

Jefferson County, Idaho Multi-Jurisdictional Hazard Mitigation Plan



**The Multi-Jurisdictional Hazard Mitigation Plan
of
Jefferson County, Idaho
and the Cities of
Rigby, Menan, Lewisville, Ririe, and Roberts**

Update 2020

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Executive Summary

The Jefferson County Hazard Multi-Jurisdictional Mitigation Plan (HMP) is an update to the 2008 Jefferson County Multi-Jurisdictional All Hazard Mitigation Plan. Through a collaborative effort between the county, its jurisdictions, the University of Idaho (UI), and the Idaho Office of Emergency Management (IOEM), the plan was updated in 2019 and finalized in 2020. Jefferson County Emergency Manager Rebecca Squires led the Multi-jurisdictional Planning Committee. The Planning Committee was composed of members from the Jefferson County Office of Emergency Management and representatives from the communities, State and Federal agencies, and other organizations and stakeholders active within the county. Five jurisdictions were actively engaged in the update process, including the Cities of Lewisville, Menan, Rigby, Ririe, and Roberts. Notably, only one of the cities (Ririe) participated in the last plan. Thus, the plan update engaged four more cities than did the prior plan.

The update built on the former plan, but reorganized its structure to enhance the plan's usability. The update also comprehensively revised all sections of the plan to reflect current hazards, political and socioeconomic conditions, and incorporate best-available data. Major changes to the HMP include an updated and rewritten county profile, the inclusion of additional hazards, more detailed and comprehensive risk and vulnerability assessments for the hazards of focus, and the addition of new mitigation actions. The 2020 update also builds a strong foundation for annual review and monitoring of progress, allowing Jefferson County to maintain the HMP through the plan's five-year lifecycle.

Mitigation actions were reviewed and updated per feedback from the Planning Committee and responsible agencies and departments. Additional mitigation actions were included based on Committee and public input. These actions were scored and ranked to better prioritize efforts and resources towards the completion of listed mitigation actions.

Finally, under an agreement between IOEM and the Idaho Department of Lands (IDL), the Jefferson County Wildfire Mitigation Plan acts as the Wildfire Annex to the Jefferson County Multi-Jurisdictional Hazard Mitigation Plan, located in Appendix G.

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Acronyms & Definitions

Acronym	Definition
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CRS	Community Rating System
DEQ	Department of Environmental Quality
DMA	Disaster Mitigation Act of 2000
EMS	Emergency Medical System
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HIFLD	Homeland Infrastructure Foundation-Level Data
HMP	Hazard Mitigation Plan
IDL	Idaho Department of Lands
IOEM	Idaho Office of Emergency Management
ITD	Idaho Transportation Department
LEPC	Local Emergency Planning Committee
MMI	Modified Mercalli Intensity
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NEHRP	National Earthquake Hazard Reduction Program
NFIP	National Flood Insurance Program
PDM	Pre-Disaster Mitigation Grant
PGA	Peak Ground Acceleration
P&Z	Planning & Zoning
USFS	U.S. Forest Service
UI	University of Idaho
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
WUI	Wildland Urban Interface

I. Introduction

1.1 Overview

The Jefferson County Multi-Jurisdictional Hazard Mitigation Plan (HMP) identifies both short and long-term policies and actions that help reduce risk and future losses from hazards. The term *hazard* is defined as any event with the potential to cause loss of life or property. Such events include natural hazards (such as earthquakes, floods, landslides, severe weather, and wildfire) and anthropogenic hazards (such as civil unrest and hazardous materials). Hazards then become disasters when communities are negatively impacted or overwhelmed by such events. To reduce the risk of disasters, hazard mitigation is implemented across the county and its communities. Hazard mitigation consists of cost-effective actions that are often divided into three categories:



- Policies and actions that keep the hazard away from people, property, and structures.
- Policies and actions that keep people, property, and structures away from hazards.
- Policies and actions that reduce the hazard impacts on people, property, and structures.

This plan identifies the vulnerabilities and risks from threats and hazards to the county and its communities and details the mitigation strategy that will be implemented over a five-year period. By implementing this plan, resources can more efficiently and effectively be targeted towards the hazards that pose the greatest risk. Other benefits of this plan include the following:

- Selection of Risk Reduction Actions – Hazard mitigation is a systematic process of identifying and analyzing the county’s risks. By setting clear goals and identifying and implementing mitigation strategies, the county can reduce losses from future hazards.
- Builds Local, State, & Federal Partnerships – The plan builds partnerships through two-way communication and collaboration by involving various stakeholders at the local, State, and Federal levels.
- Facilitates Sustainability – Risk and sustainability are linked, and without identifying and mitigating risks, the livelihood and continuance of the county and its communities is threatened. Enhancing resilience to hazards through sound mitigation practices enhances sustainability.
- Establishes Funding & Resource Priorities – By coordinating and consolidating mitigation actions undertaken in the county into a unified strategy, the plan helps prioritize and articulate the county’s and its communities’ needs to the public, other organizations and private enterprise, and agencies with a stake in the county.
- Increase Hazard Awareness & Education – The hazard mitigation planning process increases education and awareness of hazards and risks in the county and its communities. This awareness helps individuals understand their risk, self-mitigate, and enhance their resilience. This can translate to support of mitigation actions in the county.

1.2 Legal Authority

The legal basis of hazard mitigation plans is the Stafford Act, as amended by the Disaster Mitigation Act (DMA) of 2000. The DMA emphasizes pre-disaster planning, and Section 322 of the Act specifically addresses hazard mitigation planning. The DMA requires state and local governments to prepare and maintain hazard mitigation plans in order to receive federal hazard mitigation project grants. This financial assistance can be sought pre- and post-disaster and is vital in all phases of emergency management. The requirements for an HMP are codified in Title 44, part 201, section 6 of the Code of Federal Regulations (44 CFR §201.6) and include criteria for six elements. Detailed criteria for each of the requirements can be found in Appendix B as well as the relevant sections of the plan (see *1.4 Plan Organization*).

1.3 Hazard Mitigation Plan Update

Existing HMPs must be reviewed and updated as required by 44 CFR§201.6(c)(v). The revision must reflect changes in development, progress made in local mitigation efforts, and changes in hazard and mitigation priorities. The update then must be resubmitted for approval within five years in order to maintain eligibility for FEMA mitigation grant funding.

The former plan was originally completed and adopted in 2014. Through a collaborative effort between the county, its jurisdictions, the University of Idaho (UI), and the Idaho Office of Emergency Management (IOEM), the plan was updated in 2019-2020. The update built on the former plan but reorganized its structure to enhance the plan's usability. The update also comprehensively revised all sections of the plan to reflect current hazards, political and socioeconomic conditions, and incorporate best-available data. Each section summarizes the revisions made in the 2020 update.

1.4 Plan Organization

The plan is organized to be operational in nature:

1. Introduction – Provides an overview of mitigation, hazards, and the basis of HMPs.
2. Planning Process – Details the process undertaken for the 2020 plan update. This section identifies and details the planning committee, participating jurisdictions, and stakeholders.
3. County & Community Profiles – Provides an overview of the socioeconomic, demographic, and geographical character of the county and its communities.
4. Risk Assessment – Details identified hazards and risks facing the county. Hazard profiles include hazard descriptions; hazard extents, magnitudes, and past occurrences; population, structure, and structure value exposure; socioeconomic vulnerability assessments; loss estimates; and land use and future developments in relation to hazards.
5. Mitigation Strategy – Details the goals and actions to be implemented to reduce loss of life and property from hazards and risks identified in the risk assessment.
6. Mitigation Capabilities – This section details and describes the capabilities and resources the participating jurisdictions and organizations can leverage to implement hazard mitigation. This includes funding avenues and detailed National Flood Insurance Program (NFIP) information.
7. Plan Maintenance – Details the county's commitment to maintaining the 2020 plan through the five-year lifecycle. The county will monitor, evaluate, and update the plan on a bi-annual basis, and engage the public throughout the process. This section also includes recommended updates for future plan updates.

II. Planning Process

2.1 Overview

The planning process is vital to the development and completion of a comprehensive HMP that best fits a county and its communities. As with almost all planning efforts, the plan is only as good as the process itself. A major component of the planning process is involvement and participation from representatives and stakeholders from the county, local communities, State and Federal agencies, and other organizations. Through the process, perspectives on hazards and risks, community assets, and mitigation needs are discussed and incorporated into the plan.

2.1.1 Summary of Revisions

Major revisions include:

- Revised the former plan's sections to reflect the updated 2019 plan format and content
- Moved, reorganized, and restructured the plan's sections within the document
- Updated participants of the planning committee
- Updated and revised the County and Community Profile
- Updated the requirements for reviewing, revising, and submitting the plan in the Plan Maintenance section

2.1.2 FEMA Requirements

This section adheres to and fulfills the following regulations:

- 44 CFR § 201.6(b) - An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
 - (i) - An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
 - (ii) - An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and nonprofit interests to be involved in the planning process; and
 - (iii) - Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
- 44 CFR § 201.6(c) - The plan shall include the following:
 - (i) - Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

2.2 Plan Preparation & Development

- The planning process consisted of the following phases:
- Plan Update Kick-Off – Plan development for the 2019 update began in January 2017. A kick-off meeting was held with the planning team to cover FEMA requirements and to propose a work plan.
- Plan Review & Evaluation – The former plan was reviewed and evaluated according to the FEMA Local Mitigation Review Tool (2011) and a more stringent and comprehensive evaluation matrix developed by Frazier et al. (2013). The review and evaluation results guided the risk assessment and mitigation strategy for the 2019 plan update by identifying the strengths and weaknesses of the former plan.
- Risk Assessment – Hazard occurrences and hazard impacts were collected for the county. Hazard profiles were updated to reflect current science around risk and vulnerability.
- Mitigation Strategy Review – The mitigation actions listed in the former plan were reviewed and their status determined by the responsible jurisdictions and organizations.
- Mitigation Strategy Update – New and additional mitigation actions were detailed and scored by the planning committee for inclusion into the 2019 plan update. Each jurisdiction was provided the opportunity to put forth mitigation actions for discussion and approval. Mitigation goals and objectives were likewise visited and updated as necessary.
- Public Involvement & Outreach – The public was engaged through news releases to local media, a mitigation-specific survey distributed online and in-person, and a formal public meeting. The draft plan was posted to the webpage developed for the 2019 update to provide the opportunity for public comment and feedback.
- Plan Completion & Adoption – Following the compilation of all information, data, and analyses conducted throughout the planning process, drafts were distributed to the planning team and the public for review. Feedback and comments were incorporated in subsequent drafts. After the review and edit period, the plan was formally submitted to IEOM and FEMA for approval prior to formal adoption by the county, its communities, and other organizations.

2.3 Multi-Jurisdictional Participation & Coordination

All incorporated communities were invited to participate in the plan update through email, phone calls, and personal outreach by the Jefferson County Emergency Manager and others on the planning team. The table below summarizes the participation of the jurisdictions with authority to adopt the plan following IOEM and FEMA review and approval. The county and communities that chose to participate in the planning process did so through representatives from various departments and agencies; the

Table 1. Jurisdictional participation

Jurisdiction	2014 Participation & Adoption	2019 Participation & Adoption
Jefferson County	Yes	Yes
City of Lewisville	No	Yes
City of Menan	No	Yes
City of Rigby	No	Yes
City of Ririe	Yes	Yes
City of Roberts	No	Yes

details of which can be found in *Section 2.4 The Planning Team & Stakeholder Participation*, while the various efforts put forth by the jurisdictions and their representatives throughout the planning process can be found in greater detail in *Section 2.5 Planning Meetings*.

2.4 The Planning Team & Stakeholder Participation

The planning team was the core group of individuals responsible for the development and update of the plan, and was headed by Rebecca Squires, Jefferson County Emergency Manager. Comprised of local officials and subject matter experts, these individuals represent jurisdictions and organizations with the authority to implement the mitigation strategy over the plan's five-year life. These individuals and entities bring local knowledge and perspectives to the table that are vital in developing a comprehensive and cohesive plan. These representatives participated in planning meetings, discussed hazard or mitigation-related current issues and potential problems facing their jurisdictions, and provided input on the various sections of the plan, including reviewing the mitigation actions listed in the former plan and putting forward new mitigation actions. Table 2 details the individuals that participated on the planning team.

Table 2. Planning team members

Jurisdiction	Name	Title & Department	Former Participation
Jefferson County	Mike Miller	911	NO
	Rebecca Squires	Emergency Manager, Jefferson County	NO
	Kevin Hathaway	P&Z Admin/FPM, Jefferson County	NO
	Naysha Foster	P&Z Admin/FPM, Jefferson County	YES
	Shayne Young	Commissioner, Jefferson County	NO
	Roger Clark	Commissioner, Jefferson County	NO
	Scott Hancock	Commissioner, Jefferson County	YES
	Colleen Poole	Clerk, Jefferson County	NO
	Garn Herrick	IT, Jefferson County	NO
	Orren Squires	ARES, Jefferson County	NO
	Dave Walrath	Public Works, Jefferson County	NO
	Mitch Whitmill	Weed Dept., Jefferson County	YES
City of Lewisville	George Judd	Mayor, City of Lewisville	NO
City of Menan	Tad Haight	Mayor, City of Menan	NO
City of Rigby	Jason Richardson	Mayor, City of Rigby	NO
	Dave Swager	Clerk, City of Rigby	NO
	Sharon Parry	Planner, City of Rigby	NO
City of Ririe	Larry Lovell	Mayor, City of Ririe	NO
	Jason Freeman	Public Works, City of Ririe	-
	Sharon Parry	Planner, City of Ririe	-
City of Roberts	BJ Berlin	Mayor, City of Roberts	NO

Stakeholders were also invited to participate in the team and throughout the planning process via public announcements and email invitations to community groups, major employers and non-profits. These included neighboring communities, local and regional agencies involved in hazard mitigation, agencies with the authority to regulate development, and businesses, academia, and other private and non-profit interests. Table 3 details the individuals that participated as a stakeholder throughout the planning process.

Table 3. Stakeholders and other Partners

Agency/Organization	Name	Title & Department	2014 Participation
Idaho Office of Emergency Management	Lorrie Pahl	State Mitigation Planner	YES
	Susan Cleverley	Mitigation Section Chief	YES
	Mike Clements	Area Field Officer	YES
Eastern Idaho Public Health District	Michael Winegardner	Planner	NO
	Tammy Cox	HEEP Division Director	YES
	Holly Peterson	Healthcare Liaison	YES
Idaho Department of Corrections	Lawanda Thomason		
	Aaron Krieger		
Idaho Transportation Department	Mike Ahlers	Safety & Compliance Officer	
	Bob Schumachen	Operations Manager	
Idaho Department of Environmental Quality	Elizabeth Braker		
Idaho Department of Lands	Case Strong	Fire Marshal	
	Nick Carter	Fire Warden	
American Red Cross	Rusty Devereaux	Disaster Services	YES
The National Weather Service	Tim Axford	Warning Coord.	NO
	Vernon Preston	Chief Meteorologist	YES
VOAD	Steven Taylor	President	YES
Jefferson School District 251	Chad Martin	Superintendent	NO
W. Jefferson School District	Shane Williams	Superintendent	NO
Ririe School District	Jeff Gee	Superintendent	NO
Church of Jesus Christ	Bob Reames	Volunteer	NO
Rocky Mountain Power	Tim Solomon	Business Manager	YES
Central Fire District	Carl Anderson	Fire Chief	YES
	Nic White	Assistant Fire Chief	NO
	Jared Giannini	Trainer	NO
Bonneville County	Brad Clements	Emergency Manager	YES
Teton County	Greg Adams	Emergency Manager	YES
Idaho National Lab	Carisa Shultz	Public Liaison	NO
CERT	Kim Smith	Preparedness Specialist	NO
Madison County	Trevin Ricks	Emergency Manager	NO
Bank of Commerce	David Grant	Manager	NO

2.5 Planning Meetings

- A number of meetings were convened throughout the planning process to facilitate discussion amongst the planning team and other stakeholders with regards to hazards and mitigation. The following sections summarize these meetings. See Appendix E for sign-in sheets, meeting agendas, and presentations.
- February 21, 2017 – The kickoff meeting for the plan update was held at the Jefferson County Courthouse in Rigby. The meeting was facilitated by Alexander Peterson, mitigation planner with the University of Idaho and Georgetown University, and Rebecca Squires, the county emergency manager. The meeting was attended by 12 members of the planning team and other stakeholders. The meeting focused on introducing hazard mitigation, hazard mitigation plans, and the planning process. The requirements of HMPs as codified in the Code of Federal Regulations (CFR) were presented, and cost share requirements of the Pre-Disaster Mitigation grant discussed. A brief review of the former plan included which jurisdictions and agencies

participated and adopted the former plan and which hazards were profiled. A summary of the comprehensive evaluation conducted to identify the former plan's limitations was presented and discussed, followed by the participation and adoption requirements for communities and agencies in the 2019 update process.

- April 12, 2017 – The second planning meeting of the plan update, attended by 12 members of the planning team and other stakeholders, focused on initializing the risk assessment, public outreach, and reviewing the former mitigation strategy. Copies of the Phase I Risk Assessment survey were distributed and completed by members of the planning team. Public outreach was then discussed, with specifics paid to a public service announcement in local media, a short public opinion survey, and engaging the communities to conduct awareness and outreach throughout the update process. The meeting concluded following a discussion of the county's progress in implementing the former mitigation strategy.
- July 25, 2017 – The July 2017 planning meeting was held from 9:00 AM to 12:00 PM in Rigby, and was attended by 18 members of the planning team and other stakeholders. The meeting was held during the Local Emergency Planning Committee's (LEPC's) regularly scheduled time, and discussion on the plan update followed matters of planning for the August 2017 solar eclipse. Mitigation-focused discussion and activities revolved around match to date, public outreach, assessing the human and technical capabilities of the jurisdictions and agencies, and reviewing and revising the goals of the former mitigation strategy. To date, three public surveys had been completed, and additional strategies to increase survey responses were put forward. The participating jurisdictions and agencies were provided with a copy of the Resource Capabilities Assessment Worksheets and agreed to complete the capability assessments prior to August 14th. The mitigation strategy goals were revised through a participatory effort, where the team worked together to revise the goals to better reflect local visions of mitigation implementation and outcomes. Additionally, the team made the decision to merge lightning, hail, and tornado hazards into a summer/convective weather hazard, to remove snow avalanche and riot/demonstration/civil disorder, and to add a profile on cyber disruption. Utility outage was decided to be the result of other hazards, and incorporate pandemic and livestock and wildlife diseases into biological hazards. New mitigation actions were proposed, but the implementation plan and scoring of actions to be incorporated into the plan was postponed until a later date.
- November 28, 2017 – A coordinated planning meeting and webinar was held from 9:00 AM to 12:00 PM on Tuesday, November 28th. Five members of the planning team attended the meeting, with an additional four stakeholders from Madison County, IOEM, and NWS attending in-person in Rigby. Members of the UI team participated in the meeting online. The meeting included a presentation on the outlook for the 2017/2018 winter season by Vernon Preston of NWS. Following discussion of the winter hazards and preparedness actions to be undertaken by local agencies, the discussion focused on a new timeline to complete the plan update, a review of the cost share documented to date, and jurisdictional participation to date. Attendees then worked through each element of 44 CFR §201 to discuss progress to date, the need for continued public outreach and participation by additional jurisdictions and stakeholders, and how the plan will be maintained, evaluated, and updated throughout its five-year lifecycle following approval and adoption in late 2018.
- January 27, 2018 Community Outreach Meeting, City of Rigby

A community outreach meeting was organized by the Jefferson County EM in Riby, ID, to discuss the planning process with the citizens of City of Rigby, which is participating in the plan. It was attended by 15 citizens/residents.

- March 8, 2018, Community Outreach Meeting, City of Menan
The Jefferson County EM provided information about the planning process in a regular city council meeting for the participating City of Rigby at 7pm in the evening. It was attended by the City of Menan mayor and council, City Clerk, City Public Works Director, City Attorney and several residents.
- March 12, 2018 – LEPC Planning meeting
Dr. Tim Frazier of Georgetown University, acting as a subcontractor for the University of Idaho, appeared in person at this meeting of the LEPC to further explain the process of reviewing prior mitigation strategies from the 2008 plan and the process for developing new mitigation strategies. There were representatives there from all participating cities and several major partners, such as the Idaho National Lab and the Central Fire District.
- March 13, 2018 – Outreach, City of Roberts
The Jefferson County EM attended the regular evening meeting of the Mayor and Council for the City of Roberts, a participating City, in order to discuss the planning process. In attendance were the mayor and council, sheriff and deputy, and City of Robert’s officials in Planning and Zoning, Public Works, and contractor Mountainwest Waterworks. Members of the public were invited.
- March 13, 2018 – Outreach, City of Ririe
- The Jefferson County EM attended the regular evening meeting of the Mayor and Council for the City of Ririe, a participating City, in order to discuss the planning process. In attendance were the mayor and council, sheriff and deputy, and City of Robert’s officials in Planning and Zoning, Public Works. The general public was invited and several residents and a business owner did attend.
- March 15, 2018 City Council Meeting, City of Rigby
Jefferson County EM attended the regular City Council meeting for the City of Rigby in order to follow-up from the Jan 2018 outreach meeting and further discuss the planning process. It was attended by City of Rigby Mayor and Council, City Clerk, P&Z Director, Engineer, Wastewater official, City Police officer and several citizens.
- April 04, 2018 – City of Menan work meeting
A special work meeting was held at 7pm, with the HMP process as the major agenda item, as well as the need for a specific mitigation strategy pertaining to a street project. Attendees included the Jefferson EM, the mayor and council and public works director.
- April 11, 2018 – City of Mud Lake council meeting
The Jefferson County EM attended the regularly scheduled meeting of the mayor/council of the City of Mud Lake (population approximately 400) in order to discuss the HMP process. The city did not have the resources to fully participate in the capability’s assessment and mitigation planning process, but were made aware of how they could interact with the county on mitigation issues.
- April 25, 2018 – City of Ririe Work meeting

This meeting was attended by the City of Ririe mayor and council, city clerk and public works director, and 4 members of the public. The mitigation process was discussed and the capabilities assessment questionnaires completed.

- May 19, 2018 – City of Menan Canal Stakeholders meeting
During the regular annual meeting for the City of Menan canal stakeholders group, LEPC member Mayor Haight discussed the planning process with the group. There were approximately 14 residents in attendance.
- July 9, 2019 – Planning meeting
The July 2019 planning meeting was held during the meeting time of the Local Emergency Planning Committee (LEPC) on Tuesday July 9th from 12:00 PM to 2:00 PM. The purpose of the meeting was to examine the output of the risk assessment provided by the University of Idaho and to develop new mitigation actions going forward. The meeting was well attended by LEPC members and associated stakeholders.
- November 19, 2019 – Outreach, City of Roberts City Council meeting
Jefferson County EM attended the regular meeting of the City of Roberts City Council to discuss mitigation strategies proposed by the City of Roberts. The mayor, city council and clerk were in attendance. Members of the public were invited.

2.6 Public Involvement

Public involvement was integral to the 2019 plan update. A summary of the primary outreach activities follows:

- Several press releases were distributed to local media in order to inform citizens of the update process, to solicit public review and comments on the draft plan, and to inform citizens of the date, time, and location of the public meeting held to present the risk assessment and mitigation strategy.
- A survey to assess risk perceptions and knowledge of hazard mitigation was created and distributed to the public. The survey focused on events occurring after **2009** and solicited feedback on individual levels of concern of specific hazard types, dissemination of safety and preparedness information, and mitigation priorities.
- Additional outreach was conducted throughout the update. Outreach included meetings between members of the planning team and neighborhood groups and city council and commissioner meetings. During these meetings, information on the multi-jurisdictional plan was presented, and the public survey was distributed to garner feedback on the hazards and risks faced by the public and businesses, and what actions the public would like to see implemented to reduce this risk. The public input was used to help determine the priorities of some of the mitigation strategies. The survey results were used to compare public perception of risk to calculated risk and where differences existed, they were used to help define needs in education-related mitigation strategies.

2.7 Review & Incorporation of Existing Plans, Reports, Studies, & Technical Information

Several plans, policies, reports, and other documents were reviewed and incorporated into the former plan. The plan update process revisited these documents to review and evaluate their applicability in 2019. These included many of the plans and ordinances listed in more detail in Sections 6.3 - 6.9. More

details about the relationship between the first two major major instruments noted below and the update and implementation of this HMP are provided in Section 6.10.

- Jefferson County Comprehensive Plan , which was updated and adopted August 24, 2020 (Jefferson County Resolution # 2020-21). The purpose of the Jefferson County Comprehensive Plan is to legally protect the land and individual citizens' rights, retain the good qualities of the county, and strive to assist those in areas in which improvement is needed. The plan guides growth and development decisions of the elected officials in the direction the citizens have outlined.
- Jefferson County Flood Damage Prevention Ordinance, 2016-03
- Jefferson County Subdivision Ordinance (last modification 2014)
- Jefferson County – Idaho Wildland/Urban Interface Fire Mitigation Plan, September 2004 (an annex to this plan and provided in Appendix G) – used to identify more mitigation strategies for wildland fire.
- Jefferson County Emergency Operations & Response Plan¹ – The Jefferson County Emergency Operations & Response Plan provides the framework of responsibilities for response and recovery operations from emerging or potential threats (i.e., emergencies) and disasters. The plan describes the methods the county will utilize to receive and issue notifications, coordinate resources, handle requests, and provide assistance.

¹ Jefferson County Emergency Operations & Response Plan (2013)

III. County Profile

3.1 Overview

Hazard mitigation within Jefferson County should be localized in order to maximize the reduction of losses to both life and property; therefore, it is pertinent to understand the county's characteristics, including current, past, and future trends. The county profile provides a comprehensive description of the county and its characteristics, which are further contextualized with regards to hazards in the Risk Assessment. The county is profiled in the following sections:

- Geographic Setting
- Climate and Weather
- Demographics
- Economy
- Transportation
- Water Resources
- Soils
- Critical Wildlife Habitat
- Land Cover
- Land Ownership

Data for the Jefferson County Profile was gathered from the following sources:

- United States Census Bureau
- Jefferson County Comprehensive Plan
- Jefferson County Geographic Information Systems
- Jefferson County
- Idaho Department of Fish and Game
- U.S. Fish and Wildlife Service
- Idaho Office of Emergency Management
- National Climate Data Center (NOAA)

3.1.1 Summary of Revisions

Major revisions made to this section in the 2019 update include:

- Reorganized and restructured into a discrete section
- Updated statistics and data where necessary
- Incorporated new and additional maps and figures where appropriate

3.1.2 FEMA Requirements

There are no CFR elements specific to this section.

3.2 Geographic Setting

Jefferson County is located in eastern Idaho on the Upper Snake River Plain and it is named after the third President of the United States, Thomas Jefferson. Established in 1913, Jefferson County is part of the Idaho Falls, ID Metropolitan statistical area. It is bordered by Clark County to the north, Fremont County to the northeast, Madison County to the east, Bonneville County to the south, Bingham County to the southwest, and Butte County to the West. The county ranks 14th among Idaho counties in population and 28th in area. Agriculture and food processing are the largest basic industries and dominate the economy, but government and trade sectors provide the largest employment.

Jefferson County's land area in square miles is 1,106 (707,840 acres) of which 12 square miles (7,680 acres) is water. Larger than the average county size in the U.S., Jefferson County is only slightly smaller than the state of Rhode Island. Historically an agricultural county, 37.8% of the land is used for agriculture with the next two largest land use categories being 31.6% for barren land and 26.9% for rangeland. In terms of land ownership, the county is almost split evenly between federal land and private land. Dominant geographic features in the county include Mud Lake and Market lake, 3,093 acres and 522 acres respectively, with significant area of irrigated farm land near Mud Lake. Also there is Camas National Wildlife Refuge, located 36 miles north of Idaho Falls at an elevation of 4,800 ft. The 10,806 acre refuge provides wetland and sage-steppe habitat for migratory birds and other native wildlife. The water that supports the wetlands is provided by Camas Creek, which cuts through the refuge and terminates at Mud Lake. The South Fork of the Snake River winds through the county flowing northwest and then south after the confluence with the Henry's Fork. Around the main bend of the river there are large rich areas of irrigated land for agricultural use near Rigby and Market Lake. Furthermore, the river serves as a habitat for large game and small animals due to the vegetated river bottom consisting of cottonwoods and other deciduous trees. The northern and western areas of the county are Quaternary basalt lava. When exposed, this type of rock can be very unstable.

Jefferson County lies in the Snake River Plain, making it a primarily uniform level county. The general elevation in the entire county only varies by 210 feet with the exception of a few hilly areas. The highest point is located at Kelly Mountain, in the extreme south east 'panhandle' of Jefferson County. It has an elevation of 6,670 feet. The lowest point is located on the Snake River in Bassett at an elevation of 4,770 ft.

Founded in 1884, Rigby is the county seat as well as the largest city of Jefferson County. Incorporated cities include Hamer, Lewisville, Menan, Mud Lake, Rigby, Ririe, and Roberts. Unincorporated cities include Montevieu, Terreton, Lorenzo, Labelle, and others.

