

**GOODING COUNTY, IDAHO
MULTI-HAZARD MITIGATION PLAN**

**2015
REVISION**



Prepared By
Northwest Management, Inc.

Foreword

“Hazard mitigation is any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards. Mitigation activities may be implemented prior to, during, or after an incident. However, it has been demonstrated that hazard mitigation is most effective when based on an inclusive, comprehensive, long-term plan that is developed before a disaster occurs.”¹

The **Gooding County, Idaho Multi - Hazard Mitigation Plan** was updated in 2015 by the Gooding County MHMP planning committee in cooperation with Northwest Management, Inc. of Moscow, Idaho.

This Plan satisfies the requirements for a local multi-hazard mitigation plan and flood mitigation plan under 44 CFR Part 201.6 and 79.6.

¹ Federal Emergency Management Agency. “Local Multi-Hazard Mitigation Planning Guidance.” July 1, 2008.

David

U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796



FEMA

December 8, 2015

Board of County Commissioners
Gooding County Courthouse
PO Box 417
Gooding, Idaho 83330

Dear Commissioners:

On October 21, 2015, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) approved the *Gooding County, Idaho Multi-Hazard Mitigation Plan* as a multi-jurisdictional local plan as outlined in 44 CFR Part 201. With approval of this plan, the following entities are now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through October 20, 2020:

<i>Gooding County</i>	<i>City of Bliss</i>	City of Gooding
City of Hagerman	City of Wendell	

The list of approved jurisdictions has been updated to include the jurisdiction in italics, which have recently adopted the Gooding County, Idaho Multi-Hazard Mitigation Plan. To continue eligibility the plan must be reviewed, revised as appropriate, and resubmitted within five years of the original approval date.

If you have questions regarding your plan's approval or FEMA's mitigation grant programs, please contact Susan Cleverley, Senior Mitigation Planner with Idaho Bureau of Homeland Security, at (208) 422-6476, who coordinates and administers these efforts for local entities.

Sincerely,

Mark Carey, Director
Mitigation Division

cc: Mark Stephensen, Idaho Bureau of Homeland Security

KM

www.fema.gov

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Chapter 1

Plan Overview

IN THIS SECTION:

- Planning Participants
- Phase I Hazard Assessment
- Goals and Guiding Principles
- Integration with Other Planning Mechanisms

Chapter 1
Plan Overview

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Chapter 1 – Plan Overview

Overview of this Plan and its Development

This regional Multi - Hazard Mitigation Plan is the result of analyses, professional cooperation and collaboration, assessments of hazard risks and other factors considered with the intent to reduce the potential for hazards to threaten people, structures, infrastructure, and unique ecosystems in Gooding County, Idaho. The Gooding County Multi-Hazard Mitigation Plan was originally approved by Idaho Bureau of Homeland Security and the Federal Emergency Management Agency in August 2008. This document serves as the required 5-year update of the Multi-Hazard Mitigation Plan under the Pre-Disaster Mitigation program and will be in effect until 2020. This document assists with the identification and assessment of various potential hazards and helps maintain the County's eligibility for grants and other funding.

The planning team responsible for implementing this project was led by Gooding County Emergency Management. Agencies and organizations that participated in the planning process included:

- Big Wood Canal Company
- Bliss Fire District
- City of Bliss
- City of Gooding
- City of Gooding Planning and Zoning
- City of Hagerman
- City of Wendell
- City of Wendell Fire Department
- Gooding County Building Department
- Gooding County Sheriff's Department
- Gooding Rural Fire District
- North Canyon Medical Center
- Hagerman Fire District
- Idaho Bureau of Homeland Security
- Idaho Department of Lands
- Idaho Transportation Department
- North Side Canal Company
- Northwest Management, Inc.
- South Central Public Health District
- Southern Idaho Regional Communications Center
- USDI Bureau of Land Management
- Wendell Rural Fire District
- Wood River Resource Conservation and Development Council

In the spring of 2014, Gooding County Emergency Management contracted services to update the Gooding County Multi-Hazard Mitigation Plan to Northwest Management, Inc. of Moscow, Idaho.

Phase I Hazard Assessment

The Multi - Hazard Mitigation Plan is developed in accordance with the requirements of the Federal Emergency Management Agency (FEMA) and Idaho Bureau of Homeland Security for a county level pre-disaster mitigation plan. The State of Idaho Hazard Mitigation Plan identifies nine natural hazards affecting the State. In an effort to be consistent, the planning committee developed annexes for the same natural hazards. The hazards addressed in this Plan are:

- ✦ Flood
- ✦ Earthquake
- ✦ Landslide
- ✦ Severe Weather
- ✦ Wildland Fire
- ✦ Terrorism and Civil Unrest

Additional hazard annexes may be added to this Plan as funding allows. The highest priority hazards to be considered for future evaluation are:

- ✦ Hazardous Material Transport and Storage
- ✦ Crop Failure
- ✦ Pandemic

A Phase I Assessment was facilitated with the county planning committee to determine the relative frequency of a hazard's occurrence and the potential impact a hazard event will have on people, property, infrastructure, and the economy based on local knowledge of past occurrences. A matrix system with hazard magnitude on the x axis and frequency on the y axis was used to score each hazard.

Magnitude of Hazards						
Value	Reconstruction Assistance From	Geography (Area) Affected	Expected Bodily Harm	Loss Estimate Range	Population Sheltering Required	Warning Lead Times
1	Family	Parcel	Little to No Injury / No Death	\$1000s	No Sheltering	Months
2	City	Block or Group of Parcels	Multiple Injuries with Little to No Medical Care / No Death	\$10,000s	Little Sheltering	Weeks
2	County	Section or Numerous Parcels	Major Medical Care Required / Minimal Death	\$100,000s	Sheltering Required Neighboring Counties Help	Days
4	State	Multiple Sections	Major Injuries / Requires Help from Outside County / A Few Deaths	\$1,000,000s	Long Term Sheltering Effort	Hours
8	Federal	Countywide	Massive Casualties / Catastrophic	\$10,000,000s	Relocation Required	Minutes

A scoring system (shown above) was used to categorize the relative magnitude each hazard may have on the community. Frequency was rated as “High” for hazards occurring multiple times per year during a 5 year period, “Medium” for hazards occurring every 5 to 25 years, or “Low” for hazards occurring more than 25 years apart.²

The following table summarizes the results of the Phase I Hazard Assessments for Gooding County. The 2015 planning committee rated earthquakes as a lower impact, floods as a lower impact and lower occurrence, and terrorism and civil unrest as having a higher potential impact. The other original hazards remained the same and two new hazards were included.

² Custer County, Idaho. Scoring system partially adapted from the Custer County Multi-Jurisdiction All Hazard Mitigation Plan. 2008. Pp 165-168.

		Magnitude		
		Low	Medium	High
Frequency	Low	Terrorism/Civil Unrest Landslide	Earthquake	
	Medium		Wind Storms	
	High		Severe Weather Flood Drought	Wildland Fire

The inclusion of additional hazards was considered; however, due to funding limitations, participating jurisdictions chose not to assess technological or other hazards until additional funding becomes available. At such a time, the Multi - Hazard Mitigation Plan will be revised to include hazards such as hazardous materials, dam failure, and pandemic.

Goals and Guiding Principles

Federal Emergency Management Agency Philosophy

Effective November 1, 2004, a Multi - Hazard Mitigation Plan approved by the Federal Emergency Management Agency (FEMA) is required for Hazard Mitigation Grant Program (HMGP) and Pre-Disaster Mitigation Program (PDM) eligibility. The HMGP and PDM programs provide funding, through state emergency management agencies, to support local mitigation planning and projects to reduce potential disaster damages.

The new local Multi - Hazard Mitigation Plan requirements for HMGP and PDM eligibility is based on the Disaster Mitigation Act of 2000, which amended the Stafford Disaster Relief Act to promote an integrated, cost effective approach to mitigation. Local Multi - Hazard Mitigation Plans must meet the minimum requirements of the Stafford Act-Section 322, as outlined in the criteria contained in 44 CFR Part 201. The plan criteria cover the planning process, risk assessment, mitigation strategy, plan maintenance, and adoption requirements.

In order to be eligible for project funds under the Flood Mitigation Assistance (FMA) program, communities are required under 44 CFR Part 79.6(d)(1) to have a mitigation plan that addresses flood hazards. On October 31st, 2007, FEMA published amendments to the 44 CFR Part 201 at 72 Federal Reg. 61720 to incorporate mitigation planning requirements for the FMA program (44 CFR Part 201.6). The revised Local Mitigation Plan Review Crosswalk (July 2008) used by FEMA to evaluate local hazard mitigation plans is consistent with the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended by Section 322 of the Disaster Mitigation Act of 2000, the National Flood Insurance Act of 1968, as amended by the National Flood Insurance Reform Act of 2004 and 44 Code of Federal Regulations (CFR) Part 201 –

Mitigation Planning, inclusive of all amendments through October 31, 2007, was used as the official guide for development of a FEMA-compatible Gooding County, Idaho Multi-Hazard Mitigation Plan.³

FEMA will only review a local Multi - Hazard Mitigation Plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). Draft versions of local Multi - Hazard Mitigation Plans will not be reviewed by FEMA. FEMA will review the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will be unable to approve it prior to adoption.

In Idaho the SHMO is:

Idaho Bureau of Homeland Security
4040 Guard Street, Bldg 600
Boise, ID 83705

A FEMA designed plan will be evaluated on its adherence to a variety of criteria, including:

- Adoption by the Local Governing Body
- Multi-jurisdictional Plan Adoption
- Multi-jurisdictional Planning Participation
- Documentation of Planning Process
- Identifying Hazards
- Profiling Hazard Events
- Assessing Vulnerability: Identifying Assets
- Assessing Vulnerability: Estimating Potential Losses
- Assessing Vulnerability: Analyzing Development Trends
- Multi-jurisdictional Risk Assessment
- Local Hazard Mitigation Goals
- Identification and Analysis of Mitigation Measures
- Implementation of Mitigation Measures
- Multi-jurisdictional Mitigation Strategy
- Monitoring, Evaluating, and Updating the Plan
- Implementation Through Existing Programs
- Continued Public Involvement

Planning Philosophy and Goals

Gooding County Planning Philosophy

This effort will utilize the best and most appropriate science from all partners and will integrate local and regional knowledge about natural hazards while meeting the needs of local citizens and the regional economy. As part of the 2014 revision process, each participating jurisdiction in Gooding County assisted in developing the County's Mission, Vision, and Goals Statements with each jurisdiction's respective interests

³ Federal Emergency Management Agency. "Local Multi-Hazard Mitigation Planning Guidance." July 1, 2008.

in mind. Therefore, it was determined the County's statements suited the needs of each jurisdiction. This paragraph serves as each jurisdiction's acceptance of the County's Mission, Vision, and Goals Statements.

Mission Statement

To make Gooding County residents, communities, state agencies, local governments, and businesses less vulnerable to the effects of natural and man-made hazards through the effective administration of hazard mitigation grant programs, hazard risk assessments, wise and efficient infrastructure hardening, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. Our combined prioritization will be 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.

Vision Statement

Promote a countywide hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Gooding County.

Jurisdictional Planning and Mitigation Goals

The following section outlines the goals recognized by each jurisdiction.

Goals:

1. This planning process will involve planning for the natural hazards of Flood, Earthquake, Landslides, Wildland Fire (incorporated from existing CWPP), Severe Weather, and Terrorism & Civil Unrest.
2. Additional hazards will be added to this plan as pre-mitigation planning is completed in the future.
3. 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.
4. Educate communities about the unique challenges of natural hazard preparedness in the county.
5. Reduce the impact of hazard events and potential losses incurred by both public and private residents and entities.
6. Develop land use policies to alleviate potential hazard risks and impacts for future development.
7. Increase county and city participation in the National Flood Insurance Program and strive to reduce premiums by lowering their Community Rating System score.
8. Establish mitigation priorities and develop mitigation strategies in Gooding County.
9. Strategically locate and plan infrastructure projects that take into consideration the impacts of natural hazards.
10. Meet or exceed the requirements of a FEMA Multi - Hazard Mitigation Plan and Flood Mitigation Plan.

Integration with Other Local Planning Mechanisms

During the development of this Multi - Hazard Mitigation Plan several planning and management documents were reviewed in order to avoid conflicting goals and objectives. Existing programs and policies were reviewed in order to identify those that may weaken or enhance the hazard mitigation objectives outlined in this document. The following narratives help identify and briefly describe some of the existing planning documents and ordinances considered during the development of this plan. This list does not necessarily reflect every plan, ordinance, or other guidance document within each jurisdiction; however, this is a summary of the guidance documents known to and recommended for review by members of the planning committee.

Gooding County Comprehensive Plan

The Gooding County Comprehensive Plan (2010) serves as a decision-making framework and policy guide for decisions concerning the future physical development of Gooding County and facilities and services that support that development. It indicates, in a general way, how the County should grow in the next 15 to 20 years. The purpose of the Plan is to guide and balance development in the most efficient, economical and well-planned manner possible.

Planning is an ongoing process. Conditions and priorities change; consequently the plan will be reviewed regularly and revised when necessary. The 14 planning components included in the Gooding County Comprehensive Plan include:

1. Property Rights
2. Population and Growth
3. School Facilities and Transportation
4. Economic Development
5. Land Use
6. Natural Resources and Hazardous Area
7. Public Service, Facilities, and Utilities
8. Transportation
9. Recreation
10. Special Areas or Sites
11. Housing
12. Community and Sustainable Design
13. National Interest Electric Transmission Corridors
14. Implementation

Within each chapter of the comprehensive plan are goals and policies, which help establish development guidelines and public policy. Each chapter also provides a description of existing conditions, historic trends and future projections. Actions recommended to implement and support the goals and policies of the Comprehensive Plan, including but not limited to changes in zoning regulations, processes recommended

for coordination with partnering agencies, and other measures to be undertaken by county staff and others to address issues identified in the Comprehensive Plan.

This MHMP will “dove-tail” with the County’s Comprehensive Plan during its development and implementation to ensure that the goals and objectives of each are integrated. This planning effort fully adopts the goals and objectives of the County’s Comprehensive Plan.

Coordinated Water Resource Management Plan

The Middle Snake River Study Group (1989-1991) was a joint effort among the counties of Gooding, Jerome, Lincoln and Twin Falls to address water quality problems with all surface water in the Middle Snake River Region. The planning document now known as the Coordinated Water Resource Management Plan has been adopted by Gooding, Jerome, Lincoln, Twin Falls and Cassia counties. The plan also authorized the establishment of the Middle Snake Regional Water Resource Commission. The Commission’s duties and responsibilities are set forth in the authorization section of this document. The plan was expanded to include a section on the history of the region and a section on water quantity in 1995. The economic portion of the plan was added in 1996. Ground water quality was incorporated in the plan in 2002. All sections to the plan are reviewed and updated on a regular basis.

Gooding County 2013 Hazardous Materials Flow Study Report

The purpose of this study is to collect and analyze data pertaining to the transportation of U.S. Department of Transportation (DOT) regulated Hazardous Materials in Gooding County, Idaho. This report provides a basis for the planning and implementation of mitigation measures to reduce risks to public and the environment and for hazard specific preparedness activities such as training and equipment selection.

Chapter 2

Planning Process

IN THIS SECTION:

- Description of the Planning Process
- Planning Committee Meetings
- Public Involvement
- Documented Review Process
- Plan Monitoring and Maintenance

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Chapter 2 – Planning Process

Documenting the Planning Process

Documentation of the planning process, including public involvement, is required to meet FEMA’s DMA 2000 (44CFR§201.6(b) and §201.6(c)(1)) for an updated local mitigation plan. This section includes a description of the planning process used to update this plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

The Planning Team

Gooding County Disaster Services Coordinator, Lori Capps, led the planning committee efforts. The Northwest Management, Inc. Project Manager was Brad Tucker. These individuals led a team of resource professionals that included County and City elected officials and staff, fire protection districts, law enforcement, hospital and school district representatives, and public health districts.

The planning committee met with many residents of the County during the community risk assessments and at public meetings. Additionally, the press releases encouraged interested citizens to contact their County Disaster Services Coordinator or attend planning committee meetings to ensure that all issues, potential solutions, and ongoing efforts were thoroughly discussed and considered by the committee. When the public meetings were held, many of the committee members were in attendance and shared their support and experiences with the planning process and their interpretations of the results.

The planning philosophy employed in this project included open and free sharing of information with interested parties. Information from federal and state agencies was integrated into the database of knowledge used in this project. Meetings with the committee were held throughout the planning process to facilitate a sharing of information between cooperators.

Description of the Planning Process

The Gooding County Multi - Hazard Mitigation Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Chapter 1 of this document. The planning effort began by utilizing and convening the countywide LEPC committee.

Northwest Management, Inc. began sending the planning committee sections of the plan to review and update, as well as request information for other sections in June of 2014. Many of these individuals attended the first planning committee meeting personally or sent a representative from their office or organization.

The planning process included seven distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 5 completed throughout the process):

1. **Organization of Resources** – Gooding County and NMI worked together to develop a comprehensive list of potential participants as well as a project timeline and work plan. The 2008 planning committee served as the basis for identifying stakeholders; however, that list was expanded in order to provide a comprehensive review and update of the risk assessments and mitigation strategies during the update process.
2. **Collection of Data** – NMI coordinated with the planning team to gather any new data and information about the extent and periodicity of hazards in Gooding County to ensure a robust dataset for making inferences about hazards.
3. **Field Observations and Estimations** – NMI and the planning team developed risk models and identified problem areas in order to better understand risks, juxtaposition of structures and infrastructure to risk areas, access, and potential mitigation projects. Many of the analyses used in the 2008 plan were reviewed and updated to incorporate new hazard vulnerabilities or changes in development. Additionally, several new risk models and analyses were included in the 2014 update process to better represent actual conditions in Gooding County.
4. **Mapping** – NMI developed a comprehensive database and map files relevant to pre-disaster mitigation control and mitigation, structures, resource values, infrastructure, risk assessments, and other related data. All of the maps and databases were updated as part of the 2014 plan update.
5. **Public Involvement** – NMI and Gooding County developed a plan to involve the public from the formation of the planning committee to news releases, public meetings, public review of draft documents, and acknowledgement of the final updated plan by the signatory representatives.
6. **Strategies and Prioritization** – NMI and the planning team representatives worked together to review the risk analyses and develop realistic mitigation strategies. As part of the 2014 plan update, a record of completed action items as well as a “2014 status” report of projects was included in the revised mitigation strategies for each jurisdiction.
7. **Drafting of the Report** – NMI drafted a final update report and worked with members of the planning team to review each section, incorporate public comments, proceed with the state and federal review processes, and adopt the final document.

Multi Jurisdictional Participation

CFR requirement §201.6(a)(4) calls for multi-jurisdictional planning in the development of Hazard Mitigation Plans that impact multiple jurisdictions. To be included as an adopting jurisdiction in the Gooding County Multi-Hazard Mitigation Plan jurisdictions were required to participate in at least one planning committee meeting or meet with planning team leadership individually, provide a goals statement, submit at least one mitigation strategy, and adopt the final Plan by resolution.

The following is a list of jurisdictions that have met the requirements for an adopting jurisdiction and are thereby included in the Multi - Hazard Mitigation Plan:

- Gooding County

- City of Gooding
- City of Hagerman
- City of Bliss
- City of Wendell

These jurisdictions also participated in the 2008 Gooding County Multi-Hazard Mitigation Plan. This jurisdiction was represented on the planning committee and at public meetings and participated in the development of hazard profiles, risk assessments, and mitigation measures.

The monthly planning committee meetings were the primary venue for authenticating the planning record. However, additional input was gathered from each jurisdiction in a combination of the following ways:

- Planning committee leadership attended local government meetings where planning updates were provided and information was exchanged. Additionally, representatives on the planning committee periodically attended city council meetings to provide municipality leadership with updates on the project and to request reviews of draft material. All of the adopting jurisdictions maintained active participation in the monthly planning committee meetings.
- One-on-one correspondence and discussions between the planning committee leadership and the representatives of the municipalities and special districts was facilitated as needed to ensure understanding of the process, collect data and other information, and develop specific mitigation strategies. NMI representatives emailed and/or called each jurisdiction individually at least once during the planning process to answer questions and request additional information.
- The public meeting was hosted by the community of Gooding. This meeting was attended by involved elected officials, county and municipality representatives. Four members of the public attended.
- Written correspondence was provided at least monthly between the planning committee leadership and each participating jurisdictions updating the cooperators on the document's progress, making requests for information, and facilitating feedback. NMI representatives used an email distribution list of all the stakeholders to announce meetings, distribute meeting minutes, provide draft sections for review, and request information. All of the participating jurisdictions provided comments to the draft document during the data gathering phase as well as during the various committee and public review processes.
- At the request of planning committee leadership, all of the public libraries within the County, hosted copies of the draft Gooding County Multi-Hazard Mitigation Plan and provided staff to be on hand to answer any questions during the public comment phase of the planning process.

Planning Committee Meetings

Gooding County Disaster Services sent a formal invitation to prospective committee members inviting them to the initial project kickoff meeting. Additional members were invited individually as they were identified by the committee.

The following list of people participated in at least one of the planning committee meetings and volunteered time or responded to elements of the Multi - Hazard Mitigation Plan’s preparation. A few participants served on the committee as dual representatives of more than one jurisdiction. Many of the participants were also part of the original 2008 planning committee; however, the update process captured a wider variety of stakeholders than the original version of plan including the highway and irrigation district representatives. A record of sign-in sheets is included in the Chapter 7 Appendices.

Gooding County Participants:

*Indicates Adopting Jurisdiction

Tami Pearson	South Central Public Health District
Wade Gayler	ARC
Chris Taylor	ARC
Tim Peterson	Hagerman Fire/EMS
Levi Diehl	Bliss Fire
Lynn Harmon	Big Wood Canal - AFRD
Morri Hall*	City of Gooding Clerk
Karin Frodin-White	North Canyon Medical Center
Chris Koyle*	Gooding County Sheriff/Disaster Services
Bob Bailey	Wendell Fire
Brandon Covey	Gooding Fire
Loren Wert	North Side Canal Company
Gary Davis	Idaho Bureau of Homeland Security
Lori Capps*	Gooding County Disaster Services

Committee Meeting Minutes

Planning committee meetings were held from June 2014 through December. The minutes and attendance records for each planning committee meeting are included in the Chapter 7 Appendices.

Public Involvement

Public involvement in this plan was made a priority from the inception of the project. There were a number of ways that public involvement was sought and facilitated. In some cases, this led to members of the public providing information and seeking an active role in protecting their own homes and businesses, while in other cases it led to the public becoming more aware of the process without becoming directly involved in the planning.

News Releases

Under the auspices of the Gooding County Commissioners, periodic press releases were submitted to the Times News out of Twin Falls, Idaho. The first press release informed the public that the Multi-Hazard Mitigation Plan process was taking place, who was involved, why it was important to Gooding County, and who to contact for more information. The second press release was in the form of a flyer announcing the public meeting dates and venues, which was submitted to the newspapers as well as distributed to local businesses by committee members. The third press release provided information regarding the public comment period including where hardcopies of the draft could be viewed, the availability of the draft on the Gooding County website, and instructions on how to submit comments. A record of published articles regarding the Multi-Hazard Mitigation Plan is included in the Chapter 7 Appendices.

Figure 2.1. Press Release #1 – Planning Process Announcement.

Media Release

From: Lori Capps, Gooding County Disaster Services
Date: July 11, 2014
RE: Gooding County Multi-Hazard Mitigation Plan Update

Gooding County Set to Update Hazard Risk Plan

Gooding, Id. Gooding County has launched a project to update the Gooding County Multi-Hazard Mitigation Plan. Local agencies and organizations in Gooding County have created a committee to complete the required 5-year updates of these documents as part of the FEMA Pre-Disaster Mitigation program and National Fire Plan and Healthy Forests Restoration Act. The project is being funded through a grant from FEMA.

The planning update will include risk analyses, vulnerability assessments, and mitigation recommendations for the hazards of flood, landslide, earthquake, severe weather, wildland fire, terrorism/civil unrest, massive crop failure, and extended power outage.

Northwest Management, Inc. has been retained by Gooding County to provide risk assessments, hazard mapping, field inspections, interviews, and to collaborate with the planning committee to update the Plans. The committee includes representatives from local communities, rural and wildland fire districts, Idaho Department of Lands, U.S Forest Service, Bureau of Land Management, highway districts, private landowners, area businesses, various Gooding County departments, and others.

One of the goals of the planning process will be to increase the participating jurisdictions' eligibility for additional grants that will help minimize the risk and potential impact of disaster events. The planning team will be conducting public meetings to discuss preliminary findings and to seek public input on the Plans' recommendations. A notice of the dates and locations of these meetings will be posted in local newspapers. Once completed, the updated draft Plans will also be available for public review and comment. For more information on the Gooding County Multi - Hazard Mitigation Plan update, contact Lori Capps, Gooding County Disaster Services, at lcapps@co.gooding.id.us.

Public Meetings

Public meetings were scheduled in one community during the hazard assessment phase of the planning process. Venues for meetings were chosen by the planning team and located in each geographical area in order to provide an adequate opportunity for members of every community to attend without considerable

travel. Public meetings focused on sharing information regarding the planning process, presenting details of the hazard assessments, and discussing potential mitigation treatments.

The public meeting was held in December. This meeting was attended by a number of individuals on the committee and four from the general public. Attendance at the public meeting was low and included several individuals representing the county and some of the city jurisdictions. A record of attendance at public meetings is included in the Chapter 7 Appendices. The slideshow presentation used during the public meetings is also included in the Appendices.

The public meeting announcement was sent to the local newspapers and a flyer was distributed throughout each community by committee members. A record of published articles regarding the public meetings is included in the Chapter 7 Appendices. A sample of the flyer is included below in Figure 2.2.

Figure 2.2. Press Release #2 - Public Meeting Flyer.

Gooding County

Multi—Hazard Mitigation Plan

Public Meeting!

Planning & Zoning Building — December 11th at 7:00 pm

145 7th Ave. E., Gooding

This meeting will address the Multi—Hazard Mitigation Plan being updated for Gooding County. The Plans’ revision is required every 5 years and is being funded through a grant from FEMA. These meetings are open to the public and will include a slideshow presentation from Northwest Management, Inc. and the planning team on the identified hazards and potential improvement and risk reduction projects in Gooding County. Public input is being sought in order to better frame the region’s efforts for hazard mitigation projects, wildland fire protection, resource enhancements, and emergency preparedness.

Meeting will last approximately 1 hour.



For more information on the Gooding County Multi—Hazard Mitigation Plan, please contact Gooding County Disaster Services Coordinator, Lori Capps, at (208)-934-5958.

Learn about the assessments for floods, landslides, severe weather, wildland fire, and earthquakes in Gooding County. Discuss **YOUR** priorities for how local communities can best reduce the impacts of these events.



Public Comment Period

A public comment period was conducted from February 27th to March 18th, 2015 to allow members of the general public an opportunity to view the full draft plan and submit comments and any other input to the committee for consideration. A press release was submitted to the local media outlet announcing the comment period, the location of the Plan for review, and instructions on how to submit comments. Hardcopy drafts were printed and made available at the public libraries in the cities of Gooding, Wendell, and Hagerman. Each hardcopy was accompanied by a letter of instruction for submitting comments to the planning committee. The draft plan was also posted for public review on the Gooding County website homepage. A record of published articles regarding the public comment period is included in the Chapter 7 Appendices.

Figure 2.3. Press Release #3 – Public Comment Period.



Gooding County

Media Release

From: Lori Capps, Gooding County Disaster Services
Date: February 20, 2015
RE: Gooding County Multi-Hazard Mitigation Plan Update

Gooding County Hazard Plans Available for Public Review

The Gooding County Multi-Hazard Mitigation Plan update, has been completed in draft form and is available to the public for review and comment at the locations listed below. The public review phase of the planning process will be open from February 27th, 2015 thru March 18th, 2015.

Gooding Public Library	306 5 th Ave. W. Gooding, ID 83330
Wendell Public Library	157 W. Main Wendell, ID 83355
Hagerman Public Library	290 S. State St. Hagerman, ID 83332

The purpose of the Gooding County Multi-Hazard Mitigation Plan (MHMP) is to reduce the impact of hazards such as floods, landslides, severe weather, wildfire, extended power outage, crop loss, and terrorism/civil unrest on Gooding County residents, landowners, businesses, communities, local governments, and state and federal agencies while maintaining appropriate emergency response capabilities and sustainable natural resource management policies. The MHMP identifies high risk areas as well as structures and infrastructure that may have an increased potential for loss due to a hazard event. The documents also recommend specific projects that may help prevent disasters from occurring altogether or, at the least, lessen their impact on residents and property. The MHMP is being developed by a committee of city and county elected officials and departments, local and state emergency response representatives, land managers, highway district representatives, and others.

The Gooding County MHMP includes risk analysis at the community level with predictive models for where disasters are likely to occur. These Plans will enable Gooding County and its communities to be eligible for grant dollars to implement the projects and mitigation actions identified by the committee. Although not regulatory, the MHMP will provide valuable information as we plan for the future.

Comments on the MHMP must be submitted to the attention of Lori Capps, Disaster Services Coordinator, at lcapps@co.gooding.id.us or mailed to PO Box 417, Gooding, ID 83330 by close of business on March 18th, 2015. For more information on the Gooding County MHMP update process, contact Lori Capps at 208-934-5958.

Continued Public Involvement

Gooding County is dedicated to involving the public directly in review and updates of this Multi - Hazard Mitigation Plan. The County Disaster Services Coordinator, through the planning committee, is responsible for the annual review and update of the Plan as recommended in the “Plan Monitoring and Maintenance” section below.

The public will have the opportunity to provide feedback about the Plan annually on the anniversary of the adoption at a meeting of the County Board of Commissioners. Copies of the Plan will be kept at the County Courthouse as well as Gooding County Disaster Services. The Plan also includes contact information for the Emergency Management Coordinator, who is responsible for keeping track of public comments.

A public meeting will also be held as part of each annual 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 Office will be responsible for using County resources to publicize the annual meetings and maintain public involvement through the County’s webpage and local newspapers.

Documented Review Process

Review and comment on this Plan has been provided through a number of avenues for the committee members as well as for members of the general public. A record of the document’s review process has been established through email correspondence, press releases, published articles, meeting minutes, and meeting sign-in sheets. Proof of these activities is recorded in the Chapter 7 Appendices.

During regularly scheduled committee meetings in 2014, the committee members met to discuss findings, review mapping and analysis, and provide written comments on draft sections of the document. During the public meetings attendees observed map analyses, photographic collections, discussed general findings from the community assessments, and made recommendations on potential project areas.

Sections of the draft Plan were delivered to the planning committee members during the regularly scheduled committee meetings. The completed first draft of the document was presented to the committee during the August planning committee meeting for full committee review. The committee spent several weeks proofreading and editing sections of the draft. Many jurisdictions met individually to review and revise their specific risk assessment and mitigation strategy including the prioritization of action items. Once the committee’s review was completed, the draft document was released for public review and comment. The public review period remained open from February 27th to March 18th, 2015.

Plan Monitoring and Maintenance

As part of the policy of Gooding County in relation to this planning document, this entire Multi - Hazard Mitigation Plan should be reviewed annually (from date of adoption) at a special meeting of a joint planning committee, open to the public and involving all jurisdictions, where action items, priorities, budgets, and

modifications can be made or confirmed. Gooding County Disaster Services (or an official designee of the joint committee) is responsible for the scheduling, publicizing, and leadership of the annual review meeting. During this meeting, participating jurisdictions will report on their respective projects and identify needed changes and updates to the existing Plan. Maintenance to the Plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the Multi - Hazard Mitigation Plan. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

Annual Review Agenda

The focus of the joint planning committee at the annual review meeting should include at least the following topics:

- Update historical events record based on any events in the past year.
- Review county profile and individual community assessments for each hazard and note any major changes or mitigation projects that have altered the vulnerability of each entity.
- Add a section to note accomplishments or current mitigation projects.
- All action items in Chapter 6 will need updated as projects are completed and as new needs or issues are identified.
- Address Emergency Operations Plans – how can we dovetail the two plans to make them work for each other? Specifically, how do we incorporate the County’s EOP into the action items for the regional MHMP?
- Address Updated County Comprehensive Land Use Plans – how can we dovetail the two plans to make them work for each other?
- Incorporate additional hazard chapters as funding allows.

All meeting minutes, press releases, and other documentation of revisions should be kept on record by Gooding County Disaster Services.

Five Year Re-evaluation Agenda

The focus of the planning committee at the five year re-evaluation should include all of the topics suggested for the annual review in addition to the following items:

- Update County demographic and socioeconomic data.
- Address any new planning documents, ordinances, codes, etc. that have been developed by the County or cities.
- Review listed communication sites.
- Review municipal water sources, particularly those in the floodplain or landslide impact areas.
- Redo all risk analysis models incorporating new information such as an updated County parcel master database, new construction projects, development trends, population vulnerabilities, changing risk potential, etc.

- Update county risk profiles and individual community assessments based on new information reflected in the updated models.

All meeting minutes, press releases, and other documentation of revisions should be kept on record by Gooding County Disaster Services.

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Chapter 3

Community Profile

IN THIS SECTION:

- Description of the Region
- Geography and Climate
- Population and Demographics
- Natural Resources
- Hazard Management Capabilities
- Regional Hazard Profile

Chapter 3
Community Profile

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Chapter 3 – Community Profile

Gooding County Characteristics

Gooding County is located in the Snake River Plain of south central Idaho. The County was established on January 28th, 1913 with its county seat at Gooding. Gooding County is predominately made up of rural and agricultural areas with a few small urban developments. The cities of Gooding, Bliss, Hagerman, and Wendell have experienced growth and development. The majority of the development has occurred along the major highways. Most of the industries located in Gooding County are related to agricultural products, their production, harvest, or shipping.

Open spaces, scenic high desert landscapes, mountains, canyons, and rivers characterize Gooding County's countryside and natural resources. The soil and water availability shaped Gooding County's agricultural based history. These natural resources and their protection are a concern to the citizens of Gooding County. By skillfully managing Gooding County's natural resources, future generations may be assured good air quality, clean and plentiful water, and safe living conditions.

Description of the Region

Gooding County is located in the South Central Snake River Plain of Idaho with the Snake River cutting through its heartland. Ownership is mixed between Federal (mainly Bureau of Land Management), state and private owners. The majority of the private land has been developed for agricultural use where seed crops such as alfalfa hay, potatoes, beets, and grains are produced. The public lands are primarily used for grazing and are undeveloped.

Entity	Acres	Percent of Total Area
Private	195,347	42%
Bureau of Land Management	252,461	54%
United States Fish & Wildlife Service	84	<1%
State	19,678	4%
Water	2,427	<1%
Total	469,997	

Geography and Climate

Gooding County lies within the Snake River Plain section of the Columbia Plateau Province where the lava's are the dominant rock exposed. Lava flowed into the synclinal valley of the Snake River area starting during the late Tertiary through recent time as this trough slowly sank. There is an estimated accumulation of at least 2,000 feet of basalt overlaying older rocks at places in the Snake River Plain. Gooding County varies in elevation from 2,800 ft. in the Hagerman Valley to a high of 6,082 ft. at Fir Grove Mountain. Rocks exposed in Gooding County range in age from early Tertiary when the Challis Volcanic flowed over granites, gneiss and sedimentary rocks to present time when streams, rivers, lakes and the wind are depositing sediments. The youngest rock mapped in Gooding County has been named McKinney basalt (Omk) deposited during

recent time from McKinney Butte eight miles northwest of Gooding. Most of the rock outcroppings in the county are of basaltic composition, which tends to be dark brown to black in color. Older and lighter colored Challis (Tov) and Idavada (Tiv) silicic volcanic, however, have been mapped at the surface in this county. Older volcanic, sedimentary, and granite rocks of the Idaho batholith lie buried beneath the lavas. To see these rocks one must venture northward toward the Soldier Mountain.

The Big Wood River and its tributaries flow from northeast to southwest where they ultimately converge with the Snake River between Hagerman and Bliss. The Snake River and its tributaries all provide water for irrigation. Subsequently, most of the communities and agriculture are situated within close proximity to one of these water sources. The Snake River comprises the southern boundary of Gooding County and provides electricity and recreation to numerous people throughout the region.

Climate in Gooding County is generally consistent with other counties located along the Snake River Plain. In winter, the average daily maximum temperature is 40 degrees Fahrenheit and the average daily minimum is 21 degrees. In summer, the average daily maximum temperature is 86 degrees Fahrenheit and the average minimum temperature is 50 degrees. In general the summer days are hot and the nights are cool. Precipitation during the summer months is limited to isolated showers and thunderstorms that produce localized precipitation. Months of July through October represent the lowest average total precipitation recorded and coincide with the peak fire season when summer storms likely occur. Winter conditions usually arrive in mid-November. Snowfall is the primary source of precipitation for the county. Snow levels in the county vary between communities due to elevation.

Demographics and Socioeconomics

The 2010 Census established the Gooding County population at 15,464, which is up from 14,155 in 2000. The population of Bliss in 2010 was 318, Gooding was 3,567, Hagerman was 872, and the population of Wendell was 2,782. Table 3.1 shows historical changes in population among the various communities within Gooding County.

Table 3.1. Historical and Current Population by Community.		
	2000	2010
Bliss	275	318
Gooding	3,384	3,567
Hagerman	656	872
Wendell	2,338	2,782

The 2010 Census reported that ethnicity in Gooding County is comprised of 69% white, 29% Hispanic or Latino, 1% Asian, 2% American Indian, and <1% African American. Approximately 51.3% of residents are male. There are 6,032 occupied housing units in Gooding County.⁴

⁴ US Census Bureau. American FactFinder. Available online at <http://quickfacts.census.gov/qfd/states/16/16047.html>. Accessed July, 2014.

Development Trends

***The following section was taken from the 2010 Gooding County Comprehensive Plan.*

The Gooding County Comprehensive Plan shows that the number of jobs in Gooding County grew steadily between 2004 and 2005, likely due to the farming industry increasing over that period. All remaining industry sectors grew over that time period, and particularly strong growth was experienced in the services industries. Agriculture (Dairies) and Agricultural services showed the highest percentage growth in the 1990's.

The improvement in the unemployment rate and civilian labor force has been remarkable in Gooding County over the last 10 years. The peak year for unemployment was 1996 when the rate reached 4.3 percent. The unemployment rate fluctuated moderately until it dropped to 2.0 percent in 2007, significantly below the state and national average.

Due to the relatively good pay at dairies and the cheese factories, Gooding County has had strong growth in per capita income, an increase of 51 percent, from \$20,502 in 1997 to \$31,069 in 2006. Gooding County ranks 5th out of Idaho's 44 counties in per capita income. Gooding County has the second highest per capita income in south central Idaho after Blaine County.

Land in the County is under a mix of public and private ownership, with a significant amount of land owned by state and federal agencies. Areas of City Impact (or future city planning areas) are the unincorporated areas surrounding existing cities where future development, annexation or incorporation of Gooding County is anticipated to occur. Impact boundary adjustments are made by mutual agreements between the affected jurisdiction and the County and are based on the following criteria established in the Idaho State Code: relationship of local trade area, geographic features and potential for future annexation. Under the current agreements between Gooding County and each of the incorporated cities, any new development within an Area of City Impact is subject to the following conditions.

- The comprehensive plans as negotiated pursuant to the Local Land Use Planning Act (LLUPA) applies within each respective Area of City Impact.
- Gooding County zoning, subdivision and development regulations apply to the unincorporated areas within Gooding County. In the future, city ordinances and/or jointly developed city/county ordinances may be applied in some Areas of Impact as may be negotiated pursuant to LLUPA.

Outside of Areas of City Impact, most land is zoned for a combination of rural residential. The types of uses allowed in these areas include the following:

- Farm and rangeland uses.
- For several years, the only requirement to build on agriculturally zoned property was for the dwelling to be located on a lot of at least one acre in size. This resulted in a scattering of residential uses which appeared as strip developments along major roads and highways or as multi-lot rural subdivisions. The minimum acreage requirement did little to control growth in agricultural areas of the county. Different approaches could offer the county more assurance that farming will continue as the dominant land use in agricultural zoned areas.

- Selected industrial, commercial and resource extraction uses compatible with surrounding residential or agricultural use and consistent with plan policies and locational criteria.
- Transportation Corridors and Improvements.
- Other dedicated open space, park or recreation facilities or areas.

Natural Resources

***The following section was taken from the 2010 Gooding County Comprehensive Plan.*

Gooding County is a diverse ecosystem with a complex array of vegetation, wildlife, and fisheries that have developed with, and adapted to fire as a natural disturbance process. Nearly a century of wildland fire suppression coupled with past land-use practices (primarily agriculture and mining) has altered plant community succession and has resulted in dramatic shifts in the fire regimes and species composition. As a result, some rangelands in Gooding County have become more susceptible to large-scale, high-intensity fires posing a threat to life, property, and natural resources including wildlife and plant populations. High-intensity, stand-replacing fires have the potential to seriously damage soils, native vegetation, and fish and wildlife populations. In addition, an increase in the number of large, high-intensity fires throughout the nation's forest and rangelands has resulted in significant safety risks to firefighters and higher costs for fire suppression.

Fish and Wildlife – The Snake River and other sources of surface water provide important nesting and brood rearing habitat, migratory resting areas, and winter habitat for a wide variety of waterfowl, shore birds, and wading birds. Common breeding and nesting birds associated with this type of habitat include Canada geese, Mallards, Cinnamon, Teal, Great-Blue Herons, double-Crested Cormorants, and Pied-Billed Grebes. Natural vegetation along rivers, streams, and reservoirs (known as riparian areas) are biologically diverse and productive systems. A number of species of special conservation concerns in Idaho are dependent on riparian habitats for breeding, nesting, and foraging. The Snake River and many of its major tributaries are characterized by deeply incised basalt canyons. These steep and rocky canyons provide ideal breeding and nesting habitat for a number of raptors, migratory song birds, and mammals.

Big game animals within the county include the mule deer, elk, pronghorn antelope, mountain lion and bear. Predators within the county are coyotes, bobcats, foxes, bears, wolves and mountain lions. Fur-bearing animals are primarily the muskrat, mink, weasel, raccoon, fox, coyote and bobcat. Non-game or small animals are the jackrabbit, rock chuck, pima rabbit, cottontail rabbit, badger and various other species of small rodents. Game and non-game birds within the county include the pheasant, chukar, Hungarian partridge, sage grouse, California or valley quail and mourning dove. Some bluegrouse, bobwhite, and mountain quail are also found. The birds of prey include hawks, falcons, golden eagles, occasionally bald eagles, great horned owls, burrowing owls, barn owls, kingfishers, pelicans and possibly the osprey.

Vegetation - Vegetation in Gooding County is primarily a rangeland ecosystem. An evaluation of satellite imagery of the region provides some insight to the composition of the vegetation of the area. The full extent of the county was evaluated for cover type as determined from Landsat 7 ETM+ imagery in tabular format, Table 3.3.

The most represented vegetated cover type is Agricultural Land at approximately 35% of the total area followed closely by Basin and Wyoming Big Sagebrush at 34%. The next most common vegetation cover type represented is Perennial Grasslands at 17%. None of the remaining ground cover types total in excess of 10% in any one category (Table 3.3).

Land Cover	Acres	Percent of Total Area
Agricultural Land	164,819	35%
Basin and Wyoming Big Sagebrush	161,481	34%
Perennial Grassland	79,395	17%
Rabbitbrush	22,568	5%
Shrub Steppe Annual Grass Forb	13,618	3%
Grassland	55,836	6%
Non-vegetated	14,586	2%
Developed	5,461	<1%
Sparsely Vegetated	5,113	<1%
Hardwood	2,211	<1%
Conifer-Hardwood	47	<1%

Vegetative communities within the county follow the strong moisture and temperature gradient related to the major river drainages. Limited precipitation results in an arid environment throughout much of the county, limiting vegetation to drought-tolerant plant communities of grass and shrub lands. As moisture availability increases, so does the abundance of shrub species, with sagebrush communities present in the highest elevations where precipitation and elevation provide more available moisture during the growing season.

According to the 2010 Gooding County Comprehensive Plan, the original native vegetation consisted predominately of bluebunch wheatgrass, Nevada bluegrass, basin wildrye, sodforming wheatgrasses, needlegrasses, balsamroot, little sunflower, big and low sagebrushes, and bitterbrush. In the early settlement years, and even in later years, until livestock control was established, heavy use of the range reduced the original cover to its present state which is poor-to-fair condition. Native plant communities converted to annual cheatgrass, eliminating or reducing perennial herbaceous vegetation preferred by livestock and wildlife. In some areas, sagebrush and rabbitbrush densities have increased, which result in increased erosion potential. Higher producing grasses gave way to cheatgrass, squirreltail, other annual grasses and weeds. In some areas sagebrush increased in density and rabbitbrush invaded. These plants are not good forage producers or good erosion control vegetation. The rangeland is an extremely important segment of the economy. It furnishes early spring grazing for sheep and cattle on their way to summer grazing in the higher country, and late fall grazing on the return trip. Part of the range is used throughout the summer and early fall for cattle.

