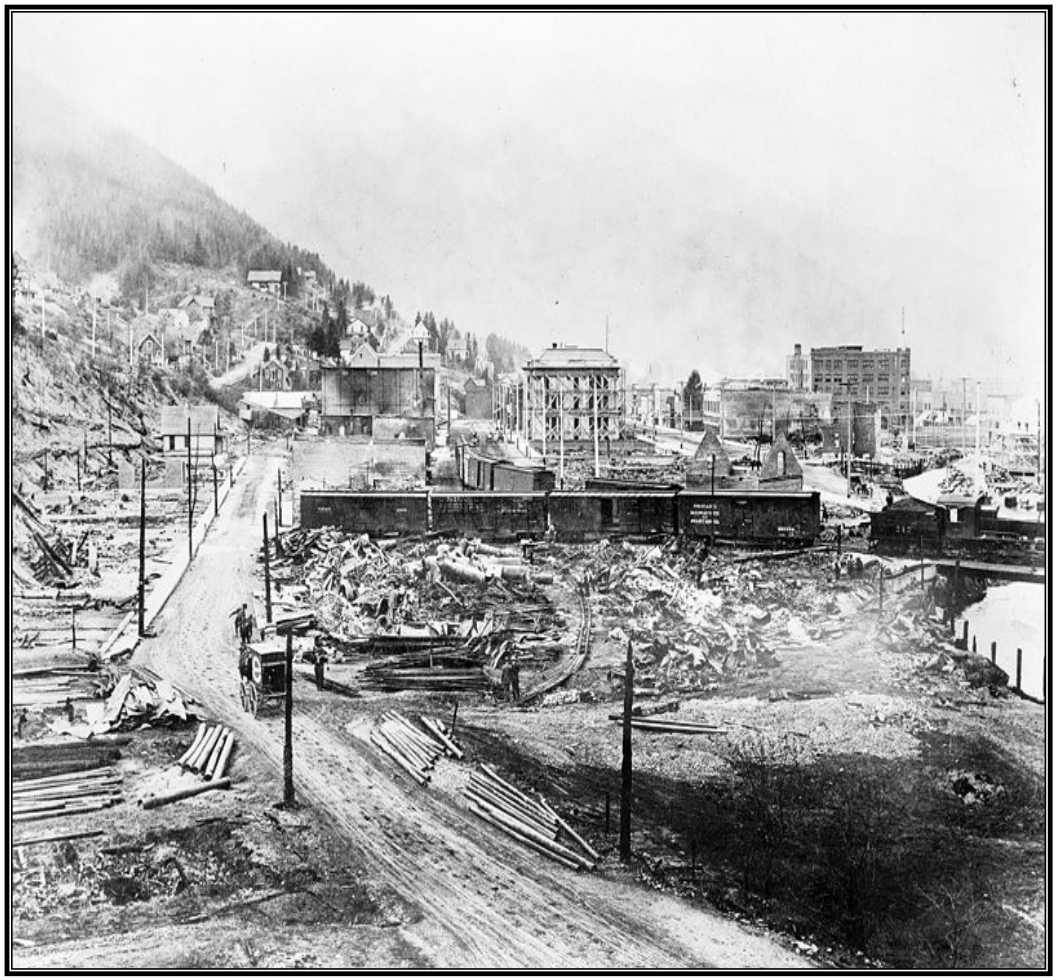
Shoshone County, Idaho

Community Wildfire Protection Plan

2011 Revision



Wallace, Idaho after the 1910 Fires

Adopted by the Shoshone County Board of Commissioners January 2011

Acknowledgments

This Community Wildfire Protection Plan represents the efforts and cooperation of a number of organizations and agencies working together to improve preparedness for wildfire events while reducing factors of risk.

To obtain copies of this plan contact:

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Forward

The process of developing a Community Wildfire Protection Plan (CWPP) can help a community clarify and refine its priorities for the protection of life, property, and critical infrastructure in the wildland–urban interface on both public and private land. It also can lead community members through valuable discussions regarding management options and implications for the surrounding land base. Local fire service organizations help define issues that may place the county, communities, and/or individual homes at risk. Through the collaboration process, the CWPP planning committee discusses potential solutions, funding opportunities, and regulatory concerns and documents their resulting recommendations in the CWPP. The CWPP planning process also incorporates an element for public outreach. Public involvement in the development of the document not only facilitates public input and recommendations, but also provides an educational opportunity through interaction of local wildfire specialists and an interested public.

The idea for community-based forest planning and prioritization is neither novel nor new. However, the incentive for communities to engage in comprehensive forest planning and prioritization was given new and unprecedented impetus with the enactment of the Healthy Forests Restoration Act (HFRA) in 2003. This landmark legislation includes the first meaningful statutory incentives for the US Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuel reduction projects. In order for a community to take full advantage of this new opportunity, it must first prepare a Community Wildfire Protection Plan (CWPP).

A countywide CWPP planning committee generally makes project recommendations based on the issue causing the wildfire risk, rather than focusing on individual landowners or organizations. Thus, projects are mapped and evaluated without regard for property boundaries, ownership, or current management. Once the CWPP is approved by the county board of commissioners, the planning committee will begin further refining proposed project boundaries, feasibility, and public outreach as well as seeking funding opportunities.

*The **Shoshone County Wildland Urban Interface Fire Mitigation Plan** was originally drafted in 2002 with project facilitation and support provided by Northwest Management, Inc. After the enactment of the HFRA in 2003, the Shoshone County WUI committee began mapping the official Wildland Urban Interface boundary, which was adopted by Shoshone County in 2004. In 2006, the committee developed a prioritized list of fuels reduction treatments that was amended to the WUI Plan. In 2008, the committee again amended the 2002 Plan to include an Appendix A (CWPP prioritized project update) and Attachment D (Firefighting Assistance Funds priority lists). The committee amended the Plan again in 2009 with updated versions of Appendix A and Attachment D.*

The 2010 Community Wildfire Protection Plan expands on the wildfire chapter of the Shoshone County Multi-Hazard Mitigation Plan, which was updated in 2009.

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Chapter 1

Overview of this Plan and its Development

This Community Wildfire Protection Plan (CWPP) for Shoshone County, Idaho, is the result of analyses, professional collaboration, and assessments of wildfire risks and other factors focused on reducing wildfire threats to people, structures, infrastructure, and unique ecosystems in Shoshone County. Agencies and organizations that participated in the planning process included:

- Avista Corporation
- City of Kellogg
- City of Mullan
- City of Osburn
- City of Pinehurst
- City of Smelterville
- City of Wallace
- City of Wardner
- Clearwater-Potlatch Timber Protective Association
- Idaho Department of Lands
- Northwest Management, Inc.
- Prichard/Murray Volunteer Fire Department
- Shoshone County Commissioners and County Departments
- Shoshone County Fire District №1
- Shoshone County Fire District №2
- Shoshone County Fire District №3/Mullan Volunteer Fire Department
- Shoshone County Fire District №4
- Silver Valley Economic Development Corporation
- USDA Forest Service
- USDI Bureau of Land Management

Northwest Management, Inc. of Moscow, Idaho was selected to assist the planning committee by facilitating meetings, leading the assessments, and authoring the document. John Specht, Shoshone County Emergency Management, served as the lead for Shoshone County. The project co-managers from Northwest Management, Inc. were Mr. Vaiden Bloch and Mrs. Tera R. King.

Goals and Guiding Principles

Planning Philosophy and Goals

The goals of the planning process include integration with the National Fire Plan, the Healthy Forests Restoration Act, and the Disaster Mitigation Act. The plan utilizes the best and most appropriate science from all partners as well as local and regional knowledge about wildfire risks and fire behavior while meeting the needs of local citizens and recognizing the significance wildfire can have to the regional economy.

Goal Statement

It is Shoshone County's goal to reduce the rate of spread and acres of land burned by forest fires through the implementation of targeted fuel mitigation treatments where the landscape has the potential to sustain fires that threaten communities and other assets in the wildland urban interface.

Objectives

1. Identify high risk areas for fire ignition
2. Locate landscape features with a high risk for rapid fire spread
3. Identify significant concentrations of home sites and other buildings at risk to wildfire and develop feasible solutions to mitigate the risk
4. Determine areas where continued mitigation efforts should be focused
5. Develop risk reduction action items

United States Government Accountability Office (GAO)

Since 1984, wildland fires have burned an average of more than 850 homes each year in the United States and, because more people are moving into fire-prone areas bordering wildlands, the number of homes at risk is likely to grow. The primary responsibility for ensuring that preventative steps are taken to protect homes lies with homeowners. Although losses from fires made up only 2 percent of all insured catastrophic losses from 1983 to 2002, fires can result in billions of dollars in damages.

GAO was asked to assess, among other issues, (1) measures that can help protect structures from wildland fires, (2) factors affecting use of protective measures, and (3) the role technology plays in improving firefighting agencies' ability to communicate during wildland fires.

The two most effective measures for protecting structures from wildland fires are: (1) creating and maintaining a buffer, called defensible space, from 30 to 100 feet wide around a structure, where vegetation and other flammable objects are reduced or eliminated; and (2) using fire-resistant roofs and vents. In addition to roofs and vents, other technologies – such as fire-resistant windows and building materials, chemical agents, sprinklers, and geographic information systems mapping – can help in protecting structures and communities, but they play a secondary role.

Although protective measures are available, many property owners have not adopted them because of the time or expense involved, competing concerns such as aesthetics or privacy, misperceptions about wildland fire risks, and lack of awareness of their shared responsibility for fire protection. Federal, state, and local governments, as well as other organizations, are attempting to increase property owners' use of protective measures through education, direct monetary assistance, and laws requiring such measures. In addition, some insurance companies have begun to direct property owners in high risk areas to take protective steps[1].

[1] United States Government Accountability Office. Technology Assessment – Protecting Structures and Improving Communications during Wildland Fires. Report to Congressional Requesters. GAO-05-380. April 2005.

State and Federal CWPP Guidelines

This Community Wildfire Protection Plan will include compatibility with FEMA requirements for a Hazard Mitigation Plan, while also adhering to the guidelines proposed in the National Fire Plan, and the Healthy Forests Restoration Act (2004). This Community Wildfire Protection Plan has been prepared in compliance with:

- The National Fire Plan: A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan (December 2006).
- Healthy Forests Restoration Act (2003).
- The Federal Emergency Management Agency's Region 10 guidelines for a Local Hazard Mitigation Plan as defined in 44 CFR parts 201 and 206, and as related to a fire mitigation plan chapter of a Multi-Hazard Mitigation Plan.
- National Association of State Foresters – guidance on identification and prioritizing of treatments between communities (2003).

The objective of combining these complementary guidelines is to facilitate an integrated wildland fire risk assessment, identify pre-hazard mitigation activities, and prioritize activities and efforts to achieve the protection of people, structures, the environment, and significant infrastructure in Shoshone County while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

Additional information detailing the state and federal guidelines used in the development of the Shoshone County Community Wildfire Protection Plan is included in Appendix 6.

Integration with Other Local Planning Documents

During development of this Community Wildfire Protection 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 mitigation objectives outlined in this document. The following sections identify and briefly describe some of the existing Shoshone County planning documents and ordinances considered during development of this plan.

Shoshone County Multi-Jurisdictional Hazards Mitigation Plan

The Shoshone County Multi-Jurisdictional Hazards Mitigation Plan (MHMP)[2] provides an in-depth risk assessment for several major natural hazards that pose risks to the County. The primary objectives of the MHMP are to reduce the negative impacts of future disasters on the community, to enhance life safety, increase public awareness, protect natural systems, and build partnerships. Numerous action items are recommended the MHMP to mitigate hazard risk in each jurisdiction.

[2] Shoshone County, Idaho. 2009. Shoshone County Multi-Jurisdictional Hazards Mitigation Plan. TerraGraphics Environmental Engineering, Inc. Moscow, Idaho.

Shoshone County Comprehensive Plan

The Shoshone County Comprehensive Plan[3] is was drafted in 1996. The existing Plan was adopted as last amended in 2004. The document outlines a pattern of growth for the County that is compatible with community traditions, values, and vision for the future. The Comprehensive Plan serves as a basis for ordinances and regulations that will achieve the overall goals identified through the active participation of county residents.

Shoshone County Emergency Operations Plan

The Shoshone County Emergency Operations Plan[4] is a set of guidelines and procedures developed to assist in the emergency response effort within the County. It reflects the National Response Framework and incorporates guidance from the Federal Emergency Management Agency as well as lessons learned from disasters and emergencies that have threatened Shoshone County in the past. The Emergency Operations Plan applies to all emergency response elements, government agencies, and disaster relief organizations and agencies supporting Shoshone County emergency operations.

Shoshone County Subdivision Regulations

Ordinance No. 139[5], Subdivision Regulations, proposes regulations to promote the public comfort, welfare, and safety. The ordinance specifies prior to construction, subdivisions proposed in timbered areas require a Wildfire Mitigation Plan. Additionally, there are provisions for providing fire protection infrastructure, allows fire department officials to be on the County's Technical Review committee, and provides for road gradient standards.

Shoshone County Forest Health Collaborative Operations Manual

The Shoshone County Forest Health Collaborative (SCC) Operations Manual[6] outlines the organizational structure, communications, and decision making processes of the Collaborative. The SCC's mission is to ensure the public health, safety and welfare, and protection of Shoshone County residents and property from wildfire through science-based consideration of ecosystem components; and to promote a sustainable ecosystem, economic viability, and quality of life through collaboration.

Bureau of Land Management Coeur d'Alene District Fire Management Plan

The Bureau of Land Management's Coeur d'Alene District Fire Management Plan[7] (FMP) identifies resource values and conditions pertaining to fire management. The FMP contains

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[3] Shoshone County, Idaho. 1996. Shoshone County Comprehensive Plan. Shoshone County Board of Commissioners. Wallace, Idaho.

[4] Shoshone County, Idaho. 2008. Shoshone County Emergency Operations Plan. Shoshone County Board of Commissioners. Wallace, Idaho.

[5] 2009. *Ordinance No. 139, Subdivision Regulations in the Unincorporated Areas of Shoshone County*. Shoshone County Board of Commissioners. Wallace, Idaho. December 2009. Available online at http://www.shoshonecounty.org/index.php?option=com_content&view=article&id=52&Itemid=86.

[6] Shoshone County Forest Health Collaborative. 2010. Operations Manual: Organization Structure, Communication, and Decision Making Process. Published May 2010.

[7] USDI Bureau of Land Management. 2010. Fire Management Plan. Coeur d'Alene District. Coeur d'Alene, Idaho. June 2010.

strategic and operational element that describe how to manage applicable fire program components such as unplanned ignitions, wildland fire for resource benefit, hazardous fuels and vegetation management, non-fire fuels treatment, burned area emergency stabilization and rehabilitation, community interactions and collaborative partnership roles, and monitoring and evaluation programs.

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Chapter 2

Documenting the Planning Process

Documentation of the planning process, including public involvement, is necessary to meet FEMA's DMA 2000 requirements (44CFR§201.4(c)(1) and §201.6(c)(1)). This section includes a description of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how all of the involved agencies participated.

Description of the Planning Process

The Shoshone County Community Wildfire Protection Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Chapter 1 of this document. The planning process included five distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 4 completed throughout the process):

1. **Collection of Data** about the extent and periodicity of the wildfire hazard in and around Shoshone County.
2. **Field Observations and Estimations** about risks, location of structures and infrastructure relative to risk areas, access, and potential treatments.
3. **Mapping** of data relevant to pre-wildfire mitigation and treatments, structures, resource values, infrastructure, risk assessments, and related data.
4. **Facilitation of Public Involvement** from the formation of the planning committee to news releases, public meetings, public mail surveys, public review of draft documents, and acknowledgement of the final plan by the signatory representatives.
5. **Analysis and Drafting of the Report** to integrate the results of the planning process, provide ample review and integration of committee and public input, and signing of the final document.

The Planning Team

Leading the planning effort from Shoshone County was John Specht, Shoshone County Emergency Manager, and Henry Nipp, Shoshone County Fire Mitigation Coordinator. Additional partners included local communities, fire departments, federal and state agencies, and others.

The planning philosophy employed in this project included the open and free sharing of information with interested parties. Information from federal, state, and local 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 participants. When the public meetings were held, many of the committee members were in attendance and shared their support and experiences and their interpretations of the results.

Multi-Jurisdictional Participation

44 CFR §201.6(a)(3) calls for multi-jurisdictional planning in the development of Hazard Mitigation Plans which impact multiple jurisdictions. This Community Wildfire Protection Plan impacts the following jurisdictions:

- Shoshone County
- City of Kellogg
- City of Mullan
- City of Osburn
- City of Pinehurst
- City of Smelterville
- City of Wallace
- City of Wardner
- Clearwater-Potlatch Timber Protective Association
- Prichard/Murray Volunteer Fire Department, Inc.
- Shoshone County Fire District №1
- Shoshone County Fire District №2
- Shoshone County Fire District №3/ Mullan Volunteer Fire Department
- Shoshone County Fire District №4
- USDA Forest Service
- USDI Bureau of Land Management
- Idaho Department of Lands

These jurisdictions were represented on the planning committee and in public meetings either directly or through their servicing fire department or district. They participated in the development of hazard profiles, risk assessments, and mitigation measures. The planning committee meetings were the primary venue for authenticating the planning record. However, additional input was gathered from each jurisdiction in the following ways:

- Planning committee leadership visits to local group meetings (e.g. county departmental meetings, city council meetings, local emergency planning commission, planning commission meetings) where planning updates were provided and information was exchanged.
- One-on-one visits between the planning committee leadership and representatives of the participating jurisdictions (e.g. meetings with county commissioners, city councilors and/or mayors, fire district commissioners, or community leaders).
- Written correspondence between the planning committee leadership and each jurisdiction updating the participating representatives on the planning process, making requests for information, and facilitating feedback.

