflows onto Picabo Street, Skiway Drive, Manchester Court and Wood River Drive from 2017 flood event	Floodplain Administrator/Utilities/Streets & Facilities/Private Property Owners	Short-Term	Ongoing



	Reduce flood insurance premiums	Maintain Floodplain Manager Certification	Floodplain Administrator	Short-Term	On-going
Geological					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will reduce potential damage to city infrastructure and structures through implementation of earthquake mitigation techniques	Protect Infrastructure	Harden city water supply against damage from earthquakes	Utilities	Long-Term	On-going
		Harden city sewer system against damage from earthquakes	Utilities	Long-Term	On-going
		Evaluate inventory of vulnerable buildings	Planning	Medium-Term	On-going
The City of Ketchum will reduce the risk of damage to essential city services.		Develop SOGs for city employees for earthquake response.	Fire	Short-Term	New
		Provide generator for new city hall.	Utilities	Short-Term	New
Drought					

Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will protect the Wood River Valley's aquifers and water supplies.	Conserve water so that aquifer is not depleted/reduce irrigation.	Public Education	Utilities/Sustainability Coordinator	Short-term	Ongoing
Avalanche					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will work to reduce the risk of death or injuries through public warning systems and increased public awareness of avalanche potentials	Protect lives	Explore cell phone notification options and develop multi-faceted notification/public awareness process	Fire/Street & Facilities	Short-term	New
		Provide or support avalanche education to city residents in partnership with the Sawtooth Avalanche Center	Fire	Short-term	New
		Explore additional education signage.	Fire	Short-term	New

Mitigate avalanches by installing snow stabilization devices.	Mitigation	Install cable fencing or hard anchors.	Fire	Medium-term	New
		Identify areas with high propensity for avalanches.	Fire	Medium-term	Ongoing
Severe Weather					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will reduce risk death or injury from multi-day winter storms by improving infrastructure and response capability.	Improve infrastructure	Retrofit fire hydrants with elevated hydrants.	Fire/Utilities	Long-Term	New
	Improve response capability	Procure tracked equipment for medical and fire response over snow.	Fire	Medium-term	New
		Ensure continuity of operations through stockpiled supplies.	Fire	Medium-term	New
		Develop alternative food/medicine delivery program.	Fire	Medium-term	New

		Ensure adequate shelters, heat, power and supplies.	Fire	Long-Term	New
The City of Ketchum will protect its buildings and infrastructure from damage by lightning.	Protect city buildings from damage from lightning strikes.	Install code compliant grounding and lightning protection on all city buildings	Fire/Utilities	Annual system checks	Ongoing
		Procure and store essential replacement parts, UPS and surge protectors.	IT/Fire	Short/Medium-term	New
		Install redundant critical communications pathways.	Fire	Short-term	Ongoing
Power Outage					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will provide auxiliary power and fuel source for city services in case of power outage.	Maintain service level in a power outage situation	Install a fuel source for city vehicles.	Utilities	Short-term	New
		Identify evacuation shelters and provide backup power systems for them.	Fire/Utilities/Disaster Services	Short-term	Ongoing

		Install new back-up generators at Northwood Well and Admin Building.	Utilities	Short-term	New
Terrorism/Cyber Security					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status
The City of Ketchum will increase the security of city infrastructure .	Reduce the terrorism risk to city infrastructure.	Explore additional security of water tanks and pump houses.	Utilities/IT	Short-term	New
The City of Ketchum will reduce the potential for external non-authorized access to protected information systems.	Protect assets and city infrastructure from cyberterrorism attacks.	Install secure firewall and controlled access systems to all city infrastructure property.	Utilities/IT	Short-term	Ongoing
		Install consistent access control systems at all key city facilities	IT	Medium-term	New
Structure Fire					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM\$	Status

The City of Ketchum will ensure that waer system capacity meets fire demands.	Water system to meet fire demands with largest well out of service in the event of equipment failure or planned maintenance.	Maintain redundant groundwater sources (well & well house)	Utilities	Short-term	On-going
Reduce risk of loss of life, property and infrastructure through education, code enforcement and mitigation.		Maintain fire codes and provide enforcement to all occupancy class above residential duplex.	Fire	Short-term	On-going
		Provide comprehensive fire education for youth and adults	Fire	Short-term	On-going
		Annually test interties with SV for fire suppression needs.	Utilities	Test/check annually	On-going
		Investigate improvements to the Trail Creek (Community School) and Sun Peak interties.	Utilities	Short-term	New
Wildfires					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status

<p>The City of Ketchum will reduce risk to lives, properties, infrastructure and recreational resources from wildfires through code enforcement, education and mitigation.</p>	<p>Protect lives and property</p>	<p>Create and fund Fire Adapted Community Council to provide education and mitigation of wildfire risks and to develop and implement plan to make the City of Ketchum a Fire Adapted Community</p>	<p>Fire</p>	<p>Medium-term</p>	<p>New</p>
	<p>Mitigate impacts of wildfire through vegetation management.</p>	<p>Develop shaded fuel breaks in all heavy fuels between developed and undeveloped areas.</p>	<p>Fire</p>	<p>Long-term</p>	<p>New</p>
		<p>Develop vegetative buffer zones separating medium fuels from developed areas.</p>	<p>Fire</p>	<p>Long-term</p>	<p>New</p>
		<p>Adopt vegetation management codes.</p>	<p>Fire</p>	<p>Long-term</p>	<p>New</p>
		<p>Develop recreational trails as fire breaks in high-risk areas</p>	<p>Fire</p>	<p>Long-term</p>	<p>New</p>