Figure 1. Map of Jefferson County

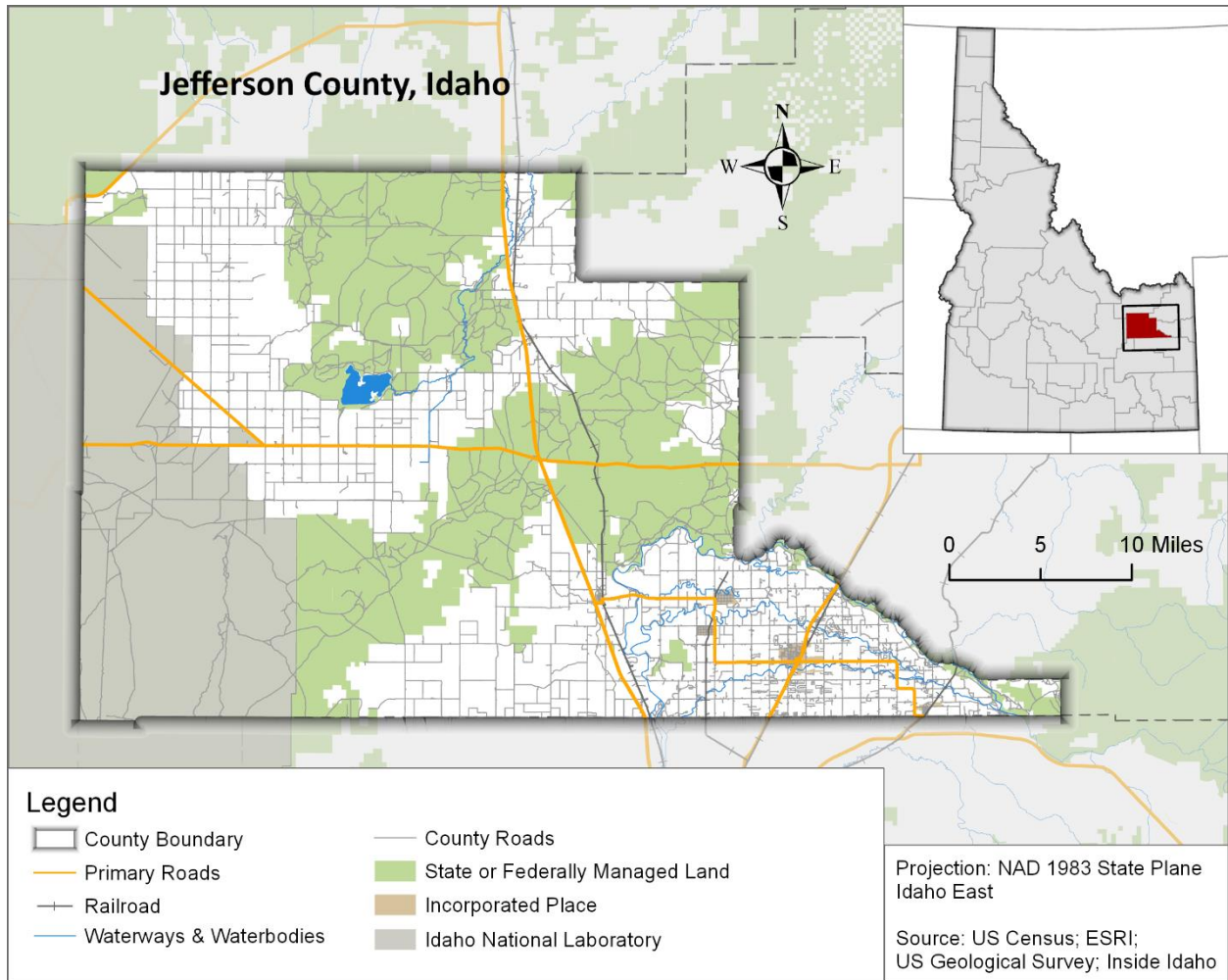


Figure 2. Jefferson County terrain map

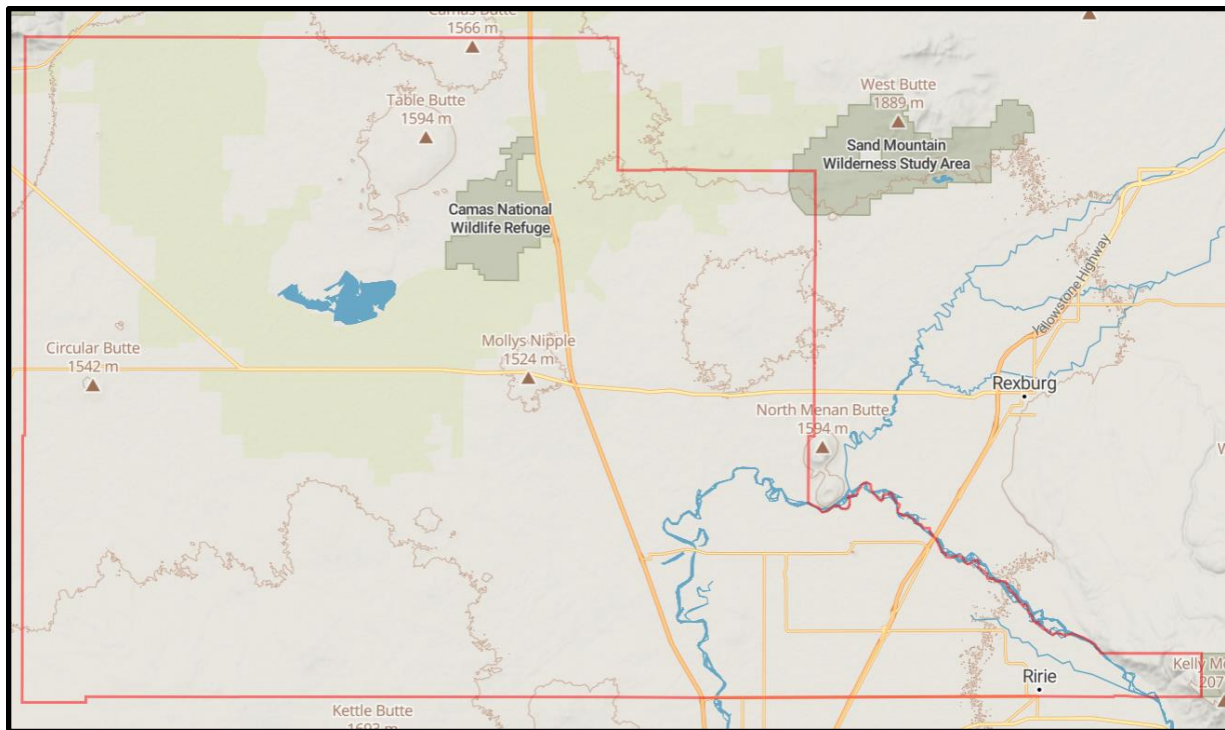
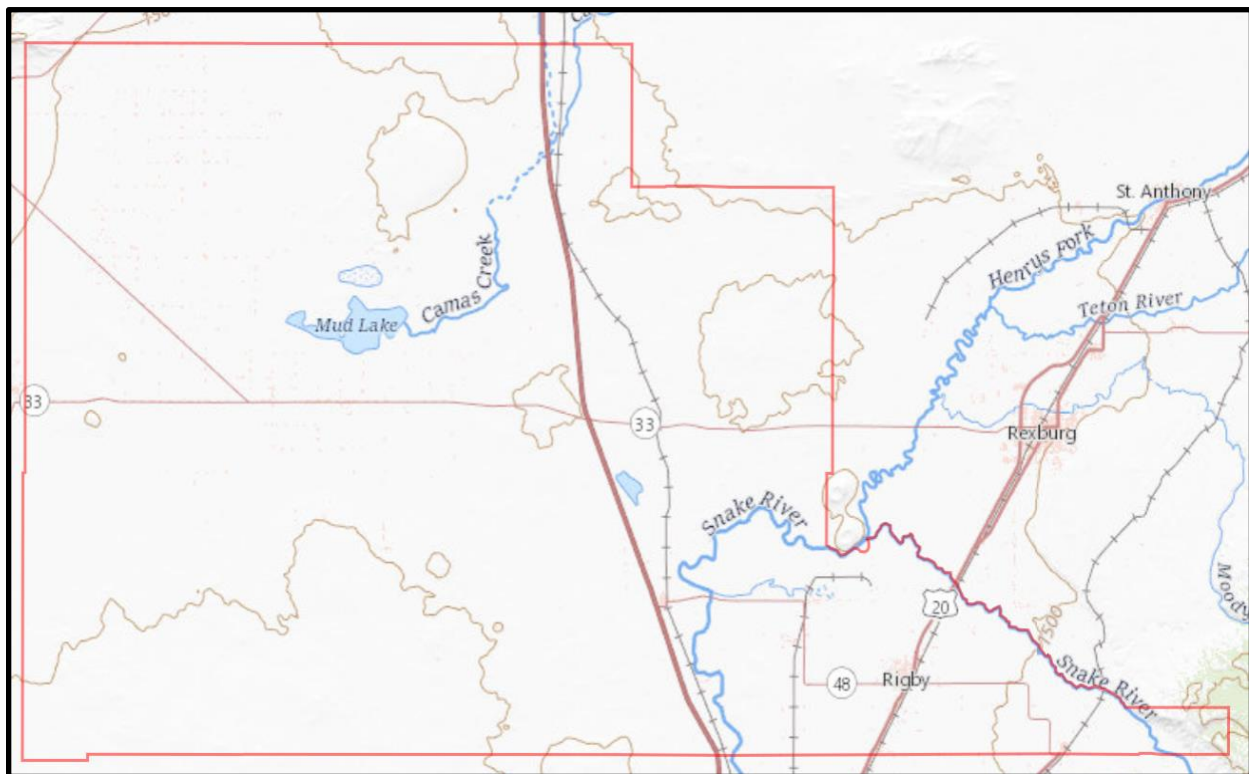


Figure 3. Jefferson County Topographic Map



3.3 Climate & Weather

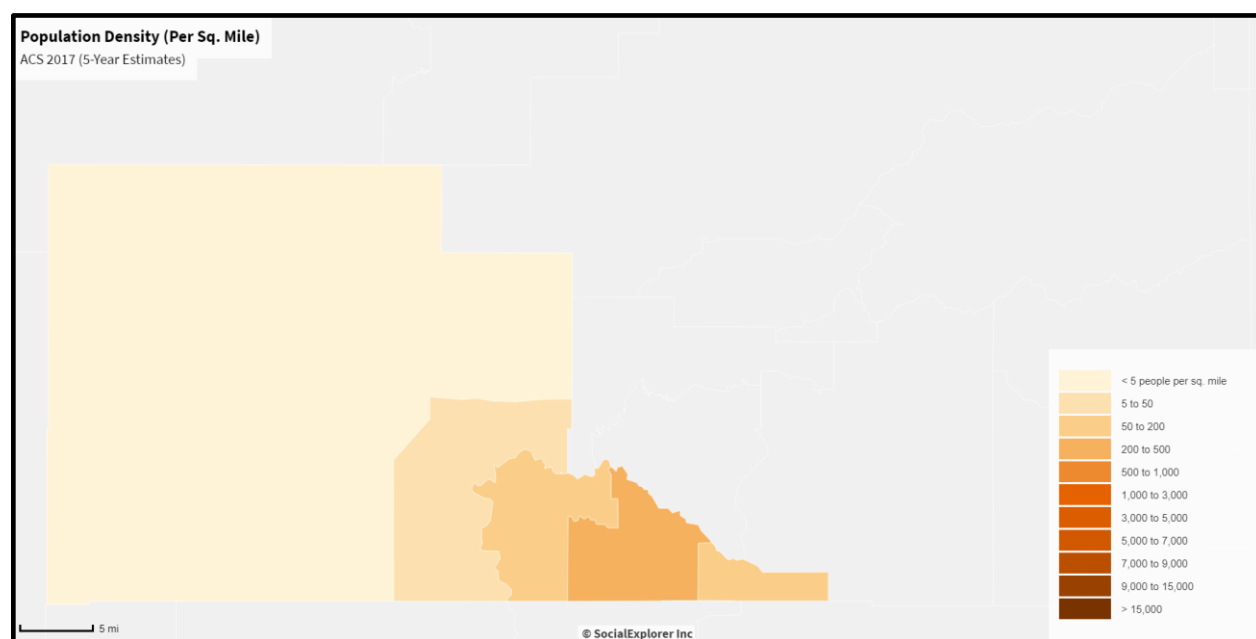
Jefferson County tends to have a fairly comfortable climate year round with 204 days of sun. The yearly highest temperature is around 86 degrees Fahrenheit in July and the yearly lowest temperature is around 11 degrees Fahrenheit in January. On average, Jefferson County gets 12 inches of rain per year and 37 inches of snow per year. Accounting for all types of precipitation, Jefferson County gets an average of 83 days of precipitation per year. Additionally, the county has a low humidity rate and an average wind speed between 7-9 mph from the Southwest. The eastern half of the County has a longer frost free growing season lasting between 120 to 160 days, while the western half of the County has a slightly shorter period between 80 to 120 days.

3.4 Demographics

The 2018 population estimate for Jefferson County is 29,439, which was an 11% increase from the 2010 census estimate of 26,140 and a 34% increase from the 2000 census estimate of 19,155 residents. Between 2006 and 2016, Jefferson County was the third fastest growing county in the state, growing over 24 percent over the decade. The county is part of the Idaho Falls Metropolitan Statistical Area and sits between the high-growth counties of Bonneville and Madison, which has contributed to Jefferson County's growth due to overflow.

Jefferson County's largest city is Rigby with a 2016 population of 4,062 individuals. Many new residential subdivisions and commercial developments have been added, and the county is trying to stay abreast of infrastructure issues. Many businesses have expanded to meet the needs of this growing county.

Figure 4. Population Density of Jefferson County

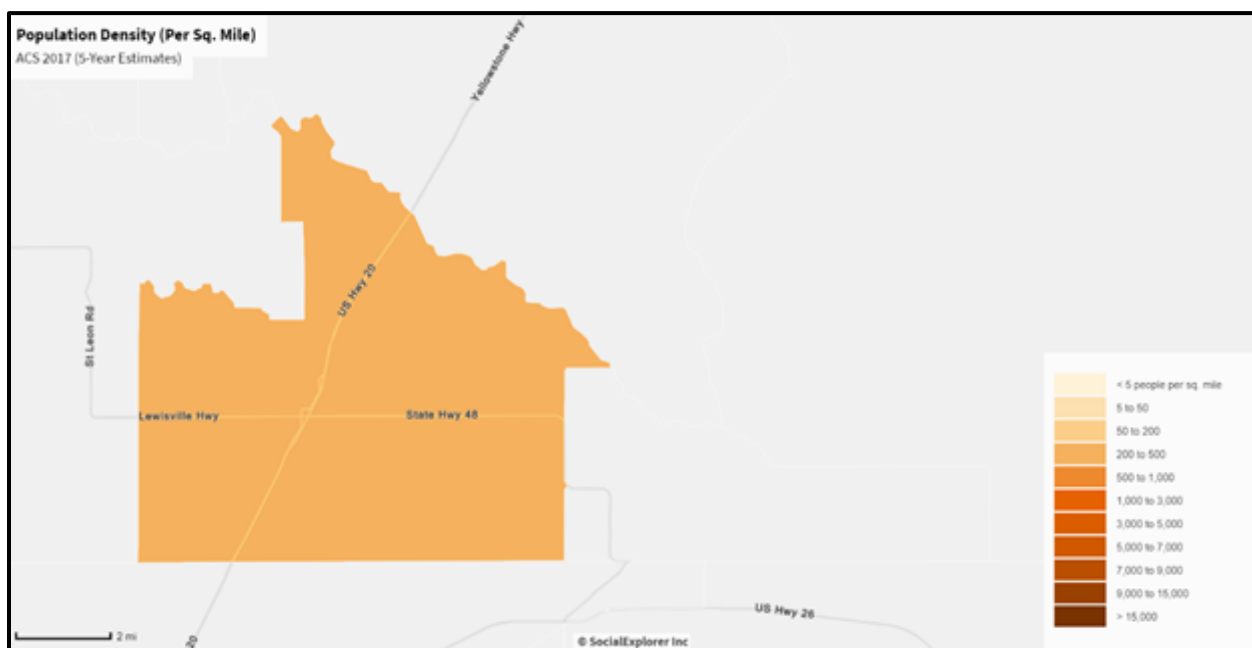


Current statistics reflect the majority of the population--34%--is under 18 years of age, while 8.6% are under 5 and 11.5% are over 65. The median age of county residents is 31 years of age, which has remained unchanged from the 2010 and 2000 census results.

The population of Jefferson County is predominately white at approximately 86%, 10% Hispanic or Latino, and less than 1% Black or African American. Overall, the racial profile of the county has remained largely the same; however, there was a decrease in the white population from 91% in 2010 and 90% in 2000.

Between 2013-2017, there were an estimated 8,470 households with 3.23 persons per household and approximately 81% of residents owned their houses. According to the 2000 census, 47% of households had children under 18, 72% of households were married couples and 7.4% had someone living alone who was over 65 years of age. This statistic remained largely unchanged by the 2010 census, in which 47% of households had children under 18, 70% of households were married couples and 7% had someone living alone who was over 65 years of age.

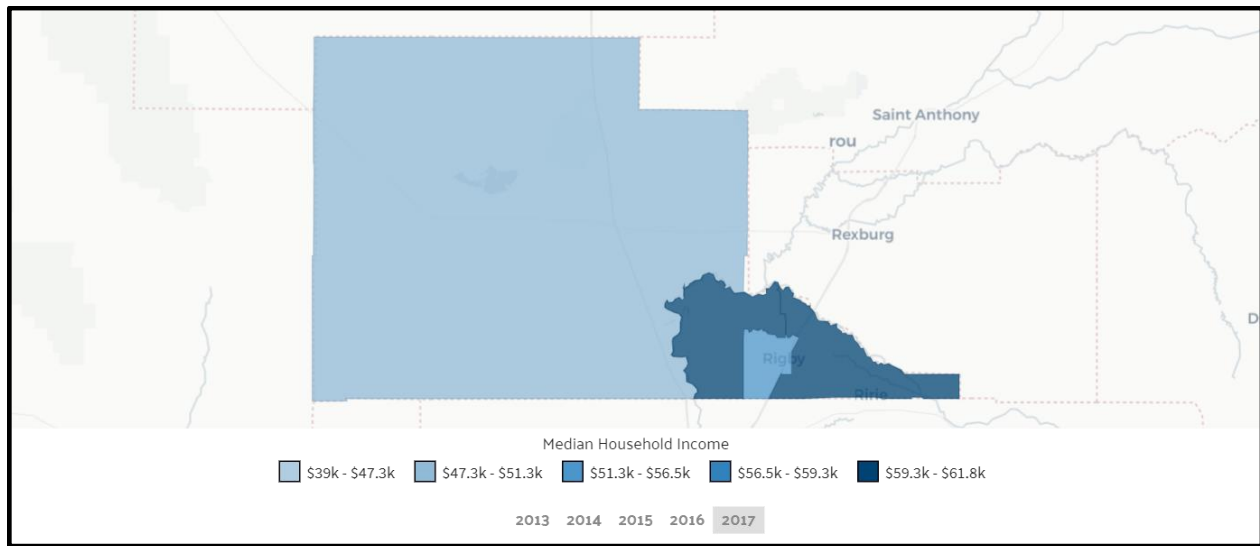
Figure 5. Population Density of Rigby Census County Division (CCD)



3.5 Economy

Between 2013-2017, 65% of the county population over the age of 16 was in the civilian labor force and 9% of the population was in poverty. The current median household income is approximately \$58,000, which is less than the median annual income across the U.S. at approximately \$60,000. According to the 2000 census, the median income has increased from \$41,000 with 10% of residents below the poverty line to the 2010 census results of a median income of \$55,000 and 10% of residents below the poverty line. Female residents between 35-44 represent the largest demographic living in poverty.

Figure 6. Jefferson County Median Household Income



Jefferson County's unemployment rate remained comparatively low between 2006 and 2016 and stayed below the state and national rates during the last decade. The 2016 unemployment rate was 3.1 percent. Many residents commute to Madison or Bonneville counties, where the growing job market has been substantial. The labor force grew by 1,712 individuals (over 15 percent) during the last decade. Employment also grew 15 percent over the decade.

There are 1,918 firms that employ 11,898 residents who work as Office & Administrative Support, Management, and Sales & Related occupations. Some of the least held occupations by residents include the Life, Physical, & Social Sciences, Law Enforcement Workers including Supervisors, and Fire Fighting & Prevention, & Other Protective Service Workers including Supervisors. However, there are a number of residents who work within specialized fields specifically Farming, Fishing, & Forestry occupations. The most common employment sectors are Health Care & Social Assistance, Retail Trade, and Agriculture, Forestry, Fishing, & Hunting.

3.6 Transportation

3.6.1 Highways

Jefferson County has approximately 720 miles of roadways under its jurisdiction. Most of the county roadways are on a north-south, east-west one-mile grid pattern. Cities generally follow the same grid pattern. The most notable exceptions are I-15, US 20, and Yellowstone Highway. Both US 20 and Yellowstone Highway parallel the Eastern Idaho Railroad in a north-eastern heading. The grid is incomplete, with large areas of western Jefferson County lacking roads of any type. This is due to the presence of the Idaho National Laboratory (INL), BLM land including wildlife refuges, and the general unsuitable nature of the land for productive purposes.

Table 4. Jefferson County Highway Surface Types

SURFACE TYPE	MILES
Unimproved	13
Graded & Drained Earth	1
Graded & Drained Gravel	289
Low Bitumen	358
High Bitumen	60

Interstate Route 15 (31.2 miles) - is the primary north-south corridor through eastern Idaho. There are three interchanges within Jefferson County –SH 48, SH 33, and Exit 150 serving the community of Hamer. The primary role of I-15 is the shipment of packaged vegetables out of Jefferson County. For the first 10 miles, I-15 lies on the western edge of the more heavily developed southeast area of Jefferson County.

US 20 (8.3 miles) – is the most heavily traveled roadway within Jefferson County. It connects all activity centers in eastern Idaho starting at Idaho Falls northward (Idaho Falls, Rigby, Rexburg, St Anthony, Ashton, West Yellowstone, Montana). Many people who live or work in Bonneville, Jefferson, and Madison Counties commute via US 20 daily. US 20 passes through the populated southeast section of Jefferson County where access to US 20 is vital to the transportation system.

State Highway 48 (24.1 miles) – is located almost entirely within Jefferson County. Beginning at I- 15 at Roberts, it passes Menan, Lewisville, Rigby and Ririe, before ending at US 26. SH 48 is the “Main Street” of Jefferson County.

State Highway 33 (35.6 miles) – runs directly east-west through the middle of the county, passing Mud Lake and Terreton, the largest community outside of southeast Jefferson County. Much of the traffic is related to the Idaho National Laboratory to the west and Rexburg to the east.

3.6.2 Rail

Jefferson County has no passenger rail service but the Union Pacific and Eastern Idaho Railroad (EIRR) passes through the county. EIRR is owned by Watco, Inc and operates two segments that move more than 35,000 carloads per year to the Union Pacific, with interchanges at Idaho Falls on the Northern Segment, and Minidoka on the Southern segment. Rigby, Ririe, Roberts, Menan, Lewisville and Hamer all have freight rail service. The Mud Lake-Terreton and Montevue areas are without rail service.

3.6.3 Airports

Commercial air service is available only in Idaho Falls. Jefferson County has a small airport south of Rigby and a landing strip west of Mud Lake. These airports are mostly used for agricultural spraying.

The Rigby Airport is a general aviation friendly airport located approximately 2 miles south of the City of Rigby, just off Yellowstone Highway. Several aviation-related businesses are located on the airport proper, as well as adjacent to the airport. The airport is well supported and maintained by an active Airport Board under the authority of the City of Rigby.

3.7 Water Resources

Jefferson County has an abundance of water resources within the County. The South Fork of the Snake River traverses Jefferson County and as a result large amounts of acreage have been developed into irrigated parcels.

3.7.1 Surface Water

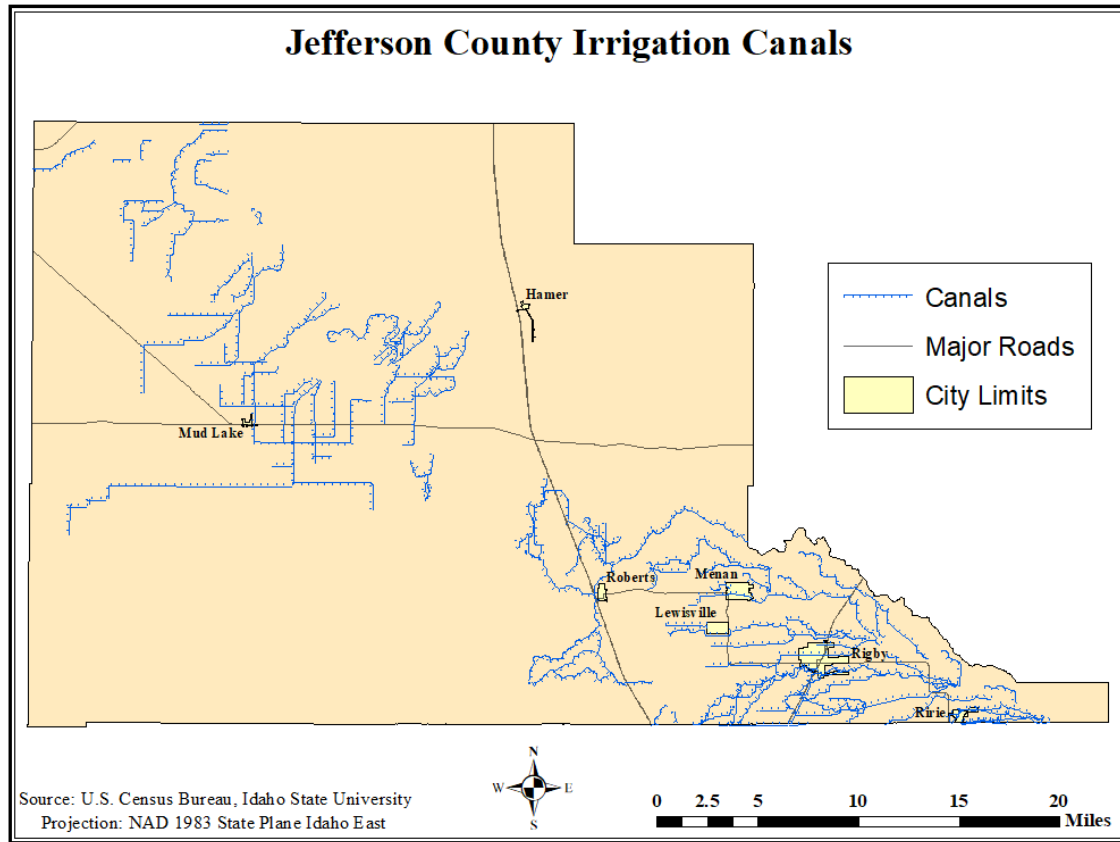
The largest river in Jefferson County is the Snake River. It runs west along the southern portion of the Jefferson/Madison County border and then turns south and flows towards Idaho Falls in Jefferson County. Other waterways include Camas Creek which has headwaters in Clark County to the north. The creek flows south into Jefferson County and ends at Mud Lake just north of Highway 33. Small streams include Warm creek, Kettle Butte Drain, Lowder Slough, Emigrant Creek, Scotts Slough, Dry Bed and Spring Creek. With the exception of Camas Creek and Warm Creek which are located in the north, these streams are in the south eastern corner of the County.

Lakes and reservoirs in Jefferson County are primarily located in the north central area. There are 9 lakes: Hamer Lake, Leavitz Pond, Mud Lake, Market Lake, Muskrat Pond, Rat Farm Pond, Rock Lakes, Two-way Pond and Willow Pond. Two-way Pond is the largest. There are 4 reservoirs also mostly located in the north central area of the County. They are: Jefferson Reservoir, Johnston Lake, Rays Lake and Sandhole Lake. The largest of these is Mud Lake at 7,000 acres. Mud Lake and Market Lake are both part of wildlife management areas owned by the State of Idaho.

Mud Lake is a terminal lake which has been diked to use as a storage reservoir. The lake's inflow is from Camas Creek.

There are several major canals traversing the agricultural lands in Jefferson County (see Figure 7 below). The massive canal system in Jefferson County defines much of the economy, transportation, and hazard profile of Jefferson County. There are hundreds of canal crossings (bridges); a dozen or so diversion structures; and many other structures (weirs) to measure and control water. Failure of a head gate or bank can result in uncontrolled flow and severe property and economic damage. Most of the jurisdictions included in this planning process have included mitigation strategies pertaining to the hardening of the various levees and headgates in the canal system in order to mitigate the occurrence and impacts of potential canal overflow.

Figure 7. Map of irrigation canals in Jefferson County



3.7.2 Groundwater

Jefferson County sits over the Snake River Plain Aquifer. It has been an important recharge area due to the large amounts of flood irrigation that is used in Jefferson County. However, that is being threatened as sprinkler irrigation is replacing flood irrigation throughout the County.

High water table problems occur annually during the irrigation season on the alluvial fan of the Snake River near the Cities of Rigby and Ririe which can result in water in basements and potato cellars and flooded fields and corrals.

Ground water levels vary throughout the County from 1 to 3 feet below the surface near the river and around ancient lake beds to 600 feet in the Roberts area.

3.7.3 Dams

Jefferson County has eight dams. All of the dams within the county are small, non-regulated dams, as indicated in the table below. However, there are larger dams external to county, but upstream. More

information about dams is provided in Section 4.12, included a map of the dams internal to the county and upstream of the county.

3.8 Soils

There is no unifying soil characteristic throughout the county. East of the Snake River are alkaline soils ranging from loam to gravel. Around Mud Lake the soils have high concentrations of sand, whereas farther away from the lake, the soils start to contain more silt and clay. About half of the county has soils that are derived from Quaternary basalt lava, while the other half is comprised of soils formed by lakes that used to cover the region.

The following soil series can be found in Jefferson county:

- Albertville
- Allen
- Bargield
- Bodine
- Decatur
- Docena
- Etowah
- Fullerton
- Gorgas
- Hanceville
- Holston
- Ketona
- Leesburg
- Montevallo
- Nauvoo
- Palmerdale
- Sullivan
- Townley
- Tupelo

3.9 Critical Wildlife Habitat

There are two Idaho Department of Fish and Game Wildlife Management Areas and one National Wildlife Refuge in Jefferson County. The Camas National Wildlife Refuge is 10,657 acres and the Mud Lake and Market Lake WMAs are 8,853 and 5,071 acres respectively.

Three amphibian species, two hundred and ninety-six bird, seventy-four invertebrate, and twenty-five mammal species have been observed in Jefferson County. Of these, there is one threatened animal species, the Canada Lynx. There is threatened species of plant in Jefferson County, the Ladies'-Tresses. There are also four animal species that are listed as candidates for the Endangered Species List. They are the Southern Idaho Ground Squirrel, the North American Wolverine, the Yellow-Billed Cuckoo, and the Greater Sage-Grouse.

Various waterfowl are present throughout the spring, summer, and fall months, using the wildlife management areas for feeding and nesting. Although no waterfowl overwinter in Jefferson County, the sagebrush is a winter habitat for grouse and antelope. Winter habitat for grouse and antelope is also provided by the desert areas, as well as for elk and deer. Moose live along the Snake River year-round.

3.10 Land Cover

Jefferson County, Idaho, covers 1095 square miles plus approximately 10.5 square miles of water (http://www.city-data.com/county/Jefferson_County-ID.html). Jefferson County's northern boundary is formed by Clark and Freemont Counties with Madison County to the east, Bonneville and Bingham Counties to the south, and Butte County to the west.

Jefferson County has open water, developed space, forests, grasslands, pastures, and wetlands. Altitudes range from 4783 feet above sea level to 6670 feet at Jefferson County's highest point. The county is relatively flat except for the mountainous areas in the far southeastern corner of the county. The geology, hydrography, climate, and land cover all play a role in the natural hazard environment that characterizes Jefferson County. Provided is a link to the USGS Idaho Falls topographic map which includes Jefferson County, https://ngmdb.usgs.gov/ht-bin/tv_browse.pl?id=de6c2a4b642ba18633732d7004f193db.

Jefferson County contains 17 classified land cover types according to the 2016 National Land Cover Database (NLCD). Figure 4.8 (below) shows the spatial distribution of the land cover types while Table 4.3 (below) provides each land cover type along with a description. Data from the Multi-Resolution Land Consortium can be access at <https://www.mrlc.gov/viewer/>.

Figure 8. 2016 Jefferson County Land Cover Map

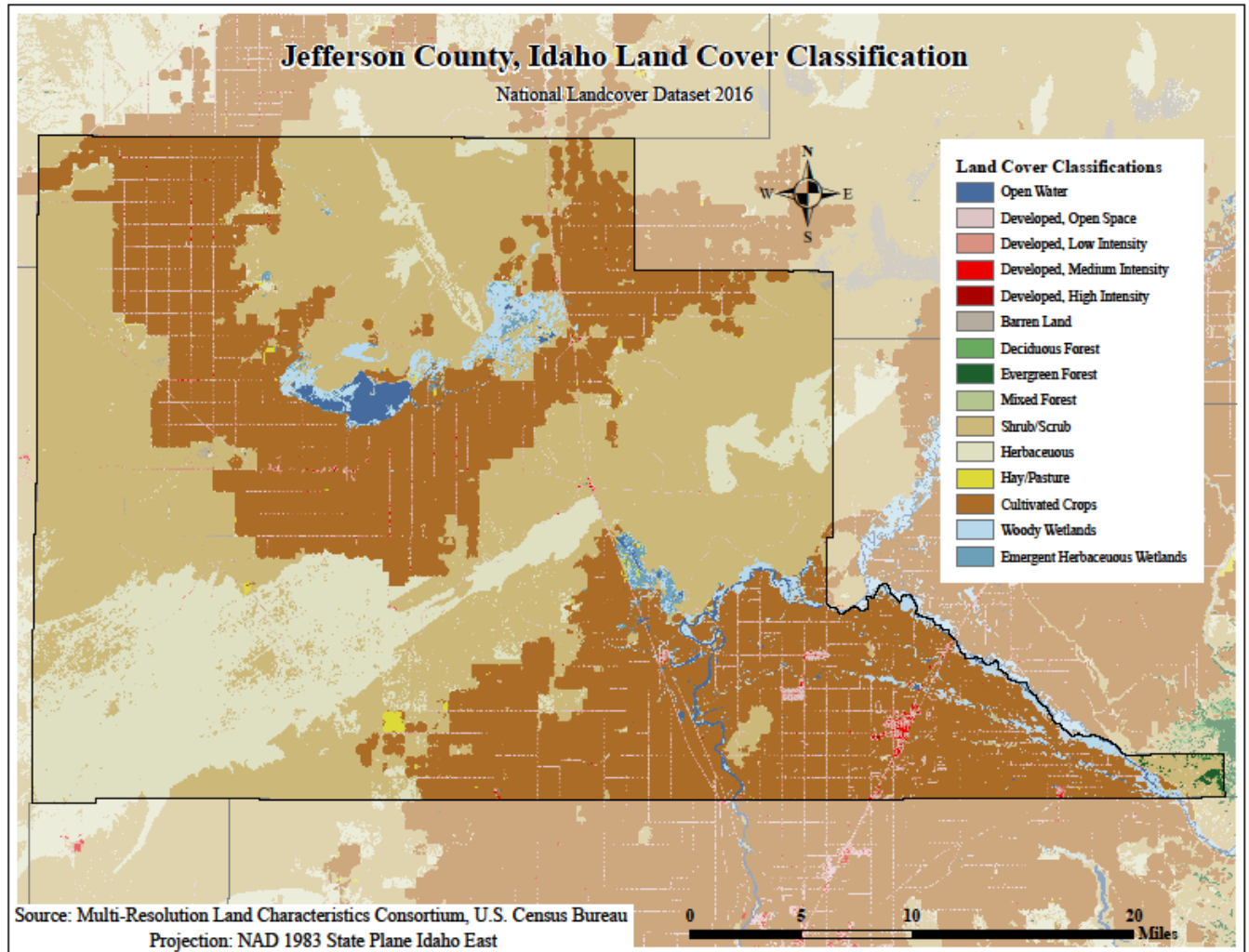


Table 5. Jefferson County Land Cover Types by Area.