Like other areas of Idaho and the United States, Shoshone County's human resources have many demands placed on them in terms of time and availability. A few of the elected officials (county commissioners, city mayors, and fire chiefs) do not serve in a full-time capacity; some of them have other employment and serve the community through a convention of community service. Recognizing this and other time constraints, many of the jurisdictions decided to identify a representative to cooperate on the planning committee and then report back to the remainder of their organization on the process and serve as a conduit between the planning committee and the jurisdiction.

Planning Committee Meetings

The following people participated in planning committee meetings, volunteered time, or responded to elements of the Shoshone County Community Wildfire Protection Plan's preparation.

NAME	ORGANIZATION
Bob Burke	Idaho Department of Lands
Bonnie England	Shoshone County Fire Mitigation
Brian White	Bureau of Land Management
Charles Mooney	City of Osburn
Chuck Reynolds	Mullan Volunteer Fire Department/Shoshone County Fire District №3
Chuck Wardell	Silver Valley Economic Development Corporation
Dale Costa	Shoshone County Fire District №2
Dan Martinsen	Shoshone County Planning and Zoning
Henry Nipp	Shoshone County Fire Mitigation
James Cleveland	Prichard-Murray Volunteer Fire Department
Jim Walcker	Shoshone County Fire District №1
John Pollard	US Forest Service
John Specht	Shoshone County Emergency Management
Jon Cantamessa	Shoshone County Commission
Kim Johnson	US Forest Service
Kjell Truesdell	Idaho Department of Lands
Kurt Naccarato	Idaho Department of Lands
Kurt Pindel	Bureau of Land Management
Larry Kaiser	Bureau of Land Management
Len Young	Idaho Department of Lands
Lonnie Newton	Bureau of Land Management
M. Dunnigan	City of Mullan
Mary Fritz	Idaho Department of Lands
Sarah Jerome	US Forest Service
Sharon Vore	Avista Corporation
Shawn Pearson	US Forest Service
Tera King	Northwest Management, Inc.
Tom Paulson	Idaho Department of Lands
Vaiden Bloch	Northwest Management, Inc.
Vince Rinaldi	Shoshone County Commission
Walter Hadley	City of Kellogg

Committee Meeting Minutes

Committee meetings were scheduled and held from July 2010 through November 2010. These meetings served to facilitate the sharing of information and to lay the groundwork for the updated Shoshone County CWPP. Northwest Management, Inc. as well as other planning committee leadership attended the meetings to provide the group with regular updates on the progress of the document and gather any additional information needed to complete the Plan.

Planning committee meeting minutes are included in Appendix 2.

Public Involvement

Public involvement 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 Shoshone County Commissioners, periodic press releases were submitted to the *Shoshone News Press* and the *St. Maries Gazette*. Informative flyers were also distributed around town and to local offices within the communities by the committee members.

Figure 2.1. Sample Press Release.

SHOSHONE COUNTY PLANS TO REDUCE WILDFIRE RISK WITH COMMUNITY WILDFIRE PROTECTION PLAN UPDATE

Shoshone County has launched the process of updating their county-level Community Wildfire Protection Plan (CWPP), which was originally developed in 2002. Local agencies and organizations in Shoshone County are working with Wildland Urban Interface (WUI) planning committee to complete the Community Wildfire Protection Plan update as part of the National Fire Plan and Healthy Forests Restoration Act. The revised Shoshone County CWPP will include risk analysis at the community level with predictive models indicating where fires are likely to ignite and their potential for spread. Northwest Management, Inc. has been retained by Shoshone County to provide wildfire risk assessments, mapping, field inspections, interviews, and to collaborate with the committee to prepare the Plan. The committee includes representatives from rural and wildland fire districts, Idaho Department of Lands, U.S Forest Service, Bureau of Land Management, private land managers, city representatives, and various Shoshone County departments.

The intention of the project is to conduct analyses of fire prone landscapes and make recommendations specific to rural homes, structures, and infrastructure. Some of the goals of this project are to:

- Continue reducing the wildfire risk to Shoshone County residents,
- Improve awareness of wildland fire issues locally,
- Identify high fire risk areas and develop strategies to reduce this risk, and
- Improve accessibility of funding assistance to achieve these goals.

The planning team will be conducting public meetings to discuss preliminary findings and to seek public involvement in the planning process early this fall. A notice of the dates and locations of these meetings will be posted in local newspapers. Once completed, the draft Plan will also be available for public review and comment.

For more information on the Community Wildfire Protection Plan Update in Shoshone County, contact John Specht, Shoshone County Emergency Manager, at 208-512-4555.

Public Meetings

Public meetings were scheduled in several communities during the hazard assessment phase of the planning process to share information on the Plan, obtain input on the details of the hazard assessments, and discuss potential mitigation treatments. Attendees at the public meetings were asked to give their impressions of the accuracy of the information generated and provide their opinions of potential treatments.

The schedule of public meetings in Shoshone County included 3 locations; Wallace, Smelterville, and Avery. They were attended by a number of individuals on the committee and from the general public. The public meeting announcement sent to the local newspapers, local citizen participation organizations, county departments, fire district representatives, and distributed by committee members is included below in Figure 2.2.

Figure 2.2. Public Meeting Flyer.

Documented Review Process

Review and comment on this plan has been provided through a number of avenues for the committee members as well as the members of the general public.

During regularly scheduled committee meetings in the summer and fall of 2010, the committee 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 and photographic collections, discussed general findings from the community assessments, and made recommendations on potential project areas.

The first draft of the document was prepared after the public meetings and presented to the committee on November 3rd, 2010 for a full committee review. The committee was given one month to provide comments to the plan.

Continued Public Involvement

Shoshone County is dedicated to involving the public directly in review and updates of this Community Wildfire Protection Plan. The Shoshone County Commissioners, working through the CWPP planning committee, are responsible for review and update of the plan as recommended in chapter 6 of this document.

The public will have the opportunity to provide feedback about the Plan annually on the anniversary of the adoption of this plan, at an open meeting of the planning committee. Copies of the Plan will be catalogued and kept at all of the appropriate agencies in the county. The existence and location of these copies will be publicized. Instructions on how to obtain copies will be made available on the County's website. The Plan also includes the address and phone number of Shoshone County Emergency Management, who is responsible for keeping track of public comments on the Plan.

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 its concerns, opinions, or ideas about the Plan. The County Commissioner's office will be responsible for using county resources to publicize the annual public meetings and maintain public involvement through the public access channel, webpage, and newspapers.

Chapter 3

Shoshone County Characteristics

Information summarized from the Shoshone County Area, Idaho soil survey manuscript.[8]

Shoshone County, Idaho is in the northeastern part of the Idaho Panhandle and home to the Silver Valley, one of the nation's greatest mining regions. Mining is and almost always has been the county's best known industry. Rugged mountains are present throughout Shoshone County. These mountains contain an abundance of natural resources including timber, water, and minerals.

Shoshone County is bounded by the Rocky Mountain western crest on the east side of the county, coinciding with the Idaho/Montana state line. Moving from the southern Shoshone County boundary clockwise, Shoshone County borders the Idaho Counties of Clearwater County, Latah County, Benewah County, Kootenai County, and Bonner County.

Geography and Climate

Three major river drainages dominate the landscape of the county; the St. Maries River and the St. Joe River in the south and multiple forks of the Coeur d'Alene River draining the north end of the county. Major population centers in the area are Kellogg, Mullan, Osburn, Pinehurst, Smelterville, Wallace, and Wardner. Elevation ranges from about 2,126 feet above sea level along the western boundary of the county at the St. Joe River to about 7,664 feet above sea level at Illinois Peak along the Idaho/Montana Border.

Information in the following sections was excerpted from the Shoshone County Multi-Jurisdictional Hazards Mitigation Plan.[9]

The Rocky Mountain western foothills continental climatic conditions prevail in much of Shoshone County. This weather pattern carries storm systems from the Pacific Ocean onto the continent, crossing the high Rocky Mountain crest along the eastern edge of Shoshone County. Because of this pattern, precipitation can be heavy at times and is frequently accompanied by high winds and extreme temperature variations. The average annual total precipitation ranges from 31 inches to nearly 39 inches per year. Temperature variations on a monthly basis range from a low of 18º F (average January temperature in Wallace and Clarkia) to an average high of 85º F (average July temperature in Kellogg).

Population and Demographics

The population of Shoshone County in 2007 is estimated at 12,838 and has experienced a 7% decline since 2000 when it was estimated at 13,771. Individual communities within Shoshone County have witnessed population changes of similar magnitudes.

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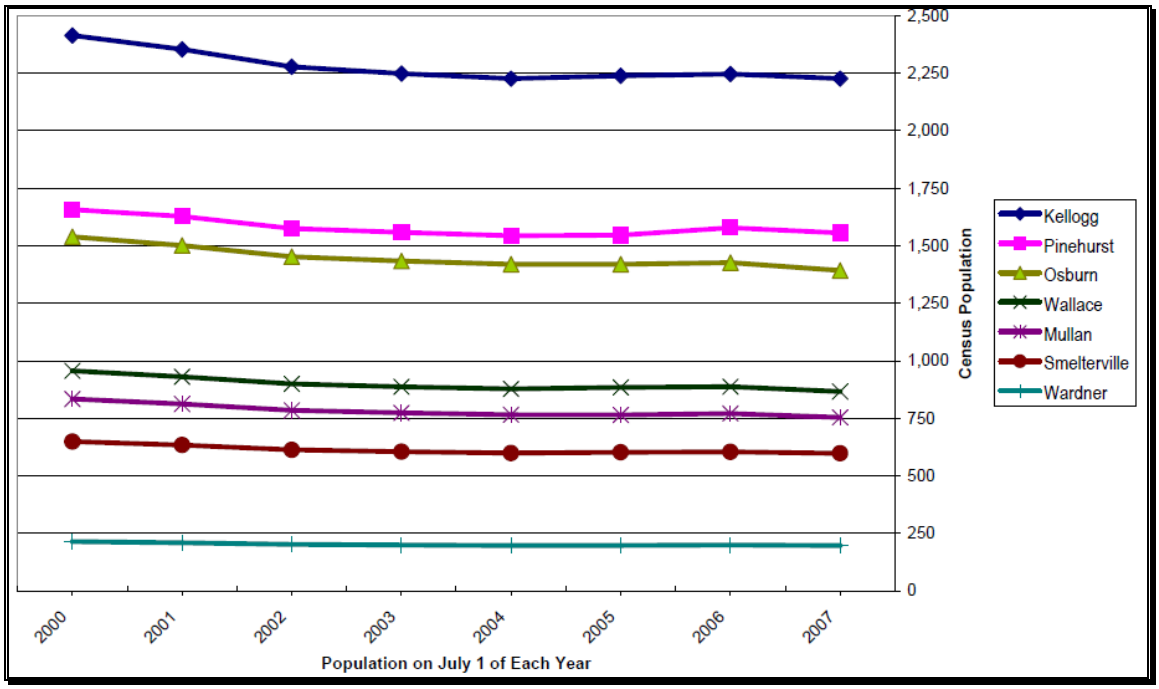
[8] Barker, Raymond J. 1981. United States Department of Agriculture Soil Conservation Service. University of Idaho, College of Agriculture. Idaho Soil Conservation Commission.

[9] Shoshone County, Idaho. 2009. Shoshone County Multi-Jurisdictional Hazards Mitigation Plan. TerraGraphics Environmental Engineering, Inc. Moscow, Idaho.

Figure 3.1 Estimated Population of Shoshone County Municipalities 2000-2007.



The vast majority of Shoshone County populated places have concentrated urban development on the valley bottoms where construction is easier. Shoshone County was established in 1864 and named after the Shoshone Indian Tribe. The Silver Valley is famous nationwide for the vast amounts of silver produced from its mines.

As of the 2000 census, there were 13,771 people, 5,906 households, and 3,856 families residing in the county. The population density was 5 people per square mile. There were 7,057 housing units at an average density of 3 per square mile. The racial makeup of the county was 95.84% White, 0.11% Black or African American, 1.52% Native American, 0.23% Asian, 0.07% Pacific Islander, 0.49% from other races, and 1.74% from two or more races. Approximately 1.93% of the population were Hispanic or Latino of any race, 22.1% were of German, 14.0% American, 11.3% English, 9.7% Irish and 5.9% Norwegian ancestry.

Out of the 5,906 households in the county, about 27% contained children under the age of 18, 52.70% contained married couples living together, 8.10% had a female householder with no husband present, and 34.70% were designated as non-families. Individuals made up 29.40% of all households and 13.60% had someone living alone who was 65 years of age or older. The average household size was 2.30 and the average family size was 2.82. By age class, the population was spread out with 22.90% under the age of 18, 6.70% from 18 to 24; 25.50% from 25 to 44; 27.40% from 45 to 64; and 17.40% who were 65 years of age or older. The median age was 42 years.

In 2000, the median income for a household in the county was $28,535, and the median income for a family was $35,694. Males had a median income of $30,439 versus $18,831 for females. The per capita income for the county was $15,934. About 12.40% of families and 16.40% of the population were below the poverty line, including 21.80% of those under age 18 and 10.00% of those over 65.

Land Ownership

The total area of Shoshone County is 1,682,327 acres (2,628.6 square miles), making it the eighth largest land area county in Idaho. This also makes Shoshone County slightly larger than the entire State of Delaware (2,489 square miles), and 70% larger than the State of Rhode Island (1,545 square miles).

Landownership in Shoshone County is dominated by federal ownership, mainly by the USFS and the BLM, who together manage approximately 76% of the land area in Shoshone County. Private land holdings (66,272 acres) occupy slightly more than State of Idaho Department of Lands managed forests (61,680 acres) at about 4% of the total land area each. Significant land holdings are managed by forest industry in Shoshone County with 263,220 acres (16%). Although this latter category is considered a form of private lands, they have been evaluated separately. [10]

Table 3.1. Ownership Categories in Shoshone County

Landowner	Acres	Percent
City	1	<1%
City/County	1,604	<1%
Coeur d'Alene Tribe	402	<1%
EPA	258	<1%
Fish and Game	1,2578	<1%
Forest Industry	263,220	16%
Private	66,272	4%
State of Idaho	61,680	4%
USDA Forest Service	1,204,823	72%
USDI Bureau of Land Management	71,490	4%
Total	**1,682,328**	**100%**

Natural Resources

Shoshone 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 timber harvesting and mining) has altered plant community succession and has resulted in dramatic shifts in the fire regimes and species composition. As a result, some forests in Shoshone 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.

[10] Shoshone County, Idaho. 2009. Shoshone County Multi-Jurisdictional Hazards Mitigation Plan. TerraGraphics Environmental Engineering, Inc. Moscow, Idaho.

Biota

Fish and Wildlife – Shoshone County is home to a diverse array of fish and wildlife species. Shoshone County streams provide habitat for native trout and char, including populations that are listed as threatened under the federal Endangered Species Act. Forestlands and interface areas are important habitat for many species of birds and mammals.

Vegetation - In the early 1800s (pre-European settlement), the landscape in Shoshone County was strikingly different than that which is seen today. Conditions mirrored those found throughout the Rocky Mountain region and northern Idaho. Conifer forests on rugged mountain slopes dominated the vegetation throughout Shoshone County. The forested areas contained a wide diversity of tree species the most predominant of which were ponderosa pine, Douglas-fir, lodgepole pine, western larch, western white pine, grand fir, and western red cedar.

The National Land Cover Database was used to assess the natural vegetation in Shoshone County. The classification of evergreen forest and scrub/shrub lands comprise an overwhelming 99% of the county. Only a small trace of land area in Shoshone County is agricultural land and much of this is located along the river systems. Most of this agricultural land is used for pasture and hay to feed livestock. Populated places in Shoshone County occupy a small percent of the total area, but sum to approximately 7,900 acres (including the high, medium, and low intensity developed areas in combination with developed open space). Much of these populated areas are located in the valleys of the major river systems including the Coeur d'Alene River (especially the South Fork), the St. Joe River, and to a lesser extent, the St. Maries River system.

Table 3.2. Vegetative Cover Types in Shoshone County

Land Cover	Acres	Percent of Total Area
Evergreen Forest	1,310,280	78%
Shrub/Scrub	345,013	21%
Grassland/Herbaceous	7,128	<1%
Emergency Herbaceous Wetlands	7,095	<1%
Developed Open Space	3,520	<1%
Developed Low Intensity	2,346	<1%
Developed Medium Intensity	1,790	<1%
Woody Wetlands	1,490	<1%
Barren Land	1,304	<1%
Open Water	989	<1%
Pasture/Hay	498	<1%
Deciduous Forest	408	<1%
Developed High Intensity	220	<1%
Mixed Forest	203	<1%
Cultivated Crops	30	<1%
Perennial Ice/Snow	12	<1%
Total	**1,682,326**	**100%**

Hydrology

Shoshone County depends heavily on groundwater for private wells, public drinking water, irrigation, industrial operations, and other beneficial uses. The Idaho Water Resource Board (IWRB) 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.[11] The Idaho Department of Water Resources has prepared General Lithologies of the Major Ground Water Flow Systems in Idaho. Much of the Silver Valley is designated as part of the Coeur d'Alene River-Silver Valley groundwater flow system by the IWRB.[12] 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.

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.[13]

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 attained (in cooperation with state, Tribal, and local governments) through national standards and strategies to control pollutant emissions from automobiles, factories, and other sources.[14]

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 Shoshone County is generally good, rarely falling below IDEQ pollution standards. Emissions from motor vehicles are the primary and most persistent cause of the degradation of local air and noise quality. Occasional intrusions of smoke from field and slash burning and the use of wood stoves also occur.

Forestland burning in Shoshone County is regulated by the Montana/Idaho Airshed Management Group. The northern half of the county is within Airshed 11 and the southern half makes up a portion of Airshed 12b. Currently, a small area surround the community of Pinehurst is the only

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[11] IDEQ (Idaho Department of Environmental Quality). 2003. Rules of the Department of Environmental Quality, IDAPA 58.01.02, "Water Quality Standards and Wastewater Treatment Requirements". Idaho Administrative Code (3-20-97), IDAPA 58.01.02, Boise, Idaho.