Hydrology

The Idaho Water Resource Board is charged with the development of the Idaho Comprehensive State Water Plan. Included in the State Water Plan are the statewide water policy plan, and component basin and water body plans which cover specific geographic areas of the state (IDEQ 2003). The Idaho

Department of Water Resources has prepared General Lithologies of the Major Ground Water Flow Systems in Idaho.

The state may assign or designate beneficial uses for particular Idaho water bodies to support. These beneficial uses are identified in sections 3.35 and 100.01 - .05 of the Idaho water quality standards (WQS). These uses include:

- **Aquatic Life Support:** cold water biota, seasonal cold water biota, warm water biota, and salmonid spawning;
- **Contact Recreation:** primary (swimming) and secondary (boating);
- **Water Supply:** domestic, agricultural, and industrial; and
- **Wildlife Habitat and Aesthetics**

While there may be competing beneficial uses in streams, federal law requires DEQ to protect the most sensitive of these beneficial uses (IDEQ 2003).

The Snake River borders the county on the south. The lower reaches of the Big and Little Wood Rivers enter Gooding County from the east and join together approximately four miles west of Gooding, forming the Malad River, which empties into the Snake River north of Hagerman. The other main drainages include Clover Creek on the west side of Gooding County, Dry Creek in the middle, and Thorn Creek on the eastern side.

Approximately half of Gooding County lies in the Snake River Aquifer. This aquifer has a large volume of water that results in springs along the Snake River Canyon from Blue Lakes to Bliss. The flow in Gooding County from the springs is approximately 5,588 cubic feet per second. The depth of the ground water varies from approximately 300 feet southeast of Gooding to less than 100 feet south of Wendell. The best ground water aquifers in this area have been in coarse textured alluvium in the valleys of large streams and from the Snake River Basalt's. The younger basalt's are variable in nature but generally have a higher permeability in the vicinity of a fault zone and can be witnessed as a spring discharge at the ground surface from some fault zones in this area. Wells located at higher elevations usually must be drilled relatively deep and many require moderate to high pump lifts from the saturated zone, which lies at an elevation of about 3,400 feet at Gooding. The lowest water table elevation in the county is about 2,600 feet above sea level at the Snake River at the west edge of the county.

Water rights on the Snake River Plain have become a focused state-wide issue and are currently being reviewed in the courts. The water rights adjudication process has resulted in a current moratorium by which no new deep well water rights are being permitted in the county for consumptive uses except for domestic wells. Although the moratorium has been established by IDWR, existing water rights can still be bought or transferred.

Surface water is the main source of water for irrigation use. The main source of surface irrigation water is from the Snake River and is diverted for this purpose at Milner Dam. This includes a system of canals, laterals, and ditches for the American Falls Reservoir No. 2, and Northside Canal Company. The Big Wood Canal System diverts from the Big and Little Wood River water rights. Other smaller systems include Pioneer Reservoir, Clover Creek, Bray Lake, and Hagerman Springs. Reservoirs within the county are Pioneer, Bray Lake, Thorn Creek, Dog Creek, Clear Lakes, Upper and Lower Salmon, and Bliss.

The American Falls Reservoir District No. 2 in Gooding County has water storage rights which average about 444,000 acre feet. The Northside Canal Company services Jerome and Gooding County and has storage rights that include Palisades (116,660 acre feet), Jackson Lake (312,007 acre feet), and American Falls (438,360 acre feet). The Northside Canal Company also has fifteen second feet right on the Big Wood River and rights on Snake River (river flow).

The geology and soils of this region lead to rapid to moderate moisture infiltration. Slopes are moderate to steep, however, headwater characteristics of this watershed lead to a high degree of infiltration as opposed to a propensity for overland flow. Thus sediment delivery efficiency of first and third order streams is fairly low. The bedrock is typically well fractured and moderately soft. This fracturing allows excessive soil moisture to rapidly infiltrate into the rock and thus surface runoff is rare. Natural mass stability hazards associated with slides are low. Natural sediment yields are low for these watersheds. However, disrupted vegetation patterns from grazing (soil compaction) and wildland fire (especially hot fires that increase soil hydrophobic characteristics), can lead to increased surface runoff and debris flow to stream channels.

A significant component of Gooding County's infrastructure is the water sources that are maintained for use by communities. While the Idaho Water Resources Board does not monitor all drinking water supplies in the State, they are charged with maintaining standards on municipal drinking water supplies. These include community water sources, water used in a business, and similar drinking water supplies in the County. Three categories of municipal water are recognized: Groundwater, spring-groundwater, and surface water. The former two are generally considered resistant to surface disturbances such as fire, flood, landslide, and severe weather events. The latter is considered much more influenced by many hazards. Earthquakes can impact all collection types, while landslides that directly contact any of them will have an impact.

Air Quality

The primary means by which the protection and enhancement of air quality is accomplished is through implementation of National Ambient Air Quality Standards (NAAQS). These standards address six pollutants known to harm human health including ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxides.⁵

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority governing air resource management. The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, the Organization for Air Quality Protection Standards (OAQPS) is responsible for setting the NAAQS standards for pollutants which are considered harmful to people and the environment. OAQPS is also responsible for ensuring these air quality standards are met, or

⁵ USDA-Forest Service (United States Department of Agriculture, Forest Service). 2000. Incorporating Air Quality Effects of Wildland Fire Management into Forest Plan Revisions – A Desk Guide. April 2000. – Draft.

attained (in cooperation with state, Tribal, and local governments) through national standards and strategies to control pollutant emissions from automobiles, factories, and other sources.⁶

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in Idaho are governed by a combination of factors. Large-scale influences include latitude, altitude, prevailing hemispheric wind patterns, and mountain barriers. At a smaller scale, topography and vegetation cover also affect air movement patterns. Locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall.

Due principally to local wind patterns, air quality in Gooding County is generally good to excellent, rarely falling below IDEQ pollution standards. However, locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall. All major river drainages are subject to temperature inversions, which trap smoke and affect dispersion, causing local air quality problems. This occurs most often during the summer and fall months and would potentially affect all communities in Gooding County.

Smoke management in Gooding County is facilitated by the Idaho/Montana Airshed Group. This group advises when conditions are appropriate for prescribed burning based on information participating members (burners) supply to them. Gooding County is in the South Idaho Airshed Unit 25. Class I areas in/near Gooding County include Sawtooth Wilderness and Craters of the Moon NM areas. An airshed is a geographical area which is characterized by similar topography and weather patterns (or in which atmospheric characteristics are similar, e.g., mixing height and transport winds). The USDA Forest Service, Bureau of Land Management, and the Idaho Department of Lands are all members of the Montana/Idaho State Airshed Group, which is responsible for coordinating burning activities to minimize or prevent impacts from smoke emissions. Prescribed burning must be coordinated through the Missoula Monitoring Unit, which coordinates burn information, provides smoke forecasting, and establishes air quality restrictions for the Montana/Idaho Airshed Group. The Monitoring Unit issues daily decisions that may restrict burning when atmospheric conditions are not conducive to good smoke dispersion. Burning restrictions are issued for airsheds, impact zones, and specific projects. The monitoring unit is active March through November. Each Airshed Group member is also responsible for smoke management all year.⁷

Hazard Management Capabilities

Gooding County Disaster Services is responsible for the administration and overall coordination of the emergency management program for Gooding County and the cities within the county. The Incident Command System (ICS) is the basis for all direction, control and coordination of emergency response and

⁶ Louks, B. 2001. Air Quality PM 10 Air Quality Monitoring Point Source Emissions; Point site locations of DEQ/EPA Air monitoring locations with Monitoring type and Pollutant. Idaho Department of Environmental Quality. Feb. 2001. As GIS Data set. Boise, Idaho.

⁷ Montana/Idaho Airshed Management Group. 2010. Montana/Idaho Airshed Management System. Available online at <http://www.smokemu.org/>.

recovery efforts. Emergency response and supporting agencies and organizations have agreed to carry out their objectives in support of the incident command structure to the fullest extent possible.

The Gooding County Government Office houses a staff of emergency management personnel trained and dedicated to mitigating the negative impacts of natural and man-made disasters in the County. City offices throughout the county are equally dedicated to reducing catastrophic losses from disasters although their budgets are extremely limited.

Many states, counties and communities in the nation believe they are prepared for natural and man-made disasters, however, not all of them have faced the necessity of testing this belief. Too often, resources are tested beyond the ability of counties and communities to effectively respond, especially when the unexpected occurs. The Idaho Bureau of Homeland Security (IBHS) and FEMA work closely with the counties and communities of Idaho in the form of desktop exercises and preparedness drills in order to increase preparations and abilities of the state’s first responders.

Gooding County and the cities of Gooding County participate in preparedness drills, public education efforts, the implementation and enforcement of planning and zoning policies.

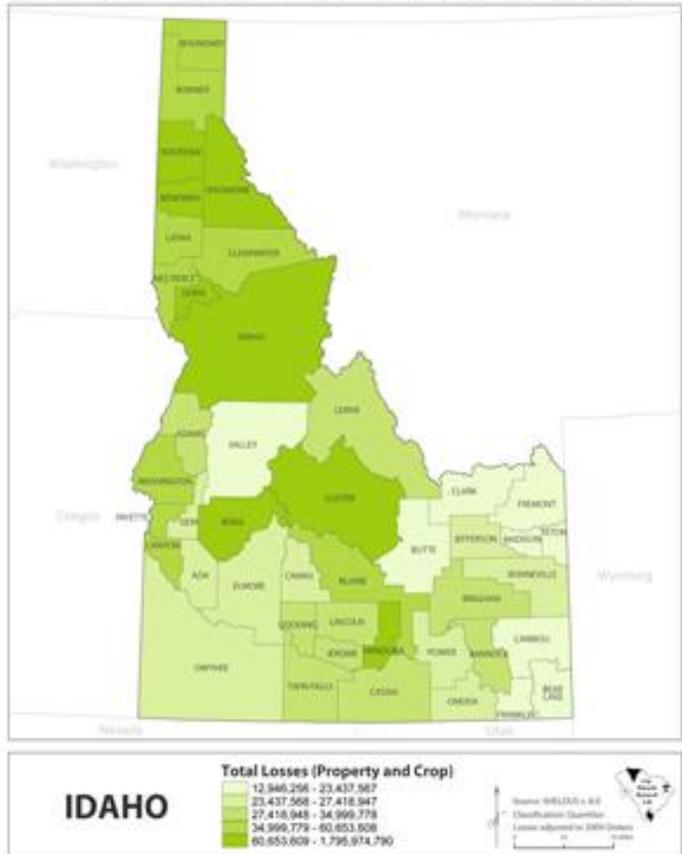
Southern Idaho Regional Communications Center (SIRCOMM) is a Regional Dispatch Center. SIRCOMM is responsible for dispatching Fire, Law Enforcement, and Medical Services for Gooding, Lincoln, Jerome, and Twin Falls Counties and the agencies within these counties. Besides dispatching Emergency Services, SIRCOMM is also responsible for contacting Disaster Services and Public Works departments for emergencies and services.

Regional Hazard Profile

SHELDUS is a county-level hazard data set for the U.S. for 18 different natural hazard event types such as thunderstorms, hurricanes, floods, wildfires, and tornados. For each event, the database includes the beginning date, location (county and state), property losses, crop losses, injuries, and fatalities that affected Gooding County.

The data was derived from several existing national data sources such as National Climatic Data Center's monthly Storm Data publications and NGDC's Tsunami Event Database. With the release of SHELDUS™ 13.1, the database includes every loss causing and/or deadly event between 1960 through

Figure 3.1. Economic Losses from Hazard Events
Economic Losses from Hazard Events, 1960-2009



present. Between 1994 and 1996, numerous months (June, May, and July of 1994, May and August of 1995, and February, May, October, and November 1996) are undergoing intensive QA/QC and may not currently reflect the true losses from disasters.

Prior to 2001, property and crop losses occurring on the same day within the same geography (i.e. county) are aggregated by hazard type. For events that covered multiple counties, the dollar losses, deaths, and injuries were equally divided among the counties (e.g. if 4 counties were affected, then each was given 1/4 of the dollar loss, injuries and deaths). Where dollar loss estimates were provided in ranges (e.g. \$50,000 - 100,000) - such as in NCDC Storm data until 1995 - the lowest value in the range of the category was used. This results in the most conservative estimate of losses during the time period of 1960-1995. Since 1995 all events that were reported by the National Climatic Data Center (NCDC) with a specific dollar amount are included in the database.⁸

It is important to keep in mind that the SHELDUS database does not include every hazard event that occurred within an area. This means that some local events may not be included in this database.

Since 1960, there have been almost 33 hazard related injuries primarily due to severe weather events. During this time period there have been 1.25 fatalities. These incidents are also primarily due to severe weather events. Traffic accidents are likely the most common cause of injuries and fatalities from hazard-related events. In the case of multi-county events, SHELDUS™ distributes losses equally between the affected counties. For instance, a winter storm event affecting Gooding and Jerome County and causing 5 fatalities will be entered into the database as an event affecting Gooding County with 2.5 and Jerome County with 2.5 fatalities.

⁸ HVRI. Natural Hazards Losses 1960-2008 (SHELDUS). Hazards & Vulnerability Research Institute. University of South Carolina. Columbia, South Carolina. Available online at <http://webra.cas.sc.edu/hvri/>. February 2010.

Figure 3.2. Summary of Property Damages in the SHELDUS Hazard Profile.

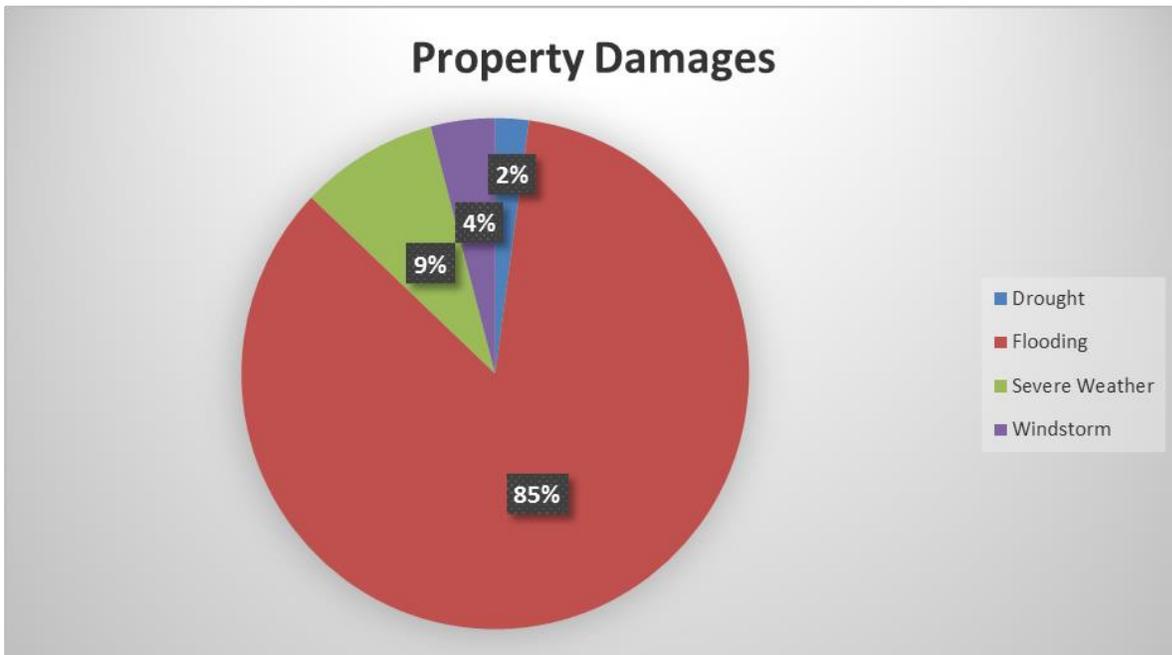
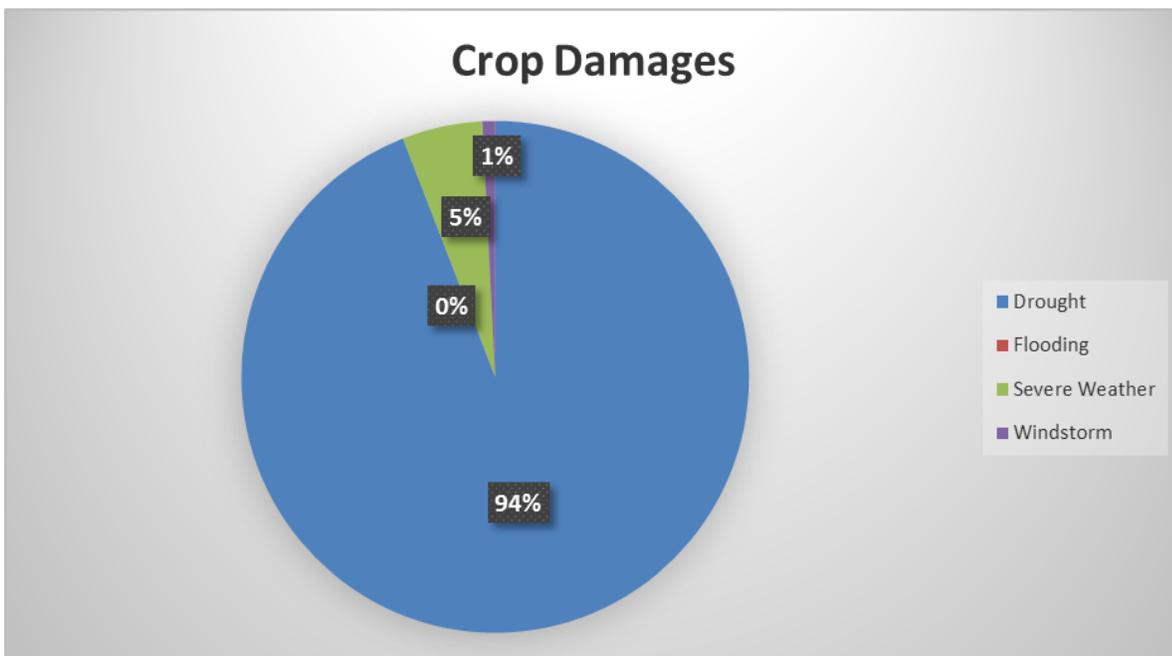


Figure 3.3. Summary of Crop Damages in the SHELDUS Hazard Profile.



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Chapter 4

Hazard Profiles

IN THIS SECTION:

- Flood Annex
- Earthquake Annex
- Landslide Annex
- Severe Weather Annex
- Wildland Fire Annex

Chapter 4
Hazard Risk
Assessment

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Chapter 4 – Hazard Profiles

Regional and Local Hazard Profiles

Flood

Floods have been a serious and costly natural hazard affecting Gooding County and are the primary natural disaster in the State of Idaho. Floods damage roads, farmlands, and structures, often disrupting lives and businesses. Simply put, flooding occurs when water leaves the river channels, lakes, ponds, and other confinements where we expect it to stay. Flood-related disasters occur when human property and lives are impacted by flood waters. An understanding of the role of weather, runoff, landscape, and human development in the floodplain is therefore the key to understanding and controlling flood-related disasters. Major disaster declarations related to flooding were made for Idaho in 1956, 1957, 1961, 1962, 1963, 1964, 1972, 1974, 1984, 1996, 1997, 2005, 2006, 2008, 2010, and 2011.

Floods can be divided into two major categories in southern Idaho: riverine and flash flood. Riverine flooding is associated with a river's watershed, which is the natural drainage basin that conveys water runoff from rain and snowmelt. Riverine flooding occurs when the flow of runoff is greater than the carrying capacities of the natural drainage systems. Rain water and snowmelt runoff that is not absorbed by soil or vegetation seeks surface drainage lines following natural topography lines. These lines merge to form a hierarchical system of rills, creeks, streams, and rivers. Generally, floods can be slow or fast rising depending on the size of the river or stream.

Flash floods are much more dangerous and flow much faster than riverine floods. Flash floods are caused by the introduction of a large amount of water into a limited area (e.g. extreme precipitation events in watersheds less than 50 square miles). They also tend to crest quickly (e.g. eight hours or less) and more commonly occur in hilly or otherwise confined terrain. Flash floods occur in both urban and rural settings, principally along smaller rivers and drainage ways that do not typically carry large amounts of water. This type of flood poses more significant safety risks than riverine floods because of the rapid onset, the high water velocity, the potential for channel scour, and the debris load.⁹

There are three types of flash flooding:

- Extreme precipitation and runoff events
- Inadequate urban drainage systems overwhelmed by small intense rainstorms
- Dam failures

⁹ Statewide Regional Evacuation Study Program. Central Florida Region Technical Data Report. Volume 1-7, Chapter II – Regional Hazards Analysis. Available online at <http://www.cfrpc.org/EVACUATION%20MASTER%20DVD%20-%20PDF%20VERSION/VOLUME%201/Chapter%202/CFRPC%20Chapter%20II%20-%20Hazards%20Analysis.pdf>.

Events that may lead to flash flooding include significant rainfall and/or snowmelt on frozen ground in the winter and early spring months, high intensity thunderstorms (usually during the summer months), and rainfall onto burned areas where high heat has caused the soil to become hydrophobic or water repellent which dramatically increases runoff and flash flood potential.

Flash floods from thunderstorms do not occur as frequently as those from general rain and snowmelt conditions, but are far more severe. The onset of these flash floods varies from slow to very quick and is dependent on the intensity and duration of the precipitation and the soil types, vegetation, topography, and slope of the basin. When intensive rainfall occurs immediately above developed areas, the flooding may occur in a matter of minutes. Sandy soils and sparse vegetation, especially recently burned areas, are conducive to flash flooding. Mountainous areas are especially susceptible to the damaging effects of flash floods, as steep topography may stall thunderstorms in a limited area and may also funnel runoff into narrow canyons, intensifying flow. A flash flood can, however, occur on any terrain when extreme amounts of precipitation accumulate more rapidly than the terrain can allow runoff. Flash floods are most common in Idaho during the spring and summer months due to thunderstorm activity.

Occasionally, floating ice or debris can accumulate at a natural or man-made obstruction and restrict the flow of water. Ice and debris jams can result in two types of flooding:

- Water held back by the ice jam or debris dam can cause flooding upstream, inundating a large area and often depositing ice or other debris which remains after the waters have receded. This inundation may occur well outside of the normal floodplain.
- High velocity flooding can occur downstream when the jam breaks. These flood waters can have additional destructive potential due to the ice and debris load that they may carry.¹⁰

Flooding from ice or debris jams is a relatively common phenomenon in southern Idaho and has been a significant contributor to flood-related damages in Gooding County specifically. Small jams frequently occur in many of the streams throughout Gooding County, particularly at bridge abutments and culverts.

Winter weather conditions are the main driving force in determining where and when base floods will occur. The type of precipitation that a winter storm produces is dependent on the vertical temperature profile of the atmosphere over a given area.¹¹ Unusually heavy snow packs or unusual spring temperature regimes (e.g. prolonged warmth) may result in the generation of runoff volumes significantly greater than can be conveyed by the confines of the stream and river channels. Such floods are often the ones that lead to widespread damage and disasters. Floods caused by spring snow melt tend to last for a period of several days to several weeks, longer than the floods caused by other meteorological sources.

Floods that result from rainfall on frozen ground in the winter, or rainfall associated with a warm, regional frontal system that rapidly melts snow at low and intermediate altitudes (rain-on-snow) can be the most severe. Both of these situations quickly introduce large quantities of water into the stream channel system, easily overloading its capacity.

¹⁰ Barnhill, Dave, et al. "Flash Floods – How do they occur?". Waterlines. Division of Water, Indiana Department of Natural Resources. Spring-Summer 1999. Indianapolis, Indiana.

¹¹ "Snowstorms". Rampo College. Resource Section for Meteorology. Available online at http://mset.rst2.edu/portfolios/k/khanna_n/meteorology/snowstorms.htm. October 2006.

On small drainages, the most severe floods are usually a result of rainfall on frozen ground; however, moderate quantities of warm rainfall on a snow pack, especially for one or more days, can also result in rapid runoff and flooding in streams and small rivers. Although meteorological conditions favorable for short-duration warm rainfall are common, conditions for long-duration warm rainfall are relatively rare. Occasionally, however, the polar front becomes situated along a line from Hawaii through Oregon, and warm, moist, unstable air moves into the region.

The major source of flood waters in Gooding County is normal spring snow melt. As spring melt is a "natural" condition; the stream channel is defined by the features established during the average spring high flow (bank-full width). Small flow peaks exceeding this level and the stream's occupation of the floodplain are common events. The magnitude of most floods in Gooding County depend on the particular combinations of intensity and duration of rainfall, pre-existing soil conditions, area of a basin, elevation of the rain or snow level, and the amount of snow pack. Man-made changes to a basin also can affect the size of floods. Although floods can happen at any time during the year, there are typical seasonal patterns for flooding in southern Idaho, based on the variety of natural processes that cause floods:

- Heavy rainfall on wet or frozen ground, before a snow pack has accumulated, typically cause fall and early winter floods
- Rainfall combined with melting of the low elevation snow pack typically cause winter and early spring floods
- Late spring floods in Gooding County result primarily from melting of the snow pack

The most commonly reported flood magnitude measure is the "base flood." This is the magnitude of a flood having a one-percent chance of being equaled or exceeded in any given year. Although unlikely, "base floods" can occur in any year, even successive ones. This magnitude is also referred to as the "100-year Flood" or "Regulatory Flood". Floods are usually described in terms of their statistical frequency. A "100-year flood" or "100-year floodplain" describes an event or an area subject to a 1% probability of a certain size flood occurring in any given year. This concept does not mean such a flood will occur only once in one hundred years. Whether or not it occurs in a given year has no bearing on the fact that there is still a 1% chance of a similar occurrence in the following year. Since floodplains can be mapped, the boundary of the 100-year flood is commonly used in floodplain mitigation programs to identify areas where the risk of flooding is significant. Any other statistical frequency of a flood event may be chosen depending on the degree of risk that is selected for evaluation, e.g., 5-year, 20-year, 50-year, 500-year floodplain.

The areas adjacent to the channel that normally carry water are referred to as the floodplain. In practical terms, the floodplain is the area that is inundated by flood waters. In regulatory terms, the floodplain is the area that is under the control of floodplain regulations and programs (such as the National Flood Insurance Program which publishes the FIRM maps). The floodplain is often defined as:

"That land that has been or may be covered by floodwaters, or is surrounded by floodwater and inaccessible, during the occurrence of the regulatory flood."¹²

¹² FEMA. Federal Emergency Management Agency. National Flood Insurance Program. Washington D.C. Available online at www.fema.gov.

The nature and extent of a flood event is the result of the hydrologic response of the landscape. Factors that affect this hydrologic response include soil texture and permeability, land cover and vegetation, land use and land management practices. Precipitation and snow melt, known collectively as runoff, follow one of three paths, or a combination of these paths, from the point of origin to a stream or depression: overland flow, shallow subsurface flow, or deep subsurface (“ground water”) flow. Each of these paths delivers water in differing quantities and rates. The character of the landscape will influence the relative allocation of the runoff and will, accordingly, affect the hydrologic response.

Unlike precipitation and ice formation, steps can be taken to mitigate flooding through manipulation or maintenance of the floodplain. Insufficient natural water storage capacity and changes to the landscape can be offset through water storage and conveyance systems that run the gamut from highly engineered structures to constructed wetlands. Careful planning of land use can build on the natural strengths of the hydrologic response. Re-vegetation of burned slopes diverts overland flow (fast and flood producing) to subsurface flow (slower and flood moderating).

The failure to recognize or acknowledge the extent of the natural hydrologic forces in an area has led to development and occupation of areas that can clearly be expected to flood on a regular basis. Despite this, communities are often surprised when the stream leaves its channel to occupy its floodplain. A past reliance on structural means to control floodwaters and “reclaim” portions of the floodplain has also contributed to inappropriate development and continued flood-related damages.

Development in or near floodplains increases the likelihood of flood damage. New developments near a floodplain add structures and people in flood areas thereby increasing, not the extent of the flood itself, but the impacts or damages that may be caused. New construction can also alter surface water flows by diverting water to new courses or increasing the amount of water that runs off impervious pavement and roof surfaces. This second effect diverts waters to places previously unaffected by flood issues. Unlike the weather and the landscape, this flood-contributing factor can be controlled. Development and occupation of the floodplain places individuals and property at risk. Such use can also increase the probability and severity of flood events (and consequent damage) downstream by reducing the water storage capacity of the floodplain, or by pushing the water further from the channel or in larger quantities downstream.¹³

Second Order Hazard Events

With the exception of dam failure, flood events are typically caused by severe weather events such as thunderstorms or rapid spring runoff. Gooding County has a high risk of major flood damages; however, flood events can trigger other types of hazard events that may be more damaging than the flood itself. The following chart outlines the interconnection between flood and other types of hazard events.

¹³ Planning and Flood Risk. Planning Policy Statement 15. The Planning Service, Department of Environment. June 2006. Available online at http://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/pps15-flood-risk.pdf.

Table 4.1. Second-Order Hazards Related to Flood Events.

Related Causal Events	Related Effects
Severe Weather	Landslide
Dam Failure	Dam Failure
	Transportation Systems
	Infectious
	Disease/Epidemic/Pandemic
	Crop Loss
	Hazardous Materials

Earthquake

An earthquake is trembling of the ground resulting from the sudden shifting of continental plates beneath the earth's crust. Earthquakes may cause landslides and rupture dams. Severe earthquakes destroy power and telephone lines and gas, sewer, or water mains, which, in turn, may set off fires and/or hinder firefighting or rescue efforts. Earthquakes also may cause buildings, bridges, and other infrastructure to collapse.

Idaho experiences numerous minor earthquakes annually. Hebgen Lake and Borah Peak were two of the largest earthquakes in the continental United States (7.3 and 6.9 magnitude, respectively). They may affect large areas, cause great damage to structures, cause injury or loss of life, and alter the socioeconomic functioning of the communities involved. The hazard risk of earthquakes varies from place to place depending upon the regional and local geology.

Earthquakes occur along faults, which are fractures or fracture zones in the earth across which there may be relative motion. If the rocks across a fault are forced to slide past one another, they do so in a *stick-slip* fashion; that is, they accumulate strain energy for centuries or millennia, then release it almost instantaneously. The energy released radiates outward from the source, or focus, as a series of waves - an earthquake. The primary hazards of earthquakes are ground breaking, as the rocks slide past one another, and ground shaking, by seismic waves. Secondary earthquake hazards result from distortion of surface materials such as water, soil, or structures.

Ground shaking may affect areas 65 miles or more from the epicenter (the point on the ground surface above the focus). As such, it is the greatest primary earthquake hazard. Ground shaking may cause seiche, the rhythmic sloshing of water in lakes or bays. It may also trigger the failure of snow (avalanche) or earth materials (landslide). Ground shaking can change the mechanical properties of some fine grained, saturated soils, whereupon they liquefy and act as a fluid (liquefaction). The dramatic reduction in bearing strength of such soils can cause buried utilities to rupture and otherwise undamaged buildings to collapse.

Ground shaking from earthquakes can collapse buildings and bridges; disrupt gas, electric, and phone service; and sometimes trigger landslides, avalanches, flash floods, fires, and destructive ocean waves (tsunamis). Buildings with foundations resting on unconsolidated landfill and other unstable soil, or trailers and homes not tied to their foundations are at risk because they can be shaken off their mountings during an earthquake. When an earthquake occurs in a populated area, it may cause deaths and injuries and extensive property damage.

The earth's crust breaks along uneven lines called faults. Geologists locate these faults and determine which are active and inactive. This helps identify where the greatest earthquake potential exists. Many faults mapped by geologists are inactive and have little earthquake potential; others are active and have a higher earthquake potential.

Aftershocks are smaller earthquakes that follow the main incident and can cause further damage to weakened buildings. Aftershocks can occur in the first hours, days, weeks, or even months after the quake. Some earthquakes are actually foreshocks with a larger earthquake eminent.

Ground movement during an earthquake is seldom the direct cause of death or injury. Most earthquake-related injuries result from collapsing walls, flying glass, and falling objects as a result of the ground shaking, or people trying to move more than a few feet during the shaking.¹⁴

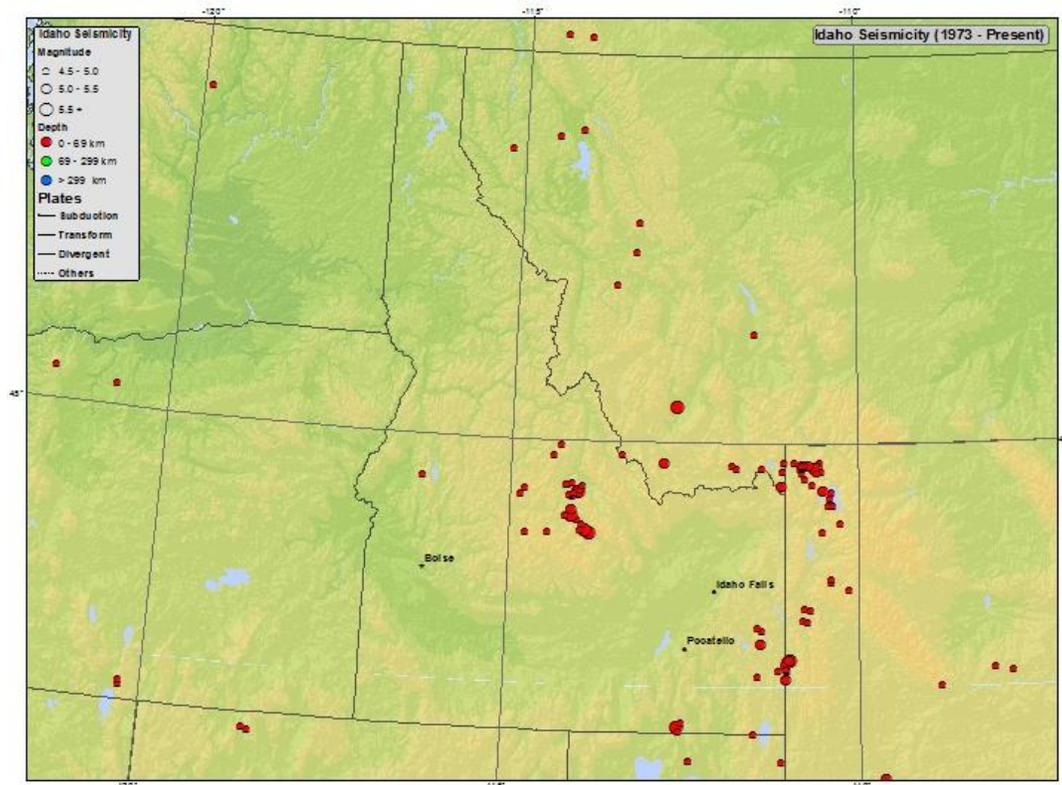
Earth scientists believe that most earthquakes are caused by slow movements inside the Earth that push against the Earth's brittle, relatively thin outer layer, causing the rocks to break suddenly. This outer layer is fragmented into a number of pieces, called plates. Most earthquakes occur at the boundaries of these plates. Idaho is part of an earthquake province called the Basin and Range Province. The Basin and Range Province is characterized by a series of northeast-southwest trending mountain ranges, which have been uplifted along normal faults and associated fault zones.¹⁵ The Intermountain Seismic Belt connects the Basin and Range Province with the more stable parts of North America (Idaho). The majority of Idaho's earthquakes occur along the Intermountain Seismic Belt, which runs from northwestern Montana, along the border of Idaho and Wyoming, and into Utah and Nevada. A significant branch of the Intermountain Seismic Belt extends west from the Yellowstone Hotspot, called the Yellowstone Tectonic Parabola, which is a result of the Basin and Range Province and the Yellowstone Hotspot uniquely interacting together. There are at least 8 major active faults in the Yellowstone Tectonic Parabola that account for numerous earthquake swarms and the location of Hebgen Lake and Borah Peak earthquakes.¹⁶

¹⁴ FEMA. Federal Emergency Management Agency. Available online at www.fema.gov. September 2007.

¹⁵ Digital Geology of Idaho. April 2011. Digital Atlas of Idaho. Available online at http://geology.isu.edu/Digital_Geology_Idaho/.

¹⁶ Idaho Bureau of Homeland Security. April 2011. Available online at www.bhs.idaho.gov.

Figure 4.1. Idaho Seismicity Map from 1973 – 2012.¹⁷



According to the handbook “Putting Down Roots in Earthquake Country”, published by the Bureau of Homeland Security¹⁸, the mountainous regions of eastern and central Idaho, both north and south of the Snake River, are at the most risk for large damaging earthquakes. However, moderate earthquakes can occur anywhere in Idaho and could cause significant damage to un-reinforced infrastructure and even fatalities. Currently, many of Idaho’s counties have building codes in place for new construction that help structures mitigate the effects of shaking. Older public buildings, especially unreinforced masonry, within Gooding County could be at risk to shaking hazards and may need to be retrofitted seismic stability.

The International Building Code (IBC), a nationwide industry standard, sets construction standards for different seismic zones in the nation. IBC seismic zone rankings for Idaho are among the highest in the nation. When structures are built to these standards they have a better chance to withstand earthquakes.

Structures that are in compliance with the 1970 Uniform Building Codes (UBC), which are now replaced by the International Building Code, are generally less vulnerable to seismic damages due to the inclusion of seismic construction standards.

¹⁷ USGS. 2014. United States Geological Survey. Earthquake Hazard Program. Available online at <http://earthquake.usgs.gov/>.

¹⁸ 2009. Idaho Bureau of Homeland Security. “Putting Down Roots in Earthquake Country – Your Handbook for Earthquakes in Idaho.” Available online at <http://www.bhs.idaho.gov/pages/PressRoom/Releases/Putting%20Down%20Roots%20in%20EQ%20Country.pdf>.

Future injuries and property losses from earthquake hazards can be reduced by considering these hazards when making decisions about land use, by designing structures that can undergo ground shaking without collapse, by securely attaching the non-structural elements of a building, and by educating the public about what to do before, during, and after an earthquake to protect life and property.¹⁹

Second-Order Hazard Events

Earthquake events can result in other types of hazard incidents. In a disaster event, the first hazard event may not be the primary cause of damages or losses within the community. Historical earthquake events have often resulted in structural fires due to broken gas lines, candles, electrical malfunctions, etc. The following chart outlines the interconnection between earthquake hazards and other types of hazard events.

Table 4.2. Second-Order Hazards Related to Earthquake Events.	
Related Causal Events	Related Effects
None	Dam Failure
	Structural/Urban Fire
	Wildland Fire
	Transportation System
	Hazardous Materials
	Landslide
	Seiche
	Volcano

¹⁹ Noson, Linda Lawrance, et al. Washington State Earthquake Hazards. Washington Division of Geology and Earth Resources Information Circular 85. Olympia, Washington. 1988.

Landslide

Landslide is a general term for a wide variety of down slope movements of earth materials that result in the perceptible downward and outward movement of soil, rock, and vegetation under the influence of gravity. The materials may move by falling, toppling, sliding, spreading, or flowing. Some landslides are rapid, occurring in seconds, whereas others may take hours, weeks, or even longer to develop. Although landslides usually occur on steep slopes, they also can occur in areas of low relief.²⁰

Landslides can occur naturally or be triggered by human-related activities. Naturally-occurring landslides can occur on any terrain, given the right condition of soil, moisture content, and the slope's angle. They are caused from an inherent weakness or instability in the rock or soil combined with one or more triggering events, such as heavy rain, rapid snow melt, flooding, earthquakes, vibrations, and other natural causes. Other natural triggers include the removal of lateral support through the erosive power of streams, glaciers, waves, and longshore and tidal currents; through weathering, wetting, drying, and freeze-thaw cycles in surficial materials; or through land subsidence or faulting that creates new slopes. Long-term climate change can influence landslide occurrences through increased precipitation, ground saturation, and a rise in groundwater level, which reduces the strength and increases the weight of the soil.

Landslides can also be induced, accelerated or retarded by human actions. Human-related causes of landslides can include grading, slope cutting and filling, quarrying, removal of retaining walls, lowering of reservoirs, vibrations from explosions, machinery, road and air traffic, and excessive development. Normally stable slopes can fail if disturbed by development activities. Often, a slope can also become unstable by earthmoving, landscaping, or vegetation clearing activities. Changing drainage patterns, groundwater level, or slope and surface water through agricultural or landscape irrigation, roof downspouts, septic-tank effluent, or broken water or sewer lines can also generate landslides. Due to the geophysical or human factors that can induce a landslide event, they can occur in developed areas, undeveloped areas, or any areas where the terrain was altered for roads, houses, utilities, buildings, and even for lawns.²¹

There are hundreds of landslides that occur in Idaho annually. The frequency of landslides, particularly cut and fill slopes along roads, is due to the geology, vegetation, climate, soils, and other human factors. There are, on occasion, severe landslide events that occur in Idaho. There have been three federally declared disasters and nine state disasters since 1990.²² Since 1976, major events have had a significant impact on transportation, communities, and natural resources in 1982, 1986 (x2), 1991, 1996-97, 1997, 1998 (x2), 2000, and 2011.

Landslides range from shallow debris flows to deep-seated slumps. They destroy homes, businesses and public buildings, undermine bridges, derail railroad cars, interrupt transportation infrastructure, damage utilities, and take lives. Sinkholes affect roads and utilities. Losses often go unrecorded because insurance claims are not filed, no report is made to emergency management, there is no media coverage, or the transportation damages are recorded as regular maintenance.

²⁰ "Landslides". SAARC Disaster Management Center. New Delhi. Available online at <http://saarc-sdmc.nic.in/pdf/landslide.pdf>. Accessed March 2011.

²¹ Tetra Tech. DMA 2000 Hazard Mitigation Plan. Onondaga County, New York. April 2010.

²² Idaho Bureau of Homeland Security. April 2011. Available online at www.bhs.idaho.gov.

Figure 4.2. Landslide Disaster Declarations in 1976-2011.²³

Year	Month	Federal	Counties Affected
1982	July		Boise
1986	February		Boise
1986	March		Boise, Elmore, Lewis, Nez Perce, Owyhee
1991	April		Bonner
1996	November	X	Adams, Benewah, Boise, Bonner, Boundary
1997	January		Clearwater, Elmore, Gem, Idaho, Kootenai, Latah, Nez Perce, Owyhee, Payette, Shoshone, Washington
1997	March	X	Benewah, Bonner, Boundary, Kootenai
1997	June*		Shoshone
1998	May		Lemhi, Nez Perce, Washington
1998	October		Boundary
2000	June**		Kootenai
2011	March	X	Bonner, Clearwater, Idaho, Nez Perce, Nez Perce Tribe, Shoshone

Land stability cannot be absolutely predicted with current technology. The best design and construction measures are still vulnerable to slope failure. The amount of protection, usually correlated to cost, is proportional to the level of risk reduction. Debris and vegetation management is integral to prevent landslide damages. Corrective measures help, but can often leave the property vulnerable to some level of risk.

The following is a list of characteristics that may be indicative of a landslide hazard area:

- Bluff retreat caused by sloughing of bluff sediments, resulting in a vertical bluff face with little vegetation.
- Pre-existing landslide area.
- Tension or ground cracks along or near the edge of the top of a bluff.
- Structural damage caused by settling and cracking of building foundations and separation of steps from the main structure.
- Toppling bowed or jack strawed trees.
- Gullying and surface erosion.
- Mid-slope ground water seepage from a bluff face.

By studying the effects of landslides in slide prone areas, we can plan for the future. More needs to be done to educate the public and to prevent development in vulnerable areas. Some landslide hazards can be mitigated by engineering, design, or construction so that risks are acceptable. When technology cannot reduce the risk to acceptable levels, building in hazardous areas should be avoided.²⁴

²³ Idaho Bureau of Homeland Security. 2013. State of Idaho Hazard Mitigation Plan. Available online at: <http://www.bhs.idaho.gov/Pages/Plans/Mitigation/SHMP.aspx>. Accessed May, 2015.

²⁴ Canning, Douglas J. "Geologically Hazardous Areas". Shorelands and Environmental Assistance Program. Washington Department of Ecology. Olympia, Washington.

Stream and riverbank erosion, road building, or other excavation can remove the toe or lateral slope and exacerbate landslides. Seismic or volcanic activity often triggers landslides as well. Urban and rural living with excavations, roads, drainage ways, landscape watering, logging, and agricultural irrigation may also disturb the solidity of landforms. In general, any land use changes that affect drainage patterns or that increase erosion or change ground-water levels can augment the potential for landslide activity.

Landslides are a recurrent menace to waterways and highways and a threat to homes, schools, businesses, and other facilities. The unimpeded movement over roads—whether for commerce, public utilities, school, emergencies, police, recreation, or tourism—is essential to the normal functioning of Gooding County. The disruption and dislocation of these or any other routes caused by landslides can quickly jeopardize travel and vital services. Although small slumps on cut and fill slopes along roads and highways is relatively common, nearly all of the more significant landslide risk in Gooding County is associated with the steeper, mountainous slopes in the northwestern portion of the county.