		Work with federal land management agencies to implement predetermined fire control points to reduce large fire impact into developed and recreational areas of the valley.	Fire	Long-term	New
	Mitigate impacts of wildfire through code enforcement and education.	Retrofit all flammable roof structures to Class A rating	Fire	Long-term	New
		Provide education to architects, builders and landscape maintenance companies on risk reduction	Fire	Medium-term	New
		Provide education to general public on risk reduction.	Fire	On-going	On-going
		Develop, advertise and practice evacuation plans.	Fire	Short-term	On-going
General Hazards					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/RO M\$	Status



<p>The City of Ketchum will ensure that its networks and communications systems are fully functional in the event of an emergency</p>	<p>Ensure that there is a backup network communications system in the event that the primary system fails.</p>	<p>Install redundant communications systems for all city IT infrastructure, radio and telephone systems.</p>	<p>IT/Fire</p>	<p>Medium/Long-term</p>	<p>Ongoing</p>
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## City of Sun Valley

Reliable Power Supply					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Improve Power Supply	Provide for a secondary power line from the substation in Hailey.	Install a secondary power supply to the City of Sun Valley	Idaho Power	\$250,000 per mile	On-Going discussions with Idaho PUC.
		Develop a policy statement in supporting secondary transmission line.	Mayor and City Council	No Cost	Completed
Improve Power Reliability	Have continued power supply	Better substation protection	Idaho Power	100000 2023 - Develop security plan with Idaho Power	New
Severe Weather					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Reduce impacts from large winter storms	Avalanche Protection	Perform an Avalanche Identification Study	Community Development	\$35,000	Ongoing
				2015 Secure Funding	
				2016 Conduct Study	
		Develop a public awareness campaign and Signage	Fire/Street Departments	\$2500 2015 - Place public education materials on LEPC website 2016 - Seek	Completed

				funding for signs	
		Develop an emergency snow removal plan to keep roads clear and critical fire hydrants open during winter months	Fire/Street Departments	\$50,000 2015 - Seek funding in city budget 2016 - Develop plan	Ongoing
		Develop public information on how to survive and stay safe with winter storms	Fire/Law Departments	\$50,000 2015 - Seek funding in city budget 2016 - Develop plan	Completed
Reduce the impact of long periods of extended cold or heat	Emergency Sheltering	Identify a community shelter and develop an MOU for use during emergency cold or heat events	Mayor & City Council, Fire, Law and Building Official	\$5000 2015 - Develop agreements 2016 - Finalize Agreements	Ongoing
	City Operations	Maintain city operations/infrastructure capabilities and power generation	Street Department	Ongoing Maintain Costs	Ongoing
Flooding					
<b>Goal</b>	<b>Objective</b>	<b>Project</b>	<b>Responsible Entity(s)</b>	<b>Planning Horizon/ROM \$</b>	<b>Status</b>
Reduce impact from flooding in the City of Sun Valley	Protect city from flooding	Develop evacuation and mitigation plan	Fire and Law Enforcement	\$80,000 2016 - Seek FMA funding 2017 - Perform study	Ongoing

		Update City of Sun Valley FEMA mapping	Community Development	\$50,000 2022 - Request new Flood Study 2027 - Complete Study	New
	Sun Valley Dam protection	Annual monitoring of existing dam use, maintenance, and certification	Community Development and Street Department with Sun Valley Company	Ongoing Costs	Ongoing
	Protect the city from sheet flooding events	Develop better drainage system for sheet flooding	Community Development and Street Department	\$100,000 2022 - Commission study 2024 - Complete work	New
Geological					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Reduce the potential damage to the city infrastructure and buildings in the event of an earthquake	Protect Infrastructure	Perform a structural engineering survey to identify city infrastructure that needs to be seismically retrofitted	City Engineer	Undetermined Cost 2015 - Conduct engineering analysis to determine scope and costs	Ongoing
		Seismically retrofit city infrastructure	Building Official	Undetermined Cost 2015 - Conduct engineering analysis to determine scope and costs	Ongoing

Hazardous Materials					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Be able to respond and contain a leak or spill from the ice rink anhydrous ammonia plant.	Reduce damage and deaths from potential leak	Develop a Tier I and Tier II evacuation plan	Law/Fire/EMS	\$5000 2016 - Seek funding for plan creation	Ongoing
Terrorism and Violent Extremism					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Reduce the impact of terrorism or violent extremism.	Protect community infrastructure	Develop methods to secure critical infrastructure	Street and Law	Undetermined Costs 2015 - Identify critical infrastructure 2016 - Develop mitigation measures 2017 - Seek funding 2018 - Implement protection	Project initial scope completed but still ongoing due to ongoing maintenance costs
		Develop a community strategy and media strategy to protect the image and brand of Sun Valley	Law, Fire, Mayor, City Council	No Cost 2015 - Develop strategy	No longer considered a need.
	Rapid intervention	Ensure personnel are trained and prepared	Law	Undetermined Costs Seek funding	Ongoing