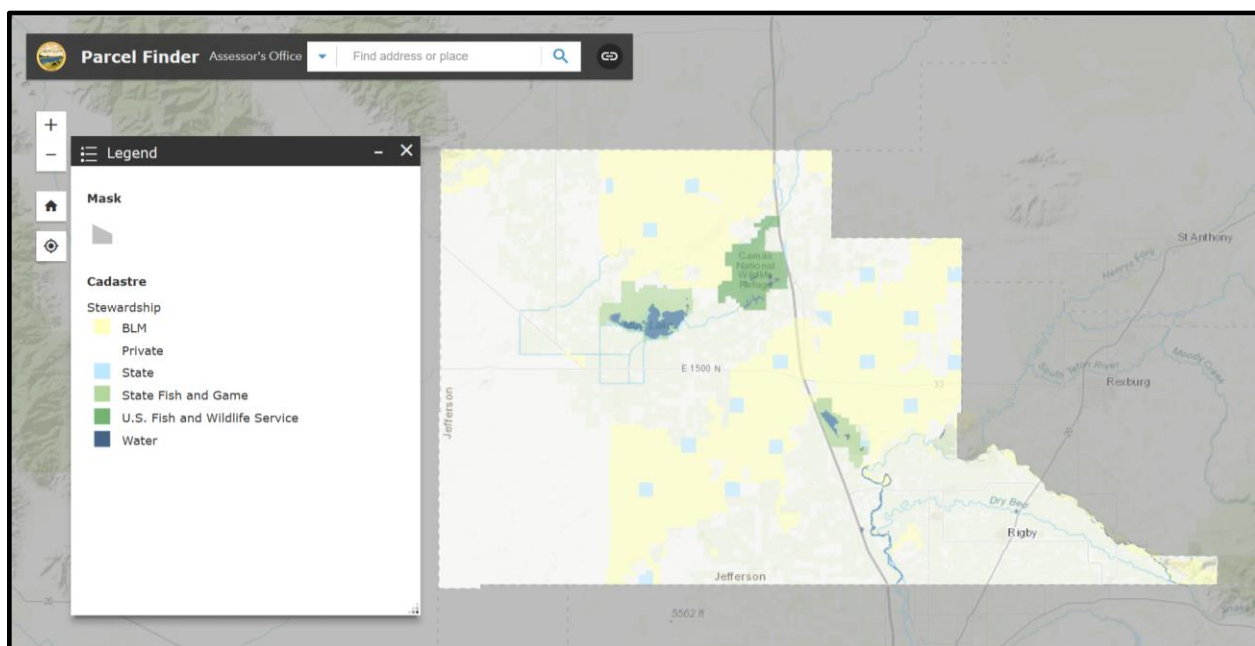
Cover Type	Acres	Percent of Area
Open Water	6,408	0.90
Developed, Open Space	12,234	1.73
Developed, Low Intensity	4,801	0.68
Developed, Medium Intensity	775	0.11
Developed, High Intensity	76	0.01
Barren Land	599	0.08
Deciduous Forest	109	0.01
Evergreen Forest	625	0.08
Mixed Forest	2	< 0.01

Shrub/Scrub	287,501	40.7
Herbaceous	103,803	14.7
Hay/Pasture	1,480	0.20
Cultivated Crops	269,152	38.1
Woody Wetlands	15,316	2.17
Emergent Herbaceous Wetlands	3,708	0.52

3.11 Land Ownership & Management

Land ownership is split roughly in half between federal and private land. The federal government owns 46.8 percent of the total land acres, or approximately 328,832 acres. Of those acres, the Bureau of Land Management (BLM) owns 186,832 acres. The Department of Energy (DOE) owns the majority of the remaining 141,394 acres. The National Wildlife Service and the US Forest Service (USFS) each manage a small portion of land. Private land makes up 49 percent of Jefferson County's area and is concentrated primarily in the southern and northern parts of the county. The state manages 4.1 percent of the total area, with State Endowment lands making up 15,813 acres and the Idaho Fish and Game managing 13,216 acres. Notably, Mud Lake State Wildlife Management Area and Market Lake State Wildlife Management Area are both managed by the Idaho Fish and Game. The remaining 0.1 percent of land is owned by the county and municipalities.

Figure 9. Jefferson County Land Stewardship



3.12 Land Use & Development Trends

3.12.1 Land Use – Current

The land use in the county is primarily agricultural and the preservation of this use within the Area of City Impacts is a high priority according to its Comprehensive Plan. While agricultural uses surrounding larger communities is trending to become non-economical, Rigby and the surrounding communities are still of the size and inclination to allow these related uses within the area of impact. This use is also appropriate in rural lands with marginal suitability of agricultural production. The Area of City Impact allows for the mixture of larger parcels and smaller parcels providing for rural, low-density living atmosphere. These lands are considered to be in a changing environment where public facilities and services will be necessary before intensive urbanization should occur.

Additional land uses in the county include Mineral Exploration, Preservation, Housing and Residential, Commercial, Industrial, Existing Uses, and Other Land Uses. The consideration of Other Land Uses in this plan is important to note as these address the unique characteristics of the land or environment. This includes identifying public lands, floodplain areas and areas of critical concern such as historical sites, geographic features, wildlife areas, and natural resource areas.

3.12.2 Development Trends and Considerations in this Planning Process

Urban areas of Jefferson County occupy approximately 1,700 acres and as it is one of the fastest growing counties in the state of Idaho, the county will need approximately 1,000 additional acres of land converted to urban use in the next 20 years to accommodate its growth. As mentioned previously, many new residential subdivisions and commercial developments have been added, and the county is trying to stay abreast of infrastructure issues as a result of this growth. Many businesses have also expanded to meet the needs of this growing county.

According to the Jefferson County Comprehensive Plan, there are land use goals related to future development including, but not limited to:

- To encourage growth and development in an orderly fashion, minimize adverse impacts on differing land uses, public health, safety, infrastructure and services.
- To encourage livability, creativity and excellence in the design of all future residential developments as well as to preserve the natural beauty and ecology of Jefferson County.
- To encourage development in those areas of the county which provide the most favorable conditions for future community services.

As noted in earlier sections, Jefferson County has a population just under 30,000 (estimated, 2018), with the population distributed among rural areas and the 5 cities participating in this plan, the largest of which, Rigby, has a population of approximately 4000. Thus, even a moderate amount of growth can stretch the capacity of the jurisdictions to provide services. Jurisdictional representatives from the county and 5 cities have noted these trends and commented on how it impacted their mitigation strategies:

- The economic downturn in 2008-2009 suppressed building in the subsequent years, however, in more recent years building of both commercial and residential has been picking up

- Population in increased by approximately 10% between 2010 and 2018, and larger class sizes in county schools suggest that the mean age is decreasing.
- The development of what was previously agricultural land increases the wildland/urban interface for jurisdictions, increasing the importance of addressing structural and wildland fire and increasing the need for partnerships among the county, cities, and fire districts.
- This need impacted the mitigation strategies crafted by most jurisdictions, in that many of them include more opportunities for partnering among those entities for several types of mitigation strategies (infrastructure, planning and education programs).
- There is a growing realization (noted in the Mitigation Capabilities section later in this plan) that the HMP and other planning mechanism such as comprehensive plans, transportation plans and capital improvement plans can and should work in concert with one another to reinforce best practices for protecting the public from loss due to fires and floods.

Figure 10 Map of New Permit Density in Jefferson County – 2019

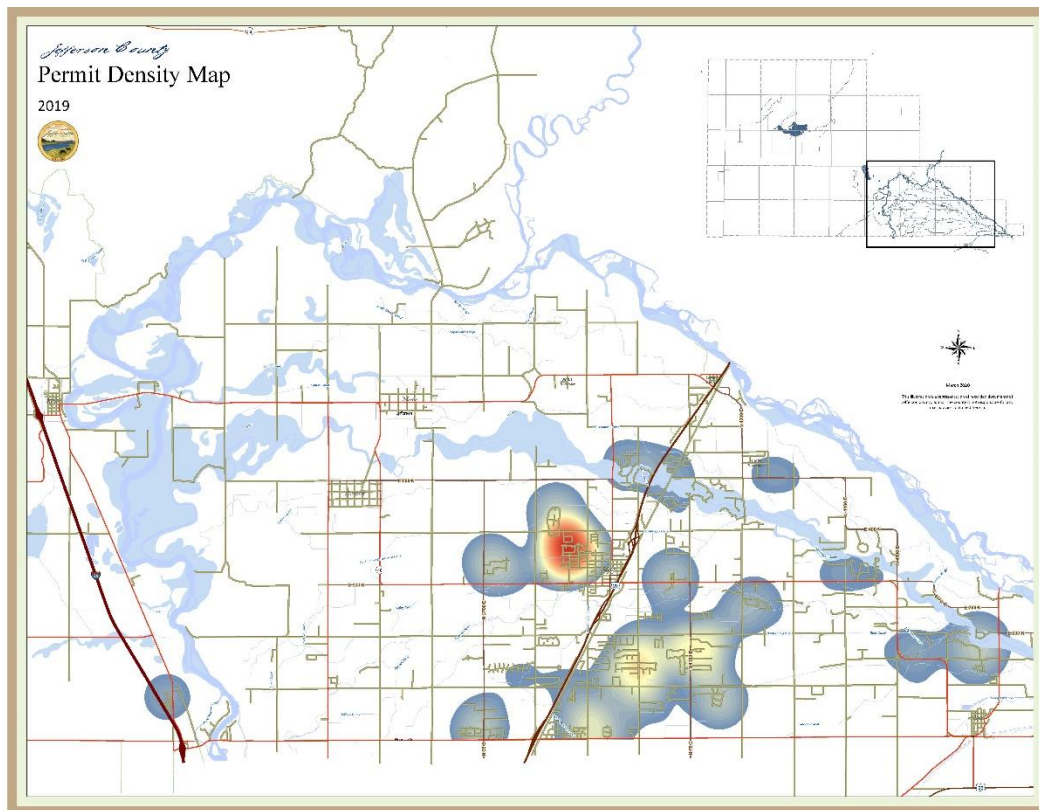


Figure 10 shows a map of the density of permits, revealing growth clusters in specific areas.

Jefferson County continues to experience rapid growth in the region surrounding Rigby, particularly near 400 North west of Rigby and between County Line Road and 200 North east of Highway 20. Since the last plan was adopted in 2008, Jefferson Joint School District 251 has added two elementary schools and a high school. The unprecedented growth has been in rural subdivisions, with lots of 1-5 acres in size.

Because irrigation is limited, the larger lots often create a subdivision wildfire hazard due to a buildup of dry vegetative material. Most subdivisions do not have centralized water or fire suppression, creating extreme difficulty in responding to fires in the wildland-urban interface. Additionally, much of the new growth is in close proximity to the “Dry Channel (Great Feeder Canal)” and Snake River, increasing flood risk. New residents, many having relocated from out of state, are unfamiliar with the area’s hazards and local methods of mitigating and responding to them.

Jefferson County will place increased priority on 1) Public Information and Warning for new residents; 2) Regulatory measures to ensure the safety and survivability of new construction; 3) Improved fire prevention and suppression capability; and 4) Protecting critical infrastructure, particularly transportation, in higher-density areas of the County.

IV. Risk Assessment – Jefferson County, Idaho

4.1 Overview

Risk assessments are key in aiding mitigation. A risk assessment identifies and characterizes hazards and the potential impacts to the county and its jurisdictions should a disaster occur. By undertaking a comprehensive risk assessment, local officials and decision makers can compare, evaluate, and prioritize mitigation actions to most effectively and efficiently reduce loss of life and property. The risk assessment also provides for more effective land use through zoning and planning, ultimately allowing for resilient growth across the jurisdictions.

Hazards that pose a risk to the county and its jurisdictions are many and varied, and this plan attempts to profile both natural and technological that pose the most significant threat to the population, infrastructure, and built environment. The profiled hazards were identified in the former plan, through discussions with the steering committee, past hazard events and declared disasters, and public outreach. These hazards include severe weather, floods, earthquakes, and wildfires. Note, however, that this is not an exhaustive list, and that additional hazard profiles should be drafted and appended to the plan when necessary.

As part of this current planning process, a team from the University of Washington's Institute of Hazard Mitigation Planning and Research (led by Dr. Himanshu Grover), computed probabilities of occurrence for risks from floods, earthquakes, volcanoes, tornado/wind risk and winter weather. These probabilities are discussed in the sections for each hazard and tables describing the risk categories for the county and each participating jurisdiction are provided in Appendix F, along with the impacted critical infrastructure.

4.2 FEMA Requirements

The 2019 plan update developed the risk assessment consistent with the process and requirements detailed by FEMA. This section satisfies the following requirements:

- 44 CFR §201.6(c) – The plan shall include the following:
 - (2) - A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards. The risk assessment shall include:
 - A description of the type, location, and extent of all-natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.
 - A description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008 must also address NFIP insured structures that have been repetitively damaged by floods. The plan should describe vulnerability in terms of:

- The types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;
 - An estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) this section and a description of the methodology used to prepare the estimate.
 - (C) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.
- (iii) – For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction’s risks where they vary from the risks facing the entire planning area.

4.3 Hazard Identification & Profiling

Studies were conducted to determine which hazards are of significant concern in Jefferson County.

Table 6. Jefferson County Hazards

Hazards	2014 Profile	2020 Profile
Earthquake	Yes	Yes
Communicable Disease Outbreak	Yes	Yes
Flooding	Yes	Yes
Hazardous Materials/ Nuclear Event	Yes	Yes
Severe Conductive Weather (e.g. Tornado, lightning, straight line winds, and hail)	Yes	Yes
Structural Fire	Yes	Yes
Wildfire	Yes	Yes
Winter Weather (e.g. Snow storm and extreme cold)	Yes	Yes
Dam Failure	No	Yes

4.4 Summary of Revisions

Major revisions made to this section in the 2019 update include:

- Revised the descriptions of all profiled hazards
- Reorganized the hazard profile to align with the requirements
- Conducted and included updated risk assessment based upon new data

4.5 Risk Assessment

Risk assessments are crucial components within any county mitigation plan. A list of hazards was compiled and a profile for each was developed. The profile includes a description of the hazard,

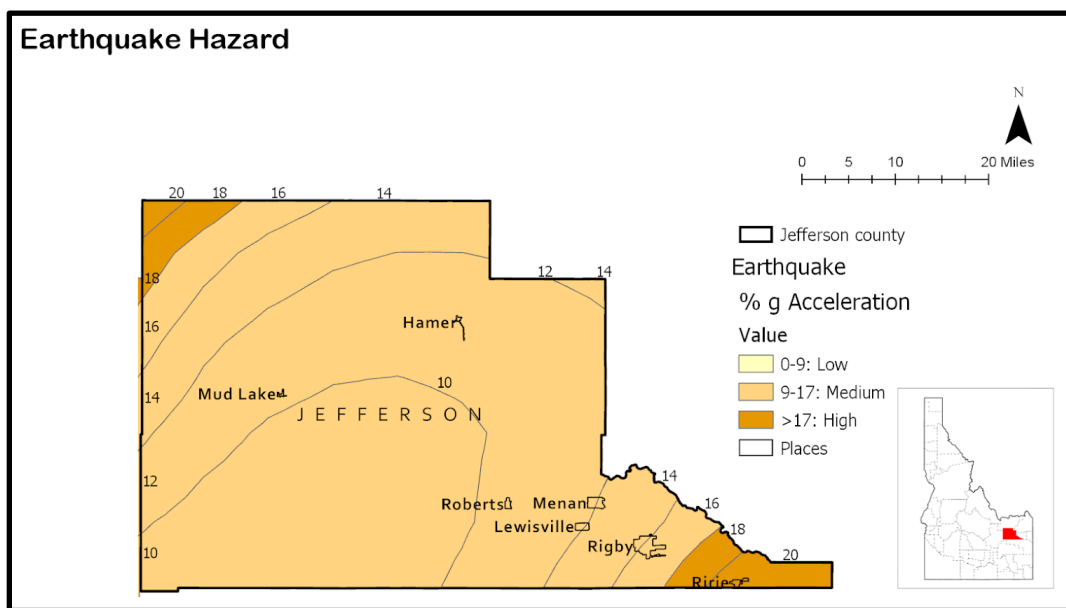
potential impacts of the hazard, and an overview of where within the county it could occur, including levels of severity and probability of occurrence.

4.6 Earthquake

4.6.1 Hazard Vulnerability & Risk Summary

Jefferson County and its jurisdictions are vulnerable to earthquakes due to the regional seismic profile. The information contained in Table F.4 in Appendix F, as well as the associated map (Figure 10) indicates that the county's entire population and structures are exposed to moderate-to-high earthquakes. Approximately 95% of the planning area is in the moderate risk category for earthquakes. The entire jurisdiction of Ririe is at a high risk for earthquakes as well as just over 5% of unincorporated areas found mainly in the northwest corner of the county. Of note is that 24 road bridges and 5 railroad bridges are in the high-risk unincorporated area.

Figure 11. Jefferson County Earthquake Hazard Map



4.6.2 Hazard Description

An earthquake is the trembling of the ground resulting from the sudden shifting of rock beneath the earth's crust. Earthquakes are caused by a sudden slip on a fault, or the breaks and fractures where the earth's crust on either side has moved relative to the other. Such events cause waves of energy to radiate from the point of release, and cause the movement, shaking, and rolling felt during an earthquake event. The durations of earthquakes are normally limited to a few seconds but can last for minutes in length. The resultant waves can travel hundreds to thousands of miles, causing damage to locations far from the epicenter.

Movements associated with earthquakes are classified as a foreshock, main shock, or aftershock. Foreshocks occur before the main shock, which is defined as the actual onset of the earthquake, while aftershocks occur after the onset of the main shock. Main shocks can occur immediately following foreshocks or can occur days to months after. Likewise, aftershocks can occur immediately following the main shock or much later. Aftershocks can be large, damaging events that further impact an area.

Earthquakes can be particularly damaging in Idaho. Geological and seismological studies show that earthquakes are likely in several active zones in Idaho and adjacent states. The state itself is ranked fifth in the nation for earthquake hazard, with only California, Nevada, Utah, and Alaska ranked higher. Idaho has experienced several damaging earthquakes over the past 100 years, with two notable events occurring in 1959 (Hebgen Lake earthquake) and 1983 (Borah Peak earthquake). Both caused fatalities and millions in dollars in damage across the state.

Earthquakes can cause significant damage to structures, and can cause injury, loss of life, and impact the socioeconomic functioning of affected communities. The following influence damages associated with earthquakes:

- Seismic Activity – Varying between earthquake events, seismic activity ranges from localized, small points of energy release to widespread, large, and destructive releases. The length of earthquakes ranges from brief (a few seconds) to more than a minute. Earthquake epicenters can be shallow or deep, with depth influencing the type of seismic waves felt and their destructive potential.
- Geology & Soil Types – The underlying geology and soil type of an area influences the propagation of seismic waves and their impact. Stable geologic types (such as solid bedrock) are less prone to destructive shaking than geologic types that are more unstable, such as fill soils. The siting of structures and communities strongly influences the nature and extent of earthquake damages.
- Development & Development Quality – The type and quality of development is vital in considering earthquake damages to a county or community. Isolated, small earthquakes in densely populated areas or areas with unreinforced masonry can be more devastating than a high-magnitude earthquake in a remote location or in an area with earthquake-appropriate building codes.
- Time of Day – Time of day determines the distribution of the population, and therefore the distribution of injuries and fatalities. Residences house more people in the evening and night, whereas business centers, schools, and other day-use locations house more people in the morning and afternoon. Day of the week is also important to consider, as people's work, travel, and activities vary between weekdays and weekends.

Secondary impacts, such as landslides, can also result from shaking. The following describes some of the types of damage stemming from an earthquake:

- Shaking – Ranging from minor to severe, minor shaking can cause objects to fall and other minimal damage, while severe shaking causing large structures to collapse and extensive damages. Unreinforced masonry and wood frame structures are most prone to earthquake damage. Non-structural falling hazards include loose or poorly secured objects, and include objects such as bookcases, wall hangings, and building facades. These objects can cause additional structural damage, and injury or fatality. Shaking can also rupture dams, destroy power and telephone lines, gas, sewer, or water mains, and can cause fires or other hazards that impair response and recovery efforts.
- Ground Displacement – The most dramatic visual evidence of an earthquake, ground displacement often occurs along a fault line. Ground can be thrust upward, subside, or move laterally given a severe enough earthquake. Damages from ground displacement is normally limited to utility lines and transportation infrastructure, though structures situated on fault lines can also be impacted.
- Landslides & Avalanches – Earthquakes often cause cascading hazards. Given conducive meteorological conditions (such as in-place snowpack or recent rain events), earthquakes can cause rock falls, landslides, or debris flows.
- Liquefaction & Subsidence – Liquefaction occurs when the energy released from an earthquake weakens the strength and stiffness of a soil, while subsidence is caving in or sinking of an area. Fill and saturated soils are notably at risk of liquefaction, which can result in widespread structural damage. Liquefaction and subsidence can also impact surface and subsurface water flow, which can impair individual or community wells as well as cause flash flood-like water flow. These impacts can likewise impact septic systems, which create additional health risks.
- Seiches – Oscillating waves in an enclosed body of water caused by an earthquake are termed seiches. Although not commonly damaging given their rarity, seiches can resemble tsunami characteristics and destructive potential. Shoreline development along a lake in earthquake-prone areas are at risk of damage, as well as dams or flood mitigation structures such as levees. Seiches can also cause hydrothermal explosions.

Earthquakes are measured in both magnitude and intensity, where magnitude refers to the energy released at the source of the earthquake, and intensity refers to the strength of shaking produced by the earthquake at a discrete location. Where magnitude is derived from seismograph measurements, the effects on people, structure, and the environment determine intensity.

The most common measure of magnitude is the Richter scale. The Richter scale measures magnitude as a function of the amplitude of waves recorded by seismographs, with adjustments to account for variations in distances between recording stations and the epicenter. Magnitude is expressed in whole numbers and decimals, and is measured logarithmically; that is, each whole number step corresponds to the release of about 31 times more energy than the preceding whole number.

The most common measure of intensity is the Modified Mercalli Intensity (MMI) Scale. The scale, composed of increasing levels of intensity that range from imperceptible shaking to catastrophic

destruction, is designated by Roman numerals. The scale does not have a mathematical basis; instead, it is an arbitrary ranking based on observed effects.

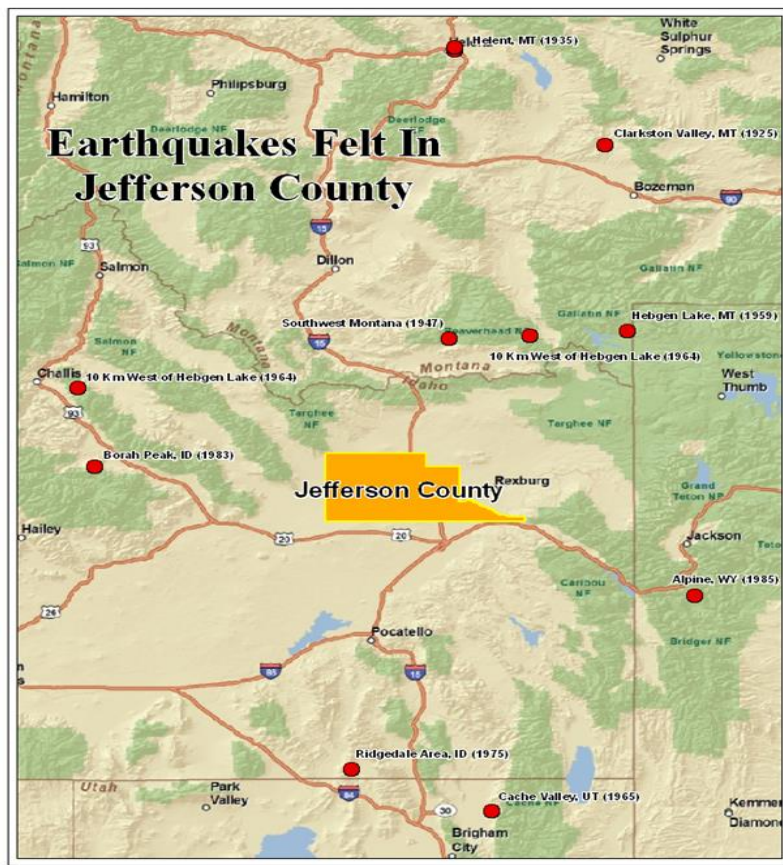
Table 7. Modified Mercalli Intensity Scale

Intensity	Description	Approximate Magnitude
I	Not felt except by a very few under especially favorable conditions.	1 to 2
II	Felt only by a few persons at rest, especially on upper floors of buildings.	2 to 3
III	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations like the passing of a truck. Duration estimated.	3 to 4
IV	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	4
V	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	4 to 5
VI	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.	5 to 6
VII	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.	6
VIII	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.	6 to 7
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.	7
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.	7 to 8
XI	Few, if any (masonry) structures remain standing. Bridges destroyed. Rails bent greatly.	8
XII	Damage total. Lines of sight and level are distorted. Objects thrown into the air.	8 or greater

4.6.3 Hazard Occurrence, Location & Extent

While there has been no recorded earthquake epicenter in the county and the county does not have a fault line, residents have felt shaking and other effects 11 times over a 90-year period for moderate size regional earthquakes (see map in Figure 11). There have been no recorded losses in Jefferson County from earthquakes.

Figure 12. Earthquakes felt in Jefferson County



4.6.3.1 City of Lewisville

Lewisville is exposed to similar extent and location of earthquakes as the greater planning area and has included an earthquake-related mitigation strategy in its portion of the plan.

4.6.3.2 City of Menan

Menan is exposed to similar extent and location of earthquakes as the greater planning area and has included an earthquake-related mitigation strategy in its portion of the plan.

4.6.3.3 City of Rigby

Rigby is exposed to similar extent and location of earthquakes as the greater planning area and has included an earthquake-related mitigation strategy in its portion of the plan.

4.6.3.4 City of Ririe

Ririe has a higher level of exposure to earthquakes than most of the greater planning area and has included an earthquake-related mitigation strategy in its portion of the plan.

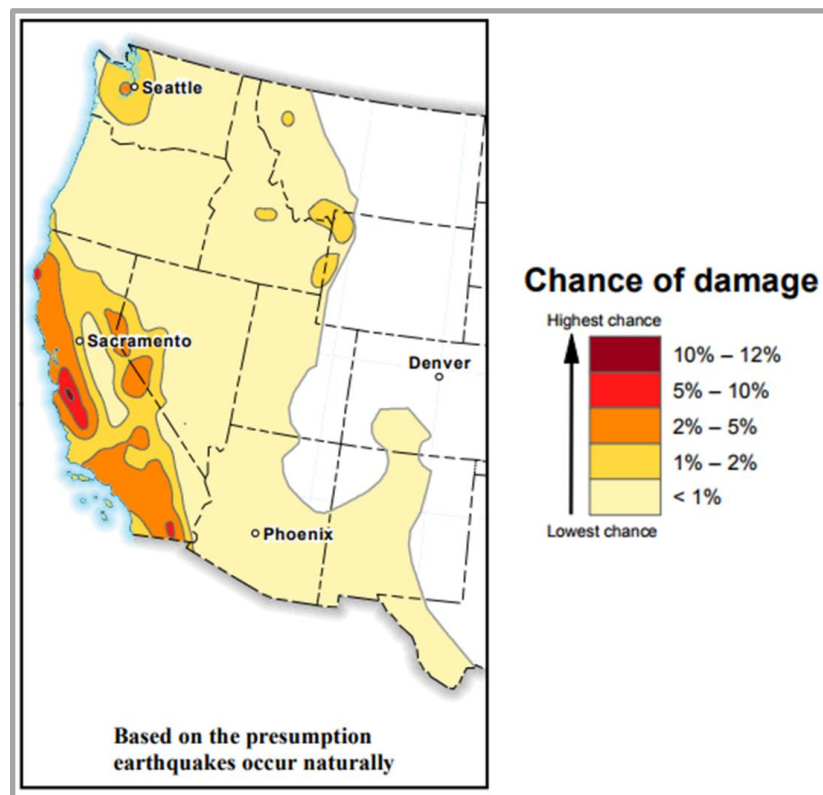
4.6.3.5 City of Roberts

Roberts is exposed to similar extent and location of earthquakes as the greater planning area and has included an earthquake-related mitigation strategy in its portion of the plan.

4.6.4 Future Probability

Although predicting the exact future occurrences of earthquakes is impossible, all of Jefferson County is characterized by a two percent chance over the next 50 years to exceed a VI on the MMI Scale, as shown in the figure below from the USGS. This includes the Cities of Lewisville, Menan, Rigby, Ririe, and Roberts. Should any of the participating jurisdictions experience shaking from an earthquake, it will likely be a result of a regional event. Furthermore, the USGS now produces one-year seismic hazard forecasts for both shaking intensity and damage, shown below. Jefferson County exhibits less than a one percent chance of damage.

Figure 13. USGS seismic forecast



4.6.5 Vulnerability Assessment

The planning area's population and structures are located within one mapped PGA zone, which corresponds to a two percent chance of minor to moderate shaking from an earthquake event over the next 50 years.

Vulnerability to earthquakes across the planning area can be highly variable given the range of possible event characteristics and the range of socioeconomic and structural characteristics found across the jurisdictions. Those factors that increase structural vulnerability include unreinforced masonry; cornices,

friezes, and other heavy decorative parts; chimneys; and structures sited on liquefaction-prone soils. Earthquakes often cause cracking or settling that then undermines the stability of the structure, which can entail costly repairs. Infrastructure such as roads, bridges, and water lines are also vulnerable to earthquake events. Additionally, changes to the water table or even the topography can impact local municipal and private wells could result in the loss of land use.

Across all jurisdictions, there are publicly accessible unreinforced masonry structures in addition to numerous homes and other buildings with unreinforced chimneys. Damaged or collapsed chimneys could result in the secondary hazard of fire. Nonstructural damage caused by falling and swinging objects may be considerable after any magnitude earthquake. Damage to some older bridges in addition to land failure causing minor slides along roadways may isolate some residents.

4.6.5.1 City of Lewisville

1 community center/city hall, 1 library, 1 fire station, and 2 irrigation canals

4.6.5.2 City of Menan

City Hall, Community Center, Elementary School, Wastewater Facility, 1 irrigation canal; fire station

4.6.5.3 City of Rigby

County Courthouse/Sheriff's Office/EOC; Police Station, City Hall, 4 wells, wastewater treatment facility, Power substation, airport, 3 schools, senior/community center, 3 irrigation canals, fire station; public works central facility/fuel storage

4.6.5.4 City of Ririe

City Hall/Community Center, water facilities, wastewater facilities, 3 schools; 2 irrigation canals; fire station

4.6.5.5 City of Roberts

City Hall/Library; Community Center; fire station; water system, wastewater system, 1 irrigation canal; Public Works supply depot/chemical storage.

4.7 Communicable Disease Outbreak

4.7.1 Hazard Vulnerability & Risk Summary

Jefferson County and its jurisdictions are vulnerable to communicable disease outbreaks; both annual outbreaks and epidemics. These outbreaks have the potential to cause a range of devastating impacts to the Jefferson County community and its economy.

4.7.2 Hazard Description

Bacteria, viruses, fungi and parasites are a few of the organisms that cause communicable diseases, sometimes referred to infectious diseases.

The spread of an infectious disease depends on the chain of transmission: a source of the agent, a route of exit from the host, a mode of transmission between the susceptible host and the source, and a route of entry into another susceptible host. Modes of spread may involve direct physical contact between

the infected host and the new host, or airborne spread, such as coughing or sneezing. Indirect transmission takes place through vehicles such as contaminated water, food, or intravenous fluids; inanimate objects such as bedding, clothes, or surgical instruments; or a biological vector such as a mosquito or flea. Overall, transition can occur between people, animal to human, animal to animal or from an object to a human.