Second-Order Hazard Events

Landslide events are often caused by other types of hazard events, but the costs of cleaning up after a landslide including road and other infrastructure repairs can often dwarf the damages of the initial hazard. The following chart outlines the interconnection between landslides and other types of hazard events.

Table 4.3. Second-Order Hazards Related to Landslide Events.	
Related Causal Events	Related Effects
Flood	Transportation System
Earthquakes	
Wildland Fire	

Severe Weather

Severe storms are a serious hazard that can and do affect Idaho on a regular basis. Severe storms affect the entire state with varying degrees, due to the complex landscape and the influence from the Pacific Ocean. Although Idaho's climate sees relatively few damaging storms in comparison with the rest of the nation, it still poses a significant hazard to the state and local communities. Storm-related Presidential Disaster declarations were made for Idaho in 1964, 1972, 1974, 1996, 1997, 2005, 2006, and 2010. Most of these storms resulted in flood damages.

In the Idaho Panhandle, the main barrier is the rugged chain of Bitterroot Mountains forming much of the boundary between Idaho and Montana. The extreme range of elevation in the State is from 738 feet above sea level at the confluence of the Clearwater and Snake Rivers to 12,655 feet at Mt. Borah in Custer County. Comprised of rugged mountain ranges, canyons, high grassy valleys, arid plains, and fertile lowlands, the State reflects in its topography and vegetation a wide range of climates. Located some 300 miles from the Pacific Ocean, Idaho is influenced by maritime air borne eastward on the prevailing westerly winds. Particularly in winter, the maritime influences are noticeable in the greater average cloudiness, greater frequency of precipitation, and mean temperatures, which are above those at the same latitude and altitude in mid-continent regions. This maritime influence is most marked in the northern part of the State, where the air arrives via the Columbia River Gorge with a greater burden of moisture than at lower latitudes.

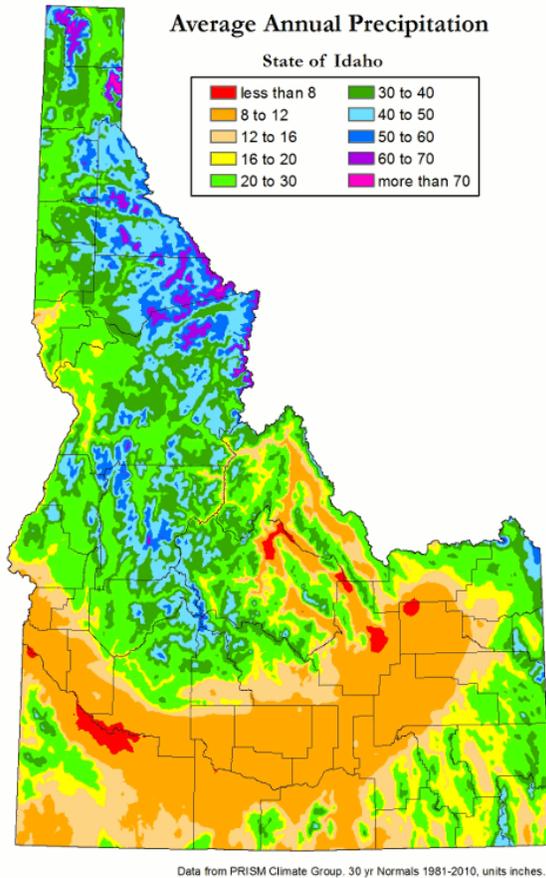
The pattern of average annual temperatures for the State indicates the effect both of latitude and altitude. The highest annual averages are found in the lower elevations of the Clearwater and Little Salmon River Basins, and in the stretch of the Snake River Valley from the vicinity of Bliss downstream to Lewiston, including the open valleys of the Boise, Payette, and Weiser Rivers. The range between the mean temperature of the coldest and warmest months of the year varies from less than 40°F at a number of northern stations, to well over 50° F at stations in the higher elevation of the central and eastern parts of the State. In general, it can be said that monthly means are 32° F or lower at stations above 5,000 feet from November through March; 4,000 and 5,000 feet from November through February; 3,000 to 4,000 feet from December through February; and 2,000 to 3,000 feet only one or two months of the year. In summer, periods of extreme heat extending beyond a week are quite rare and the same can be said of periods of extremely low temperatures in winter. In both cases the normal progress of weather systems across the State usually results in a change at rather frequent intervals. In the realm of extremely low temperatures, two winters stand out in the records for the State: 1937-38 and 1948-49. The lowest monthly mean temperatures on record occurred throughout the State in January 1949 and many stations registered the absolute lowest temperature on record during that month.

To a large extent the source of moisture for precipitation in Idaho is the Pacific Ocean. In summer there are some exceptions to this when moisture-laden air is brought in from the south at high levels to produce thunderstorm activity, particularly in the eastern part of Idaho. The source of this moisture from the south is the Gulf of Mexico and Caribbean region. The average precipitation map for Idaho is as complex as the physiographic representation of the State. Partly because of the greater moisture supply in the west winds over the northern part of the State (less formidable barriers to the west) and partly because of the greater

frequency of cyclonic activity in the north, the average valley precipitation is considerably greater in north Idaho than in the southern regions of the State.

Thunderstorms do occur within Idaho affecting almost all counties, including Gooding County, but usually are localized events. Their impacts are fairly limited and do not significantly affect the communities enough to declare a disaster. Thunderstorms are emphasized within the flood chapter of this Multi-Hazard Mitigation Plan.

Figure 4.3. Average Annual Precipitation in Idaho.²⁵



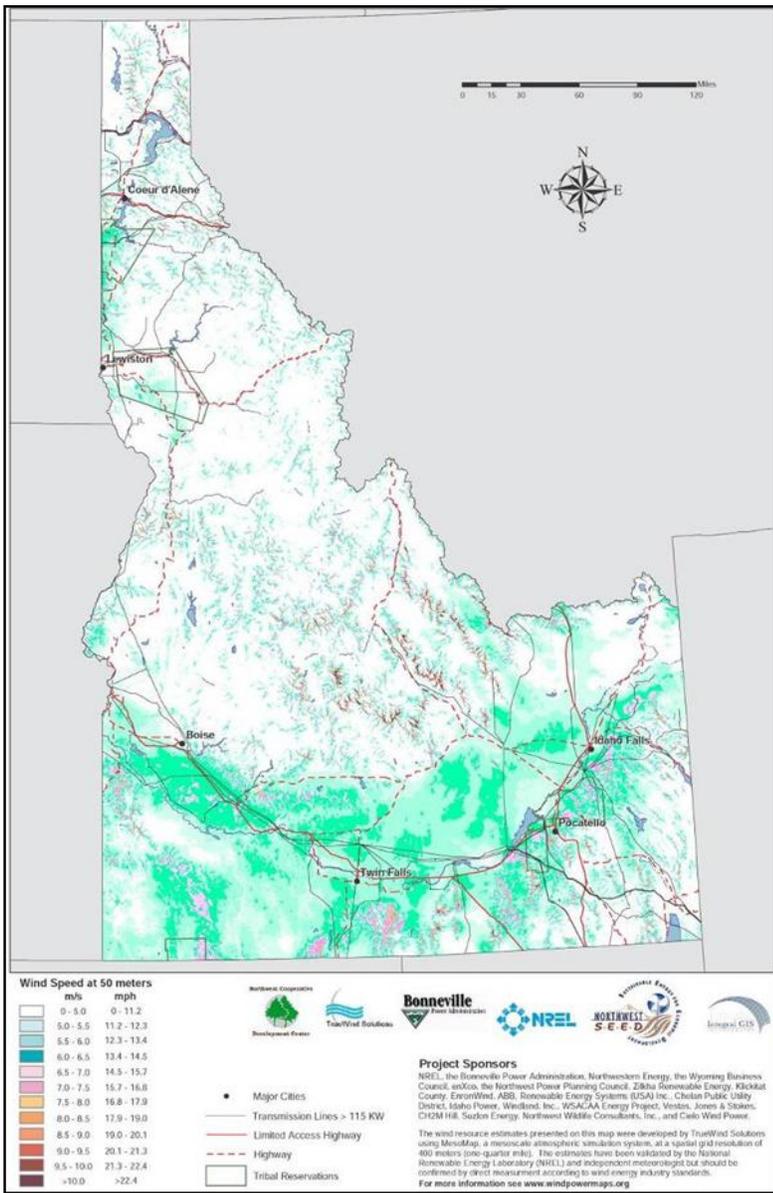
Snowfall distribution is affected both by availability of moisture and by elevation. Annual snowfall totals in Shoshone County in northern Idaho have reached nearly 500 inches. The greatest long-term (1942-56) seasonal average was 182 inches at Mullan Pass, while the greatest snow depth (also 182 inches) was recorded at that station on February 20, 1954. The major mountain ranges of the State accumulate a deep snow cover during the winter months and the release of water from the melting snow-pack in late spring furnishes irrigation water for more than two million acres, mainly within the Snake River Basin above Weiser. Irrigation water supplies are nearly always plentiful, except on some of the smaller projects where storage facilities are inadequate. Hydro-electric power is generated by the waters of the many rivers in Idaho.

Winter storms are a part of life in Idaho. They vary in degree and intensity and can occur at any time but are especially probable between September and May. These storms could be

localized or could affect the entire state. They can last a matter of minutes or many days. Typically, winter storms are measured by the amount of snow accumulated during any given storm. Additionally, these storms could be measured by the accompanying wind or associated temperatures.

²⁵ Idaho Department of Water Resources. Precipitation Map. Available online at http://www.idwr.idaho.gov/WaterInformation/WaterSupply/images/id_precip.gif. Accessed August, 2014

Figure 4.4. Idaho Average Wind Speed Map.²⁶



Windstorms are not uncommon in Idaho, but the State has no destructive storms such as hurricanes, and an extremely small incidence of tornadoes. Windstorms associated with cyclonic systems, and their cold fronts, do some damage to trees each year, often causing temporary disruption of power and communication facilities, but only minor damage to structures in most instances. Storms of this type may occur at any time from October into July, while during the summer months strong winds almost invariably accompany thunderstorms.

Hail damage in Idaho is very small in comparison with damage in areas of the central part of the United States. Often the hail that occurs does not grow to a size larger than one-half inch in diameter and the areas affected 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 areas in connection with summer

thunderstorms. The incidence of summer thunderstorms is greatest in mountainous areas with lightning often causing forest and range fires.

Past weather patterns show that severe weather conditions are likely to happen in any part of Gooding County in any given year. The topographical features of the county contribute greatly to the various weather patterns that occur. The following table lists the average climate within Gooding County.

²⁶ True Wind Solutions. 2002. Map of approximate wind speeds in Idaho. Available online at www.windpowermaps.org.

Table 4.4. Weather and Climate for Gooding County, Idaho.

Temperature		Degrees (F)	Month
	Lowest Average Daily Minimum Temperature	18.4 (Gooding)	January
	Highest Average Daily Maximum Temperature	93.7 (Hagerman)	July
	Hottest Month		July
	Coldest Month		January
Precipitation	Type	Inches	
	Average Annual Total Precipitation	9.36" (Gooding)	
	Average Annual Snowfall	26.2" (Gooding)	
Elevation			
	3,575 Feet (Gooding)		

Storms are naturally occurring atmospheric disturbances manifested in strong winds accompanied by rain, snow, or other precipitation and often by thunder or lightning. All areas within this region are vulnerable to severe local storms. The effects are generally transportation problems and loss of utilities. When transportation accidents occur, motorists are stranded and schools and businesses close. The effects vary with the intensity of the storm, the level of preparation by local jurisdictions and residents, and the equipment and staff available to perform tasks to lessen the effects of severe local storms. There is no way to prevent severe storms. The weather forces and topography of Gooding County will always dictate when and where severe storms will occur.

Drought is an expected phase in the climactic cycle of almost any geographical region. Objective, quantitative definitions for drought exist but most authorities agree that, because of the many factors contributing to it and because its onset and relief are slow and indistinct, none are entirely satisfactory. According to the National Drought Mitigation Center, drought originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector. What is clear is that a condition perceived as “drought” in a given location is the result of a significant decrease in water supply relative to what is “normal” in that area.²⁷

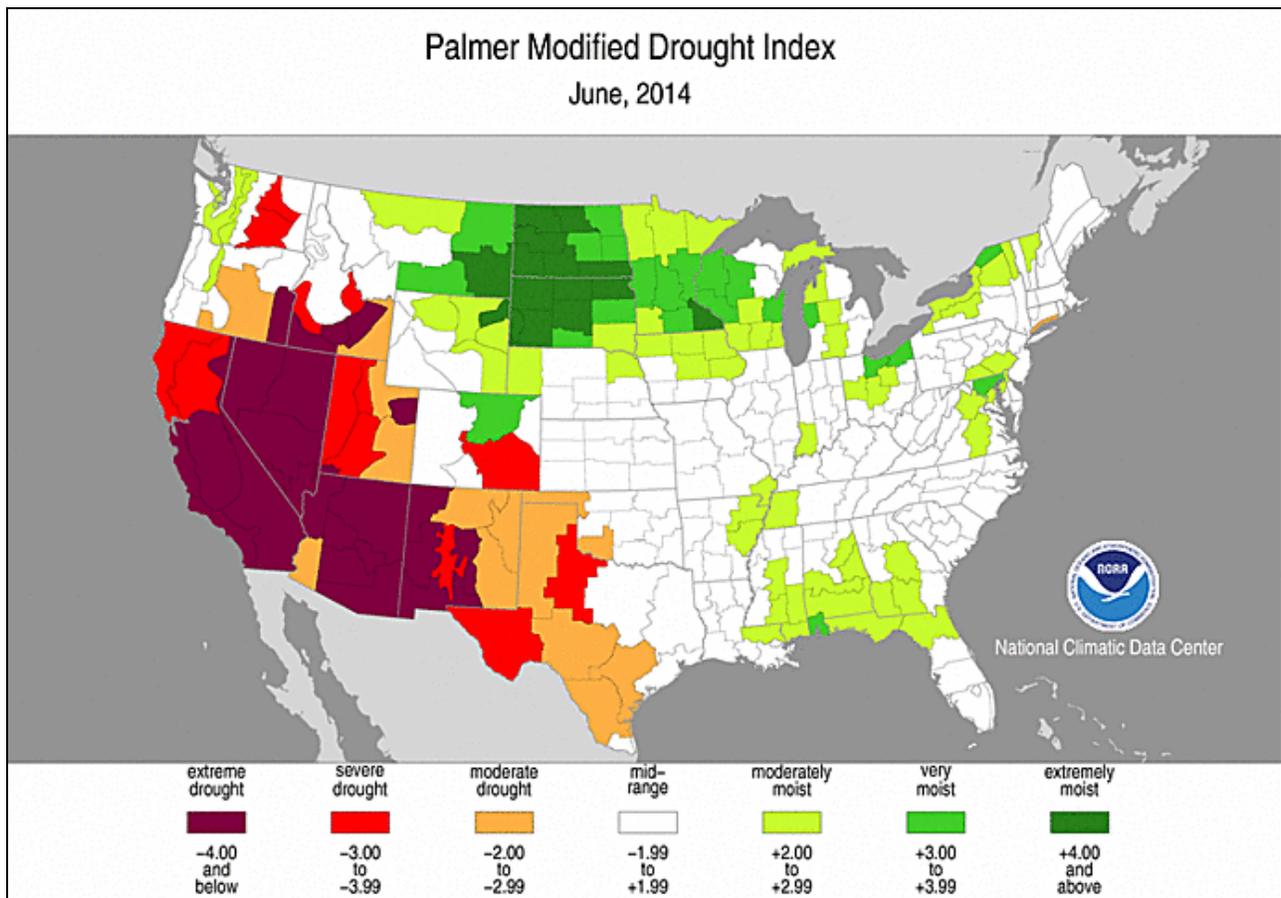
It should be noted that water supply is not only controlled by precipitation (amount, frequency, and intensity), but also by other factors including evaporation (which is increased by higher than normal heat and winds), transpiration, and human use. Drought in Idaho is generally associated with a sustained period of low winter snowfall. This results from a temporary, yet significant, change in the large-scale weather

²⁷ National Oceanic & Atmospheric Administration. 2010. U.S. Drought Monitor. Drought Information Center. U.S. Department of Agriculture. Available online at <http://www.drought.noaa.gov/index.html>.

patterns in the western U.S. The limited snow packs result in reduced stream flows and ground water recharge. Idaho’s system of reservoirs and natural storage can buffer the effects of minor events over a few years, but a series of dry winters (or an especially pronounced single low snowfall event) will result in a shortage of available water. Extended periods of above-average temperatures during the spring and summer can increase the impacts of low snow packs.

The Idaho Department of Water Resources reports that meteorological drought conditions (a period of low precipitation) existed in the State approximately 30% of the time during the period 1931-1982. Principal drought in Idaho, indicated by stream flow records, occurred during 1929-41, 1944-45, 1959-61, 1977, and 1987-92.²⁸

Figure 4.5. U.S. Drought Monitor Map of Idaho for August 2014.²⁹



Hazard management of drought involves the long-term reduction of the probable gap between water supply and demand. Supply can be addressed through the development of storage and delivery capacity

²⁸ Idaho Department of Water Resources. 2010. Idaho Drought Emergency Declarations. Available online at <http://www.idwr.idaho.gov/News/drought/drought.htm>.

²⁹ U.S. Drought Portal. August 2014. Available online at <http://www.drought.gov/drought/content/products-current-drought-and-monitoring-drought-indicators/palmer-drought-severity-index>.

(construction of reservoirs and associated facilities), improved operation of existing facilities, and weather modification. Demand can be addressed through various forms of conservation.³⁰

Climate in Gooding County is generally consistent with other counties located along the Snake River Plain. In winter, the average daily maximum temperature is 40 degrees Fahrenheit and the average daily minimum is 21 degrees. In summer, the average daily maximum temperature is 86 degrees Fahrenheit and the average minimum temperature is 50 degrees. In general the summer days are hot and the nights are cool. Precipitation during the summer months is limited to isolated showers and thunderstorms that produce localized precipitation. Months of July through October represent the lowest average total precipitation recorded and coincide with the peak fire season when summer storms likely occur. Winter conditions usually arrive in mid-November. Snowfall is the primary source of precipitation for the county. Snow levels in the county vary between communities due to elevation.

Storms are naturally occurring atmospheric disturbances manifested in strong winds accompanied by rain, snow, or other precipitation, and often by thunder or lightning. All areas within this region are vulnerable to severe local storms. The effects are generally transportation problems and loss of utilities. When transportation accidents occur, motorists are stranded and schools and businesses close. The effects vary with the intensity of the storm, the level of preparation by local jurisdictions and residents, and the equipment and staff available to perform tasks to lessen the effects of severe local storms.

Second-Order Hazard Events

Severe weather is often the causal factor in damages from other types of hazard incidents such as flood or wildland fire. The following chart outlines the interconnection between severe weather and other types of hazard events.

Table 4.5. Second-Order Hazards Related to Severe Weather Events.

Related Causal Events	Related Effects
None	Drought
	Crop Loss
	Tornado
	Wildland Fire
	Flood

³⁰ Idaho Bureau of Homeland Security. 2010. State of Idaho Hazard Mitigation Plan. Hazard Mitigation Program. November 2007. Available online at <http://www.bhs.idaho.gov/Resources/PDF/SHMPFinalw-signatures.pdf>.

Wildland Fire

The original Gooding County Community Wildfire Protection Plan was completed and adopted in 2004 and most recently updated in 2012. This chapter is an adaptation of the more comprehensive updated Gooding County Wildfire Protection Plan.

An informed discussion of fire mitigation is not complete until basic concepts that govern fire behavior are understood. In the broadest sense, wildland fire behavior describes how fires burn; the manner in which fuels ignite, how flames develop and how fire spreads across the landscape. The three major physical components that determine fire behavior are the fuels supporting the fire, the topography in which the fire is burning, and the weather and atmospheric conditions during a fire event. At the landscape level, both topography and weather are beyond our control. We are powerless to control winds, temperature, relative humidity, atmospheric instability, slope, aspect, elevation, and landforms. It is beyond our control to alter these conditions, and thus impossible to alter fire behavior through their manipulation. When we attempt to alter how fires burn, we are left with manipulating the third component of the fire environment; fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to control or affect how fires burn.

A brief description of each of the fire environment elements follows in order to illustrate their effect on fire behavior.

Weather

Weather conditions contribute significantly to determining fire behavior. Wind, moisture, temperature, and relative humidity ultimately determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain an ignition. Once conditions are capable of sustaining a fire, atmospheric stability and wind speed and direction can have a significant effect on fire behavior. Winds fan fires with oxygen, increasing the rate at which fire spreads across the landscape. Weather is the most unpredictable component governing fire behavior, constantly changing in time and across the landscape.

Topography

Fires burning in similar fuel types, will burn differently under varying topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influences vegetative growth and resulting fuels. Changes in slope and aspect can have significant influences on how fires burn. Generally speaking, north slopes tend to be cooler, wetter, more productive sites. This can lead to heavy fuel accumulations, with high fuel moistures, later curing of fuels, and lower rates of spread. In contrast, south and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. The combination of light fuels and dry sites leads to fires that typically display the highest rates of spread. These slopes also tend to be on the windward side of mountains. Thus these slopes tend to be “available to burn” a greater portion of the year.

Slope also plays a significant role in fire spread, by allowing preheating of fuels upslope of the burning fire. As slope increases, rate of spread and flame lengths tend to increase. Therefore, we can expect the fastest rates of spread on steep, warm south and west slopes with fuels that are exposed to the wind.

Fuels

Fuel is any material that can ignite and burn. Fuels describe any organic material, dead or alive, found in the fire environment. Grasses, brush, branches, logs, logging slash, forest floor litter, conifer needles, and buildings are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content, and continuity and arrangement all have an effect on fire behavior. Generally speaking, the smaller and finer the fuels, the faster the potential rate of fire spread. Small fuels such as grass, needle litter and other fuels less than a quarter inch in diameter are most responsible for fire spread. In fact, “fine” fuels, with high surface to volume ratios, are considered the primary carriers of surface fire. This is apparent to anyone who has ever witnessed the speed at which grass fires burn. As fuel size increases, the rate of spread tends to decrease due to a decrease in the surface to volume ratio. Fires in large fuels generally burn at a slower rate, but release much more energy and burn with much greater intensity. This increased energy release, or intensity, makes these fires more difficult to control. Thus, it is much easier to control a fire burning in grass than to control a fire burning in timber.

When burning under a forest canopy, the increased intensities can lead to torching (single trees becoming completely involved) and potential development of crown fires. That is, they release much more energy. Fuels are found in combinations of types, amounts, sizes, shapes, and arrangements. It is the unique combination of these factors, along with the topography and weather, which determines how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected effect small changes in any single component have on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and repeated research, some of the principles that govern fire behavior have been identified and are recognized.

Wildfire Hazard Assessment

Gooding County was analyzed using a variety of models, managed on a Geographic Information System (GIS) system. Physical features of the region including roads, streams, soils, elevation, and remotely sensed images were represented by data layers. Field visits were conducted by specialists from Northwest Management, Inc. and others. Discussions with area residents and local fire suppression professionals augmented field visits and provided insights into forest health issues and treatment options. This information was analyzed and combined to develop an objective assessment of wildland fire risk in the region.

Historic Fire Regime

Historical variability in fire regime is a conservative indicator of ecosystem sustainability, and thus, understanding the natural role of fire in ecosystems is necessary for proper fire management. Fire is one of the dominant processes in terrestrial systems that constrain vegetation patterns, habitats, and ultimately,

species composition. Land managers need to understand historical fire regimes, the fire return interval (frequency) and fire severity prior to settlement by Euro-Americans, to be able to define ecologically appropriate goals and objectives for an area. Moreover, managers need spatially explicit knowledge of how historical fire regimes vary across the landscape.

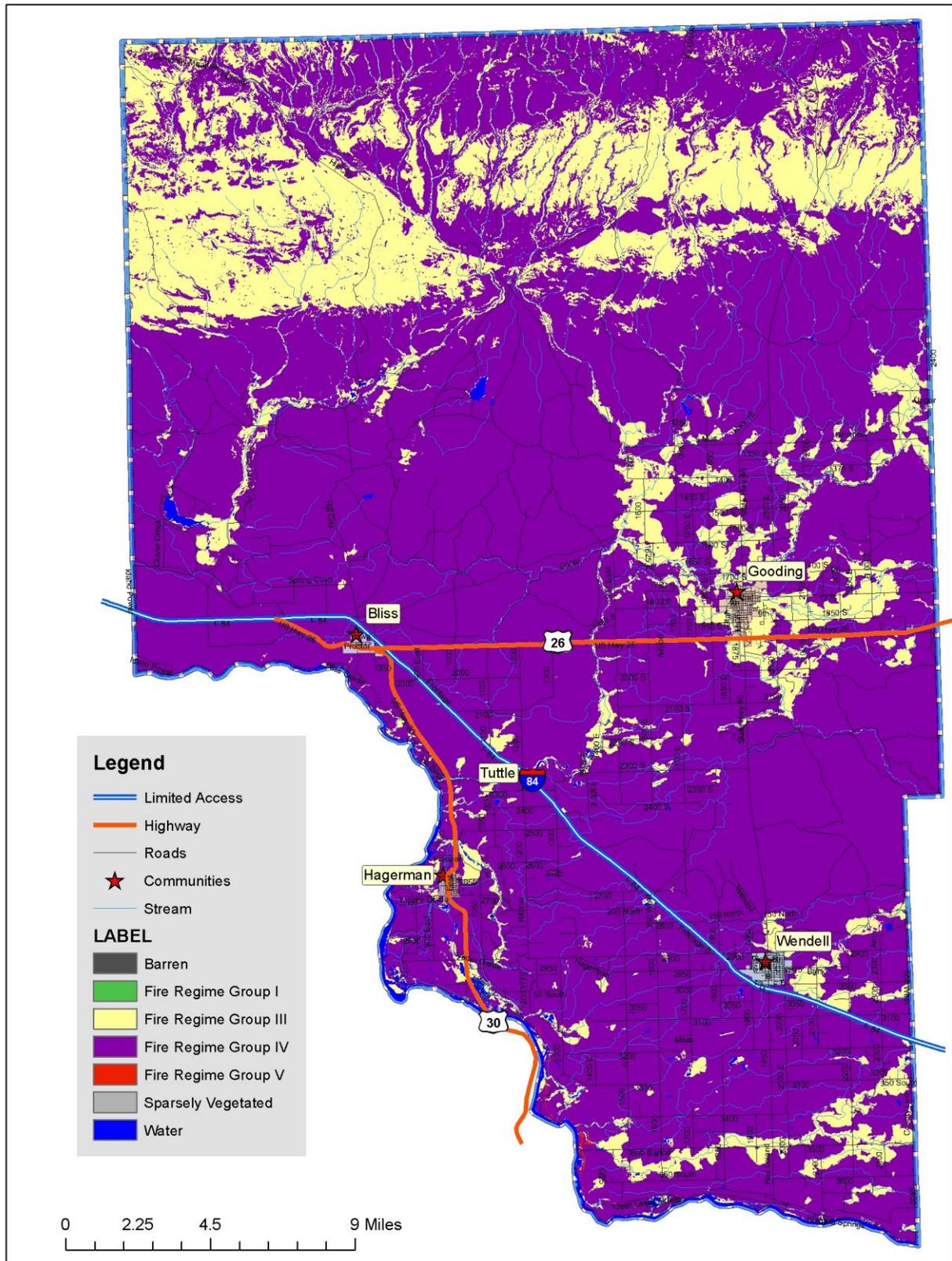
Many ecological assessments are enhanced by the characterization of the historical range of variability which helps managers understand: (1) how the driving ecosystem processes vary from site to site; (2) how these processes affected ecosystems in the past; and (3) how these processes might affect the ecosystems of today and the future. Historical fire regimes are a critical component for characterizing the historical range of variability in fire-adapted ecosystems. Furthermore, understanding ecosystem departures provides the necessary context for managing sustainable ecosystems. Land managers need to understand how ecosystem processes and functions have changed prior to developing strategies to maintain or restore sustainable systems. In addition, the concept of departure is a key factor for assessing risks to ecosystem components. For example, the departure from historical fire regimes may serve as a useful proxy for the potential of severe fire effects from an ecological perspective.

Table 4.6. Historic Fire Regimes in Gooding County.

Historic Fire Regime	Description	Acres	Percent of Total
Fire Regime Group I	<= 35 Year Fire Return Interval, Low and Mixed Severity	41	<1%
Fire Regime Group II	<= 35 Year Fire Return Interval, Replacement Severity	0	0%
Fire Regime Group III	35 - 200 Year Fire Return Interval, Low and Mixed Severity	100,683	21%
Fire Regime Group IV	35 - 200 Year Fire Return Interval, Replacement Severity	365,982	78%
Fire Regime Group V	> 200 Year Fire Return Interval, Any Severity	145	<1%
Water	Water	2,711	<1%
Barren	Barren	4	<1%
Sparsely Vegetated	Sparsely Vegetated	75	<1%
Total		469,641	100%

Over three quarters of the County is considered to be in Fire Regime Group IV with replacement severity. This is likely due to the growth of both annual and perennial grasses each spring that cure during the summer months which readily carries fire once it is ignited. The growth and recruitment of vegetation is generally quick, therefore it only takes one or two cycles of seasons before the vegetation (primarily grasses) is dense enough to sustain a fire.

Figure 4.6. Historic Fire Regime for Gooding County.



Fire Regime Condition Class

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning.^{31, 32} Coarse scale definitions for historic fire regimes have been developed by Hardy et al³³ and Schmidt et al³⁴ and interpreted for fire and fuels management by Hann and Bunnell.

A Fire Regime condition class (FRCC) is a classification of the amount of departure from the historic regime.³⁵ The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime.^{36,37} The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Approximately 50% of Gooding County is moderately to highly departed from the historic regime. In most scenarios, the more departed an area is from its natural fire regime, the higher the wildfire potential; however, this is not true 100% of the time. Most of the highly departed vegetation appears to be scattered throughout the County. This is likely a result of human disturbance (recreation and farming) or wildland fires, which has allowed other species to outcompete the natural vegetation in these areas. Nearly 25% of the vegetation in the County has been changed to agriculture while the remaining 25% is close to native vegetation.

³¹ Agee, J. K. *Fire Ecology of the Pacific Northwest forests*. Oregon: Island Press. 1993.

³² Brown, J. K. "Fire regimes and their relevance to ecosystem management." *Proceedings of Society of American Foresters National Convention*. Society of American Foresters. Washington, D.C. 1995. Pp 171-178.

³³ Hardy, C. C., et al. "*Spatial data for national fire planning and fuel management.*" *International Journal of Wildland Fire*. 2001. Pp 353-372.

³⁴ Schmidt, K. M., et al. "*Development of coarse scale spatial data for wildland fire and fuel management.*" General Technical Report, RMRS-GTR-87. U.S. Department of Agriculture, Forest Service. Rocky Mountain Research Station. Fort Collins, Colorado. 2002.

³⁵ Hann, W. J. and D. L. Bunnell. "Fire and land management planning and implementation across multiple scales." *International Journal of Wildland Fire*. 2001. Pp 389-403.

³⁶ Hardy, C. C., et al. "*Spatial data for national fire planning and fuel management.*" *International Journal of Wildland Fire*. 2001. Pp 353-372.

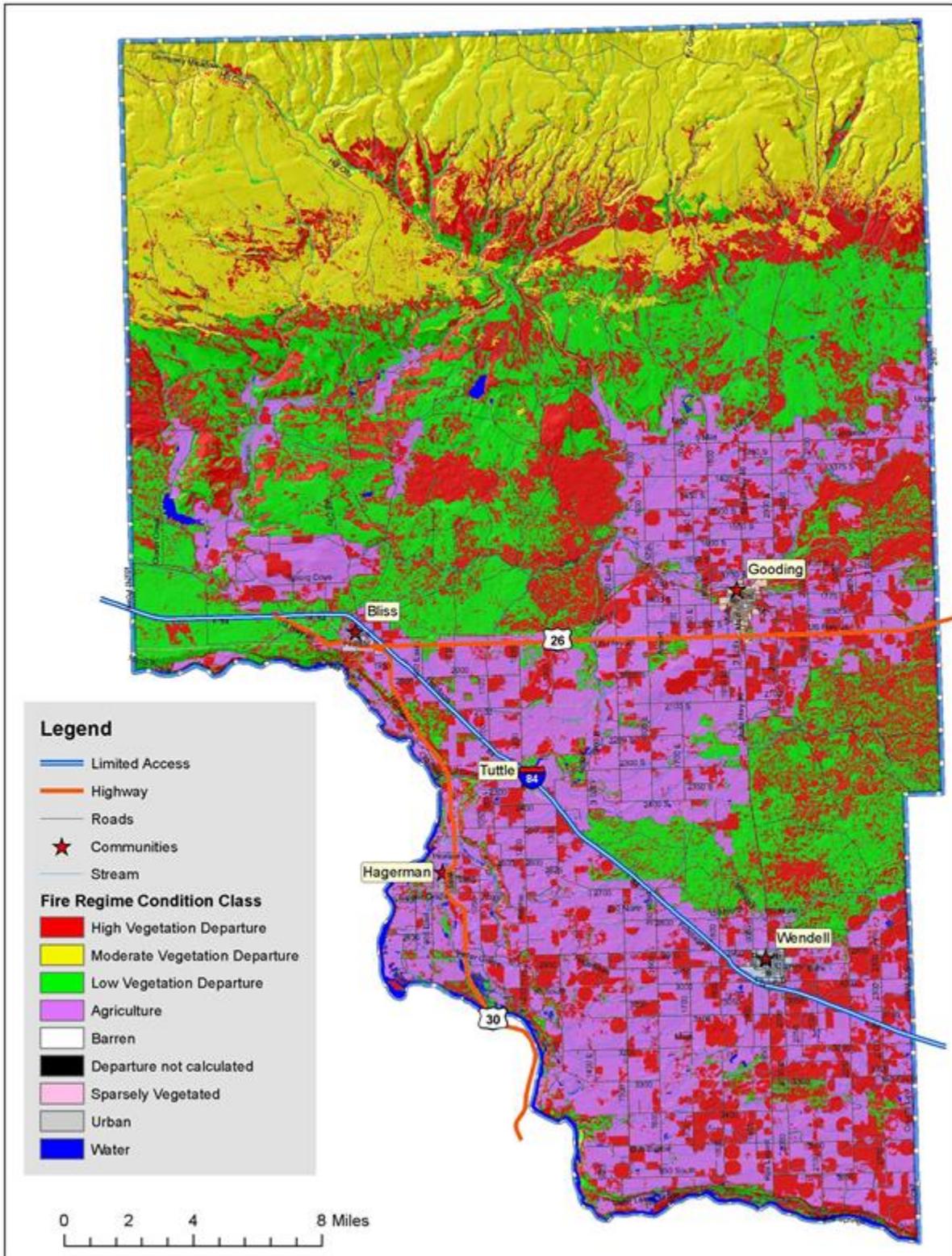
³⁷ Schmidt, K. M., et al. "*Development of coarse scale spatial data for wildland fire and fuel management.*" General Technical Report, RMRS-GTR-87. U.S. Department of Agriculture, Forest Service. Rocky Mountain Research Station. Fort Collins, Colorado. 2002.

Table 4.7. Fire Regime Condition Class in Gooding County.

Fire Regime Condition Class	Description	Acres	Percent of Total
Fire Regime Condition Class I	Low Vegetation Departure	110,576	24%
Fire Regime Condition Class II	Moderate Vegetation Departure	98,770	21%
Fire Regime Condition Class III	High Vegetation Departure	137,862	29%
Water	Water	2,711	1%
Urban	Urban	11,109	2%
Barren	Barren	4	0%
Sparsely Vegetated	Sparsely Vegetated	90	0%
Agriculture	Agriculture	108,519	23%
	Total	469,641	100%

Several factors have contributed to the changing fire regime in Gooding County including the introduction of invasive plant species and a reduction in widespread grazing as well as more sophisticated, and ultimately more successful, fire suppression. Introduced species such as medusahead (*Taeniatherum caput-medusae*) and cheatgrass (*Bromus tectorum*) have replaced the native bunchgrasses in some areas. These species create a more continuous vegetative fuel bed, which tends to result in higher rates of fire spread than the native vegetation could sustain. Additionally, livestock grazing has been reduced throughout southern Idaho, which traditionally lessened the wildfire risk through the consumption of fine fuels. These factors have resulted in a departure from the historic fire regimes' range of variability. Rangeland fires are occurring more frequently than prior to European settlement of the area. Furthermore, medusahead and cheatgrass are better adapted to disturbed soils; thus, they often outcompete native grass and sagebrush communities once a fire has burned through an area, which further increases their dominance and thus, fire risk.

Figure 4.7. Fire Regime Condition Class Map for Gooding County.



Wildland-Urban Interface

The wildland-urban interface (WUI) has gained attention through efforts targeted at wildfire mitigation; however, this analysis technique is also useful when considering other hazards because the concept looks at where people and structures are concentrated in any particular region.

A key component in meeting the underlying need for protection of people and structures is the protection and treatment of hazards in the wildland-urban interface. The wildland-urban interface refers to areas where wildland vegetation meets urban developments or where forest fuels meet urban fuels such as houses. The WUI encompasses not only the interface (areas immediately adjacent to urban development), but also the surrounding vegetation and topography. Reducing the hazard in the wildland-urban interface requires the efforts of federal, state, and local agencies and private individuals.³⁸ “The role of [most] federal agencies in the wildland-urban interface includes wildland firefighting, hazard fuels reduction, cooperative prevention and education, and technical experience. Structural fire protection [during a wildfire] in the wildland-urban interface is [largely] the responsibility of Tribal, state, and local governments”.³⁹ The role of the federal agencies in Gooding County is and will be much more limited. Property owners share a responsibility to protect their residences and businesses and minimize danger by creating defensible areas around them and taking other measures to minimize the risks to their structures.⁴⁰ With treatment, a wildland-urban interface can provide firefighters a defensible area from which to suppress wildland fires or defend communities against other hazard risks. In addition, a wildland-urban interface that is properly treated will be less likely to sustain a crown fire that enters or originates within it.⁴¹

By reducing hazardous fuel loads, ladder fuels, and tree/shrub densities, and creating new and reinforcing existing defensible space, landowners can protect the wildland-urban interface, the biological resources of the management area, and adjacent property owners by:

- minimizing the potential of high-severity ground or crown fires entering or leaving the area;
- reducing the potential for firebrands (embers carried by the wind in front of the wildfire) impacting the WUI. Research indicates that flying sparks and embers (firebrands) from a crown fire can ignite additional wildfires as far as 1¼ miles away during periods of extreme fire weather and fire behavior;⁴²
- improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

³⁸ Norton, P. Bear Valley National Wildlife Refuge Fire Hazard Reduction Project: Final Environmental Assessment. Fish and Wildlife Services, Bear Valley Wildlife Refuge. June 20, 2002.

³⁹ USFS. 2001. United States Department of Agriculture, Forest Service. Wildland Urban Interface. Web page. Date accessed: 25 September 2001. Accessed at: <http://www.fs.fed.us/r3/sfe/fire/urbanint.html>

⁴⁰ USFS. 2001. United States Department of Agriculture, Forest Service. Wildland Urban Interface. Web page. Date accessed: 25 September 2001. Accessed at: <http://www.fs.fed.us/r3/sfe/fire/urbanint.html>

⁴¹ Norton, P. Bear Valley National Wildlife Refuge Fire Hazard Reduction Project: Final Environmental Assessment. Fish and Wildlife Services, Bear Valley Wildlife Refuge. June 20, 2002.

⁴² McCoy, L. K., et all. Cerro Grand Fire Behavior Narrative. 2001.

Three wildland-urban interface conditions have been identified (Federal Register 66(3), January 4, 2001) for use in wildfire control efforts. These include the Interface Condition, Intermix Condition, and Occluded Condition. Descriptions of each are as follows:

- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – a situation where structures are scattered throughout a wildland area. There is no clear line of demarcation; the wildland fuels are continuous outside of and within the developed area. The development density in the intermix ranges from structures very close together to one structure per 40 acres; and
- **Occluded Condition** – a situation, normally within a city, where structures abut an island of wildland fuels (park or open space). There is a clear line of demarcation between the structures and the wildland fuels along roads and fences. The development density for an occluded condition is usually similar to that found in the interface condition and the occluded area is usually less than 1,000 acres in size.

In addition to these classifications detailed in the Federal Register, Gooding County has included four additional classifications to augment these categories:

- **Rural Condition** – a situation where the scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to wildland fuels. There may be miles between these clusters.
- **Infrastructure Area WUI** – those locations where critical and identified infrastructure is located outside of populated regions and may include high tension power line corridors, critical escape or primary access corridors, municipal watersheds, and areas immediately adjacent to facilities in the wildland such as radio repeater towers.
- **Non-WUI Condition** – a situation where the above definitions do not apply because of a lack of structures in an area or the absence of critical infrastructure. This classification is not considered part of the wildland urban interface.

In summary, the designation of areas by the Gooding County planning committee includes:

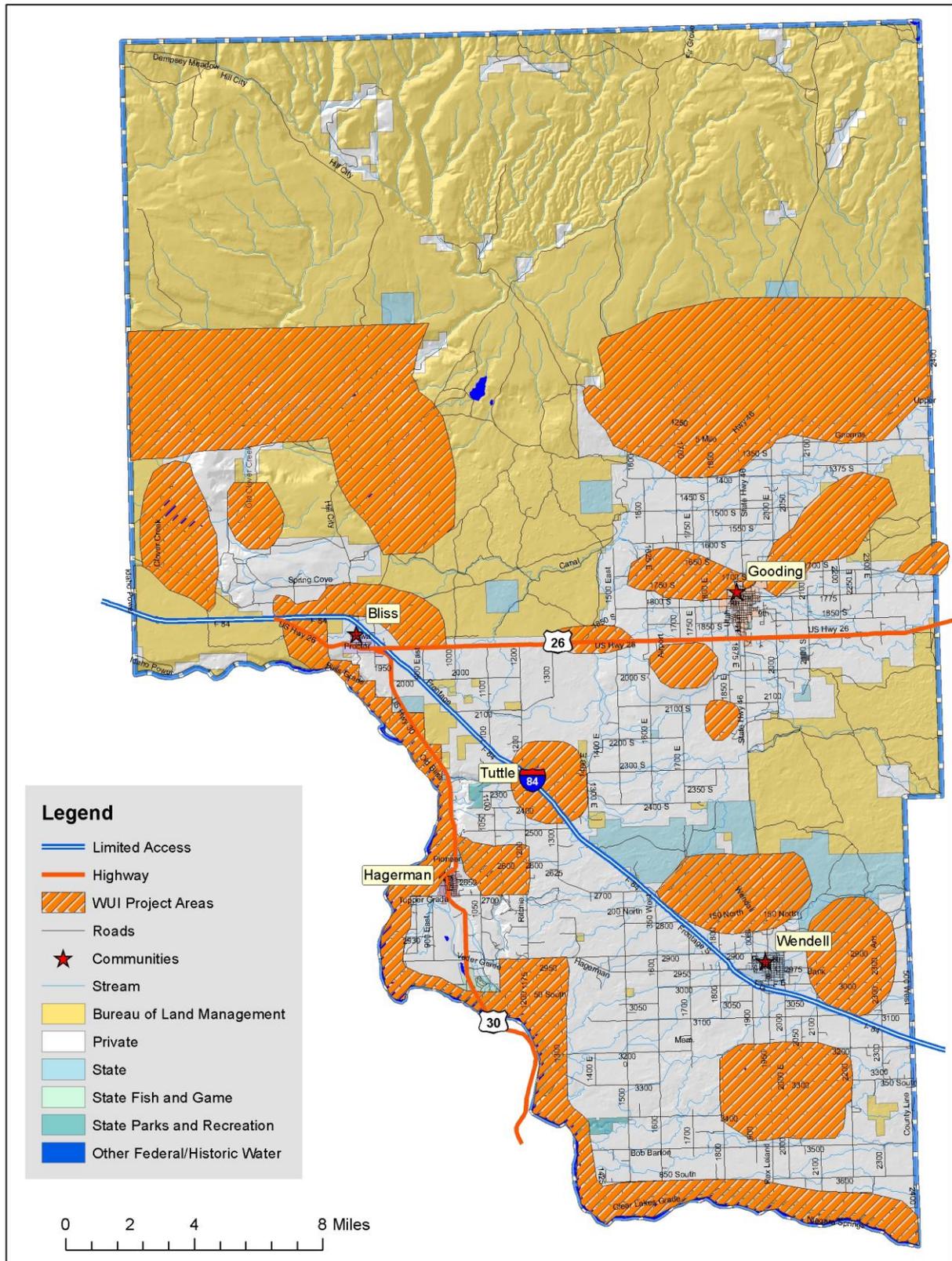
- Interface Condition: WUI
- Intermix Condition: WUI
- Occluded Condition: WUI
- Rural Condition: WUI
- Infrastructure Areas: WUI
- Non-WUI Condition: Not WUI, but present in Gooding County

Gooding County's wildland urban interface (WUI) is mostly based on interface and intermix conditions. This designation was defined by the County's Community Wildfire Protection Plan developed collaboratively by all agencies that have firefighting capabilities within Gooding County.