				to continue trainings	
	Ensure plans and resources are in place for coordinated inter-agency response	Develop an evacuation plan for Sun Valley Company and City	Law/Fire/EMS	\$5000 2016 - Seek funding	Started and Ongoing
		Develop a public safety communication plan and interoperability field guide	Law/Fire/EMS	\$10,000 2022 - Seek contractor 2023 - Develop plan	New
		Obtain crowd control equipment	Law/Fire/EMS	\$5000 2022 - Purchase equipment	New
Drought					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Protect the city from the impacts of long term drought	Improve drought response	Develop a drought preparedness plan	Community Development	\$10,000 2016/2017 - Develop plan	Ongoing
	Water conservation	Set alternate watering days	SVW&SD, Mayor, City Council	No Costs 2016/2017 - Implement rules	Completed
	Secure water needs	Work with state to develop water right plan	SVW&SD, Mayor, City Council	Undetermined Costs 2022 - Meet with water users group	Ongoing
	Maximize water re-use	Expand existing SVW&SD re-use water system	SVW&SD, Sun Valley Company and City of Sun Valley	Per Project Cost TBD	Ongoing
Wildfire					

Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
Reduce loses of life and property caused by wildfire	Perform fuel reduction projects	Reduce fuels that border the city	Fire and Community Development	\$200,000 2012 - Seek HMA funds 2017 - Implement projects	Completed
	Improve wildland urban interface planning	Develop GIS based fuel model that can be used in fire response	Fire, Emergency Management	\$10,000 2016 - Work with WUI committee to develop joint project	Ongoing
Reduce effects of wildfire smoke	Reduce exposure to wildfire smoke	Identify shelter for vulnerable populations during levels of high wildfire smoke	Emergency Management	\$50,000 2023 - Work to identify locations 2024 - Remodel location for smoke reduction	New
		Install updated air filtration in city buildings	Mayor and City Council	\$25,000 2023 - Complete analysis of current air filtration system 2024 - Install new filtration system	New
Cyber Security					
Goal	Objective	Project	Responsible Entity(s)	Planning Horizon/ROM \$	Status
To continue government operations during and after a disaster	Improve disaster response	Develop a viable continuity of government plan	mayor, city council	\$10,000 2015 - Seek consultants for planning	Ongoing

	Improve resiliency to a cyber attack	Install cyber security devices and policies	Sun Valley IT	\$100,00 2022 - Complete cyber analysis 2023 - Install plan and devices	New
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## Section 6 Plan Integration

Many of the mitigation actions identified above are intertwined with other plans and policies within the county and cities. It is important to ensure coordination integration and consistency within all the plans. These plans fall into the following general categories:

- Local capital improvement plans and other budget documents. These include infrastructure projects such as road and bridges, water supplies, and communications equipment.
- Regulations, agreements and related procedures.
- Existing emergency operating or response plans.

Mitigation planning is on a different schedule than comprehensive planning, with most comprehensive plans likely to be updated no more frequently than once per decade.

While the mitigation plan was not specifically referenced in most participant plans, some of the mitigation recommendations are included as comprehensive plan policies.

Public Utilities and emergency services are other common themes in many local comprehensive plans. Even so, greater effort is needed to ensure that the AHMP is considered during other local planning efforts and vice versa.

As the mitigation plan strategies reflect, Blaine County and the incorporated cities will continue to work with the Land Use and Community Development departments to encourage coordination and consistency between comprehensive planning and the hazard mitigation plan and provide instruction on how to incorporate mitigation strategies into their comprehensive plans and other planning mechanisms.

Blaine County and the incorporated cities encourage the philosophy of instilling disaster resistance in normal day to day operations. By implementing plan activities through existing programs and resources, the cost of mitigation is often a small portion of the overall cost of a projects design or program. Through their resolution of adoption as well as their participation on the planning committee, each jurisdiction should be aware of and committed to incorporating the risk assessments and mitigation strategies contained herein. It is anticipated that the research, local knowledge and documentation of hazard conditions coalesced in this document will serve as a tool for local decision makers as new policies, plans, and projects are evaluated.

There are several planning processes and mechanisms in Blaine County that will either use the risk assessment information presented in this document to inform decisions or will integrate the mitigation strategy directly into capital improvement, infrastructure enhancement and training projects; prevention campaigns; and land use and development plans. Although not inclusive, the follow is a list of mechanisms available to each jurisdiction for incorporating the mitigation requirements.

1. Comprehensive Plans
2. Transportation Plans
3. Emergency Operations Plan
4. Building Codes and Ordinances
5. Department Budgets
6. Site Master Plans

**BLAINE COUNTY**

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
Blaine County Disaster Services	Emergency Operations Plan	X			
Blaine County Disaster Services	Burned- Area Report Beaver Creek Fire	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Disaster Services	Big Wood Flood Report	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Disaster Services	Big Wood Discovery Report	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Disaster Services	Technical Assistance Report USACE	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Disaster Services	USACE Flood Report 2014	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Disaster Services	USGS Beaver Creek Fire Debris Flow Report	X	X		Provides Risk Assessment and Mitigation Actions
Blaine County Planning Zoning	Blaine County Comprehensive Plan	X			
Wood River Fire and Rescue	Fire Fighting, Emergency Medical Services	X			
Blaine County Road and Bridge	Transportation Planning	X			

**CITY OF BELLEVUE**

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
City of Bellevue	Comprehensive Plan	X	X		
City of Bellevue Fire Department	Fire Fighting	X			
City of Bellevue Public Works	Public Utilities, Road and Bridge Maintenance	X	X		