The following is a list and brief description of communicable diseases that threaten Jefferson County:

- **Influenza** – A serious disease caused by viruses that infect the respiratory tract. Pandemic flu is a virulent human flu that causes a global outbreak, or pandemic, of serious illness. Because there is little natural immunity, the disease can spread easily from person to person. AI (Avian flu) viruses occur naturally among wild birds. Low pathogenic AI is common in birds and causes few problems. Highly pathogenic form (HPAI) is extremely infectious among humans. The rapid spread of HPAI, with outbreaks occurring at the same time, is of growing concern for human health as well as for animal health. Spanish influenza caused several waves of pandemic in 1918 through 1919, resulting in 20 to 50 million deaths worldwide. A pandemic of Asian flu (Influenza A [H2N2]) occurred in 1957-58 where it caused about 70,000 deaths.
- **Lyme disease** --Caused by the bacterium *Borrelia burgdorferi* and is transmitted to humans by the bite of infected blacklegged ticks. Typical symptoms include fever, headache, fatigue, and a characteristic skin rash. If left untreated, infection can spread to joints, the heart, and the nervous system. Lyme disease is diagnosed based on symptoms, physical findings, and the possibility of exposure to infected ticks; laboratory testing is helpful in the later stages of disease. Most cases of Lyme disease can be treated successfully with a few weeks of antibiotics.
- **West Nile Virus**--Often mosquito-transmitted, West Nile virus can result in minor symptoms to death. West Nile fever may include a fever, headache, body aches, a rash and swollen glands. The symptoms of West Nile fever may last for days or linger for weeks to months. Serious illness infecting the brain or spinal cord can occur in some individuals, and although anyone can experience the more severe form of the disease, it tends to occur in people over the age of 50 or those with other underlying medical conditions or weakened immune systems. The severe symptoms may include high fever, headache, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, vision loss, numbness and paralysis. These symptoms may last several weeks or more, and neurological effects may be permanent. Usually, symptoms occur from 5 to 15 days after the bite of an infected mosquito. There is no specific treatment for infection, but hospitalization and treatment of symptoms may improve the chances of recovery for severe infections. There is no vaccine available for humans.

Special Note: This HMP was being finalized just as the Covid-19 pandemic of 2020 was occurring and thus coronavirus outbreaks are not specifically addressed here.

4.7.3 Hazard Occurrence, Location & Extent

The extent and magnitude of communicable diseases varies and makes it difficult to precisely track its impact. For example, some diseases (e.g. common cold) can infect many individuals, however its magnitude may be relatively low.

4.7.4 Future Probability

This hazard carries a low to moderate risk within the county and no data presented to date has altered this designation moving forward.

4.7.5 Vulnerability Assessment

The Centers for Disease Control (CDC)-developed FluSurge model was used to assess the county's risk to pandemic influenza. FluSurge estimates the number of hospitalizations and deaths for a percentage of the county population assumed to become clinically ill over a set duration with influenza during the next pandemic, considering susceptible factors such as the age characteristics of the county.

For this risk assessment, 15 percent, 25 percent, and 35 percent of the county's population (referred to as a 15 percent attack rate, 25 percent attack rate, and 35 percent attack rate) was assumed to be infected over a 12-week duration. Three different scenarios are generated to allow for responsive planning: minimum (which estimates the fewest possible number of hospital admissions and deaths); most likely (which estimates the average number of hospital admissions and deaths); and maximum (which estimates the worst-case scenario of hospital admissions and deaths). Finally, two pandemic influenza strains were modeled: the 1918 strain (also known as Spanish Flu), and the 1968 strain.

Note that although the number of hospital beds represent the total current capacity, hospital capacity fluctuates and some capacity must always be reserved for patients other than those affected by communicable diseases (e.g., maternity, trauma). Actual capacity will be less than the total capacity, although adjustments through opening emergency or temporary wards can alter capacity.

Critical infrastructure including medical care facilities, hospitals, pharmacies, and ambulatory services can be strained from the impact of communicable disease on a county and its communities. Emergency rooms and ambulance transport can reach capacity, and social services and support (such as shelters and health departments) can close due to infection of responders and workers or unwilling to expose themselves.

Often, the most vulnerable populations to communicable disease are children, pregnant women, seniors, special needs populations, and predisposed populations (e.g., genetics). Although a socioeconomic vulnerability assessment was not conducted for this hazard given the difficulty in assessing the spatial pattern of spread of the many possible communicable diseases, the sensitivity of the county's population might elucidate those areas more vulnerable to communicable disease. During the plan update process, local officials determined that hazard impacts and vulnerability did not deviate from the overall county's impacts and vulnerability.

4.8 Flood

4.8.1 Hazard Vulnerability & Risk Summary

Jefferson County and its jurisdictions are vulnerable to floods due to the topographical and hydrological characteristics of the region. Jefferson County's population and structures are exposed to low-to-moderate flood risk. Information about flood risk categories for each jurisdiction is provided in Table F.4 and F.5 in Appendix F and mapped in the figure below.

The majority of the planning area's overall risk to floods is low as most of the unincorporated area as well as the jurisdictions of Hamer and Mud Lake have an annual chance of flooding below 0.2%. However, the jurisdictions of Lewisville, Rigby, and Ririe have a moderate chance of flooding at 0.2% annually as well as 99% of Menan, 96% of Roberts, and 21% of the unincorporated area. In addition, about 2.5% of Jefferson County is at a high risk for flooding (portions of Menan, Roberts, and unincorporated). Of note is that 23 road bridges and 5 railroad bridges are in the high-risk unincorporated area.

Figure 14. Jefferson County Flood Hazard Map

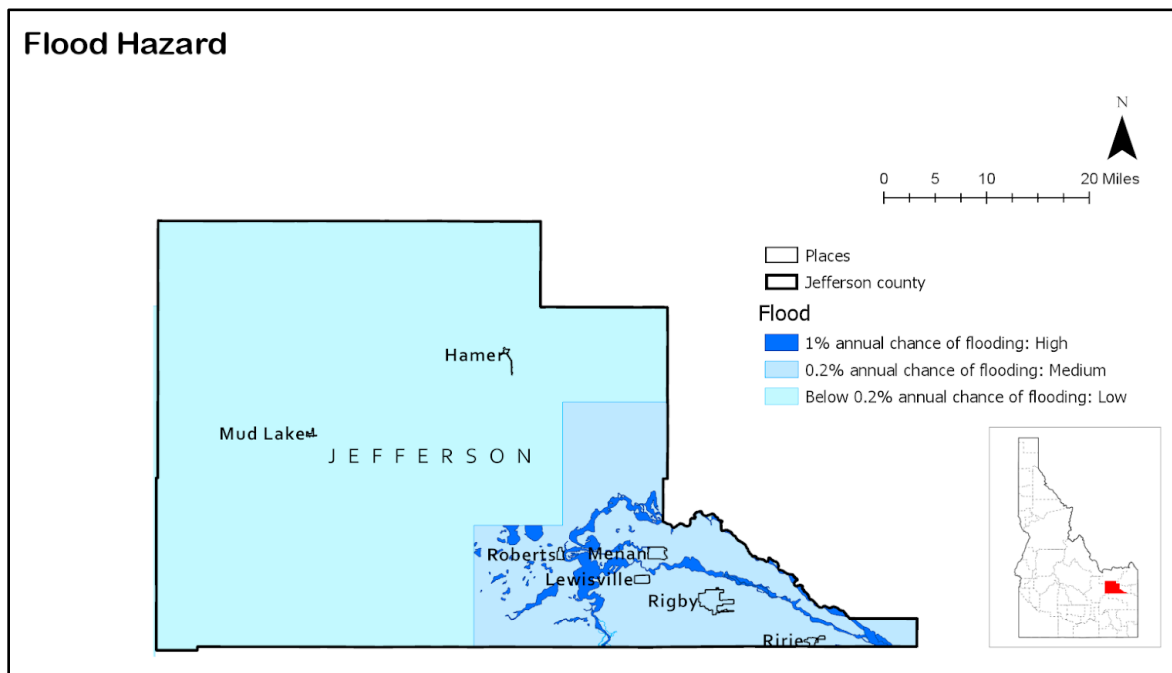
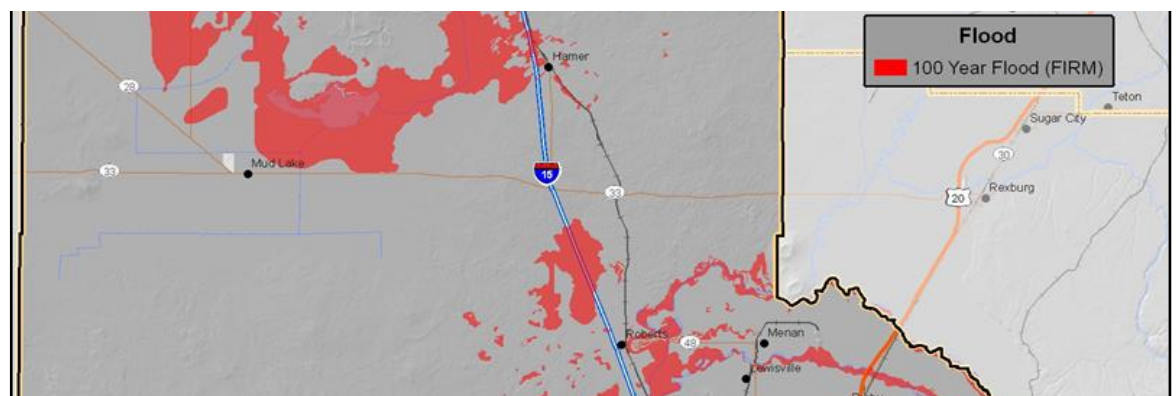


Figure 15. Jefferson County 100 Year Flood Map



4.8.2 Hazard Description

Thousands of floods occur each year, making it one of the most common hazards in all 50 states.

Flooding is often a natural process where excess water overflows a waterway inundating adjacent land (termed the floodplain). Flooding results from several different causes, including significant precipitation or snowmelt events, ice and debris jams on waterways, and structural failures or breakages. An understanding of the role of atmospheric systems, the natural environment, and the built environment is key to understanding and mitigating flood-related losses.

Floods kill an average of 150 people per year nationwide, with most injuries and deaths occurring when people are swept away by flood currents. Floods also cause significant economic losses, with most damage resulting from the inundation of property by sediment-laden water. Faster moving floodwater can wash buildings off their foundations and sweep vehicles downstream. Pipelines, bridges, and other infrastructure are also at risk, and high water combined with flood debris can result in infrastructure damage and loss of use. Effects from flooding can also include floating fuel tanks, inundation of subdivisions, road washouts, and basement flooding—all of which can result in extensive damage. These damages predominantly occur in the floodplain which are those areas the excess water inundates.

Floodplains range from narrow and confined channels to wide and flat areas depending on the topographical features near the waterway. Floodplain characteristics contribute to the speed and characteristics of flooding. In narrow and confined channels, flooding is normally rapid but short duration, with deep and rapid floodwaters. In contrast, flooding can be relatively slow, shallow, and last for long periods in flat floodplains. Many factors influence the size of a flood, such as the size of the catchment area or watershed, topographic characteristics such as mountainous slopes and elevation changes, land-use characteristics or structural modifications, and the characteristics of meteorological events.

Natural flood events are often classified into the following:

- Riverine Flood – Perceived as the classic ‘flood’ event, riverine flooding occurs when the floodplain (the lowland areas adjacent to rivers and lakes) is inundated with water, usually caused by a weather system with prolonged or intense rainfall. Large-scale weather systems can cause both large and small rivers and streams to flood, notably if prolonged or intense rainfall is distributed over a wide area. Localized weather systems can also produce flooding, though normally such systems impact smaller rivers and streams. Riverine flooding can also result from snowmelt, which in turn can be a result of above-freezing temperatures and rain-on-snow events.
- Flash Flood – Characterized by a rapid rise in surface water levels, flash floods often have a high flow velocity and can carry large amounts of debris, such as trees and boulders, making flash flood events capable of extensive damage. Intense rainfall events in areas with steep watershed or stream gradients often results in flash floods, notable in the steep mountainous terrain found across Idaho. Dam or levee failure, wildfire, debris or ice jam breakage, and rapid snowmelt can cause flash floods, as all can release large volumes of stored water in a short period. Urban development also drives flash floods due to an increase of impervious surfaces, inadequate or failing drainage systems, and channelization of rivers and streams.
- Alluvial Fan Flood – This type of flood occurs most commonly in the alluvial fans created by the meandering of streams and rivers and are the most prevalent flood type in arid regions. Alluvial

fans pose a significant flood risk due to active erosion, sedimentation, deposition, and unpredictability of flow paths. As the floodway fills with deposited sediment, the river or stream can quickly reach overbank flood stages and channelize a new floodway. Human activities often exacerbate flooding and erosion on alluvial fans by altering flow patterns and constructing impervious surfaces with the potential to carry high-velocity flows to lower portions of the fan.

- Ice & Debris Jam Flood – Similar in characteristics to riverine floods and flash floods, ice jams or debris can accumulate at obstruction points on a stream or river and restrict water flow upstream, causing the banks behind the obstruction to inundate. These jams can also break, resulting in a sudden large discharge of stored water to the downstream reaches. The formation of these jams is dependent on meteorological and other physical conditions, often occurring at natural channel constrictions and shallow points along the channel, where water can freeze. Human-built structures such as bridges can also act as obstruction points. Ice and debris jam flooding most often occurs in the fall, winter, and spring due to the formation and loss of ice. Flood damages from ice and debris jam breakages often exceed that caused by riverine flooding, as water elevations are higher and more unpredictable, and floodwaters can carry debris.

Given the climatological characteristics of spring snowmelt, stream channels are defined by the long-term average spring high flow. Small flow peaks exceeding this level and the stream's occupation of the floodplain are relatively common events; however, above-average snowpack or above-average early-year temperatures regimes (e.g., prolonged warmth) can generate runoff volumes significantly greater than the conveyance ability of stream channels. Such events can result in widespread damages and losses, as snowmelt-driven floods tend to last for longer periods than other meteorologically-driven floods (from a period of several days to several weeks).

However, floods resulting from rainfall on frozen ground or rainfall associated with warm, regional frontal system that melts low and intermediate-altitude snow can be the most severe flood events. Rain-on-snow events quickly introduce large quantities of water into the stream channel system, overloading its capacity. These events can cause a swift rise in floodwaters, which can damage property and interrupt socioeconomic activity in downstream floodplains. In general, these flood events can be predicted 24 to 72 hours in advance.

The most commonly reported flood magnitude is the “base flood”, or the flood magnitude with a one-percent chance of being equaled or exceeded in any given year (it was previously commonly referred to as the 100-year flood). It is important to note that this flood magnitude is statistically independent and can occur in consecutive years or within the same year. The floodplain pertaining to the base flood is often delineated and mapped to identify areas with significant flood risk; other statistical frequencies can also notate flood probabilities corresponding to a certain degree of risk (e.g., the 0.2 percent annual chance flood, also known as the 500-year flood). The base flood is often referred to as the regulatory flood, and the corresponding floodplain is often termed the regulatory floodplain given the state and federal policies (e.g., the National Flood Insurance Program (NFIP)) that regulate development within its area.

It is important to note the difference between the regulatory floodplain and the physical floodplain. The regulatory floodplain corresponds to an area delineated by FEMA where specific regulations apply. The regulatory floodplain is more limited than the physical floodplain, as the regulatory floodplain is

delineated through surveys and modeling that cannot account for all waterways and waterbodies in the county. FEMA-mapped floodplain shows three regulatory flood zones:

- Zone X – Areas identified in a community’s Flood Insurance Study (FIS) as areas of moderate or minimal hazard from the principal source of flood in the area. However, buildings in these zones are at risk of flooding if severe, concentrated rainfall is coupled with inadequate local drainage systems. Flood insurance is available in participating communities but is not required by regulation in these zones.
- Zone A – Areas at risk to inundation by the one-percent annual chance flood event. Mandatory flood insurance purchase requirements apply. However, detailed hydraulic analyses have not been performed, and no base flood elevations (BFEs) or flood depths are shown.
- Zone AE – Areas subject to inundation by the one-percent annual chance flood event determined by detailed methods. Mandatory flood insurance purchase requirements apply. BFEs are shown within these zones.

4.8.3 Hazard Location & Extent

Jefferson County can experience riverine floods and flash flooding brought on by higher rainfall amounts over a shorter period and rapid snowmelt from warmer temperatures. Rain-on-snow events cause periodic run off flooding in the Kettle Butte drainage area, but not from the Snake River. The Snake River is bounded by the Heise-Roberts levee system for approx. 23 miles through Jefferson County. Flow on the South Fork is controlled at the Palisades Dam. However, there is little dam control on the Henry’s Fork. When Henry’s Fork peaks later than normal and Palisades is receiving its peak flows from the Yellowstone/Teton high country, Jefferson County experiences riverine flooding. Flood events in 1997 and 2011 occurred when the levee overtopped and when the unprotected areas downstream of the levee (at Highway 48 near Roberts) flooded during high flows.

With reference to the 2018 Idaho State HMP, Jefferson County had 73 National Flood Insurance Program (NFIP) policies with 18 claims and total loss payment of \$115,665. As noted in Section 6.3, the County and the City of Roberts participate in the NFIP; the other participating cities do not. The Jefferson County Floodplain Administrator and the Emergency Management Director will work with the cities to encourage their participation in the NFIP. Jefferson County has no communities under suspension or revocation of participation in the NFIP. The Jefferson County Floodplain Administrator is the Planning and Zoning Department Administrator.

4.8.4 Hazard Occurrences

Jefferson County has regularly been exposed to flood events, with period damage resulting from floodwaters. Past flooding has resulted in displaced residents and damage to homesites and infrastructure. The table below shows previous notable occurrences of flood events.

Table 8. Large regional flooding events impacting Jefferson County since the mid-1990s.

Date	Type	Declaration	Location	Casualties	Losses
March 1997	Flood	Northern and Southeastern Floods (DR-1777)	Jefferson County	-	*Relief totaled \$11,365,667
May – July 2011	Flood	Eastern Idaho Flooding	Jefferson County	-	-
Feb 2017	Flood	Severe Winter Storms and Flooding (DR-4310)	Statewide	-	*\$9.06 million in property damage

*State of Idaho total

There was a river flood event in 2011 (Eastern Idaho Flooding) which was not 1997 (DR-1777) magnitude, but still significant. Also, there was a rain-on-snow event in February 2017 on the Kettle Butte drainage that resulted in a statewide federal declaration (DR-4310). More detail about all flooding events recorded by the National Weather Service from May 1, 2010 to May 1, 2020 are reported in the table below.

Table 9 Flood occurrences in Jefferson County from May 1, 2010 to May 1, 2020

Event ID	Date	Type	Deaths	Injuries	Damage	Location	Latitude	Longitude	Description
315393	5/1/2011	Flood	0	0	\$2,000	TERRETON	43.83	-112.43	Extensive road damage and washouts occurred along Kelly Canyon Road. Extensive lowland and agricultural field flooding occurred and a few properties had minor flooding in yards. One home 3 miles east of Roberts just off Highway 48 had water in the basement. Teh Menan Buttes Public Access boat ramp flooded and a recreational day use area and boat ramp adjacent to Highway 48 flooded. Levees were raised in the Roberts area and Scotts Slough by the Menan Buttes Bridge to avoid flood waters.
328351	6/1/2011	Flood	0	0	\$10,000	RIGBY	43.6423	-111.828	High flows on the Snake River flooded over 1,100 acres of cropland. The Menan Buttes Public Access boat ramp and a recreational day use area and boat ramp adjacent to Highway 48 remained flooded. A power line which under the river near Lorenzo was unburied and snapped due to the high flows.
327730	6/6/2011	Flood	0	0	\$0	HEISE	43.5721	-111.68	The Snake River at Heise rose above flood stage of 8 feet on June 6th through the morning of June 8th peaking at 8.31 feet on June 8th. Lowland flooding occurred and the extended period of high flows caused erosion and structural concerns at the Archer Highway north Twin Bridge.
540547	8/5/2014	Flash Flood	0	0	\$1,000	RIGBY	43.699	-111.92	Flooding of farmland occurred east of Rigby with standing water reported in pastures throughout the region. 1 to 2 inches of rain fell in less than an hour over the flooded areas.
682550	2/5/2017	Flood	0	0	\$2,430,000	CAMAS	44	-112.22	A significant warmup in February caused massive sheet flooding from snowfall accumulation from December and January. Extensive damage occurred to homes and especially road damage. The state declared Jefferson County a disaster area due to the magnitude of the damage. Road flooding occurred near Roberts on the 11th and 12th, but extreme flooding commenced after the 19th mainly west of Interstate 15. 600 North was closed from 2450 East to 2300 East. 400 North was closed from 2400 East to 1800 East. 2300 East was closed from County Line to 400 North. 2100 East was closed from County Line to 400 North. 2600 East was closed from 200 North to 400 North and 1800 East was closed from 400 North to 1200 North. Water on some roads reached levels that caused automobiles to float. Road crews described some roads similar to waterfalls.
689556	3/1/2017	Flood	0	0	\$435,000	CAMAS	44	-112.22	Extensive road and property damage continued into March. Many roads in the Roberts area suffered severe damage due to the flooding. Multiple personal water wells had e-coli due to the problems from the flooding in the first week of March. This occurred near E 200 N and N 3300 E southwest of Lewisville.
704332	5/1/2017	Flood	0	0	\$38,000	CAMAS	44	-112.22	Minor flooding continued throughout May with field flooding causing agricultural damage along with money needed for levee repair and recreation facilities.
709237	6/1/2017	Flood	0	0	\$13,000	CAMAS	44	-112.22	Minor flooding continued throughout the first half of June with field flooding causing agricultural damage along with money needed for levee repair and recreation facilities.
760231	5/12/2018	Flood	0	0	\$100,000	LORENZO	43.7505	-111.908	Seasonal snow melt flooding along with heavy rain caused significant damage to the levee near Lorenzo as it was eroding 500 feet per day. The Snake River and Henry's Fork of the Snake flowed at action stage for several weeks causing the event. Jefferson County declared disaster as it was costing 9,000 dollars per day for seven days. The County used all of their 40,000 dollars for the repairs to the levee and required further assistance from the US Corps of Engineers.
815402	3/1/2019	Flood	0	0	\$0	ROBERTS	43.72	-112.43	Some flooding occurred in Jefferson County closing a few roads, but cooling temperatures eased the issue. Only minor damage occurred.

4.8.5 Future Probability

The probability of future floods across the multi-jurisdictional planning area is ranges from low to high. Low-magnitude flood events are expected to occur multiple times per year. The impacts of these events are slight and will likely amount to minor property damage or temporary traffic issues.

Much of the unincorporated portion of the county (98%) is at low risk of floods, however, portions of the all jurisdictions are at medium risk of flooding (see Tables 4 and 5 in Appendix F), due to proximity to the irrigation canal infrastructure. Small portions of the communities of Menan and Roberts are in the high risk category, due to proximity to irrigation infrastructure and the major drainage systems in the area, including the Snake River and Robert's slough. Specific vulnerabilities for each jurisdiction are noted below.

4.8.6 Vulnerability Assessment

Due to the fairly flat terrain found on the prairie and in the extensive cropland in Jefferson County, localized flooding from thunderstorms tend to cause issues with storm drainage for jurisdictions. Short-term blockage of roads is usually the biggest impact as drainage structures are overwhelmed by the amount of water.

A high level of sediment is prevalent during periods of runoff primarily from the abundance of agricultural fields. This sediment tends to cause a deteriorating condition in channel beds through erosion and deposition. Natural obstructions to flood waters include trees, brush, and other vegetation along the stream banks in the floodplain area. Debris can plug culverts and accumulate on bridge abutments at several locations. Several streets and road shoulders are prone to erosion during flood events. Many secondary routes are not paved, which results in gravel washing down-slope potentially clogging drainage systems or directing water to places that were not intended. Sedimentation and accumulated debris and vegetation are significantly increasing the flood risk throughout Jefferson County. Debris jams during high water events have caused considerable flood damage to adjacent properties.

4.8.5.1 City of Lewisville

The City of Lewisville is at medium risk for flooding, primarily due to inadequate storm drainage during heavy rainfall events.

4.8.5.2 City of Menan

Most of the area of the City of Menan is at medium risk for flooding (and a small portion at high risk) due to proximity to an irrigation canal that runs parallel to Main St.

4.8.5.3 City of Rigby

The City of Rigby is at medium risk for flood events and storm drainage issues due to its high water table. One of its major vulnerabilities is its developed water and wastewater infrastructure. As the county seat, it has a high percentage of the county's critical infrastructure.

4.8.5.4 City of Ririe

The City of Ririe is at medium risk for flooding, primarily due to inadequate storm drainage during heavy rainfall events.

4.8.5.5 City of Roberts

Most of the City of Roberts is at medium risk for flooding but 6.5% of its area is in the high risk zone. It is located in a low-lying area of the county, adjacent to the Snake River and Robert's Slough and other irrigation canal infrastructure. It is threatened by high water events on the Snake River and flooding through the irrigation canals.

4.9 Hazardous Materials/ Nuclear Event

4.9.1 Hazard Vulnerability & Risk Summary

According to the 2018 Idaho State HMP, Nuclear/radiological incidents can occur anywhere within the United States, The State of Idaho is not immune to these risks, and consequently must plan and be ready for any radiological or nuclear incident, regardless of the scale or location within the state. Due to the nature of radiological particles, Idaho could also be at risk from a neighboring state's nuclear/radiological incident that is carried into the state via multiple pathways. Incidents may occur for a wide variety of reasons and can range significantly in scope and severity. A further introduction to these risks is available from the FEMA Incident Annex Manual (1).

4.9.2 Hazard Description

Hazardous Materials - Department of Transportation (DOT) Definition:

It is any substance or material in any form or quantity which poses an unreasonable risk to safety, health, and property when transported in commerce. The United States Department of Transportation (DOT) uses the term hazardous materials, which covers nine hazard classes, some of which have subcategories called classifications. When a substance meets the DOT definition of a hazardous material, it must be transported in accordance with safety regulations providing for appropriate packaging, communication of hazards, and proper shipping controls. DOT includes in its regulations hazardous substances and hazardous wastes, both of which are regulated by the Environmental Protection Agency (EPA), if their inherent properties would not otherwise be covered.

Nuclear: With reference to past Idaho State HMPs, a “nuclear event” is defined as an incident involving a nuclear reaction; nuclear fission or nuclear fusion. Such an incident must involve “fissionable” materials, defined as materials containing isotopes with nuclei capable of splitting. Further, the most probable incidents involve “fissile” materials, defined as materials containing isotopes capable of sustaining a nuclear fission chain reaction. Such reactions release heat, radiation, and radioactive contamination in extremely large quantities relative to the amount of material reacting. Examples of nuclear events include nuclear weapons detonations, nuclear reactor incidents, and nuclear (fissile) material production, handling or transportation incidents. A nuclear detonation as a part of an attack scenario is, perhaps, the ultimate technological disaster. The hazards are well-known and vividly described in FEMA publications. They include shock wave, enormous heat, and the spread of fallout (radioactive contamination). Other nuclear events would not involve a nuclear blast, but still have the potential to produce widespread and long-term consequences as exemplified by the 1986 Chernobyl accident²¹. Of primary concern is the release of radioactive contamination in the form of airborne gases and particulate material. This radioactive material has the potential travel great distances and particulate material eventually is deposited in the environment and incorporated into the food chain. Such contamination may remain hazardous for many years. Direct radiation exposure is also a hazard in relatively close proximity to a nuclear event as is exposure to high thermal energy. Nuclear events are virtually always caused by intentional or unintentional human actions.

4.9.3 Hazard Occurrence, Location & Extent

The Idaho National Laboratory (INL) facilities and associated federal land are located just south of the county and there are fissile materials present. The facility does handle radioactive waste, including spent fuel from naval reactors. The last significant reactor accident was in the 1950's, and there have been no radiation-related incidents in recent decades. INL does have a very robust monitoring and response capability. However, in 2019, the Sheep Fire (INL's largest wildland fire to date) did come close to nuclear facilities. INL has substantial resources devoted to the prevention of incidents.

4.9.4 Future Probability

Currently, there are no identified technologically enhanced naturally occurring radioactivity (TENORM) issues in Idaho, although there is a relatively high potential for TENORM generation given the extractive industries operating in the state (and surrounding states) and the occurrence of uranium and thorium ore deposits in the state.

It is impossible to predict the potential for nuclear-related incidents at the Idaho National Laboratory. As noted above, INL does have a very robust monitoring and response capability, as well as significant resources dedicated to the prevention of hazardous incidents.

4.9.5 Vulnerability Assessment

The proximity to the county to INL does put it in a unique situation (along with 3-4 other nearby counties) with regard to nuclear incidents. It is difficult to mitigate for the possibility of a low-likelihood but potentially catastrophic event. However, the county has included mitigation actions to expand their partnership with INL to include radiation training for emergency responders, as well as a cooperative agreement between INL and law enforcement and emergency management in the county. Many of their "General" strategies also include the strengthening of emergency communications and education for their residents.

4.10 Severe Weather

4.10.1 Hazard Vulnerability & Risk Summary

Jefferson County and its jurisdictions are vulnerable to severe weather and the steering committee ranked multiple meteorological hazards (such as winter storms and thunderstorms) as "high" in both magnitude and in frequency. Over the past years, the county has experienced numerous heavy snow events, high wind events, hail events, and many additional severe weather occurrences within its boundaries (see Sec 4.10.3 below). More than \$562,000 in losses have been reported. The risk analysis information shown in Appendix F rates most of the county as being in the high risk category for Tornadoes/High Winds and medium risk of lightening. The plan update did not identify any specific jurisdictions or special districts with significant deviation from the planning area's overall vulnerability or risk to landslide hazards.

4.10.1.1 Summary on Drought

This section does not explicitly address drought, for two reasons. First, Table F.16 in Appendix F indicates that the entire county and all participating jurisdictions are in the low risk category for drought. Secondly, the hydrologic cycle of Jefferson County is

driven by snowpack accrued in mountainous areas in the winter and released as runoff in the spring and summer. It is typical for the county and surrounding areas to experience long, hot summers with little rain. There are numerous dams and reservoirs in the region in part to store snowmelt runoff. The large amount of agriculture that takes place in the county is all irrigated, primarily from reservoirs and somewhat with groundwater pumping. Low snowpack years do sometimes cause shortages in irrigation water but the state has a highly regulated system of water banking and exchanges.

Thus, the primary impact of drought in Valley County is felt through the increased risk of wildfires. These risks are addressed in detail in the Community Wildfire Protection Plan, referenced in Section 4.14 below and included as an Appendix to this plan.

4.10.2 Hazard Description

Severe weather is a serious hazard across Idaho, occurring with regular frequency and oftentimes damaging or disrupting intensity. Although the term “severe weather” is nebulous, the plan defines severe weather as any meteorological phenomenon with the potential to cause harm or injury to individuals, the built environment, or economic sectors. Such phenomena include (but are not limited to) high winds, lightning, tornados, winter storms, extreme heat and cold temperatures, hydrometeorological events (e.g., hail and heavy rain), and thunderstorms. Often these events are coincidental, making delineation difficult.

- **Extreme Temperature** – Commonly referred to as a heat wave, extreme heat is a period of significant above-normal temperatures in a locality. Urban development amplifies extreme heat effects due the heat island effect. Extreme heat impacts human health through heat exhaustion, sunstroke, and heat cramps. Opposite extreme heat is extreme cold, which is classified as a period of significant below-normal temperatures in a locality. Winds of 10 mph or greater can amplify extreme cold impacts. Advisories are issued when wind chill temperatures reach -20 degrees F or lower with winds of 10 mph or higher for one hour or more. Similar to extreme heat, extreme cold is of greatest concern under persistence over an extended period. Extreme cold can be associated with the formation of ice and freezing which can result in flooding.
- **Hail** – Defined as precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter falling from a cumulonimbus cloud. Created by the vertical cycle of a wind and water in a storm mass (or cell), the ice accumulation that forms hail can reach sizes up to four inches in diameter (though hail of three-fourths of an inch or greater is sufficient to classify a thunderstorm as severe). Nationally, hail causes approximately \$1 billion in property and crop damage annually, as peak activity coincides with peak agricultural seasons. Severe hailstorms also cause considerable damage to buildings and automobiles, but rarely result in loss of life.
- **Lightning** – A product of the violent movement of air within a thunderstorm, the NWS defines lightning as “visible electrical discharge produced by a thunderstorm.” The discharge can occur within or between clouds, between clouds and air, between clouds and the earth’s surface, and between the earth’s surface and clouds. Lightning can be over five miles in length, generate temperatures above 50,000 degrees F, and carry 50,000 volts of electrical potential. Lightning strikes can be deadly, notably direct strikes where the person or structure is the direct path for lightning conduction to the ground. Side strikes are similar to a direct strike but diverts to an

alternate path from the initial grounding point. Conducted strikes occur when the electrical current from the initial grounding point through a conductive material (such as electrical and electronic equipment). Lightning can also induce secondary discharges by altering the electrical potential between adjacent structures, through the earth's surface, and in electrical equipment.