The Healthy Forests Restoration Act makes a clear designation that the location of the WUI is at the determination of the county or reservation when a formal and adopted Community Wildfire Protection

Plan is in place. It further states that the federal agencies are obligated to use this WUI designation for all Healthy Forests Restoration Act purposes. The Gooding County Multi-Hazard Mitigation Plan planning committee evaluated a variety of different approaches to determining the WUI for the county and selected this approach and has adopted it for these purposes. In addition to a formal WUI map for use with the federal agencies, it is hoped that it will serve as a planning tool for the county, state and federal agencies, and local fire districts.

Figure 4.7. Wildland Urban Interface in Gooding County, Idaho.



Second-Order Hazard Events

Wildland fires can be caused naturally by lightning or by various technological sources. Wildland fire can also be a secondary effect of another type of hazard. The following chart outlines the interconnection between wildland fire and other types of hazard events.

Table 4.8. Second-Order Hazards Related to Wildland Fire Events.	
Related Causal Events	Related Effects
Severe Weather	Structural/Urban Fire
Drought	Civil Unrest
Earthquake	Landslide
Transportation Systems	Transportation Systems
Hazardous Materials	
Structural/Urban Fire	

Chapter 5

Jurisdictional Vulnerability Assessment

IN THIS SECTION:

- Gooding County Annex
- City of Bliss Annex
- City of Gooding Annex
- City of Hagerman Annex
- City of Wendell Annex

Chapter 5
Vulnerability
Assessment

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Chapter 5 – Hazard Assessments

Jurisdictional Risk and Vulnerability Assessments

The Gooding County MHMP planning committee reviewed many of the natural and man-made hazards that have affected or pose a potential risk to people or property throughout the County. The committee agreed that the natural hazards of flood, earthquake, landslide, severe weather, and wildland fire should be included in the risk assessment for each jurisdiction. The planning committee recognizes that there are additional hazards, particularly man-made hazards, which may also affect Gooding County. These types of additional hazards will be reviewed for inclusion during the subsequent annual and 5-year evaluations of the MHMP.

As part of the risk and vulnerability assessment, each member of the planning committee was asked to fill out a critical infrastructure worksheet identifying and locating all structures, infrastructure, and culturally significant sites that loss or damage of which would have a significant impact on the community. This exercise also included all communication, hazardous materials storage, transportation, and emergency response infrastructure. The list from each member was compiled and added to a GIS database. The critical infrastructure database was used to develop maps and address each type of hazard risk in each jurisdiction.

Furthermore, Gooding County's existing parcel master listing has been converted to an accessible GIS database. This database allowed the planning committee to map every parcel within the County jurisdiction. This data was combined with the hazard vulnerability models to develop the risk assessments and loss estimations for the County's jurisdiction.

In order to be eligible for project funds under the Flood Mitigation Assistance (FMA) Program authorized by the National Flood Insurance Act of 1968, as amended, communities are required under 44 CFR 79.6(d)(1) to have a mitigation plan that addresses flood hazards. On October 31, 2007, FEMA published amendments to the 44 CFR Part 201 at 72 Federal Register 61720 to incorporate mitigation planning requirements for the FMA program, which combined the Local Mitigation Plan requirement for all hazard mitigation assistances programs under 44 CFR 201.6 to include the FMA as well as the HMGP, and PDM programs thus eliminating duplicative mitigation planning regulations. The purpose of the flood sections in the following annexes is to fulfill the requirements for both the FMA program and the Local Hazard Mitigation Plan.

Gooding County Annex

Flood Profile

All three types of flood events occur in Gooding County. Riverine flooding occurs along all tributaries to the Upper Snake, Malad, Clover, Little Wood, and Big Wood Rivers. The mountainous terrain of the north half of the County creates a flood-prone environment. Rain-on-snow events can and do occur at almost all elevations across the County. These events often contain enough moisture to cause flooding on the Malad River drainage and most of its major tributaries in the County. To a lesser extent the Snake River is also affected by rain on snow events. Due to its large drainage area and dams, the impacts of flood events on the main stem of the Snake River are muted; however, tributaries to the Snake River can be greatly influenced by rain on snow events. In general, these flood events can be predicted 24 to 72 hours in advance of the rising waters.

Most of the area is a gently undulating plain of lava flows and low shield volcanoes. Many drainage ways flow into ephemeral playa lakes. The Big Wood and Little Wood Rivers flow in a southwesterly direction across the northwestern half of the county and join the Snake River near Tuttle. The Snake River flows in a deep canyon to the south. To the north of Gooding County, in Camas County, is the Bennett Hills region, which consists of deeply dissected plateaus, rolling hills, and an area of scenic rock sculptures and canyons called the "City of the Rocks." Many high-gradient, deeply entrenched streams flow southward through the Bennett Hills region, the largest of which is Clover Creek.

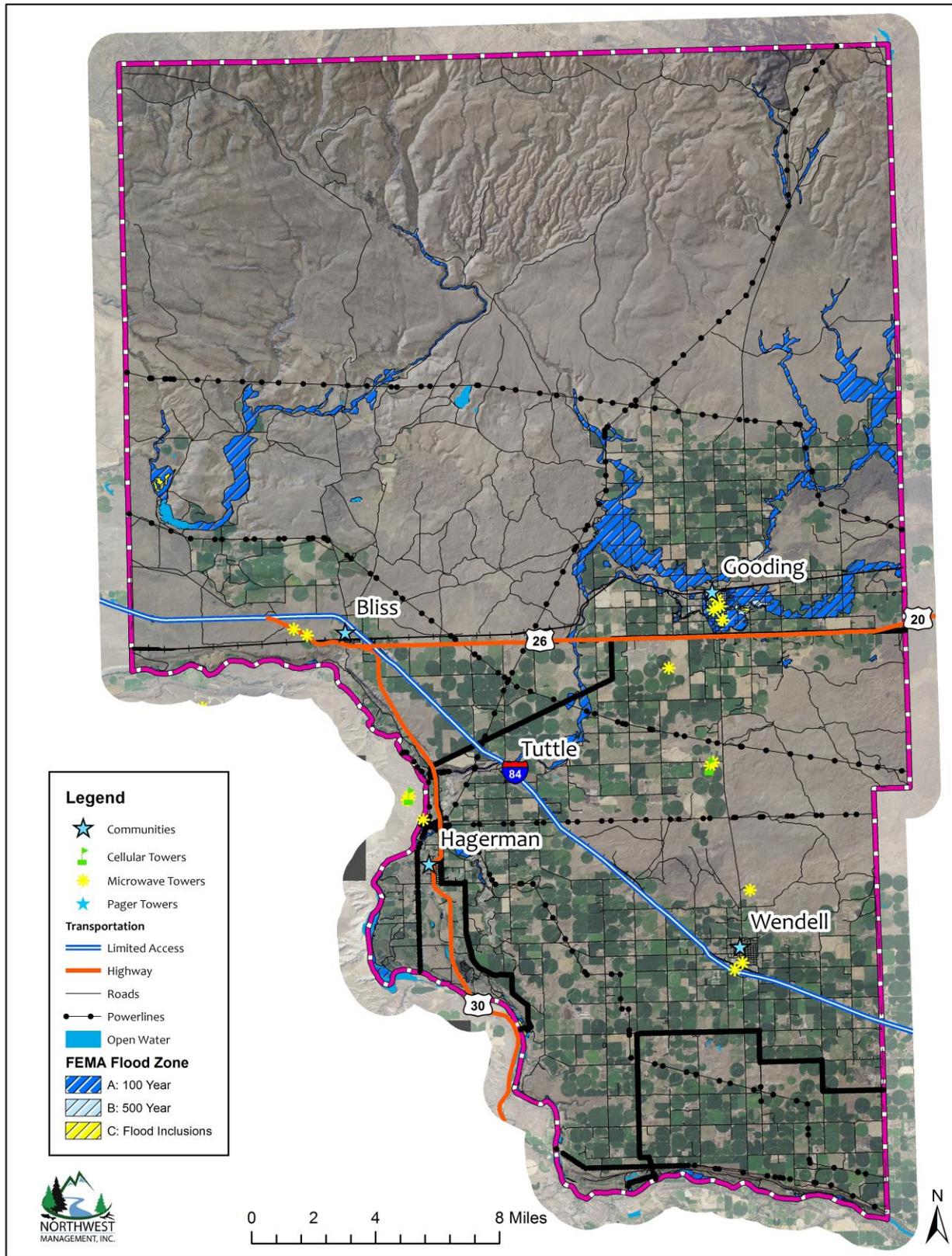
In Gooding County, summer thunderstorms can result in flash flooding of specific smaller drainages. Often there is little time to react to the quickly rising waters. Due to the nature of the terrain within the County, localized flooding from thunderstorms tends to be more of a storm drainage problem for many communities. Short-term blockage of roads is usually the biggest issue as drainage structures are overwhelmed by the rapid influx of water.

Two major factors have been attributed to past historical spring flood events at Gooding: 1) concurrent flood overflow from the Big Wood River into flood waters of the Little Wood River and 2) high discharges from early spring runoff from Jim Byrns and Marley slough combined with moderate discharges originating in the Little Wood River drainage above Richfield. Since construction of the Magic Reservoir on the Big Wood River in 1911, there have been no known large floods near Gooding caused by overflow from the Big Wood River during spring flood events.

The Wood River Area encompasses the south-central part of Idaho. It includes about 751,800 acres in Blaine County, 469,300 acres in Gooding County, 344,320 acres in Gooding County, and 218,600 acres in Minidoka County. The total area is about 1,784,020 acres, or 2,788 square miles. About 89 percent of the total area is rangeland, and about 11 percent is irrigated cropland and pastureland. Urban land makes up less than 0.2 percent of the Wood River region. The region includes private, State, and Federal land. The Federal land is administered by the Bureau of Land Management and the State land is administered by the Idaho Department of Lands.

Many bridge crossings have been identified by the Highway Districts as outdated and inadequate for high water events. Debris often collects on bridge abutments causing water to back up.

Figure 5.1. Gooding County FEMA Floodplain Map.



Gooding County is currently a participant in the National Flood Insurance Program (NFIP), and has been since 1979. The City of Gooding has been a participant in the program since 1974, when FIRM maps were first established in the city. FEMA flood maps were updated in 1985 for the City, and the rest of the county, but have not been updated since. Participation in the NFIP is low with only 21 policies in force in the county and only 133 in force in the city of Gooding (Table 5.1). The cities of Bliss, Hagerman, and Wendell do not have any FEMA flood zones identified within city limits.

Table 5.1. NFIP Policy Statistics as of 7/31/2014 in Gooding County.						
Community Name	Policies In-Force	Insurance In-Force	Written Premium In-Force	FIRM Effective Date	Floodplain Ordinance/Manager	CRS Ranking
Gooding County	14	\$2,372,300	\$12,406	6/19/1985	Ami Bennett	N/A
City of Bliss		No Mapped Special Flood Hazard Area				N/A
City of Gooding	62	\$10,600,100	\$70,936	7/19/1985	Mori Hall	N/A
City of Hagerman		No Mapped Special Flood Hazard Area				N/A
City of Wendell		No Mapped Special Flood Hazard Area				N/A

Participation in the National Flood Insurance Program (NFIP) and subsequent adoption of the International Building Codes, or more stringent local building codes, provide basic guidelines to communities on how to regulate development. When a county participates in the NFIP it enables property owners in the county to insure against flood losses. By employing wise floodplain management, a participating county can protect its citizens against much of the devastating financial loss resulting from flood disasters. Careful local management of development in the floodplains results in construction practices that can reduce flood losses and the high costs associated with flood disasters to all levels of government.

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

Local Event History

Gooding County has experienced a long history of high magnitude floods typically by “50 and 100-year” levels. The diverse landscape and weather patterns within Gooding County are the triggers for those high magnitude floods. Rain-on-snow events and above normal high spring temperatures are very typical throughout the county in the spring and late winter. The combination of the above two events are devastating and can cause extraordinary flooding events.

February, 1962 – Little Wood River: Floods were touched off when prolonged rain and warm temperatures combined to melt mountain snow packs and send the runoff rushing into the lowlands faster than the still frozen ground could absorb. A federal disaster declaration was issued on February 14, 1962 after extensive flooding along the Portneuf River and its tributaries, the Snake and Teton Rivers, inundating an area from Sugar City to Malad and from Aberdeen to Soda Springs. Throughout the area, numerous earthen dams and levees collapsed, roads were closed, bridges damaged, houses and businesses flooded. National Guard and Army Corps of Engineers responded to the areas in hopes of stopping additional flooding. Damage was estimated at more than \$15 million. Damage to over 1500 homes was reported.

Ice jams on the Little Wood River caused flooding and evacuations in Gooding. Twelve homes were affected by the floods.

1976 – Big Wood River: In 1976, the Big Wood River flooded Gooding. Water went over the West Bridge.

December, 1994 – Little Wood River: In December 1994, ice jams caused water to rise along the banks of the Little Wood River. The same problem is faced almost every year. The weather turns very cold, the river freezes, and then the weather warms up and the ice breaks loose. In Gooding, there is a low spot behind the old school as well as west of West Park where the river channel is shallow and ice builds up. Earlier in the month, the river almost overflowed in the vicinity of 9th Avenue and Colorado Street. Water was diverted into the desert relieving the flow through town.

1997 – Hagerman Valley: In 1997, residents in the Hagerman Valley had areas of flooding. As water levels rose, residents found themselves without facilities and facing moderate to severe damage from water flowing into basements and in some cases, the lower floors of their homes. Though residents are allowed to build on the floodplain of the river, Twin Falls and Gooding counties both require the finished elevation of homes be one foot above the floodplain.

The Crystal Springs Fish Hatchery south of Wendell also experienced problems with the rising river. Employees were forced to walk into their work areas, as approximately three feet of water covered the road. Though the river didn't overflow into hatchery ponds, it did cause difficulty with water backing up in the ponds and made feeding very difficult.

April, 2006 – Magic Valley: Due to above average snow melt in the Camas Creek drainage in Camas County, the Big Wood River below Magic Reservoir rose significantly. The water in the river channel near Gooding rose about 6 feet. On April 15, 2006, the Big Wood River flow was about 3,249 cfs or 6.35 feet on the gauge.

On April 16, 2006, the current flows to Magic Reservoir were approximately 5,500 cfs (Camas Creek = 3,570 cfs; Big Wood = 943 cfs, and other streams = 1,000 cfs). Discharge from the Magic Reservoir was measured at 5,200 cfs on April 16. On April 17, flows leveled off to 5,900 cfs. The river channel below the reservoir had some flooding in sections with water spilling over its banks. The water in the channel near Gooding rose about four feet in 24 hours and was measured at a stage of 7.45 feet near the State Highway 46 bridge north of Gooding. The flooding caused only minimal damage. Sandbagging was done to protect homes. This area has flooded before and residents are usually prepared for it.

The April 2006 flooding in Gooding County occurred as a result of above average spring precipitation, heavy runoff, and rapid snowmelt. A state disaster was officially declared on April 14, 2006 and was extended several times until February of 2007. The Idaho Bureau of Homeland Security reported that the state did not incur any costs in Gooding County due to this flood event.

Probability of Future Occurrence

The probability of flood events occurring in Gooding County is high. Low magnitude flood events can be expected several times each year. However, due to various flood control measures and drainage infrastructure, the impacts of these events in unincorporated areas are slight and usually amount to minor and temporary traffic issues throughout the County. Larger magnitude and high impact flood events have

occurred, but are not likely in any given year. These types of flood events have the highest probability of occurrence in the winter or early spring and often have a greater impact on the city of Gooding. Minor flash flood events are expected annually most likely as a result of summer thunderstorms or rain-on-snow events.

There are currently no repetitive loss properties or special flood hazard areas in unincorporated Gooding County.

Impacts of Flood Events

Due to several swift bodies of water in Gooding County, the probability of a flood-related fatality is moderate. Flash flood events in particular or accidents could result in a death or injury. First responders or other persons could be pinned under debris and drowned or receive trauma from debris being carried along the waterway. Once flood waters recede, mold can grow in wet material causing a public health hazard. Flood waters may contain sewage and hazardous chemicals that could be left on people's property following a flood event. Furthermore, water and food may be contaminated and heat and electricity may be inoperable for a period of time. Although the probability of these types of impacts occurring at a moderate to large scale is very low, all of these factors could contribute to a decline in current and long term health of Gooding County residents.

The continuity of operations for Gooding County and most other jurisdictions within the county will not be compromised due to a flood event. The delivery of some services may be hindered by localized flooding in certain areas; however, due to the availability of alternative routes, this is not a significant concern. Damage to facilities, equipment, or files could impact certain organizations or public services depending on the extent of damage and duration of the event.

Flood events in Gooding County are most likely to affect private property by damaging homes, businesses, barns, equipment, livestock, and vehicles. Both water and contaminants can damage or permanently ruin equipment. Flood waters can also erode land. This is particularly an issue when lands supporting roads, power lines, pipelines, sewage control facilities, levees, bridges, and other infrastructure are damaged by erosion.

In Gooding County, it is unlikely that flood events would cause any long-term environmental impacts. Some environmental impacts that may be realized by localized flooding could include erosion of stream banks, loss of riparian plant life, or contamination by chemicals or sewage. Flooding in some areas may have some environmental benefits such as establishing meanders that slow the stream flow, replenishing wetland areas and replenishing the soil with nutrients from sediment.

Flooding in Gooding County is not likely to have a significant or long-term effect on the local economy. Depending on the magnitude of the event, individual residents and businesses may be adversely impacted, but the economic viability of the community will not be affected. Severe damage to transportation infrastructure may have a short-term impact on certain communities due to the presence of state and U.S. highways, but alternative routes are available.

Value of Resources at Risk

There are approximately 1,319 structures within the FEMA-identified floodplains (100- and 500-year) in unincorporated Gooding County and the City of Gooding, yielding a total structure value of \$94.5 million. The structural value is based on the County's assessed value of property improvements and does not reflect the replacement cost of a structure. According to Gooding County Disaster Services, there are currently no repetitive loss properties within Gooding County. The average damage to structures was estimated based on the parcel's location as either completely within or out of the flood zone. The estimated value of contents is ½ the value of the improvements equating to an additional \$47.25 million in potential losses. In reality, the damages will most likely not be equally distributed between buildings based on building materials, building location, and flood location. However, these estimates provide a basic approximation.

Gooding County has not had any documented damages with regard to flooding within the County. The only significant flooding during the past 20 years occurred in 2006 which resulted in no damages.

Earthquake Profile

Based on historical records, Gooding County has not experienced any seriously damaging earthquakes in recorded history. Several distant earthquakes produced intensities strong enough to be felt in southern Idaho, but no earthquake epicenters were recorded for the region.⁴³ Many of Idaho's cities are at risk to earthquakes, even small ones, because many were built on unconsolidated sediments that move easily in response to seismic waves. Seismic waves are the form of energy that ripples through Earth when an earthquake occurs. When seismic waves propagate through unconsolidated sediments the sediments re-organize and move chaotically (analogy to shaking like a bowl of gelatin). The danger is really two fold because those cities, which were built near rivers below the foothills and mountains, eventually expanded upward into the foothills. Mountain foothills contain erosion remnants called alluvial fans. The alluvial fans may either slide down into the valley or simply shake about creating new topography due to internal settling. For this reason, Idaho ranks fifth in the lower 48 states as to its earthquake hazard.

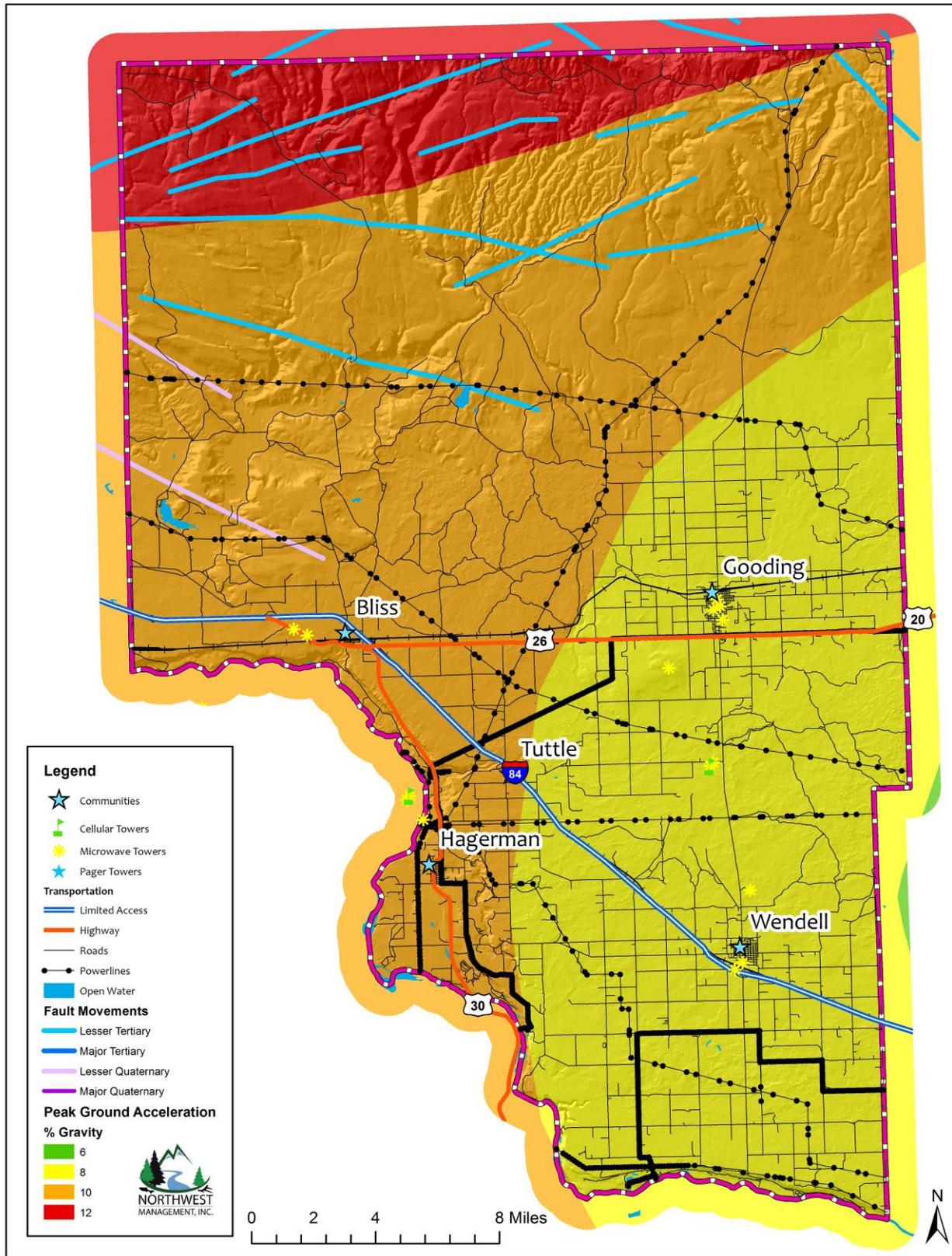
The U.S. Geological Survey has gathered data and produced maps of the nation, depicting earthquake-shaking hazards. This information is essential for creating and updating seismic design provisions of building codes in the United States. The USGS Shaking Hazard maps for the United States are based on current information about the rate at which earthquakes occur in different areas and on how far strong shaking extends from quake sources. Studies of ground shaking in Idaho during previous earthquakes have led to better interpretations of the seismic threat to buildings. In areas of severe seismic shaking hazard, older buildings are especially vulnerable to damage. Older buildings are at risk even if their foundations are on solid bedrock. Areas shown on the map with high seismic shaking hazard can experience earthquakes with high intensity where weaker soils exist. Most populated areas in Idaho are located on or near alluvial

⁴³ Idaho Geological Society. 2004. Available online at <http://www.idahogeology.com/Services/GeologicHazards/Earthquakes/>.

deposits that provide poorer building site conditions during earthquakes. Older buildings may suffer damage even in areas of moderate ground shaking hazards.⁴⁴

⁴⁴ Idaho Geological Society. 2004. Available online at <http://www.idahogeology.com/Services/GeologicHazards/Earthquakes/>.

Figure 5.2. Seismic Shaking Hazard and Fault Zones for Gooding County



Local Event History

No history of earthquake events has been specifically recorded for Gooding County.

Probability of Future Occurrence

There are several known geologic faults in Gooding County. Peak ground acceleration (pga) in percent g is a measure of the ground motion, which decreases, the further you are from the earthquake. The USGS Shaking Hazard maps for the United States are based on current information about the rate at which earthquakes occur in different areas and on how far strong shaking extends from quake sources. Colors on the map show the levels of horizontal shaking that have a 1 in 10 chance of being exceeded in a 50-year period. Shaking is expressed as a percentage of “g” (g is the acceleration of a falling object due to gravity). This map is based on seismic activity and fault-slip rates and takes into account the frequency of occurrence of earthquakes of various magnitudes. Locally, this hazard may be greater than that shown, because site geology may amplify ground motions. As seen in Figure 5.2, the earthquake probability trends upward from a 10% chance of exceeding a 5-6% pga in southern Gooding County to a 10% chance of exceeding a 7-8% pga in the northeastern tip of the County over the next 50 years.⁴⁵ No specific jurisdictions or special districts were identified as having differing issues or levels of risk associated with this hazard.

Impacts of Earthquake Events

Past events suggest that an earthquake in the Gooding County area would cause little to no damage. Nonetheless, severity can increase in areas that have softer soils, such as unconsolidated sediments.

Although unlikely in Gooding County, buildings that collapse can trap and bury people, putting lives at risk and creating clean-up costs. Upgrading existing buildings to resist earthquake forces is more expensive than meeting code requirements for new construction; thus, a high number of structures in Gooding County, particularly those built prior to seismic code requirements, remain at risk. Many critical facilities are housed in older buildings that are not up to current seismic codes.

Communities in Gooding County can expect some structural failure of older multistory unreinforced masonry buildings as a result of even lower intensity earthquakes. Cornices, frieze, and other heavy decorative portions of these types of structures may fail. The potential impacts of a substantial earthquake event are highly variable. Many of the structures and infrastructure throughout the county may not incur any damages at all; however, damage to roads, bridges, unreinforced masonry, chimneys, foundations, water lines, sewer lines, natural gas pipelines, and many other components are at risk. Fires can also be a secondary hazard to structures sustaining earthquake damage. The economic losses to business in the area may be very high if owners are forced to stop production or close their doors for even just a day.

Because structural damage by earthquakes is typically not complete destruction, but rather tends to be subtle cracking or settling that undermines the stability of the structure. These types of repairs can be very costly. Additionally, changes to the water table or even the topography can significantly impact local municipal and private wells and could result in the loss of traditional land uses.

⁴⁵ USGS. 2008 United States National Seismic Hazard Maps. U.S. Geological Survey. U.S. Department of Interior. Available online at <http://earthquake.usgs.gov/hazards/products/conterminous/2008/>. October 2009.

Value of Resources at Risk

HAZUS®-MH MR5⁴⁶ is a regional earthquake loss estimation model that was developed by FEMA and the National Institute of Building Sciences. The primary purpose of HAZUS is to provide a methodology and software application to develop earthquake loss estimations at a regional scale. In order to estimate potential earthquake losses in Gooding County, HAZUS was used to model a scenario based on the parameters of the nearest historic epicenter. The modeled earthquake recreated the effects of the Borah Peak Earthquake near Challis in 1983, i.e. the most likely type of earthquake event to occur in Gooding County. The HAZUS model estimated direct earthquake damages, induced earthquake damage, social impacts, and economic losses. It should be noted that the figures have a high degree of uncertainty and should only be used for general planning purposes.

For the modeled earthquake scenario, the HAZUS software reported no expected damage to essential facilities including hospitals, schools, emergency operations centers, police stations, and fire stations. There are an estimated 5,000 buildings in Gooding County with a total building replacement value (excluding contents) of \$1.2 billion. The software also reported that no residential or commercial structures would be damaged.

The replacement value of the transportation and utility lifeline systems is estimated to be \$1.5 billion and \$1.8 million, respectively. HAZUS estimated that no damages to the transportation system, potable water and electric power system, or the utility system facilities would be expected. The HAZUS model also does not project any casualties or sheltering as a result of the earthquake scenario.

Figure 5.4. Summary of Utility System Pipeline Damage from HAZUS.

System	Total Pipelines Length (kms)	Number of Leaks	Number of Breaks
Potable Water	505	0	0
Waste Water	303	0	0
Natural Gas	202	0	0
Oil	0	0	0

HAZUS estimated the long-term economic impacts for 15 years after the earthquake. The model quantifies this information in terms of income and employment changes within Gooding County. HAZUS estimated that there would be no economic losses attributed to bridge repairs. No economic losses are expected due

⁴⁶ FEMA. Hazuz®-MH MR5. Department of Homeland Security. Federal Emergency Management Agency, Mitigation Division. Washington, D.C. November 2014.

to repair of potable water distribution lines, wastewater facilities and distribution lines, natural gas distribution lines, or electrical power facilities.

HAZUS estimated that there are 54 unreinforced masonry structures in all of Gooding County. There are no known publicly accessible unreinforced masonry structures in unincorporated Gooding County.

Unreinforced masonry (URM) structures and unreinforced chimneys of homes will likely be damaged in the event of an earthquake. 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, more fragile bridges and land failure causing minor slides along roadways may isolate some residents.

Landslide Profile

Gooding County is entirely on the Snake River Plain, north of the Snake River. Thus all the rocks are Miocene and younger, with Quaternary basalt covering most of the county. In the north the Gooding City of Rocks, carved from Miocene rhyolite ignimbrites of the Twin Falls Volcanic Field, forms the south flank of the Mount Bennett Hills. A series of east-west normal faults cuts the Mount Bennett Hills, reflecting the rift-valley structure of the western Snake River Plain.

On the south, in the Snake River Canyon, are exposures of Miocene and Pliocene Glens Ferry Formation below the Quaternary basalt flows. Hagerman Fossil Beds National Monument, itself located on the west side of the Snake River in Twin Falls County, has its headquarters in Hagerman.

Malad Gorge, a narrow canyon cut by the Wood River in the last few hundred thousand years, is a unique feature of southern Gooding County.

Gooding County has a low probability of experiencing future landslide events, particularly those large enough to cause any major damage. However, this risk may increase along the Snake River canyon as human development and road building alter the natural stability of the canyon walls.

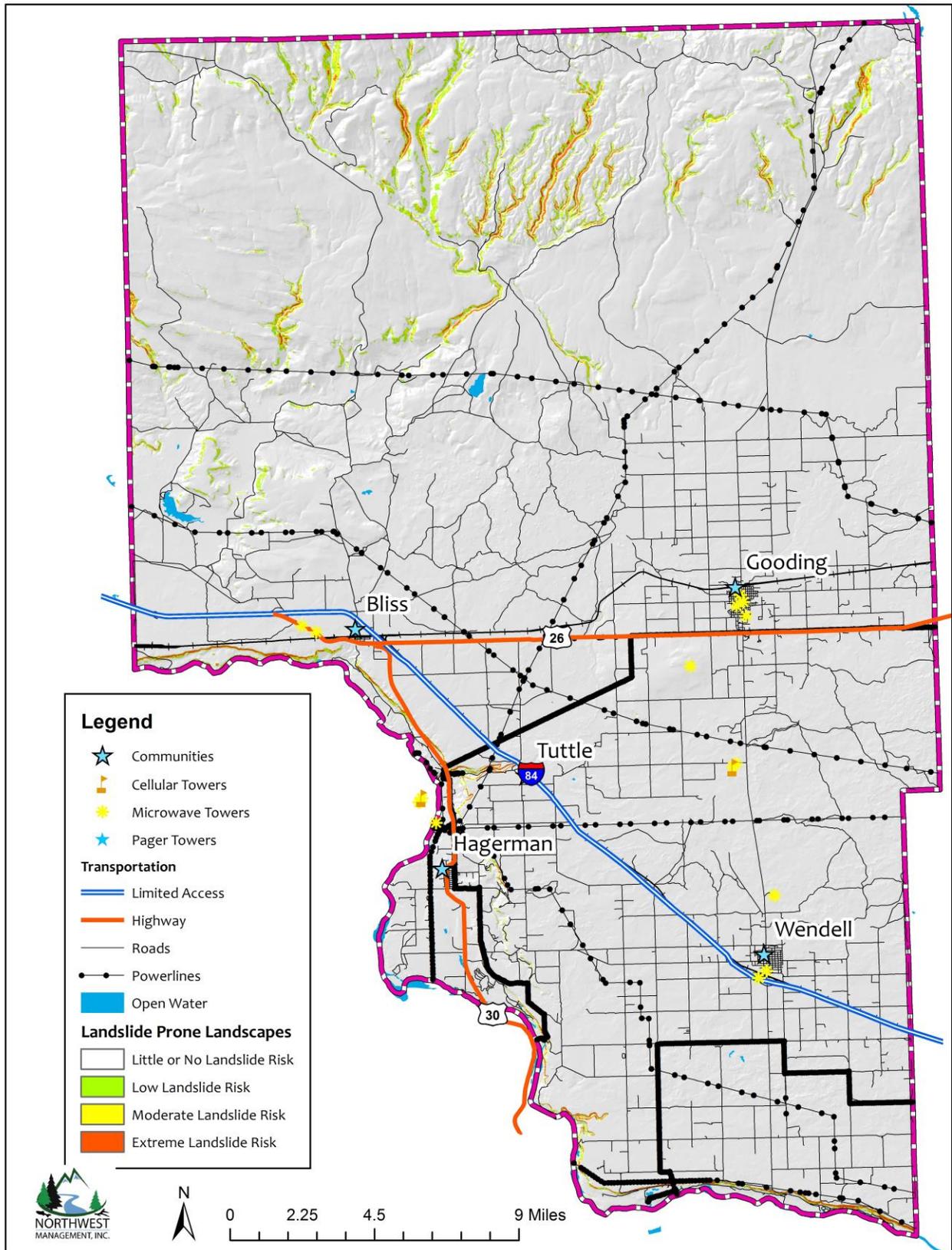
Soil factors that increase the potential for landslide are soils developed from parent materials high in schist and granite, and soils that are less permeable containing a resistive or hardpan layer. These soils tend to exhibit higher landslide potential under saturated conditions than do well-drained soils. To identify the high-risk soils in Gooding County, the NRCS State Soils Geographic Database (STATSGO) layer was used to identify the location and characteristics of all soils in the County. The specific characteristics of each major soil type within the County were reviewed. Soils information that suggested characteristics pertaining to very low permeability and/or developed a hardpan layer and soils developed from schist and granite parent material were selected as soils with potential high landslide risk. High-risk soils magnify the effect slope has on landslide potential. Soils identified as having high potential landslide risk are further identified only in areas with slopes between 14° and 30° (25-60%). It is these areas that traditionally exhibit the highest landslide risk due to soil characteristics within a given landscape.

To portray areas of probable landslide risk due to slope related factors, slope models were used to identify areas of low, moderate and high risk. This analysis identified the low risk areas as slopes in the range of 20°-25° (36-46%), moderate as 26°-30° (48-60%) and high risk as slopes in the range of 31°-60° (60-173%).

Slopes that exceeded 60° (173%) were considered low risk due to the fact that sliding most likely had already occurred relieving the area of the potential energy needed for a landslide. From the coverage created by these two methods, it is possible to depict areas of assumed risk and their proximity to development and human activity. With additional field reconnaissance the areas of high risk can be further defined by overlaying additional data points identifying actual slide locations, thus improving the resolution by specifically identifying the highest risk areas. This method of analysis is similar to a method developed by the Clearwater National Forest in north central Idaho.⁴⁷

⁴⁷ McClelland, D.E., et al. 1977. Assessment of the 1995 and 1996 floods and landslides on the Clearwater National Forest Part 1: Landslide Assessment. Northern Region U.S. Forest Service. December 1977.

Figure 5.5. Landslide Prone Landscapes Map of Gooding County.



Landslides occur primarily in the northern part of Gooding County. This area has a low number of structures and an occasional campground. In the past, the main consequence of landslides has been to restrict travel on the few roads that exist in the area. There are several stretches of Rock Creek road, Olds Ferry road, and Highway 71 in the Snake River Canyon area that have significant risk to slumps, bank failures, and culvert or bridge blockages during flood events due to the steep topography and unstable soils.

The major population centers in Gooding County, Bliss, Gooding, Hagerman, and Wendell have very little risk of experiencing major property damage or loss of life due to landslides.

The location of landslide deposits in canyons is controlled by the presence of sedimentary interbeds, the hydrologic regime, and the occurrence of basalt overlying clay-rich weathered basement rocks. The largest landslides occur where canyon cutting has exposed landslide-prone sediments to steep topography. Today, initiation and reactivation of landslides is closely tied to unusual climatic events and land-use changes. Even small landslide activity on the upper parts of the slopes can transform into high-energy debris flows that endanger roads, buildings, and people below. Landslide debris is highly unstable when modified through natural variations in precipitation, artificial cuts, fills, and changes to surface drainage and ground water.⁴⁸

Local Event History

1993 – Bliss Landslide: A large landslide below the City of Bliss, Idaho occurred that affected the area and communities of Bliss and Hagerman, Idaho. This landslide closed the Bliss Grade Road and access to the Bliss Bridge, this access was critical for the residences located on the Twin Falls County side of the Snake River. This landslide was large enough that it did briefly stop the flow of the Snake River; in the long term the channel of the river was changed dramatically and did have long term effects on the condition of the Bliss Bridge. The Bliss Grade Road was repaired and access restored to the area, however the potential for a reoccurrence still exists. This presents problems for the people that reside on the Twin Falls County side of the river as their fire and EMS services need to come across the bridge. If the bridge is not accessible these services could be delayed by almost an hour. More detailed information is included in the landslide profile for the City of Bliss.

1979 – Hagerman Fossil Beds National Monument: A series of major landslides have struck the plateau along the Snake River located in Hagerman Fossil Beds National Monument since 1979. These large slope failures have occurred approximately every two years, and typically affected areas ranging in size from 300 to 800 feet wide and up to 1000 feet long. The 1987 event destroyed a million dollar irrigation pumping facility and nearly killed two workers.

Probability of Future Occurrence

The majority of the landslide potential in Gooding County occurs in the steep canyons along the Snake River and in the canyons and drainages in the northern half of the County. These canyons have a high propensity for slides based on the steeper slopes, unstable soils, and history of occurrence. Wildfires and/or severe

⁴⁸ Weisz, D.W., K.L. Othberg, and R. M. Breckenridge. 2003. Surficial Geological Map of the Payette Quadrangle, Idaho and Lewis Counties, Idaho. Idaho Geological Survey Map, scale 1:24,000.

storms that saturate the soils could lead to major slide events in these areas. The probability of occurrence of major, high velocity landslide events in this area, including those caused by severe local storms, is moderate. The probability of other areas in Gooding County experiencing a landslide event is very low.

Impacts of Landslide Events

In Gooding County, minor landslides along toe-slopes and roadways occur annually with minimal impact to local residents. Major landslides in western Gooding County could cause property damage, injury, and death and may adversely affect a variety of resources. For example, water supplies, fisheries, forests, dams, and roadways can be affected for years after a slide event. The negative economic effects of landslides include the cost to repair structures/infrastructure, loss of property value, disruption of transportation routes, medical costs in the event of injury, and indirect costs such as lost timber and lost fish stocks.

Water availability, quantity, and quality can be affected by landslides and would have a very significant economic impact on Gooding County. The loss or redistribution of water would affect agricultural crops grown in certain areas, ranching activities, and personal and municipal wells.

Value of Resources at Risk

The cost of cleanup and repairs of roadways is difficult to estimate due to the variable circumstances with each incident including size of the slide, proximity to a State or County shop, and whether the slide occurred on the cut slope or the fill slope. Other factors that could affect the cost of the damage may include culverts, streams, and removal of debris. This type of information is impossible to anticipate; thus, no repair costs for damaged roadways have been estimated.

The average structure value throughout the county was determined using the County parcel database (incomplete) and the number of structures visible in recent aerial photography. According to this data set, there are 2,070 parcels with assessed improvement values in Gooding County. Within these parcels there are approximately 2,199 structures equating to a total value of \$157,626,910. This gives an extrapolated average structure value of \$71,681.

Landslide Impact Zone	Number of Structures	Value of Structures at Risk
Bliss - Malad	4	\$286,724

Slides in the identified Impact Zone are more likely to be larger and more damaging as weaknesses in the underlying rock formations give way. Although infrequent, this type of slide has the potential to not only block, but destroy road corridors, dam waterways, and demolish structures. The highest risk areas in these impact zones are typically at the higher elevations where slopes exceed 25% grade. There are a few homes in this impact zone. Single slide events will not likely impact the entire population, but rather individual structures. Many of the main access and secondary roads could also be at risk from slides initiating in these impact zones.

Severe Weather

Severe weather in Gooding County ranges from the commonly occurring thunderstorms to hail, high winds, tornadoes, drought, dense fog, lightning, and snow storms.

All of Gooding County is at risk to severe winter weather events and there is a high probability of their continued occurrence in this area. Blowing snow is very common in Gooding County. Very cold conditions combined with high winds tend to transport blowing snow many miles. The topographic features of the region facilitate snow accumulations on the leeward sides of hills piling up snow many feet deep. Commonly, snow accumulations and drifting are the cause of 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 Gooding County, particularly the senior population.

In Gooding County, ice storms occur when a layer of warm air is between two layers of cold air. Frozen precipitation melts while falling into the warm air layer, and then proceeds to refreeze in the cold layer above the ground. If the precipitate is partially melted, it will land on the ground as sleet. However, if the warm layer completely melts the precipitate, becoming rain, the liquid droplets will continue to fall, and pass through a thin layer of cold air just above the surface. This thin layer of air then cools the rain to a temperature below freezing (32 °F); however, the drops themselves do not freeze which is known as a phenomenon called supercooling. When the supercooled drops strike the ground or anything else below 32 °F, they instantly freeze, forming a thin film of ice that can build up on trees, utilities, roads, and other structures, infrastructure, and personal property.⁴⁹

Due to their relative frequency and minimal severity, severe thunderstorms are not well documented in Gooding 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 sections 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.

Hail can occur in any strong thunderstorm, which means hail is a threat everywhere. Hail is precipitation that is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere. Large hail stones can fall at speeds faster than 100 miles per hour. Hail damage in Idaho is very small relative to damage in areas of the central part of the United States. Often the hail that occurs does not grow to a size larger than one-half inch in diameter, and the areas affected 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.

⁴⁹ Wikipedia. "Ice Storm". Wikimedia Foundation, Inc. March 2011. Available online at http://en.wikipedia.org/wiki/Ice_storm.

Windstorms are frequent in Gooding County and they have been known to cause substantial damage. Under most conditions, the County's highest winds come from the northwest. However, during the summer months lightning and thunderstorms often come from the south to southwest. Due to the abundance of agricultural development in Gooding 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 wind blown dust on sensitive receptors, or 4) wind driven wildfires. Structural injury from damaged roofs is not uncommon in Gooding County. Airborne particulate matter increases during high wind events. When this occurs, sensitive receptors including the elderly and those with asthma are at increased risk to 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 the Coast Range and southern Idaho.

Gooding County and the entire region are at increased risk to wildfires during high wind events. Ignitions can occur from a variety of sources including downed power lines, lightning, or arson. Once ignited, only wildfire mitigation efforts around the community and scattered homes will assist firefighters in controlling a blaze. Details about wildfire mitigation are discussed in the wildland fire annex of this Multi - Hazard Mitigation Plan.

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 of the tornadoes occurring in April and May, when cold, dry air from the north or northwest meets warm, moister air moving up from the south. If this scenario was to occur and a major tornado was to strike a populated area in Gooding 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; tornados usually develop from severe thunderstorms. Areas most vulnerable to tornado are those subject to severe thunderstorms or those with a recurrence rate of 5 percent or greater, meaning the County experiences one damaging severe thunderstorm event at least once every 20 years.

According to the Tornado Project⁵⁰ and the National Climatic Data Center⁵¹, there were 6 reports of tornadoes in Gooding County between 1950 and 2012. They occurred in June of 1956 (F1), May of 1985 (F1), two on April of 1988(F0 & F1), June of 1990 (F1), and May of 1993 (F0). No injuries or deaths were reported as a result of these events. There are no reports of tornadoes from 2012 to present.