**CITY OF CAREY**

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
City of Carey	Comprehensive Plan	X	X		
Carey Rural Fire Protection District	Fire Fighting	X			
City of Carey Public Works	Public Utilities	X			

**CITY OF HAILEY**

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
City of Hailey	Comprehensive Plan	X	X		
City of Hailey Fire Department	Fire Fighting and Medical Response Support, Emergency Management	X	X		
City of Hailey Public Works	Public Utilities, Road, and Bridge Maintenance	X	X		

**CITY OF KETCHUM**

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
City of Ketchum	Comprehensive Plan	X	X		

City of Ketchum Fire Department	Fire Fighting and Medical Response	X			
City of Ketchum Public Works	Public Utilities, Road, and Bridge Maintenance	X	X		

### CITY OF SUN VALLEY

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
City of Sun Valley	Comprehensive Plan	X	X		
City of Sun Valley Fire Department	Fire Fighting	X			
Sun Valley Water and Sewer District	Public Utilities	X	X		

### Blaine County School District

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
Blaine County School District	Health And Safety Procedures	X	X		
Blaine County School District	Speak Up for Safety	X			
State of Idaho Code	Title 33	X			

### Flood Control District No. 9

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Effect of Loss Reduction*			
		Support	Facilitate	Hinder	Comments
Flood Control District	United States Army Corp of Engineers Levee Program	X	X		
State of Idaho Code	State Statutes – Title 42	X	X		

**FLOODPLAIN MANAGEMENT**

	Blaine County	City of Bellevue	City of Carey	City of Hailey	City of Ketchum	City of Sun Valley
Number of properties in the community	3700	1057	267	3594	4034	2982
Date Participating in Regular Phase of NFIP	3/16/1981	8/1/1978	3/22/2006	4/17/1978	6/15/1978	4/17/1978
Participating in CRS (class)	N/A	N/A	N/A	N/A	7	N/A
Date of current FIRM	11/26/2010	11/26/2010	11/26/2010	11/26/2010	11/26/2010	11/26/2010
Number of NFIP Policies	214	27	3	73	135	60
Are FIRMs digital or paper	Digital	Digital	Digital	Digital	Digital	Digital
Insurance in Force (Total Coverage)	\$68,579,300	\$7,931,600	\$463,100	\$20,990,200	\$43,124,400	\$19,439,300
Total Premiums	\$166,057	\$15,599	\$4,137	\$41,752	\$89,398	\$41,030
Number Claims Paid	109	9	0	83	90	8
\$ Total Claims Paid	\$1,460,489.03	\$7,282	\$0	\$1,450,386.18	\$491,881.95	\$128,467.90
# Substantial Damage Claims	1	0	0	3	1	0
Rep Loss Properties	13	0	0	28	7	2
Repetitive Loss Type	All Residential			All Residential	All Residential	All Residential
Severe Rep Loss Properties	0	0	0	0	0	0

Blaine County participates in the National Flood Insurance Program as well as the Cities of Sun Valley, Ketchum, Hailey, Bellevue, and Carey.

There are 244 NFIP Policies in the County, with the majority (196) being in the City of Ketchum. The City of Hailey has 104 policies, while Bellevue has 27, and Sun Valley has 24 NFIP Policies in their community. The City of Carey has only two policies. Of the total policies there have been 62 claims paid in the County, totaling \$626,299.

The Blaine County Flood Plain Coordinator is the Planning and Zoning Department Administrator. Each of the incorporated communities of Bellevue, Carey, Hailey, Ketchum, and Sun Valley has designated floodplain managers/coordinators.

NFIP administration services in each community include review of building plans against city ordinances and review of surveyor submitted elevation certificates.

All of the communities listed the barriers to running an effective NFIP Program as both limited time and staff, or workload.

Blaine County has no communities within the 100-year flood plain hazard area that are not participating in the NFIP. Blaine County has no communities under suspension or revocation of participation in the NFIP.

All of the communities in Blaine County have Floodplain Ordinances that exceed the FEMA or State minimum requirements. The City of Bellevue's permitting process includes a FEMA elevation certificate for all structures built, or added onto in the floodplain. In the City of Hailey, floodplain development permits are included with building permit applications. Applications are reviewed by Engineering, Planning, and Building Departments. Floodplain permits are usually issued with conditions. In the City of Ketchum, the permitting process includes waterways design review in new development in a floodplain, and adjacent to any waterway. The floodplain development permit is required only for development in the floodplain. In Sun Valley the floodplain is completely built out and there will be no more development allowed in the floodplain. Requests to remodel an existing structure within the floodplain would require review as part of the building permit application.

An important part of being an NFIP community is the availability of low-cost flood insurance for those homes and business within designated floodplains, or in areas that are subject to flooding, but that are not designated as Special Flood Hazard Areas.

Potential reasons for continuing low participation in the NFIP are:

- Current cost of insurance is prohibitive
- A lack of knowledge about the existence of the availability of low cost flood insurance
- Home and business owners are unaware of their vulnerability to flood events

## Section 7 Plan Maintenance

The AHMP maintenance process includes a schedule for monitoring and evaluation of the programmatic outcomes established in the plan and for producing a formal plan revision every 5 years.