- **Straight-Line Wind** – A term used to distinguish between non-rotating and rotating winds (i.e., tornados). Generated by thunderstorms, straight-line winds reach speeds in excess of 100 miles per hour (mph). The NWS defines 'high winds' as sustained wind speeds of 40 mph or greater over a one-hour period or longer, or winds of 58 mph or greater over any period. Windstorms affect areas with significant tree stands, as well as areas with exposed property, major infrastructure, and aboveground utility lines. Of particular note are downbursts (also known as microbursts), which are a particular type of straight-line wind and are small areas of rapidly descending rain and rain-cooled air beneath a thunderstorm with potential wind velocities equal to that of a strong tornado.
- **Thunderstorms** – Produced when unstable atmospheric conditions exist, and warm, moist air forced upward condenses to form cumulonimbus clouds. Most common in the spring and summer months during the afternoon and evening hours, thunderstorms persist an average of 10 to 20 minutes (though can persist much longer), during which they can produce heavy rain, hail, lightning, strong winds, and tornadoes. Thunderstorm types include dry thunderstorms, pulse severe thunderstorms, severe thunderstorms, and supercell thunderstorms. Dry thunderstorms are characterized by 'dry lightning', where lightning is observed but little to no precipitation reaches the earth's surface due to evaporation into the dry air beneath the storm cell. Pulse severe thunderstorms are single-cell thunderstorms that produce brief periods of severe weather, such as a tornado, winds of at least 58 mph, and/or at least three-fourths of an inch hail size. A severe thunderstorm is one in which winds reach at least 40 mph and/or hail of at least one-half inch in size. Finally, a supercell thunderstorm is the most dangerous. These storms produce downbursts, large hail, and long-lived violent tornados.
- **Tornadoes** – The most concentrated and violent storms produced by the atmosphere. A tornado is a column (also known as a vortex) of air composed of rotating wind and strong vertical motion. Wind speeds within the vortex range between 40 and 300 mph, and the vortex itself can travel at speeds up to 70 mph over a distance between 10 and 200 miles (although shorter distances have been reported). Though damages are generally confined to a narrow path, tornadoes can devastate a large distance, and a single storm can produce multiple tornados.

4.10.3 Hazard Location & Extent

Severe weather in the planning area ranges from thunderstorms to hail, tornadoes, high winds, dense fog, and lightning. All of these events can occur across the planning area with similar probability.

4.10.3.1 Extreme Heat & Cold

Extreme heat can occur throughout Jefferson County and its communities. Most susceptible are age-dependent populations, including the elderly and small children, and those with other and chronic illness. Environmental impacts include loss of wildlife and increased wildfire probability. Extreme heat can stress power grids due to an increase in energy demand for cooling.

Similar to extreme heat, extreme cold is of greatest concern under persistence over an extended period of time, and like extreme heat, the most susceptible are the age-dependent and those with chronic

illness. Environmental and other impacts are similar to that of extreme heat, though extreme cold can be associated with the formation of ice and freezing which can result in flooding.

4.10.3.2 Hail

Hail can occur in any strong thunderstorm, which means hail is a threat everywhere. Often the hail that occurs does not grow to a size larger than one-half inch in diameter, and the areas affected across the county are usually small. Quite often hail comes during early spring storms, when it is mostly of the small, soft variety with a limited damaging effect. Later, when crops are more mature and more susceptible to serious damage, hail occurs in widely scattered spots in connection with summer thunderstorms. The potential impacts of a severe hail storm in Jefferson County include crop damage, downed power lines, downed or damaged trees broken windows, roof damage, and vehicle damage. Hail storms can, in extreme cases, cause death by exposure. Hail storms also have the potential to cause losses among livestock. The highest potential damage from hail storms in Jefferson County is the economic loss from crop damage. Even small hail can cause significant damage to young and tender plants. Trees can also be severely damaged by hail as was seen in the 1996 ice storm near Spokane, Washington.

4.10.3.3 Thunderstorm

Due to their relative frequency and minimal severity, severe thunderstorms are not well documented in Jefferson County. Their impacts are fairly limited and do not significantly affect the communities enough to declare a disaster. The secondary impacts of thunderstorms, floods, are emphasized within the flood chapter of this document. Areas most vulnerable to this type of storm are those subject to a strong southwesterly flow of moist, unstable air that generates strong, sometimes violent thunderstorms with one or more of the following characteristics: strong damaging winds, large hail, waterspouts, or tornados. The most common direct impact from ice storms to people is traffic accidents. Over 85% of ice storm deaths nationwide are caused by traffic accidents.

4.10.3.4 Windstorm

Windstorms are frequent in Jefferson County, particularly on the Camas Prairie, and they have been known to cause substantial damage. Under most conditions, the County's highest winds come from the south or southwest. Due to the abundance of agricultural development in Jefferson County, crop damage due to high winds can have disastrous effects on the local economy. In the case of extremely high winds, some buildings may be damaged or destroyed. Wind damages will generally be categorized into four groups: 1) structure damage to roofs, 2) structure damage from falling trees, 3) damage from windblown dust on sensitive receptors, or 4) wind driven wildfires. Structural injury from damaged roofs is not uncommon in Jefferson County. Structural damage from falling trees is also relatively common. Many homeowners have planted ornamental trees for shade and windbreak protections. However, many of these trees are located near, and upwind of homes putting them at risk to falling trees which could cause substantial structural damage and potentially put lives at risk. Airborne particulate matter increases during high wind events.

When this occurs, sensitive receptors including the elderly and those with asthma are at increased risk of complications. The National Weather Service defines high winds as sustained winds of 40 mph or gusts of 58 mph or greater, not caused by thunderstorms, expected to last for an hour or more. Areas most vulnerable to high winds are those affected by a strong pressure difference from deep storms

originating over the Pacific Ocean; an outbreak of very cold, Arctic air originating over Canada; or air pressure differences between western Washington and the Idaho Panhandle.

4.10.3.5 Tornado

A tornado is formed by the turbulent mixing of layers of air with contrasting temperature, moisture, density, and wind flow. This mixing accounts for most tornadoes occurring in April, May, and June, when cold, dry air from the north or northwest meets warm, moist air moving up from the south. If this scenario was to occur and a major tornado was to strike a populated area in Jefferson County, damage could be widespread. Businesses could be forced to close for an extended period, and routine services such as telephone or power could be disrupted. The National Weather Service defines a tornado as a violently rotating column of air that contacts the ground; tornadoes usually develop from severe thunderstorms. Jefferson County has a high risk of exposure to tornadoes. The plan update did not identify any specific jurisdictions or special districts with significant deviation from the planning area's overall risk to tornadoes.

4.10.4 Hazard Occurrences

Jefferson County was the recipient of State Disaster Declarations in 1997 and 2017 (see Table 9) as a result of severe weather. According to the National Weather Center database on severe weather events, between May 1, 2010 and May 1, 2020, Jefferson County experienced the follow number of events (excluding flooding events and winter weather events reported in other sections):

- 17 Dust Storms
- 9 Hail events
- 1 Heavy Rain Event
- 32 Thunderstorms
- 1 Lightening Event
- 27 High Wind Events
- 4 Tornado Events (each EFO)
- 2 Funnel Clouds

No injuries or deaths were reported as a result of these events in the last decade. They are estimated to have caused a total of approximately \$563,000 in property and crop damage. Some notable occurrences among these included:

- **June 2010:** Heavy rainfall flooded already swollen rivers, washing out roads and bridges and flooding some homes in central Idaho. State and Federal Disaster declarations were made to assist the Counties of Adams, Gem, Idaho, Lewis, Payette, Valley, and Washington.
- **August 2010:** Although not a designated disaster, a severe storm with high winds, lightning, and hail blew through the area causing significant tree blow-down and sparking several small wildfires.
- **April 2017:** During Spring 2017, Jefferson County sustained about \$800,000 in damages to transportation infrastructure. Disaster declaration were made to assist 11 southern Idaho counties to repair public infrastructure damaged by severe winter storms and related flooding from Feb. 5 through March 3

4.10.5 Future Probability

All of the jurisdictions included in this plan are at risk of severe weather events, and there is a certain high probability of continued severe weather occurrence in the planning area. Based on the reported events, the recurrence interval is 1.7 (based on the 1950-2018 period), indicating that the multi-jurisdictional planning area experiences more than one severe weather event annually.

4.10.6 Vulnerability Assessment & Loss Estimates

All of Jefferson County is at risk to severe winter weather events and there is a high probability of their continued occurrence in this area. It is difficult to estimate the cost of potential winter storm damages to structures and the economy in Jefferson County. Damage to roofs by heavy snow accumulations depends on the moisture content of the snow and the structural characteristics of the buildings. In general, snow in this region tends to have low moisture content because of the low temperatures and arid environment. However, heavy snow is not uncommon. Frozen water pipes are the most common damage to residential and business structures. Older homes tend to be at a higher risk to frozen water pipes than newer ones. Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on Jefferson County residents as not only is power lost to homes and businesses, but also primary heating is lost for many residents. Obstructed vents from gas appliances are also a critical hazard. Gas furnaces and wood stoves supplement electrical heating, but with wood heating, the senior population is at a disadvantage. Emergency response to severe winter storms includes site visits by police or fire department personnel, opening of shelters, or assistance with shopping, medical attention, and communications. The economic losses caused by severe winter storms may frequently be greater than structural damages. Employees may not be able to travel to work for several days and businesses may not open. Damages are seen in the form of structural repair and loss of economic activity. Jefferson County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow-covered roads.

Thunderstorms do occur in Idaho affecting all counties, but usually are localized events. Their impacts are fairly limited and do not significantly affect the communities enough to declare a disaster.

Although the financial impacts of hail can be substantial and extended, accurately quantifying these impacts is problematic. Hail typically causes direct losses to structures and other personal property as well as to the vast forestlands and extensive agricultural development in Jefferson County. The most significant losses are most clearly seen in the agriculture sectors of the County's economy. Potential losses to agriculture can be disastrous. They can also be very localized; thus, individual farmers can have significant losses, but the event may not drastically affect the economy of the County. Furthermore, crop damage from hail will also be different depending on the time of year and the type of crop. Some farmers carry insurance on their crops to help mitigate the potential financial loss resulting from a localized hail storm. Federal and state aid is available for County's with declared hail disasters resulting in significant loss to local farmers as well as the regional economy. Homeowners in Jefferson County rarely incur severe damage to structures (roofs); however, hail damage to vehicles is not uncommon. The damage to vehicles is difficult to estimate because the number of vehicles impacted by a specific ice storm is unknown. Additionally, most hail damage records are kept by various insurance agencies.

The impacts of drought in Jefferson County will be primarily felt in the agricultural sector from the loss in production of crops. Jefferson County is primarily dryland farmed; thus, a significant loss in production could lead to millions of dollars in lost revenues. However, most farmers in the area have insurance to protect their livelihoods from these kinds of weather-related occurrences. The actual value of agricultural crops in Jefferson County is unknown, but it is estimated in the millions of dollars depending on the year and the crop rotation of various landowners.

4.10.6.1 City Lewisville

Lewisville does not have any differing levels of risk from the greater planning area associated with severe weather. However, a signature feature of the community are the 100 yr old cottonwood trees that are present throughout the town, presenting some increased hazards related to downed limbs during high winds.

4.10.6.2 City of Menan

Menan does not have any differing levels of risk from the greater planning area associated with severe weather.

4.10.6.3 City of Rigby

Rigby does not have any differing levels of risk from the greater planning area associated with severe weather.

4.10.6.4 City of Ririe

Ririe does not have any differing levels of risk from the greater planning area associated with severe weather.

4.10.6.5 City of Roberts

Roberts does not have any differing levels of risk from the greater planning area associated with severe weather.

4.11 Winter Weather

4.11.1 Hazard Vulnerability & Risk Summary

Jefferson County has a moderate risk of exposure to winter weather. The plan update did not identify any specific jurisdictions or special districts with significant deviation from the planning area's overall risk to winter weather. The information provided in Table F.14 in Appendix F and mapped in Figure 15 below indicates that all of the unincorporated areas of Jefferson County and its jurisdictions are classified in the medium risk category for Winter Weather.

4.11.2 Hazard Description

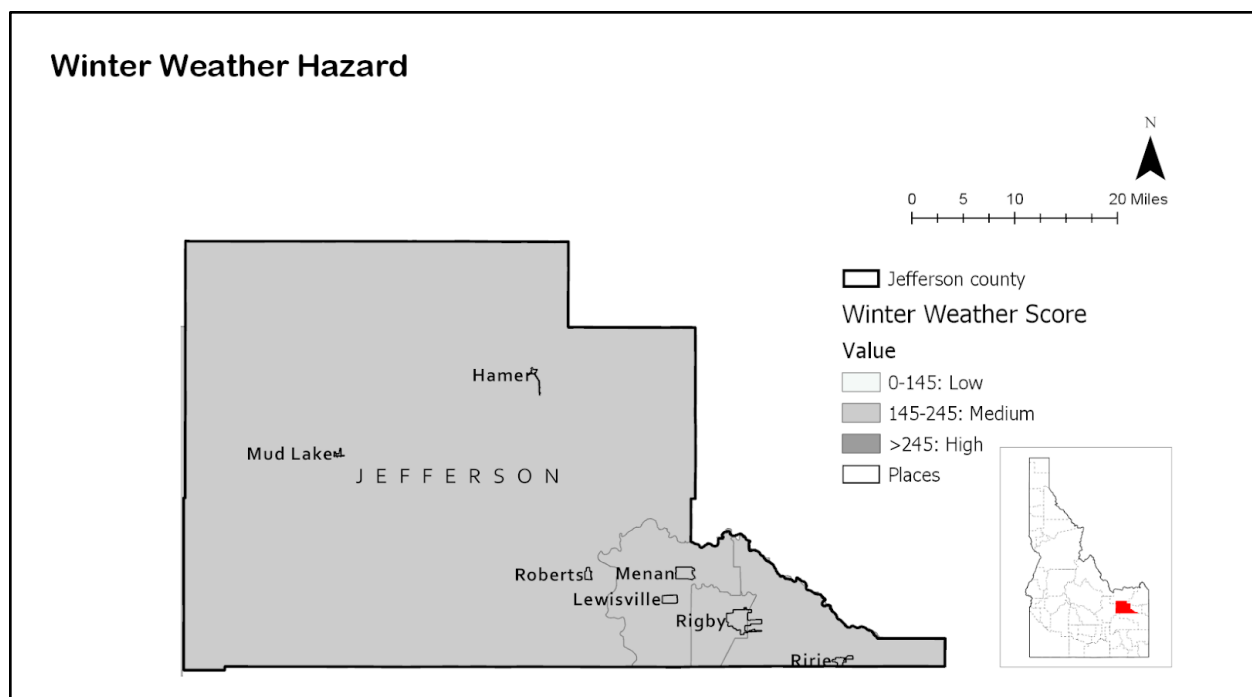
Winter storms are characterized by low/freezing temperatures, blowing snow, and ice. Like all severe storms, winter storms range in size, duration, and intensity, with potential to impact both large and localized areas. Severe winter storms deposit four or more inches of snow during a 12-hour period, or six inches during a 24-hour period. To be classified as a blizzard, winds must exceed 35 mph with temperatures below 20 degrees F. Particularly damaging are ice storms, characterized by cold rain freezing immediately on contact with a surface. In general, the principal hazards associated with severe winter storms are snow/ice accumulation, extreme cold, and reduction of visibility. Such storms can also disrupt transportation, power and communication lines, and halt everyday activities.

Winter storms with heavy snow, high winds, and/or extreme cold can have a considerable impact on Jefferson County; however, most residents are well accustomed to the severe winter conditions in this part of Idaho.

Commonly, heavy snow accumulations cause disruptions to normal commuting activities (delays and inability to plow roads and driveways). When coupled with extreme cold weather, severe winter storms have a detrimental impact on residents in Jefferson County, particularly the senior population. Severe winter storms also have the potential to cause large losses among livestock and wildlife. Animal losses are usually the result of dehydration rather than cold or suffocation.

Snow loads on roofs, ice-slides off of roofs onto vehicles or other buildings, and damaged frozen pipes are also potential hazards associated with winter weather. These events represent a significant hazard to public health and safety, a substantial disruption of economic activity, and a constant threat to structures during the winter months.

Figure 16. Jefferson County Winter Weather Hazard Map



4.11.3 Hazard Location, Extent and Occurrences

According to the National Weather Center database on severe weather events, between May 1, 2010 and May 1, 2020, Jefferson County experienced the follow number of events winter weather events:

- 1 Blizzard
- 8 Extreme Cold/Wind Chill events
- 17 Heavy Snow events
- 28 Winter Storm events
- 8 Winter Weather events

There were two deaths attributed to winter weather events and an estimated \$862,000 of property damage in this time period.

4.11.4 Vulnerability Assessment & Loss Estimates

All of Jefferson County is at risk to severe winter weather events and there is a high probability of their continued occurrence in this area. It is difficult to estimate the cost of potential winter storm damages to structures and the economy in Jefferson County. Damage to roofs by heavy snow accumulations depends on the moisture content of the snow and the structural characteristics of the buildings. In general, snow in this region tends to have low moisture content because of the low temperatures and arid environment. However, heavy snow is not uncommon. Frozen water pipes are the most common damage to residential and business structures. Older homes tend to be at a higher risk to frozen water pipes than newer ones. Utility supplies are impacted during severe winter storms as power is lost on a

regional basis. This has a two-fold impact on Jefferson County residents as not only is power lost to homes and businesses, but also primary heating is lost for many residents. Obstructed vents from gas appliances are also a critical hazard. Gas furnaces and wood stoves supplement electrical heating, but with wood heating, the senior population is at a disadvantage. Emergency response to severe winter storms includes site visits by police or fire department personnel, opening of shelters, or assistance with shopping, medical attention, and communications. The economic losses caused by severe winter storms may frequently be greater than structural damages. Employees may not be able to travel to work for several days and businesses may not open. Damages are seen in the form of structural repair and loss of economic activity. Jefferson County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow-covered roads.

4.11.4.1 City Lewisville

Lewisville does not have any differing levels of risk from the greater planning area associated with winter weather.

4.11.4.2 City of Menan

Menan does not have any differing levels of risk from the greater planning area associated with winter weather.

4.11.4.3 City of Rigby

Rigby does not have any differing levels of risk from the greater planning area associated with winter weather.

4.11.4.4 City of Ririe

Ririe does not have any differing levels of risk from the greater planning area associated with winter weather.

4.11.4.5 City of Roberts

Roberts does not have any differing levels of risk from the greater planning area associated with winter weather.

4.12 Dam Failure

4.12.1 Hazard Vulnerability & Risk Summary

Per the 2018 Idaho State Hazard Mitigation Plan (HMP), a dam is defined as an artificial barrier constructed across a watercourse for the purpose of storage, control, or diversion of water. Most dams typically are constructed of earth, rock, and/or concrete. Instead of storing water, some dams are designed and constructed to impound mine tailings slurry, wastewater, and liquefied industrial or food processing byproducts. A dam failure generally implies an uncontrolled release of impounded water or waste due to a catastrophic collapse, breach, or overtopping of the dam resulting in downstream flooding.

Dam or levee failure can cause flash floods by releasing large volumes of stored water in a short period. Urban development also drives flash floods due to an increase of impervious surfaces, inadequate or failing drainage systems which can put unforeseen strain on existing dams and levees. This hazard can

be a standalone threat (destructive force of water) or a compounding hazard that leads to, for example, extended power outages or landslides.

All of the dams either within or upstream of Jefferson County are shown in the table below. All of the dams within the county are small and unregulated. The three large dams outside of the county boundaries but upstream of the county are shown in the shaded cells of Table 10 and are mapped in Figure 18 (Island Park, Ashton and Palisades).

Figure 17. Jefferson County and upstream dam locations

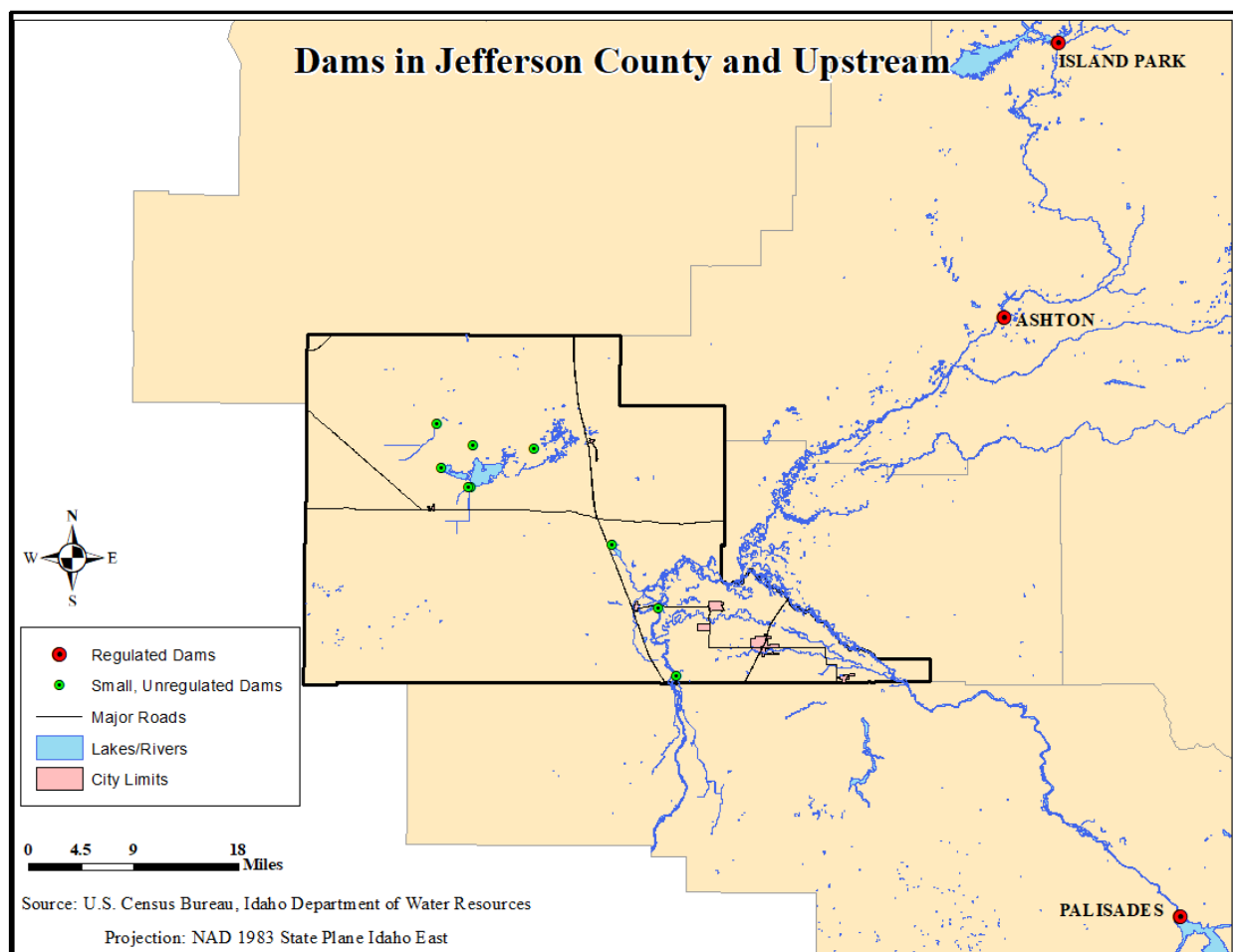


Table 10. Dams either within or upstream of Jefferson County*.

Name	Status	Height (ft)	Surface Area (acres)	Drainage Area (mi ²)	Downstream Flooding Potential	Source	Tributary
Market Lake Slough	Non-Regulated	9	545	0	Low	Market Lake Slough Creek	Sinks
Sidley	Non-Regulated	9	1.5	2.7	Low	Mud Lake	N/A
Mud Lake	Non-Regulated	0	7200	0	Not Rated	Mud Lake	N/A
Welchman	Non-Regulated	4	0	0	Low	Mud Lake	Sinks
North Lake	Non-Regulated	0	0	0	Not Rated	North Lake	N/A
Roberts Slough	Non-Regulated	0	0	0	N/A	Snake River	Columbia River
Idaho Diversion	Non-Regulated	12	15	9000	Low	Snake River	Columbia River
Jefferson Lake	Breached	8	1140	0	Low	Spring Lake	Sinks
Draper	Non-Regulated	0	0	0	N/A	Unnamed Stream	Camas Creek
Island Park	Regulated	84	7794	481	High	Henrys Fork	Snake River
Ashton	Regulated	60	404	1040	High	Henrys Fork	Snake River
Palisades	Regulated	260	16150	5150	High	Snake River	Columbia River

* 0 is what appears in metadata for Dams shapefile from IDWR; N/A is in place of missing data from Dams shapefile from IDWR; Shaded cells are the large dams outside of the county boundaries but upstream of the county.

4.12.2 Vulnerability Assessment

According to the 2018 Idaho State HMP, Jefferson County dam failure vulnerability relates largely to the performance of the Palisades Dam with 31 state-owned buildings located in the Palisade Dam flood hazard area. In 2018, this building exposure was valued at \$17,357,877. This same hazard area contains 82.4% of the county population (21,532 people in 2018). Additionally, Jefferson County has 3.7% of all the state's critical facilities that are susceptible to damage by a 1% rated flood event.

4.13 Landslides

4.13.1 Hazard Vulnerability & Risk Summary

Analysis from the University of Washington team indicated provided in Table F.8 puts the entirety of the Jefferson County incorporated area and each of the participating jurisdictions in the category of low risk of exposure to landslides. The plan update did not identify any specific jurisdictions or special districts with significant deviation from the planning area's overall risk to landslides, however, the very small area of the county with significant slope would definitely be more vulnerable than flatter areas.

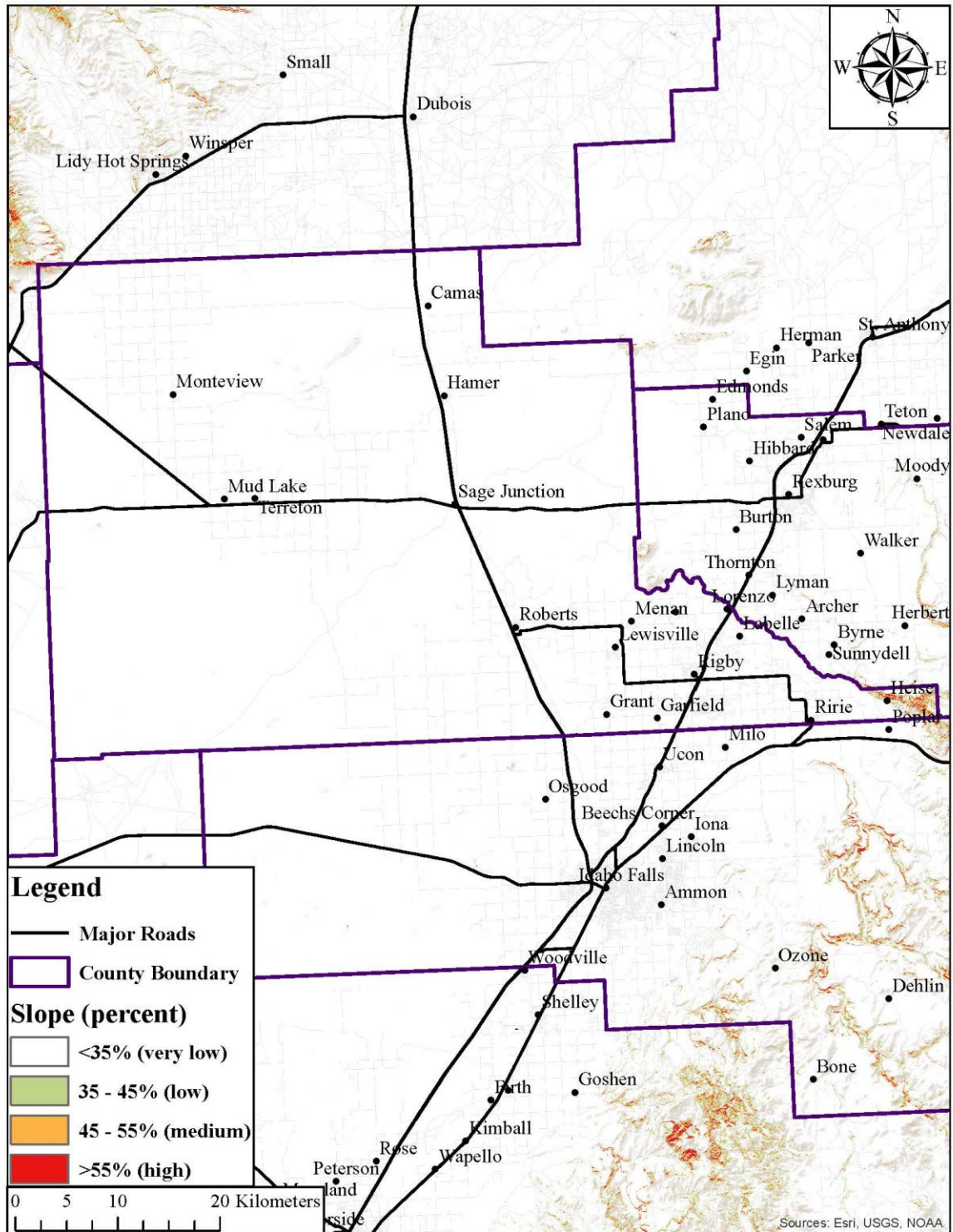
Determining the probability of landslides is difficult because of the numerous factors that contribute to them. Landslides typically occur on slopes and in areas where they have taken place before. Idaho's geology, landscape, climate, soils, and other factors can be conducive to landslide activity and numerous

small landslides occur each year in Idaho. The Idaho Geological Survey is engaged in a project to identify and map more than 3,000 landslides in the state since the time they began to record them, but results for this project were not available at the time of this report.

There is no widely accepted model for assessing exposure to landslides in this region, however, there is widespread agreement that it is a result of slope magnitude and stability of the geologic material. In lieu of comprehensive regional model, we use here some breakpoints related to slope values in order to map areas of Valley County susceptible to landslides based on slope values alone (see Figure 17 below). The risk categories are assigned based on observations in a report¹ by US Forest Service scientists who synthesized previous US Forest Service analyses of the occurrence of 860 landslides in the Clearwater-Nez Perce National Forest, which is a large national forest in north central Idaho.

The population of Jefferson County and all the participating cities lives in the flat areas of the county that are not prone to landslides. The County does contain a very small amount of mountainous area with high risk of exposure to landslides in the far southeast corner of the county near the town of Heise, which is not participating in the plan.

Figure 18. Jefferson County Landslide vulnerability calculated from slope values



4.14 Wildfire

4.14.1 Wildfire Annex

Under agreement between IOEM and IDL, the Jefferson County Wildfire Mitigation Plan (2004) acts as the Wildfire Annex to the Jefferson County Multi-Jurisdictional Hazard Mitigation Plan. A copy of that plan is provided in Appendix G and the map from the report showing 5 difference vulnerability zones is shown below. Wildfire threat comes from shrublands and pastures in the region, as there is only a small amount of forested land cover in the far southeastern portion of the county.

The report contained many specific mitigation strategies, some of which have been accomplished and some of which are included in the next section of this plan (Mitigation Strategy).

Several general points about fire hazards and the map of the Wildland Urban Interface from the 2004 CWPP are provided here.

4.14.2 Hazard Vulnerability & Risk Summary

Wildfires are unplanned fires that burn in natural areas, such as grasslands, shrublands, forests, or other environments, including wildland areas where people live. They can start from both human and natural causes, such as lightning, and they affect every state in the U.S. Nearly 85 percent of U.S. wildfires are from human causes, including uncontrolled campfires, burning debris, sparks from malfunctioning equipment, discarded cigarettes, and arson, accounting for 44% of the total area burned across the U.S. (American Geosciences Institute.org, 2019).