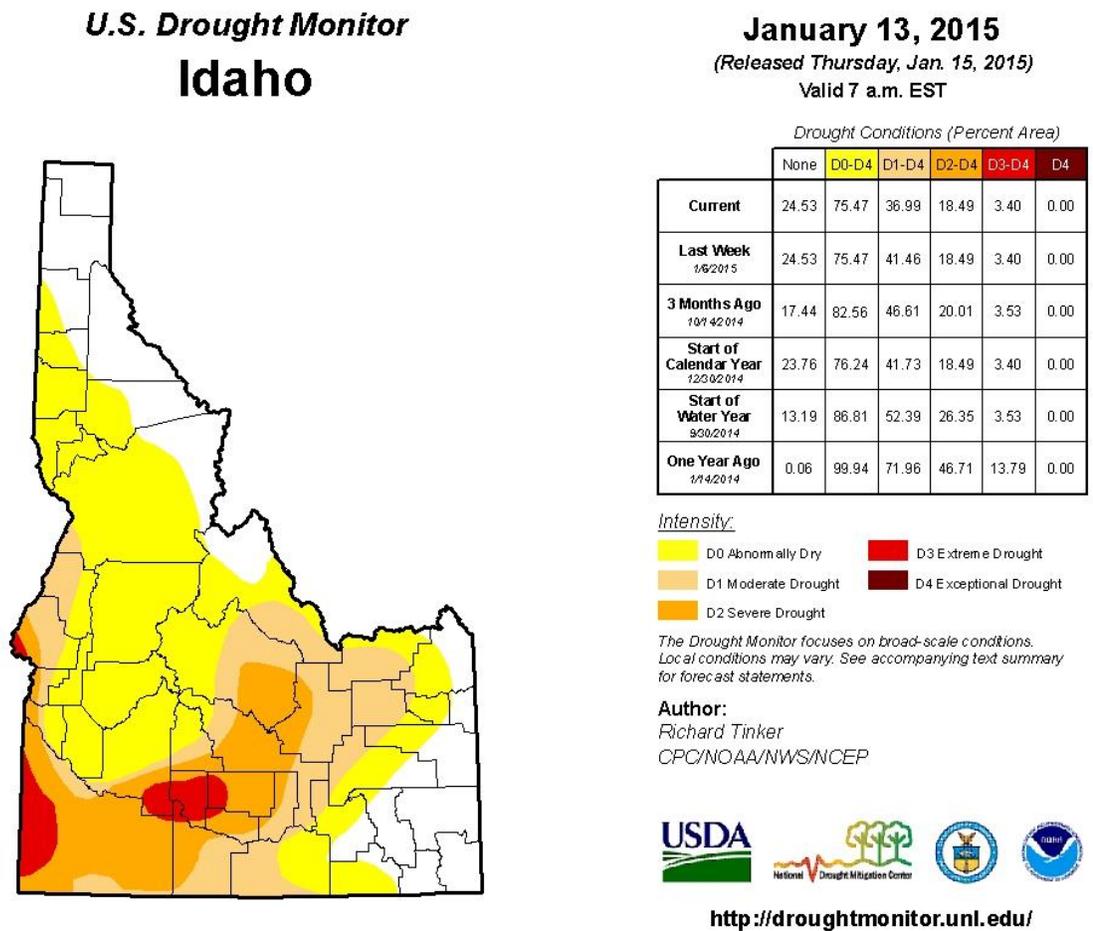
⁵⁰ Tornado Project. 1999. St. Johnsbury, Vermont. Available online at <http://www.tornadoproject.com/alltorns/idthorn.htm>.

⁵¹ National Climatic Data Center. 2010. *Storm Events Database*. NOAA Satellite and Information Service. U.S. Department of Commerce. Available online at <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>.

Drought is a condition of climatic dryness that is severe enough to reduce soil moisture and water below the minimum necessary for sustaining plant, animal, and human life systems. Nearly all areas of the State are vulnerable to drought. In every drought, agriculture is adversely impacted, especially in non-irrigated areas such as the dry land farms and rangelands in Gooding County. Droughts impact individuals (farm owners, tenants, and farm laborers), the agricultural industry, and other agriculture-related sectors.

The severity of drought is measured by the Palmer Index in a range of 4 (extremely wet) to -4 (extremely dry). The Palmer Index incorporates temperature, precipitation, evaporation and transpiration, runoff and soil moisture when designating the degree of drought.⁵²

Figure 5.6. Idaho Drought Monitor for January, 2015.



Drought affects water levels for use by industry, agriculture, and individual consumers. Water shortages affect firefighting capabilities through reduced flows and pressures. Drought also affects power production. Much of Idaho’s power is produced by hydro-electric dams. When water levels drop, electric

⁵² U.S. Drought Monitor. Available online at <http://droughtmonitor.unl.edu/Home/StateDroughtMonitor.aspx?ID>. Accessed January, 2015.

companies cannot produce enough power to meet demand and are forced to buy electricity from other sources. Oftentimes, drought is accompanied by extreme heat. When temperatures reach 90 degrees and above, people are vulnerable to sunstroke, heat cramps, and heat exhaustion. Pets and livestock are also vulnerable to heat-related injuries. Crops can be vulnerable as well. In the past Idaho State droughts yields were significantly lessened. Drought increases the danger of wildland fires. In Gooding County, fires in rangeland areas are particularly dangerous due to typically high rates of spread and the scattered nature of structures and infrastructure that could potentially be affected.

Local Event History

Seven Year Drought – 1987 to 1992: This period saw the worst water shortage since the 1977 drought. In 1987, Idaho requested \$5.8 million in Emergency Conservation Funds to aid drought-stricken farmers. In 1988, in Oneida County, the Deep Creek Reservoir was shut off half-way through irrigation season because the water level was so low it was filling the sprinkler system with mud and silt. Throughout the drought, reservoirs were consistently below capacity, resulting in irrigation water ending earlier than normal, crops being plowed under or not planted at all, and recreational activities being curtailed. The drought caused high water temperatures in rivers and the lack of perennial grass growth caused livestock to be removed from public lands early, while wildlife starved in many wintering areas. Conservation measures were instituted for residential and commercial use. Wells used for residential and agricultural sectors ran dry, and a moratorium on new wells was instituted. In 1992 alone, \$500 million was lost in agricultural production.

July, 1998 – Bliss: In July 1998, Bliss residents reported golf ball size hail fell. Gooding residents reported marble sized chunks. The hail quickly built up along building fronts giving the appearance of snow drifts.

April, 2006 – Hagerman: The following is a personal account by the Hagerman Fire Protection District Chief of the F-0 tornado that passed through Hagerman on April 4th, 2006. See Figure 7.22 in the Appendices of this document.

June, 2006: The National Weather Service in Boise issued a tornado warning for parts of Ada, Canyon and Owyhee counties. Thunderstorms brought heavy rain, winds and hail to much of southwestern Idaho, and one tornado. A funnel cloud was spotted in a rural area of southeastern Oregon.

There were no reports of property damage or injuries to people from this event. The affected area is mostly sagebrush. A fast-moving storm pounded southern Idaho with rain, hail and reports of tornadoes. Some 19,000 people were without power in Twin Falls.

Large hailstones were reported in Boise and Mountain Home, and hail also fell across other areas on the state's western border, including Gooding, Camas, and Lincoln Counties. The National Weather Service ended its tornado warning just after 5 p.m. After that, intermittent sunshine and dark clouds moved through the region.

The storm was accompanied by thunder and lightning. Much of southwest Idaho was put under alert. A spokesman with the National Weather Service in Boise said that a tornado did touch down in southeastern Oregon around 1 p.m. (June 14, 2006) near the town of Wagontire. The affected area is mostly sagebrush

and there have been no reports of any property damage or injuries to people. This tornado was categorized as an F-0 storm, which means it had sustained winds of less than 72 miles per hour.

Probability of Future Occurrence

The probability of Gooding County experiencing a severe weather event on an annual basis is very high.

Extreme cold, snow accumulation, and wind events are common occurrences between November and March. Major winter storms are expected at least twice each year during the winter season; however, these weather patterns rarely last more than a few days. Severe drifting also occurs in Gooding County during the winter months. The probability of this type of event is moderate to high annually.

Wind events are also common in Gooding County and can occur throughout the year. Wind is often associated with winter storms during the winter and thunderstorms during the warmer months, but can also occur without additional storm influences. Significant wind events are expected 3-5 times annually.

Several major thunderstorms are expected in Gooding County each year between April and September; however, these types of events rarely cause serious damage.

Gooding County has a moderate probability of experiencing a damaging hail storm in any given year. These types of events most frequently occur in the spring, but can occur throughout the summer as well.

Tornadoes are relatively rare, but the conditions for a funnel cloud to form are reported in Gooding County several times each year. Nevertheless, based on the historical record of tornadoes in this area, the probability for a small tornado to occur in Gooding County is low. The probability of a higher magnitude tornado occurring in this area is extremely low.

The Idaho Department of Water Resources reports that meteorological drought conditions (a period of low precipitation) existed in the State approximately 30% of the time during the period 1931-1982. Principal drought in Idaho, indicated by stream flow records, occurred during 1929-41, 1944-45, 1959-61, 1977, and 1987-92.⁵³ The probability of Gooding County experiencing a major long term drought in any given year is low to moderate. While Gooding County does experience droughts, on the whole, they are mild and do not cause long term damage. The impacts of drought on the agricultural sector are mitigated by the availability of irrigation water.

Impacts of Severe Weather Events

Winter storms with drifting snow, high winds, and/or extreme cold can have a considerable impact on Gooding County. However, most residents are well accustomed to the severe winter conditions in this part of Idaho. Structures in these communities are generally built to handle the snowload for the area; thus, severe damages from winter storms are rarely reported.

Power outages and unplowed roads are a frequent occurrence throughout many parts of the County, but most residents are prepared to handle the temporary inconvenience. Snow loads on roofs, ice-slides off of

⁵³ Idaho Department of Water Resources. 2010. Idaho Drought Emergency Declarations. Available online at <http://www.idwr.idaho.gov/News/drought/drought.htm>.

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.

Many types of severe weather events tend to impact transportation routes and related infrastructure, especially snow and thunderstorms. Numerous traffic accidents occur along Interstate 84 and other primary highways each year, but are particularly common during the winter months due to ice and snowpack as well as poor visibility.

Wind usually accompanies snow storms in Gooding County; thus, large accumulations are not common as much of the snow is blown away. Commonly, heavy drifting is the cause of disruptions to normal commuting activities (delays and inability to plow roads and driveways). High wind events during the spring and summer months could lead to crop damages as well.

The potential impacts of a severe hail storm in Gooding 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. The most common direct impact from ice storms to people is traffic accidents. The highest potential damage from hail storms in Gooding County is the economic loss from crop damage. Even small hail can cause significant damage to young and tender plants and fruit. Trees can also be severely damaged by hail.

Impacts of tornados in Gooding County include crop damage, downed power lines, downed or damaged trees, broken windows, roof damage, and vehicle damage. The most common direct impact from tornados to people is structure damage. Tornados are often accompanied by hail which can cause severe damage to crops, vehicles, structures, and even injure people. The highest potential damage from tornados in Gooding County is the economic loss from crop damage.

The impacts of drought are diverse and often ripple through the economy. Thus, impacts are often referred to as either direct or indirect. A loss of yield resulting from drought is a direct or first-order impact of drought. However, the consequences of that impact (for example, loss of income, farm foreclosures, and government relief programs) are secondary or even tertiary impacts. The impacts of drought in Gooding County can be classified into one of three principal types: economic, environmental, and social. Economic impacts, resulting from drought, range from direct losses in the broad agricultural and agriculturally related sectors (including forestry and fishing), to losses in recreation, transportation, banking, and energy sectors. Other economic impacts would include added unemployment and loss of revenue to local, state, and federal government. Environmental losses include damages to plant and animal species, wildlife habitat, and air and water quality; forest and range fires; degradation of landscape quality; and soil erosion. These losses are difficult to quantify, but growing public awareness and concern for environmental quality has forced public officials to focus greater attention on them. Social impacts mainly involve public safety, health, conflicts between water users, and inequities in the distribution of impacts and disaster relief programs. As with all natural hazards, the economic impacts of drought are highly variable within and between economic sectors and geographic regions, producing a complex assortment of winners and losers with the occurrence of each disaster.

Value of Resources at Risk

It is difficult to estimate the cost of potential winter storm damages to structures and the economy in Gooding 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. Additionally, due to the lack of significant topographic features, the wind tends to blow much of the snow accumulation away. Snow plowing in Gooding County occurs from a variety of departments and agencies. The state highways are maintained by the State of Idaho. Plowing of county roads is done by the local highway districts and the road departments of the individual cities. Gooding County has developed a pre-determined list of critical routes in order to prioritize the plowing of arterials and other main access routes. Private landowners are responsible for maintaining their own driveways or other private roads.

Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on Gooding County residents as not only is power cut to homes and businesses, but primary heating is lost for many residents. Gas furnaces and wood stoves supplement electrical heating, but with wood heating the senior population is at a disadvantage. 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. More rural parts of the County are sometimes better prepared to deal with power outages for a few days due to the frequent occurrence of such events; however, prolonged failure, especially during cold winter temperatures can have disastrous effects. All communities should be prepared to deal with power failures. Community shelters equipped with alternative power sources will help local residents stay warm and prepare food. A community-based system for monitoring and assisting elderly or disabled residents should also be developed. All households should maintain survival kits that include warm blankets, flashlights, extra batteries, nonperishable food items, and clean drinking water.

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. Gooding County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow covered roads.

Thunderstorms do occur within 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. The loss potential from flooding which results from severe thunderstorms can be significant in Gooding County.

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 extensive agricultural development in Gooding County. 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. Most 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 Gooding 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.

It is difficult to estimate potential losses in Gooding County due to windstorms and tornadoes. Construction throughout the County has been implemented in the presence of high wind events, and therefore, the community has a higher level of preparedness to high wind events than many other areas experiencing lower average wind speeds.

We have estimated losses based on wind and tornado damage as follows:

- 3% of the buildings damaged causing 50% of value loss (loss could be from downed or damaged trees, damaged outbuildings, damaged fences/poles, damage to siding, damaged landscaping etc.)
- 5% of the buildings received damage to roof (requiring replacement of roof equaling \$3,000)

Damages associated with sensitive receptor irritation have not been estimated. We have also not estimated the potential for a large scale wildfire event associated with high winds. Based on the data provided by the County, there are 5,851 parcels with improvements in unincorporated Gooding County with a total value of approximately \$616,691,578 and an average value of \$105,399. Using the criteria outlined above an estimate of the impact of high winds on the County has been made. The potential wind and tornado damage to all buildings is estimated at approximately \$9,275,143. The estimated damage to roofs is approximately \$877,650.

Recent drought periods in Gooding County have caused only minor damages and crop losses. There were no threats to any critical facilities. Thus, a minor to moderate drought has a low probability of affecting the County's economy directly due to the availability of irrigation waters. An extreme and prolonged drought could result in limited availability of irrigation water; thus causing severe crop losses countywide. In the event of an extended drought cycle, water shortages may lead to crop failures, or at the least, the necessity to plant lower value crops that are less water-dependent. The majority of the population is employed either directly by the agriculture industry or to a service industry dependent on agriculture. Crop losses resulting from extended droughts would likely be considered a disaster for Gooding County. Domestic and municipal water shortages are also likely to occur during an extended drought. Efforts to conserve water resources, including public education on conservation techniques, are encouraged by Gooding County during the summer months.

Wildland Fire Profile

The Gooding County Wildland Fire Hazard Mitigation Plan⁵⁴ provides a comprehensive analysis of the wildland fire risks and recommended protection and mitigation measures for all jurisdictions in Gooding

⁵⁴ 2004. Gooding County, Idaho, Wildland Fire Hazard Mitigation Plan. North Wind, Inc., Idaho Falls, Idaho. September 2004. Pp. 56.

County. The information in the “Wildland Fire” sections of this Gooding County Annex is excerpted from that more detailed document.

The majority of homes and structures within and surrounding Gooding County communities are along a spectrum from low to moderate to high risk of loss to wildland fire. Individual characteristics of each community and structure dictate the risk factors. The prevalence of grass and shrub fuels pose a moderate to high threat to homes surrounded by these fuels as fire typically spreads quickly through the grasses and burns at relatively high intensities in the brush fuels, especially where declining rangeland health is a factor. Many homes are at low risk as a result of the management of fuels in the area immediately surrounding the structures and access routes. There are a number of individual homes that have a much higher risk to wildland fire loss largely due to the use of highly ignitable materials in home construction or the lack of defensible space surrounding the home. Home defensibility practices can dramatically increase the probability of home survivability. The amount of fuel modification necessary will depend on the specific attributes of the site. Considering the high spread rates possible in these fuel types, homes need to be protected prior to fire ignitions as there is little time to defend a home in advance of an active fire.

Rangeland Communities

The communities of Gooding, Wendell, Hagerman, and Bliss all consist of small farms and ranches concentrated along the perimeter of the city limits. Larger landowners are scattered across the flat bottoms of the Snake River valley and its tributaries. These rivers in conjunction with several canals provide an ample water resource for irrigation. The more populated parts of these areas are heavily utilized for agricultural purposes and pastureland due to the well-established irrigational access. This significantly reduces the risk of wildfire by controlling the herbaceous vegetation.

These communities are surrounded however, by the vegetative ecosystem known as the “sagebrush steppe” community. The Sagebrush Steppe Ecosystem is widespread over much of southern Idaho, eastern Oregon and Washington, and portions of northern Nevada, California and Utah. The southern Idaho portion of this ecosystem occurs over a variety of landforms and vegetation types. Native vegetative communities range from vast expanses of grasslands to old-growth sagebrush communities.

The steppe is characterized by a persistently warm and arid environment that limits non-cultivated vegetative communities to grass and brush rangelands. Xeric vegetation and hot, dry and windy conditions has resulted in a rich fire history, with relatively frequent fires. The last decade has seen the proliferation of cheatgrass (*Bromus tectorum L.*), an exotic grass species that is able to out-compete native bunchgrasses. Cheatgrass responds well to soil disturbance and is found in abundance along roadsides, driveways, new construction areas, and in recently burned areas. Over time, vegetative species composition in unmanaged or non-irrigated land has shifted toward fire prone species, particularly in high use areas where disturbance is common.

Agricultural and irrigation practices surrounding some communities within the Snake River Valley have created a patchwork of green, lush vegetation and cured rangeland. This patchwork helps to break the continuity of fuels that are available to burn. However, dry fuels become continuous above the irrigated zone providing a consistent fuel bed for fire spread. The majority of land outside of towns and

communities is dominated by xeric vegetation with few breaks in continuity. Under dry and windy conditions, fires in these vegetative types can burn thousands of acres in a single burning period.

Fuels throughout the entire steppe community in Gooding County are quite consistent, dominated by grasslands and sage. Fires in these fuel types tend to be spread rapidly, but burn at relatively low intensity. Where grasses become less consistent, wind is needed to push fires through the bunchgrass. Typically, fires in sage-dominated fuel types require a moderate wind to push fire through the fuels. Without wind, the fire will drop to the ground and in the absence of fine fuels, fire spread will stop.

Fire behavior and fire regimes have been altered due to the proliferation of cheatgrass. The fine fuel structure and its ability to completely dominate disturbed sites provide a dry, consistent fuel bed for fire. Where this invasive has encroached in sagebrush stands, it now provides a consistent bed of fine fuels that actively carry fire without the influence of wind. Because of these characteristics, cheatgrass will support fire during months of the year and under conditions that native vegetation would not have sustained.

Cheatgrass can reduce the fire recurrence interval in sagebrush grasslands dramatically; 60 to 110 years for a natural cycle to less than five years on cheatgrass-dominated sites.⁵⁵ Continued natural and human-caused disturbances will favor cheatgrass; shifting species composition away from native species toward this highly flammable exotic. Consequently, the landscape will become increasingly fire prone over time. Fuels in more populated areas will continue to become increasingly receptive to ignition sources; thus, increasing the frequency of wildland fires.

Local Event History

Detailed records of wildfire ignitions and extents from the Bureau of Land Management (BLM) have been analyzed. In interpreting this data, it is important to keep in mind that the information represents only the lands protected by the agency specified and may not include all fires in areas covered only by local fire departments or other agencies.

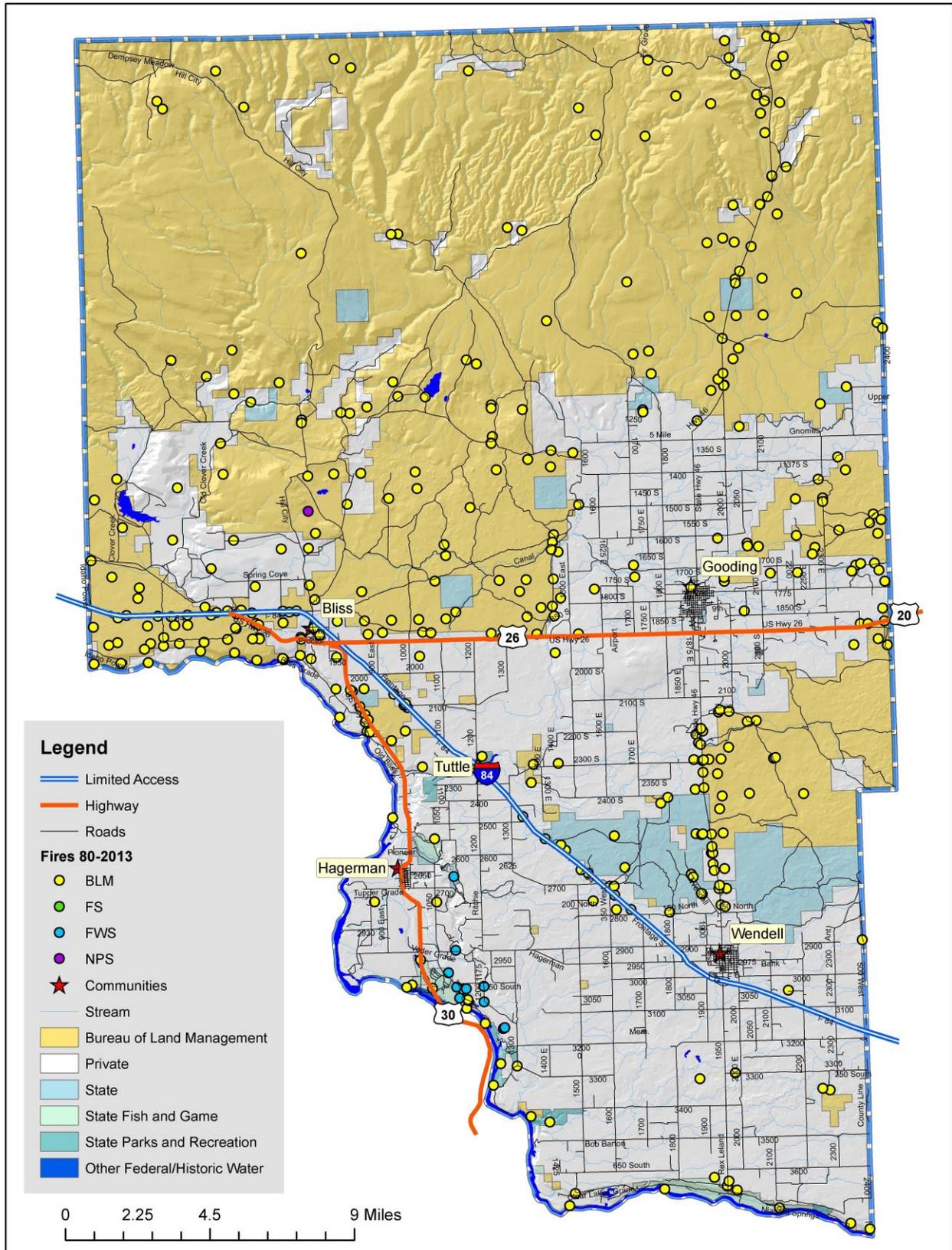
The BLM database of wildfire ignitions used in this analysis includes ignition and extent data from 1980 through 2013 within their jurisdictions. During this period, the agency recorded an average of 12 wildfire ignitions per year resulting in an average total burn area of 3,949 acres per year. According to this dataset, the vast majority of fires occurring in Gooding County are human caused and result in the majority of acres burned.

The highest number of ignitions was witnessed in 2005 with 34 separate ignitions, while the largest number of acres burned in a single year occurred in 1996 with over 25,000 acres being scorched.

⁵⁵ The Great Basin and Invasive Weeds website.

<http://www.usu.edu/weeds/plantspecies/weedspecies/cheatgrass.html>. Accessed November, 2012.

Figure 5.7. Federal and State Wildland Fires 1980-2013.



When analyzed by decade from 1980-2013, this shows that the total number of ignitions has increased each decade since the 80's. There is also a definite upward trend in the total number of acres burned each decade from 30,841 acres burned in the 1980s, 39,255 acres in the 1990s, and 34,309 in the 2000s. Gooding County is currently on target to double those acres during the 2010s

Table 5.3. Summary of BLM databases 1981-2010.

General Cause	Number of Ignitions	Percent of Total Ignitions	Acres Burned	Percent of Total Acres
Human-Caused	300	73%	92,332	69%
Natural Ignition	78	19%	41,934	31%
Unknown	32	8%	11	<1%
Total	410	100%	134,278	100%

The data reviewed above provides a general picture regarding the level of wildland-urban interface fire risk within Gooding County. There are several reasons why the fire risk may be even higher than suggested above, especially in developing wildland-urban interface areas.

1) Large fires may occur infrequently, but statistically they will occur. One large fire could significantly change the statistics. In other words, 30 years of historical data may be too short to capture large, infrequent wildland fire events.

2) The level of fire hazard depends profoundly on weather patterns. A several year drought period would substantially increase the probability of large wildland fires in Gooding County. For smaller vegetation areas, with grass, brush and small trees, a much shorter drought period of a few months or less would substantially increase the fire hazard.

3) The level of fire hazard in wildland-urban interface areas is likely significantly higher than for wildland areas as a whole due to the greater risk to life and property. The probability of fires starting in interface areas is much higher than in wildland areas because of the higher population density and increased activities. Many fires in the wildland urban interface are not recorded in agency datasets because the local fire department responded and successfully suppressed the ignition without mutual aid assistance from the federal agencies.

Figure 5.8. Summary of Ignitions 1980-2013.

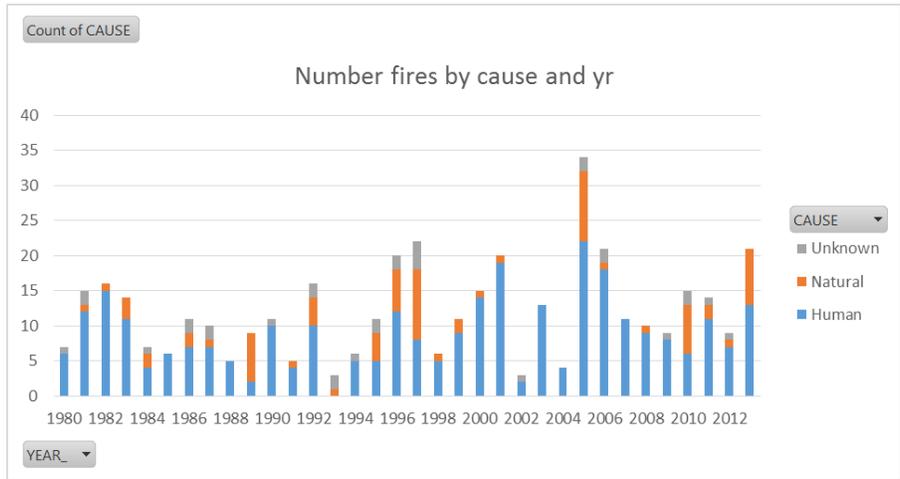
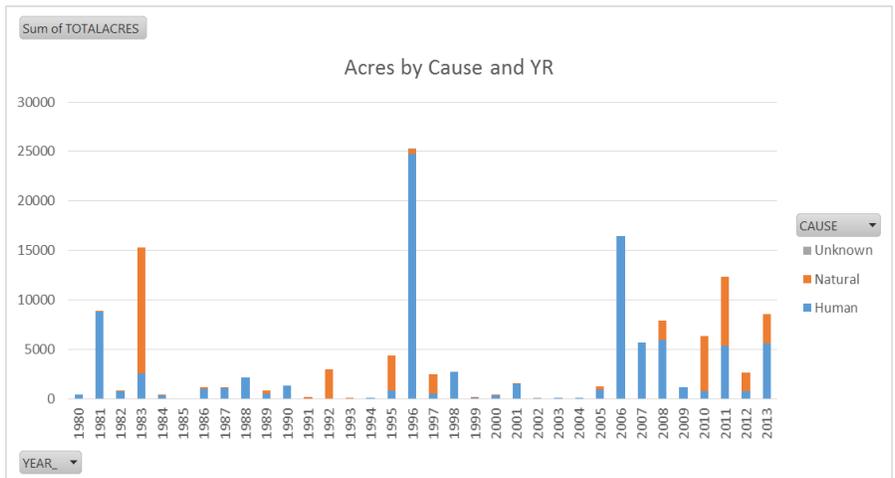


Figure 5.9. Summary of Acres Burned 1980-2013.



Probability of Future Occurrence

Fire was once an integral function within the majority of ecosystems in Idaho. The seasonal cycling of fire across the landscape was as regular as the July, August and September lightning storms plying across the Snake River Plain of Gooding County. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition.⁵⁶ The fires burned from 1 to 47 years apart, with most at 5- to 20-year intervals.⁵⁷ With infrequent return intervals, plant communities tended to burn more severely and be replaced by

⁵⁶ Johnson, C.G. 1998. Vegetation Response after Wildfires in National Forests of Northeastern Oregon. 128 pp.

⁵⁷ Barrett, J.W. 1979. Silviculture of ponderosa pine in the Pacific Northwest: the state of our knowledge. USDA Forest Service, General Technical Report PNW-97. Pacific Northwest Forest and Range Experiment Station, Portland, OR. 106 p.

vegetation different in composition, structure, and age.⁵⁸ Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation throughout Gooding County.

Ideally, historical fire data would be used to estimate the annual probability for fires in Gooding County. However, current data are not adequate to make credible calculations because the data for local, state, and federal responsibility areas are not reported by the same criteria. Nevertheless, the data reviewed above provide a general picture of the level of wildland-urban interface fire risk for Gooding County overall. Based on the historical information available, Gooding County has a very high probability of wildland fires occurring on an annual basis. Based on the historical data provided by the BLM, a fire of over 10,000 acres should be expected every ten to fifteen years.

Ignition potential is also high throughout the County. Recreational areas, major roadways, debris burning, and agricultural equipment are typically the most likely human ignition sources. Lightning is also a common source of wildfires in Gooding County.

Impacts of Wildland Fire Events

Wildland fires, big and small, are dangerous to both Gooding County residents and emergency response personnel. Wildland fire suppression activities have a very high frequency of injuries, such as heat exhaustion and smoke inhalation, and have caused numerous deaths nationwide. Fire events in Gooding County typically result in a multi-department and agency response effort; thus, coordinating activities and ensuring everyone's safety is paramount.

Local residents with property in the path of wildland fire will likely suffer the greatest impacts through loss of structures and/or the value of any agricultural crops on their land. Many fires require an evacuation of nearby residences in order to ensure the safety of citizens. Evacuation procedures require the coordination of law enforcement and fire service organizations and may involve temporary sheltering in extreme cases.

Gooding County, like most areas, has sensitive populations, such as elderly residents and children, who may be affected by air quality during a wildland fire. Smoke and particulates can severely degrade air quality, triggering health problems. In areas heavily impacted by smoke, people with breathing problems might need additional services from doctors or emergency rooms.

Commerce in Gooding County and the rest of the region may also be interrupted by wildland fires. Transportation corridors will likely be temporarily closed or slowed due to a fire burning in the area. Heavy smoke from a wildfire several miles away could be dense enough to make travel unsafe on roadways.

The environmental impacts from a fire are dependent on the vegetation present and the intensity of the fire. Most of the rangeland ecosystems present in Gooding County are adapted to periodic fire events and

⁵⁸ Johnson, C.G.; Clausnitzer, R.R.; Mehringer, P.J.; Oliver, C.D. 1994. Biotic and Abiotic Processes of Eastside Ecosystems: the Effects of Management on Plant and Community Ecology, and on Stand and Landscape Vegetation Dynamics. Gen. Tech. Report PNW-GTR-322. USDA-Forest Service. PNW Research Station. Portland, Oregon. 722pp.

are actually benefitted by occasional, low intensity burns. On the other hand, overcrowded shrubland conditions or over mature stands of sage brush will likely burn much more intensely than occurred historically. These types of fires tend to result in a high rate of mortality in the vegetation and often adversely impact soil conditions. High intensity fires are also much more dangerous and difficult to suppress.

Gooding County is actively pursuing funds to help with wildland fire mitigation projects and public education programs. While mitigation efforts will significantly improve the probability of a structure's survivability, no amount of mitigation will guarantee survival.

Value of Resources at Risk

It is difficult to estimate potential losses in Gooding County due to wildland fire due to the unpredictability of wildfire behavior and the nature of ignition sources. It is impossible to forecast the path a wildfire will take and what type of assets and resources, manmade and ecological, will be at risk. Thus, no value estimates were made for this hazard.

Typically, structures located in forested areas without an adequate defensible space or fire resistant landscaping have the highest risk of loss. Nevertheless, homes and other structures and infrastructure located in the grasslands or agricultural regions are not without wildfire risk. Grass fires are often the most dangerous due to high rates of spread. Fires in this fuel type are considered somewhat easier to suppress given the appropriate resources, but they can also be the most destructive.

City of Bliss Annex

Flood Profile

Bliss is located adjacent to Interstate 84 which is the main thoroughfare across southern Idaho. Highway 30 travels south from the city of Bliss. U.S. Highway 26 travels east from the city of Bliss towards Shoshone in Lincoln County.

This roadway is well-traveled not only by area commuters, but also by delivery trucks, and recreationists. Other secondary roads are available to bi-pass town in the event of a flood. There is an irrigation canal that is located along the northern perimeter of the city. Canals generally do not have a history of flooding the surrounding areas. Water levels in canals are monitored and controlled to eliminate the flood risk. There are no natural waterways that are subject to spring high water flows in Bliss. Because the topographic profile of the area is very modest, nearly the entire city has some risk to direct flooding. Furthermore, impacts from those areas flooded may include road closures and closed city and county services. Flood waters tend to recede very slowly because of the minimal topographic relief of the area.

Floods in the area are the result of thunderstorms and to a lesser extent spring runoff, and rain-on-snow events. Rain-on-snow events that affect the city of Bliss occur when significant snow pack exists within the hydrologic watershed surrounding Bliss. The boundaries of the watersheds are fairly large, draining the nearby agricultural fields, and forested watersheds. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water

cannot be absorbed into the soil resulting in increased overland flows. Floodwaters recede slowly as rain-on-snow weather events tend to last for several days.

Thunderstorms can also affect the community. These events are usually localized, but still can have a significant impact. Storms resulting in intense rain fall often occur rapidly and overwhelm the carrying capacity of the nearby streams. The duration of these storms usually lasts only a matter of hours, but the affects can be spread throughout the impact areas of the City.

There are no identified floodplains within the city of Bliss. Flooding within the city of Bliss will likely be the result of plugged culverts or ditches that can't handle large volumes of water in a short period of time. Flooding of any public facilities will impact residents of Gooding County as commerce is disrupted and distribution of basic services such as emergency response and postal services are slowed. Electrical service may also be impacted as power is shut off in flooded areas to prevent electric shock. The lack of electricity could become a secondary hazard as the ability of residents to cook or provide heat is halted. Additionally, grocery and petroleum outlets may be closed or contaminated, which may lead to a lack of fresh drinking water and food sources as well as residents' inability to leave the area. Any amount of flooding typically causes damage to structures. Much of the damage may be cosmetic, but still very costly.

Probability of Future Occurrence

The probability of a flood event occurring in the city of Bliss on an annual basis is very low. Flood impacts are mainly limited to disruption of road travel and limited localized flooding of structures, equipment, and businesses. Low magnitude flood events can be expected several times each year. However, due to the flat topography and drainage infrastructure, the impacts of these events are slight and will usually amount to minor and temporary traffic issues. Larger magnitude and high impact flood events have not occurred, and are unlikely in any given year. These types of flood events have the highest probability of occurrence in the winter or early spring in the city of Bliss as a result of rain-on-snow events or rapid runoff.

Impacts of Flood Events

The impacts of flood events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

Minimal damage would be expected in the event of a flood within the city limits. Damages would likely be isolated to individual structures and could not be predicted from year to year.

Earthquake Profile

There are no recorded occurrences of earthquakes significantly impacting the city of Bliss; however, some minimal shaking has been felt as a result of larger earthquakes elsewhere. The city of Bliss does not have any differing issues or levels of risk associated with this hazard than Gooding County as a whole. Please refer to the earthquake section of the Gooding County Annex found on page 80 for more details.

Probability of Future Occurrence

The City has a 10% chance of exceeding a 6-7% pga in the next 50 years.⁵⁹

Impacts of Earthquake Events

Unreinforced masonry (URM) structures and unreinforced chimneys of homes will likely be damaged in the event of an earthquake. There are a few publicly accessible unreinforced masonry structures in the city of Bliss in addition to the numerous homes and other buildings throughout the City 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, more fragile bridges and land failure causing minor slides along roadways may isolate some residents.

Value of Resources at Risk

In the city of Bliss, there are approximately 4 unreinforced masonry buildings within the city limits of Bliss. These structures were built prior to the inclusion of articles for seismic stability in the Uniform Building Codes in 1972. The number and value of unreinforced masonry homes or homes with masonry chimneys in the City of Bliss is unknown, but estimated to include at least 25 buildings.

Landslide Profile

The city of Bliss has moderate risk to landslides due to the topography of the surrounding area and the built environment. "On July 24, 1993, a section of ground south of the city of Bliss failed and slid southward into the Snake River. According to local witnesses the river was temporarily blocked before a new channel cut through the debris. The toe of the landslide has been eroded by the river. The slide destroyed a portion of the Shoestring Road which provided access from Bliss to a bridge across the Snake River. Approximately 100 acres have been totally disrupted by the landslide, which has grown in size by creep (very slow downslope movement) and additional movement since the original event."⁶⁰ Small slumps may occur along other roadways, but these are not likely to cause significant damage to the community.

Probability of Future Occurrence

The city of Bliss has a very low probability of experiencing damaging landslides. The few slopes in and around the community are generally less than 10% grade. While small, low angle slumps may occur on eyebrows of the surrounding rolling hills, these will be infrequent and likely the result of water saturation or a major disturbance such as an earthquake or road construction.

⁵⁹ USGS. 2008 United States National Seismic Hazard Maps. U.S. Geological Survey. U.S. Department of Interior. Available online at <http://earthquake.usgs.gov/hazards/products/conterminous/2008/>. October 2009.

⁶⁰ Virginia S. Gillerman. 1993. Geologic Report on the 1993 Bliss Landslide, Gooding County, Idaho. Staff Report 01-1. December, 2001. Idaho Geological Survey. University of Idaho. Available online at: [http://www.idahogeology.org/PDF/Staff_Reports_\(S\)/2001/s-01-01.pdf](http://www.idahogeology.org/PDF/Staff_Reports_(S)/2001/s-01-01.pdf). Accessed September, 2014.

Impacts of Landslide Events

The city of Bliss may be indirectly affected by landslides that adversely affect a variety of resources such as water supplies, fisheries, sewage disposal systems, dams, and roadways upstream of the community. Water availability, quantity, and quality can be affected by landslides and could have a very significant economic impact on Bliss. The loss or redistribution of water would affect agricultural crops grown in certain areas, ranching activities, and personal and municipal wells.

Value of Resources at Risk

There are no structures or infrastructure directly at risk from landslides within the city of Bliss. The cost of cleanup and repairs of roadways is difficult to estimate due to the variable circumstances with each incident including size of the slide, proximity to a State or County shop, and whether the slide occurred on the cut slope or the fill slope. Other factors that could affect the cost of the damage may include culverts, streams, and removal of debris. This type of information is impossible to anticipate; thus, no repair costs for damaged roadways have been estimated.

Severe Weather

The city of Bliss does not have any differing levels of risk associated with this hazard than Gooding County as a whole. Please refer to the severe weather section of the Gooding County Annex found on page 90 for more details.

Probability of Future Occurrence

The probability of a severe weather event occurring in the city of Bliss on an annual basis is very high.

Impacts of Severe Weather Events

The impacts of severe weather events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

It is difficult to estimate the cost of potential winter storm damages to structures and the economy in the city of Bliss. 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. 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. Snow plowing in within the city limits is accomplished by the city's public works department. Private landowners are responsible for maintaining their own driveways or other private roads. Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on residents as not only is power cut to homes and businesses, but primary heating is lost for many residents. 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. Gooding County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow covered roads.

Thunderstorms are not likely to be severe enough in the city of Bliss to cause significant damages. However, the loss potential from flooding which results from severe thunderstorms could be significant.

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 within the city of Bliss. The most significant losses are most clearly seen in the agriculture sectors of the economy. Potential losses to agriculture can be disastrous. Crop damage from hail will also be different depending on the time of year and the type of crop. Most farmers carry insurance on their crops to help mitigate the potential financial loss resulting from a localized hail storm. Homeowners in the city of Bliss 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.

It is difficult to estimate potential losses in the city of Bliss due to windstorms and tornadoes. Construction throughout the County has been implemented in the presence of high wind events, and therefore, the community is at a higher level of preparedness to high wind events than many other areas experiencing lower average wind speeds.

We have estimated losses based on wind and tornado damage as follows:

- 3% of the buildings damaged causing 50% of value loss (loss could be from downed or damaged trees, damaged outbuildings, damaged fences/poles, damage to siding, damaged landscaping etc.)
- 5% of the buildings received damage to roof (requiring replacement of roof equaling \$3,000)

Damages associated with sensitive receptor irritation have not been estimated. We have also not estimated the potential for a large scale wildfire event associated with high winds. Based on the data provided by the County, there are 183 parcels with improvements in the city of Bliss with a total value of approximately \$5,049,952 and an average value of \$27,595. Using the criteria outlined above, an estimate of the impact of high winds in the city of Bliss has been made. The potential wind and tornado damage to all buildings is estimated at approximately \$75,748. The estimated damage to roofs is approximately \$27,450.

Power failure often accompanies severe storms. Prolonged failure, especially during cold winter temperatures can have disastrous effects. All communities should be prepared to deal with power failures. Community shelters equipped with alternative power sources will help local residents stay warm and prepare food. A community-based system for monitoring and assisting elderly or disabled residents should also be developed. All households should maintain survival kits that include warm blankets, flashlights, extra batteries, nonperishable food items, and clean drinking water.

Wildland Fire Profile

Moisture is limited in the city of Bliss, which supports a warm mesic shrub/steppe vegetation type in which sagebrush and rabbit brush are the major shrub species with a variety of native bunchgrasses in the understory. Farm fields and grazing land are common, especially at the bottom of the valley. Many homes are located in the shrublands near these fields. Stand structure and canopy closure is highly dependent on fire frequency and severity. Historically, shrub/steppe vegetation was relatively open with widely spaced shrubs and scattered bunch grasses in the understory. Fire exclusion has resulted in denser stand conditions.⁶¹ These habitat types are highly valued for their benefit to a variety of wildlife.

Fuels Assessment

Fuel models 1, 3, and 6 characterize this arid area. Understory vegetation includes dry grasses, *Artemisia sp.* (sagebrush), *Chrysothamnus sp.* (Rabbitbrush), and others. Historically, wildland fire events would burn through the dead and cured herbaceous layer. Concentrations of invasive species such as; *Bromus tectorum* (cheatgrass) and *Taeniatherum caput-medusae* (medusahead), may increase the frequency that wildland fires occur which leads to may lead to the reduction of native species.

Infrastructure

There are no major infrastructures in the city of Bliss that are at a greater risk to wildfires than what is present in Gooding County.

Escape

Bliss is located adjacent to Interstate 84 which is the main thoroughfare across southern Idaho. Highway 30 travels south from the city of Bliss. U.S. Highway 26 travels east from the city of Bliss towards Shoshone in Lincoln County. All of the travel corridors through Bliss are surrounded by irrigated agriculture that should remain safe for travel in the event of a wildfire. However, as these escape routes leave the city limits they pass through terrain surrounded by arid shrub/steppe, which means citizens have a significant risk of being cut-off by wildfire under extreme conditions.

Community Assessment

Bliss Fire District is located in the northwest corner of Gooding County. This Fire District shares boundaries with Elmore County on the west BLM lands on the north and east, Gooding Fire District on the southeast, Wendell Fire District on the south, and Hagerman Fire District to the south. This Fire District is comprised mostly of agriculture and BLM lands with areas of recreational properties along the Snake River Canyon. Bliss Fire District has several residential areas that are associated with agricultural activities such as dairy, potato farming, and ranching. Interstate 84 and Union Pacific Railroad lines traverse this district along the southern edge from east to west.

Potential Mitigation Activities

⁶¹USDA. 1999. Salmon River Canyon Project Draft Environmental Statement. USDA Forest Service. Nez Perce National Forest.