### Formal Review Process

The AHMP is to be reviewed on an annual basis by the Blaine County Disaster Services Coordinator and reviewed and revised every 5 years by the LEPC to determine the effectiveness of programs and to reflect changes that may affect mitigation priorities. The Disaster Services Coordinator will be responsible for contacting the committee members and organizing the review. Committee members will be responsible for monitoring and evaluating progress of the mitigation strategies in the plan. The committee will review the goals and action items to determine their relevance to changing situations in the county as well as changes in federal policy, and to ensure they are addressing current and expected conditions. The committee will also review the risk assessment portion of the plan to determine if this information should be updated or modified, given any new available data. The organizations responsible for the various action items will report on the status of the projects, the success of various implementation processes, difficulties encountered, success of coordination efforts, and which strategies should be revised or removed.

The Disaster Services Coordinator will be responsible for ensuring the updating of plan. The coordinator will also notify all holders of the plan and affected stakeholders when changes have been made. The updated plan will be submitted to the state of Idaho OEM mitigation program and to FEMA every 5 years for review.

### Continued Public Involvement

The Blaine County Disaster Services is dedicated to involving the public directly in the review and updates of the AHMP. The coordinator is responsible for the review and updates of the plan. The public will also have the opportunity to provide input into the plan revisions and updates. Copies of the AHMP will be kept by appropriate county departments and outside agencies.

Public meetings will be held when deemed necessary by the coordinator. The meetings will provide a forum when the public can express concerns, opinions or new alternatives that can then be included in the plan. The Board of County Commissioners will be responsible for using county resources to publicize the public meetings and maintain public involvement.

To further facilitate continued public involvement in the planning process, the county will ensure that:

- Copies of the plan will be catalogued and kept on hand at all public libraries. The Blaine County Disaster Services Coordinator will keep a copy of the plan on hand at their office for review and comment by the public
  - The Blaine County Disaster Services Coordinator will conduct outreach activities after a disaster event to remind members of the importance of mitigation and to solicit mitigation ideas to be included in the plan.
  - A public meeting will be held annually to provide the public with a forum for discussing concerns, opinions and ideas with the LEPC

## Monitoring, Evaluation and Updating the Plan

To ensure it continues to provide an appropriate path for risk reduction throughout the county, it is necessary to regularly evaluate and update the AHMP. The Blaine County Disaster Services Coordinator will be responsible for monitoring the status of the plan and gathering appropriate parties to report of the status of mitigation actions. The LEPC will convene on an annual basis to determine the progress of the identified mitigation actions. The LEPC will also be an active participant in the next plan update. As the AHMP matures, new stakeholders will be identified and encouraged to join the existing LEPC.

The Blaine County Disaster Services Coordinator is responsible for contacting committee members and organizing the annual meeting. The committee's responsibilities include:

- Annually review the goals and objectives to determine their relevance and appropriateness.
- Monitor and evaluate the mitigation strategies in this plan to ensure the document reflects current hazard analysis, development trends, code changes, and risk analysis and perceptions.
- Ensure the appropriate implementation of annual status reports and regular maintenance of the plan. The committee will hear progress reports from the parties responsible for the various implementation actions to monitor progress.
- Create future action plans and mitigation strategies. These should be carefully assessed and prioritized using the BCA methodology that FEMA has developed.
- Ensure the public is invited to comment and be involved in mitigation plan updates.
- Ensure that the county complies with all applicable federal statutes and regulations during the periods for which it receives grant funding, in compliance with 44 Code of Federal Regulations (CFR).
- Reassess the plan in light of any major hazard event. The committee will convene within 45 days of any major event to review all applicable data and to consider the risk assessment, plan goals, objectives and action items given the impact of the hazard event.
- Review the hazard mitigation plan in connection to other plans, projects, developments, and other significant initiatives.
- Coordinate with appropriate municipalities and authorities to incorporate regional initiatives that transcend the boundaries of the county.
- Update the plan every 5 years and submit for FEMA approval.
- Amend the plan whenever necessary to reflect changes in state and federal laws and statutes required in 44 CFR.

## The 5-year Action Plan

This section outlines the implementation agenda that the LEPC should follow 5 years following the adoption of this plan, and then every 5 years thereafter. The LEPC along with the Blaine County Disaster Services Coordinator is responsible to ensure the AHMP is updated every 5 years.

The committee will consider the following schedule as an action plan for the first 5 year planning cycle.

Year 0:

- 2022: Updated AHMP, including a series of LEPC meetings and public meetings. Submit 2020 AHMP for FEMA approval



**Year 1:**

- June 2023: Meet with LEPC for first annual AHMP review meeting. Host first annual public meeting.

**Year 2:**

- June 2024: Meet with LEPC for annual AHMP review meeting. Host annual public meeting.

**Year 3:**

- June 2025: Meet with LEPC for annual AHMP review meeting. Host annual public meeting.

**Year 4:**

- June 2026: Meet with LEPC for annual AHMP review meeting. Host annual public meeting.

**Year 5:**

- January - September 2027: Update 2022 AHMP, including a series of meetings with local jurisdictions.
- October 2027: Submit 2022 AHMP for FEMA approval. Repeat.

It should be noted that this schedule can be modified as necessary and does not include any meetings and/or activities that would be necessary following a disaster event (which would include reconvening the LEPC within 45 days of a disaster or emergency to determine what mitigation projects should be priorities during the community recovery). If an emergency meeting of the LEPC occurs, this proposed schedule may be altered to fit any new needs.