In Jefferson County, the vulnerability and risk is limited somewhat by the land cover types and their spatial arrangements relative to communities, roads and the numerous irrigation canals. As noted in Section 3.10, the dominant land cover type is shrubs and grasslands, which together cover approximately 56% of the county, followed by cropland (38%) and woody wetlands (2%). Forests, which tend to support much faster growing fires that are more difficult to contain, only cover approximately 0.1% of the land area and are confined to the far southeastern corner of the county. Although fires in shrublands, grasslands and croplands can definitely be harmful to individuals and property, and there is increasing concern about the expansion of residential areas into shrublands and grasslands, the spatial arrangement of these land cover types relative to irrigation canals and roads tends to limit the size and rate of growth of fires when they do occur. Table 3.1.S in the 2018 Idaho Hazard Mitigation Plan lists the projected change in 2010 to 2020 development located in the wildlife hazard area for each county. For Jefferson County, that estimate is 0.4 acres.

4.4.3 Past Occurrences

The 2018 Idaho Hazard Mitigation Plan (Table 3.1.N) lists major wildfire events throughout the state from 1985-2017). None are shown as impacting Jefferson County. Table 3.1.P from that same plan shows the wildfire-related disaster declarations in the state since 1960 and again, none are shown to have impacted Jefferson County. A search of the Idaho Dept of Lands database also indicates that no wildfires have occurred in recent years.

4.4.4 Future Probability and Vulnerability

Shown in the figure below is the statewide map of risk of wildfire, as estimated by the Bureau of Land Management and included in the 2018 Idaho Hazards Mitigation Plan as Figure 1.1.H. Portions of Jefferson County fall into the categories of Low, Low-Moderate and Moderate.

Figure 19. Risk to wildfire in Idaho (from the 2018 Idaho Hazards Mitigation Plan)

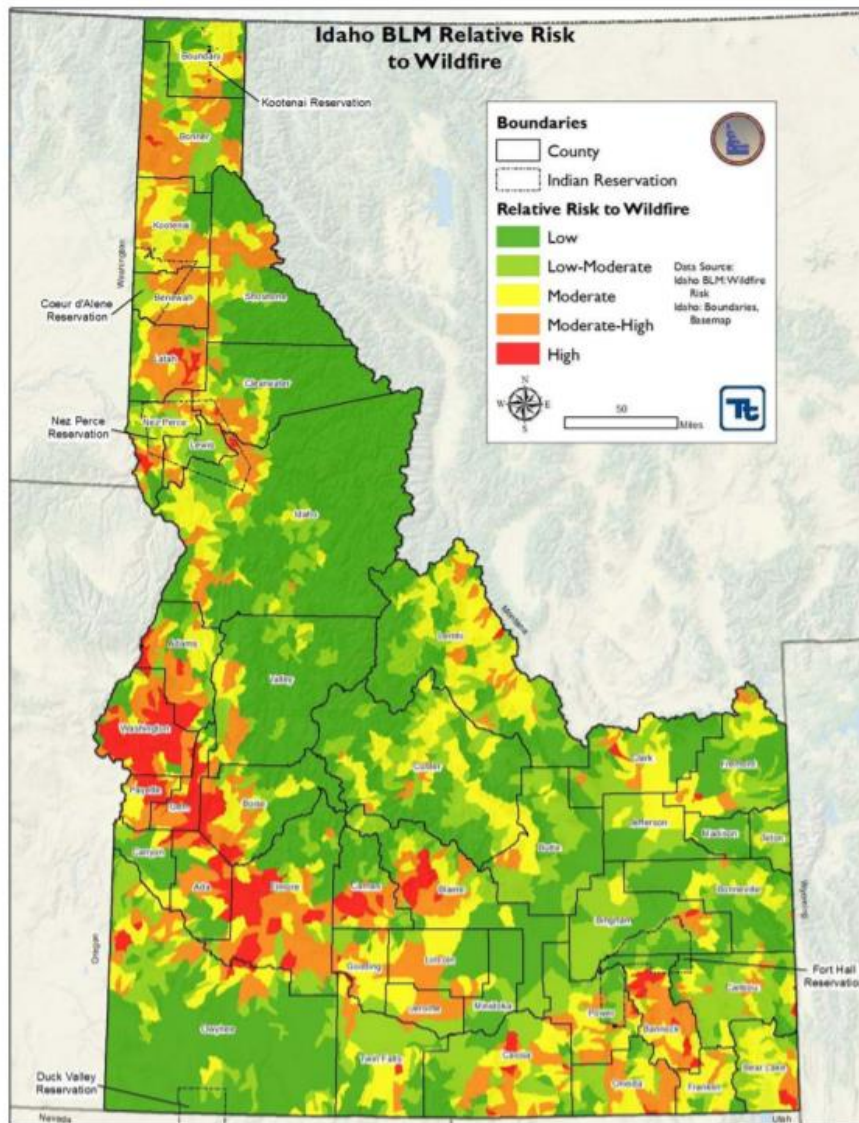
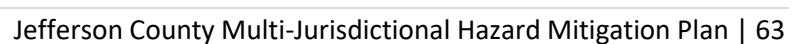


Figure 20 below, excerpted from the Jefferson County Wildfire Annex document, shows the vulnerability zones delineated in that report. As noted above, the state plan from 2018 projected that only approximately 0.4 acres of newly developed land would be in the Wildland Urban Interface from 2010-2020. Still, the county and most jurisdictions have recognized the need more education for old and new

Figure 20. Jefferson County Wildfire Vulnerability Zones



V. Mitigation Strategy

5.1 Overview

The mitigation strategy is a comprehensive effort to reduce or eliminate potential losses from the hazards identified by the planning team and detailed in the risk assessment (see *Section 7 Risk Assessment*). The goals, objectives, and actions that comprise the strategy were carried forward from the former plan (with revisions where necessary), with additional goals, objectives, and actions developed through collaborative efforts across the county that included its communities, various State and Federal agencies, and through public engagement.

5.1.1 Summary of Revisions

Major revisions include:

- Moved the mitigation strategy forward in the plan organization
- Reviewed and revised goals and objectives
- Reviewed and revised all mitigation actions to reflect progress to date
- Updated all mitigation actions with estimated cost, timelines, and potential funding avenues where possible/applicable
- Removed mitigation actions no longer relevant or necessary
- Included additional mitigation action

5.1.2 FEMA Requirements

This section adheres to and fulfills the following regulations:

- 44 CFR §201.6(c)(3) – A mitigation strategy that provides the jurisdiction’s blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
 - (i) – A description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.
 - (ii) – A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
 - (iii) – An action plan, describing how the action identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to cost benefit review of the proposed projects and their associated costs.
 - (iv) – For multijurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

5.2 Mitigation Strategy Goals and Processes

Goals and objectives frame the mitigation strategy and are put forward and adopted by the planning team at the outset of the planning process. The 2019 plan update revisited and revised the goals included in the former plan to enhance their cogency and applicability to Jefferson County and its

incorporated cities. The following seven goals guided the planning process and update of the mitigation strategy:

1. To minimize the area of land damaged and losses experienced because of hazards where these risks threaten communities in the county.
2. Prioritize the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy
3. Educate communities about the unique opportunities and challenges of pre- and post-disaster hazard mitigation, disaster response, and post-disaster recovery.
4. Establish mitigation priorities and develop mitigation strategies.
5. Strategically locate, plan, coordinate, and implement hazard reduction projects with emphasis on those projects to reduce exposure to multiple hazards
6. Continue and enhance cooperation, coordination, and capabilities of agencies and partners within the county
7. Ensure long-term viability of the county to support successful mitigation, response, and recovery through human resources

5.2.1 Prioritization of Mitigation Actions

After identifying problem areas and concerns via the risk assessment, the county and each jurisdiction developed and prioritized specific mitigation actions. In doing so, for each action considered, they completed the mitigation action worksheet shown in Appendix C. This worksheet included a consideration of both the economic costs and the benefits an action would bring. In addition to the considerations on the worksheet shown in Appendix C, each jurisdiction also assigned Staplee factor scores to each action. The completed worksheets for this process are provided in Appendix D. The final priorities shown in the tables below, which are the same as those in the Staplee worksheets in Appendix D came about from consideration of the cost/benefit analysis and Staplee scores. Although the priorities assigned by the jurisdictions usually follow in alignment with the Staplee scores, for a small percentage of the actions, it was decided that the Staplee scoring did not adequately capture a particularly low or high cost/benefit and the priorities were adjusted in those few cases to be in alignment with local knowledge of the cost/benefit.

5.3 Jefferson County Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan's five-year life.

Table 11. Jefferson County mitigation actions and implementation plan

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
General/All Hazards						
1.1	Work with faith-based organizations and disability services to create an accountability program for those with functional and access needs	Goals: 2,5,6 Priority: Low	Lead: Emergency Mngmt (EM) Partners: Faith organizations, home health care, disability care providers	Timeline: 2022 Cost: \$2000 Funding and/or Resources: Volunteers, EM budget	New	Preparedness & Response
1.2	Add Spanish messaging option to AlertSense notification	Goals: 2,5 Priority: High	Lead: Jefferson 911	Timeline: 2020 Cost: \$200 Funding and/or Resources: 911 funding	New	Preparedness & Response
1.3	Develop technical assistance program for homeowners, builders, and business owners to help protect structures from multiple hazards	Goals: 1,2,5,6 Priority: High	Lead: Jefferson Building Dept Partners; EM, HOAs, realtors	Timeline: 2022 Cost: \$ 2000 Funding and/or Resources: SHSP funding	New	Structure & Infrastructure Education Programs
1.4	Increase community enrollment in AlertSense to 80%, develop agency notification protocols, and	Goals: 2,5 Priority: High	Lead: Jefferson 911 Partners: EM, faith organizations, Chamber of Commerce, LEPC	Timeline: 2020 Cost: \$8000 Funding and/or Resources: 911 funding	New	Preparedness & Response
1.5	Develop protocols for community notification through AlertSense, Emergency Broadcast, Social Media	Goals: 2,5 Priority: Medium	Lead: EM Partner: Jefferson 911	Timeline: 2020 Cost: \$500 Funding and/or Resources: 911 funding	New	Preparedness & Response

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
1.6	Ensure identified shelter locations are equipped to handle emergency power (generators)	Goals: 2,5,6 Priority: Low	Lead: EM Partners: Schools, American Red Cross, cities	Timeline: 2023 Cost: \$200,000 Funding and/or Resources: PDM grant, SHSP funding	New	Preparedness & Response
1.6.1	Auxiliary power on fuel dispensary	Goals: 2,5 Priority: Medium	Lead: Public Works Partner: EM	Timeline: 2022 Cost: \$50,000 Funding and/or Resources: internal	New	Preparedness & Response
Seismic/Geologic						
2.1	Identify critical infrastructure, including buildings, schools, transportation and utilities, assess for seismic vulnerability, and create an action plan to assess vulnerabilities	Goals: 1,2,4,6 Priority: Medium	Lead: Emergency Management Partners: Jefferson Building Dept., Public Works, schools, cities, Central Fire	Timeline: 2023 Cost: \$50,000 Funding and/or Resources: PDM grant	Modified prior plan strategy to include schools/public buildings into one strategy	Structure & Infrastructure Planning and Regulatory
2.1.1	Widen East Heise River Rd	Goals: 2 Priority: High	Lead: Public Works Partners: EM	Timeline: 2025 Cost: \$300,000 Funding and/or Resources: PDM grant	New	Structure & Infrastructure
2.2	Train building department staff and officials on Form ATC-20 for post-earthquake building evaluation.	Goals: 1,2,4 Priority: Low	Lead: Jefferson Building Dept. Partners: Assessor's Office, EM	Timeline: 2023 Cost: \$5,000 Funding and/or Resources: SHSP funding	New	Structure & Infrastructure
2.3	Enforce portions of building code addressing protection from seismic activity	Goals: 1,2 Priority: High	Lead: Jefferson Building Dept. Partners: EM	Timeline: 2020 Cost: \$1000. Funding and/or Resources: Internal budgets	New	Structure & Infrastructure

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Flooding						
3.1	Ensure adequate drainage in flood-prone areas and mitigate erosion	Goals: 1,2 Priority: High	Lead: Jefferson Public Works Partners: Canal companies, flood control district	Timeline: 2020 Cost: \$ 500,000 Funding and/or Resources: PDM grant	Prior	Structure & Infrastructure
3.1.2	Elevate, pave, armor 2100 E	Goals: 1,2,5 Priority: High	Lead: Public Works Partners: Dept of Commerce, Kettle Butte Dairy,	Timeline: 2023 Cost: \$ 4,000,000 Funding and/or Resources: Dept of Commerce grant	New	Structure & Infrastructure
3.1.3	Flap gates for inland flooding	Goals: 1,2 Priority: Medium	Lead: Flood Control District #1 Partners: EM	Timeline: 2024 Cost: \$75,000 Funding and/or Resources: PDM grant	New	Structure & Infrastructure
3.2	Protect bridges, culverts, irrigation from failure	Goals: 1,2,6 Priority: Medium	Lead: Public Works Partners: Canal companies	Timeline: 2024 Cost: \$100,000 Funding and/or Resources: Internal budgets, PDM grants	New	Structure & Infrastructure
3.2.1	Armor bridge at 120 N 4700 E	Goals: 1,2,6 Priority: High	Lead: Harrison Canal Comp. Partner: Public Works	Timeline: 2024 Cost: \$100,000 Funding and/or Resources: PDM Grant	New	Structure & Infrastructure
3.3	Floodplain Plan	Goals: 1,2,4 Priority: Medium	Lead: Jefferson P&Z Partners: FEMA, cities	Timeline: 2022 Cost: \$50,000 Funding and/or Resources: PDM grant	New	Planning & Regulatory

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
3.4	Transportation Protection	Goals: 1,2,5 Priority: Medium	Lead: Jefferson Public Works Partners: ITD, Emergency Management	Timeline: 2021 Cost: \$300,000 Funding and/or Resources: Internal budgets	New	Structure & Infrastructure
3.5	Water/Sewer Protection	Goals: 1,2,5 Priority: Low	Lead: HOAs Partners: EM, Jefferson P&Z	Timeline: 2025 Cost: Unknown Funding and/or Resources: Internal budgets	New	Structure & Infrastructure
3.6	Flooding Evacuation Plan	Goals: 1,2 Priority: Low	Lead: EM Partners: Jefferson Public Works, ITD	Timeline: 2024 Cost: \$10,000 Funding and/or Resources: Internal budget	New	Preparedness & Response Planning & Regulatory
Severe Weather						
4.1	Ensure and enforce building codes for wind shear, snow loading, roof pitch, frost depth, insulation, and heating	Goals: 1,2 Priority: High	Lead: Jefferson Building Dept.	Timeline: 2020 Cost: \$1000 Funding and/or Resources: Internal budget	New	Planning and Regulatory Structure and Infrastructure
4.2	Protect public infrastructure through the use of living windbreaks	Goals: 1,2 Priority: Medium	Lead: Jefferson Public Works Partners: EM, Commissioners, Weed Dept., Soil Conservation	Timeline: 2022 Cost: \$25,000 Funding and/or Resources: Internal budget	Ongoing	Structure and Infrastructure
4.3	Identify areas of wind erosion and work with private property owners on mitigation efforts	Goals: 1,2,6 Priority: Low	Lead: EM Partners: ITD, Soil Conservation, landowners	Timeline: 2026 Cost: \$100,000 Funding and/or Resources: Internal budgets/private	New	Planning and Regulatory Structure and Infrastructure

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
4.4	Mitigate tree risk	Goals: 1,2,6 Priority: High	Lead: Jefferson Public Works Partners: Cities, Soil Conservation, homeowners, Rocky Mtn Power	Timeline: 2023 Cost: \$300,000 Funding and/or Resources: PDM grant/internal/private	New	Structure and Infrastructure
4.5	Participate in Storm Ready (NWS)	Goals: 1,2,6 Priority: High	Lead: EM Partners: NWS, cities, schools	Timeline: 2020 Cost: \$200/yr Funding and/or Resources: NWS Programming	New	Preparedness & Response Structure and Infrastructure Education Programs
Wildfire						
5.1	Wildland Urban Interface Education	Goals: 1,2,6 Priority: Medium	Lead: Central Fire Partners: Emergency Management, Roberts Fire, Hamer Fire, West Jefferson Fire	Timeline: 2024 Cost: \$10,000 Funding and/or Resources: Public Safety Grant	New	Education Programs
5.2	Revise the Subdivision ordinance to require dual access/egress in all areas and other mitigation strategies from WUI report	Goals: 1,2,6 Priority: High	Lead: Jefferson P&Z Partners: Central Fire, EM	Timeline: 2021 Cost: \$2,000 Funding and/or Resources: Internal budget	Continued from prior plan	Preparedness & Response Structure & Infrastructure
5.3	Evacuation plan for Heise	Goals: 1,2,6 Priority: High	Lead: Central Fire Partners: EM, High Country RC&D, US Forest Service, Bureau of Land Management, private businesses	Timeline: 2021 Cost: \$10,000 Funding and/or Resources: Public safety and recreation grants, internal budgets, private	New	Preparedness & Response
5.4	Wild area access/egress	Goals: 1,2,6 Priority: High	Lead: Jefferson Public Works Partners: Central Fire, BLM, USFS, ITD	Timeline: 2024 Cost: \$500,000	New	Preparedness & Response

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
5.5	Private Wells, ensuring water supplies (?)	Goals: 1,2,6 Priority: Low	Lead: Central Fire Partners: EM, private	Funding and/or Resources: PDM grant	Modified from prior plan	Natural Systems Protection
				Timeline: 2023		Preparedness & Response
				Cost: \$1,000 Funding and/or Resources: Internal budget Timeline: 2020		Natural Systems Protection
5.6	Train and equip wildfire response	Goals: 1,2,6 Priority: High	Lead: Central Fire Partners: West Jefferson Fire, Roberts Fire, Hamer Fire, EM, BLM	Cost: \$100,000 Funding and/or Resources: SHSP funding, internal funding, surplus equipment Timeline: 2028	New	Preparedness & Response
5.7	Utility protection	Goals: 1,2,6 Priority: Medium	Lead: Rocky Mtn Power Partners: EM, Weed Dept.	Cost: \$ 250,000 Funding and/or Resources: Internal funding, safety grants	New	Preparedness & Response Structure & Infrastructure
Severe Winter Weather						
6.1	Enforce building codes for snow loading and roof pitch	Goals: 1,2,4 Priority: Medium	Lead: Jefferson Building Dept. Partners: State Building Safety	Timeline: 2020 Cost: \$1000 Funding and/or Resources: Internal	New	Structure & Infrastructure Planning & Regulatory
6.2	Identify special hazard areas in transportation and create strategies to mitigate hazards	Goals: 1,2,4 Priority: Medium	Lead: Jefferson Public Works Partners: EM, ITD	Timeline: 2026 Cost: \$25,000 Funding and/or Resources: Internal funding	New	Structure & Infrastructure
6.2.1	Vegetation management on fence lines	Goals: 1,2,6 Priority: Low	Lead: Jefferson Weed Dept Partners: Public Works, landowners	Timeline: 2022 Cost: \$ 50,000	New	Structure & Infrastructure Planning & Regulatory

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
				Funding and/or Resources: Internal budgets Timeline: 2024		Education Programs
6.3	Educate public on snow removal from vent pipes, roofs	Goals: 2,6 Priority: Medium	Lead: EM Partners: Faith organizations	Cost: \$ 2,000 Funding and/or Resources: SHSP funding, private Timeline: 2024	New	Preparedness & Response
6.4	Provide education on heating without electricity	Goals: 2,6 Priority: Medium	Lead: EM Partners: Faith organizations	Cost: \$ 2,000 Funding and/or Resources: SHSP grant, private Timeline: 2020	New	Education Programs Preparedness & Response
6.5	Enforce building codes for frost depth, insulation and heating	Goals: 1,2 Priority: Medium	Lead: Jefferson Building Dept Partners: State Building Safety	Cost: \$ 1,000 Funding and/or Resources: Internal Timeline: 2025	New	Structure & Infrastructure Planning & Regulatory
6.6	Install engine heaters or build shelters for critical vehicles	Goals: 1,2 Priority: High	Lead: Jefferson Sheriff, Jefferson Public Works Partners: EM	Cost: \$ 75,000 Funding and/or Resources: SHSP funding, internal	New	Preparedness & Response
Biological						
7.1	Public education campaigns on vector-borne illness	Goals: 2,6 Priority: Low	Lead: East Idaho Public Health Partners: Emergency Management	Timeline: 2021 Cost: \$ 8,000 Funding and/or Resources: State funding grant	Expansion of prior action on West Nile virus to include other illness	Education Programs
7.3	Outbreak prevention and response	Goals: 2,6 Priority: High	Lead: East Idaho Public Health Partners: EM, Jefferson SD#251, Rire SD#252, West Jefferson SD#253	Timeline: 2020 Cost: \$ 4000 Funding and/or Resources: State funding, Healthcare Coalition	New	Structure & Infrastructure Preparedness & Response

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
7.4	Education – Invasive Species	Goals: 1,2 Priority: Low	Lead: Jefferson Weed Control Partners: EM, ID Dept of Agriculture	Timeline: 2021 Cost: \$ 8,000 Funding and/or Resources: state funding, internal budget	New	Education Programs
7.5	Invasive species control	Goals: 1,2 Priority: Medium	Lead: Jefferson Weed Control Partners:	Timeline: 2020 Cost: \$ Unknown Funding and/or Resources: Internal budget, private	New	Preparedness & Response Natural Systems Protection
7.6	Secure chemicals used for species control	Goals: 1,2 Priority: High	Lead: Jefferson Weed Control Partners: EM	Timeline: 2023 Cost: \$ 50,000 Funding and/or Resources: PDM grant, internal budget	New	Preparedness & Response Natural Systems Protection
Structure Fire						
8.1	Evaluate each fire district's ISO rating and create a plan for improving ISO ratings	Goals: 1,2 Priority: Medium	Lead: Central Fire Partners: EM, Roberts Fire, Hamer Fire, West Jefferson Fire	Timeline: 2025 Cost: \$ 200,000 Funding and/or Resources: Internal budgets, AFG grant, SHSP grant, PDM grant	New	Preparedness & Response
8.2	Shorten time and distance to water sources	Goals: 1,2,6 Priority: Medium	Lead: Central Fire Partners: EM, Roberts Fire, Hamer Fire, West Jefferson Fire	Timeline: 2026 Cost: \$500,000 Funding: Private, impact fees	Ongoing from prior plan	Preparedness & Response Structure & Infrastructure
8.3	Ensure all new construction is equipped with smoke detectors	Goals: 1,2 Priority: High	Lead: Jefferson Building Dept Partners: Private	Timeline: 2020 Cost: \$200/home Funding and/or Resources: Private	Ongoing from prior plan	Education Programs Preparedness & Response
8.4	Provide smoke detectors and installation to private homeowners	Goals: 1,2	Lead: American Red Cross Partners: Central Fire	Timeline: 2020	Ongoing from prior plan	Education Programs

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
		Priority: High		Cost: \$200/home Funding and/or Resources: ARC funds, Internal Budget		Preparedness & Response
8.5	Educate the public and businesses on installing fire detection and suppression systems	Goals: 1,2 Priority: Medium	Lead: Jefferson Building Dept. Partners: Central Fire, EM	Timeline: 2022 Cost: \$8,000 Funding and/or Resources: SHSP funding, internal budget	New	Education Programs Preparedness & Response
Radiological Release						
9.1	Radiation training and equipment	Goals: 1,2,4,6 Priority: High	Lead: Central Fire Partners: Idaho National Lab (INL), Jefferson Sheriff, Roberts Fire, West Jefferson Fire, Hamer Fire, EM	Timeline: 2022 Cost: \$ 5,000 Funding and/or Resources: SHSP funding, internal budgets	New	Preparedness & Response Structure & Infrastructure Natural Systems Protection
9.2	Radiation source identification	Goals: 1,2,6 Priority: High	Lead: Emergency Management Partners: INL, LEPC, IOEM	Timeline: 2021 Cost: \$ 2,000 Funding and/or Resources: Internal budgets	New	Preparedness & Response Education Programs Natural Systems Protection
9.3	INL Cooperative Agreements for law enforcement and emergency management	Goals: 1,2,6 Priority: High	Lead: EM Partners: East Idaho Fire Chiefs, USIWG, Jefferson Sheriff, Jefferson commissioners	Timeline: 2022 Cost: \$ 2,000 Funding and/or Resources: Internal budgets	New	Preparedness & Response Structure & Infrastructure Natural Systems Protection
Hazardous Materials Event						
10.1	Hazmat Assessment	Goals: 1,2,4	Lead: EM Partners: LEPC, IOEM	Timeline: 2026	Ongoing from prior plan	Preparedness & Response

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
		Priority: High		Cost: \$ 45,000 Funding and/or Resources: PDM grant, other grant sources		Planning & Regulatory Natural Systems Protection Preparedness & Response
10.2	LEPC Participation	Goals: 6 Priority: Medium	Lead: EM Partners: LEPC, private	Timeline: 2021 Cost: \$ 2,000 Funding and/or Resources: Internal budget	New	Structure & Infrastructure Planning & Regulatory
Riot/Terrorism/Mass Shooting						
11.1	Control access into critical facilities, including fuel storage, government building, schools and mass care facilities	Goals: 1,2,4 Priority: High	Lead: Jefferson Sheriff Partners: Emergency Management, Jefferson Clerk	Timeline: 2025 Cost: \$ 200,000 Funding and/or Resources: SHSP funding, PDM grant, internal funding	New	Preparedness & Response Structure & Infrastructure Planning & Regulatory
11.2	Harden critical facilities against explosions, gunfire, and other projectile damage	Goals: 1,2,6 Priority: High	Lead: EM Partners: Jefferson Sheriff, 7 th District Court, Jefferson SD#251, Ririe SD#252, West Jefferson SD#253	Timeline: 2025 Cost: \$ 500,000 Funding and/or Resources: SHSP funding, school safety grants, PDM grant	Ongoing from prior plan	Preparedness & Response Structure & Infrastructure Natural Systems Protection
11.3	Response Training	Goals: 1,2 Priority: High	Lead: Jefferson Sheriff Partners: Rigby Police, EM, Jefferson SD#251, Ririe SD#252, West Jefferson SD#253	Timeline: 2020 Cost: \$ 2,000 Funding and/or Resources: SHSP funding, internal budgets	New	Preparedness & Response

Jefferson County Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
11.4	First-aid training	Goals: 2,6 Priority: High	Lead: EM Partners: Jefferson Sheriff, Central Fire, Mud Lake ambulance, Rigby Police, Jefferson SD#251, Ririe SD#252, West Jefferson SD#253	Timeline: 2021 Cost: \$ 2,000 Funding and/or Resources: SHSP funding, internal budgets	New	Preparedness & Response Education Programs
Cybersecurity						
12.1	Protective network infrastructure	Goals: 1,2 Priority: High	Lead: Jefferson IT Partners: EM	Timeline: 2020 Cost: \$ 250,000 Funding and/or Resources: SHSP funding, internal funding, PDM grant	New	Preparedness & Response Structure & Infrastructure
12.2	Cyber Education	Goals: 1,2 Priority: High	Lead: ICRMP Partners: Jefferson IT	Timeline: 2020 Cost: \$ 10,000 Funding and/or Resources: ICRMP, internal funding	New	Education Program Preparedness & Response

5.3.1 Changes in Mitigation Priorities

The overall priorities for the county did not change, however, a large number of new strategies were added and prioritized via the Staplee method, with documentation of this process in Appendix D. A few strategies were modified or expanded; these are noted in the table above. A few strategies from the prior plan were deleted (see following table), typically in cases where the completion would require buy-in from partners that are not prepared to do so at this time, in favor of adding more new, attainable and actionable strategies.

5.3.2 Completed & Removed Mitigation Actions & Projects

The following actions were completed prior to the 2019 update or were removed from the strategy during the 2019 update:

Table 12. Jefferson County completed or removed mitigation actions

Mitigation Action	Status	Notes
Provide education regarding notification of all types of weather related incidents	Completed	
Update and improve road signing and rural addressing (under Wildfire in Prior Plan)	Completed	
Provide public education on home protection and preparedness for seismic events	Merged into education strategies under all hazards	
Work with jurisdictions that do not participate in the National Flood Insurance Program to encourage them to adopt the program	Completed, but with negative results	Jurisdictions were contacted and education was provided. However, none chose to adopt NFIP.
Protect or relocate properties within the floodplain that are experiencing repetitive loss	Deleted	Not an issue in Jefferson County
Early Warning for Dam Failures	Modified and Completed	Requires buy-in by many partners; more pressing local concerns. Warning protocol is defined in Dam Emergency Plans. County participates in plan exercise and updates.
Identify special transportation hazard areas and create strategies to mitigate hazards (Under Severe Weather)	Completed	
Develop a standard practice for roadside vegetation management in the following areas: (Wildfire)	Completed	

Designate Wildland Urban Interface areas as a special land use category in the County Comprehensive Plan (Wildfire)	In Progress	To be included in the 2020 Update to the County Comprehensive Plan, to be considered for adoption in July 2020.
Communicate Risks posed through the INL ingestion pathway. (Nuclear Events)	Modified	Technical and security difficulties of defining ingestion pathway prompted modification to include other means of communication and coordination with INL.
Educate the Public on Civil Disobedience Reporting (Riot/Terrorism)	Deleted	Changes in culture made action obsolete. Priority shifted to protection, prevention, and response.

5.4 City of Lewisville Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan's five-year period.

Table 13. City of Lewisville mitigation actions and implementation plan

City of Lewisville Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2020 Status	Mitigation Type
General						
1.1	Work with faith-based organizations and disability services to create accountability program for those with functional and access needs.	Goals: 1,2,5,6 Priority: Low	Lead: City Council Partners: Emergency Mgmt; Faith Organizations Home Healthcare Disability Care Providers	Timeline: 2022 Cost: \$2000 Funding and/or Resources: Volunteers	New	Preparedness & Response
1.2	Develop protocols for community notification through AlertSense, Emergency Broadcast, Social Media	Goals: 1,2,5,6 Priority: Medium	Lead: Emergency Management Partners: Jefferson 911	Timeline: 2020 Cost: \$500 Funding and/or Resources: 911 Funding	New	Preparedness & Response
1.3	Install emergency power at community centers	Goals: 1,2, 5 Priority: High	Lead: Lewisville City Partners: Red Cross, cities	Timeline: 2023 Cost: \$200,000 Funding and/or Resources: PDM grant. SHSP funding	New	Preparedness & Response Structure & Infrastructure
Flooding						
2.1	Install stormwater catch and drainage at city park	Goals: 1,2,6 Priority: Medium	Lead: Lewisville City Partners: Ball Bros produce, railroad, landowners	Timeline: 2029 Cost: \$100,000 Funding and/or Resources: Partner agencies, PDM grant	New	Structure & Infrastructure
2.2	Develop evacuation plan for major flooding event	Goals: 1,2, 3, 6 Priority: Low	Lead: Emergency Management Partners: Jefferson Public Works Dept; ITD	Timeline: 2024 Cost: \$10,000 Funding and/or Resources: Internal budget	New	Preparedness & Response Education Programs
Severe Convective Weather						

City of Lewisville Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2020 Status	Mitigation Type
				Timeline: 2020		
3.1	Ensure building codes on new construction are adequate for wind shear in our area	Goals: 1,2 Priority: Low	Lead: Lewisville Building Dept.	Cost: \$1000 Funding and/or Resources: Internal budget	New	Planning & Regulatory Structure & Infrastructure
3.2	Identify and replace trees that threaten to break in high winds	Goals: 1,2,6 Priority: High	Lead: Lewisville Public Works Partners: Cities, Soil Conservation Dist, homeowners, Rocky Mountain Power	Timeline: 2023 Cost: \$400,000 Funding and/or Resources: Internal funding, safety grants	New	Planning & Regulatory Structure & Infrastructure
3.3	Participate in Storm Ready (NWS) program; maintain accreditation beyond 2022	Goals: 1,2,3,6 Priority: Medium	Lead: Emergency Management Partners: National Weather Service, city, schools.	Timeline: 2020 Cost: \$200/yr Funding and/or Resources: NWS programming	New	Preparedness & Response Education Programs
Wildfire						
4.1	Educate public and farmers/ranchers on WUI issues and protection	Goals: 3,6 Priority: Medium	Lead: Central Fire Partners: Emergency Mngmt, Roberts Fire, Hamer Fire, West Jefferson Fire	Timeline: 2024 Cost: \$10,000 Funding and/or Resources: Public safety grant	New	Educational Programs
4.2	Identify utilities at risk from fire and create protection plan	Goals: 1,2,4 Priority: Low	Lead: Rocky Mountain Power Partners: Emergency Mngmt; Weed Dept.	Timeline: 2028 Cost: \$250,000 Funding and/or Resources: Internal funding, safety grants	New	Structure & Infrastructure Planning & Regulatory
Severe Winter Weather						
5.1	Enforce building codes for snow loading and roof pitch	Goals: 1,2 Priority: Medium	Lead: Lewisville Building Dept Partners: State Building Safety	Timeline: 2020 Cost: \$1000 Funding and/or Resources: Internal	New	Planning & Regulatory Structure & Infrastructure

City of Lewisville Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2020 Status	Mitigation Type
5.2	Identify special hazard areas in transportation and create strategies to mitigate hazards	Goals: 1,2,4 Priority: Medium	Lead: Lewisville Building Dept. Partners: State Building Safety	Timeline: 2020 Cost: \$1000 Funding and/or Resources: Internal	New	Planning & Regulatory Structure & Infrastructure
Biological						
6.1	Continue support of mosquito abatement districts	Goals: 1,2,3 Priority: High	Lead: Lewisville City Mosquito Abatement	Timeline: 2020 Cost: \$1500/yr Funding and/or Resources: Internal	New	Planning & Regulatory
6.2	Public education campaigns on vector-borne illness	Goals: 1,2,3 Priority: Low	Lead: Lewisville City Mosquito Abatement	Timeline: 2021 Cost: \$1000 Funding and/or Resources: Internal	New	Education Programs
6.3	Address areas of standing water near warehouse facilities and railroad tracks	Goals: 1,2,6 Priority: Medium	Lead: Lewisville City Council Partners: Ball Bros Produce, Railroad	Timeline: 2020 Cost: \$1000/yr Funding and/or Resources: Internal, private	New	Planning & Regulatory Structure & Infrastructure
Structure Fire						
7.1	Ensure all new construction is equipped with smoke detectors	Goals: 1,2,3 Priority: Medium	Lead: Lewisville Building Dept Partners: Private	Timeline: 2020 Cost: \$200/home Funding and/or Resources: Private	New	Planning & Regulatory Structure & Infrastructure
7.2	Provide smoke detectors and installation to private homeowners	Goals: 1,2,3 Priority: Medium	Lead: American Red Cross Partners: Central Fire	Timeline: 2020 Cost: \$200/home Funding and/or Resources: ARC funds, internal budgets	New	Structure & Infrastructure Education Programs
Hazardous Material Event						

City of Lewisville Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2020 Status	Mitigation Type
8.1	Conduct hazardous materials assessment within City Impact Area	Goals: 1,2,4 Priority: Medium	Lead: LEPC Partners: Idaho Office of Emergency Management	Timeline: 2026 Cost: \$45,000 Funding and/or Resources: PDM grant, other source	New	Planning & Regulatory Structure & Infrastructure
Riot/Terrorism/Mass Shooting						
9.1	Control access into critical facilities, including fuel storage, government buildings, schools and mass care facilities	Goals: 1,2,6 Priority: Medium	Lead: Lewisville City, Partners: Emergency Mngment, Jefferson Sheriff	Timeline: 2025 Cost: \$200,000 Funding and/or Resources: SHSP funding, PDM grant, internal funding	New	Structure & Infrastructure Preparedness & Response
Earthquake/Seismic						
10.1	Seismic retrofit or replacement of library, which is unreinforced masonry	Goals: 1,2 Priority: Medium	Lead: Lewisville City	Timeline: 2025 Cost: \$300,000 Funding and/or Resources: PDM grant	New	Structure & Infrastructure Preparedness & Response

5.4.1 Changes in Mitigation Priorities

The City of Lewisville did not participate in the last plan, thus there are no changes in priorities since this plan. New mitigation actions identified were prioritized using the Staplee method, with documentation provided in Appendix D.