Vegetation in this area should be managed to increase the effectiveness of fire suppression equipment in the event of a wildland fire. Plantings near homes should use fire resistant landscaping and be well spaced. Grass surrounding homes and other buildings should be kept short and watered if possible. Other possible management actions include:

- Remove weak, dying, and sick vegetation.
- Thin shrubs to create crown openings by taking the total height of the shrub and spacing that distance between shrubs.
- Spray weeds and other unwanted vegetation with herbicide.
- Create a 3 to 5 foot perimeter of non-combustible material around homes.
- Dispose of all excess vegetative material by chipping or hand-piling and burning when conditions are favorable.

Access roads in this area requires additional treatments to ensure a viable escape route for residents while simultaneously providing for access by emergency vehicles. The majority of the homes in the wildland-urban interface (situated within the agriculture and shrub/steppe) have multiple entrances and exits from their homes and businesses. The vegetation surrounding these access points should be trimmed and disposed of in such a way to allow easy access to and from homes. Site specific treatments should be developed for each home and subdivision.

In addition, some of the housing developments in this area have access roads that cannot support water trucks used by fire fighters (rural and wildland). Some roads have steep adverse grades, while others have turning radii that would be difficult for large trucks to navigate. Some roads have both limitations. The vast majority of the bridges observed in the area would support water-laden trucks. Roads in developments should be signed to allow emergency vehicles to plot a route over navigable roads while responding to an emergency. High visibility address markers at driveways would improve accurate emergency vehicle response during fire or other incidents.

Probability of Future Occurrence

The probability of a wildland fire threatening the city of Bliss on an annual basis is moderate. Homes and other structures located in the shrub/steppe or agricultural fields within or surrounding the community have a high wildfire risk. Rangeland or grass fires are often the most dangerous due to high rates of spread. Fires in this fuel type are considered somewhat easier to suppress given the appropriate resources, but they can also be the most destructive. Homes along the perimeter of the community would have the highest risk due to their adjacency to flashy fuels. The current vegetation condition class surrounding the city of Bliss suggests that there has been a moderate alteration of the vegetation in this area. This could be attributed to shrubland being converted for alternative uses, introduction of exotic species, or many other reasons.

Impacts of Wildland Fire Events

The potential impacts from a wildfire in the city of Bliss are similar to the impacts described for Gooding County as a whole. All fires pose a significant safety risk to residents and emergency service personnel.

Individual structures, property, and livelihoods could be severely damaged or lost as a result of a fire; however, the community is not likely to suffer severe or long-term economic losses.

A fire in the shrub/steppe surrounding the community may benefit the ecological environment as nutrients are recycled into the soil. Generally, grass and forbs are rejuvenated by a low intensity fire and grow back quickly; however, heavy rains immediately after a fire could cause erosion.

Smoke from a nearby wildland fire may impact sensitive populations within the community due to degraded air quality conditions. Smoke and/or flames will also impact transportation corridors connecting the city of Bliss with other communities; thus, travel and commerce may be interrupted.

Value of Resources at Risk

It is difficult to estimate potential losses in the city of Bliss from wildland fire due to the unpredictability of wildfire behavior and the nature of ignition sources. It is unlikely that more than a few structures or other properties within the city limits of Bliss would be lost or damaged by a wildland fire; however, residents in the immediate vicinity may be directly impacted. It is impossible to forecast the path a wildfire will take and what type of assets and resources, manmade and ecological, will be at risk. Thus, no value estimates were made for this hazard.

City of Gooding Annex

Flood Profile

The city of Gooding is located just north of the intersection of U.S. Highway 26 and State Highway 46, which are the primary access for the community. This roadway is well-traveled not only by area commuters, but also by delivery trucks, and recreationists. Other secondary roads are available to bi-pass town in the event of a flood. The Little Wood River flows directly through Gooding and the Big Wood River drainage is located just north of the city limits. Both rivers have a history of flooding Gooding and the surrounding areas within its watershed. Spring high water flows are common during April and May. Swollen stream capacity causes the Little Wood River and the Big Wood River to crest its banks, generally as a result of rain-on-snow events, snow melt, and high rain events. The major impacts from both types of flooding in Gooding are the restricted use of several streets, rail lines, commercial properties, industrial, and residential areas. Because the topographic profile of the area is very modest, nearly the entire city has some risk to direct flooding. Furthermore, impacts from those areas flooded may include road closures and closed city and county services. Flood waters tend to recede very slowly because of the minimal topographic relief of the area.

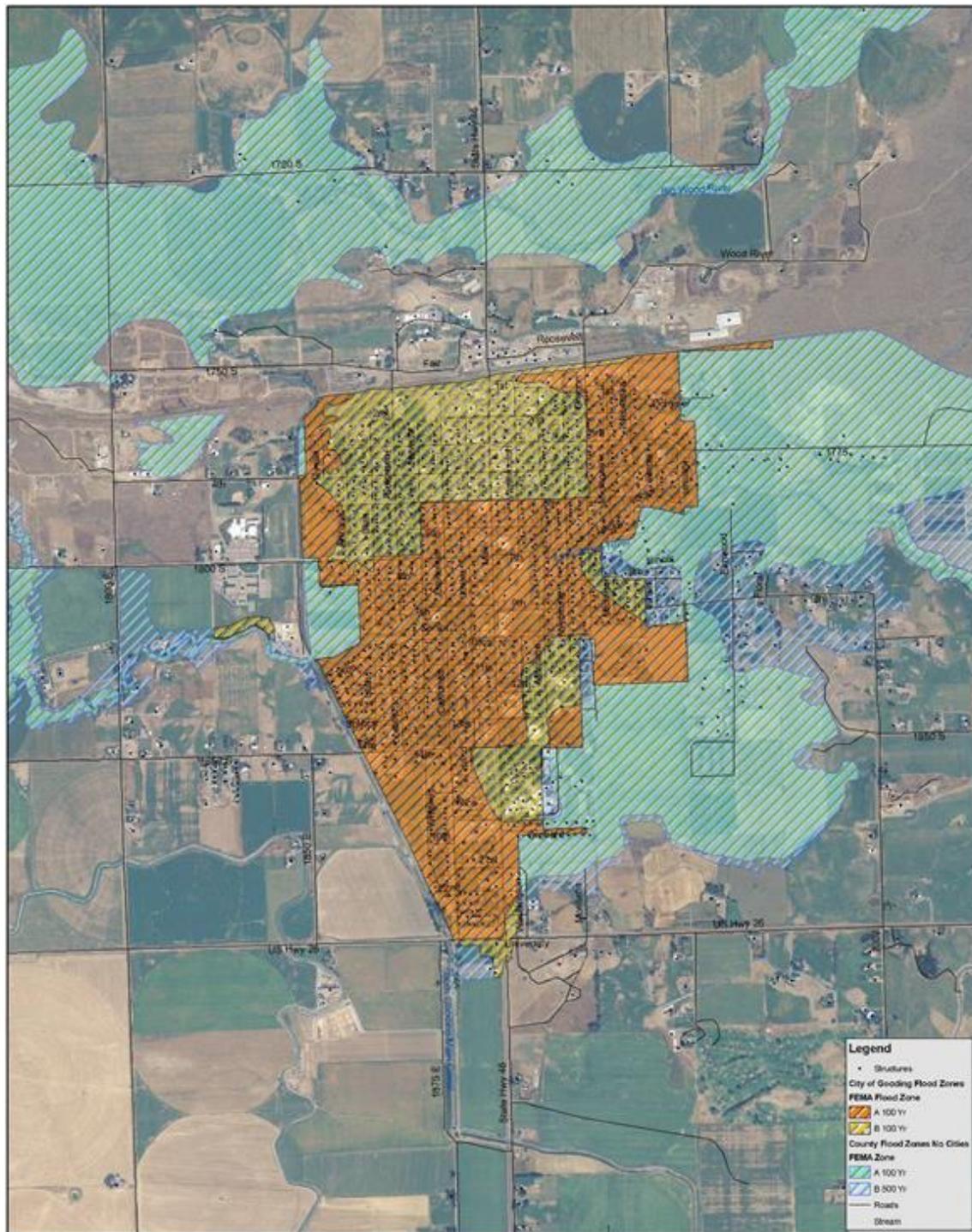
Floods in the area are the result of spring runoff, rain-on-snow events, and to a lesser extent localized thunderstorms. Rain-on-snow events that affect the city of Gooding occur when significant snow pack exists within the hydrologic watershed surrounding Gooding. The boundaries of the watersheds are fairly large, draining the nearby agricultural fields, and forested watersheds. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water cannot be absorbed into the soil resulting in increased overland flows. Floodwaters recede slowly as rain-on-snow weather events tend to last for several days.

Thunderstorms can also affect the community. These events are usually localized, but still can have a significant impact. Storms resulting in intense rain fall often occur rapidly and overwhelm the carrying capacity of the nearby streams. The duration of these storms usually lasts only a matter of hours, but the affects can be spread throughout the impact areas of the City.

According to FIRM maps, a large portion of downtown Gooding is within the 100 year floodplain of the Little Wood River and would be the first area inundated with water and, therefore, has the highest risk of repeated flooding. Additionally, much of the remaining structures in the city are within the 500 year floodplain. U.S. Highway 26 and State Highway 46 pass through the 100 year and 500 year floodplains in Gooding. Nearly all of the county and city government buildings are within the 100 year floodplain as well as numerous other public facilities, schools, churches, homes, and businesses critical to the functionality of the community. A portion of the north end of the city is within the 500 year floodplain and includes a number of residential blocks as well as an industrial area. The North Canyon Medical Center has been moved to a new location outside of the 500 year floodplain. Also of concern are the numerous petroleum distribution and storage sites in both the 100 and 500 year floodplain. Most of the private homes and businesses in Gooding are located within the 100 and 500 year floodplains. Flood damage to private property will likely be very costly. Poor participation in the National Flood Insurance Program could lead to property owners bearing the burden of the cost to repair.

Flooding of any public facilities will impact residents of Gooding County as commerce is disrupted and distribution of basic services such as emergency response and postal services are slowed. Electrical service may also be impacted as power is shut off in flooded areas to prevent electric shock. The lack of electricity could become a secondary hazard as the ability of residents to cook or provide heat is halted. Additionally, grocery and petroleum outlets may be closed or contaminated, which may lead to a lack of fresh drinking water and food sources as well as residents' inability to leave the area. Any amount of flooding typically causes damage to structures. Much of the damage may be cosmetic, but still very costly. More extreme damage may be caused as river and stream channels migrate or infrastructural components, such as a bridge or sections of the railroad, are destroyed.

Figure 5.10. Flood Insurance Rate Map for the City of Gooding.



Local Event History

Heavy rains and spring runoff have caused several flood events in the city of Gooding. The most recent major flood events were recorded in 1962, 1976, 1994, and 2006. The following flood descriptions occurred throughout the county, not just specifically for the city of Gooding.

February 1962 Little Wood River – Floods were touched off when prolonged rain and warm temperatures combined to melt mountain snow packs and send the runoff rushing into the lowlands faster than the still frozen ground could absorb. A federal disaster declaration was issued on February 14, 1962 after extensive flooding along the Portneuf River and its tributaries, the Snake and Teton Rivers, inundating an area from Sugar City to Malad and from Aberdeen to Soda Springs. Throughout the area, numerous earthen dams and levees collapsed, roads were closed, bridges damaged, houses and businesses flooded. National Guard and Army Corps of Engineers responded to the areas in hopes of stopping additional flooding. Damage was estimated at more than \$15 million. Damage to over 1500 homes was reported.

Ice jams on the Little Wood River caused flooding and evacuations in Gooding. Twelve homes were affected by the floods.

1976 Big Wood River– In 1976, the Big Wood River flooded Gooding. Water went over the West Bridge.

December, 1994 Little Wood River – In December 1994, ice jams caused water to rise along the banks of the Little Wood River. The same problem is faced almost every year. The weather turns very cold, the river freezes, and then the weather warms up and the ice breaks loose. In Gooding, there is a low spot behind the old school as well as west of West Park where the river channel is shallow and ice builds up. Earlier in the month, the river almost overflowed in the vicinity of 9th Avenue and Colorado Street. Water was diverted into the desert relieving the flow through town.

April, 2006 Magic Valley – Due to above average snow melt in the Camas Creek drainage in Camas County, the Big Wood River below Magic Reservoir rose significantly. The water in the river channel near Gooding rose about 6 feet. On April 15, 2006, the Big Wood River flow was about 3,249 cfs or 6.35 feet on the gauge.

On April 16, 2006, the water in the channel near Gooding rose about four feet in 24 hours and was measured at a stage of 7.45 feet near the State Highway 46 bridge north of Gooding. The flooding caused only minimal damage. Sandbagging was done to protect homes. This area has flooded before and residents are usually prepared for it.

The April 2006 flooding in Gooding County occurred as a result of above average spring precipitation, heavy runoff, and rapid snowmelt. A state disaster was officially declared on April 14, 2006 and was extended several times until February of 2007. The Idaho Bureau of Homeland Security reported that the state did not incur any costs in Gooding County due to this flood event.

Probability of Future Occurrence

The probability of flood events in the city of Gooding is high. Flood impacts are mainly limited to disruption of road travel and limited localized flooding of structures, equipment, and businesses. Low magnitude flood events can be expected several times each year. However, due to the flat topography and drainage infrastructure, the impacts of these events are slight and will usually amount to minor and temporary traffic issues. Larger magnitude and high impact flood events have occurred, but are not likely in any given year. These types of flood events have the highest probability of occurrence in the winter or early spring in the city of Gooding as a result of rain-on-snow events or rapid runoff.

Impacts of Flood Events

The potential impacts from flooding in the city of Gooding are very similar to the impacts described for Gooding County as a whole. First responders and other volunteers aiding with emergency flood control or cleanup efforts are potentially at risk of injury due to accidents or possibly exposure to contaminated water.

The major impacts from flooding in the city of Gooding are the restricted use of several streets, commercial, and residential areas. There are numerous bridge and culvert crossings within the City and the surrounding area.

The availability of food and other supplies is not likely to be impacted or interrupted by a flood event. Furthermore, the delivery of community services such as postal services, health care, law enforcement, and emergency response is also not likely to be impacted by flood events in the city of Gooding except under extreme (100 year plus floods) circumstances. While individual homes and businesses may incur damages as a result of a flood, the economy of the community will not be impacted by this type of hazard.

Environmental damages resulting from a flood event are also unlikely. Scouring and erosion along the banks of creeks in the Gooding area is possible, but due to grass and other vegetation on the stream banks, these impacts will most likely be minimal and localized. Contamination of the riparian area by floodwaters containing chemicals or other pollutants is also a possibility.

Value of Resources at Risk

The Department of Homeland Security (DHS), Federal Emergency Management Agency's (FEMA) Risk Mapping, Assessment, and Planning (Risk MAP) program provides States, Tribes and local communities with flood risk information and tools that they can use to increase their resilience to flooding and better protect their citizens. The Flood Risk Report (FRR) provides non-regulatory information to help local or Tribal officials, floodplain managers, planners, emergency managers, and others better understand their flood risk, communicate those risks to their citizens and local businesses, and take steps to mitigate those risks. The following tables were taken from the Draft Flood Risk Report that was developed for communities within the Big Wood Watershed.⁶²

The City of Gooding has two municipal wells that are within the 100 year flood zone and one that is not. The city expects to have two additional wells installed by the end of 2015 that are not within the flood zone.

⁶² Big Wood River Watershed Flood Risk Report (Draft). 2012. Available online at: <http://bhs.idaho.gov/Pages/Plans/RiskMAP/Risk%20MAP%20Projects/Big%20Wood%20Watershed/BigWoodFloodReport.pdf>. Accessed December, 2014.

Figure 5.11. City of Gooding Estimated Flood Related Losses

Structure Related Losses	Total Inventory		10% (10-yr)		2% (50-yr)		0.5% (200-yr)	
	Estimated Value	Percent of Total	Dollar Losses	Loss Ratio	Dollar Losses	Loss Ratio	Dollar Losses	Loss Ratio
Residential Building/Contents	\$16,108,000	49%	\$316,000	63%	\$858,000	83%	\$1,312,000	41%
Commercial Building/Contents	\$12,634,000	38%	\$177,000	35%	\$172,000	17%	\$1,780,000	56%
Total Building/Contents	\$32,971,000	100%	\$505,000	1.5%	\$1,033,000	3%	\$3,226,000	9.8%

Figure 5.12. City of Gooding Estimated Flood Related Sheltering Needs

Population Impacts	10% (10-yr)	2% (50-yr)	0.5% (200-yr)
Shelter Needs	20	58	107
Displaced Population	38	74	135

Figure 5.13. City of Gooding Estimated Flood Related Debris

Debris	10% (10-yr)	2% (50-yr)	0.5% (200-yr)
Debris (tons)	61.94	155.91	256.19

Earthquake Profile

There are no recorded occurrences of earthquakes significantly impacting the city of Gooding; however, some minimal shaking has been felt as a result of larger earthquakes elsewhere. The city of Gooding does not have any differing issues or levels of risk associated with this hazard than Gooding County as a whole. Please refer to the earthquake section of the Gooding County Annex found on page 80 for more details.

Probability of Future Occurrence

The City has a 10% chance of exceeding a 6-7% pga in the next 50 years.⁶³

Impacts of Earthquake Events

Unreinforced masonry (URM) structures and unreinforced chimneys of homes will likely be damaged in the event of an earthquake. There are several publicly accessible unreinforced masonry structures in the city of Gooding in addition to the numerous homes and other buildings throughout the City 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, more fragile bridges and land failure causing minor slides along roadways may isolate some residents.

Value of Resources at Risk

In the city of Gooding, there are approximately 5 unreinforced masonry buildings within the city limits of Gooding. These structures were built prior to the inclusion of articles for seismic stability in the Uniform Building Codes in 1972. The number and value of unreinforced masonry homes or homes with masonry chimneys in the City of Gooding is unknown, but estimated to include at least 40 buildings.

Landslide Profile

The city of Gooding has very little risk to landslides due to the flat topography of the surrounding area and the built environment. Small slumps may occur along some roadways, but these are not likely to cause significant damage to the community.

Probability of Future Occurrence

The city of Gooding has a very low probability of experiencing damaging landslides. The few slopes in and around the community are generally less than 10% grade. While small, low angle slumps may occur on eyebrows of the surrounding rolling hills, these will be infrequent and likely the result of water saturation or a major disturbance such as an earthquake or road construction.

Impacts of Landslide Events

The city of Gooding may be indirectly affected by landslides that adversely affect a variety of resources such as water supplies, fisheries, sewage disposal systems, dams, and roadways upstream of the community. Water availability, quantity, and quality can be affected by landslides and could have a very significant

⁶³ USGS. 2008 United States National Seismic Hazard Maps. U.S. Geological Survey. U.S. Department of Interior. Available online at <http://earthquake.usgs.gov/hazards/products/conterminous/2008/>. October 2009.

economic impact on Gooding. The loss or redistribution of water would affect agricultural crops grown in certain areas, ranching activities, and personal and municipal wells.

Value of Resources at Risk

There are no structures or infrastructure directly at risk from landslides within the city of Gooding. The cost of cleanup and repairs of roadways is difficult to estimate due to the variable circumstances with each incident including size of the slide, proximity to a State or County shop, and whether the slide occurred on the cut slope or the fill slope. Other factors that could affect the cost of the damage may include culverts, streams, and removal of debris. This type of information is impossible to anticipate; thus, no repair costs for damaged roadways have been estimated.

Severe Weather

The city of Gooding does not have any differing levels of risk associated with this hazard than Gooding County as a whole. Please refer to the severe weather section of the Gooding County Annex found on page 90 for more details.

Probability of Future Occurrence

The probability of a severe weather event occurring in the city of Gooding on an annual basis is very high.

Impacts of Severe Weather Events

The impacts of severe weather events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

It is difficult to estimate the cost of potential winter storm damages to structures and the economy in the city of Gooding. 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. 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. Snow plowing in within the city limits is accomplished by the city's public works department. Private landowners are responsible for maintaining their own driveways or other private roads. Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on residents as not only is power cut to homes and businesses, but primary heating is lost for many residents. 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. Gooding County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow covered roads.

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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 within the city of Gooding. The most significant losses are most clearly seen in the agriculture sectors of the economy. Potential losses to agriculture can be disastrous. Crop damage from hail will also be different depending on the time of year and the type of crop. Most farmers carry insurance on their crops to help mitigate the potential financial loss resulting from a localized hail storm. Homeowners in the city of Gooding 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.

It is difficult to estimate potential losses in the city of Gooding due to windstorms and tornadoes. Construction throughout the County has been implemented in the presence of high wind events, and therefore, the community is at a higher level of preparedness to high wind events than many other areas experiencing lower average wind speeds.

We have estimated losses based on wind and tornado damage as follows:

- 3% of the buildings damaged causing 50% of value loss (loss could be from downed or damaged trees, damaged outbuildings, damaged fences/poles, damage to siding, damaged landscaping etc.)
- 5% of the buildings received damage to roof (requiring replacement of roof equaling \$3,000)

Damages associated with sensitive receptor irritation have not been estimated. We have also not estimated the potential for a large scale wildfire event associated with high winds. Based on the data provided by the County, there are 1,588 parcels with improvements in the city of Gooding with a total value of approximately \$118,258,988 and an average value of \$74,470. Using the criteria outlined above, an estimate of the impact of high winds in the city of Gooding has been made. The potential wind and tornado damage to all buildings is estimated at approximately \$1,773,875. The estimated damage to roofs is approximately \$238,200.

Power failure often accompanies severe storms. Prolonged failure, especially during cold winter temperatures can have disastrous effects. All communities should be prepared to deal with power failures. Community shelters equipped with alternative power sources will help local residents stay warm and prepare food. A community-based system for monitoring and assisting elderly or disabled residents should also be developed. All households should maintain survival kits that include warm blankets, flashlights, extra batteries, nonperishable food items, and clean drinking water.

Wildland Fire Profile

Moisture is limited in the city of Gooding, which supports a warm mesic shrub/steppe vegetation type in which sagebrush and rabbit brush are the major shrub species with a variety of native bunchgrasses in the understory. Farm fields and grazing land are common, especially at the bottom of the valley. Many homes

are located in the shrublands near these fields. Stand structure and canopy closure is highly dependent on fire frequency and severity. Historically, shrub/steppe vegetation was relatively open with widely spaced shrubs and scattered bunch grasses in the understory. Fire exclusion has resulted in denser stand conditions.⁶⁴ These habitat types are highly valued for their benefit to a variety of wildlife.

Fuels Assessment

Fuel models 1, 3, and 6 characterize this arid area. Understory vegetation includes dry grasses, *Artemisia sp.* (sagebrush), *Chrysothamnus sp.* (Rabbitbrush), and others. Historically, wildland fire events would burn through the dead and cured herbaceous layer. Concentrations of invasive species such as; *Bromus tectorum* (cheatgrass) and *Taeniatherum caput-medusae* (medusahead), may increase the frequency that wildland fires occur which may lead to the reduction of native species.

Infrastructure

There are no major infrastructures in the city of Gooding that are at a greater risk to wildfires than what is present in Gooding County.

Escape

State Highway 46 travels north and south through the city of Gooding. U.S. Highway 26 travels east and west just south of the city limits. State Highway 46 to the north is surrounded by irrigated agriculture that should remain safe for travel in the event of a wildfire. State Highway 46 to the south and U.S. Highway 26 to the east both travel through terrain surrounded by arid shrub/steppe. These access routes have significant risk of being cut-off by wildfire.

Community Assessment

Gooding Fire District includes the northeast quarter of Gooding County. It is comprised of agricultural land with areas of sagebrush/grasslands interspersed with residential developments. The north end of the Fire District is BLM land with mutual aid agreements in place with that agency. The wildfire risk in the Gooding Fire District is not significantly different than that affecting Gooding County as a whole. There are no current hazardous fuels treatment projects being conducted near the City of Gooding.

Potential Mitigation Activities

Vegetation in this area should be managed to increase the effectiveness of fire suppression equipment in the event of a wildland fire. Plantings near homes should use fire resistant landscaping and be well spaced. Grass surrounding homes and other buildings should be kept short and watered if possible. Other possible management actions include:

- Remove weak, dying, and sick vegetation.
- Thin shrubs to create crown openings by taking the total height of the shrub and spacing that distance between shrubs.

⁶⁴USDA. 1999. Salmon River Canyon Project Draft Environmental Statement. USDA Forest Service. Nez Perce National Forest.

- Spray weeds and other unwanted vegetation with herbicide.
- Create a 3 to 5 foot perimeter of non-combustible material around homes.
- Dispose of all excess vegetative material by chipping or hand-piling and burning when conditions are favorable.

Access roads in this area requires additional treatments to ensure a viable escape route for residents while simultaneously providing for access by emergency vehicles. The majority of the homes in the wildland-urban interface (situated within the agriculture and shrub/steppe) have multiple entrances and exits from their homes and businesses. The vegetation surrounding these access points should be trimmed and disposed of in such a way to allow easy access to and from homes. Site specific treatments should be developed for each home and subdivision.

In addition, some of the housing developments in this area have access roads that cannot support water trucks used by fire fighters (rural and wildland). Some roads have steep adverse grades, while others have turning radii that would be difficult for large trucks to navigate. Some roads have both limitations. The vast majority of the bridges observed in the area would support water-laden trucks. Roads in developments should be signed to allow emergency vehicles to plot a route over navigable roads while responding to an emergency. High visibility address markers at driveways would improve accurate emergency vehicle response during fire or other incidents.

Probability of Future Occurrence

The probability of a wildland fire threatening the city of Gooding on an annual basis is moderate. Homes and other structures located in the shrub/steppe or agricultural fields within or surrounding the community have a high wildfire risk. Rangeland or grass fires are often the most dangerous due to high rates of spread. Fires in this fuel type are considered somewhat easier to suppress given the appropriate resources, but they can also be the most destructive. Homes along the perimeter of the community would have the highest risk due to their adjacency to flashy fuels. The current vegetation condition class surrounding the city of Gooding suggests that there has been a moderate alteration of the vegetation in this area. This could be attributed to shrubland being converted for alternative uses, introduction of exotic species, or many other reasons.

Impacts of Wildland Fire Events

The potential impacts from a wildfire in the city of Gooding are similar to the impacts described for Gooding County as a whole. All fires pose a significant safety risk to residents and emergency service personnel. Individual structures, property, and livelihoods could be severely damaged or lost as a result of a fire; however, the community is not likely to suffer severe or long-term economic losses.

A fire in the shrub/steppe surrounding the community may benefit the ecological environment as nutrients are recycled into the soil. Generally, grass and forbs are rejuvenated by a low intensity fire and grow back quickly; however, heavy rains immediately after a fire could cause erosion.

Smoke from a nearby wildland fire may impact sensitive populations within the community due to degraded air quality conditions. Smoke and/or flames will also impact transportation corridors connecting the city of Gooding with other communities; thus, travel and commerce may be interrupted.

Value of Resources at Risk

It is difficult to estimate potential losses in the city of Gooding from wildland fire due to the unpredictability of wildfire behavior and the nature of ignition sources. It is unlikely that more than a few structures or other properties within the city limits of Gooding would be lost or damaged by a wildland fire; however, residents in the immediate vicinity may be directly impacted. It is impossible to forecast the path a wildfire will take and what type of assets and resources, manmade and ecological, will be at risk. Thus, no value estimates were made for this hazard.

City of Hagerman Annex

Flood Profile

The city of Hagerman does not have any differing levels of risk associated with this hazard than Gooding County as a whole.

Hagerman is located between Interstate 84 and the Snake River. The Hagerman Highway travels east from Hagerman towards Wendell. Interstate 84, which travels east and west across southern Idaho, lies just north and east of Hagerman. Highway 30 travels north and south through the city of Hagerman. This roadway is well-traveled not only by area commuters, but also by delivery trucks, and recreationists. Other secondary roads are available to bi-pass town in the event of a flood. There are a couple of unnamed streams that flow directly through Hagerman and the Billingsley drainage is located just outside of the periphery of the city limits. None of the waterways in this area have a history of flooding Hagerman. Spring high water flows are common during April and May. Swollen stream capacity may cause Billingsley Creek and the unnamed streams to crest their banks, likely as a result of rain-on-snow events, snow melt, and high rain events. The major impacts from both types of flooding in Hagerman are the restricted use of several streets, commercial properties, industrial, and residential areas. Because the topographic profile of the area is very modest, nearly the entire city has some risk to direct flooding. Furthermore, impacts from those areas flooded may include road closures and closed city and county services. Flood waters tend to recede very slowly because of the minimal topographic relief of the area.

Floods in the area are likely the result of spring runoff, rain-on-snow events, and to a lesser extent localized thunderstorms. Rain-on-snow events that affect the city of Hagerman occur when significant snow pack exists within the hydrologic watershed surrounding Hagerman. The boundaries of the watersheds are fairly large, draining the nearby agricultural fields, and forested watersheds. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water cannot be absorbed into the soil resulting in increased overland flows. Floodwaters recede slowly as rain-on-snow weather events tend to last for several days.

Thunderstorms can also affect the community. These events are usually localized, but still can have a significant impact. Storms resulting in intense rain fall often occur rapidly and overwhelm the carrying

capacity of the nearby streams. The duration of these storms usually lasts only a matter of hours, but the affects can be spread throughout the impact areas of the City.

There are no identified floodplains within the city of Hagerman. Flooding within the city of Hagerman will likely be the result of plugged culverts or ditches that can't handle large volumes of water in short period of time. Flooding of any public facilities will impact residents of Gooding County as commerce is disrupted and distribution of basic services such as emergency response and postal services are slowed. Electrical service may also be impacted as power is shut off in flooded areas to prevent electric shock. The lack of electricity could become a secondary hazard as the ability of residents to cook or provide heat is halted. Additionally, grocery and petroleum outlets may be closed or contaminated, which may lead to a lack of fresh drinking water and food sources as well as residents' inability to leave the area. Any amount of flooding typically causes damage to structures. Much of the damage may be cosmetic, but still very costly.

Probability of Future Occurrence

The probability of a flood event occurring in the city of Hagerman on an annual basis is very low. Flood impacts are mainly limited to disruption of road travel and limited localized flooding of structures, equipment, and businesses. Low magnitude flood events can be expected several times each year. However, due to the flat topography and drainage infrastructure, the impacts of these events are slight and will usually amount to minor and temporary traffic issues. Larger magnitude and high impact flood events have not occurred, and are unlikely in any given year. These types of flood events have the highest probability of occurrence in the winter or early spring in the city of Bliss as a result of rain-on-snow events or rapid runoff.

Impacts of Flood Events

The impacts of severe weather events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

Minimal damage would be expected in the event of a flood within the city limits. Damages would likely be isolated to individual structures and could not be predicted from year to year.

Earthquake Profile

There are no recorded occurrences of earthquakes significantly impacting the city of Hagerman; however, some minimal shaking has been felt as a result of larger earthquakes elsewhere. The city of Hagerman does not have any differing issues or levels of risk associated with this hazard than Gooding County as a whole. Please refer to the earthquake section of the Gooding County Annex found on page 80 for more details.

Probability of Future Occurrence

The City has a 10% chance of exceeding a 6-7% pga in the next 50 years.⁶⁵

⁶⁵ USGS. 2008 United States National Seismic Hazard Maps. U.S. Geological Survey. U.S. Department of Interior. Available online at <http://earthquake.usgs.gov/hazards/products/conterminous/2008/>. October 2009.

Impacts of Earthquake Events

Unreinforced masonry (URM) structures and unreinforced chimneys of homes will likely be damaged in the event of an earthquake. There are a few publicly accessible unreinforced masonry structures in the city of Hagerman in addition to the numerous homes and other buildings throughout the City 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, more fragile bridges and land failure causing minor slides along roadways may isolate some residents.

Value of Resources at Risk

In the city of Hagerman, there are approximately 3 unreinforced masonry buildings within the city limits of Hagerman. These structures were built prior to the inclusion of articles for seismic stability in the Uniform Building Codes in 1972. The number and value of unreinforced masonry homes or homes with masonry chimneys in the City of Hagerman is unknown, but estimated to include at least 25 buildings.

Landslide Profile

The city of Hagerman has very little risk to landslides due to the flat topography of the surrounding area and the built environment. Small slumps may occur along some roadways, but these are not likely to cause significant damage to the community.

Probability of Future Occurrence

The city of Hagerman has a very low probability of experiencing damaging landslides. The few slopes in and around the community are generally less than 10% grade. While small, low angle slumps may occur on eyebrows of the surrounding rolling hills, these will be infrequent and likely the result of water saturation or a major disturbance such as an earthquake or road construction.

Impacts of Landslide Events

The city of Hagerman may be indirectly affected by landslides that adversely affect a variety of resources such as water supplies, fisheries, sewage disposal systems, dams, and roadways upstream of the community. Water availability, quantity, and quality can be affected by landslides and could have a very significant economic impact on Hagerman. The loss or redistribution of water would affect agricultural crops grown in certain areas, ranching activities, and personal and municipal wells.

Value of Resources at Risk

There are no structures or infrastructure directly at risk from landslides within the city of Hagerman. The cost of cleanup and repairs of roadways is difficult to estimate due to the variable circumstances with each incident including size of the slide, proximity to a State or County shop, and whether the slide occurred on the cut slope or the fill slope. Other factors that could affect the cost of the damage may include culverts, streams, and removal of debris. This type of information is impossible to anticipate; thus, no repair costs for damaged roadways have been estimated.

Severe Weather

The city of Hagerman does not have any differing levels of risk associated with this hazard than Gooding County as a whole. Please refer to the severe weather section of the Gooding County Annex found on page 90 for more details.

Probability of Future Occurrence

The probability of a severe weather event occurring in the city of Hagerman on an annual basis is very high.

Impacts of Severe Weather Events

The impacts of severe weather events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

It is difficult to estimate the cost of potential winter storm damages to structures and the economy in the city of Hagerman. 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. 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. Snow plowing in within the city limits is accomplished by the city's public works department. Private landowners are responsible for maintaining their own driveways or other private roads. Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on residents as not only is power cut to homes and businesses, but primary heating is lost for many residents. 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. Gooding County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow covered roads.

Thunderstorms are not likely to be severe enough in the city of Hagerman to cause significant damages. However, the loss potential from flooding which results from severe thunderstorms could be significant.

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 within the city of Hagerman. The most significant losses are most clearly seen in the agriculture sectors of the economy. Potential losses to agriculture can be disastrous. Crop damage from hail will also be different depending on the time of year and the type of crop. Most farmers carry insurance on their crops to help mitigate the potential financial loss resulting from a localized hail storm. Homeowners in the city of Hagerman 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.

It is difficult to estimate potential losses in the city of Hagerman due to windstorms and tornadoes. Construction throughout the County has been implemented in the presence of high wind events, and therefore, the community is at a higher level of preparedness to high wind events than many other areas experiencing lower average wind speeds.

We have estimated losses based on wind and tornado damage as follows:

- 3% of the buildings damaged causing 50% of value loss (loss could be from downed or damaged trees, damaged outbuildings, damaged fences/poles, damage to siding, damaged landscaping etc.)
- 5% of the buildings received damage to roof (requiring replacement of roof equaling \$3,000)

Damages associated with sensitive receptor irritation have not been estimated. We have also not estimated the potential for a large scale wildfire event associated with high winds. Based on the data provided by the County, there are 629 parcels with improvements in the city of Hagerman with a total value of approximately \$39,309,624 and an average value of \$62,495. Using the criteria outlined above, an estimate of the impact of high winds in the city of Hagerman has been made. The potential wind and tornado damage to all buildings is estimated at approximately \$589,640. The estimated damage to roofs is approximately \$94,350.

Power failure often accompanies severe storms. Prolonged failure, especially during cold winter temperatures can have disastrous effects. All communities should be prepared to deal with power failures. Community shelters equipped with alternative power sources will help local residents stay warm and prepare food. A community-based system for monitoring and assisting elderly or disabled residents should also be developed. All households should maintain survival kits that include warm blankets, flashlights, extra batteries, nonperishable food items, and clean drinking water.

Wildland Fire Profile

Moisture is limited in the city of Hagerman, which supports a warm mesic shrub/steppe vegetation type in which sagebrush and rabbit brush are the major shrub species with a variety of native bunchgrasses in the understory. Farm fields and grazing land are common, especially at the bottom of the valley. Many homes are located in the shrublands near these fields. Stand structure and canopy closure is highly dependent on fire frequency and severity. Historically, shrub/steppe vegetation was relatively open with widely spaced shrubs and scattered bunch grasses in the understory. Fire exclusion has resulted in denser stand conditions.⁶⁶ These habitat types are highly valued for their benefit to a variety of wildlife.

Fuels Assessment

⁶⁶USDA. 1999. Salmon River Canyon Project Draft Environmental Statement. USDA Forest Service. Nez Perce National Forest.

Fuel models 1, 3, and 6 characterize this arid area. Understory vegetation includes dry grasses, *Artemisia sp.* (sagebrush), *Chrysothamnus sp.* (Rabbitbrush), and others. Historically, wildland fire events would burn through the dead and cured herbaceous layer. Concentrations of invasive species such as; *Bromus tectorum* (cheatgrass) and *Taeniatherum caput-medusae* (medusahead), may increase the frequency that wildland fires occur which leads to may lead to the reduction of native species.

Infrastructure

There are no major infrastructures in the city of Hagerman that are at a greater risk to wildfires than what is present in Gooding County.

Escape

Highway 30 travels north and south through the city of Hagerman. The Hagerman Highway travels east from Hagerman towards Wendell. Interstate 84, which travels east and west across southern Idaho, lies just north and east of Hagerman. Highway 30 is surrounded by a mix of irrigated agriculture and shrub/steppe that could be cut-off in the event of a wildland fire under extreme conditions. The Hagerman Highway travels through gentle terrain surrounded by irrigate agriculture which should remain safe for travel in the event of a wildland fire.

Community Assessment

Hagerman Fire District is located in the southwest corner of Gooding County. The shared boundaries are Twin Falls County to the south and west, Bliss Fire District to the north, and Wendell Fire District to the east.

The west side of this district is private lands interspersed with homes and recreational properties.

Hagerman Fire District has a large seasonal recreational population that occupies homes and cabins along the Snake River. The east side above the Snake River Canyon is agricultural properties with potato and dairy farms comprising most of the properties. There are small vineyards along the Snake River to the north of the town of Hagerman where the fire department is located. The topography of the district is unique in comparison with the rest of Gooding County. This fact makes firefighting very difficult.

Access to existing properties within the District continues to be a problem. Many access roads are extremely narrow, have no turnaround areas, and have heavy hazardous fuel loads along the roads. Many areas are inaccessible to firefighting apparatus. Lack of address numbers and partial numbers on many properties within the District hinders firefighting.

Potential Mitigation Activities

Vegetation in this area should be managed to increase the effectiveness of fire suppression equipment in the event of a wildland fire. Plantings near homes should use fire resistant landscaping and be well spaced. Grass surrounding homes and other buildings should be kept short and watered if possible. Other possible management actions include:

- Remove weak, dying, and sick vegetation.

- Thin shrubs to create crown openings by taking the total height of the shrub and spacing that distance between shrubs.
- Spray weeds and other unwanted vegetation with herbicide.
- Create a 3 to 5 foot perimeter of non-combustible material around homes.
- Dispose of all excess vegetative material by chipping or hand-piling and burning when conditions are favorable.

Access roads in this area requires additional treatments to ensure a viable escape route for residents while simultaneously providing for access by emergency vehicles. The majority of the homes in the wildland-urban interface (situated within the agriculture and shrub/steppe) have multiple entrances and exits from their homes and businesses. The vegetation surrounding these access points should be trimmed and disposed of in such a way to allow easy access to and from homes. Site specific treatments should be developed for each home and subdivision.

In addition, some of the housing developments in this area have access roads that cannot support water trucks used by fire fighters (rural and wildland). Some roads have steep adverse grades, while others have turning radii that would be difficult for large trucks to navigate. Some roads have both limitations. The vast majority of the bridges observed in the area would support water-laden trucks. Roads in developments should be signed to allow emergency vehicles to plot a route over navigable roads while responding to an emergency. High visibility address markers at driveways would improve accurate emergency vehicle response during fire or other incidents.

Probability of Future Occurrence

The probability of a wildland fire threatening the city of Hagerman on an annual basis is moderate. Homes and other structures located in the shrub/steppe or agricultural fields within or surrounding the community have a high wildfire risk. Rangeland or grass fires are often the most dangerous due to high rates of spread. Fires in this fuel type are considered somewhat easier to suppress given the appropriate resources, but they can also be the most destructive. Homes along the perimeter of the community would have the highest risk due to their adjacency to flashy fuels. The current vegetation condition class surrounding the city of Hagerman suggests that there has been a moderate alteration of the vegetation in this area. This could be attributed to shrubland being converted for alternative uses, introduction of exotic species, or many other reasons.

Impacts of Wildland Fire Events

The potential impacts from a wildfire in the city of Hagerman are similar to the impacts described for Gooding County as a whole. All fires pose a significant safety risk to residents and emergency service personnel. Individual structures, property, and livelihoods could be severely damaged or lost as a result of a fire; however, the community is not likely to suffer severe or long-term economic losses.

A fire in the shrub/steppe surrounding the community may benefit the ecological environment as nutrients are recycled into the soil. Generally, grass and forbs are rejuvenated by a low intensity fire and grow back quickly; however, heavy rains immediately after a fire could cause erosion.

Smoke from a nearby wildland fire may impact sensitive populations within the community due to degraded air quality conditions. Smoke and/or flames will also impact transportation corridors connecting the city of Hagerman with other communities; thus, travel and commerce may be interrupted.

Value of Resources at Risk

It is difficult to estimate potential losses in the city of Hagerman from wildland fire due to the unpredictability of wildfire behavior and the nature of ignition sources. It is unlikely that more than a few structures or other properties within the city limits of Hagerman would be lost or damaged by a wildland fire; however, residents in the immediate vicinity may be directly impacted. It is impossible to forecast the path a wildfire will take and what type of assets and resources, manmade and ecological, will be at risk. Thus, no value estimates were made for this hazard.

City of Wendell Annex

Flood Profile

Wendell is located adjacent to Interstate 84 which is the main thoroughfare across southern Idaho. State Highway 46 travels north from the city of Wendell. Hagerman Road heads west from the city of Wendell and intersects with US Highway 30 just south of the city of Hagerman.

These roadways are well-traveled not only by area commuters, but also by delivery trucks, and recreationists. Other secondary roads are available to bi-pass town in the event of a flood. There are irrigation canals that are located around the perimeter of the city. Canals generally do not have a history of flooding the surrounding areas. Water levels in canals are monitored and controlled to eliminate the flood risk. There are no natural waterways that are subject to spring high water flows in Wendell. Because the topographic profile of the area is very modest, nearly the entire city has some risk to direct flooding. Furthermore, impacts from those areas flooded may include road closures and closed city and county services. Flood waters tend to recede very slowly because of the minimal topographic relief of the area.

Floods in the area are the result of thunderstorms and to a lesser extent spring runoff, and rain-on-snow events. Rain-on-snow events that affect the city of Wendell occur when significant snow pack exists within the hydrologic watershed surrounding Wendell. The boundaries of the watersheds are fairly large, draining the nearby agricultural fields, and forested watersheds. Warm rains falling on the snow pack result in a significantly increased rate of snowmelt. Often this melting occurs while the ground is frozen and the water cannot be absorbed into the soil resulting in increased overland flows. Floodwaters recede slowly as rain-on-snow weather events tend to last for several days.

Thunderstorms can also affect the community. These events are usually localized, but still can have a significant impact. Storms resulting in intense rain fall often occur rapidly and overwhelm the carrying capacity of the nearby streams. The duration of these storms usually lasts only a matter of hours, but the affects can be spread throughout the impact areas of the City.

There are no identified floodplains within the city of Wendell. Flooding within the city of Wendell will likely be the result of plugged culverts or ditches that can't handle large volumes of water in a short period of time. Flooding of any public facilities will impact residents of Gooding County as commerce is disrupted

and distribution of basic services such as emergency response and postal services are slowed. Electrical service may also be impacted as power is shut off in flooded areas to prevent electric shock. The lack of electricity could become a secondary hazard as the ability of residents to cook or provide heat is halted. Additionally, grocery and petroleum outlets may be closed or contaminated, which may lead to a lack of fresh drinking water and food sources as well as residents' inability to leave the area. Any amount of flooding typically causes damage to structures. Much of the damage may be cosmetic, but still very costly.

Probability of Future Occurrence

The probability of a flood event occurring in the city of Wendell on an annual basis is very low. Flood impacts are mainly limited to disruption of road travel and limited localized flooding of structures, equipment, and businesses. Low magnitude flood events can be expected several times each year. However, due to the flat topography and drainage infrastructure, the impacts of these events are slight and will usually amount to minor and temporary traffic issues. Larger magnitude and high impact flood events have not occurred, and are unlikely in any given year. These types of flood events have the highest probability of occurrence in the winter or early spring in the city of Wendell as a result of rain-on-snow events or rapid runoff.