**Annual Mitigation Steering Committee Meetings**

During each annual LEPC mitigation plan update meeting, the committee will be responsible for a brief evaluation of the 2022 AHMP and to review the progress on mitigation actions.

**Plan Evaluation**

To evaluate the plan, the LEPC should answer the following questions:

- Are the goals and objectives still relevant?
- Is the risk assessment still appropriate, or has the nature of the hazard and/or vulnerability changed over time?
- Are current resources appropriate for implementing this plan?
- Have lead agencies participated as originally proposed?
- Has the public been adequately involved in the process? Are their comments being heard?
- Have departments ben integrating mitigation into their planning documents?

If the answer to each of the above questions is “yes”, the plan evaluation is complete. If any questions are answered with a “no”, the identified gap must be addressed.

**Review of Mitigation Actions**

Once the plan evaluation is complete, the committee must review the status of the mitigation actions. To do so, the committee should answer the following questions:

- Have the mitigation actions been implemented as planned?
- Have the outcomes been adequate?
- What problems has occurred during the implementation process?

### **Meeting Documentation**

Each annual LEPC AHMP meeting must be documented, including the plan evaluation and review of mitigation actions. Mitigation actions have been formatted to facilitate the annual review process.

#### **Implementation through Existing Programs**

Hazard mitigation practices must be incorporated within existing plans, projects and programs. Therefore, the involvement of all departments, private non-profits, private industry, and appropriate jurisdictions is necessary in order to find mitigation opportunities with existing or planned projects and programs. To execute this, the Blaine County Disaster Services Coordinator will assist and coordinate resources for the mitigation actions and provide strategic outreach to implement mitigation actions that meet the goals and objectives identifies in this plan.

## Appendix A:

### Press-release

#### Public Feedback Invited for Blaine County Multi-Jurisdictional All Hazards Mitigation Plan

Blaine County and other local jurisdictions through the Local Emergency Planning Committee (LEPC) are beginning the process of updating the county's Multi-Jurisdictional All Hazards Mitigation Plan. With the required 5 year revision and re-adoption of the plan, Blaine County and other local jurisdictions who sign on to the plan will maintain their eligibility to apply for federal funding towards hazard mitigation projects like flood, wildfire and terrorist attacks. This local planning process will include a wide range of representatives from city and county government, emergency management and public safety personnel and outreach to members of the public.

An all hazard mitigation plan provides communities with a set of goals, action items, and resources designed to reduce risk from future disaster events. Engaging in mitigation activities provides jurisdictions with a number of benefits, including reduced loss of life, property, essential services, critical facilities, and economic hardship; reduced short-term and long-term recovery and reconstruction costs; increased cooperation and communication within the community through the planning process; and increased potential for state and federal funding for recovery and reconstruction projects. In addition, increasing public awareness of local hazards and disaster preparedness helps to create a community that is resilient to disaster and breaks the cycle of response and recovery.

To kick off this process, we are asking members of our community to complete an electronic survey about the hazards in Blaine County. Community involvement and feedback are vital to the success of the plan. Blaine County and members of the LEPC invites public feedback on the hazards that you feel are the most impactful to Blaine County, along with feedback on how to best tackle those issues. The survey can be found on Survey Monkey using the following link <https://www.surveymonkey.com/r/2XVSDD5> and will be open until July 23<sup>rd</sup>, 2021. If you have any questions about the survey or the All Hazards Mitigation Plan, please contact Chris Corwin, Blaine County Disaster Services Coordinator, at 208-788-5508 or email at [ccorwin@co.blaine.id.us](mailto:ccorwin@co.blaine.id.us)

### Community Survey Results:

The number of people who took the survey: 83

Are you aware of the Blaine County Multi-Hazard Mitigation Plan developed in 2015?

Yes: 28 (34%)

No: 55 (66%)

Are you aware of the Blaine County Multi-Hazard Mitigation Plan developed in 2015?

Yes, I was a member of the LEPC in 2015 and participated 10 (12%)

Yes, I attended a public meeting 1 (1%)

Yes, I provided comments on the draft plan 4 (5%)

No, I did not participate but I was aware of the plan and followed development through the news media 8 (10%)

No, I did not participate in any way 60 (72%)

Where do you live and work? (Multiple answer allowed)

Bellevue 10 (12%)

Carey 2 (2%)

Hailey 36 (43%)

Ketchum 23 (28%)

Sun Valley 9 (11%)

Unincorporated County 23 (28%)

How long have you live in Blaine County? (years)

Range: 0 – 65

Average: 23

Which options below best define your role in your community?

Resident 49 (59%)

Business Operator 7 (8%)

Landowner 2 (2%)

Local Official 11 (13%)

Institutional/organizational partner 6 (7%)

Other 8 (10%)

How concerned are you about your community as a whole being impacted by a disaster?

Extremely Concerned	44 (53%)
Somewhat Concerned	35(42%)
Not Concerned	4 (5%)

Have you been impacted by a natural disaster in your community?