[12] Graham, William G. and Linford J. Campbell. 1981. Groundwater Resources of Idaho. Idaho Department of Water Resources. Statehouse. Boise, Idaho. Available online at http://www.idwr.idaho.gov/WaterInformation/Publications/misc/Ground_Water_Resources_ID.pdf.

[13] 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.

[14] 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.

listed Impact Zone in the county. Impact Zones are defined as areas where smoke is likely to be a problem because of local topography, meteorology, or other factors. Areas with existing air quality problems that smoke could exacerbate may also be designated as an Impact Zone.[15]

Summary of Superfund Status in the Silver Valley

Information in this section was excerpted from the Shoshone County Multi-Jurisdictional Hazards Mitigation Plan.[16]

The Bunker Hill Mining and Metallurgical Complex is a Superfund Site located in the Coeur d'Alene River Basin situated in approximately the center of Shoshone County and includes three Operable Units (OU). A century of releases from mining and smelting activities left several thousand acres contaminated with heavy metals. The most significant contaminants are antimony, arsenic, cadmium, copper, lead, mercury, and zinc. The principal sources of unconfined metal contamination were emissions from smelting operations and discharge of mine/mill tailings and waste rock to the South Fork Coeur d'Alene River and its tributaries.

Several million tons of tailings were confined in large waste piles on-site or used as aggregate and fill in widespread construction activities. Tailings discharged to local streams have heavily contaminated approximately 1,100 acres of the floodplain. These wastes were subsequently transported throughout the area by flooding, erosion, wind, and anthropogenic activities. Decades of sulfur oxide emissions from smelter operations and extensive logging denuded the adjacent hillsides resulting in severe erosion.

This site was added to the National Priority List in 1983 due to the widespread heavy metal contamination and consequent excess blood lead levels identified in area children. An approximate 21 square mile area, commonly referred to as the Bunker Hill Box (the Box), contains the original OUs 1 and 2. The greater Coeur d'Alene River Basin surrounding the Box is OU3. The Populated Areas (i.e., OU1) Record of Decision (ROD) was adopted in 1991 and the Non-Populated Areas ROD (OU2) was adopted in 1992. The Basin (OU3) ROD was signed a decade later in 2002.

The risk management strategy adopted in the RODs was to achieve exposure reductions through replacement and/or cover of contaminated soil, dust, and waste piles with clean soils. In residential and common use areas such as parks and schools, this meant 6 to 12 inches of contaminated soils were removed, placed in repositories on-site, and capped with clean soils. The Institutional Controls Program (ICP) was adopted to ensure the long-term integrity of these clean material barriers, and the Lead Health Intervention Program (LHIP) was implemented to minimize exposure through targeted intervention efforts in the interim . The Panhandle Health District (PHD) adopted the ICP in 1995 and currently administers the ICP for the Bunker Hill Superfund site. The ICP was expanded into the Basin in July 2007. Under ICP rules, PHD is directed to require homeowners to repair their own barrier, once established, in order to control contaminant migration and exposure. Numerous documents have been prepared that describe the Bunker Hill Superfund site in more detail, particularly related to its location, background and

[15] Montana/Idaho Airshed Management Group. 2010. Montana/Idaho Airshed Management System. Available online at http://www.smokemu.org/.

[16] Shoshone County, Idaho. 2009. Shoshone County Multi-Jurisdictional Hazards Mitigation Plan. TerraGraphics Environmental Engineering, Inc. Moscow, Idaho.

history: the Five Year Reviews, the RODs, and the NAS review of mining megasites only name a few.

The extent and nature of the cleanup that has occurred and is currently ongoing at the Bunker Hill Superfund Site present special considerations for Shoshone County. Hazard mitigation, especially flood control, must be considered in the context of protecting the environmental cleanup actions taken under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as well as mitigating traditional flooding impacts to homes, businesses, and infrastructure.

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Chapter 4

Risk and Preparedness Assessments

Wildland Fire Characteristics

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 affect 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.

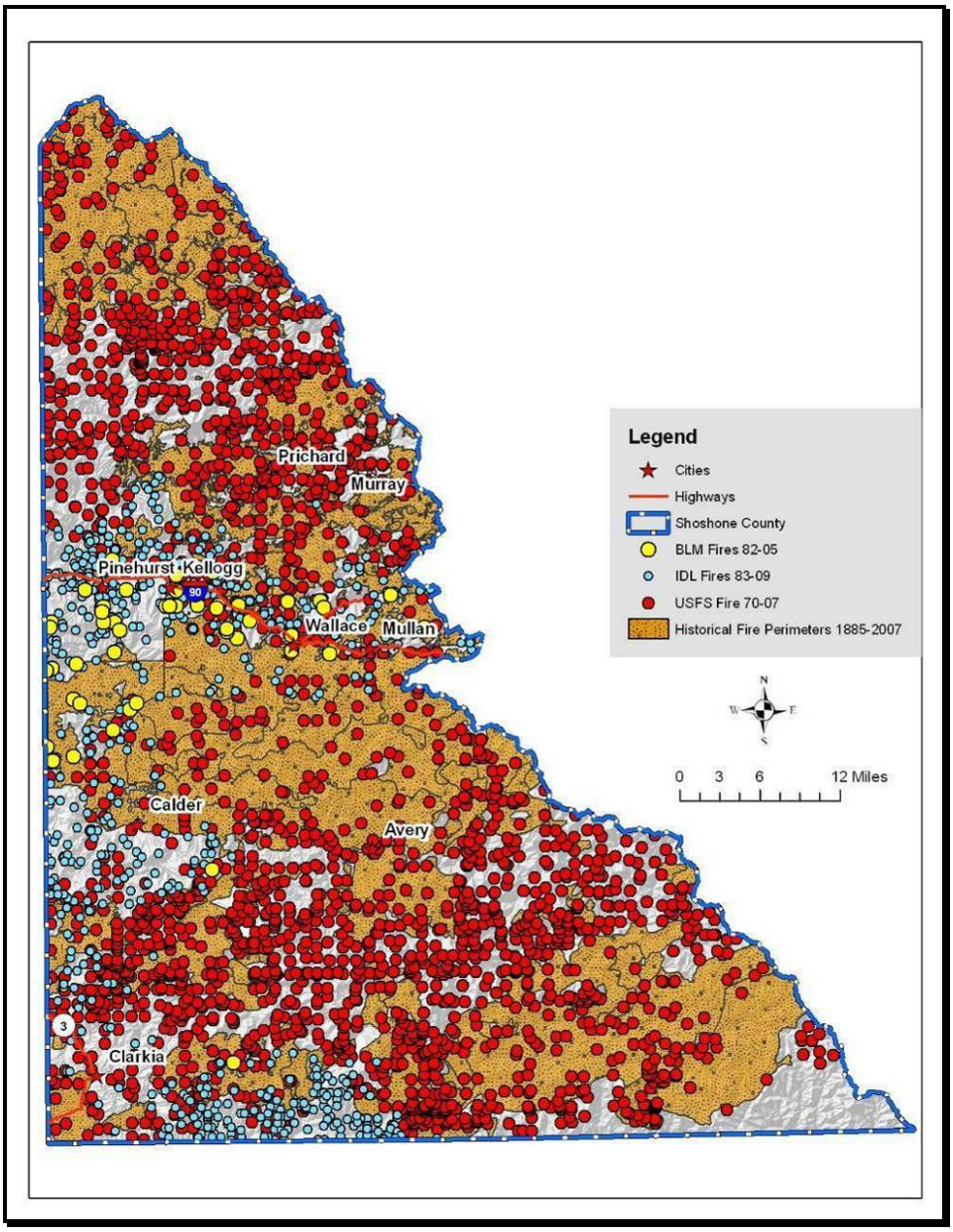
The study of fire behavior recognizes the dramatic and often-unexpected effect small changes in any single component have on how fires burn. It is impossible to speak in specific terms when predicting how a fire will burn under any given set of conditions. However, through countless observations and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

Wildfire Hazards

In the 1930s, wildfires consumed an average of 40 to 50 million acres per year in the contiguous United States, according to US Forest Service estimates. By the 1970s, the average acreage burned had been reduced to about 5 million acres per year. Over this time period, fire suppression efforts were dramatically increased and firefighting tactics and equipment became more sophisticated and effective. For the 11 western states, the average acreage burned per year since 1970 has remained relatively constant at about 3.5 million acres per year.

The severity of a fire season can usually be determined in the spring by how much precipitation is received, which in turn determines how much fine fuel growth there is and how long it takes this growth to dry. These factors, combined with annual wind events can drastically increase the chance a fire start will grow and resist suppression activities. Furthermore, harvest operations and recreational activities are typically occurring throughout the months of August and September. Occasionally, these types of human activities cause an ignition that could spread into populated areas and timberlands.

Figure 4.1. Ignition History in Shoshone County.



Fire History

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 canyons and mountains. Depending on the plant community composition, structural configuration, and buildup of plant biomass, fire resulted from ignitions with varying intensities and extent across the landscape. Shorter return intervals between fire events often resulted in less dramatic changes in plant composition.[17] The fires burned from 1 to

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

47 years apart, with most at 5- to 20-year intervals.[18] With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age.[19] 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 Shoshone County.

Table 4.1. USFS Large Fire Summary 1965-2007.

Fire Name	Year	Cost	Acres Burned in Shoshone County
Cabin Creek	1979	-	728
Cabin Creek	1988	$200,000	90
Suburban	1992	$120,000	31
1956 North	1994	$125,000	223
Unknown	1994	$75,000	28
Casper	1994	$70,000	23
Murray Peak	1994	$46,000	34
Berge Peak #4	2000	$263,036	47
Taylor Saddle	2000	$15,000	13
Clinton	2000	$20,000	13
Tank Creek	2001	$14,800	26
Larch Mountain 24	2003	$13,069	90
Ulm	2003	$3,000	26
Bobtail 1	2003	$2,320	41
Mile Post 17	2003	$6,589	5
Barrymore	2003	$25,141	4
Haystack 3	2003	$27,573	2
Toboggan	2003	$1,575,000	302
Gold Chest	2003	$509,000	92
Ulm Peak	2006	$4,253,000	4,985
Revett	2006	$111,000	164
Collins Tooth	2006	$99,700	377
First Fire	2007	$51,500	9
Elm Street	2007	$600,000	75
Roundtop	2007	$100,000	24
Total		**$8,325,728**	**7,452**

1910 Fires

In a brief 48-hour span, fires carried by hurricane-force winds burned more than 3 million acres, killed 85 persons, devastated the eastern part of Wallace and destroyed between seven and eight billion board-feet of timber. The winds, which gave the Big Blowup its horror, came up from the

[18] 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.

[19] Johnson, C.G.; Clausnitzer, R.R.; Mehringer, P.J.; Oliver, C.D. 1994. Biotic and Abiotic Processes of Eastside Ecosytems: 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.

southwest in the Nez Perce National Forest near Elk City. 2.5 million acres of the Clearwater River, burning all of the Clearwater's headwaters from Weitas Creek up through Kelly Creek and across the Bitterroot Range.[20]

Shoshone County suffered the brunt of the historic 1910 fires resulting in many communities being burnt, including a portion of Wallace.[21] The scars of that fire are still evident across the landscape of Shoshone County as some previously forested regions still do not support forest trees and shrubs, especially along the southern facing slopes, while other areas have a mosaic of regeneration of different size classes. Other areas have begun to support trees due to aggressive reforestation programs that were initiated two decades ago and have made significant headway on these previously barren sites.

Toboggan Fire

In 2003, The Tobaggan Fire burned over 300 acres 12 miles northeast of Wallace in the east fork of Eagle Creek near Murray Peak.

Gold Chest Fire

In 2003, the Gold Chest Fire burned nearly 100 acres just two miles southwest of Murray.

Ulm Peak Fire

The Ulm Peak Fire was detected on August 18th, 2006 along the Idaho/Montana state line 12 miles southwest of Noxon, Montana in the Kootenai and Idaho Panhandle National Forests. The fire was started by lightning and grew to almost 5,000 acres. At one point, over 250 firefighters were assigned to this fire.

Wildfire Ignition Profile

Detailed records of wildfire ignitions and extents from the US Forest Service, Bureau of Land Management (BLM), and Idaho Department of Lands (IDL) have been analyzed. In interpreting these 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 US Forest Service and BLM database of wildfire ignitions used in this analysis includes ignition and extent data from 1970 through 2007 within their jurisdictions. During this period, the agencies recorded an average of 71 wildfire ignitions per year resulting in an average total burn area of 237 acres per year. The highest number of ignitions was witnessed in 1994 with 373 separate ignitions. However, these fires were successfully suppressed resulting in only 632 total acres burned.

[20] Peterson, Jim. 1995. "The 1910 Fire". Evergreen Magazine, Winter Edition 1994-1995. Idaho Forest Products Commission. Available online at http://www.idahoforests.org/fires.htm.

[21] Pyne, Dr. Stephen. 2001. "The Source". Joint Conference of the American Society for Environmental History and the Forest History Society. Distinguished Lectureship in Forest and Conservation History. Available online at http://www.foresthistory.org/Events/lecture2001%20text.html.

Table 4.2. USFS Ignition and Extent Data 1970-2007.

Year	Number of Ignitions	Acres Burned
1970	163	21
1971	58	12
1972	74	7
1973	63	23
1974	129	37
1975	47	20
1976	55	14
1977	60	12
1978	36	3
1979	147	32
1980	23	1
1981	65	15
1982	48	11
1983	36	2
1984	94	21
1985	41	17
1986	63	1,464
1987	45	136
1988	52	92
1989	42	16
1990	33	113
1991	29	14
1992	64	111
1993	14	2
1994	373	632
1995	58	33
1996	54	19
1997	44	3
1998	99	29
1999	78	12
2000	72	141
2001	54	24
2002	59	21
2003	72	472
2004	84	56
2005	25	32
2006	88	5,513
2007	58	114
Total	**2,699**	**9,297**

Table 4.3. IDL Ignition and Extent Data 1983- 2008.

Year	Number of Ignitions	Acres Burned
1983	4	1
1984	11	2
1985	40	30
1986	30	1,460
1987	23	37
1988	27	21
1989	20	12
1990	17	3
1991	27	10
1992	29	10
1993	9	1
1994	95	153
1995	11	65
1996	13	9
1997	11	1
1998	32	30
1999	27	16
2000	10	3
2001	14	15
2002	5	1
2003	37	23
2004	22	6
2005	4	-
2006	35	27
2007	28	52
2008	12	8
2009	27	67
Total	**620**	**2,063**

Based on these data, the IDL experiences an average of 76 burned acres on 23 separate events annually. Only one "large fire" event has been summarized in the IDL fire occurrence database from 1983 through 2008. In this dataset, the Mary Mix II fire in 1986 charred approximately 1,438 acres and was ignited from equipment use.

From 1970 through 2007, state and federal wildland fire protection agencies recorded ignition causes and tracked them for each fire in the database. During this time period, approximately 75% of all ignitions were caused by lightning. In some areas of Idaho and the inland western US, this percentage drops to rates around 50%. This does not mean that the lightning is less of a problem, but instead that human causes are more common in relation to the number of total ignitions.

Table 4.4. Summary of Ignition Causes from IDL, USFS, and BLM Databases.

General Cause	Number of Ignitions	Percent of Total Ignitions
Lightning	2,445	75%
Campfire	77	2%
Smoking	111	3%
Debris Burning	224	7%
Arson	99	3%
Equipment Use	50	2%
Railroad	52	2%
Children	40	1%
Miscellaneous	163	5%
Total	**3,261**	

The data reviewed above provides a general picture regarding the level of wildland-urban interface fire risk within Shoshone 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, 40 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 Shoshone 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 an agency datasets because the local fire department responded and successfully suppressed the ignition before it spread.

Wildfire Extent Profile

Across the west, wildfires have been increasing in extent and cost of control. Data summaries for 2000 through 2006 are provided and demonstrate the variability of the frequency and extent of wildfires nationally.

Table 4.5. National Fire Season Summaries.

Statistical Highlights	2000	2001	2002	2003	2004	2005	2006
Number of Fires	122,827	84,079	88,458	85,943	77,534	66,753	96,385
10-year Average ending with indicated year	106,393	106,400	103,112	101,575	100,466	89,859	87,788
Acres Burned	8,422,237	3,555,138	6,937,584	4,918,088	6,790,692	8,689,389	9,873,745
10-year Average ending with indicated year	3,786,411	4,083,347	4,215,089	4,663,081	4,923,848	6,158,985	6,511,469
Structures Burned	861	731	2,381	5,781	1,095	--	--
Estimated Cost of Fire Suppression (Federal agencies only)	$1.3 billion	$917 million	$ 1.6 billion	$1.3 billion	$890 million	$876 million	--

The National Interagency Fire Center maintains records of fire costs, extent, and related data for the entire nation. Tables 4.5 and 4.6 summarize some of the relevant wildland fire data for the nation and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained. According to these data, the total number of fires is trending downward while the total number of acres burned is trending upward. Since 2000 there has been a significant increase in the number of acres burned.[22]

Table 4.6. Total Fires and Acres 1980 - 2008 Nationally.