The city did not identify a strategy specific to Earthquake hazards, however, several of the strategies under the category of “General” contribute to mitigation of the impacts of earthquake hazards.

5.4.2 Completed & Remove Mitigation Actions & Projects

Not applicable since the jurisdiction did not participate in the last plan.

5.5 City of Menan Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan’s five-year life.

Table 14. City of Menan mitigation actions and implementation plan.

City of Menan Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
General						
1	Improve multi-lingual emergency notification by installing Google translate on city website	Goals: 1,2 Priority: Medium	City of Menan	Timeline: 1 yr Cost: \$500. Funding and/or Resources: City budget	New mitigation action	Preparedness & Response
Severe Weather/Winter Weather						
2	Encourage signup for Alert Sense	Goals: 1,2 Priority: High	City of Menan, Central Fire	Timeline: 1-2 yrs Cost: \$500-1000 Funding and/or Resources: City budget or grant	New mitigation action	Preparedness & Response
Flood						
3	Canal flood mitigation plan (providing education on likely scenarios and preventative actions)	Goals: 1,2,4,5 Priority: High	City of Menan, Long Island Canal company.	Timeline: 5 yrs Cost: \$1000 Funding and/or Resources: City and Long Island Canal Co	New mitigation action	Planning & Regulatory Education Systems
4	Develop contact list for canal flooding	Goals: 1,2,5 Priority: High	City of Menan, Long Island Canal Co	Timeline: 5 yrs Cost: \$200 Funding and/or Resources:	New mitigation action	Preparedness & Response

City of Menan Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
5	Flood mitigation on Long Island Canal, including hardening banks, upsizing culverts, rebuilding diversion structures, relocating laterals	Goals: 1,2,4,5 Priority: Medium	City of Menan, Long Island Canal Co., Eastern Idaho Railroad	Timeline: 5 yrs Cost: \$500,000 Funding and/or Resources: Long Island Canal Co., Eastern Idaho Railroad	New mitigation action	Structure & Infrastructure Planning & Regulatory
Earthquake						
6	Plan for evacuation of library due to gas leaks and assessment of shelves/seismic risk	Goals: 1,2,3,6 Priority: Low	Library board and district	Timeline: 2 yrs Cost: \$2500 Funding and/or Resources: City budget	New mitigation action	Planning & Regulatory Preparedness & Response
Wildland and Structural Fire						
7	Update comprehensive plan to address wildfire	Goals: 1,2,4,6 Priority: Medium	Central Fire District, developers	Timeline: 5 yrs if subdivisions are developed Cost: \$10,000 Funding and/or Resources: City budget for existing structures; developer of subdivisions for new	New mitigation action	Planning & Regulatory
8	Fire Education to individual households (evacuation plans, Red Cross smoke detectors and Fire Prevention Month)	Goals: 1,2,3 Priority: Low	Central Fire District, City of Menan	Timeline: 2 yrs Cost: \$100 Funding and/or Resources: Central Fire District	New mitigation action	Planning & Regulatory
9	Improve ability for fire suppression in city buildings via more extinguishers and regular maintenance	Goals: 1,2 Priority: Low	City, Central Fire	Timeline: 1 yr Cost: \$500 Funding and/or Resources: City budget or grant	New mitigation action	Preparedness & Resonse

City of Menan Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Dam Failure						
10	Develop evacuation plan for different dam failure in region, place on city website	Goals: 1,2,3,4 Priority: Medium	City, Jefferson County Emergency Management	Timeline: 5 yrs Cost: \$1000 Funding and/or Resources: City budget	New mitigation action	Planning & Regulatory Preparedness & Response
Hazardous Materials						
11	Join training exercise and evacuation plan for release of hazardous materials such as anhydrous ammonia, propane or other potential accident.	Goals: 1,2,3,4,6 Priority: Low	City, Central Fire, Faith-based organizations, valley-wide partners	Timeline: 1-2 yrs Cost: \$1000-5000 Funding and/or Resources: City budget	New mitigation action	Planning & Regulatory Preparedness & Response
Terrorism						
12	Implement community awareness campaign for 4 th of July activity – active shooter, see something/say something	Goals: 1,2,3 Priority: Medium	City, community activities committee	Timeline: 1 yr Cost: \$2000 Funding and/or Resources: Community activity funds	New mitigation actions	Preparedness & Response
Controlling Disease Vectors						
13	Mosquito abatement to control disease vectors	Goals: 1,2 Priority: High	City of Menan	Timeline: Each yr Cost: \$2000 Funding and/or Resources: City budget	New mitigation actions	Planning & Regulatory
Cybersecurity						
14	Implement off-site backup of city records and information	Goals: 1,2,5 Priority: High	City of Menan	Timeline: 2 yrs Cost: \$5000 Funding and/or Resources: City budget	New mitigation actions	Preparedness & Response

5.5.1 Changes in Mitigation Priorities

The City of Menan did not participate in the last plan, thus there are no changes in priorities since this plan. New mitigation actions identified were prioritized using the Staplee method, with documentation provided in Appendix D. began participating in the plan in 2019. There are no changes in mitigation priorities for this reason.

The city did not identify a strategy specific to Severe Weather and Winter Weather, however, several of the strategies under the category of “General” contribute to mitigation of the impacts of those hazards.

5.5.2 Completed & Removed Mitigation Actions & Projects

Not applicable since the City of Menan did not participate in the last plan.

5.6 City of Rigby Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan’s five-year life.

Table 15. City of Rigby mitigation actions and implementation plan

City of Rigby Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Severe Weather						
1	Portable generator to interface with city's SCADA system and traffic lighting system	Goals: 1,2,5 Priority: High	City of Rigby, Rocky Mountain Power	Timeline: 2-6 yrs Cost: \$100,000 Funding and/or Resources: N/A	New mitigation item	Preparedness & Response
2	Expand storm drains to handle heavy rainfall and/or portable de-watering pumps	Goals: 1,2 Priority: Medium	City of Rigby, Jefferson County R&B,	Timeline: 2-6 yrs Cost: \$2M storm drains/\$75,000 pumps Funding and/or Resources: Mitigation grant	New mitigation item	Structure & Infrastructure Preparedness & Response
3	Heated shop building to house equipment to prevent equipment failure during power outages and/or low winter temperatures	Goals: 1,2,5 Priority: Low	City of Rigby, Jefferson County R&B, Central Fire	Timeline: 2-6 yrs Cost: \$1.5M Funding and/or Resources: N/A	New action item	Structure & Infrastructure Preparedness & Response
4	Retrofit Rigby senior citizen building and Rigby library/police building to provide emergency power and secondary heat supply	Goals: 1,2,5 Priority: Medium	City of Rigby, Rocky Mountain Power	Timeline: 2-6 yrs Cost: \$200,000 Funding and/or Resources: N/A	New action item	Structure & Infrastructure Preparedness & Response
Earthquake						
5	Redundant water tank to provide second source of water supply, loop water system to secure city if failure to the one water tank	Goals: 1, 2 Priority: High	City of Rigby, Dept of Commerce	Timeline: 3-10 yrs Cost: \$5M Funding and/or Resources: N/A	New action item	Structure & Infrastructure

City of Rigby Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
6	Install alternative to single sewer lines to prevent sewage backup; downtime for water/sewer lines to be repaired/replaced.	Goals: 1,2,6 Priority: High	City of Rigby, Dept of Environmental Quality	Timeline: 3-10 yrs Cost: \$3M Funding and/or Resources: N/A	New action item	Structure & Infrastructure
7	Portable backup pumps for water/sewer	Goals: 1,2,5 Priority: Medium	City of Rigby	Timeline: 3-10 yrs Cost: Funding and/or Resources: N/A	New action item	Structure & Infrastructure
8	Conduct seismic study of city and at-risk building and create action plan to earthquake-proof buildings	Goals: 1,2,4 Priority: Low	City of Rigby, IOEM	Timeline: 3-10 yrs Cost: \$50,000 Funding and/or Resources: N/A	New action item	Structure & Infrastructure Planning & Regulatory
Wildland and Structure Fires						
9	Install million gallon capacity water storage tank to ensure water supply for schools and fire-fighting should a major or long-term fire occur in surrounding farmland or in town. Install fire hydrants on outside perimeter of city.	Goals: 1,2,5 Priority: Medium	City of Rigby, Central Fire, Emergency Services	Timeline: 1 yr research and grant apps; 2 yrs construction Cost: \$4M for tank; \$500,000 for hydrants Funding and/or Resources: Community block grants and loans.	New action item	Structure & Infrastructure Preparedness & Response
10	Distribute smoke detectors and educate public about importance	Goals: 1,2,3 Priority: Low	City of Rigby, Central Fire	Timeline: 1 yr research and grant apps; 8 months for distribution Cost: \$25,000 Funding and/or Resources: N/A	New Action Item	Education Programs Preparedness and Response

City of Rigby Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Flood						
11	Improvements to wastewater treatment facility (elevation of oxidation ditches, install redundant lift station, upgrade/hardening and improvement of SCADA system, installation and completion of emergency power at facility and in lift stations.	Goals: 1,2,5 Priority: High	City of Rigby, Jefferson County	Timeline: Construction 2022 Cost: \$2.8M Funding and/or Resources: Pre-disaster mitigation grant, city reserves, USDA Rural Devt, Dept of Commerce Block Grant, USACE Grant	New Action Item	Structure & Infrastructure
	<u>See also Action #2 above related to flooding during heavy rainfall.:</u> Expand storm drains to handle heavy rainfall and/or portable de-watering pumps	Same as #2	Same as #2	Same as #2	New	Structure & Infrastructure
Multi-Hazard (Flood, Earthquake, Severe Weather, Wildfire)						
12	Emergency coop station for disasters	Goals: 1, 2, 5 Priority: Med	City of Rigby, Jefferson County, Central Fire District, Idaho Transportation Dept., National Guard, State Police	Timeline: 1-2 yrs Cost: \$750,000 to \$1M Funding and/or Resources: Grants	New action item	Structure & Infrastructure Preparedness and Response

5.6.1 Changes in Mitigation Priorities

The City of Rigby did not participate in the last plan, thus there are no changes in priorities since this plan. New mitigation actions identified were prioritized using the Staplee method, with documentation provided in Appendix D. began participating in the plan in 2019. There are no changes in mitigation priorities for this reason.

The city did not identify a strategy specific to Wildfire, however, several of the strategies under the category of “General” contribute to mitigation of the impacts of those hazards.

5.6.2 Completed & Removed Mitigation Actions & Projects

Not applicable because the City of Rigby did not participate in the last plan.

5.7 City of Ririe Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan’s five-year life.

Table 16. City of Ririe mitigation actions and implementation plan

City of Ririe Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources		2019 Status	Mitigation Type
Severe Weather							
1	Update Hazard Section in the Comp Plan for Severe Weather	Goal: 1,2,4 Priority: Routine	P&Z administrator	Timeline: 2020 Cost: n/a Funding and/or Resources: City, as part of comp plan update		Carryover from 2008 plan; Almost completed, update of Comprehensive plan expected at end of 2020	Planning & Regulatory
2	Remove trees at risk for falling in high winds and backup power for lift stations	Goal: 1,2,3,5 Priority: Medium	City, property owners	Timeline: 5 yrs Cost: \$5000. Funding and/or Resources: City, property owners		New mitigation action	Preparedness & Response Education Programs
3	Educating population on severe weather actions (running water to avoid frozen pipes and not parking on snow routes)	Goal: 1,2,3 Priority: Medium	City clerk and staff, police on enforcement of snow route parking ordinance	Timeline: 3 yrs Cost: \$5,000 Funding and/or Resources: General Fund		New mitigation action	Education Programs Preparedness & Response
Earthquake							
4	Add seismic safety standards to planning and zoning ordinance	Goal: 1,2,4 Priority: Low	City Planning and Zoning, City Council	Timeline: 2 yrs Cost: \$500 Funding and/or Resources: General Fund		New mitigation action	Planning & Regulatory
Flooding							
5	Improve storm water drainage and put in new drains 1 st west	Goal: 1,2 Priority: High	City council	Timeline: 2 yrs Cost: \$20,000 Funding and/or Resources: Grant from Ltac/Lrip		New mitigation action	Structure & Infrastructure

City of Ririe Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Wildland and Structure Fire				Timeline: 2 yrs		
6	Develop a plan for grain elevator fire	Goal: 1,2,4 Priority: Low	Central fire (lead), elevator owners as partners	Cost: \$200 Funding and/or Resources: property owners, city match, grants	New mitigation action	Planning & Regulatory Preparedness & Response

5.7.1 Changes in Mitigation Priorities

The City of Ririe completed most of their mitigation actions from the last plan. New actions were identified and prioritized using the Staplee method. Worksheets used for prioritizing are provided in Appendix D.

5.7.2 Completed & Removed Mitigation Actions & Projects

Table 17. City of Ririe completed or removed mitigation actions

Mitigation Action	Status	Notes
30. Harden canal head gates and bridge	Completed	
31. Place restraining hardware on the City Library shelves	Completed	
32. Harden the City water storage tank	Completed	
33. Encourage private property owners to install and maintain smoke detectors on all levels of residences and to place detectors in bedrooms	Completed	
34. Initial new booster pumps	Completed	

5.8 City of Roberts Mitigation Actions & Implementation Plan

The following table shows the specific actions and projects to be implemented over the plan's five-year life.

Table 18. City of Roberts mitigation actions and implementation plan

City of Roberts Action Item		Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Multiple Hazards (Wildfire, Flood)						
1	Acquire and build greenspace to protect City from wildfire and floods	Goal: 1,2,4,6 Priority: High	Lead: City of Roberts Partners: Private landowners, ID Fish&Game, AGRA, Garden Club	Timeline: 2024 Cost: \$200,000 Funding and/or Resources: Mitigation grants, community forest	New	Planning & Regulatory Structure and Infrastructure
Severe Convective Weather						
2	Replace roof of community building and evaluate and remove trees that are vulnerable to high winds	Goal: 1,2,6 Priority: Low	Lead: City of Roberts Partners: Lion, Garden Club, AGRA, Community Christians group, Hireable Haunts	Timeline: 2023 (Roof), 2025 (Trees) Cost: \$ 250,000 (roof), \$50,000 (trees) Funding and/or Resources: PDM grants, HGM, CHC, internal budget	New	Structure and Infrastructure
Structure Fire						
3	Develop plan for grain elevator fire & BJ's Bayou; implement fire fighter recruiting	Goal: 1,2,4,6,7 Priority: Medium	Lead: Roberts Fire Partners: Central Fire, Idaho Falls Fire, Pasley Grain	Timeline: 2023 Cost: \$3,000 Funding and/or Resources: Business owner, city, grants	New	Preparedness & Response Planning and Regulatory
Severe Winter Weather						
4	Purchase generator for emergency power at Mustang Events Center (emergency shelter)	Goal: 1,2,6 Priority: High	Lead: City of Roberts Partners: Jefferson County, Red Cross	Timeline: 2026 Cost: \$100,000 Funding and/or Resources: PDM, internal funds	New	Preparedness & Response
Flooding						
5	Protect City from river and canal flooding by completing and improving control structures, levees and headgates	Goal: 1,2,6 Priority: High*	Lead: City of Roberts Partners: Landowners, canal company, Army Corp of Engineers, County	Timeline: Not given Cost: \$300,000 Funding and/or Resources: ACOE, FEMA Flood Control District, grants	New	Structure and Infrastructure

City of Roberts Action Item	Goals & Priority	Lead Agency, Partners	Estimated Timeline, Cost, & Resources	2019 Status	Mitigation Type
Seismic and Geologic					
6	Make community more earthquake safe by hardening water and wastewater buildings and line Goal: 1,2,6 Priority: High	Lead: City of Roberts, Keller Associates	Timeline: 2025 Cost: \$500,000 Funding and/or Resources: IDEQ Block grants, mitigation grants	New	Structure and Infrastructure Preparedness & Response
Cybersecurity					
7	Create and store backup information off-site or in secure area Goal: 1,2 Priority: High	Lead: City of Roberts	Timeline: 2021 Cost: \$1000. Funding and/or Resources: Internal budget	New	Preparedness & Response

5.8.1 Changes in Mitigation Priorities

The City of Roberts did not participate in the last plan, thus there are no changes in priorities since this plan. New mitigation actions identified were prioritized using the Staplee method, with documentation provided in Appendix D. began participating in the plan in 2019. There are no changes in mitigation priorities for this reason.

5.8.2 Completed & Removed Mitigation Actions & Projects

Not applicable because the City of Roberts did not participate in the last plan.

VI. Mitigation Capabilities

6.1 Overview

Each community has a unique set of capabilities, including authorities, policies, programs, staff, funding, and other resources available to accomplish mitigation and reduce long-term vulnerability. This section provides an overview of these capabilities, including state and federal capabilities that local officials can utilize in hazard mitigation, the National Flood Insurance Program (NFIP), and an assessment of the capability types completed by adopting jurisdictions.

6.1.1 Summary of Revisions

The 2019 update incorporated this section into the plan. Points to note:

- Incorporated the former plan's Floodplain Management section
- Reviewed and summarized relevant Federal and State planning and regulatory capabilities related to hazard mitigation
- Reviewed and summarized county and community planning and regulatory capabilities related to hazard mitigation
- Incorporated National Flood Insurance Program (NFIP) statistics and discussion on jurisdictional participation and future compliance

6.1.2 FEMA Requirements

This section adheres to and fulfills the following regulations:

- 44 CFR §201.6(c)(3) – A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs, and resources, and its ability to expand on and improve these existing tools.
 - (ii) – A section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.
- 44 CFR §201.6(c)(4) – The plan shall include the following:
 - (ii) – A process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, where appropriate.

6.2 Federal & State Planning & Regulatory Capabilities

A number of federal and state regulations and policies form the legal framework in which to implement Jefferson County's hazard mitigation goals and projects. A list of these regulations and plans is presented below:

- Federal
 - The Federal Civil Defense Act of 1950
 - Public Law 96-342, The Improved Civil Defense Act of 1980
 - Public Law 91-606, Disaster Relief Act

- Public Law 93-288, The Robert T. Stafford Disaster Relief Act of 1974.
- Presidential Executive Order 11988, Floodplain Management
- Presidential Executive Order 11990, Protection of Wetlands
- State of Idaho
 - Idaho State Code Title 46, Chapter 10, State Disaster Preparedness Act
 - Idaho State Code Title 39, Chapter 71, Hazardous Material Act
 - Idaho State Title 67, Chapter 65, Local Land Use Planning Act
 - Governor's Executive Order 2000-04, April 20, 2000

6.3 National Flood Insurance Program Compliance

In response to the mounting flood-related losses over the 20th century, Congress passed the National Flood Insurance Act (NFIA) of 1968, which instituted the National Flood Insurance Program (NFIP). The NFIP makes flood insurance available to communities that agreed to adopt and enforce floodplain management ordinances, through hazard mitigation planning, site design and construction standards, and land use regulations. The NFIP is based on the premise that populations located in flood-prone areas should bear a substantial portion of the cost to reduce community vulnerability and bear responsibility for a majority of losses should the community experience a flood disaster. The table below details the county and cities' participation and policies in the NFIP.

Table 19 NFIP statistics

Community Name	NFIP Status	CRS Status	Flood Claims	Claims Paid	Repetitive Loss Properties	Policies In-force	Insurance In-force Whole	Written Premium In-force
Jefferson County	Yes	No			2 on private property	44	\$12,664,500	
City of Lewisville	No	No						
City of Menan	No	No						
City of Rigby	No	No						
City of Ririe	No	No						
City of Roberts	Yes	No				1	\$350,000	

Policy & Claim Statistics for Flood Insurance, Policy Statistics as of 5/18/20, retrieved from <https://www.fema.gov/policy-claim-statistics-flood-insurance>

Jefferson County most recently updated its Floodplain Ordinance in 2016 and one of the mitigation strategies described in the previous chapter includes an update to the Subdivision Ordinance. Some of the topics to be reviewed will include requiring new subdivisions and development proposals with more than 50 lots or larger than five acres to include Base Flood Elevations (BFEs) and incorporate parts of the recommended Idaho Model Flood Damage Prevention Ordinance.

The five cities participating in the plan are all quite small (the largest, Rigby, has a population of 4000) and do not have their own floodplain ordinance, thus they rely on the county for floodplain management assistance. Another mitigation strategy identified by the County is to develop a floodplain management plan, in partnership with all 5 cities. Jefferson County will also continue to work with cities in educating the public, to include the importance of designing water supply systems and sanitary

sewage systems to minimize and/or eliminate infiltration of flood waters. Jefferson County will continue to enforce its Flood Damage Prevention Ordinance and continue to promote floodplain education and safety within the communities of Jefferson County and work with FEMA and the NFIP.

According the state floodplain manager (communication on September 23, 2020), there are two repetitive losses in the unincorporated part of the county. The location of these properties is unknown to county officials and that is protected information. There are no repetitive losses in any of the 5 participating cities.

6.4 Jefferson County Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by county representatives. The tables detail the county's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 20. Jefferson County mitigation-related capabilities

Capability/Resource		Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	Jefferson County's Planning and Zoning Commission is composed of seven members, appointed by the Board of Commissioners. The Commission reviews all land use applications, conditional use permits, subdivisions and other applications, providing recommendations to the Board of Commissioners. The P&Z Commission is provided with guidance on floodplain development, and may receive future information on addressing and considering other hazards when providing recommendations on future development.
	Local Emergency Planning Committee	The Local Emergency Planning committee is composed of leaders from government, utilities, business, schools and the community. The committee considers and evaluates emergency plans, creates public outreach opportunities, and receives information regarding hazards and response capabilities. The LEPC will assist in community outreach, setting mitigation priorities, and identifying partnerships in carrying out mitigation activities.
	Dedicated maintenance programs to reduce risk	Risk reduction programs include: Public Works: Tree trimming in the right of way, maintenance of sight triangles and removal of vegetation that threatens transportation routes; drainage systems are inspected and cleaned regularly; roadsides are maintained to provide drainage. Bridges, particularly those on major transportation routes are inspected routinely. Windbreaks are maintained at the Solid Waste facilities. Noxious Weeds and Invasive Species Department: Protection of economy and the environment by controlling invasive species of plants and mollusks. Native plants and grasses are encouraged in areas in

	Capability/Resource	Synopsis
		which harmful species have been removed. Public outreach programs are in place to assist private landowners in controlling invasive species and establishing native species. The existing programs may be expanded to assist landowners in evaluating risks on their properties and addressing those risks.
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	Mutual aid agreements are maintained with neighboring jurisdictions, state, and federal agencies. While many focus on response capabilities, other cooperative projects include wildfire mitigation, control of invasive species, and cooperation between the County and municipalities within the county. These agreements enable all agencies to leverage resources in projects, including mitigation, that provide the most benefit. Agreements include: -Tri-County Sheriff's Agreement -Fire Chiefs Agreement - Weed Department MOU with ITD and participation in Upper Snake River Valley Cooperative Weed Management Area - Public Works Agreement – to be adopted in the future.
	Staff	Yes. The Jefferson County Building Official does not specifically look at mitigation. However, the adopted building code he enforces has many mitigation actions built in, namely, fire safety, snow loading, wind shear, earthquake, and others. In addition to adhering to the adopted building code, the building department could be instrumental in developing a “hazard-ready” criteria for new homes. Although not required by code, a “hazard-ready” checklist could encourage homeowners to implement safety and preparedness measures from the ground up.
		The full-time Planning & Zoning Administrator also acts as the Floodplain Administrator. The Administrator reviews all requests for development within the floodplain, and maintains compliance with the National Flood Insurance Program.
		The full-time Emergency Manager is trained on hazard mitigation and oversees mitigation planning, funding, and implementation throughout the county. In addition, the Emergency Manager provides assistance to municipalities as requested.
		Jefferson County employs a full-time Community Planner. The planner is not currently trained in hazard mitigation, but that training will be offered in the future. The Planner can assist in implementing future

Capability/Resource		Synopsis
Technical		mitigation actions by utilizing flood plain data and the WUI plan in his/her planning function.
	Civil Engineer	Jefferson County employs a full-time Civil Engineer as the Public Works Administrator. The Engineer utilizes his expertise to identify possible mitigation actions and cost-effective, feasible solutions for mitigation needs.
	GIS Coordinator	Jefferson County contracts for part-time GIS Coordination. The GIS Coordinator is not currently trained in hazard mitigation, but training will be offered in the future. Geospatial information has many applications in mitigation, from identifying affected properties to mapping public outreach efforts. The GIS Coordinator will continue to be an instrumental part of mitigation planning.
	Warning systems and/or services	a) AlertSense – Administered by Jefferson County Sheriff’s Office. System could be expanded by increasing enrollment, and creating special contact groups within the warning system. b) Outdoor Warning – Available in Rigby, Ririe, and Menan. The Sheriff’s Office is working to tie the systems together with a central control at the Sheriff’s Office, each with a local override.
	Hazard data & information	Hazard data is maintained by the GIS Department, and within the Office of Emergency Management. For future use, the hazard data could be maintained in a more formal system and tied to response plans and mitigation actions.
	Grant-writing expertise	The Emergency Manager has grant writing experience. This experience is useful in collecting and analyzing data, searching for funding sources, and obtaining additional funding for mitigation actions.
	Hazus expertise	HAZUS analysis expertise is not currently contained within Jefferson County. Because of the relative infrequency of hazard events, it is more cost effective to contract as needed for hazard analysis.
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	a) CERT: Involved in the LEPC; assists with public outreach and education initiatives. b) ARES/RACES: Continues to augment both emergency response and civil communications. Local operators provide technical expertise and education opportunities. Operators active in many community groups connect the groups for both warning and response across the entire county. c) Lion’s Club/Rotary Club: Provides outreach to vulnerable populations such as the elderly or those affected by poverty. d) The Church of Jesus Christ of Latter-day Saints, Crown of Life Lutheran Church: provide a robust network for public outreach and education. Interfaith working group was formed to explore preparedness issues in the community. Churches may continue to assist with public outreach efforts.

Capability/Resource		Synopsis
		e) The Giving Cupboard Food Pantry: Could be a source to provide outreach and education to at-risk populations. f) Sheriff's Citizen Resource Committee: Provides citizen input and support for law enforcement functions.
	Ongoing public education or information programs	Ongoing training is provided by both CERT and the ARES/RACES organizations. The County hosts an annual preparedness expo. Mitigation programming at the expo includes personal preparedness, home evaluation, home and life insurance programs, and others. The University of Idaho Extension Office in Jefferson County provides ongoing community education on a variety of topics. Hazard preparedness could be included in its programming.
	Natural disaster or safety related school programs	The three school districts in Jefferson County maintain active drill schedules, and routinely practice evacuation, shelter-in-place, and communications programming. There are presently no natural disaster education programs, other than what is given as part of science curricula. Future programming might include home & school safety evaluation for seismic and weather events, severe weather drills, and driver education for disaster preparedness.
	Storm Ready certification	Jefferson County became StormReady June 1, 2010, and intends to maintain certification.
	FireWise Community certification	No; Jefferson County does not maintain FireWise Communities certification. There has been some interest, particularly in the Heise (unincorporated) area in fire safety organization and instruction. We will pursue FireWise certification within the next five years.
	Public-private partnerships	There has been some preliminary discussion of Jefferson County partnering with a private company for rural broadband service, but the agreement has not been formalized. Otherwise, there are currently no public/private partnership initiatives in Jefferson County. It is possible that some partnering may take place between the County and utility companies or health care providers, but those partnerships have yet to be explored.
Financial		
Funding Resources	Funding for capital improvement projects	Jefferson County does maintain funding for capital improvement projects. In both 2017 and 2018, Jefferson County has used county funds for levee armoring. Hazard mitigation may be considered as a part of every capital improvement project by creating harmony between the mitigation plan, comprehensive plan, and budget planning.

Capability/Resource	Synopsis
Authority to levy taxes for specific purposes	Yes; Jefferson County maintains authority to levy taxes for specific purposes. In the past, the creation of a mosquito control district and the current practice of levying for the Noxious Weed and Invasive Species Department are ways that tax levies have been used for mitigation. It is unlikely that the County will initiate additional tax levies for mitigation, unless a specific, targeted threat emerges or if the County is required to do so by state statute.
Funding through other federal funding programs	Yes; Jefferson County participates in grant programs through the Department of Homeland Security. Other federal funding sources include Payment in Lieu of Taxes, and agreements with federal agencies for certain law enforcement functions. Mitigation was a part of the recovery from 2017 flooding west of Roberts, and federal and state funding assisted in the costs of additional drainage, water handling, and armoring in the area. Jefferson County would use DHS funding for mitigation. Other federal sources are committed to other functions within the County.
Impact fees for new development	Yes; Jefferson County collects impact fees for new development, as outlined in the Capital Improvement Plan. Fees have not been used specifically for mitigation projects. As the CIP is due for revision, the County can ensure that there is correlation between capital improvement projects funded through impact fees and the objectives of the All-Hazards Mitigation Plan.
Stormwater utility fee	No; There is no stormwater utility fee collected in Jefferson County, and it is unlikely that one would be adopted in the next five years.
Incur debt through general obligation bonds and/or special tax bonds	Jefferson County has the ability to incur debt through general obligation bonds and/or special tax bonds. There are no bonds currently outstanding. Jefferson County has no plans to incur future debt through bonding, and would not likely pursue bonding for a specific mitigation project. However, mitigation will be considered in each capital improvement project.
Incur debt through private activities	Yes; There is currently a debt as the current courthouse (2007) is paid off. However, this is not a normal practice for the Jefferson County, and would be an unlikely funding mechanism for mitigation projects.
Funding through a Community Development Block Grant	Jefferson County has not pursued funding through the CDBG program. However, this would be a potential funding source for qualified projects.
Funding through any state funding programs	State funding sources include waterways grant and highway safety grants to the Sheriff's Office. This money would not be used for mitigation. Parks and Recreation grants have been used to improve recreation facilities, but cannot be used directly for mitigation. Due to the 2017 state disaster declaration for winter flooding, state money was used for mitigating future flood events west of Roberts.