Yes	52 (63%)
No	31 (37%)

Below is a list of hazards the Blaine County Multi-Hazard Mitigation Plan currently addresses. Please select the 3 hazards of most concern to you:

Avalanche	10 (12%)
Dam and Levee Failure	1 (1%)
Drought	55 (66%)
Earthquake	6 (7%)
Extreme Temperatures	28 (34%)
Flood	29 (35%)
Hailstorms	0 (0%)
Landside/Mud and Debris	0 (0%)
Lightening	5 (6%)
Pandemic Flu	15 (18%)
Severe Winer Storm	25 (30%)
Subsidence	0 (0%)
Tornado	1 (1%)
West Nile or other mosquito diseases	0 (0%)
Wildfire	78 (94%)
Windstorm	5 (6%)

Are there any hazards not listed previously that you believe the Hazard Mitigation Planning Committee should consider?

Yes	26 (32%)
No	55 (68%)

What additional hazards do you believe the Hazard Mitigation Planning committee should consider?

- Terrorism/Domestic violent extremism
- Cybersecurity
- Water System Failure
- Rapid Population Growth
- Climate Change
- Power Grid Failure
- Air Pollution
- Electro-magnetic pulse
- Toxic Spill/release
- Supply chain disruption

If the hazard you identified as being the greatest threat to you and your community occurred in your neighborhood today, what would be the likely impact to you and your family?

Power outage, dead vegetation, flooded basement, homeless, evacuated, No medical services or food, death, financial collapse, forced to relocate, mental health issues, no water, loss of livestock, health issues, loss of business

In the past 5 years, have you or any local organizations in your community taken any actions to reduce or eliminate the impact of this hazard?

Yes	54 (67%)
No	27 (33%)

Please describe the actions you or your community have taken to reduce or eliminate the impact of this hazard (the greatest threat hazard).

Reduced water usage both in home usage and for irrigation, installed sump pumps, fire wise landscaping, masks and vaccines, raised awareness, energy efficient home repairs, change staffing for quicker response, xeriscaping, installation of drip lines, educating neighbors and other citizens, wildfire fuel reduction, replaced cedar shake roof with metal, developed emergency response plan, installation for alternate power generation like solar, generators, batteries or micro grid, amateur radio communication training and equipment, aquifer recharge, added ditches.

A number of community-wide activities can reduce risks from natural hazards. In general, these activities fall into one of the following four (4) general categories. Please tell us how important you think each one is for your community to consider pursuing.

Structure and Infrastructure Projects

Not Important	12 (14%)
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Somewhat Important	46 (57%)
Very Important	23 (28%)
Preparedness, Coordination and Response	
Not Important	2 (2%)
Somewhat Important	18 (22%)
Very Important	62 (76%)
Education and Awareness	
Not Important	1 (1%)
Somewhat Important	25 (31%)
Very Important	56 (68%)
Local Plans and Regulations	
Not Important	5 (6%)
Somewhat Important	28 (34%)
Very Important	49 (60%)

Resources to mitigate natural hazards are limited, and hard choices must be made about which community assets and services to prioritize. Please indicate your priority areas below.

#### Protect private Property

Not Important	1 (1%)
Very Important	5 (7%)
Neutral	12 (17%)
Somewhat Important	24 (34%)
Very Important	29 (41%)

#### Protect critical facilities and infrastructure

Not Important	0 (0%)
Very Important	0 (0%)
Neutral	1 (1%)
Somewhat Important	10 (12%)
Very Important	71 (87%)

#### Prevent development in hazard prone areas

Not Important	0 (0%)
Very Important	4 (5%)
Neutral	6(7%)
Somewhat Important	19 (23%)
Very Important	53 (65%)
Protect/enhance natural features to aid in mitigation	
Not Important	1 (1%)
Very Important	5 (6%)
Neutral	3 (4%)
Somewhat Important	21 (26%)
Very Important	52 (63%)
Protect historic and cultural landmarks	
Not Important	4 (5%)
Very Important	4 (5%)
Neutral	16 (20%)
Somewhat Important	41 (50%)
Very Important	17 (21%)
Protect and reduce damages to utilities	
Not Important	0 (0%)
Very Important	0 (0%)
Neutral	10 (12%)
Somewhat Important	28 (35%)
Very Important	43 (53%)
Strengthen emergency services	
Not Important	1 (1%)
Very Important	1 (1%)
Neutral	5 (6%)
Somewhat Important	24 (29%)
Very Important	51 (62%)



## Promote cooperation among public agencies, citizens, NGOs and businesses

Not Important	0 (0%)
Very Important	3 (4%)
Neutral	6 (7%)
Somewhat Important	23 (28%)
Very Important	50 (61%)

In your opinion, what are some steps your local government could take to reduce or eliminate the risk of future hazard damage in the community and in your neighborhood that it is not already taking?

Establish a fully dedicated EM office, fund a fully qualified Certified Emergency Manager position, fund a comprehensive risk assessment, coordinate and educate public/private stakeholders, more housing, inspection of buildings for resiliency, community outreach at farmers markets, prevent development in hazardous areas, require fire wise, requirements for landscaping to reduce water usage, outlaw fireworks, communication, more cooperation, enforcement of existing ordinances, research, don't overbuild, more education on trout friendly lawns, eliminate grass on golf courses, research water impacts of new developments, regulate water usage, more disaster training, Fund a WUI technician position, control growth, complete prescribed burns, research a water budget, revise zoning regulations, invest in more firefighters, invest more in micro-grids/backup power, more funding for police, enforcement of fire building codes. Enforcement of current policies and codes.

Overall, how well prepared do you feel your community is for a natural disaster?