Year	Fires	Acres	Year	Fires	Acres
2009	78,792	5,921,786	**1994**	114,049	4,724,014
2008	68,594	4,723,810	**1993**	97,031	2,310,420
2007	85,822	9,321,326	**1992**	103,830	2,457,665
2006	96,385	9,873,745	**1991**	116,953	2,237,714
2005	66,753	8,689,389	**1990**	122,763	5,452,874
2004	77,534	6,790,692	**1989**	121,714	3,261,732
2003	85,943	4,918,088	**1988**	154,573	7,398,889
2002	88,458	6,937,584	**1987**	143,877	4,152,575
2001	84,079	3,555,138	**1986**	139,980	3,308,133
2000	122,827	8,422,237	**1985**	133,840	4,434,748
1999	93,702	5,661,976	**1984**	118,636	2,266,134
1998	81,043	2,329,709	**1983**	161,649	5,080,553
1997	89,517	3,672,616	**1982**	174,755	2,382,036
1996	115,025	6,701,390	**1981**	249,370	4,814,206
1995	130,019	2,315,730	**1980**	234,892	5,260,825

These statistics are based on end-of-year reports compiled by all wildland fire agencies after each fire season. The agencies include: Bureau of Land Management, Bureau of Indian Affairs, National Park Service, US Fish and Wildlife Service, Forest Service, and all state agencies.

The fire suppression agencies in Shoshone County respond to numerous wildland fires each year, but few of those fires grow to a significant size. According to national statistics, only 2% of all wildland fires escape initial attack. However, that 2% accounts for the majority of fire suppression expenditures and threatens lives, properties, and natural resources. These large fires are characterized by a size and complexity that require special management organizations

[22] National Interagency Fire Center. 2008. Available online at http://www.nifc.gov/.

drawing suppression resources from across the nation. These fires create unique challenges to local communities by their quick development and the scale of their footprint. According to the US Forest Service and Bureau of Land Management's Legacy Data, approximately 2.5 million acres burned in Shoshone County between 1885 and 1965. The most significant of these years were 1910 (945,371 acres), 1889 (320,373), 1926 ((292,226). 1919 (133,375), and 1929 (107,726).

Shoshone County has experienced high impact wildland fires that have taken lives and burned structures and infrastructure within their wildland urban interface. However, there has not been a large wildfire event that has threatened structures in the last 50 years. This does not mean that the county is at low risk. In fact, many of the fire professionals in Shoshone County believe the question is not "if" there will be a large fire in this area; it is "when." If Shoshone County experienced a wildfire similar in scale to the recent Cascade Complex in Valley County, Idaho (2007) or the Castle Rock Fire in Blaine County, Idaho (2007), it would have a severe impact on the region and local communities. It is important that regional planners as well as local residents understand what has happened in the past in order to be more effective in the future when preparing for the inevitable.

Wildfire Hazard Assessment

Shoshone 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.

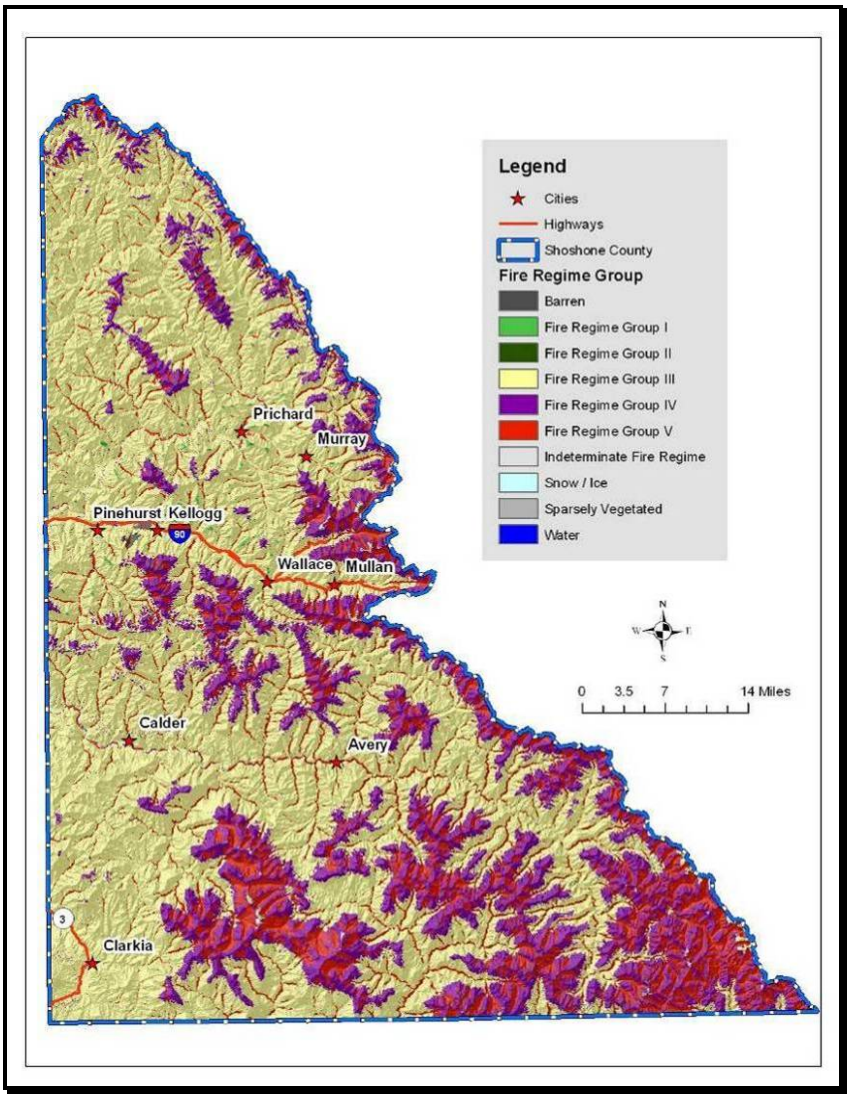
Table 4.7. Historic Fire Regimes in Shoshone County.

Historic Fire Regime	Description	Acres	Percent of Total
Fire Regime Group I	Mixed Severity – Short Interval	3,549	0%
Fire Regime Group II	Stand Replacement – Short Interval, Non-forest	206	0%
Fire Regime Group III	Mixed Severity – Long Interval	1,106,034	65%
Fire Regime Group IV	Stand Replacement – Short Interval	336,484	20%
Fire Regime Group V	Stand Replacement – Long Interval	235,459	14%
Water	Water	1,091	0%
Snow/Ice	Snow/Ice	24	0%
Barren	Barren	6,924	0%
Sparsely Vegetated	Sparsely Vegetated	1	0%
Indeterminate	Indeterminate	73	0%
Total		**1,689,844**	**100%**

The historic fire regime data for Shoshone County shows most of the County being characterized by Regime Group III or mixed severity fires with relatively long return intervals. Higher elevations areas, particularly in the southeastern region of the County have increasing amounts of lands designated as Regime Groups IV and V. These areas are more likely to experience stand replacing fires. Fires occurring on ridge tops in these areas will tend to occur more frequently while those on north aspects and in moist draws will tend to burn very intensely, but have long return intervals. The population centers in Shoshone County are located in areas characterized by historically mixed severity fires.

Additional explanation of how the historic fire regime data were derived is included in Appendix 3.

Figure 4.2. Historic Fire Regime for Shoshone County.



Shoshone County's 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.[23] "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".[24] The role of the federal agencies in Shoshone 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.[25] 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. [26]

By reducing hazardous fuel loads, ladder fuels, and tree 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;[27]
- improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

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

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[23] 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.

[24] 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

[25] 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

[26] 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.

[27] McCoy, L. K., et all. Cerro Grand Fire Behavior Narrative. 2001.

- **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.

Shoshone County's wildland-urban interface (WUI) was originally developed collaboratively by the Shoshone County planning committee in 2004. During the 2010 CWPP update process, the committee reviewed the boundaries of the WUI and made some slight modifications to reflect growth, forest management, completed projects, and other changed conditions.

The Shoshone County WUI map is divided into two distinct levels:

Level 1: Wildland Urban Interface Zone (WUIZ)

The WUIZ is the most important, where life and property is the primary resource to be protected. This level includes a minimum of ½ mile buffers around towns; inhabited structures and primary escape routes. Municipal watersheds are also included, whether they are primary or back up sources. The WUI boundary is extended to ridgetops when necessary due to topography, potential fire behavior, and suppression tactics. WUIZ includes many utilities such as power lines, radio towers, and cell towers.

Stipulations in the WUIZ include:

1. Wildfires occurring in the WUIZ receive the top priority for fire suppression.
2. Access for fire suppression is as a minimum maintained and improved where necessary.
3. Cooperating agencies place priority on fuel reduction projects within this area; the planning committee on a case-by-case basis would support fuel reduction projects outside the WUI.
4. On any ownership, the planning committee recommends that these areas be actively managed to reduce the risk of intense fires that are resistant to control. Active management would include commercial harvest, with appropriate post-harvest fuel reduction treatments to minimize slash fire hazards.
5. The Shoshone County Fire Mitigation Program will concentrate its efforts within the WUI.

Level 2: Secondary Resource Protection Zone (SRPZ)

SRPZ includes areas outside the WUIZ, but considered critical infrastructure or is an important asset or resource to Shoshone County such as power lines, radio sites, and escape routes in sparsely populated or recreation areas.

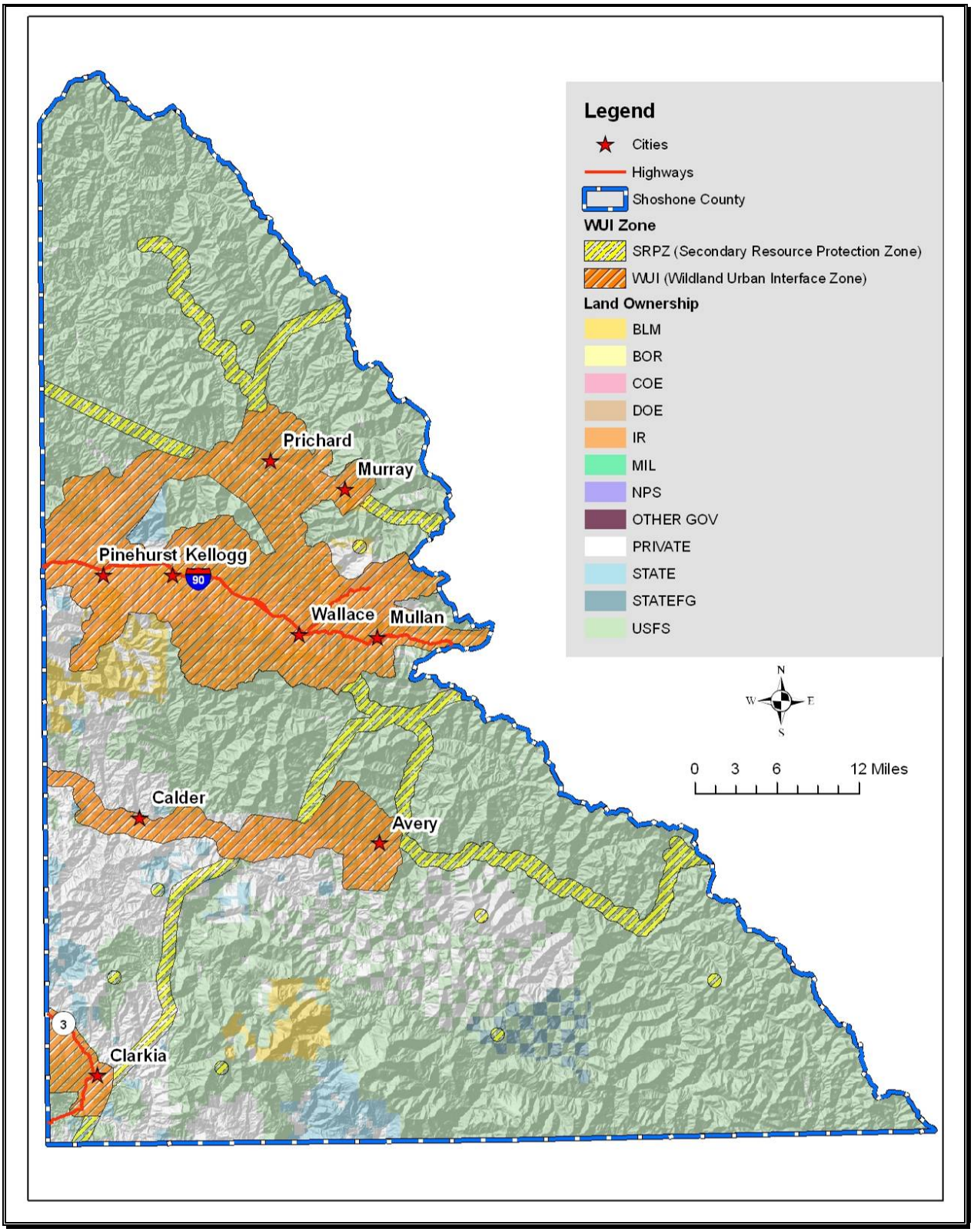
Stipulations for Management in the SRPZ include:

1. The SRPZ should be managed to reduce detrimental effects caused by wildfire such as electrical power interruptions, communications interruptions, traffic delays, etc.
2. The SRPZ should also be managed to reduce potential fire behavior resulting from ignitions originating from transmission lines in order to allow efficient and effective initial attack of wildfires.

3. Resources such as communication towers (cellular, radio, telephone) should be evaluated to determine their risk to wildfire. Where a significant risk exists, fuel reduction treatments should be completed to mitigate the risk.

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 Shoshone County Community Wildfire Protection 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, the Idaho Department of Lands, and local fire districts.

Figure 4.3. Wildland Urban Interface in Shoshone County, Idaho.



Potential WUI Treatments

The definition and mapping of the WUI is the creation of a planning tool to identify where structures, people, infrastructure, and fuels are located in reference to each other. It should not be assumed that just because an area is identified as being within the WUI, that it will therefore receive treatments because of this identification alone. Nor should it be implicit that all WUI treatments will be the application of the same prescription. Instead, each location targeted for treatments must be evaluated on its own merits: factors of structural ignitability, access, resistance to control, population density, resources and capabilities of firefighting personnel, and other site specific factors.

It should also not be assumed that WUI designation on national or state forest lands automatically equates to a treatment area. The Forest Service, Bureau of Land Management, and Idaho Department of Lands are still obligated to manage lands under their control according to the standards and guides listed in their respective forest plans. The adopted forest plan has legal precedence over the WUI designation until such a time as the forest plan is revised to reflect updated priorities.

Most treatments may begin with a home evaluation, and the implicit factors of structural ignitability (roofing, siding, deck materials) and vegetation within the treatment area of the structure. However, treatments in the low population areas may look closely at access (two ways in and out) and communications through means other than land-based telephones. On the other hand, a subdivision with densely packed homes surrounded by forests and dense underbrush, may receive more time and effort implementing fuels treatments beyond the immediate home site to reduce the probability of a crown fire entering the subdivision.

The determination, planning, prioritization, and implementation of WUI treatments is decided by the CWPP planning committee on an annual basis.

Shoshone County Conditions

Shoshone County is characterized by temperate winters and warm, dry summers. Although infrequent, fires in the forest fuel types present throughout much of the County have the potential to result in large, intense and damaging fires such as the 1910 Fire or the Sundance Fire. Past timber harvest operations have created a mosaic of stand conditions that is evident from almost any viewpoint. The fire risk associated with these activities is highly variable depending on a number of factors, some of which include the amount of timber volume removed (i.e. number and size of trees left standing), treatment of slash post-harvest, reforestation success, use of equipment, and many site specific factors such as aspect. Generally, treatment of slash by prescribed burning or pile burning can significantly reduce the risk of intense wildfire by removing hazardous fuels in the understory.

Vegetative structure and composition within Shoshone County is closely related to elevation, aspect and precipitation. Relatively mild and moist environments characterize the rugged topography of the region, which is largely dominated by coniferous forests (78%). These forest habitat types often contain high fuel accumulations that have the potential to burn at moderate to high intensities. Highly variable topography coupled with dry, windy weather conditions typical of the region contribute to the potential for large fire development.

The transition between developed agricultural land and timberlands occurs abruptly, usually along distinct land use and property boundaries. In the higher, mountainous areas, moisture

becomes more abundant due to a combination of higher precipitation and reduced solar radiation. Vegetative patterns shift from forested communities dominated by lodgepole and ponderosa pine, western larch, and Douglas-fir at the lower elevations to grand fir, western white pine, subalpine fir, and lodgepole pine at the higher elevations. Engelmann spruce and western red cedar are commonly found in moist draws and frost pockets. These forested conditions possess a greater quantity of both dead and down fuels as well as live fuels. Rates of fire spread tend to be lower than those in the grass and shrub lands, however, intensities can escalate dramatically, especially under the effect of slope and wind. These conditions can lead to control problems and potentially threaten lives, structures and other valued resources.

As elevation and aspect increase available moisture, forest composition transitions to moisture habitat types. Increases in moisture keep forest fuels unavailable to burn for longer periods during the summer. This increases the time between fire events, resulting in varying degrees of fuel accumulation. When these fuels do become available to burn, they typically burn in mosaic pattern at mid elevations, where accumulations of forest fuels result in either single or group tree torching, and in some instances, short crown fire runs. At the highest elevations, fire events are typically stand replacing, as years of fuel accumulation fuel large, intense wildfires.

Forested areas dominated by ponderosa pine or Douglas-fir tend to be quite dry, as they typically inhabit south and west aspects where the drying effect of the sun and the wind create conditions favorable for shade-intolerant species. Light grass fuels and the abundance of pine needles cast from overstory trees contribute to the fine fuel loads along the forest floor. Fires in the dry ponderosa pine and mixed species forests tend to burn at reduced rates of spread relative to open range and agricultural areas due to the shielding of the wind by overstory trees. However, in areas of low stocking, there may not be a significant wind reduction factor, allowing fire to be pushed more rapidly through the surface fuels. If regular forest tending has kept surface fuel loading and ladder fuels to a minimum, fires in these dry forest types will generally remain on the surface. However, if heavy surface fuel loads and abundant understory regeneration has accumulated, fires in these drier forest types can burn at high intensities, leading to torching of large mature trees. These conditions present significant control problems for suppression resources and can pose a significant threat to homes in the fire path.