Impacts of Flood Events

The impacts of flood events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

Minimal damage would be expected in the event of a flood within the city limits. Damages would likely be isolated to individual structures and could not be predicted from year to year.

Earthquake Profile

There are no recorded occurrences of earthquakes significantly impacting the city of Wendell; however, some minimal shaking has been felt as a result of larger earthquakes elsewhere. The city of Wendell does not have any differing issues or levels of risk associated with this hazard than Gooding County as a whole. Please refer to the earthquake section of the Gooding County Annex found on page 80 for more details.

Probability of Future Occurrence

The City has a 10% chance of exceeding a 6-7% pga in the next 50 years.⁶⁷

Impacts of Earthquake Events

Unreinforced masonry (URM) structures and unreinforced chimneys of homes will likely be damaged in the event of an earthquake. There are a few publicly accessible unreinforced masonry structures in the city of Wendell in addition to the numerous homes and other buildings throughout the City with unreinforced chimneys. Damaged or collapsed chimneys could result in the secondary hazard of fire. Nonstructural

⁶⁷ USGS. 2008 United States National Seismic Hazard Maps. U.S. Geological Survey. U.S. Department of Interior. Available online at <http://earthquake.usgs.gov/hazards/products/conterminous/2008/>. October 2009.

damage caused by falling and swinging objects may be considerable after any magnitude earthquake. Damage to some older, more fragile bridges and land failure causing minor slides along roadways may isolate some residents.

Value of Resources at Risk

In the city of Wendell, there are approximately 4 unreinforced masonry buildings within the city limits of Wendell. These structures were built prior to the inclusion of articles for seismic stability in the Uniform Building Codes in 1972. The number and value of unreinforced masonry homes or homes with masonry chimneys in the City of Wendell is unknown, but estimated to include at least 25 buildings.

Landslide Profile

The city of Wendell has very little risk to landslides due to the flat topography of the surrounding area and the built environment. Small slumps may occur along some roadways, but these are not likely to cause significant damage to the community.

Probability of Future Occurrence

The city of Wendell has a very low probability of experiencing damaging landslides. The few slopes in and around the community are generally less than 10% grade. While small, low angle slumps may occur on eyebrows of the surrounding rolling hills, these will be infrequent and likely the result of water saturation or a major disturbance such as an earthquake or road construction.

Impacts of Landslide Events

The city of Wendell may be indirectly affected by landslides that adversely affect a variety of resources such as water supplies, fisheries, sewage disposal systems, dams, and roadways upstream of the community. Water availability, quantity, and quality can be affected by landslides and could have a very significant economic impact on Wendell. The loss or redistribution of water would affect agricultural crops grown in certain areas, ranching activities, and personal and municipal wells.

Value of Resources at Risk

There are no structures or infrastructure directly at risk from landslides within the city of Wendell. The cost of cleanup and repairs of roadways is difficult to estimate due to the variable circumstances with each incident including size of the slide, proximity to a State or County shop, and whether the slide occurred on the cut slope or the fill slope. Other factors that could affect the cost of the damage may include culverts, streams, and removal of debris. This type of information is impossible to anticipate; thus, no repair costs for damaged roadways have been estimated.

Severe Weather

The city of Wendell does not have any differing levels of risk associated with this hazard than Gooding County as a whole. Please refer to the severe weather section of the Gooding County Annex found on page 90 for more details.

Probability of Future Occurrence

The probability of a severe weather event occurring in the city of Wendell on an annual basis is very high.

Impacts of Severe Weather Events

The impacts of severe weather events to the community are usually minimal and are the same as those described for Gooding County as a whole.

Value of Resources at Risk

It is difficult to estimate the cost of potential winter storm damages to structures and the economy in the city of Wendell. 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. 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. Snow plowing in within the city limits is accomplished by the city's public works department. Private landowners are responsible for maintaining their own driveways or other private roads. Utility supplies are impacted during severe winter storms as power is lost on a regional basis. This has a two-fold impact on residents as not only is power cut to homes and businesses, but primary heating is lost for many residents. 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. Gooding County schools are occasionally closed during and right after a severe winter storm because of cold temperatures and snow covered roads.

Thunderstorms are not likely to be severe enough in the city of Wendell to cause significant damages. However, the loss potential from flooding which results from severe thunderstorms could be significant.

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 within the city of Wendell. The most significant losses are most clearly seen in the agriculture sectors of the economy. Potential losses to agriculture can be disastrous. Crop damage from hail will also be different depending on the time of year and the type of crop. Most farmers carry insurance on their crops to help mitigate the potential financial loss resulting from a localized hail storm. Homeowners in the city of Wendell 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.

It is difficult to estimate potential losses in the city of Wendell due to windstorms and tornadoes. Construction throughout the County has been implemented in the presence of high wind events, and

therefore, the community is at a higher level of preparedness to high wind events than many other areas experiencing lower average wind speeds.

We have estimated losses based on wind and tornado damage as follows:

- 3% of the buildings damaged causing 50% of value loss (loss could be from downed or damaged trees, damaged outbuildings, damaged fences/poles, damage to siding, damaged landscaping etc.)
- 5% of the buildings received damage to roof (requiring replacement of roof equaling \$3,000)

Damages associated with sensitive receptor irritation have not been estimated. We have also not estimated the potential for a large scale wildfire event associated with high winds. Based on the data provided by the County, there are 1,288 parcels with improvements in the city of Wendell with a total value of approximately \$88,509,894 with an average value of \$72,076. Using the criteria outlined above, an estimate of the impact of high winds in the city of Wendell has been made. The potential wind and tornado damage to all buildings is estimated at approximately \$1,327,640. The estimated damage to roofs is approximately \$184,200.

Power failure often accompanies severe storms. Prolonged failure, especially during cold winter temperatures can have disastrous effects. All communities should be prepared to deal with power failures. Community shelters equipped with alternative power sources will help local residents stay warm and prepare food. A community-based system for monitoring and assisting elderly or disabled residents should also be developed. All households should maintain survival kits that include warm blankets, flashlights, extra batteries, nonperishable food items, and clean drinking water.

Wildland Fire Profile

Moisture is limited in the city of Wendell, which naturally supports a warm mesic shrub/steppe vegetation type in which sagebrush and rabbit brush are the major shrub species with a variety of native bunchgrasses in the understory. Stand structure and canopy closure is highly dependent on fire frequency and severity. Historically, shrub/steppe vegetation was relatively open with widely spaced shrubs and scattered bunch grasses in the understory. Fire exclusion has resulted in denser stand conditions.⁶⁸ These habitat types are highly valued for their benefit to a variety of wildlife.

Irrigated crop fields are common surrounding the city of Wendell where many homes are located in subdivisions near these fields. Due to the availability of irrigation, these homes are generally not at risk to wildland fires, however the risk could increase if this region was exposed to a lengthy drought. Many of the homes in Wendell are located within the interior city limits thus, the wildland fire risk is significantly reduced due to irrigated landscaping and lack of fuel continuity. This however, does not eliminate the wildland fire risk completely because fire brands can land several hundred feet from the fire itself.

Fuels Assessment

⁶⁸USDA. 1999. Salmon River Canyon Project Draft Environmental Statement. USDA Forest Service. Nez Perce National Forest.

Fuel models 1, 3, and 6 characterize this arid area. Understory vegetation includes dry grasses, *Artemisia sp.* (sagebrush), *Chrysothamnus sp.* (Rabbitbrush), and others. Historically, wildland fire events would burn through the dead and cured herbaceous layer. Concentrations of invasive species such as; *Bromus tectorum* (cheatgrass) and *Taeniatherum caput-medusae* (medusahead), may increase the frequency that wildland fires occur which leads to may lead to the reduction of native species.

Infrastructure

There are no major infrastructures in the city of Wendell that are at a greater risk to wildfires than what is present in Gooding County.

Escape

State Highway 46 travels north from the city of Wendell. Interstate 84 from the northwest to the southeast just to the south of Wendell. Interstate 84 is surrounded by irrigated agriculture that should remain safe for travel in the event of a wildfire. State Highway 46 to the north travels through terrain surrounded by arid shrub/steppe. This access route has a significant risk of being cut-off by wildfire.

Community Assessment

Wendell Fire District is located in the southern portion of Gooding County. It is comprised of agricultural lands interspersed with sagebrush/grasslands. The main agricultural activities are potato, hay and dairy farming. The southern boundary of Wendell Fire District lies along the Snake River, with the eastern boundary being shared with Jerome County, the western boundary is Hagerman Fire District, and the northwest boundary is shared with Bliss Fire District the northern boundary is shared with Gooding Fire District and an area of BLM and state land. There are 17 miles of Interstate 84 within this Fire District.

Potential Mitigation Activities

Vegetation in this area should be managed to increase the effectiveness of fire suppression equipment in the event of a wildland fire. Plantings near homes should use fire resistant landscaping and be well spaced. Grass surrounding homes and other buildings should be kept short and watered if possible. Other possible management actions include:

- Remove weak, dying, and sick vegetation.
- Thin shrubs to create crown openings by taking the total height of the shrub and spacing that distance between shrubs.
- Spray weeds and other unwanted vegetation with herbicide.
- Create a 3 to 5 foot perimeter of non-combustible material around homes.
- Dispose of all excess vegetative material by chipping or hand-piling and burning when conditions are favorable.

Access roads in this area requires additional treatments to ensure a viable escape route for residents while simultaneously providing for access by emergency vehicles. The majority of the homes in the wildland-urban interface (situated within the agriculture and shrub/steppe) have multiple entrances and exits from their homes and businesses. The vegetation surrounding these access points should be trimmed and

disposed of in such a way to allow easy access to and from homes. Site specific treatments should be developed for each home and subdivision.

In addition, the vast majority of the bridges observed in the area would support water-laden trucks. Roads in developments should be signed to allow emergency vehicles to plot a route over navigable roads while responding to an emergency. High visibility address markers at driveways would improve accurate emergency vehicle response during fire or other incidents.

Fuel breaks would be constructed adjacent to the Hilltop subdivision and in the southern end of the Fire District near Banbury Springs, Clear Lakes, and along the main north-south road to access these areas.

Install dry hydrant system and/or drafting locations for engines and tenders on the Snake River in the extreme southern end of the Fire District.

Probability of Future Occurrence

The probability of a wildland fire threatening the city of Wendell on an annual basis is moderate. Homes and other structures located in the shrub/steppe or agricultural fields within or surrounding the community have a high wildfire risk. Rangeland or grass fires are often the most dangerous due to high rates of spread. Fires in this fuel type are considered somewhat easier to suppress given the appropriate resources, but they can also be the most destructive. Homes along the perimeter of the community would have the highest risk due to their adjacency to flashy fuels. The current vegetation condition class surrounding the city of Wendell suggests that there has been a moderate alteration of the vegetation in this area. This could be attributed to shrubland being converted for alternative uses, introduction of exotic species, or many other reasons.

Impacts of Wildland Fire Events

The potential impacts from a wildfire in the city of Wendell are similar to the impacts described for Gooding County as a whole. All fires pose a significant safety risk to residents and emergency service personnel. Individual structures, property, and livelihoods could be severely damaged or lost as a result of a fire; however, the community is not likely to suffer severe or long-term economic losses.

A fire in the shrub/steppe surrounding the community may benefit the ecological environment as nutrients are recycled into the soil. Generally, grass and forbs are rejuvenated by a low intensity fire and grow back quickly; however, heavy rains immediately after a fire could cause erosion.

Smoke from a nearby wildland fire may impact sensitive populations within the community due to degraded air quality conditions. Smoke and/or flames will also impact transportation corridors connecting the city of Wendell with other communities; thus, travel and commerce may be interrupted.

Value of Resources at Risk

It is difficult to estimate potential losses in the city of Wendell from wildland fire due to the unpredictability of wildfire behavior and the nature of ignition sources. It is unlikely that more than a few structures or other properties within the city limits of Wendell would be lost or damaged by a wildland fire; however, residents in the immediate vicinity may be directly impacted. It is impossible to forecast the path a wildfire

will take and what type of assets and resources, manmade and ecological, will be at risk. Thus, no value estimates were made for this hazard.

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Chapter 6

Mitigation Strategy

IN THIS SECTION:

- Prioritization of Action Items
- Gooding County Annex

Chapter 6
Mitigation Strategy

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Chapter 6 – Mitigation Strategy

Administration and Implementation of Action Items

Critical to the implementation of this Multi - Hazard Mitigation Plan will be the identification and implementation of an integrated schedule of action items. These action items are targeted at achieving an elimination of lives lost, a reduction in structures destroyed or compromised, and the preservation of unique ecosystems that serve to sustain the way of life and economy stability in Gooding County, Idaho. Since there are many management agencies and thousands of private landowners in this area, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across all ownerships.

All risk assessments were made based on the conditions existing during 2014, thus, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of the County's' resources are not static. It will be necessary to fine-tune this Plan's recommendations annually to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

Mechanisms to Incorporate Mitigation Strategies

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

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

Gooding County Mechanisms

1. Comprehensive Plan
2. Transportation Plan
3. Emergency Operations Plan
4. Building Codes and Ordinances

5. Departmental Budgets
6. Site Master Plans (wastewater treatment, landfill, etc.)
7. Personnel Training Programs

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Table 6.1. Gooding County Local Mitigation Capability Assessment						
Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Gooding County Planning and Zoning	Floodplain Management	Ami Bennett, Administrator 145 7 th Ave. E., Gooding, ID 83330 (208) 934-5958		X		Clean gutters, storm drains and culverts as needed
Southern Idaho Regional Solid Waste District	Solid waste transfer station	Southern Idaho Reg. Solid Waste Dist. 2743 State Hwy. 46 Gooding, ID 83330 (208) 536-2181		X		Responsible for removal of debris after an event
Road & Bridge Department	Transportation	Gooding County Clerk's Office 624 Main, P.O. Box 417 Gooding, ID 83330 (208)934-4841		X		Road, bridge, and culvert repairs
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Gooding County Disaster Services	Emergency Operations Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Outlines emergency response procedures during and after a disaster. City will rely on County for support if needed

Table 6.1. Gooding County Local Mitigation Capability Assessment

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Gooding County Disaster Services	Multi-Hazard Mitigation Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during hazard mitigation activities. City will rely on County for support if needed
Gooding County Disaster Services	Community Wildfire Protection Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during wildfire mitigation activities. City will rely on County for support if needed

Incorporated City Mechanisms

1. Transportation Plans
2. City Budgets
3. Building Codes and Ordinances
4. Site Master Plans (airport, business incubators, etc.)

Table 6.2. City of Bliss Local Mitigation Capability Assessment						
Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
City of Bliss	Bliss City Ordinance and State Codes	Chris Pruett, Mayor 208-731-8501	X			
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Gooding County Disaster Services	Emergency Operations Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Outlines emergency response procedures during and after a disaster. City will rely on County for support if needed
Gooding County Disaster Services	Multi-Hazard Mitigation Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during hazard mitigation activities. City will rely on County for support if needed
Gooding County Disaster Services	Community Wildfire Protection Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during wildfire mitigation activities. City will rely on County for support if needed

Table 6.3. City of Gooding Local Mitigation Capability Assessment						
Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
City of Gooding Street Department	Road & Bridge Maintenance	City of Gooding 308 5 th Ave West Gooding, Id. 83330 (208)-934-5669		X		Oversee road maintenance, snow removal, tree & brush removal and disposal.
City of Gooding Wastewater Department	Sewer collection & pumping maintenance	City of Gooding 308 5 th Ave West Gooding, Id. 83330 (208)-934-5669		X		Oversee sewer collection and disposal. Provide temporary wastewater pumping equipment.
City of Gooding Water Department	Drinking Water Distribution	City of Gooding 308 5 th Ave West Gooding, Id. 83330 (208)-934-5669		X		Oversee drinking water pumping & distribution system.
City of Gooding Sanitation Department	Commercial & Residential Waste Management	City of Gooding 308 5 th Ave West Gooding, Id. 83330 (208)-934-5669		X		Collection and disposal of waste.
City of Gooding Municipal Airport	Air Transportation	Gooding Municipal Airport 1945 Airport Road Gooding, Id. 83330 (208)-934-5934		X		Oversee operations of general aviation & ag services and provides aircraft fuel.
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Gooding County Disaster Services	Emergency Operations Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Outlines emergency response procedures during and after a disaster. City will rely on County for support if needed

Table 6.3. City of Gooding Local Mitigation Capability Assessment						
Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Gooding County Disaster Services	Multi-Hazard Mitigation Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during hazard mitigation activities. City will rely on County for support if needed
Gooding County Disaster Services	Community Wildfire Protection Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during wildfire mitigation activities. City will rely on County for support if needed

Table 6.4. City of Hagerman Local Mitigation Capability Assessment

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
City of Hagerman Municipality	Government	Mayor Noel (Pete) Weir P.O. Box 158 Hagerman, ID 83332	X			
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Gooding County Disaster Services	Emergency Operations Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Outlines emergency response procedures during and after a disaster. City will rely on County for support if needed
Gooding County Disaster Services	Multi-Hazard Mitigation Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during hazard mitigation activities. City will rely on County for support if needed
Gooding County Disaster Services	Community Wildfire Protection Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during wildfire mitigation activities. City will rely on County for support if needed

Table 6.5. City of Wendell Local Mitigation Capability Assessment

Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
City of Wendell (Mayor & City Council)	City Ordinance, Police, Procedures	Mayor Lori Swainston Wendell City Hall 375 1 st Ave. E. Wendell, ID 83355 (208) 536-5161		X		Approves City Ordinances and approves other documents such as “Hazard Mitigation Plans”
Wendell Fire Department	Fire and Hazard Prevention, Incident Command System, NIMS	Fire Chief Bob Bailey Wendell Fire Department 169 E. Ave. “A” Wendell, ID 83355 (208) 536-5431	X	X		First responding agency to most hazards involving both natural and manmade disasters. Is responsible for scene management and setting up the incident command structure as well as functioning as the liaison between other agencies.
Wendell Department of Public Works	Infrastructure, Road-Way and Storm Drain Management	City Administrator Brad Christopherson Wendell City Hall 375 1 st Ave. East, Wendell, ID 83355 (208) 536-5161	X	X		Maintains City Infrastructure, Water, Sewer, Storm Drains, Roads and Right-of-Ways
City of Wendell (Mayor & City Council)	City Ordinance, Police, Procedures	Mayor Lori Swainston Wendell City Hall 375 1 st Ave. E. Wendell, ID 83355 (208) 536-5161		X		Approves City Ordinances and approves other documents such as “Hazard Mitigation Plans”

Table 6.5. City of Wendell Local Mitigation Capability Assessment						
Agency Name (Mission/Function)	Programs, Plans, Policies, Regulations, Funding, or Practices	Point of Contact Name, Address, Phone, Email	Effect on Loss Reduction			Comments
			Support	Facilitate	Hinder	
Wendell Fire Department	Fire and Hazard Prevention, Incident Command System, NIMS	Fire Chief Bob Bailey Wendell Fire Department 169 E. Ave. "A" Wendell, ID 83355 (208) 536-5431	X	X		First responding agency to most hazards involving both natural and manmade disasters. Is responsible for scene management and setting up the incident command structure as well as functioning as the liaison between other agencies.
Idaho Department of Water Resources	Stream Channel Protection Program	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within stream channels
Idaho Department of Water Resources	Floodplain Management	Western Regional Office 2735 Airport Way Boise, ID 83705 (208)-334-2190			X	Oversees activities within floodplains
Gooding County Disaster Services	Emergency Operations Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Outlines emergency response procedures during and after a disaster. City will rely on County for support if needed
Gooding County Disaster Services	Multi-Hazard Mitigation Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during hazard mitigation activities. City will rely on County for support if needed
Gooding County Disaster Services	Community Wildfire Protection Plan	Lori Capps 145 7 th Avenue E. Gooding, ID 83330 208-934-5958		X		Guides planners during wildfire mitigation activities. City will rely on County for support if needed

Hospital District Mechanisms

1. Emergency Operations Plan
2. Annual Budget
3. Board of Directors Bylaws (Operational Protocols)

Agencies and other Organization Mechanisms

1. Annual Budget
2. Prevention Programs
3. Training Programs
4. Long Term Land Use Plans (Forest Plans, Wildlife Management Area Plans, etc.)

The Gooding County Disaster Services Coordinator is responsible for educating the Board of Commissioners and other County departments as well as city planners on the contents and incorporation requirements of the Multi-Hazard Mitigation Plan. The Disaster Services Coordinator and other planning committee partners should be aware of the risk assessments and mitigation strategies respective to their jurisdictions in order to include them in the planning processes and discussions for other types of projects as they come up. The Gooding County Disaster Services Coordinator is responsible for ensuring that each participating jurisdiction as well as other partners has a copy of the Multi-Hazard Mitigation Plan readily available for reference purposes. Furthermore, as previously mentioned, the Gooding County Disaster Services Coordinator is responsible for annual and 5-year evaluations of the Multi-Hazard Mitigation Plan. The annual meetings will serve a dual purpose of updating the document and refreshing each jurisdiction's memory of the contents and mitigation requirements of Multi-Hazard Mitigation Plan. Members of the planning committee are also responsible of educating decision-makers in their own jurisdictions on the use and incorporation of mitigation requirements of this document into other planning mechanisms such as those listed above.

Prioritization of Action Items

The prioritization process includes a special emphasis on benefit-cost analysis review. The process reflects that a key component in funding decision is a determination that the project will provide an equivalent or more in benefits over the life of the project when compared with the costs. Projects will be administered by local jurisdictions with overall coordination provided by the Gooding County Disaster Services Coordinator.

County Commissioners and the elected officials of all jurisdictions have evaluated opportunities and established their own unique priorities to accomplish mitigation activities where existing funds and resources are available and there is community interest in implementing mitigation measures. If no federal funding is used in these situations, the prioritization process may be less formal. Often the types of projects a county can afford to do on their own are in relation to improved codes and standards, department planning and preparedness, and education. These types of projects may not meet the traditional project model, selection criteria, and benefit-cost model. Gooding County will use this Multi-Hazard Mitigation Plan as guidance when considering pre-disaster mitigation proposals brought before the Board of Commissioners by department heads, city officials, fire districts, and local civic groups.

When federal or state funding is available for hazard mitigation, there are usually requirements that establish a rigorous benefit-cost analysis as a guiding criterion in establishing project priorities. Gooding County understands the basic federal grant program criteria which will drive the identification, selection, and funding of the most competitive and worthy mitigation projects. FEMA's three grant programs (the Hazard Mitigation Grant Program, the Flood Mitigation Assistance Program, and Pre-Disaster Mitigation Program) that offer federal mitigation funding to state and local governments all include the benefit-cost and repetitive loss selection criteria.

The prioritization of new projects and deletion of completed projects will occur annually and be facilitated by the Gooding County Disaster Services Coordinator and the joint planning committee. All mitigation activities, recommendations, and action items mentioned in this document are dependent on available funding and staffing.

Prioritization Scheme

All of the action items and project recommendations made in this Plan were prioritized by each respective jurisdiction in coordination with their governing body. Each jurisdiction's representative on the planning committee met with their governing bodies and prioritized their own list of projects and mitigation measures through a group discussion and voting process. Although completed individually, each jurisdiction's mitigation strategy was discussed and analyzed on the merits described in the STAPLEE process including the social, technical, administrative, political, legal, economical, and environmental factors associated with each recommended action item. Projects were ranked on a "High", "Moderate", or "Low" scale with emphasis on project feasibility and the benefit/cost correlation. Once completed, the individual jurisdiction's rankings were discussed and approved at the committee level.

Jurisdictional Mitigation Strategies

The following tables outline all of the participating jurisdictions’ mitigation strategies for at least the next five year period. All of the action items from the 2008 Plan were carried into the updated mitigation strategies; however, the committee thoroughly reviewed and discussed each proposed project, and in some cases, chose to revise the action item or delete it altogether. The “2014 Status” column in each table highlights the current state of each action item.

Gooding County Annex

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.a. Develop and deliver public education programs on Hazard Mitigation.	Goal # 1,3,4,5,& 8 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Disaster Services	Original Item (not complete)	City of Gooding, City of Wendell, City of Bliss, City of Hagerman BLM, and USFS	2017
Flood	6.1.b. Develop county and city policies to restrict development in flood zone to help prevent losses.	Goal # 1,3,5,6,8,& 9 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Planning & Zoning	Original Item (In Progress)	City of Gooding Planning & Zoning	2016
Landslide	6.1.c. County policy to restrict development near landslide prone landscapes.	Goal # 1,3,5,6,8,& 9 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Planning & Zoning	Original Item (unknown)	City of Bliss Planning & Zoning	On-going

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Flood	6.1.d. Encourage county participation in the Flood Mitigation Assistance Program.	Goal # 1,2,3,& 7 Priority Ranking: High	Gooding County Disaster Services	Original Item (not complete)	Gooding County Planning & Zoning and City of Gooding Planning & Zoning	On-going
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.e. Incorporate the Gooding County Multi-Hazard Mitigation Plan into the Gooding County Comprehensive Plan, where applicable.	Goal # 6 & 10 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (not complete)	Gooding County Disaster Services and Cities of Gooding County Planning & Zoning Departments	Next Comp Plan update
Flood	6.1.f. Increase County and City of Gooding participation in National Flood Insurance Program.	Goals # 1,2,3,& 7 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (not complete)	City of Gooding	On-going
Severe Weather, Wildland Fire, and Flood	6.1.g. Post hazard related rural signage (road signs, Evacuation Route Signs, etc).	Goal # 1,3,5,& 8 Priority Ranking: High	Gooding County Highway District	Original Item (in progress)	Bliss Highway District, Hagerman Highway District, and West Point Highway District	2018
Flood	6.1.h. Request FEMA update of Flood Insurance Rate maps.	Goal # 1,2,5,6,7,8,& 9 Priority Ranking:	Gooding County Planning & Zoning	Original Item (in progress)	City of Gooding, and FEMA	2016

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Landslide	6.1.i. Restrict construction from Bliss to Snake River along Old Highway.	Goal # 1,3,5,6,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (unknown)	Gooding County Building Department	On-going
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.j. Develop county and city policy to actively enforce all International Building Codes as adopted by the State of Idaho.	Goal # 1,3,5,6,& 8 Priority Ranking: N/A	Gooding County Planning & Zoning	Original Item (completed)	Cities of Wendell, Gooding, Bliss, and Hagerman	On-going
Flood	6.1.k. Develop ordinance to regulate future construction in the 100 year floodplain within the City of Gooding.	Goal # 1,3,5,6,& 8 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (unknown)	City of Gooding	2018
Wildland Fire	9.1.i. Work with various types of media to present fire education messages (PSAs) to the general public.	Goal # 1,3,4,& 5 Priority Ranking: Low	Gooding County Disaster Services	Original Item (unknown)	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	On-going
Wildland Fire	9.1.m. Update Gooding County Fire Districts' wildland fire preplan and mitigation map in cooperation with the Twin Falls District, BLM.	Goal # 1,3,5,& 8 Priority Ranking: High	Gooding County Disaster Services	Original Item (unknown)	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	2018

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Severe Weather	6.1.n. Assess and hardwire facilities and shelters throughout the County for use with a portable generator.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (not complete)	Gooding County Building Department, Gooding County Disaster Services, Cities of Gooding, Wendell, Bliss, and Hagerman	2018
Severe Weather	6.1.o. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding County Disaster Services	Original Item (not completed)	Cities of Gooding, Wendell, Bliss, and Hagerman	2019
Flood	6.1.p. Evaluate the structures located in the flood zone to determine measures needed to protect the structure from flood waters (elevation of structure, barrier, wet protection, etc).	Goal # 1,3,5,8,& 9 Priority Ranking:	Gooding County Planning & Zoning	Original Item (deleted due to change in priorities)	Gooding County Disaster Services	
Flood and Earthquake	6.1.q. Evaluate the well intakes located in the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Idaho Department of Water Resources and U.S. Army Corps of Engineers.	Original Item (deleted due to change in priorities)	Gooding County Disaster Services	
Flood	6.1.r. Stabilize banks of Little Wood River to protect City of Gooding from overflow.	Goal # N/A Priority Ranking: N/A	City of Gooding Planning & Zoning	Original Item (deleted due to change in priorities)	Gooding County Planning & Zoning and Gooding County Disaster Services	

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake	6.1.s. Evaluate Gooding Fire Station for seismic stability and implement recommendations for retrofit, if necessary.	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding Rural Fire District	Original Item (unknown)	Gooding County Building Department	2017
Wildland Fire	6.1.t. Continue to improve the Firewise program and Google Pro countywide.	Goal # 1,3,& 4 Priority Ranking: Moderate	Gooding County Disaster Services	Original Item (unknown)	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	On-going
Landslide	6.1.u. Install roadside debris catchment devices.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Highway District	Original Item (unknown)	Idaho Transportation Department	2019
Landslide	6.1.v. Maintain debris catchment devices on new Bliss Grade.	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding County Highway District	Original Item (deleted due to change in priorities)	Gooding County Disaster Services	
Flood	6.1.w. Elevate roads in floodplain to raise them above the 100 year flood zone (e.g. Highway 46 near Big Wood River).	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (unknown)	Idaho Transportation Department	2020

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Severe Weather, Wildland Fire, and Flood	6.1.x. Post “Emergency Evacuation Route” signs along the identified primary and secondary escape routes.	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding County Rural Fire Districts	Original Item	Highway Districts and Idaho Transportation Dept.	2018
Flood	6.1.y. Conduct evaluation and implement a strategy to prevent ice and debris jams on bridges over Little Wood River near Gooding.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (completed)		
Severe Weather	6.1.z. Anchor irrigation pivots to prevent them from blowing over or moving during high wind events.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County	Original Item (completed)		
Severe Weather	6.1.a.a. Construct snow fences in strategic locations to prevent drifting on primary and secondary access routes and near population centers.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (unknown)	Private landowners	2020

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Severe Weather	6.1.b.b. Construct a snow fence on State Route 46 approximately two miles south of Gooding.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (ITD did remove rock outcroppings for about half of this stretch of roadway, which helps prevent drifting)	Idaho Transportation Department	2020
Severe Weather	6.1.c.c. Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, Senior Centers, school districts, and Fire Protection Districts).	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Disaster Management	Original Item (unknown)	Gooding County Fire Districts	On-going
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.d.d. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potential hazards, particularly the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item (unknown)	Gooding County Disaster Services, Cities of Gooding, Wendell, Hagerman, and Bliss.	2019
Severe Weather	6.1.e.e. Obtain snowplows to mount on wildland fire brush trucks for use during winter storms.	Goal # N/A Priority Ranking: N/A	City of Gooding	Original Item (deleted due to change in priorities)		

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Wildland Fire	6.1.f.f. Continue to improve Red Zone capability countywide.	Goal # N/A Priority Ranking: N/A	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	Original Item (deleted due to change in priorities)		
Wildland Fire	6.1.g.g. Create a County WUI fire prevention website for all County Fire Districts.	Goal # 1,3,4,& 5 Priority Ranking: N/A	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	Original Item (completed)		Update as needed
Wildland Fire	6.1.h.h. Obtain grants and/or secure funding through the budget process to maintain and/or purchase new equipment.	Goal # 1,3,& 5 Priority Ranking: High	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	Original Item (unknown)	Gooding County Disaster Services	On-going

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Wildland Fire	6.1.i.i. Continue use of mutual aid agreements with county rural fire districts.	Goal # 1,3,5,& 8 Priority Ranking: N/A	Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, and Bliss Fire District	Original Item (completed)		Update as needed
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.j.j. Establish an Emergency Operations Center for Countywide use during disasters/emergencies.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Disaster Services	New Item	Cities of Gooding, Wendell, Hagerman, and Bliss. As well as, FEMA, and Idaho BHS.	2018
Flood	6.1.k.k. Work with BLM to establish a water catchment system similar to that developed to relieve high water in the Little Wood River southwest of Richfield in 2006.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Disaster Services	New Item	BLM, Army Corps of Engineers, Big Wood Canal Company, and the North Canal Company	2020
Landslide	Access the Landslide Impact Zone of Bliss to determine mitigation actions required.	Goal #1,3,5,8,& 9 Priority Ranking: Moderate	Gooding County Highway District, Idaho Transportation Department	New Item	Gooding County Disaster Services, Gooding County Commissioners	2017

Table 6.6. Gooding County Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Flood	Continued participation in National Flood Insurance Program.	Goal #1,2,4,5,7 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Commissioners	New Item	Gooding County Disaster Services	Ongoing
Terrorism & Civil Unrest	Establish barriers around courthouse and other public buildings to prevent vehicles from driving into the building.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: Moderate</div>	Gooding County Commissioners	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services	2020
Terrorism & Civil Unrest	Install cameras around courthouse and other public buildings to monitor suspicious activity.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: Moderate</div>	Gooding County Commissioners	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services	2020
Terrorism & Civil Unrest	Reduce tall landscaping around courthouse and other public buildings to reduce hiding places for people and bombs.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: Moderate</div>	Gooding County Commissioners	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services	2020

City of Bliss Annex

Table 6.2. City of Bliss Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.5.a. Develop and deliver public education programs on Hazard Mitigation.	Goal # 1,3,4,& 5 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (not complete)	Gooding County Disaster Services, BLM, and USFS	2017
Flood	6.5.b. Develop county and city policies to restrict development in flood zone to help prevent losses.	Goal # 1,3,5,6,& 8 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (In Progress)	Gooding County Planning & Zoning	2016
Flood	6.5.c. Increase County and City of Bliss participation in National Flood Insurance Program.	Goals # 1,2,3,& 7 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (not complete)	Gooding County Planning & Zoning	On-going
Flood	6.5.d. Request FEMA update of Flood Insurance Rate maps.	Goal # 1,2,5,6,7,8,& 9 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (in progress)	Gooding County Planning & Zoning	2016

Table 6.2. City of Bliss Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.5.e. Develop county and city policy to actively enforce all Uniform Building Codes as adopted by the State of Idaho.	Goal # 1,3,5,6,& 8 Priority Ranking: N/A	Bliss City Council	Original Item (completed)	Gooding County Planning & Zoning	
Severe Weather	6.5.f. Assess and hardware facilities and shelters throughout the County for use with a portable generator.	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (not complete)	Gooding County Building Department	2018
Severe Weather	6.5.g. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc).	Goal #1,3,5,8,& 9 Priority Ranking: Moderate	Gooding County Disaster Services	Original Item (not completed)	City of Bliss	2019
Flood	6.5.h. Evaluate the structures located in the flood zone to determine measures needed to protect the structure from flood waters (elevation of structure, barrier, wet protection, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Gooding County Disaster Services	2020

Table 6.2. City of Bliss Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Severe Weather	6.5.l. Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, and Senior Centers).	Goal # 1,3,5,8,& 9 Priority Ranking: High	Bliss City Council	Original Item (unknown)	Gooding County Disaster Services	2020
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.5.m. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potential hazards, particularly the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Bliss Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Disaster Services	2019
Wildland Fire	6.5.n. Obtain an Urban Interface vehicle	Goal # 1,3,5, & 8 Priority Ranking: High	Bliss City Council, local Fire Department	New Item	Gooding County Planning & Zoning and Disaster Services	2017
Wildland Fire	6.5.o. Develop public education program to inform citizens about the risks of wildland fire and defensible space techniques.	Goal # 1,3,4, 5, & 8 Priority Ranking: High	City of Bliss Planning & Zoning	New Item	Local fire districts, County Disaster Services, BLM, IDL	2017

Table 6.2. City of Bliss Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Flood	6.5.p. Obtain resources to provide National Flood Insurance Program training to County staff and elected officials.	Goals # 1,2,3,& 7 Priority Ranking: High	Bliss City Council	New Item	Gooding County Disaster Services, FEMA, IDBHS	2017
Flood	Continued participation in National Flood Insurance Program.	Goal #1,2,4,5,7 Priority Ranking: High	Bliss City Council	New Item	Gooding County Commissioners	Ongoing
Terrorism & Civil Unrest	Establish barriers around city hall and other public buildings to prevent vehicles from driving into the building.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	City of Bliss Planning & Zoning	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020
Terrorism & Civil Unrest	Install cameras around city hall and other public buildings to monitor suspicious activity.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Bliss City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

Table 6.2. City of Bliss Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Terrorism & Civil Unrest	Reduce tall landscaping around city hall and other public buildings to reduce hiding places for people and bombs.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Bliss City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

City of Gooding Annex

Table 6.3. City of Gooding Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.2.a. Develop and deliver public education programs on Hazard Mitigation.	Goal # 1,3,4,& 5 Priority Ranking: High	City of Gooding City Council	Original Item (not complete)	Gooding County Disaster Services , BLM, and USFS	2017
Flood	6.2.b. Develop county and city policies to restrict development in flood zone to help prevent losses.	Goal # 1,3,5,6,& 8 Priority Ranking: High	City of Gooding City Council	Original Item (In Progress)	Gooding County Planning & Zoning and Gooding County Disaster Services	2016
Flood	6.2.c. Increase City of Gooding participation in National Flood Insurance Program.	Goals # 1,2,3,& 7 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (not complete)	Gooding County Planning & Zoning and Gooding County Disaster Services	On-going
Flood	6.2.d. Request FEMA update of Flood Insurance Rate maps.	Goal # 1,2,5,6,7,8,& 9 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (in progress)	Gooding County Planning & Zoning, Gooding County Disaster Services and FEMA	On-going

Table 6.3. City of Gooding Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.2.e. Develop county and city policy to actively enforce all International Building Codes as adopted by the State of Idaho.	Goal # 1,3,5,6,& 8 Priority Ranking: N/A	Gooding City Council	Original Item (completed)	Gooding County Planning & Zoning	On-going
Flood	6.2.f. Develop ordinance to regulate future construction in the 100 year floodplain within the City of Gooding.	Goal # 1,3,5,6,& 8 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning	On-going
Severe Weather	6.2.g. Assess and hardwire facilities and shelters throughout the County for use with a portable generator.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding City Council	Original Item (not complete)	Gooding County Planning & Zoning and Gooding County Disaster Services	2018
Severe Weather	6.2.h. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding City Council	Original Item (not completed)	Gooding County Disaster Services	2019

Table 6.3. City of Gooding Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Flood and Earthquake	6.2.i. Evaluate the well intakes located in the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Gooding County Disaster Services	2020
Earthquake	6.2.j. Evaluate Gooding Fire Station for seismic stability and implement recommendations for retrofit, if necessary.	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Gooding Rural Fire District	Original Item (unknown)	Gooding City Council	On-going
Flood	6.2.k. Conduct evaluation and implement a strategy to prevent ice and debris jams on bridges over Little Wood River near Gooding.	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning, Gooding County Disaster Services, U.S. Army Corps of Engineers	2020
Severe Weather	6.2.l. Anchor irrigation pivots to prevent them from blowing over or moving during high wind events.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding City Council and local Irrigation District	Original Item (mostly complete)	Private landowners and Gooding County	On-going

Table 6.3. City of Gooding Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.2.m. Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, Senior Centers, school districts, and fire districts).	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding City Council and local Fire Department/District	Original Item (unknown)	Gooding County Disaster Services	2020
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.2.n. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potential hazards, particularly the flood zone.	Goal #1,3,5,8,& 9 Priority Ranking: High	City of Gooding Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Gooding County Disaster Services	2019
Flood	6.5.p. Obtain resources to provide National Flood Insurance Program training to County staff and elected officials.	Goals # 1,2,3,& 7 Priority Ranking: High	Gooding City Council	New Item	Gooding County Planning & Zoning, Gooding County Disaster Services, FEMA, IDBHS	2017
Flood	Continued participation in National Flood Insurance Program.	Goal #1,2,4,5,7 Priority Ranking: High	Gooding City Council	New Item	Gooding County Commissioners	Ongoing

Table 6.3. City of Gooding Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Terrorism & Civil Unrest	Establish barriers around city hall and other public buildings to prevent vehicles from driving into the building.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Gooding City Council and Planning & Zoning	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Planning & Zoning	2020
Terrorism & Civil Unrest	Install cameras around city hall and other public buildings to monitor suspicious activity.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Gooding City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Planning & Zoning	2020
Terrorism & Civil Unrest	Reduce tall landscaping around city hall and other public buildings to reduce hiding places for people and bombs.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Gooding City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Planning & Zoning	2020

City of Hagerman Annex

Table 6.4. City of Hagerman Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.4.a. Develop and deliver public education programs on Hazard Mitigation.	Goal # 1,3,4,& 5 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Hagerman City Council	Original Item (not complete)	Gooding County Disaster Services, BLM, and USFS	2017
Flood	6.4.b. Develop county and city policies to restrict development in flood zone to help prevent losses.	Goal # 1,3,5,6,& 8 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Planning & Zoning	Original Item (In Progress)	City of Hagerman	In-progress
Flood	6.4.c. Increase County and City of Hagerman participation in National Flood Insurance Program.	Goals # 1,2,3,& 7 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Planning & Zoning	Original Item (not complete)	City of Hagerman	On-going
Flood	6.4.d. Request FEMA update of Flood Insurance Rate maps.	Goal # 1,2,5,6,7,8,& 9 <div style="border: 1px solid black; padding: 2px;">Priority Ranking: High</div>	Gooding County Planning & Zoning	Original Item (in progress)	City of Hagerman	On-going

Table 6.4. City of Hagerman Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.4.e. Develop county and city policy to actively enforce all International Building Codes as adopted by the State of Idaho.	Goal # 1,3,5,6,& 8 Priority Ranking: N/A	Hagerman City Council	Original Item (completed)	Gooding County Disaster Services and Gooding County Planning & Zoning	
Severe Weather	6.4.f. Assess and hardwire facilities and shelters throughout the County for use with a portable generator.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Hagerman City Council and local fire department/district	Original Item (not complete)	Gooding County Planning & Zoning, Gooding County Building Department and Gooding County Disaster Services	2018
Severe Weather	6.4.g. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Hagerman City Council	Original Item (not completed)	Gooding County Disaster Services	2019
Flood	6.4.h. Evaluate the structures located in the flood zone to determine measures needed to protect the structure from flood waters (elevation of structure, barrier, wet protection, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Hagerman Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Gooding County Disaster Services	2020

Table 6.4. City of Hagerman Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake	6.4.i. Inspect buildings, particularly unreinforced masonry, for earthquake hazard stability and develop implementation plan for seismic retrofit.	Goal # 1,3,5,8,& 9 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	City of Hagerman Planning & Zoning	Original Item (deleted due to change in priorities)		
Severe Weather and Flood	6.4.j. Inspect home and business building sites for hazard trees posing a threat to structure in event of a windstorm, winter storm, or flood. Assist with tree removal.	Goal # 1,3,5,8,& 9 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	City of Hagerman Planning & Zoning	Original Item (deleted due to change in priorities)		
Severe Weather	6.4.k. Inspect homes' and businesses' roofing materials to identify roofs at risk to windstorms and assist homeowners with replacement options.	Goal # 1,3,5,8,& 9 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: High</div>	City of Hagerman Planning & Zoning	Original Item (deleted due to change in priorities)		
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.4.l. Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, Senior Centers, school districts, and Fire Protection Districts).	Goal # 1,3,5,8,& 9 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: High</div>	Hagerman City Council and local fire department/ district	Original Item	Gooding County Disaster Services	2020

Table 6.4. City of Hagerman Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.4.m. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potential hazards, particularly the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Gooding County Planning & Zoning	Original Item	City of Hagerman and Gooding County Disaster Services	In-progress
Flood	6.5.p. Obtain resources to provide National Flood Insurance Program training to County staff and elected officials.	Goals # 1,2,3,& 7 Priority Ranking: High	City of Hagerman Planning & Zoning	New Item	Gooding County Planning & Zoning, FEMA, IDBHS	2017
Flood	Continued participation in National Flood Insurance Program.	Goal #1,2,4,5,7 Priority Ranking: High	Hagerman City Council	New Item	Gooding County Commissioners	Ongoing
Terrorism & Civil Unrest	Establish barriers around city hall and other public buildings to prevent vehicles from driving into the building.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Hagerman City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

Table 6.4. City of Hagerman Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Terrorism & Civil Unrest	Install cameras around city hall and other public buildings to monitor suspicious activity.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	Hagerman City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020
Terrorism & Civil Unrest	Reduce tall landscaping around city hall and other public buildings to reduce hiding places for people and bombs.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	Hagerman City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

City of Wendell Annex

Table 6.5. City of Wendell Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.3.a. Develop and deliver public education programs on Hazard Mitigation.	Goal # 1,3,4,& 5 Priority Ranking: High	Wendell City Council	Original Item (not complete)	Gooding County Disaster Services	2017
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.3.b. Develop county and city policy to actively enforce all International Building Codes as adopted by the State of Idaho.	Goal #1,3,5,6,& 8 Priority Ranking: N/A	Wendell City Council	Original Item (completed)	Gooding County Planning & Zoning	On-going
Severe Weather	6.3.c. Assess and hardwire facilities and shelters throughout the County for use with a portable generator.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Wendell City Council	Original Item (not complete)	Gooding County Planning & Zoning and Gooding County Disaster Services	2018
Severe Weather	6.3.d. Obtain needed resources for health care facilities, community centers, and other shelters to protect themselves from potential hazards (e.g. sandbags, cots, nonperishable foods, etc).	Goal # 1,3,5,8,& 9 Priority Ranking: Moderate	Wendell City Council	Original Item (not completed)	Gooding County Planning & Zoning, Gooding County Disaster Services and Wendell School District	2019

Table 6.5. City of Wendell Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Wildland Fire	6.3.e. Continue to improve the Firewise program and Google Pro countywide.	Goal # 1,3,& 4 Priority Ranking: Moderate	Wendell City Council	Original Item (unknown)	Gooding County Disaster Services, Gooding Rural Fire District, Hagerman Fire District, Wendell Rural Fire District, City of Wendell Fire Department, Bliss Fire District, and BLM	On-going
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.3.f. Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, infrastructure security, EOC, and Senior Centers, school districts, and Fire Protection Districts).	Goal # 1,3,5,8,& 9 Priority Ranking: High	Wendell City Council	Original Item (unknown)	Gooding County Fire Districts and Gooding County Disaster Services	2020
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.3.g. Evaluate location of emergency services headquarters, field offices, and storage facilities for proximity to potential hazards, particularly the flood zone.	Goal # 1,3,5,8,& 9 Priority Ranking: High	City of Wendell Planning & Zoning	Original Item (unknown)	Gooding County Planning & Zoning and Gooding County Disaster Services	2019
Wildland Fire	6.3.h. Wendell Fire needs a training room to provide training opportunities for firefighters.	Goal # 1,3,5,8,& 9 Priority Ranking: High	Wendell Fire	New Item	City of Wendell	2020

Table 6.5. City of Wendell Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Earthquake, Severe Weather, Wildland Fire, and Landslide	6.1.i. Keep siren on the Wendell fire station operational for use during emergencies.	Goal # 1,3,5,& 8 Priority Ranking: High	City of Wendell Fire Department	Original Item (unknown)	Wendell Rural Fire District	On-going
Flood	6.5.p. Obtain resources to provide National Flood Insurance Program training to County staff and elected officials.	Goals # 1,2,3,& 7 Priority Ranking: High	City of Wendell Planning & Zoning	New Item	Gooding County Planning & Zoning, FEMA, IDBHS	2017
Flood	Continued participation in National Flood Insurance Program.	Goal #1,2,4,5,7 Priority Ranking: High	Wendell City Council	New Item	Gooding County Commissioners	Ongoing
Terrorism & Civil Unrest	Establish barriers around city hall and other public buildings to prevent vehicles from driving into the building.	Goal #1,3,5,8, & 10 Priority Ranking: Moderate	Wendell City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

Table 6.5. City of Wendell Mitigation Strategies.