Planning & Regulatory

Capability/Resource		Synopsis
Planning & Plans	Comprehensive Plan	Jefferson County Comprehensive Plan. The Planning and Zoning Department is responsible for its development/update. Chapter 9, page 51, addresses “Hazardous Areas” with hazards being: Seismic, Flooding, Avalanche/Landslide, Wildfire, and Hazardous Materials.
	Capital Improvements Plan	Yes; Jefferson County, Idaho Impact Fee Study and Capital Improvement Plan, January 2009. The Planning and Zoning Department is responsible for its development/update. Hazards are not specifically referenced, although law enforcement and fire districts are recipients of Impact Fees. All improvements will be considered with a hazard mitigation component, and priorities for projects will in part be determined by mitigation priorities.
	Economic Development Plan	No; However, Economic Development is addressed in Comprehensive Plan. In addition, Jefferson County is associated with the Regional Development Alliance and Development Company. Both entities have regional economic development plans which include Jefferson County. An additional plan is not likely in the next five years
		Yes; Jefferson County Emergency Operations Plan, 2013. The Office of Emergency Management is responsible for its development/update.
	Local Emergency Operations Plan	Section III: Hazard-Specific Annex lists the following hazards: Bomb Threat & Civil Disobedience; Communicable Disease; Earthquake; Flood; Hazardous Materials; Radiological; Landslide; Power Failure; Severe Summer Weather; Severe Winter Weather; Terrorism; Major Transportation Incident; and Wildfire.
		Mitigation actions are listed in the EOP by Emergency Support Function (ESF). Using the actions listed specifically in the mitigation plan, the EOP will direct which agencies are responsible for which specific actions.
	Transportation Plan	Yes; Rigby/Jefferson County Transportation Plan, November 2007. Public Works is responsible for its development/update. Hazards are not addressed in the Transportation Plan. Although the Transportation Plan does not address specific hazards, it does identify critical infrastructure for the movement of goods and people. The critical infrastructure will be considered a priority for mitigation projects that involve protecting transportation routes.
	Stormwater Management Plan	No; There is no need for a stormwater management plan in Jefferson County.
Building Codes, Permitting, & Inspections	Community Wildfire Protection Plan	Yes; Jefferson County – Idaho Wildland/Urban Interface Fire Mitigation Plan, September 2004. The Office of Emergency Management is responsible for its development/update.
	Building codes	Yes; Jefferson County has adopted the 2012 International Building Code and the 2012 Residential Code. Jefferson County adopted building standards

Capability/Resource		Synopsis
Land Use Planning & Ordinances		under the IBC/IRC for seismic, wind, snow load, extreme temperatures, and frost depth considerations for the region.
	ISO-rated fire dept.	Yes; in Central Fire District 2018.
	Zoning ordinance	Yes; Jefferson County Zoning Ordinance, Amended September 15, 2015. The zoning ordinance may be amended to reflect the priorities of the Comprehensive Plan and All-Hazards Mitigation Plan.
	Subdivision ordinance	Yes; Jefferson County Subdivision Ordinance, 2006, 2008, 2014. Hazards addressed in ordinance: Section 3-5-3-2: (B): Areas having soil, geology or hydrology hazards shall not be developed unless it is shown that: 1) The limitations can be overcome; 2) That hazard to life or property will not exist; 3) That the safety, use or stability of a public way or drainage channel is not jeopardized; and 4) That the natural environment is not subjected to undue impact. Section 3-5-8: Subdivision within an Area of Critical Concern (A) Designation of Areas of Critical Concern: Hazardous or unique areas may be designated as an area of critical concern by the county commissioners or by the state of Idaho. Special consideration shall be given to any proposed development within an area of critical concern to assure that the development is necessary and desirable and in the public interest in view of the existing unique conditions. Hazardous or unique areas that may be designated as areas of critical concern are as follows: 1) Earthquake location; 2) Unstable soils; 3) Unique animal life; 4) Unique plant life; 5) Scenic areas; 6) Historical significance; 7) Flood plain; 8) Areas within the area of county impact zone but outside of county boundaries; and 9) Other areas of critical concern.
	Floodplain ordinance	Yes; Flood Damage Prevention Ordinance, 2016-03. The floodplain ordinance governs all considerations for construction or development within the floodplain. Special consideration will be given for mitigation within floodplain areas.

Primary shortfalls in the county by section:

- **Administrative and Technical capabilities:** lack of training for county employees and contractors in mitigation planning and actions. Need to update the NIMS plan to include mitigation training for key employees. In addition, infrastructure, policy and protocols should be implemented for warning systems within the County.

- **Education and Outreach capabilities:** there is difficulty reaching vulnerable populations through current education efforts. Need to emphasize policies, protocols, and organizations that reach the disabled, elderly, and migrant populations.
- **Financial capabilities:** as a very rural county with limited taxing ability, Jefferson County must carefully prioritize each project and purchase. For this reason, mitigation will be most easily accomplished when couched within high-priority projects. The County will also seek funding that does not depend heavily on the tax base; for example, through federal granting programs.
- **Planning and Regulatory capabilities:** many of Jefferson County's plans are in need of updates. However, this presents a solid opportunity to create better correlation between mitigation efforts and the many plans. As plans are updated, ordinances may also need to be updated to reflect the priorities and objectives of the plans.

Table 21. Jefferson County mitigation-related capability gaps

Capability/Resource		Synopsis
Administrative & Technical		
Technical	Hazus expertise	It is more cost effective to contract as needed for hazard analysis.
Education & Outreach		
Education	FireWise Communities certification	County will pursue FireWise certification within the next five years.
	Public-private partnership initiatives addressing disaster-related issues	Partnerships are being explored, no agreements have been formalized.
Financial		
Funding Resources	Fees for water, sewer, gas, or electric services	The county does not maintain nor identify the need for this funding resource at this time.
	Stormwater utility fee	The county does not maintain nor identify the need for this funding resource at this time.
	Funding through a Community Development Block Grant	The county recognizes that funding through the CDBG program can be a potential funding source for qualified projects.
Planning & Regulatory		
Planning & Plans	Economic Development Plan	Not identified as a need by the County. Economic Development is addressed in Comprehensive Plan.
	Stormwater Management Plan	There is not a need for a stormwater management plan in Jefferson County.

6.5 City of Lewisville Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by the city personnel. The tables detail the city's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 22. City of Lewisville capabilities assessment

Capability/Resource		Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	No; Not likely to form in next 5 years
	Local Emergency Planning Committee	No; Not likely to form in next 5 years
	Dedicated maintenance programs to reduce risk	Public Works: Maintains and trims trees, controls noxious weeds in the public right of way, and sprays to control mosquitoes and other flying insects.
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	Tri-County Sheriffs Agreement and Fire Chiefs Agreement
Staff	Chief Building Official	Yes
	Floodplain Administrator	No; Not likely to have one in the next 5 years
	Emergency Manager	No; Not likely to have one in the next 5 years
	Community Planner	No; role is filled by City Council
	Civil Engineer	No; Not likely to have one in the next 5 years
	GIS Coordinator	No, rely on county GIS system
Technical	Warning systems and/or services	No; the need is filled by the Fire District
	Hazard data & information	No; any occurrences would appear in City Council minutes
	Grant-writing expertise	No; is needed
	Hazus expertise	No
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	No
	Ongoing public education or information programs	City website information dissemination
	Natural disaster or safety related school programs	No
	Storm Ready certification	No; rely on Jefferson County cert
	FireWise Community certification	No
	Public-private partnerships	No
Financial		
Funding Resources	Funding for capital improvement projects	Mosquito abatement equipment; future project will manage liability issues with aging trees
	Authority to levy taxes for specific purposes	Yes; has not been used to date
	Funding through other federal funding programs	No
	Impacts fees for new development	No
	Storm water utility fee	No
	Incur debt through general obligation bonds and/or special tax bonds	No
	Incur debt through private activities	No
	Funding through a Community Development Block Grant	No
	Other federal funding programs	No
	Funding through any state funding programs	No
Planning & Regulatory		
Planning & Plans	Comprehensive Plan (1999)	The City of Lewisville Comprehensive Plan was written in October of 1999 by the City Council
	Capital Improvements Plan	No
	Economic Development Plan	No
	Local Emergency Operations Plan	No; contract with Jefferson County
	Transportation Plan	No

	Capability/Resource	Synopsis
	Stormwater Management Plan	-
	Community Wildfire Protection Plan	No
Building Codes, Permitting, & Inspections	Building codes	2010; International building code
	ISO-rated fire dept.	Yes; in Central Fire District
Land Use Planning & Ordinances	Zoning ordinance	Yes (9-8-2010)
	Subdivision ordinance	No
	Floodplain ordinance	No

Primary shortfalls by section:

- **Technical Resources and Capabilities:** a lack of revenue resources to fill the positions the city lacks, and a lack of community participation in the county sheriffs reverse 911 system.
- **Education and Outreach:** reaching vulnerable residences through technology and education efforts.
- **Financial:** as an extremely rural city with limited taxing ability the city must carefully prioritize each project and purchase.
- **Planning & Regulatory:** Lewisville's ordinances and plans are in need of updating because there is very little to do with Hazard Mitigation within them.

6.6 City of Menan Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by the city personnel. The tables detail the city's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 23. City of Menan capabilities assessment

	Capability/Resource	Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	Yes, volunteer. Reviews and recommends
	Local Emergency Planning Committee	Participate in Jefferson County LEPC
	Dedicated maintenance programs to reduce risk	No
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	No, but may happen over next 5 yrs
Staff	Chief Building Official	No
	Floodplain Administrator	No
	Emergency Manager	No
	Community Planner	No
	Civil Engineer	No
	GIS Coordinator	No
Technical	Warning systems and/or services	Yes, siren on firehouse
	Hazard data & information	No, but there is need, so there may be effort over next 5 yrs
	Grant-writing expertise	No, but there is need
	Hazus expertise	No
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	Yes, Menan Community Activities Committee

	Capability/Resource	Synopsis
	Ongoing public education or information programs	Yes; city website, email
	Natural disaster or safety related school programs	Yes, school drills for lockdown
	Storm Ready certification	Application pending
	FireWise Community certification	Not at present, but likely to pursue in next 5 yrs
	Public-private partnerships	Not at present, but likely to pursue in next 5 yrs
Financial		
	Funding for capital improvement projects	No
	Authority to levy taxes for specific purposes	Yes
	Fees for water, sewer, gas, or electric services	Yes
	Impact fees for new development	No
	Stormwater utility fee	No
Funding Resources	Incur debt through general obligation bonds and/or special tax bonds	No
	Incur debt through private activities	No
	Funding through a Community Development Block Grant	Not at present, but have been awarded in the past
	Other federal funding programs	Not at present
	Funding through any state funding programs	Not at present
Planning & Regulatory		
	Comprehensive Plan (1997)	Yes, City of Menan Comprehensive Plan 2010.
	Capital Improvements Plan	No
	Economic Development Plan	No
Planning & Plans	Local Emergency Operations Plan (2010)	No
	Transportation Plan	Yes, Menan Transportation Plan 2016 though it does not address hazards
	Stormwater Management Plan	No
	Community Wildfire Protection Plan	No
Building Codes, Permitting, & Inspections	Building codes	Yes
	ISO-rated fire dept.	Yes, rated 5
Land Use Planning & Ordinances	Zoning ordinance	Yes
	Subdivision ordinance	Yes
	Floodplain ordinance	No

6.7 City of Rigby Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by the city personnel. The tables detail the city's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 24. City of Rigby capabilities assessment

	Capability/Resource	Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	Yes, P&Z committee is 6 members, appointed by Mayor and Council Reviews all land use applications, conditional use permits, subdivisions and other applications, sole authority on some issues, recommendations to Mayor and Council on others. Also presented with land use ordinance revisions for review/recommendations to Council.

	Capability/Resource	Synopsis
	Local Emergency Planning Committee	City participates in Jefferson County LEPC
	Dedicated maintenance programs to reduce risk	City Public Works handles issues of tree trimming in right of way, code enforcement of weeds, maintenance of sight triangles and enforcement of overgrown vegetation, drainage and crown of streets for drainage done by Public Works, drain system inspections, bridge maintenance and inspection.
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	Mutual aid agreements are maintained with neighboring jurisdictions, state and federal agencies- some programs based on response capabilities, others on cooperative projections including wildfire, mitigation and cooperation between county and cities within the county. Future agreements may include canal companies, power companies and others.
Staff	Chief Building Official	Rigby contracts with Jefferson County for our building official. With the adopted building code, he enforces both Rigby City Codes and the building codes that have mitigation actions built in, including fire safety, snow loading, wind shear, earthquake and others. In addition to adhering to the adopted building code, the bilding dept. could be instrumental in developing a "hazard-ready" set of criteria for new homes. Although not required, this checklist could encourage homeowners to implement safety and preparedness measures.
	Floodplain Administrator	No, city defers to the County for guidance on floodplain issues.
	Emergency Manager	No, by signed agreement with the County, we work with the county's emergency manager
	Community Planner	Yes
	Civil Engineer	No, by arrangement City utilizes the services of staff of Jefferson County.
	GIS Coordinator	No, contracts with Jefferson County for GIS services.
	Other	County Clerk's office, with Indigent and Social Services, can assist to identif and plan for the needs of vulnerable populations. School District #251 also offers displaced and vulnerable student identification. University of Idaho Cooperative Extension can provide training and education in some types of hazard and mitigation activities.
Technical	Warning systems and/or services	Sheriff's office is working to tie systems together with a central control at Sheriff's office, each with a local override. AlertSense system administered by Jefferson County Sheriff's office. Local churches have emergency management plans and phone trees. Local short-band radio groups have formed.
	Hazard data & information	Maintained within County
	Grant-writing expertise	Deputy Clerk and City Planner both have grant writing experience.
	Hazus expertise	No, hazard events do not occur very often and it is more cost effective to contract for services as needed.
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	a) CERT: Involved in the LEPC, assists with public outreach and education initiatives; b) ARES/RACES: Continues to augment both emergency response and civil communications. Local operators provide technical expertise and education opportunities. Operators active in many community groups connect the groups for both warning and response across the entire city; c) Lion's Club/Rotary Club: Provides outreach to vulnerable populations such as the elderly or those affected by poverty; d) The Church of Jesus Christ of Latter-day Saints and Crown of Life Lutheran Church provide a robust network for public outreach and education; e) The Giving Cupboard Food Pantry; f) Sheriff's Citizen Resource Committee provides citizen input and support for law enforcement functions.

Capability/Resource		Synopsis
	Ongoing public education or information programs	Ongoing training is provided by both CERT and the ARES/RACES organizations. City participates in annual preparedness expo. Mitigation programming at the expo includes personal preparedness, home evaluation, home and life insurance programs, among others.
	Natural disaster or safety related school programs	The school district in the City of Rigby maintains active drill schedules and routinely practice evacuation, shelter in place, and communications programming.
	Storm Ready certification	Yes, the City became StormReady certified on June 1, 2010 and intends to maintain certification.
	FireWise Community certification	No
	Public-private partnerships	There have been discussion about the city partnering with a private company for rural broadband service, but the agreement has not been formalized.
Financial		
Funding Resources	Funding for capital improvement projects	No
	Authority to levy taxes for specific purposes	Yes
	Fees for water, sewer, gas, or electric services	Yes
	Impact area fees for new development	Not currently, but Council may explore feasibility in the future.
	Stormwater utility fee	No
	Incur debt through general obligation bonds and/or special tax bonds	City has the ability, but no bonds currently outstanding.
	Incur debt through private activities	No
	Funding through a Community Development Block Grant	Has in the past received support for qualified projects.
	Other federal funding programs	Participates from time to time, currently the only federally funded program in the sewer bond lower interest rate program.
	Funding through any state funding programs	Not currently, but would consider grants for highway safety, safe routes to school, and policy safety.
Planning & Regulatory		
Planning & Plans	Comprehensive Plan	Yes, became effective May 21, 2015. Addresses hazards only briefly and needs to be fleshed out more. Plan is to rewrite beginning in late 2019 and include more specifics on hazards.
	Capital Improvements Plan	Yes, Rigby Public Works does have CIP and it will be incorporated into new Comprehensive Plan. Addresses water, sewer and streets primarily, currently does not address hazards, but partners in HMP are also partners in comprehensive plan (eg., law enforcement, fire districts), so there may be more mitigation planning in CIP in future.
	Economic Development Plan	Yes, Rigby Community Review in 2014 and Rigby Comprehensive plan in 2015 specifically address economic development. There is no stand-alone Economic Devt plan, however.
	Local Emergency Operations Plan (2010)	No, partner with Jefferson County at this time. There is a need for this however, and the Jefferson County EM is working with Rigby P&Z, Rigby Police, Public Works Depts, and Central Fire District to create a comprehensive emergency plan beginning in late 2019 or early 2020.
	Transportation Plan	No, but there is a need, particularly because Idaho Transportation Dept has jurisdiction over several streets and roads in Rigby.

	Capability/Resource	Synopsis
	Stormwater Management Plan	No, but there is a need because of the large canals, occasional large rainstorms and snowmelt. Likely that Rigby will create a SMP through the Public Works Dept and Planning and Building Dept.
	Community Wildfire Protection Plan	No, would like to retain involvement in Jefferson County plan.
Building Codes, Permitting, & Inspections	Building codes	Rigby uses Jefferson County building inspectors as a vendor, using county code (2012 International Building Code and 2012 Residential Code).
	ISO-rated fire dept.	Yes, Central Fire, 2018.
Land Use Planning & Ordinances	Zoning ordinance	Yes, updated frequently
	Subdivision ordinance	Yes, updated frequently
	Floodplain ordinance	City utilizes the Jefferson County Flood Damage Prevention Ordinance, 2016-03.

6.8 City of Ririe Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by the city personnel. The tables detail the city's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 25. City of Ririe Capabilities Assessment

	Capability/Resource	Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	Yes - Community area residents; they review and edit the comprehensive plan, approve permits, hold hearings, and recommend actions to City Council
	Local Emergency Planning Committee	No
	Dedicated maintenance programs to reduce risk	City maintenance: trim trees, pump storm water, clear alleys, clear drains, snow removal, flush hydrants, paint crosswalks and handicap signs
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	Yes; Jefferson County Mitigation Plan, Jefferson County Sheriffs Contract
	GIS Coordinator	No; Jefferson County employs GIS mapping
Staff	Chief Building Official	No
	Floodplain Administrator	No
	Emergency Manager	No
	Community Planner	No
	Civil Engineer	No
Technical	Warning systems and/or services	No; systems maintained by County
	Hazard data & information	No
	Grant-writing expertise	No
	Hazus expertise	No
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	Yes, local Church groups, schools Ham radio group, Central fire district
	Ongoing public education or information programs	Yes, to educate the public on reactions and options for mitigation
	Natural disaster or safety related school programs	Yes

	Capability/Resource	Synopsis
	Storm Ready certification	No
	FireWise Community certification	No
	Public-private partnerships	No
Financial		
Funding Resources	Funding for capital improvement projects	Yes; improve and renovate water wells, improve fire suppression
	Authority to levy taxes for specific purposes	Yes, to improve storm drainage
	Fees for water, sewer, gas, or electric services	Yes, to install security fencing
	Impacts fees for new development	No
	Storm water utility fee	No
	Incur debt through general obligation bonds and/or special tax bonds	Yes, to improve fire protection. Has been used for water and sewer related projects.
	Incur debt through private activities	No
	Funding through a Community Development Block Grant	No
	Other federal funding programs	No
	Funding through any state funding programs	Yes, has been used to improve safety at school bus route/parking area
Planning & Regulatory		
Planning & Plans	Comprehensive Plan (2013)	Yes; City of Ririe Comprehensive Plan
	Capital Improvements Plan	Yes; Ririe City Council is responsible for its development and updates
	Economic Development Plan	No, included in the comprehensive plan
	Local Emergency Operations Plan	No; City of Ririe is included in Jefferson County Plan
	Transportation Plan	Yes; Public Works Department and City Council are responsible for the plan
	Stormwater Management Plan	No
	Community Wildfire Protection Plan	No; Jefferson Central Fire District addresses fire protection
Building Codes, Permitting, & Inspections	Building codes	Yes
	ISO-rated fire dept.	Yes
Land Use Planning & Ordinances	Zoning ordinance	Yes; Ririe Zoning Code 2015
	Subdivision ordinance	Yes; Title 9 Ririe Subdivision Regulations
	Floodplain ordinance	No

Primary shortfalls by section:

- **Administrative & Technical:** -
- **Education & Outreach:** lack of individuals to serve or help with mitigation issues.
- **Financial:** not enough funding to mitigate hazards.
- **Planning & Regulatory:** lack of funding to implement and enforce planning and regulatory codes.

6.9 City of Roberts Mitigation Capabilities Assessment

The tables below were compiled from a questionnaire completed by the city personnel. The tables detail the city's mitigation-related capabilities that reduce hazard impacts or that can be used to implement hazard mitigation activities.

Table 26. City of Roberts Capabilities Assessment

Capability/Resource		Synopsis
Administrative & Technical		
Administration	Dedicated planning commission	Yes
	Local Emergency Planning Committee	No, participate in Jefferson County LEPC
	Dedicated maintenance programs to reduce risk	Yes, but not yet formalized on paper
	Mutual aid agreements (MAAs) and/or memorandums of understanding (MOUs)	Yes, fire depts, sheriff, county, cities of Menan and Lewisville
Staff	Chief Building Official	No
	Floodplain Administrator	No
	Emergency Manager	Rely on County EM
	Community Planner	No
	Civil Engineer	Yes, but only contractor on an as-needed basis for specific projects
	GIS Coordinator	No, rely on county
Technical	Warning systems and/or services	No, could expand by using air raid sirens and/or signal lights on water tower
	Hazard data & information	No
	Grant-writing expertise	No
	Hazus expertise	No
Education & Outreach		
Education	Active local citizen groups or non-profit organizations	Yes, Lions Club, Flower & Garden, 3 churches
	Ongoing public education or information programs	Yes, newsletter and Shaw Alerts
	Natural disaster or safety related school programs	Yes, Fire drills and other drills
	Storm Ready certification	Yes, certification good until 2022
	FireWise Community certification	No
	Public-private partnerships	No
Financial		
Funding Resources	Funding for capital improvement projects	
	Authority to levy taxes for specific purposes	No
	Fees for water, sewer, gas, or electric services	Yes, has been used for maintenance and upgrades
	Impacts fees for new development	No
	Storm water utility fee	No
	Incur debt through general obligation bonds and/or special tax bonds	Yes, for water/sewer
	Incur debt through private activities	No
	Funding through a Community Development Block Grant	No
	Other federal funding programs	No
	Funding through any state funding programs	None at present but past uses have included street funds
Planning & Regulatory		
Planning & Plans	Comprehensive Plan	Yes, includes some guidance on flooding, EMS, fire, transportation
	Capital Improvements Plan	No, but likely over next 5 yrs
	Economic Development Plan	No

	Capability/Resource	Synopsis
	Local Emergency Operations Plan	Yes, City Council creates/updates
	Transportation Plan	Yes
	Stormwater Management Plan	No
	Community Wildfire Protection Plan	No
Building Codes, Permitting, & Inspections	Building codes	Yes
	ISO-rated fire dept.	No
Land Use Planning & Ordinances	Zoning ordinance	Yes
	Subdivision ordinance	Yes
	Floodplain ordinance	No

6.10 Other Planning Mechanisms

Various mechanisms exist for Jefferson County and the adopting jurisdictions to incorporate elements of the mitigation plan and/or mitigation actions items. The following tables assess some of these planning mechanisms as they relate to hazard mitigation:

Table 27. Jefferson County Comprehensive Plan planning mechanism

Jefferson County, Idaho Comprehensive Plan	
Date of Last Revision	2020
Author/Owner	Jefferson County, Idaho
Description	Through the preparation of a Comprehensive Plan, local residents are able to give some direction to the development (“building”) of their community.
Relationship to Hazard Mitigation Planning	The plan includes objectives in the Land Use, Transportation, and Community Design sections related to natural hazard mitigation planning. The Hazardous Area section describes an extensive number of hazards that impact the County including flood, severe weather, landslides, and more. Additionally, in the Land Use section the County aims to continue the enforcement of the IBC 2000 which is also directly correlated to hazard mitigation. The County lists several ways to implement these objectives including adopting and administering zoning and subdivision ordinances, coordinating agency partnerships, requiring reviews of significant development proposals, and coordinating county programs.
Thoughts for Future Hazard Mitigation Incorporation	The County could include hazard maps from the HMP update in the next version of the Comprehensive Plan as well as include objectives related to the hazard mitigation actions listed in the HMP update.
Incorporation into Hazard Mitigation Plan	Plan content used for the capabilities assessment, county profile, and risk assessment. ‘Thoughts for Future Hazard Mitigation Incorporation’ may be used for the creation of new mitigation actions in this HMP update or future updates.

Table 28. Jefferson County Flood Damage Prevention Ordinance planning mechanism.

Jefferson County, Flood Damage Prevention Ordinance	
Date of Last Revision	Flood Damage Prevention Ordinance, 2016-03
Author/Owner	Jefferson County, Idaho
Description	The floodplain ordinance governs all considerations for construction or development within the floodplain.
Relationship to Hazard Mitigation Planning	Special consideration will be given for mitigation within floodplain areas. This ordinance puts forth provisions for flood hazard reduction including, but not limited to standards regarding construction materials and methods, subdivision proposals, the review of building permits and floodway development.
Thoughts for Future Hazard Mitigation Incorporation	The County could include a flood hazard overlay in future ordinance and zoning map updates to where these conditions apply. Maps could be used from the HMP update for reference.
Incorporation into Hazard Mitigation Plan	Ordinance content used for the capabilities assessment. 'Thoughts for Future Hazard Mitigation Incorporation' may be used for the creation of new mitigation actions in this HMP update or future updates.

In addition to the county comprehensive plan and floodplain ordinances, many of the individual city comprehensive plans are in the process of being updated, or will be soon. Through the LEPC and the process of generating this HMP plan, the county, city governments and partners (law enforcement, fire districts) are realizing the need to put hazard mitigation into both comprehensive planning, as well as capital improvement plans and transportation plans. Most cities are not planning to create a flood ordinance at this time but continue to work together through the county floodplain manager.

VII. Plan Maintenance

7.1 Overview

The HMP is a living document that guides action over time, and it is vital the plan is actively engaged and maintained throughout its five-year lifecycle. As conditions change, new information becomes available, or actions are successfully implemented or challenged, plan adjustments may be necessary to maintain relevance and operationality. This section describes the procedures to monitor, evaluate, and update the HMP in addition to continued public involvement in hazard mitigation.

7.1.1 Summary of Revisions

Major revisions made to this section in the 2020 update include:

- Section was reorganized into a discrete section
- The procedures to monitor, evaluate, and update the plan were reviewed and revised
- The procedures for continued public participation were reviewed and revised

7.1.2 FEMA Requirements

This section adheres to and fulfills the following regulations:

- 44 CFR §201.6(c)(4) – The plan shall include the following:
 - (i) – A section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.
 - (iii) – A discussion on how the community will continue public participation in the plan maintenance process.

7.2 Plan Monitoring, Evaluation, & Update

Plan maintenance is the process the planning committee establishes to track the progress of the plan's implementation and to inform future plan updates within a five-year cycle. These procedures help ensure the mitigation strategy is implemented according to the plan; provide a foundation for ongoing hazard mitigation across all participating jurisdictions; standardize long-term monitoring of hazard and risk-related activities; help integrate mitigation into department roles; and maintain momentum through continued engagement and accountability.

Plan maintenance will primarily be coordinated and led by Jefferson County Emergency Management (or an official designee), and will be accomplished through annual meetings in addition to a five-year evaluation. Jefferson County Emergency Management (or an official designee) will schedule, publicize, and lead the annual meetings and the five-year evaluation, with additional coordination undertaken by the official designee of the adopting jurisdictions:

- County Emergency Manager
- City of Lewisville – LEPC representative (Mayor)
- City of Menan – LEPC representative (Mayor)
- City of Rigby – LEPC representative (Mayor, but Clerk and Planner also involved)
- City of Ririe – LEPC representative (Mayor, but Public Works and Planner also involved)
- City of Roberts – LEPC representative (Mayor)

All meeting minutes, press releases, and other documentation of revisions should be kept on record by Jefferson County Emergency Management.

7.2.1 Monitoring Implementation

Plan monitoring refers to charting and tracking the implementation of the plan over time. During the annual meetings, the entities responsible for the mitigation strategy will report on the progress of implementation of actions (Section 2), noting both successes and challenges encountered or foreseen. Monitoring will be captured by the Jefferson County Emergency Manager and compiled into a report to be used in plan updates.

7.2.2 Evaluating Implementation

Evaluating means assessing the effectiveness of the plan at achieving its stated purpose and goals. During the annual meetings and the five-year evaluation, the planning committee in addition to all participating stakeholders will evaluate progress of the following items:

- The number of actions listed in the mitigation strategy completed (see *Section 2. Mitigation Strategies*)
- Integration of hazard mitigation into other planning mechanisms
- Opportunities for new and additional mitigation actions

The annual evaluation will be captured by the Jefferson County Emergency Manager and compiled into a report to be used in plan updates.

7.2.3 Updating the Plan

The plan must be reviewed and revised least once every five years to reflect changes in development, progress in local mitigation efforts, and changes in priorities. The Jefferson County Emergency Manager will be responsible for the five-year update. Prior to the five-year anniversary of plan adoption, the Emergency Manager will seek local, state, and/or federal funding to update the plan (if necessary), will initiate the plan update by convening the planning committee, and coordinate across the adopting jurisdictions and stakeholders to ensure participation and engagement. During the update process, the planning committee in addition to all participating stakeholders will revisit and update the following information:

- Local, state, and/or federal policy related to emergency management, with focus paid to hazard mitigation
- Completed mitigation actions, identify new actions, and conduct a comprehensive evaluation of mitigation priorities and programs
- Identify avenues for successful mitigation implementation, challenges and limitations encountered, and methods to overcome challenges
- Review and update mitigation-related capabilities and resources specific to each adopting jurisdiction and participating stakeholder with roles in emergency management
- Incorporate additional or updated demographic and socioeconomic data of the county and its jurisdictions
- Review and incorporate any new planning documents, ordinances, codes, and regulations that have been developed by the county and its jurisdictions

- Update the hazard profiles—specifically the risk and vulnerability assessments of each hazard and jurisdiction—noting any major changes to the hazard type, location, and extent, or mitigation projects that have altered vulnerability to the hazard
- Local and regional hazard occurrences, specifically those with associated direct and/or indirect losses and repetitive/recurring losses to people, structures, and infrastructure
- Update and/or incorporate additional risk analysis models and data, such as an updated parcel data, new construction projects, development trends, population vulnerabilities, changing risk potential, etc.

7.3 Continued Public Participation

The Jefferson County Commissioners and Jefferson County Emergency Manager are jointly responsible for continued public involvement in hazard mitigation. Additionally, an official designee from each jurisdiction is responsible for coordinating continued public engagement over the five-year lifecycle of the plan:

- County Emergency Manager
- City of Lewisville – Mayor
- City of Menan – Mayor
- City of Rigby – Mayor
- City of Ririe – Mayor
- City of Roberts – Mayor

The designees will hold a public meeting as part of each annual monitoring/evaluation or when deemed necessary by the planning committee. The meetings will provide the public a forum for which they can express concerns, opinions, or ideas about the plan. The County Commissioner’s Offices will be responsible for using county resources to publicize the annual meetings and maintain public involvement through the county’s webpage and local newspapers. The public will have the opportunity to provide feedback about the plan at meetings of the County Board of Commissioners. In addition, copies of the plan will be kept at the County Courthouse. The plan includes contact information for Jefferson County Emergency Management, which is responsible for keeping track of public comments and incorporating public feedback into the plan when necessary.