Fire suppression often depends on two important factors: availability of fire suppression resources and access. Fire suppression resources include firefighting personnel, equipment and apparatus as well as water and chemical fire suppressants. The greater the availability of fire suppression resources, the more likely it is that a given fire will be contained quickly. Fire suppression also depends on access. Fires in remote areas without ground access are more difficult to fight and thus harder to contain than are fires in roaded areas. Access and effective response is partially a function of land management objectives. Lands managed for natural conditions where roads have not been built or the existing roads have been obliterated tend to have a much poorer fire suppression response than commercial forestlands where road systems are maintained.

Because wildland fires are being effectively suppressed, the patterns and characteristics of fires are changing. Vegetation that historically would have been minimized by frequent fires has become more dominant. Over time, some species have also become more susceptible to disease and insect damage, which leads to an increase in mortality. The resulting accumulation of dead wood and debris creates the types of fuels that promote intense, rapidly spreading fires.

Decades of logging and fire suppression have also changed the characteristics of forests, trending towards younger forest stands. Mature forests are typically less dense, and contain larger more fire-resistant trees. Young forests are denser with larger numbers of small, less fire-resistant trees. Younger trees have thinner bark and may sustain more economic damage than an older stand.

Areas subject to wildland-urban interface fires have very different fire hazard characteristics. The defining characteristic of the wildland-urban interface area is that structures are built in areas with essentially continuous (and often high) vegetative fuel loads. When wildland fires occur in such areas, they tend to spread quickly and structures in these areas may, unfortunately, become little more than additional fuel sources. The placement of homes in wildland urban interface settings has also changed over time. Historically pioneering families built their homes in low lands, close to water and the fields they intended to work. Within the last 50 years, rural homes have increasingly been built in locations chosen because of the view or other amenities. Thus, many newer homes are in locations more difficult to defend against wildland fires.

Fire risk to structures and occupants in wildland-urban interface areas is high due to high vegetative fuel loads and limited fire suppression resources compared to urban or suburban areas. Homes in wildland-urban interface areas are most commonly on wells rather than on municipal water supplies, which limits the availability of water for fire suppression. Less availability of water resources makes it more likely that a small wildland fire or a single structure fire will spread before it can be extinguished.

In many areas of Shoshone County, narrow winding roads, dead end driveways, and inadequate bridges impede access by firefighting apparatus. As with water supplies, the lower availability of firefighting personnel and apparatus and longer response times increase the probability that a small wildland fire or a single structure fire will spread.

Developments in wildland-urban interface areas often face high fire risk because of the combination of high fire hazard (high vegetative fuel loads) and limited fire suppression capabilities. Unfortunately, occupants in many wildland-urban interface areas also face high safety risks, especially from large fires that may spread quickly. The safety risks in interface areas are often exacerbated by limited numbers of roads (in the worst case only one access road) that are often narrow and winding and subject to blockage by a wildland fire.

Potential safety issues within interface areas are often increased by homeowners' reluctance to evacuate homes quickly. Instead, homeowners often try to protect their homes with whatever fire suppression resources are available. Such efforts generally have very little effectiveness. Unfortunately, homeowners who delay evacuation often place themselves in jeopardy.

Developments in rural wildland-urban interface areas face a range of risk factors. Developments that have all or most of the following attributes are at the highest level of risk:

1) Location in or surrounded by heavy fuel loads with a high degree of continuity (i.e. few significant firebreaks). Risk may be particularly high if the fuel load is grass, brush, and smaller trees subject to low moisture levels in short duration drought periods.
2) Steep slopes, which cause fires to spread more rapidly.
3) Limited fire suppression capacity including limited water supply capacity for fire suppression purposes, limited firefighting personnel and apparatus, and typically long response times for fire alarms.

4) Limited access for firefighting apparatus and limited evacuation routes for residents at risk.

5) Construction of structures to less than fully fire-safe practices,

6) Lack of maintenance of firebreaks and defensible zones around structures.

Overall, the threat of wildland fire appears high for Shoshone County. This is in large part because of the steep topography, limited access, fuel types, and structure density. However, portions of Shoshone County, including those in the valley bottoms and those that have received (and maintained) fuels reduction treatments have a low to moderate risk of being significantly impacted by a wildfire.

Overall Mitigation Activities

There are many actions that will help improve safety in a particular area; there are also many mitigation activities that can apply to all residents and all fuel types. General mitigation activities that apply to all of Shoshone County are discussed below while area-specific mitigation activities are discussed within the strategic planning area assessments.

Prevention. The safest, easiest, and most economical way to mitigate unwanted fires is to stop them before they start. Generally, prevention actions attempt to prevent human-caused fires. Campaigns designed to reduce the number and sources of ignitions can be quite effective and can take many forms. Shoshone County has a very active Fire Prevention Cooperative made up of individuals from county fire districts, volunteer fire departments, and wildland fire agencies within the Silver Valley. The co-op's primary focus is fire prevention through education, particularly youth education.

Active prevention techniques can involve mass media, radio, and the local newspapers. The Shoshone County Fire Prevention Cooperative's partnership of agencies, departments and individuals pools their resources to accomplish all types of prevention activities extending from Rose Lake to Mullan.

Limiting Use. Areas within the IDL protection district boundary are also subject to public use restrictions, referred to as "Regulated Use", during fire season in an attempt to limit, or manage use of activities known to cause fires. Fire departments typically observe the State of Idaho's closed fire season between May 10 and October 20. During this time, an individual seeking to conduct any type of burning shall obtain a permit to prescribe the conditions under which the burn can be conducted and the resources that need to be on hand to suppress the fire from a State of Idaho fire warden.

Defensible Space. Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Shoshone County must be made aware that home defensibility starts with the homeowner. Once a fire has started and is moving toward a structure, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the building. *"Living with Fire, A Guide for the Homeowner"* is an excellent tool for educating homeowners on the steps to take in order to create an effective defensible space. Residents of Shoshone County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual home site evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Beyond the

homes, forest management efforts must be considered to slow the approach of a fire that threatens a community.

Evacuation. Development of community evacuation plans is necessary and critical to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape routes would reduce chaos and escape times for fleeing residents. Community safety zones should also be established in the event safe evacuation is impossible and 'sheltering in place' becomes the better option. In recognition of this need, the Shoshone County Commissioners approved (December 2010) the development of a contract to prepare a county evacuation plan.

Access. Also of vital importance is the accessibility of homes to emergency apparatus. The fate of a home will often be determined by homeowner actions prior to the event. A few simple guidelines such as widening or pruning along driveways and creating a turnaround area for large vehicles, can greatly enhance home survivability.

Facility Maintenance. Recreational facilities near communities or in the surrounding forests such as parks or natural areas should be kept clean and maintained. In order to mitigate the risk of an escaped campfire, escape-resistant fire rings and barbeque pits should be installed and maintained. In some cases, restricting campfires during dry periods may be necessary. Surface fuel accumulations in nearby forests can also be kept to a minimum by periodically conducting pre-commercial thinning, pruning and limbing, and possibly controlled burns.

Fire District Response. Once a fire has started, how much and how large it burns is often dependent on the availability of suppression resources. In most cases, rural fire departments are the first to respond and have the best opportunity to halt the spread of a wildland fire. For many districts, the ability to reach these suppression objectives is largely dependent on the availability of functional resources and trained individuals. Increasing the capacity of departments through funding and equipment acquisition can improve response times and subsequently reduce the potential for resource loss.

Development Standards. Furthermore, county policies can be revised to provide for more fire conscious techniques such as using fire resistant construction materials; improved road, driveway, and bridge standard, establishment of permanent water resources, and adoption of a WUI building code.

Other Mitigation. Other actions to reduce fire hazards are thinning and pruning timbered areas, creating a fire resistant buffer along roads and power line corridors, and strictly enforcing fire-use regulations. Ensuring that areas beneath power lines have been cleared of potential high risk fuels and making sure that the buffer between the surrounding forest lands is wide enough to adequately protect the poles as well as the lines is imperative.

Overview of Fire Protection System

The US Forest Service, the BLM, and the IDL all maintain resources to combat wildfire ignitions and maintain records of wildfire ignitions in north Idaho. Primary wildfire protection in Shoshone County is provided by the Forest Service and the IDL. The IDL is responsible for wildfire protection in the Silver Valley and along the western side of the county from Clarkia north to the Silver Valley.

The Clearwater-Potlatch Timber Protective Area is responsible for wildfire protection in an area slightly east of Clarkia and in neighboring Clearwater and Latah Counties. The remainder of the county is protected by the Forest Service. BLM resources are available from Coeur d'Alene on a

mutual aid basis with the State and US Forest Service. Mutual aid agreements have been made between each of the local fire districts and the IDL to supplement resources of a fire agency or district during a time of critical need. Mutual aid is given only when equipment and resources are available. On wildland fires, fire districts typically provide initial attack resources until the IDL assumes command of the incident.

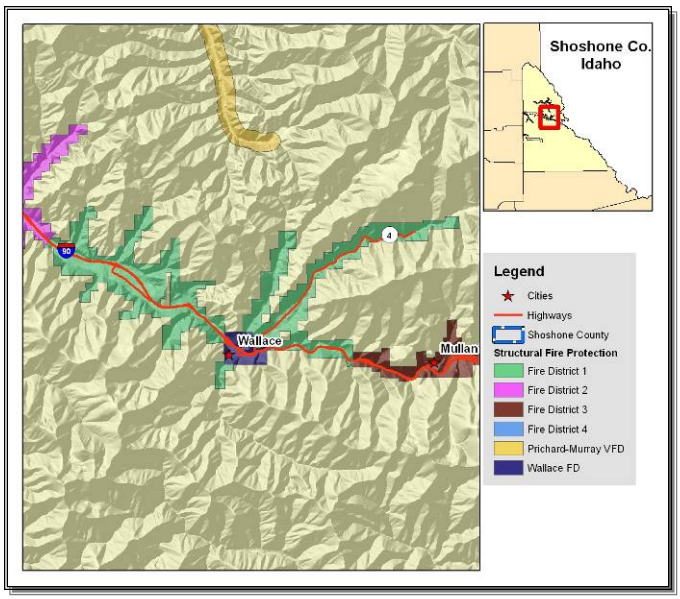
Local Fire Department and District Summaries

The firefighting resources and capabilities information provided in this section is a summary of information provided by the fire chiefs or representatives of the wildland firefighting agencies listed. Each organization completed a survey with written responses. Their answers to a variety of questions are summarized here. These synopses indicate their perceptions and information summaries.

Appendices 4 and 5 contain contact information, a complete available resource list, and a "needs" list for each of the following fire service organizations.

Shoshone County Fire District №1

District Summary: District №1 is responsible for a 14 square mile response area in the central part of the Silver Valley. The District covers the west end of Osburn to milepost 65 on Interstate 90 and all gulches in between as well as the cities of Osburn and Wallace and the communities of Silverton and Woodland Park. The District maintains 4 career staff consisting of three shift workers and 1 paid chief. Also assisting with responses are 32 dedicated volunteer staff. District №1 responds out of two stations; one in Osburn and one in Wallace. The Osburn station is manned 24/7 365 days a year. The Wallace station is unmanned and houses reserve equipment. District №1 responds to approximately 100 fire calls and 350-400 EMS calls on average annually.



Issues of Concern: District №1's main concern is the continued overcrowding in Wallace leading building on inaccessible sites. Shoshone County needs to address road grade issues through consideration and adoption of countywide road standards.

Water resources and locations are also a concern for the District. Shoshone County needs to address this issue through countywide ordinances.

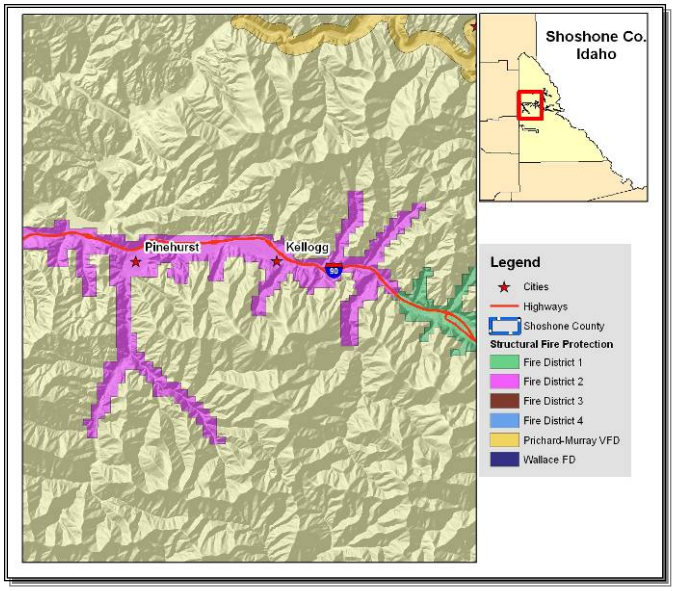
Cooperative Agreements: District №1 has signed mutual aid agreements with the surrounding fire districts as well as the IDL. However, these agreements may need updated to reflect changes in equipment and personnel.

Shoshone County Fire District №2

District Summary: Shoshone County Fire District №2 is located in western Shoshone and eastern Kootenai County in northern Idaho. Geographically, the District is located along Interstate 90 approximately 70 miles east of Spokane, Washington and 130 miles west of Missoula, Montana. The District provides fire and emergency medical services to approximately 185 square miles in a mountainous region with an approximate population of 9,000 permanent citizens and variable seasonal citizens. The District includes the four incorporated cities of Kellogg, Wardner, Smelterville, and Pinehurst along with approximately ten unincorporated communities in a vast area of outlying canyons and drainages. District №2 operates from four fire stations; two in Kellogg, one in Pinehurst, and one on Doyle Road near Rose Lake. A fifth station was to be built in 2010 in Medimont, but due to the economic conditions, it has been postponed. The District has a staff of eight career firefighters and 30 dedicated volunteer firefighters district-wide that are trained for both structural and wildland firefighting.

Issues of Concern: There are several issues of concern for District №2:

Residential Growth: Single-family year around residential growth has not been a problem to date, but there are several big and ambitious projects that have stalled due to the economy. If they should start moving forward, there will be the need for additional stations and equipment. A piece of specialty equipment such as firefighting apparatus on tracks would be beneficial for use over snow.



The District has seen over 400 condominiums built over the last several years with the majority housed in six buildings; five being 5-stories and a sixth that is 4 stories. District №2 has yet to receive any additional tax monies from the construction, but the District has responded to calls at their location. The District is short on personnel for initial response and it does not have an aerial long enough to reach over roofs or to the top floor windows for rescue during a fire emergency.

Communications: All communication sites in Shoshone County, both public and private, need to be identified, evaluated, and the necessary steps taken to ensure that there is no communications disruption during a major incident.

Presently, the District is having issues with the radio system, mainly coming from dispatch. District №2 has taken some major steps to improve the system and is working towards a final resolution. One solutions is to install a second repeater to cover the large response area. Budget is a limiting factor to complete this project. Additionally, some of the District's radio equipment is not narrow band as is required by the Federal Government and will need to be updated by 2013 to meet the Federal mandate.

Burn Permit Regulations: District №2 follows the International Fire Code as adopted by the Sate of Idaho when setting open burning regulations. In addition, the District works closely with the Idaho Department of Lands, the US Forest Service, and the other fire departments in the Silver Valley when setting open burning restrictions when the fire danger is designated "high" or "extreme". The software the District is currently using for issuing burning permits needs to be updated and more specific. The biggest problem is simply getting people to get a permit or call when they plan to burn.

Other Issues: Load ratings on bridges are very important throughout Shoshone County, particularly in District №2 where many small private bridges are the only access to some residential structures. Case in point, the District has had one bridge collapse from the weight of the front axel of our engine while responding to a fully engulfed residential structure fire. In addition, the Ross Oil Company had bridge collapse under the weight of a truck with 800 gallons of fuel oil leaving the rear axel in Montgomery Creek and the front axel on the road.

The State of Idaho has adopted the International Fire Code, which can be enforced by the fire departments and districts throughout the State. The State legislature has mandated that certain portions of the code are not adopted, but have left those sections at the discretion of each County government. Standards for road grades, width, all weather surfaces, dead-ends, gates, and water supply for one and two family dwellings need to be specifically adopted by Shoshone County.

Furthermore, whereas Shoshone County has an ordinance for residential rural addressing, it needs to be reviewed, a penalty set for non-compliance, and enforced.

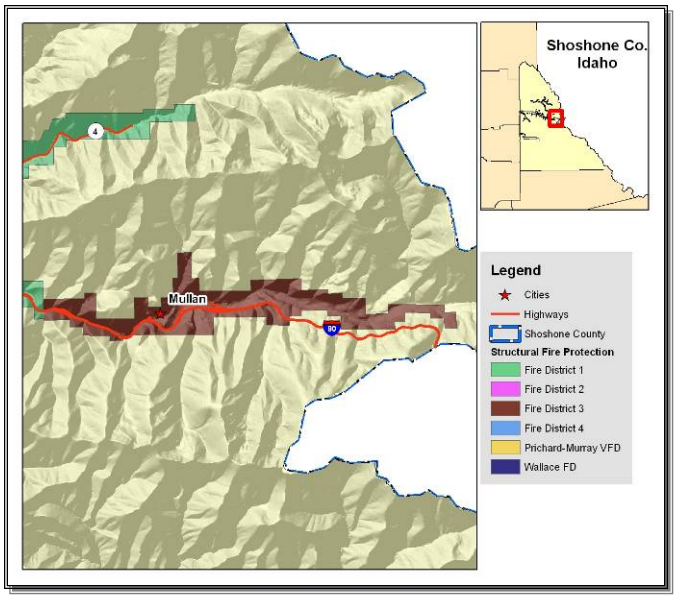
Cooperative Agreements: Presently, District №2 has mutual aid agreements with Shoshone County Fire Districts 1 & 3, the Mullan Volunteer Fire Department, Idaho Department of Lands, City of Coeur d'Alene, Kootenai County Fire and Rescue, and the St. Maries Fire District.