Hazard	Action Item	Goals Addressed	Responsible Departments or Organizations	2014 Status	Potential Resources	Projected Completion Year
Terrorism & Civil Unrest	Install cameras around city hall and other public buildings to monitor suspicious activity.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	Wendell City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020
Terrorism & Civil Unrest	Reduce tall landscaping around city hall and other public buildings to reduce hiding places for people and bombs.	Goal #1,3,5,8, & 10 <div style="border: 1px solid black; padding: 2px; width: fit-content;">Priority Ranking: Moderate</div>	Wendell City Council	New Item	Gooding County Sheriff's Office, Gooding County Disaster Services, and Gooding County Commissioners	2020

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Chapter 7

Appendices

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- Planning Committee Minutes
- Record of Meeting Attendance
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Record of Local Adoption

Each participating jurisdiction formally adopted the Gooding County Multi-Hazard Mitigation Plan by resolution in an open public hearing. The following is a record of the resolutions passed by the governing body in each represented jurisdiction.

Figure 7.1. Gooding County Resolution of Adoption

RESOLUTION NO. 15-12-07

RESOLUTION FOR ADOPTION OF GOODING COUNTY
MULTI-HAZARD MITIGATION PLAN

A resolution of the Gooding County Board of Commissioners declaring county support and adoption of the Gooding County Multi-Hazard Mitigation Plan.

WHEREAS, The Gooding County Board of Commissioners support the Gooding County Multi-Hazard Mitigation Plan, and

WHEREAS, The Gooding County Board of Commissioners has participated in the development of the Gooding County Multi-Hazard Mitigation Plan, and

WHEREAS, The Gooding County Multi-Hazard Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation and other purposes as deemed appropriate.

NOW, THEREFORE, BE IT RESOLVED AS FOLLOWS: That the Gooding County Board of Commissioners do hereby adopt, support, and will facilitate the Gooding County Multi-Hazard Mitigation Plan's implementation as deemed appropriate.

Passed and approved this 7th Day of December, 2015.

Board of County Commissioners
Gooding County, Idaho

Helen P. Edwards
Helen Edwards, Chairman

Marc Bolduc
Marc Bolduc, Commissioner

Wayne Chandler
Wayne Chandler, Commissioner



Attest:

Denise Gill
Denise Gill, Clerk

Figure 7.2. City of Bliss Resolution of Adoption

#2015-23

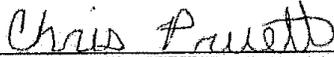
A resolution for the City of Bliss declaring support and adoption of the Gooding County Multi-hazard Mitigation plan.

Whereas, The City of Bliss supports the Gooding County Multi-hazard Mitigation Plan, and
Whereas, The City Council of Bliss has participated in the development of the Gooding County Multi-Hazard Mitigation Plan, and

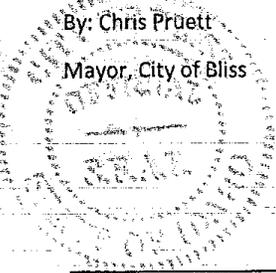
Whereas, The Gooding County Multi-Hazard Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation and other purposes as deemed appropriate by the City Council of Bliss, and

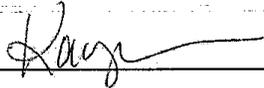
Therefore be it resolved, that the City Council of Bliss does hereby adopt, support, and will facilitate the Gooding County Multi-Hazard Mitigation Plan's implementation as deemed appropriate.

Passed and approved this 16th Day of September 2015 by the city council of Bliss located in Gooding County, Idaho.



By: Chris Pruett
Mayor, City of Bliss





Attested by: Kacy Bradshaw
Clerk, City of Bliss

Figure 7.3. City of Gooding Resolution of Adoption



"Gateway to a Good Life"
308 5th Ave West
Gooding, ID 83330-1205
208 934-5669 Phone
208 934-5425 Fax

City of Gooding

Incorporated November 21, 1910

Mayor: Walter C. Nelson
Clerk: Hollye Lierman

City Council
Michael 'Mitch' Arkoosh
Vern France
Diane Houser
Mel Magnelli

Resolution of Adoption by the City of Gooding, Idaho No. 238

A resolution of the City of Gooding declaring support and adoption of the Gooding County Multi-Hazard Mitigation Plan.

Whereas, The City Council of Gooding supports the Gooding Multi-Hazard Mitigation plan, and

Whereas, The City Council of Gooding has participated in the development of the Gooding County Multi-Hazard Mitigation Plan, and

Whereas, The Gooding County Multi-Hazard Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation and other purposes as deemed appropriate by the City Council of Gooding, and

Therefore be it resolved, that the City Council of Gooding does hereby adopt, support, and will facilitate the Gooding County Multi-Hazard Mitigation Plan's implementation as deemed appropriate.

Passed and approved this 17 Day of August 2015

By the City Council of Gooding located in Gooding County, Idaho.


By: Walter C. Nelson
Mayor, City of Gooding


Attested by: Hollye Lierman
City Clerk, City of Gooding

Figure 7.4. City of Hagerman Resolution of Adoption

**RESOLUTION OF ADOPTION BY THE CITY OF HAGERMAN
2015-004**

A resolution of the City of Hagerman declaring support and adoption of the Gooding County Multi-Hazard Mitigation Plan.

Whereas, The City of Hagerman supports the Gooding County Multi-Hazard Mitigation Plan, and

Whereas, The City of Hagerman has participated in the development of the Gooding County Multi-Hazard Mitigation Plan, and

Whereas, The Gooding County Multi-Hazard Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation and other purposes as deemed appropriate by the City of Hagerman, and

Therefore be it resolved, that the City Council of Hagerman does hereby adopt, support and facilitate the Gooding County Multi-Hazard Mitigation Plan's implementation as deemed appropriate.

Passed and approved this 16th day of September, 2015.

By the City Council of Hagerman located in Gooding County, Idaho.

By Noel (Pete) C. Weir
Mayor, City of Hagerman.

Attested by
Karen Woods
Clerk, City of Hagerman.

PUBLISH: September 30, 2015.

Figure 7.5. City of Wendell Resolution of Adoption

RESOLUTION NO. 164-2015

A Resolution of the City of Wendell Declaring support and and adoption of the Gooding County Multi-Hazard Mitigation Plan.

WHEREAS, The City of Wendell supports the Gooding County Multi-Hazard Mitigation Plan, and

WHEREAS, The Wendell City Council has participated in the development of the Gooding County Multi-Hazard Mitigation Plan, and

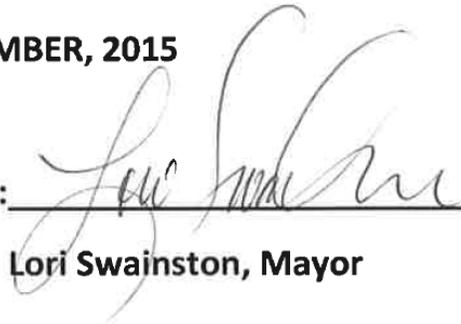
WHEREAS, The Gooding County Multi-Hazard Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation and other purposes as deemed appropriated by the Wendell City Council, and

THEREFORE BE IT RESOLVED, that the City Council of Wendell, Idaho does hereby adopt, support, and will facilitate the Gooding County Multi-Hazard Mitigation Plan’s implementation as deemed appropriated.

PASSED BY THE CITY COUNCIL this 17th day of **September, 2015**

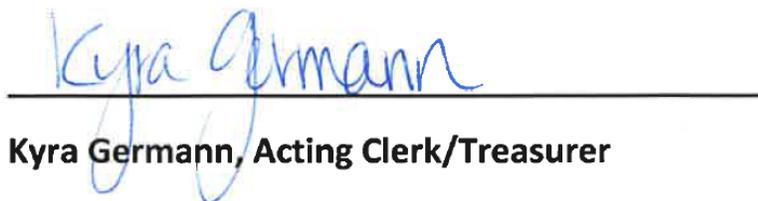
SIGNED BY THE MAYOR this 17th day of **SEPTEMBER, 2015**

BY: _____



Lori Swainston, Mayor

ATTEST:



Kyra Germann, Acting Clerk/Treasurer

Planning Committee Minutes

Figure 7.6. September 3, 2014



GOODING COUNTY DISASTER SERVICES

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CELL: (208) 316-2364
lcapps@co.gooding.id.us

September 3, 2014

All Hazard Mitigation Plan Committee Meeting

In attendance: Gary Davis, BHS
Tami Pearson, South Central Public Health Dist.
Loren Wert, North Side Canal Company
Brandon Covey, Gooding Fire
Bob Bailey, Wendell Fire
Chris Koyle, Gooding Sheriff/Disaster Services
Brad Tucker, Northwest Management

Karin Frodin-White, North Canyon Medical Center
Morri Hall, City of Gooding Clerk
Lynn Harmon, Big Wood Canal – AFRD
Levi Diehl, Bliss Fire
Tim Peterson, Hagerman Fire
Lori Capps, Gooding County Disaster Services

Lori began the committee meeting thanking everyone for coming. The reason for the update to the All Hazard Mitigation Plan is it has to be revised every five years. Lori has tried for the past three years to obtain a FEMA grant to redo the plan but was unsuccessful. She contacted Northwest Management and they agreed to revise the plan for \$14,000. Lori will use 2013 SHSP grant dollars for the revision. Brad Tucker was on a conference call explaining the process.

First item that was gone over was the Executive Summary for the county and the cities. High Priority Ranking Action Items recommended for Gooding County were as follows:

Gooding County:

Public education programs on Hazard Mitigation need to be developed and delivered.

The county is going to be working with Keri Smith-Sigman, Idaho State Floodplain Coordinator, Idaho Department of Water Resources. The county will work with Keri on the flood zones and adopting a new flood plain ordinance.

The county is also working on a new address system for Gooding County with the fire districts, QRUs, EMS, highway departments. Working on acquire grant dollars on the project. New address placards will be placed on the properties that will be double sided so the first responding can find residences.

Develop county and city policy to actively enforce all International Building Codes as adopted by the State of Idaho, which is being done.

Assess and hardwire facilities and shelters throughout the County for use with a portable generator, which needs to be done but not the funding to be able to do so.

Anchor irrigation pivots to prevent them from blowing over or moving during wind events, which most farmers are doing. Gooding County will be working on water on the roadways since it does deteriorate the roads.

Construct a snow fence on State Highway 46 approximately two miles south of Gooding. In 2008 - 2010, Idaho Transportation Department did blast the rock outcroppings along Highway 46. IDL got about half of that project done. This helps with icy road conditions and blowing snow.

Morri addressed the City of Gooding.

Develop and deliver public education programs on Hazard Mitigation. She has only been with the city of Gooding for three years. She wants to work with the other jurisdictions to accomplish this goal.

Increase county and City of Gooding participation in National Flood Insurance Program. The city has a flood plain control ordinance. She has worked with FEMA and city officials on this.

Develop county and city policy to actively enforce International Building Codes as adopted by the State, which is being done.

Assess and hardwire facilities and shelters for use with a portable generator, which isn't being addressed.

Evaluate the structures located in the flood zone to determine measures needed to protect the structure from flood waters. She doesn't know how you go about evaluating all the structures located in the flood plain in Gooding.

Inspect home and businesses' roofing materials to identify roofs at risk to windstorms and assist homeowners with replacement options will be deleted.

There was also discussion as to how long you have to stay in a flood zone when you don't flood. Morri is talking to FEMA about that.

Reinforce will intakes located in the flood zone. She will talk to Todd about including reinforcement of old well intakes into the new water project. The new water project well heads have to be a foot above the flood plain. She didn't know if old ones are.

Stabilize banks of Little Wood River to protect city of Gooding from overflow. She said the Little Wood River can't be touched for any maintenance according to the Army Corps of Engineers. This has been an ongoing fight for years. The city does have a diversion north of Glanbia to prevent flooding in the city.

Obtain snowplows to mount on wildland fire brush trucks for use during the winter storms will be deleted.

Bob Bailey gave the report for the city of Wendell.

Develop and deliver public education programs on Hazard Mitigation hasn't been done.

Develop county and city policies to restrict development in flood zone to help prevent losses. The city of Wendell isn't in the flood plain.

Enforce building codes are being done as they use the county's building inspector.

Access and hardwire facilities and shelters in county for generator, needs to be done.

Evaluate structures located in the flood zone, needs to be deleted as not in the flood plain.

Inspect home and businesses' roofing materials to identify roofs at risk to windstorms and assist homeowners with replacement options is not being done. The county has snow load requirements, which they enforce.

Evaluate location of emergency services for headquarters. Bob will be putting in a training room in his five year plan. Hopefully, funding will be made available to put in an emergency operations center.

Tim talked about the fire department in Hagerman and not the city of Hagerman.

Obtain portable generators for the fire department, grade school and senior center as these have cooking facilities in place. The city currently went through a 14 hour power outage and this needs to be addressed.

The fire department has continued to update the wildland plan. Siren at the station works if needed.

The Redzone program is no longer effective due to inadequate software support. The Wildland-Urban Interface (WUI) seems to still be working. Grant dollars are drying up but some funding still available.

Mutual aid agreements are working well among the fire districts in Gooding County.

Brad went over the magnitude of hazards, which are currently listed in the existing plan. They include earthquake, landslide, flood, severe weather, wildland fires, terrorism and civil unrest. He went over the magnitude and frequencies that were in the existing plan. The group agreed the scoring system was okay the way it was.

He went over the list for critical infrastructures in the old plan and ranked them for potential risk. He wants us to take a look at it and see if any changes need to be made on the scoring. A statement will be put in with what FEMA is requiring. Each adopting jurisdiction has its own goals and if any other jurisdiction to be adopting the plan will need its own goals. In the past for other counties, he has put in a blanket statement that each jurisdiction is operating under the same goals and principals for the county.

Brad had given Lori Chapters 1 and 2 for review. She will send them to the committee for their review. He did an overview on the chapters currently in the plan. These chapters are required to be in the plan. Chapters 3 and 4 will be ready in the next couple of weeks for review. Their GIS guy will make some maps for the committee to look at. Each chapter after that follows the hazards for that jurisdiction. That will be a month or so out. He will keep submitting drafts for the committee to review.

The plan will be completed by the end of the year. The public meeting will be held in October or November. FEMA and BHS will take more time to review it. Brad asked if there have been any recent hazards since the 2008 when the first plan was adopted. The committee didn't know of any events since the adoption. Tim brought up Hagerman's 14 hour power outage which just happened.

Loren Wert wanted the committee to be made aware of the canal system. If the dam for North Canal Company in the desert hadn't broke, the X Canal would have been bank high, which is next to the school. It would have been full. The two inch rain in Jerome plus their power outage caused the break. They would like to have some help with the BLM and put in a still in the desert between here and Jerome, which would be couple of hundred feet to take the edge off of

Gooding. That canal could be the bigger problem than the Little Wood River. At midnight the canal company was pulling boards to prevent the water from overflowing into the school yards. The structure needs to be redone as it isn't safe. It needs to be replaced. When the rain comes down hard in Jerome could affect Gooding. If the canal hadn't broken, a lot of water would have been in Gooding. Need to work with BLM to get something built in the desert. They need to do something like they did off the Little Wood just south and west of Richfield in 2006. In the 1970s, the army corps of engineers put in a flood release off the canal so can get rid of a lot of water coming down the Little Wood clear up into the Richfield area. Butch Nielsen owns an area around there that is private ground to help with the project.

Lori will schedule another meeting in September. Meeting adjourned at 11:20 a.m.

Submitted by
Lori Capps



GOODING COUNTY DISASTER SERVICES

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October 30, 2014

All Hazard Mitigation Plan Committee Meeting

In attendance:

Gary Davis, BHS

Levi Diehl, Bliss Fire

Helen Edwards, County Commissioner

Brad Tucker, Northwest Management

Tami Pearson, South Central Public Health Dist.

Bob Bailey, Wendell Fire

Lori Capps, Gooding County Disaster Services

Susan Cleverley, Idaho BHS

Lori thanked the group for attending the meeting. Brad Tucker was on a conference call for the meeting and the revisions were gone over with the group on the smart board. Lori told the group the Times News finally published the All Hazard Mitigation Plan update in the paper on October 30, 2014. Brad began with Chapter 3. Changes had been sent to him that he made. The information was taken from the original plan and the updated 2010 Comprehensive Plan.

The committee didn't know of any recent hazardous events since the plan was originally adopted. Susan had mentioned flooding in 2012 but this was a statewide event and not necessarily just Gooding County.

Susan had given Lori a 2013 SHMP Data disk for Gooding County. Lori will check the hazards to see if they coincide with what Brad is proposing for the updated plan. Susan said it is a good idea to have a summary as FEMA wants more specific events per hazard. She said this might be more appropriate in Chapter 4 where hazards are listed. Brad will specify through a table or a series of events.

Lori sent Brad the current 2014 Idaho Geological Survey for earthquakes. The Bureau of Homeland Security publishes Putting Down Roots in Earthquake Country with input from Idaho Geological Survey.

Lori sent Brad the latest WUI maps and the last amendment update was in 2012. The committee looked at the WUI map on the 2013 SHMP Data disk, which doesn't match Gooding County's. Lori sent the most current maps back to BHS for correction. The Community Wildfire Protection Plan will not be combined with the All Hazard Mitigation Plan. They will be two separate plans.

Brad began reviewing Chapter 6. (Should we add the 2014 Hazardous Materials Commodity Flow Study under the Gooding County Mechanisms?) Lori will send out annexes for each of the cities for their review to either add or change any action item. The cities need to be made aware of the revisions to the plan so they will sign it when completed.

Susan said the column designated for responsible departments or organizations need to be identified as the lead agency that would be the one reporting on the progress. Action items need to cover one or multiple goals to be adopted to the plan. Any shadowed boxes need to show how the item ranks as to high, medium or low. Any empty box needs to be filled in by that city or county. Progress needs to be kept up also as to ongoing, completed, etc. The action items were taken from the old plan and some new ones added according to past meeting discussions.

Susan asked if a vulnerability assessment has been done. The hazards need to be ranked. Brad hasn't done one for each community but should.

Under the Facility Inherent Vulnerability Assessment matrices in the columns for Gooding, the South Central Public Health District building needs to be added. This will also be sent to the cities to see if any changes need to be made.

Brad said a public meeting needs to be held in November or early December. He will come down for the meeting, do some field assessment and exploring of the county. Susan said if there is a community event that we could tie into might get a better public comment. Susan said the plan will be looked over to see if the communities were involved in the process.

Susan said 44 CFR Section 2 addresses items that need to be in the plan. Becky Rose, BHS, is the GIS person who can help with those areas of maps. For essential facilities, there were three hospitals listed with 109 beds. This needs to be checked out because Gooding has one hospital. If this is regional, it still doesn't add up with the 109 beds. Susan will check on this.

Meeting adjourned at 11:15.

Submitted by

Lori Capps

Figure 7.8. December 2, 2014 City of Gooding



GOODING COUNTY DISASTER SERVICES

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lcapps@co.gooding.id.us

December 2, 2014

All Hazard Mitigation Plan City of Gooding Meeting

In attendance:

Walter Nelson, City of Gooding Mayor
Todd Bunn, City of Gooding Public Works Director
Hollye Lierman, City of Gooding Clerk
Lori Capps, Gooding County Disaster Services

Lori thanked the group for attending the meeting. Lori handed out the portions of the plan that pertained to the City of Gooding. On Table 3.4 Summary of Vulnerability Assessments for Critical Facilities in Gooding County, the City of Gooding wants to add:

City of Gooding Sewer Plant

Asset Visibility: 2
Target Utility: 3
Asset Accessibility: 4
Asset Mobility: 5
Presence of Haz/Mat: 4
Collateral Damage: 3
Site Pop/Capacity: 1
Total: 22

City of Gooding Public Works Facilities

Asset Visibility: 5
Target Utility: 4
Asset Accessibility: 3
Asset Mobility: 5
Presence of Haz/Mat: 2
Collateral Damage: 4
Site Pop/Capacity: 4
Total: 27

Under Safety and Policy: Homes and Businesses: delete 9.2.d; 9.2.e and 9.2.f. Under 9.2.g change to Evaluate the well intakes located in the flood zone, long term. Under 9.2.h add Idaho Department of Water Resources and U.S. Army Corps of Engineers under coordinating department or agency; long term, not immediate.

Under 9.3.e add U.S. Army Corps of Engineers and take out short term.

Under 9.4.a. will now read: Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, senior centers, schools districts and fire districts. Take out short term.

Under 9.4.b. change landslide to All Hazards.

Under 9.4.c. – the only fire station with a siren is the City of Wendell. None of the other fire stations are going to be installing one. Under 9.4.e, the RedZone needs to be deleted. No longer a viable program. This would be for all agencies.

In the City of Gooding Annex Table 6.2 under 6.2.b – change completion year to in progress. 6.2.h – on going. 6.2.j change Uniform to International Building Codes and it is on-going. 6.2.k – is also on going. 6.2.q, 6.2.r and 6.2.t are to be deleted. 6.2.v – is on going as a new fire station is going to be built. 6.2.b.b. – under potential resources, add U.S. Army Corps of Engineers; 6.2.c.c. is also on going. Under 6.2.g.g. change from landslide to General.

The meeting adjourned at 1:45 p.m.

Submitted by

Lori Capps

Figure 7.9. December 2, 2014 City of Wendell



GOODING COUNTY DISASTER SERVICES

145 7TH AVE E
P.O. BOX 417
GOODING, ID 83330
PHONE: (208)934-5958
FAX: (208) 934-4363
CELL: (208) 316-2364
lcapps@co.gooding.id.us

December 2, 2014

All Hazard Mitigation Plan City of Wendell Meeting

In attendance:

Bob Bailey, Wendell Fire
Lori Capps, Gooding County Disaster Services
Brad Christopherson, City of Wendell Administrator

Lori thanked the group for attending the meeting. Lori handed out the portions of the plan that pertained to the City of Wendell. On Table 3.4 Summary of Vulnerability Assessments for Critical Facilities in Gooding County, the City of Wendell wants to add Wendell Public Works Facilities:

Asset Visibility: 5
Target Utility: 3
Asset Accessibility: 3
Asset Mobility: 5
Presence of Haz/Mat: 1
Collateral Damage: 5
Site Pop/Capacity: 1
Total: 23

Under Safety and Policy: Homes and Businesses: take out 9.2.d, 9.2.e and 9.2.f. Under 9.2.j add Google Pro with continue Firewise program.
Under Resource and Capability Enhancement change 9.4.a to read: Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, senior centers, schools districts and fire districts.
Under 9.4.b change mitigated hazard to All Hazards and not landslide.
Under 9.4.e, delete as there is no longer a Redzone program.
In the City of Wendell Annex under Table 6.3 City of Wendell Mitigation Strategies 6.3.j needs to read International Building Codes and not Uniform and projected completion year – ongoing.
Under 6.3.o, under potential resources, add Gooding County and Wendell School District; 6.3.q, 6.3.r and 6.3.s need to be deleted. 6.3.w – add Google Pro.
Under 6.3.f.f. – add infrastructure security; under Action Item. 6.3.gg change hazard to General instead of Landslide.
Under 6.3.hh you have Wendell with only one L.
Meeting adjourned at 10:25 a.m.

Submitted by

Lori Capps

Meeting adjourned at 11:15.

Figure 7.10. December 3, 2014 City of Bliss



GOODING COUNTY DISASTER SERVICES

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December 3, 2014

All Hazard Mitigation Plan City of Bliss Meeting

In attendance:

Chris Pruett, City of Bliss Mayor
Kacy Bradshaw, City of Bliss Clerk
Lori Capps, Gooding County Disaster Services

Lori thanked the group for attending the meeting. Lori handed out the portions of the plan that pertained to the City of Bliss. On Table 3.4 Summary of Vulnerability Assessments for Critical Facilities in Gooding County, the City of Bliss wants to add:

City of Bliss Sewer Plant

Asset Visibility: 5
Target Utility: 4
Asset Accessibility: 5
Asset Mobility: 5
Presence of Haz/Mat: 1
Collateral Damage: 2
Site Pop/Capacity: 1
Total: 23

City of Bliss Public Works Facilities

Asset Visibility: 5
Target Utility: 4
Asset Accessibility: 5
Asset Mobility: 5
Presence of Haz/Mat: 1
Collateral Damage: 2
Site Pop/Capacity: 1
Total: 23

Under Safety and Policy: Homes and Businesses: delete 9.2.d; 9.2.e and 9.2.f.

Under 9.2.a. will now read: Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, senior centers, schools districts and fire districts. Change to Long-Term.

Delete 9.2.d, 9.2.e and 9.2.f. 9.4.a will now read: Obtain portable generators for use during power outages and other emergency situations (.e.g. municipal water pumps and lift stations, EOC, Senior Centers, school districts and fire districts.

Under 9.4.b. change landslide to All Hazards.

Under 9.4.c. – the only fire station with a siren is the City of Wendell. Bliss has a siren but not installed at this time. Thinking about putting it back up. None of the other fire stations are going to be installing one. Under 9.4.e, the RedZone needs to be deleted. No longer a viable program. This would be for all agencies.

In the City of Bliss Annex Table 6.5 under 6.5.b – change completion year to on-going. 6.5.h – on going. 6.5.j change Uniform to International Building Codes and it is on-going. 6.5.q, 6.5.r and 6.5.s are to be deleted.

The meeting adjourned at 11:55 a.m.
Submitted by
Lori Capps

Figure 7.11. December 8, 2014 City of Hagerman



GOODING COUNTY DISASTER SERVICES

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lcapps@co.gooding.id.us

December 8, 2014

All Hazard Mitigation Plan City of Hagerman Meeting

In attendance:

Noel Weir, City of Hagerman Mayor
Alan Jay, City of Hagerman Councilman
Justin Hulme, City of Hagerman Superintendent
Lori Capps, Gooding County Disaster Services

Lori thanked the group for attending the meeting. Lori handed out the portions of the plan that pertained to the City of Hagerman. On Table 3.4 Summary of Vulnerability Assessments for Critical Facilities in Gooding County, the City of Hagerman wants to add:

City of Hagerman Sewer Plant

Asset Visibility:5
Target Utility: 4
Asset Accessibility: 4
Asset Mobility: 5
Presence of Haz/Mat:1
Collateral Damage: 4
Site Pop/Capacity: 2
Total: 25

City of Hagerman Public Works Facilities

Asset Visibility: 5
Target Utility: 4
Asset Accessibility: 4
Asset Mobility: 5
Presence of Haz/Mat: 1
Collateral Damage: 4
Site Pop/Capacity:2
Total: 25

Under Safety and Policy: Homes and Businesses: delete 9.2.d; 9.2.e and 9.2.f.

Under 9.4.a. will now read: Obtain portable generators for use during power outages and other emergency situations (e.g. municipal water pumps and lift stations, EOC, senior centers, schools districts and fire districts. Take out short term.

Under 9.4.b. change landslide to All Hazards.

Under 9.4.c. – the only fire station with a siren is the City of Wendell. The Mayor said City of Hagerman won't be putting up a siren. Under 9.4.e, the RedZone needs to be deleted. No longer a viable program. This would be for all agencies.

In the City of Hagerman Annex Table 6.4 under 6.4.b – change completion year to in progress and responsible department Gooding County; 6.4.f. – responsible department Gooding County. 6.4.h – responsible agency Gooding County and on going.

6.4.j change Uniform to International Building Codes and it is on-going. 6.4.q, 6.4.r and 6.4.s are to be deleted. Under 6.4.g.g. change from landslide to General.

The meeting adjourned at 10:05 a.m.

Submitted by
Lori Capps

Record of Meeting Attendance

The following is a record of the attendance taken at each of the committee and public meetings held during the Multi-Hazard Mitigation Planning process.

Figure 7.12. Committee Meeting Sign-In Sheet. June 17, 2014.

Meeting: LEPC meeting Date: 6/17/14

Name	Organization/ Agency	E-Mail Address	Phone/FAX
1. <u>Alvin Pearson</u>	<u>SCPHD</u>		Ph: () FAX: ()
2. <u>Wade Gayler</u>	<u>ARC</u>	<u>Wade.Gayler@redcross.org</u>	Ph: <u>(208) 573-1980</u> FAX: ()
3. <u>Chris Taylor</u>	<u>ARC</u>	<u>Chris.Taylor2@redcross.org</u>	Ph: () FAX: ()
4. <u>Tim Peterson</u>	<u>Hagerman Fire/FMS</u>		Ph: () FAX: ()
5. <u>[Signature]</u>			Ph: () FAX: ()
6. <u>[Signature]</u>			Ph: () FAX: ()

Figure 7.13. Committee Meeting Sign-In Sheet. September 3, 2014.

Sept. 3, 2014

GARY W DAVIS	IBHS
Karin FRODIN-White	Ncmic
Nami Pearson	SCP(H)
Morri Hall	City of Edg
Tran West	nsc e
Amy Hamon	Bugwood Caval - AFRD ²
Brandon Lopez	GFD
Levi Diell	BFD
Bob Bailey	Wendell Fire
Tim Peterson	Hagerman Fire/EMS
Chris Kogale	Edg Sheriff
Lon Lynn	Edg Co. P. Inspector
Brad Tucker	- Conference Call

Figure 7.14. Committee Meeting Sign-In Sheet. October 30, 2014.

mitigation
~~LEPC~~ OCT. 30, 2014
 SIGN UP SHEET

SIGNATURE	AGENCY	PHONE NUMBER	EMAIL - ADDRESS
1 <i>[Signature]</i>	Wendell Fire Dept		
2 Helen Edwards	Hdg Co. Comm		
3 Lewi Drill	Bliss Fire		
4 Susan Cliverley	IA Bureau of Homeland Security	258-6545	scliverley@bhs.idaho.gov
5 Tami Pearson	SCPHD		
6 Tracy W Davis	IBHS		

Figure 7.15. Committee Meeting Sign-In Sheet. December 2, 2014.

Wendell

Sign In City of ~~Wendell~~
 Dec. 2, 2014

Bob Bailey
 Fred Christopherson
 Lon Engr

Figure 7.16. Committee Meeting Sign-In Sheet. December 2, 2014.

City of Gooding
 December 2, 2014

Haley Greenman	City Clerk
Ladell Bunn	Public Works Director
Walter Nelson	Mayor
Lori Lynn	Leading

Figure 7.17. Committee Meeting Sign-In Sheet. December 3, 2014.

Dec 3, 2014

Sign in 03 1:55

Chris Pruett	Mayor	731-8501
Kacy Braden	Clerk	352-1117
Lori Lynn	Leading	

Figure 7.18. Committee Meeting Sign-In Sheet. December 8, 2014.

Dec 8, 2014

Sign in sheet

David Wei	Mayor
Alaska Jay	Councilman
Justin Stume	Superintendent
Lori Lynn	

Figure 7.19. Public Meeting Record.

Gooding Co. MHMP update
Public Meeting
SIGN UP SHEET
December 11, 2014

	SIGNATURE	PHONE NUMBER
1	Chris Pruitt Mayor, Bliss	731-8501
2	Bill Burt	
3	Deanne Baulig	
4	Brad Tucker Northwest, Management	208-310-0320
5	Randy Norris	316-0519
6	Tim Petersen	
7	Dennis L. Read Council	352-4655
8	Teel James Council	358-0176
9	Lou Lynn	

Record of Published Articles

The following is a subset of Multi-Hazard Mitigation-related articles published in local newspapers during the planning process. A total of three specific press releases were sent at critical stages of the process; one to introduce the project and invite interested parties, one to announce the public meetings, and one to announce the availability of the document for public comment. Additionally, during the local adoption phase of the process, Gooding County and city jurisdictions advertised the formal adoption of the Plan by resolution at a public hearing. The agendas for these meetings are published by the jurisdiction in the most appropriate local media outlet.

Figure 7.20. Project Announcement.



Figure 7.21. Public Meeting Announcement.



Public Meeting Slideshow

The following slideshow was presented during the June public meetings. This presentation made up the formal portion of the meeting presentation; however, members of the committee and representatives from NMI were available at each meeting to informally answer questions, explain the models and other mapping products, and take notes on public input and ideas for consideration by the committee.

Slide 1

Gooding County, Idaho
Multi-Hazards Mitigation Plan Update



Northwest Management, Inc.
Brad Tucker, B.S.
233 East Palouse River Drive
Moscow, Idaho 83843
208-863-4488 Telephone

Slide 2

Northwest Management, Inc.

- Serving the Western U.S. since 1984
- Main Office in Moscow, Idaho
 - Deer Park, Washington
 - Helena, Montana
- Natural Resource Consultants



NORTHWEST MANAGEMENT, INC. *Providing a balanced approach to natural resource management*

Slide 3

Purpose of the MHMP

- Recognize and Identify Risk Factors
- Reduce the Risk of Loss for Life, Property, Infrastructure, Natural Resources, and Economy
- Map and Prioritize Mitigation Projects
- Provide for Public Awareness
- Improve County's Eligibility for Funding Assistance

All of this must happen **BEFORE** a disaster!!

Slide 4

FEMA Multi-Hazard Mitigation Plan

- Flooding
- Landslides
- Wildland Fire
- Severe Weather
- Earthquake
- Terrorism/Civil Unrest




MHMPs are required for all counties.
As of November 1, 2004 by FEMA

Slide 5

FEMA Requirements  **FEMA**

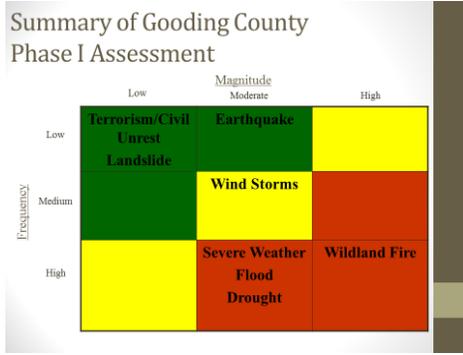
- Adoption by Local Government Body
- Multi-Jurisdictional Planning
- Identification of Hazards & Risk Assessment
 - Profiling Hazard Events
 - Mapping Juxtaposition of Hazards, Structures, Infrastructure
 - Potential Dollar Losses to Vulnerable Structures (B/C Analysis)
- Documented Planning Process
- Assessing Vulnerability
- Mitigation Goals
- Analysis of Mitigation Measures
- Monitoring, Evaluating & Updating the Plan (5 year cycles)
- Implementation Through Existing Programs
- Public Involvement

Slide 6

Who is on the committee?

<p><u>Adopting Jurisdictions:</u></p> <ul style="list-style-type: none"> • Gooding County <ul style="list-style-type: none"> • Fire Districts/EMS • Disaster & Emergency Services • Sheriff's Department • Planning & Zoning • Building Department • Incorporated Cities <ul style="list-style-type: none"> • Bliss • Gooding • Hagerman • Wendell 	<p><u>Other Committee Members:</u></p> <ul style="list-style-type: none"> • Big Wood River Canal Company • North Canyon Medical Center • South Central Public Health District • Southern Idaho Regional Comm. Center • Wood River Conservation & Development Council • Idaho Bureau of Homeland Security • Idaho Transportation Department • BLM
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Slide 7



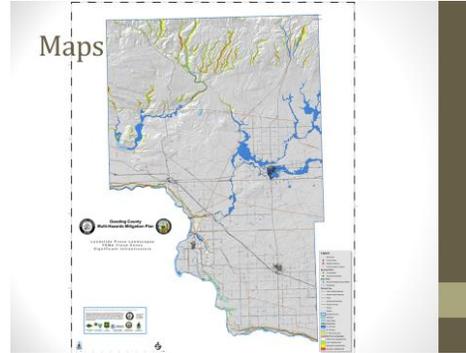
Slide 8



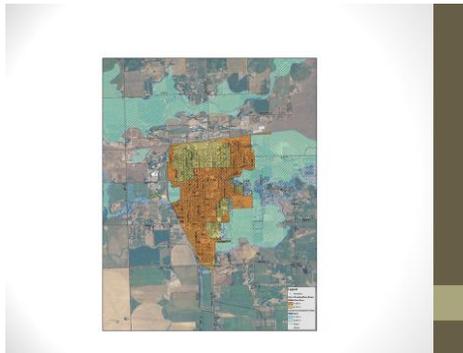
Slide 9



Slide 10



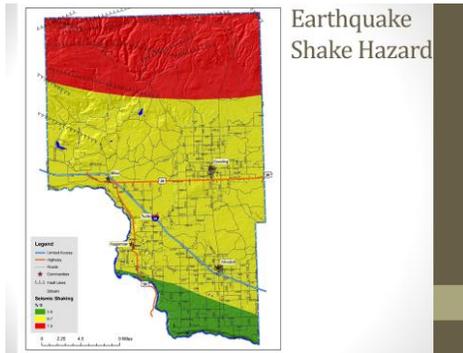
Slide 11



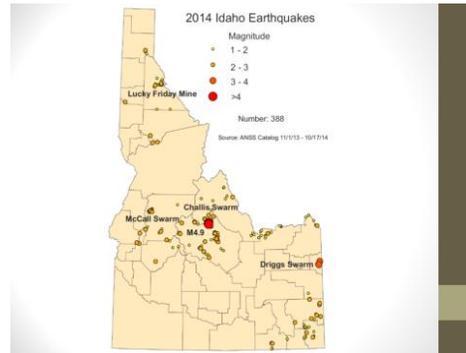
Slide 12



Slide 13



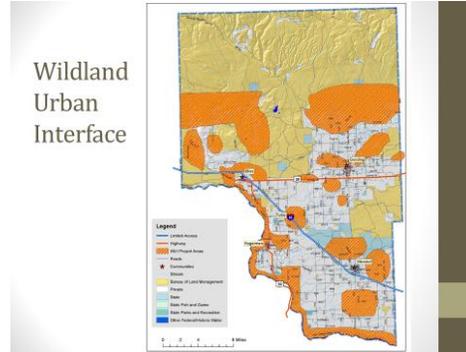
Slide 14



Slide 15



Slide 16



Slide 17



Slide 18



Slide 19



Slide 20



Slide 21



Slide 22



Figure. 7.22. Personal Account.

Hagerman Fire Protection District Account of 2006 Tornado

“At 19:30 on April, 4 2006 we at the Hagerman Fire Protection District began to get notification from our dispatch for calls for service related to high winds. The high winds were also accompanied with large hail and heavy rain. The storm passed quickly, lasting no more than 15 minutes. We received no warning of severe weather from any official service.

We were paged for seven calls for assistance for downed power lines, trees on homes and across roadways, and for several destroyed outbuildings. I found the power lines down in the roadway on U.S Highway 30 (State Street South) blocking traffic. This same line runs up Hagerman Avenue East and it was also down in several places. At the intersection of Hagerman Avenue East and East Avenue South I found an unattached garage completely destroyed with parts of it hanging in the top of what remained of a 50 foot tree. Across the street an unattached garage had the roof blown off and a large tree had flattened a pickup truck, there was debris everywhere from the garages and power lines down also. We also had trees in power lines in the southern end of our district near the state fish hatchery.

I deployed one fire truck and a crew to each of the reported incidents and set up a command post in the parking lot of a convenience store located on State Street South. I coordinated with the Hagerman Police Department, Hagerman City Works Department, Hagerman Highway District, Idaho Transportation Department, Idaho Power, and Gooding County Sheriffs Department. I continued to get phone calls and contacted in person by citizens reporting damage to their homes or in their area. These reports continued to be downed power lines, trees on their homes and vehicles, and roof damage.

We established a traffic control plan to reroute traffic around the downed power lines and restrict access to hazard areas. The Hagerman Quick Response Unit was on standby for any injuries that might be reported and was assisting with traffic control at two intersections. There was a very rapid and large response from Idaho Power and they quickly were working to remove hazard lines and to restore power. The Hagerman Highway District was working in the south end of the valley to remove trees from the roadway to provide Idaho Power with access to the downed lines in that area. The Hagerman City Works Department was removing trees from the side streets in the city with chainsaws and several of our firefighters. Idaho Power was able to get the power lines out of State Street and we were able to get traffic moving through the valley again. Soon power restored to the greater part of the city and lines in the roadways in were being removed and repaired allowing a normal traffic flow to return to our area. We were able to clear all of our incidents at 22:38 and return to the station. We had many calls and visits from citizens reporting that they had seen cloud rotation prior to the storm hitting the area.

The next morning damage reports continued to come in, with roof damage at the top of the list. The United Methodist Church had lost part of their roof; an industrial building on Lagoon Road had lost part of their roof. In the end probably 30 to 40 residential homes needed to have new shingles installed. The damage to irrigation equipment was extensive with center pivot irrigation systems tipped over, wheel lines irrigations systems scattered and twisted into balls. One wheel line south of Hagerman was blown across Hwy 30 and ended up 300 yards from its original location. Hand line sprinkler pipe was scattered across hay fields south of Hagerman. The damage to irrigation systems extended thru the Tuttle area and into the Gooding area

along with damage to power poles and lines. The Idaho Fish and Game Hatchery had suffered extensive tree damage near their fish rearing ponds.

The media began to contact myself and the Police Department about the incident, we also were contacted by the National Weather Service, and they were sending an investigator to our area. The investigator looked at the damage and interviewed several witnesses and in the end declared that we had been hit with an F-0 tornado. We received quite a lot of media attention for a couple of days regarding this event.

For the next several days the prevalent sound to be heard was chainsaws in operation, with the city works department assisting citizens and local tree services working to remove fallen trees from homes and property. The pine and evergreen trees seemed to be the ones that mostly had fallen victim to the storm. We were very fortunate that we had no reported injuries due to the storm. I received a call from Gooding County Commissioner asking if I would take him on a tour of the damaged areas for him to assess, this was to see if we needed to declare a disaster and apply for any needed aid.

Work continued for the next couple of months to repair roofs, remove destroyed outbuildings, and repair irrigation systems. I have no exact dollar amount of the damage that we suffered but I would guess that it was in excess of \$500,000.”

Tim Peterson, Chief
Hagerman Fire Protection District

This plan was developed by Northwest Management, Inc. under contract with Gooding County Disaster Services.

Copies of this Plan can be obtained by contacting:

Gooding County Disaster Services
Address: 624 Main Street, Gooding, Idaho 83330
Phone: 208-934-4363

Citation of this work:

Tucker, Brad and V. Bloch. *Lead Authors*. Gooding County, Idaho Multi-Hazard Mitigation Plan – 2015 Revision. Northwest Management, Inc., Moscow, Idaho. 2015. Pp 216.



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233 East Palouse River Drive
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Moscow ID 83843

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