Very Prepared	10 (12%)
Somewhat Prepared	57 (70%)
Not Very Prepared	15 (18%)

Have you done anything to your home to make it less vulnerable to hazards such as earthquakes, floods, and fires, or do you plan to?

Yes, I have taken action	60 (74%)
I have not but plan to	9 (11%)
I have not and no plans to	12 (15%)

Is your home located in a designated floodplain or flood zone?

Yes	7 (9%)
No	68 (84%)

I don't know	6 (7%)
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Do you currently have flood insurance?

Yes	6 (7%)
No	67 (82%)
I don't know	6 (7%)
Prefer not to say	3 (4%)

If you do not have flood insurance, please select the reason why:

Not located in a floodplain	50 (71%)
Too Expensive	3 (4%)
Not necessary because it does not flood	3 (4%)
Not necessary because I am elevated/protected	8 (11%)
My mortgage did not require it	1 (1%)
Never really considered it	3 (4%)
Other (Would consider based on snowpack)	2 (3%)

How vulnerable do you consider your home/business/organization the impacts of natural hazards?

Not at all vulnerable	1 (1%)
Moderately vulnerable	41 (50%)
Only a little vulnerable	25 (31%)
Very vulnerable	13 (16%)
Don't know	2 (2%)

Are you more interested in making your home/business/organization or community more resistant to natural hazards?

Yes	67 (82%)
No	15 (18%)

Would incentives such as insurance discounts, property tax breaks or low interest loans motivate you to take additional steps to protect your property from disasters (example: flood-proofing home, reinforcing roof, etc.)?

Yes	62 (76%)
No	6 (7%)

Which of the following incentives might encourage you to spend money to retrofit your home to withstand the impacts of possible natural hazards (for example, elevating a flood-prone home, reinforcing a wind-prone home, using fire-proof materials on a home in a wildfire prone area, etc.)? (Please check all that apply)

Building permit fee waiver	21 (26%)
Insurance premium discount	46 (58%)
Low interest rate loan	22 (28%)
Property tax break	57 (71%)
Mortgage discount	30 (38%)
State tax incentive	47 (59%)
None	5 (6%)
Other	Free assessments of home for retrofitting ideas

What is the most effective way for you to receive information about how to make your home, business and neighborhood more resistant to hazards? Please check all that apply.

Local Newspaper	48 (60%)
Television	2 (3%)
Radio	7 (9%)
Information in Utility Bills	26 (33%)
Direct Mailings	31 (39%)
Email	46 (58%)
City/County Websites	34 (43%)
City/County Meetings	24 (30%)
School Meeting and Messages	2 (3%)
Information at Local Library	3 (4%)
Roadside Message Boards	18 (23%)

Phone Infor through “CodeRed” Systems	24 (30%)
Social Media	37 (46%)

What actions have you taken to reduce risk for your house / apartment / property for potential disasters? (Please check all that apply)

Purchased Insurance	67 (82%)
Purchased Flood Insurance	9 (11%)
Flood Proofing	11 (13%)
Installed retrofits to home that reduce risk	10 (12%)
Install fire breaks around home	18 (22%)
Removed dead/dying trees or vegetation	61 (74%)
Purchase and placement of fire extinguishers	47 (57%)
Alternate power supply	16 (20%)
Alternate water supply	8 (10%)
None	1 (1%)
Other ( Moved to lower risk area, installed wood stove)	2 (3%)

If a severe hazard event occurred today such that all services were cut off from your home(power, gas, water, sewer) and you were unable to leave or access a store for 72 hours, which of these items do you have readily available?

Blanket/Sleeping Bag	80 (98%)
Can Opener	76 (93%)
Canned Food/nonperishable food	71 (87%)
Cash	49 (60%)
Cooking and Eating Utensils	75 (92%)
Extra clothes and shoes	76 (93%)
Extra medications	56 (68%)
First aid kit	69 (84%)
Flashlight (with batteries)	76 (93%)
Gas grill/camping stove	71 (87%)

Gasoline	42 (51%)
Handheld “walking-talking” radios	31 (38%)
Important family photos/documents in water/fire proof	34 (41%)
Pet Supplies	48 (59%)
Portable Am/FM radio (solar, hand crank, batteries)	30 (37%)
Potable water ( 3 gallons per person)	35 (43%)
Secondary source of heat	41 (50%)
Telephone (batteries)	46 (56%)
Other (camp trailer with generator, ski, boots, snowshoes, generator, ham radio, water purification)	

How can Blaine County and local cities help you become more prepared for a disaster? (choose all that apply)

Provide effective emergency notifications and communication	67 (83%)
Provide training and education to residents and business owners on how to reduce future damage	45 (56%)
Provide community outreach regarding emergency preparedness	59 (73%)
Create awareness of special needs and vulnerable populations	45 (56%)
Other ( housing for workers, organizing volunteers, develop Community Response Team, install backup generators at all substations)	

Are there any other comments, questions, or concerns you would like the Hazard Mitigation Planning Committee to consider?

Critical support personnel live too far away for quick response. Classes for public to learn how to prepare for disasters, evacuation plans because getting out of the valley during a disaster will be hectic, Less grass, human impacts to wildlife, better defined mutual aid agreements/Emergency Operations Plan, need a redundant power line, Triumph mine plug failure needs to be addressed, buried transmission lines, more action needs to be done, More funding for sheriffs department, Need to address large influx of new residents.