FIRE DISTRICT #3

Mullan & Larson

Shoshone County Fire District №3/Mullan Volunteer Fire Department

District Summary: Both Mullan Volunteer Fire Department (VFD) and Shoshone County Fire District №3 have fire protection responsibility for the city of Mullan and eastern Shoshone County from Exit 65 to the top of Lookout Pass.



Shoshone County Fire District №3 and Mullan VFD have a mutual aid agreement with the IDL, Shoshone County Fire District №1 and West End Fire District in Mineral County, Montana.

Issues of Concern: The primary concern for the District is access issues and lack of water resources in Willow Creek or other new subdivisions in Mullan. There needs to be a countywide ordinance to prevent the construction of steep road grades to homes, fix narrow one-way in access, and require a developed water resource within subdivision or group of homes.

Additionally, Lookout Ski Hill and Lodge is not within the Shoshone County Fire District №3 fire protection and EMS boundary. Structural protection for this site falls under Shoshone County Sheriff jurisdiction. USFS Lolo National Forest and the Idaho Department of Lands have wildland fire protection responsibilities. It is unclear if West End Fire District in Montana will provide structural fire protection for the Lookout ski area.

FIRE DISTRICT #4

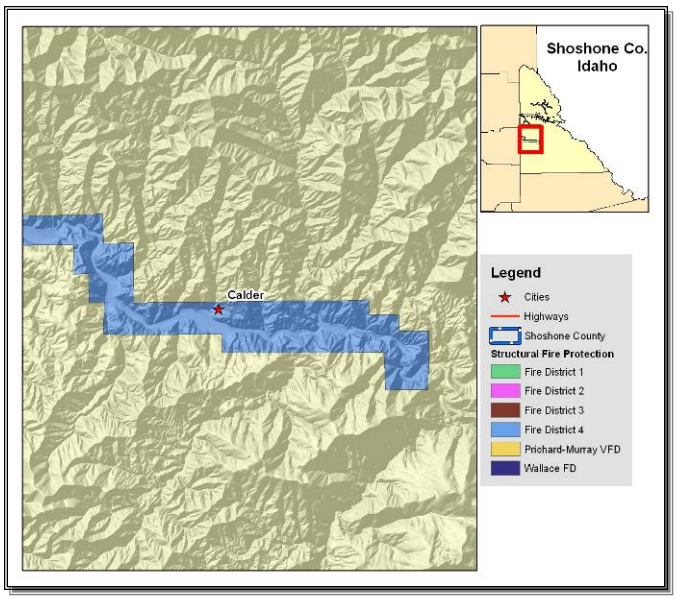
The Western St. Joe River Valley

Shoshone County Fire District №4

District Summary: Shoshone County Fire District №4 provides structural protection to homes along the St. Joe River from the western county line to Marble Creek. The district maintains a station in Calder and Marble Creek.

Issues of Concern: The greatest issue of concern for District №4 is poor communication capabilities with Shoshone County and mutual aid partners.

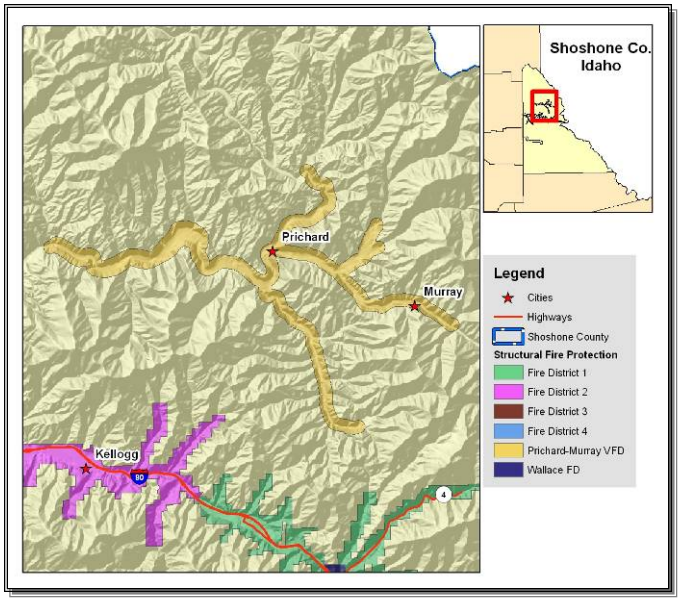
Additionally, there are populated areas upriver of Marble Creek, including Hoyt Flats and Avery that currently have no structural fire protection. The District has repeatedly been asked to respond to fire emergencies in this "no mans land". This practice puts the District at significant risk to lawsuits and can be viewed as a disservice to tax paying customers within their existing coverage area. District №4 is working with the Shoshone County Commissioners to annex unprotected areas along the St. Joe River corridor into the District boundaries.



Prichard-Murray Volunteer Fire Department, Inc.

District Summary: The Prichard-Murray Volunteer Fire Department, Inc. is a small, all volunteer, rural, non-profit organization that provides fire, rescue, and emergency medical services to northern Shoshone County. Fire protection is provided from milepost 11 on the Coeur d'Alene River Road to milepost 31 as well as to the top of Dobson Pass and Thompson Pass. Emergency medical services are provided over 500 square miles while fire protection is offered only in the valley basins. Operating out of 2 stations (Prichard and Murray) with 20 volunteers, the Prichard-Murray Volunteer Fire Department provides service to the isolated communities of Prichard, Murray, Eagle, and Delta as well as several thousand visitors to the Panhandle National Forest. Due to the distance from the Silver Valley and the mountainous nature of our region, mutual aid is typically at least 30 minutes away, in good weather.

The Department provides initial response to the three commercial mining operations within the coverage area. There are also several large buildings built prior to 1900 that are identified as hazards including an 18,000 square foot museum that is made up of several interconnected buildings. Major infrastructure within the Department boundaries includes Forest Highway 9 (a main corridor between northern Montana, Idaho, and eastern Washington) and 27 miles of petroleum transmission pipeline.



Issues of Concern: There are numerous issues for the Prichard-Murray Volunteer Fire Department including funding and capitol improvements as well as access and water supply issues.

Funding: The Prichard-Murray Volunteer Fire Department, Inc. is a non-profit corporation and is not a political subdivision or taxing entity. The Department subsists solely on fundraisers, donations, and what grants can be generated for much needed improvements. The problem lies in the fact that this source of funding is variable from year to year and does not always provide sufficient funding for operations and improvements. This lack of a stable funding mechanism puts the entire Department at risk. Another concern is growth. Even in the current depressed economy, several homes have been built within the Department's coverage area. As a non-governmental agency, the Department has no way of assessing impact fees for new construction. Because the organization exists on such a limited budget, every additional residence strains the capabilities of the Department's resources. Growth is also occurring as a result of formerly recreational properties turning into full time residences. As more people move into the area, there is a higher likelihood of incidents.

Access: Access in the Prichard-Murray area is particularly difficult because homes are built on driveways or roads that have substantially limited access. Some of these roads have bridges, both private and US Forest Service owned, with inadequate weight limitations. Many of these

bridges do not have signage indicating the limits. Some roads are too steep for fire apparatus to access, especially in the winter. The closure of the Old River Road during the winter has also had a negative impact on the Department. Response to homes on the Old River Road is delayed in the winter as firefighters must drive over 20 miles to access this part of the Department's service area.

Water Supply: Although there is one water utility and two other private water systems in the Department's response area, only one of these systems has fire hydrants. The community of Murray has no functional water supply system. One private water system protects an area of about 15 homes and has a 100 gallon per minute pump that supplies an outlet in their pump house. Lastly, Shoshone Camp has a private water system that has hydrants, but its location is too remote to be of assistance to other areas within the Department's service area. There needs to be positive pressure water systems in the primary communities as well as improved rural water supply access.

Capital Improvements: There are a number of capitol improvement concerns for the Prichar-Murray Fire Department. Recently, the Department has been asked to change radio frequencies from what has been used for years because it is an alternate frequency for the Shoshone County Sheriff's Department. This has had a large impact because of the costs, the technical nature of making such a switch, and the anticipated maintenance costs.

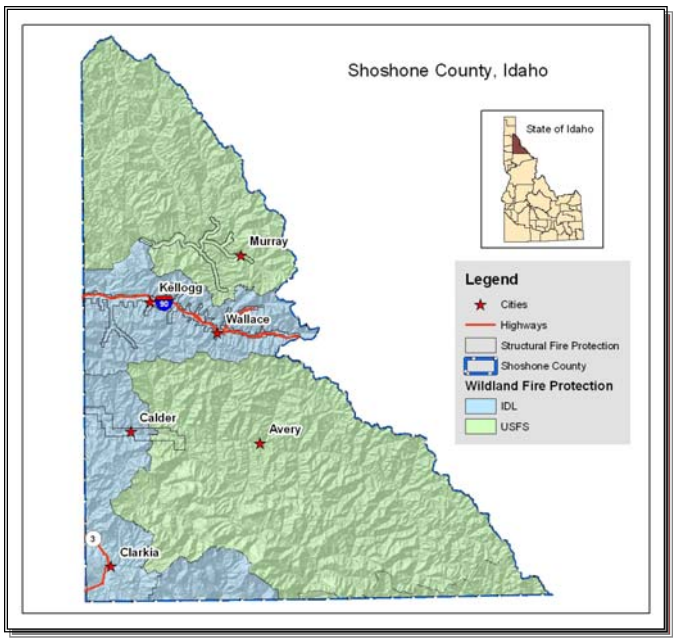
Fire stations are another concern for the Department. The station located in Murray is completely inadequate and needs replaced. It has two apparatus bays and is not tall enough to house modern firefighting apparatus. This station needs to have at least three apparatus bays that can house modern equipment. A new station, including basic equipment, also needs to be built in the Copper Camp or Shoshone Camp areas due to the lengthy response time to these areas. A satellite station would drastically improve the Department's capabilities and protection services for residents in this area. There is also a need to have a station that can access the Old River Road year round, but this is such a remote area that it will likely have to wait several years.

USDA Forest Service – St. Joe National Forest

District Summary: The US Forest Service provides wildland fire protection only. The St. Joe National Forest covers a large section of Shoshone County from the Clarkia area north to the Silver Valley. The Forest maintains field offices in St. Maries and Avery.

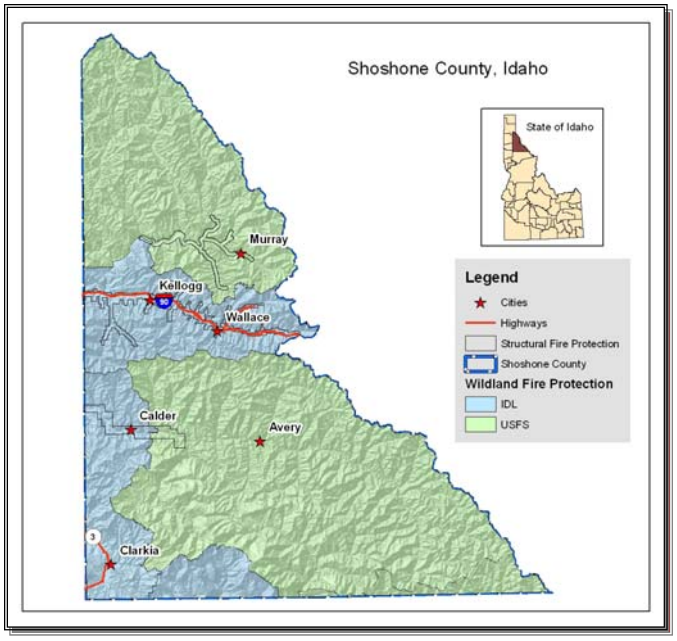
The St. Joe National Forest is a partner in the North Idaho Cooperative Operating Plan and the State of Idaho Annual Cooperative Operating Plan.

Issues of Concern: Major concerns for the St. Joe National Forest include increasing residential growth in the wildland urban interface as well as the presence of the Bonneville Power Administration transmission line.



USDA Forest Service – Coeur d'Alene National Forest

District Summary: The Coeur d'Alene River Ranger District of the Idaho Panhandle National Forests provides wildland fire protection on nearly 690,000 acres throughout Shoshone, Kootenai, and Bonner counties. Although most of the CDA River Ranger District's protection is National Forest System (NFS) lands, their protection also includes private ownership and public lands managed by the Bureau of Land Management. The majority of the district's fire protection lies within the North Fork of the CDA River drainage, although it also includes protection east of Hayden Lake, Coeur d'Alene, Coeur d'Alene Lake, and north of the Chain Lakes. The district has one Fire Management Officer who manages an active fuels program as well as firefighters in both district offices, Fernan and Smelterville. Each office has and Assistant Fire Management Officer who directly supervises two fire engine modules (one Type 4 engine and one Type 6 engine). The district generally sees an active fire season managing human-caused fires, lightning-caused fires, and more recently, fires that are managed for resource benefits. The district's prescribed burning program generally includes a target of at least 1,500 acres per year to be completed in spring and fall burning seasons.



Issues of Concern: The primary concern for the Coeur d'Alene River Ranger District is the protection of public and firefighter safety, which is most challenging in the district's extensive Wildland-Urban Interface. In addition, the North Fork of the CDA River corridor is heavily populated with recreationists during the fire season. Two major transmission lines bisect the district, as well as many smaller transmission and distribution lines, and three gas pipelines.

Bureau of Land Management

District Summary: The BLM Coeur d'Alene District administers land management on BLM lands in their North Idaho Fire Planning Unit. The goal for wildfire management in this area is to protect life and property while returning fire to its natural role in the ecosystem. The BLM Resource Management Plan directs the management of wildfires to include objectives for all wildland fire emphasizing firefighter and public safety while protecting resources and assets and minimizing suppression costs. Shoshone County is split into the Central Fire Management Unit (FMU) (Silver Valley area north) and the South FMU (St. Joe River corridor and Clarkia) for the Coeur d'Alene District. The BLM has ranked the priorities for the Central FMU as high for suppression, wildland fire for resource benefit on select lands only, high for prescribed fire treatments, high for non-fire fuels treatments, and high for community assistance and protection. Priorities in the South FMU are low for suppression, wildland fire for resource benefit on select lands only, low for prescribed fire treatment, low for non-fire fuels treatment, and low for community assistance and protection.

The Coeur d'Alene District has facilitated cooperative management county governments and participates on the Shoshone County WUI planning committee. The BLM also maintains an "offset" agreement for fire suppression with the Idaho Department of Lands. This means that the IDL is providing fire suppression on BLM lands in Shoshone County in exchange for the BLM providing fire suppression services on State land in southern Idaho. The BLM also has a memorandum of understanding with Clearwater-Potlatch Timber Protective Association.

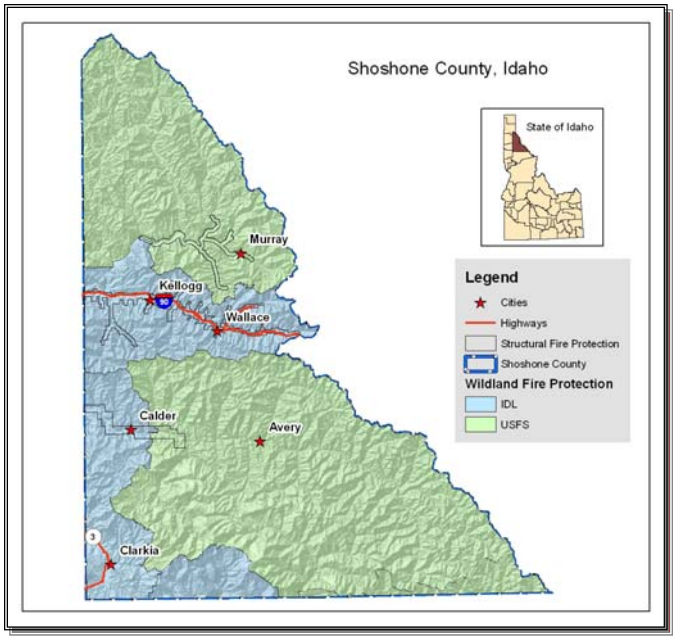
Issues of Concern: As identified in the BLM Fire Management Plan (2010), issues of concern for the Coeur d'Alene Field Office include forest health, forest products, air quality, forest management, fish and wildlife, cultural resources, and transportation and travel management.

Idaho Department of Lands, Cataldo Supervisory Office

District Summary: The Idaho Department of Lands (IDL); Cataldo Supervisory Area's administrative district encompasses approx. 888,300 acres of state, federal and private lands. The IDL's wildland fire responsibilities include pre-suppression (preparedness), prevention, and fire suppression. The Cataldo Fire Protection District encompasses approximately 312,300 acres and has the responsibility to suppress wildland fires within this district boundary pursuant to Chapter 1: Idaho Forestry Act 38-107; Uncontrolled fires a nuisance. In Shoshone County, the Cataldo IDL office is a member of the Shoshone County Fire Prevention Cooperative, which coordinates all the structural and wildland prevention activities within the Silver Valley. Fire suppression readiness is maintained during the closed fire season of May 10th to October 20th. The IDL has mutual aid agreements in place with all area fire agencies.

Burning permits are required from May 10th – October 20th. Permits are issued based upon the consensus of the Shoshone County Fire Chief's Association. Permitted burners are also asked to call the Idaho Department of Environmental Quality hotline to see if smoke dispersal is adequate before burning.

Issues of Concern: Issues of concern for the Cataldo office include educating the public and communities on defensible space techniques, accurate mapping as new residences are built in the WUI, and active participation in the Shoshone County Fire Prevention Cooperative.



Clearwater-Potlatch Timber Protective Association

The Clearwater Timber Protective Association and the Potlatch Timber Association were separately organized in the early 1900's. In 1966, these two entities merged to form the Clearwater-Potlatch Timber Protective Association, a non-corporate entity. Subsequently, on July 16, 1982, the Association completed filings for incorporation under the Idaho Nonprofit Corporation Act and became the Clearwater-Potlatch Timber Protective Association, Inc.

The Association is controlled by forest landowners belonging to its membership and subject to the provisions of the Idaho Forestry Act. The Association is primarily responsible for the conservation and protection of the forests and forestland within the State of Idaho; specifically, the Palouse, Potlatch, and North Fork of the Clearwater River drainages.

A cooperative agreement continues to this date between the Association and the State Board of Land Commissioners through the Director of the Idaho Department of Lands. The purpose of this agreement is to clarify the forest protection relationship between the Association and the Idaho Department of Lands. It defines the reimbursable expenditures and emergency fire suppression expenditures that may be incurred by the State and Association. In addition, the agreement addresses the following: (1) fire protection plans, (2) fire management, (3) reports and records, (4) budgets, (5) administrative matters, (6) payments, (7) duration, and (8) limited obligation by the State.

The protection agreement with the Corps of Engineers to provide additional protection services around Dworshak Reservoir was continued during the 2003 fire season. This agreement provides for boat patrols, aerial patrols, fire prevention, prescribed fire, and maintenance efforts in the campsites.

The C-PTPA maintains 5 stations located at Boehls Cabin, Headquarters, Elk River, and Orofino (administrative office). All aircraft resources are based out of Orofino. The Association has over 1 million acres of wildland fire protection in Clearwater, Latah, and Shoshone County. CPTPA has cooperative agreements in place with the IDL, US Forest Service, BLM, and rural fire districts.

Issues of Concern: Residential growth in the WUI is increasing at a fast rate. This will require additional response capabilities and prevention efforts for CPTPA fire wardens and local fire chiefs.

CPTPA needs to update radio communication to meet narrow band requirement by 2013.

Fire Protection Issues

The following sections provide a brief overview of the many difficult issues currently challenging Shoshone County in providing wildland fire safety to citizens. These issues were discussed at length both during the committee process and at several of the public meetings. In most cases, the committee has developed action items (Chapter 6) that are intended to begin the process of effectively mitigating these issues.

Urban and Suburban Growth

One challenge Shoshone County faces is the large number of houses in the urban/rural fringe compared to twenty years ago. Since the 1970s, a segment of Idaho's growing population has expanded further into traditional forest or resource lands. The "interface" between urban and suburban areas and the resource lands created by this expansion has produced a significant increase in threats to life and property from fires, and has pushed existing fire protection systems beyond original or current design or capability. Many property owners in the interface are not aware of the problems and threats they face and owners have done very little to manage or offset fire hazards or risks on their own property. Furthermore, human activities increase the incidence of fire ignition and potential damage.

It is one of the goals of this document to help educate the public on the ramifications of living in the wildland-urban interface, including their responsibilities as landowners to reduce the fire risk on their property and to provide safe access to their property for all emergency personnel and equipment. Homeowners building in a high fire risk area must understand how to make their properties more fire resistant using proven firesafe construction and landscaping techniques, and they must have a realistic understanding of the capability of local fire service organizations to defend their property.

Rural Fire Protection

People moving from urban to more rural areas frequently have high expectations for structural fire protection services. Often, new residents do not realize they are living outside a fire protection district, or that the services provided are not the same as in an urban area. The diversity and amount of equipment and the number of personnel can be substantially limited in rural areas. Fire protection may rely more on the landowner's personal initiative to take measures to protect his or her property. Furthermore, subdivisions on steep slopes and the greater number of homes exceeding 3,000 square feet are also factors challenging fire service organizations. In the future, public education and awareness may play a greater role in rural or interface areas. Great improvements in fire protection techniques are being made to adapt to large, rapidly spreading fires that threaten large numbers of homes in interface areas.

Debris Burning

Local burning of trash and yard debris has been identified as a significant and growing cause of wildfires throughout Shoshone County. Not only are some people regularly burning outside of the designated time frame, but escaped debris fires impose a very high fire risk to neighboring properties and residents. A growing portion of local fire department calls are in response to debris fires or "backyard burning" that either have escaped the landowner's control or are

causing smoke management problems. It is likely that regulating this type of burning will always be a challenge for local authorities and fire departments; however, improved public education regarding the county's burning regulations and permit system as well as potential risk factors would be beneficial.

Pre-planning in High Risk Areas

Although conducting home, community, and road defensible space projects is a very effective way to reduce the fire risk to communities in Shoshone County, recommended projects cannot all occur immediately and many will take several years to complete. Thus, developing pre-planning guidelines specifying which and how local fire agencies and departments will respond to specific areas is very beneficial. These response plans should include assessments of the structures, topography, fuels, available evacuation routes, available resources, response times, communications, water resource availability, and any other factors specific to an area. All of these plans should be available to the local fire departments as well as dispatch personnel.

Shoshone County Forest Health Collaborative

Shoshone County, Idaho is in the process of redefining the community's role in forest management. Opportunities exist to address ecological restoration and stewardship needs, while providing quality jobs for local workers and restoration "by-products" for local manufacturing. Accomplishing this requires a new approach to natural resources stewardship; one that is locally supported, incentive-driven, and reliant on the power of solutions that integrate the environmental, economic, and social needs of communities. Collaboration between diverse stakeholders and land management agencies is an essential tool in this approach. The mission of the Shoshone County Forest Health Collaborative is to ensure the public health, safety and welfare, and protection of Shoshone County residents and property from wildfire through science-based consideration of ecosystem components; and to promote a sustainable ecosystem, economic viability, and quality of life through collaboration.

The Shoshone County Forest Health Collaborative's Forest Health Subcommittee is working in tandem with the WUI planning committee to plan and implement fuels reduction and forest health improvement projects in areas that will provide wildfire protection to communities and critical infrastructure.

Fire Service "No Man's Land"

A large area surrounding the populated areas of Clarkia, Avery, and between milepost 1 and milepost 11 on the Forest Highway 9 are not currently within a structural fire protection district. In many cases, the homeowners are not aware that they do not have structural fire protection. Additionally, some landowners are aware of the inadequacy, but are resistant to formation of a new fire district or annexation into an existing district for various reasons. Shoshone County supports researching the options available to improve the fire services in this area, which may involve a well-organized public education campaign to ensure homeowners in the area are aware of the situation and understand the ramifications.

Road and Bridge Standards

Fire chiefs throughout Shoshone County have identified home accessibility issues as a primary concern in many of the rural areas in the county. Some private driveways are too narrow and/or too steep and most do not have adequate turnouts, turnaround areas, or alternative escape routes. In addition, some privately-maintained rural access roads have become overgrown by vegetation, effectively restricting safe access, particularly in a wildfire situation.

Inadequate private bridges lacking weight rating signage are also a common problem. There have been at least two documented incidents of loaded trucks collapsing substandard bridges. Due to the risk of bridge failure and resulting personnel injury and equipment damage, fire and medical service organizations will not cross bridges that may be incapable of handling the weight of emergency response apparatus.

The planning committee involved in the development of this CWPP found accessibility due to poor road conditions, steep grades, lack of turnouts/turnarounds, and substandard bridges to be a significant issue throughout. It is a clear goal of this planning process to begin the development, enforcement, and maintenance of accepted road and bridge standards countywide. As part of this process, the committee has recommended action items for completing an inventory and certification process for bridges, road improvement projects, and access improvement through roadside fuels reduction.

Avista Utilities

Avista Utilities has over 100 miles (1250 acres) of transmission rights of way in Shoshone County and 350 miles of distribution lines crossing the county. Transmission lines are integral to the transfer of electricity and the electric grid. Avista's vegetation management program is designed to maintain and protect facilities, electric reliability, and associated resources. Annual inspections and line patrols are conducted specifically for vegetation related concerns. Patrols are used to identify trees that pose a hazard to the conductors as well as to assess general vegetation conditions and growth on the ROW. Maintenance activities on these lines involve right of way clearing, hazard tree patrol, and herbicide treatments. The desired outcome is a stable, low growing plant community that will reduce the risk of outages, fire hazard, or interfere with right of way access. Avista is an active participant in Shoshone County's fire mitigation and prevention programs. They also allow shared uses of their access roads and support the use of power line corridors as fuel breaks.

Wildland Fire Specific Building Regulations

As the trend to build in the wildland-urban interface continues, many counties and communities have begun to develop wildland-urban interface codes for new construction that regulate the use of certain building materials (roofing, siding, vents, decking, etc.) in high fire risk areas. In addition, WUI codes regarding road and bridge standards, availability of water resources, proximity of vegetation, and other requirements have been adopted in communities and counties across the United States.

Shoshone County has begun researching examples of wildland fire specific building codes in the wildland urban interface areas.

Hazard Trees

Hazard trees are typically individual trees in publicly-used areas that create a wildfire or safety hazard due either to their location or as a result of poor health and/or structure. It is often difficult and expensive to remove hazard trees as they are generally widely scattered over large areas. Shoshone County is working on an effort to remove hazard trees along road right-of-ways and near public facilities and critical infrastructure.

Shoshone County is developing a mechanism to identify and remove hazard trees in public areas throughout the County. This has been identified as a high priority action item in this document.

Hazardous Fuels Treatment Project Maintenance

Shoshone County has an established Fire Mitigation program that has been implementing hazardous fuels reduction projects for over 8 years including thinning, pruning, brush cutting, and debris removal on hundreds of acres countywide. Many of the program's earliest projects are now in need of maintenance work as brush and conifer regeneration is beginning to once again increase the wildland fire risk. Many of these projects were completed first because they present the highest risk to residents or infrastructure. Currently, there are few mechanisms in place locally or at the state and federal levels that provide assistance for maintenance projects. As hazardous fuels treatment programs continue to develop, the need for maintenance on existing high priority project areas will become increasingly important.

Public Wildfire Awareness

As the potential fire risk in the wildland-urban interface continues to increase, it is clear that fire service organizations cannot be solely responsible for protection of lives, structures, infrastructure, ecosystems, and all of the intrinsic values that go along with living in rural areas. Public awareness of the wildland fire risks as well as homeowner accountability for the risk on their own property is paramount to protection of all the resources in the wildland-urban interface.

The continued development of mechanisms and partnerships to increase public awareness regarding wildfire risks and promoting "do it yourself" mitigation actions is a primary goal of the CWPP planning committee as well as many of the individual organizations participating on the committee.

Superfund Site

During the operations of the smelter located at Smelterville, an enormous volume of pollutants were expelled into the atmosphere. This atmospheric hazardous waste was distributed downwind during decades of operations. This fine particulate matter settled on the surrounding hills and forestlands during this time of aerial deposition. Some of this contaminated exhaust, after it settled on vegetation and the soil, was washed downstream during and after precipitation events. Additional fallout settled on the forest floor and became a part of the duff layer through the normal process of decomposition of leaves, twigs, and decaying wood. Today, these contaminated particles are incorporated into the upper layers of the forest floor.

These contaminated particles are encapsulated in this identifiable layer of soil duff, then overtopped by new, recent detritus material. This occurs through the normal process of forest soil formation. The risks associated in the forestlands surrounding the location of the now closed smelter site are related to increased erosion. This erosion can occur either from forest harvesting that exposes broad expanses of bare soil or from intense wildfire activity that produces similar results. The exposed soil is not directly the vector of contamination. Instead, it is mobilized when rains intercept the exposed soil layers and carries it down slope to the stream channel. By these means, the contaminants are introduced into the streams and storm water runoff. This mobilization from sub-surface particulate in the soil to the stream channel represents an introduction of particulate contamination that will ultimately be relocated to storm water and flood water sludge deposits, or into Lake Coeur d'Alene.

The forestlands situated downwind of Smelterville are managed by forest industry, IDL, the BLM, the USFS, and several private forestland owners. Historical evidence suggests that aerial contamination was measured as far downwind as Osburn and even Silverton. The means of protecting the potentially contaminated area from erosion begins with using low impact equipment during timber harvest activities. Small amounts of logging slash are generally allowed to remain on-site as this can assist in reducing surface erosion during and after logging operations.

Rapid reforestation efforts will also ensure limited erosion potential. Site specific silvicultural systems are recommended for all impacted area timber harvesting operations. The goal must be to protect these sites from erosion as much as possible. The State of Idaho Forest Practices Act regulates certain conditions of timber harvesting including slash disposal and reforestation targets.

Wildland urban interface areas burned by fires must also be rehabilitated as soon as possible to avoid erosion. Immediate suppression is expected within this zone. The post-fire considerations must address site-specific remediation efforts to immediately intercept surface erosion. This can be accomplished using straw bales anchored to the site and arranged perpendicular to the slope of the site, by using small rubber dams arranged mid-slope in the bottom of the gorges to intercept overland flow, or other tactics. If large fires occur on state or federal lands, then interagency agreements to plan for, and implement these controls can be made ahead of the fires. If a wildfire occurs on forest industry or private lands, then some form of incentive may need to be considered to insure urgent erosion control measures.

In either event, it behooves Shoshone County to work with area forestland owners (private, state, federal), the Idaho Department of Environmental Quality and the public health district, and others to develop a pre-disaster response protocol on wildfire impacted forestlands. In this way, a comprehensive response can be developed before a wildfire occurs.

Current Wildfire Mitigation Activities

Shoshone County Fire Prevention Cooperative

The Shoshone County Fire Prevention Cooperative was started in 1987 with a federal grant. It is made up of individuals from county fire districts, volunteer fire departments, and wildland fire agencies within the Silver Valley. The co-op's primary focus is fire prevention through education, particularly youth education. This Silver Valley partnership of agencies, departments

and individuals pool their resources to accomplish prevention activities extending from Rose Lake to Mullan.

Shoshone County Fire Mitigation Program

The Shoshone County office of Fire Mitigation is responsible for overseeing and coordinating the county fire and fuel management program to implement community fire protection measures and hazardous fuels treatments in conjunction with programs authorized by the Board of Commissioners. The Project Manager works with private landowners, elected officials, various State and Federal agency officials, designated planning committees, the Emergency Services Manager, and the County Commissioners to preserve life and protect natural resources and critical infrastructure from catastrophic fires.

Firewise Communities/USA

The Firewise Communities/USA program is designed to provide an effective management approach for preserving wildland living aesthetics. Participating in this educational program gives communities in Shoshone County a way to balance sustainable ecological lifestyles with an effective means of wildland fire protection.

This Community Wildfire Protection Plan will fulfill the community assessment requirement for participation in the Firewise Communities/USA program for all population centers in Shoshone County. The Shoshone County Fire Mitigation program will assist communities with participation in the Firewise Communities/USA program by managing the applications and other paperwork, maintaining the CWPP, ensuring applications meet the requirements of the program, and assisting with the development and funding of wildfire mitigation activities.

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Chapter 5

Community Fire Risk Assessments

The majority of homes and structures within and surrounding Shoshone 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 tree 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 and forest fuels, especially where declining forest 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 by 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.

Avery

Fuels Assessment – 1 mile from home sites

Forestlands on the south side of the St. Joe River are closed canopy, mature or over mature timber with a component of heavy down material and a large amount of timber litter. In some areas adjacent to the town of Avery, particularly on harvested private lands, the fuel is composed of litter from western red cedar and western hemlock partial harvests.

The slopes along the St. Joe River and near Avery are steep, often 50-60%. As the slope lessens near ridge tops, commercial logging has provided a patchwork of mature timber broken by plantations of 12-20 foot tall trees. There are also areas of interspersed selective harvests where some slash abatement has occurred either by burning, natural decomposition, or a combination of both.

On the north side of the St. Joe River is a mixture of steep, open shrub and grassy fuels with a great deal of rock outcrops, especially when in close proximity to the St. Joe River or the North Fork. Where timber is present, it is patchy to uniform Douglas-fir with some areas more prone to ponderosa pine transitioning to Douglas-fir. Very little down material or timber litter is present.

Fuels Assessment – 3 miles from community center

The area 2 to 3 miles from Avery south of the St. Joe River is mature to over mature forests with a large down fuel component (slash and debris). However, in this zone there are plantations and previous

commercial timber sales where slash has been burned; thus, providing small areas of relief in the fuel base should a large fire occur.

In general, the fuels on the north side of St. Joe River are younger Douglas-fir stands or dense brush fields with little to no timber present.

Community Risk Assessment

Avery has a population of approximately 57 permanent residents. There are about 66 structures in this community concentrated tightly near the community center. All of these buildings are considered at risk to loss in the event of a wildfire because of the characteristics of the region including limited access. There is no rural fire department providing structural fire protection in the community of Avery. Wildland fire protection is provided by the US Forest Service, St. Joe National Forest.

The highest concentration of forest fuels near homes is in the area immediately adjacent to the community on the south side of the St. Joe River. In some places, the logging debris is within 100 feet of homes. When combined with the steep slopes, this becomes a high fire risk area.

Because of the reduced fuels risk, the moderate slopes, and the dispersion of the homes in this community; home defensible zones are recommended. Two additional activities should be undertaken in this community to reduce the risk of casualty loss in the event of a fire. First, a community defensible zone should be created that extends from the paved road to approximately 250 feet above the roadway on the north-facing slope adjacent to the homes extending from the Kelly Creek Road west to Roundhouse Gulch. Within this protection zone, trees should be thinned, pruned, and shrubs removed, piled, and burned. This protection zone would increase the probability that homes will survive a wildland fire burning on the hill above Avery.

Second, the logging slash in the private land south of Avery should be treated to reduce the fuel load as much as possible. The combination of treating the fuels and creating a community defensible zone will greatly reduce the wildfire risk.

Calder

Fuels Assessment – 1 mile from home sites

On the north side of the St. Joe River and on the flat area south of the River, native grass and pasture is grazed while its green until late summer. Fires in this area would most likely burn through the fine, porous grass, especially in moderate to extreme drought years. Surface fires would be expected to move rapidly through the cured grass.

North of the River, grass pastures transition into grass and shrub with a timber overstory. The steepness of the slope also increases as the terrain changes from flat to moderate slopes with short benches. Fires would tend to be surface fires with intensities governed by the amount of herbaceous fuel and down and dead stemwood.

Fuels Assessment – 3 miles from community center

East of town and north of the River within the 3 mile radius from the community center, the fuels change from open grass and shrub with a timber overstory to mixed conifer stands that range from open ponderosa pine and Douglas-fir mix to closed Douglas-fir or a Douglas-fir/grand fir mix. Ground fires with occasional flare ups through fuel concentrations would be expected in this fuel type. Torching of individual trees, spotting, jackpotting, and crowning is also likely.

All areas transition from flat, grassy, pasture to closed canopy mixed conifer stands with heavy concentrations of down material either from over maturity or from activity. Fires in this fuel type can be expected to burn intensely, especially through areas with heavy ground fuel concentrations. As described above; crowning, spotting, jackpotting, and torching as well as suppression difficulties can be expected.

Community Risk Assessment

There is an estimated permanent population of less than 50 individuals living in the community of Calder. There are approximately 58 structures at risk within 3 miles of the community of Calder. All of these structures are considered at moderate risk due to the dispersion of buildings and the high degree of wildland interface characteristics. Although it is not a high risk area currently, this may change in the next decade, depending on forest growth rates and fire mitigation efforts in the area.

Calder supports the Shoshone County Rural Fire District №4 with fire stations in Calder and further up the St. Joe River in Marble Creek. Wildland fire protection is provided by the Idaho Department of Lands in St. Maries. However, the boundary of the protection zone for this agency extends just to the border of the 3-mile community buffer zone. Beyond this zone eastward, the US Forest Service, St. Joe Ranger District is responsible wildland fire protection coverage.

Because of the reduced fuels risk, the moderate slopes, and the dispersion of the homes in this community; home defensible zones are recommended. These zones should follow the basic recommendations for homeowners in the wildland urban interface and should include the removal of shrubs, ladder fuels, and dense forests within 150 feet of homes with fire breaks strategically located around homes or groups of homes. Access issues should be addressed for each home and include an assessment of driveway width, the creation of turnouts, and an evaluation of weight restrictions on bridges and cattle guards. In some instances, evacuation routes should be marked while some routes will require road improvements to ensure that homeowners will have alternative routes in an emergency.

Cattle grazing is common and has served to reduce the late summer fuel load in fields and forestlands around this community. This reduction of grasses and shrubs serves the community well and is a practice that should be continued.

Canyon Creek Drainage

Fuels Assessment – 1 mile from home sites

The entire Canyon Creek drainage from Wallace to beyond the community of Burke, is characterized as steep forested slopes climbing dramatically from Canyon Creek to the

surrounding ridges. The vegetation is primarily Douglas-fir and other conifers that are between 60 and 90 years old. The understory has a minor amount of herbaceous shrubs, grasses, and litter from the canopy. Timber harvesting has been conducted in various areas with road building activities accessing only a minor amount of the drainage. Slopes are steep, averaging around 40% in some areas.

Home sites in this drainage are all concentrated along the river bottom from Wallace to Burke in small clusters. These homes capitalized on the flatter areas for building sites; however, the steep canyon walls climb immediately from these sites to the forest and the canyon walls. In many instances, forest trees overtop homes obscuring them from view, even from only a few yards away.

Fuels Assessment – 3 miles from community center

There is little significant difference between the forest conditions surrounding the home sites of this drainage and the timber found on the slopes and ridge tops. For planning purposes, the differentiation between the two can be ignored in favor of considering the creation of defensible zones around the home sites and considering fire spread potential.

The upper end of the drainage transitions from a mixed conifer forest to a mountain forest ecosystem dominated by subalpine fir, western red cedar, mountain hemlock, and wet-site shrubs. The duff layer in these forests is very thick. Fires are rare in these high elevation ecosystems, but when they do occur (about every 100-500 years) they can be very intense.

Power lines and access roads cut through the forest providing a connection between Idaho and Montana power grids. Shrubs and small trees are growing under the power line right-of-way. Although it is not a problem at this time, the right-of-way must be kept cleared of vegetation that may support an ignition sparked by the power line. Trees along the edges of the right-of-way for a distance of 100 feet should be evaluated for potential hazard tree removal. This component of the ecosystem is at a high elevation and at a high risk of rapid wildfire spread due to dead and dying subalpine fir and lodgepole pine. This route is the only escape for residents of the community if access to Wallace is compromised. In the event that a fire starts lower in the drainage, residents may be forced to flee the area through this escape route. Every effort should be made to guarantee that this area has a low probability of ignition.

Community Risk Assessment

Canyon Creek includes the communities of Burke, Mace, and Gem. State Highway 4 winds up the river bottom where homes, mining structures, and other buildings are located. There are approximately 103 structures located in the area. Although all of these structures are along Canyon Creek and the state highway, they are all at very high-risk to wildfire loss. Structural fire protection is provided by Fire District №1 with fire stations in Wallace and Osburn. Wildland fire protection is provided by the Idaho Department of Lands.

The greatest risk for casualty loss in the Canyon Creek drainage is a wildfire that starts in the vicinity of Wallace and spreads up-canyon in the direction of Gem, Mace, and Burke. If this ignition is accompanied by northeast winds, which is the prevalent wind direction in late summer, the steep canyon walls may funnel the heat, flames, and smoke up the river bottom. This "worst-case-scenario" would be difficult for fire fighters to access and suppress. It would also be a challenge to evacuate the residents via the US Forest Service Road 7623 to the northeast of the drainage and into Montana.

If high winds from the northeast were not present at the time of ignition, then it is probable that the fire spread would be limited to upslope locations with spotting across the drainage. Fire spread in the area could easily approach 500 feet per hour on the flat slopes and over 5 miles per hour on the steeper slopes. It would not be difficult for fire moving upslope to spread to the crowns of the trees if fuel moisture was below 8% and midslope flame speeds were above 5 miles per hour.

Homes in Canyon Creek are at risk to ignition in the event of a wildfire. Only a few home sites near Wallace have any defensible space surrounding them. Other home sites in the drainage are characterized by dense forest canopies that overtop roofs and overhang outbuildings. All of these home sites would benefit greatly from the creation of home defensible space surrounding personal property according to Firewise standards.

Access for fire fighting equipment should be evaluated with respect to bridges to determine the maximum weight the bridges will support. These ratings should be posted on the bridges and kept in a record book at the Fire District №1 station. In addition, evacuation routes should be clearly marked in the event of a fire emergency. Further, these routes should be evaluated by a roads specialist to ensure that 2-wheel drive vehicles are capable of negotiating the designated escape routes.

Clarkia

Fuels Assessment – 1 mile from home sites

Located in the southwestern corner of Shoshone County, Clarkia is surrounded by managed forests in the possession of a variety of federal, state, and private owners. The landowners in this area are actively managing forestlands through timber harvesting, fuels and slash reduction, reforestation, thinning, and road maintenance. The resulting landscape is a diverse mix of species, ages, and density. As a result, fire risk in this area is generally lower than in other locale in Shoshone County.

To the west of Clarkia, US Forest Service ownership dominates. These forests have been managed to a lesser degree than the surrounding privately owned land. Private ownerships show evidence of past fires and logging activity. Because of the close proximity to the community of Clarkia, the dense, overcrowded forests with dead and dying trees represent increased risks to wildfire spread. This land is managed by the US Forest Service and is also the location of the US Forest Service work center.

Pasture lands and scattered shrubs dominate the landscape immediately surrounding the community of Clarkia and much of State Highway 8. The area transitions from fescues and

grasses to scattered forest tree species. The grasses are a fire spread risk when cured or dead as spread is governed by the fine, very porous, and continuous herbaceous layer. Fires can move rapidly through this layer and transition into the forest or homes. The pasture fields support active cattle grazing, which helps keep the grasses clipped and the resulting fuels reduced. Because of this, the homes' fire risks are greatly abated.

Commercial forestlands near homes and beyond are representative of a diverse mix of species, age classes, and density giving rise to a diversity of potential fire behavior. This area has moderate slopes and is well roaded.

Fire fighting efforts in this zone are aided by the diversity of forest cover types that would burn only in the most extreme weather conditions because of the discontinuous tree canopy and lack of surface fuels. Overall, the community of Clarkia is likely at the lowest risk to wildfire spread in Shoshone County because of the actively managed forestlands.

Community Risk Assessment

The Census reported that the population of Clarkia was 190 persons in 2000. There are approximately 85 buildings within a 3-mile radius of the community of Clarkia. All of these buildings are considered at low to moderate risk to loss in a wildfire that burns the forests surrounding this community. This particular community is surrounded by managed forests that are not likely to burn intensely, but still have a potential to burn. For this reason, this community has been ranked with a low to moderate risk rating.

There is no rural or volunteer fire district serving the community of Clarkia. The Clearwater-Potlatch Timber Protective Association provides most of the wildland fire protection to the south and southeast and the Idaho Department of Lands (St. Maries) and US Forest Service (St. Maries) provides wildfire protection to the north and northeast.

Although this community has a relatively low risk to wildfire loss, there are specific treatments that can improve the risk rating for individual homes and areas. Specifically, some of the homes in this Clarkia are built at the intersection of fields and forestlands. While these areas have adequate access, some are at increased risk to wildfire because of trees with branches reaching to the ground, dead and dying trees, and tall, ungrazed grasses. These individual homes would benefit from the creation of home site defensible space surrounding the home and out-buildings.

In addition, some of these homes have small bridges or cattle guards on their driveway that should be weight-rated. In a few cases, driveways should be trimmed of overhanging shrubs and trees to allow emergency vehicles better access.

Cattle grazing in this community keeps the forbs, fescues, and shrubs trimmed and reduced in volume. This serves to protect the community from a wildfire and should be continued into the future. Increasing grazing on forestlands would decrease the fuels in these areas as well.

Active forest management south and southeast of Clarkia has targeted mature forests, which typically would have had an with increased risk of wildfire. US Forest Service land managers removed the small diameter trees, cut the underbrush, and prepared

the site for prescribed fire treatment in 2002. These sites are located near roads and on south aspects. The trees left on site are generally dominant and co-dominant Douglas-fir, ponderosa pine, and western larch. The trees are healthy and well spaced. These sites represent an excellent example of wildfire mitigation efforts in and around communities.

Additional US Forest Service lands to the west of Clarkia and State Highway 8 would benefit from similar treatments. Treatments should focus on those lands adjacent to the highway and where recreational uses are the greatest.

Kellogg & Wardner

Fuels Assessment – 1 mile from home sites

Located at the base of the Silver Mountain ski area, Kellogg straddles Interstate 90 and continues along the hills to the south towards Wardner. Additional home sites are scattered up gulches in this region where access and forest fuels are a concern. North of Kellogg, the hills still show signs of the area's mining history as exhibited by slow tree establishment and growth. South of Kellogg, young western white pine less than 30 feet tall dominate.

To the east, Montgomery Creek has a few dozen homes located on either side of the river. The west side of the gulch is dominated by brush fields with scattered ponderosa pine trees while the east side has young trees and little underbrush. Access is provided from the south by the Silver Valley Road and by a forest access road 2.3 miles north of the Interstate that leads into National Forest lands. Further to the east, north of I-90, Moon Creek is similar to Montgomery Creek except that the escape route to the north has been closed by the Forest Service.

Fuels Assessment – 3 miles from community center

Beyond the immediate zone of homes in Kellogg and Wardner, the ridge tops support a variety of forest types with moderate risk factors for wildfire.

Community Risk Assessment

Kellogg had a population of 2,591 according to the Census in 2000 making it the largest community in Shoshone County. The community's structures are concentrated near the downtown area. There are approximately 1,028 structures within 2 miles of the community center (excluding those near Smelterville). Due to recent growth and development within Kellogg, the city council has installed mechanisms that require new construction to follow Firewise practices such as cluster developments and establishing structural sprinkler systems in order to lessen the fire risk. The downtown area is not considered to be at risk to wildfire loss. The area immediately surrounding Kellogg are also not at high risk to wildfire due to past wildfire history and environmental alterations related to mining in the region. The structures located beyond 0.5 miles from the city center including those along the perimeter of the community, in the drainages, and in the surrounding forests are at low to moderate risk to wildfire risk in the future. There are approximately 475 structures in this low to moderate risk zone. As the trees and underbrush continue to re-establish and grow in this area, the fire risk will increase.

This entire area has structural fire protection provided by Shoshone County Fire District №2 with a station in Kellogg. Wildland fire protection responsibilities are shared by the Idaho Department of Lands and Fire District №2.

The water source for the community of Wardner is the North Fork of the Coeur d'Alene River. However, the Milo Creek and Big Creek drainages south of Wardner are tapped to provide domestic water supplies for the communities downstream during an emergency. The forests in this drainage are young, healthy, and at only a slight to moderate risk to wildfire. As these forest stands continue to grow, the fire danger will likely increase without management. Because it may serve as a backup domestic water supply, the forest conditions in the Milo and Big Creek watersheds should be monitored.

Multiple access routes for the residents of Milo Creek between Wardner and Kellogg is a minor factor at this time because of the low fire risk rating; however, access through this area should be improved in the future because it will become beneficial in the event of an emergency.

Although dual access is provided in the Montgomery Creek drainage, the potential escape route to the north is not signed. It is highly recommended that this route be signposted all the way to Prichard. Home access bridges in this drainage should be evaluated for maximum load ratings with the ratings posted and kept on record at Shoshone County Fire District №2 and the IDL's Cataldo office. From a fuels standpoint, the brush fields to the west of the gulch present some degree of risk. However, this brush field is comprised primarily of hardwoods, has an eastward aspect, and there are no homes located on the slope above it. Live fuel moistures will tend to retard any ignition and subsequent spread suggesting that a well-maintained defensible space around the homes adjacent to this brush field would be adequate to protect homes and property from the effects of wildland fire.

The Moon Creek drainage east of Montgomery Creek is similar in forest fuel type and conditions. However, the US Forest Service road that would normally provide an escape route to residents has been blocked. National Forest Development Road 930, when originally built, provided an escape route to Prichard and other points north from this valley. The US Forest Service is strongly encouraged to re-evaluate this permanent road closure in favor of a solution that would allow its utilization in the event of a life threatening emergency.

The forests surrounding Kellogg should be monitored over the next 10 years as the young western white pine stands mature and underbrush thickens. Pruning and the creation of fuel breaks along the natural terrain features should be implemented as funding becomes available. Although it is at a low risk to wildfire currently, this will change over time.

Kingston

Fuels Assessment – 1 mile from home sites

Kingston is located on the western side of Shoshone County along the I-90 corridor. Homes in this community are scattered near the interstate and along the river valleys running north and south including French Gulch, Hunt Gulch, and along the Coeur d'Alene River. Slopes near

homes are more gentle in this area than most of the county with structures scattered in a more diverse pattern. A small amount of livestock husbandry is practiced in the vicinity of Kingston.

Forest habitats are a range of wet site species near the river to dry site species along the hill slopes and ridge tops. Mature forests in this area are characteristically dense with a moderate amount of dead and dying trees in the canopy and a noticeable amount of duff that could carry a ground fire.

Wildfire spread in this region would most likely be carried in the tree canopies and move in the characteristic west to southwest direction after ignition. Residents in this neighborhood have ample escape routes when needed, but there are no signs or planned routes for residents to follow. Home defensibility in this area ranges from excellent to poor. For the most part, the scattered nature of the home sites dictates that defensibility zones will be built around individual homes or possibly around smaller clusters of homes.

Fuels Assessment – 3 miles from community center

Beyond the immediate zone of homes in this area, the ridge tops support a variety of forest types with moderate risk factors for wildfire.

Community Risk Assessment

This community along the Coeur d'Alene River had a population of 500 as reported in the 2000 Census. Combined with Enaville, Kingston is less than 2 miles from Pinehurst and is scattered in all directions from the intersection of the Coeur d'Alene River Road and I-90. There are approximately 288 structures within 3 miles of Kingston, excluding those attributed to Pinehurst. The structures within 0.25 miles of I-90 are not considered at high risk to wildfire; however, those beyond this distance have an increased risk. There are approximately 151 structures in this high-risk zone.

Structural fire protection is provided by subscription to residents of this community by Shoshone County Fire District №2 with a station in Pinehurst. The area from Kingston upriver to approximately Coal Creek has no structural protection. Wildland fire protection responsibilities are shared by District №2 and the Idaho Department of Lands. Wildland protection is transferred to the US Forest Service office in Smelterville at Bumblebee Bridge.

Because of the extremely rural nature of this community, most of the nearly 300 structures are next to the wildland urban interface. Homes have generally been built at the junction of trees and farm fields. Livestock feed in many fields reducing the threat from a grass fire, but the potential threat presented by the forest is still a concern for many residents. Individual home site defensibility zones should be constructed around homes and groups of homes to help prevent losses from wildland fires.

A few homes in this zone exhibit extremely risky characteristics such as firewood stacked against the wooden deck, cedar shake roofs, dense forest trees and shrubs against the house, and limited access. These homes are not only themselves at risk to wildfire, they also put other

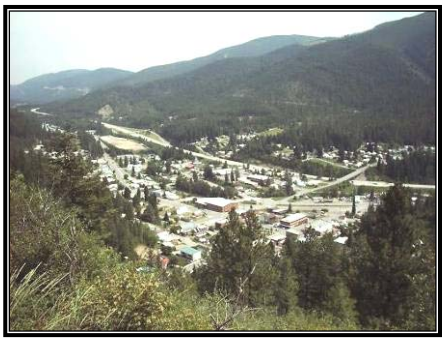
homes at risk to a fire that starts in the home and spreads to the forest and then other homes. These homeowners are strongly encouraged to reduce individual home site risk factors.

Many of the homes located along river access their homes through the use of single driveway bridges. While some of these stream crossings are well constructed, others are not. As with many areas in the region, Kingston is in need of maximum load ratings on bridges with the results kept on file at the local fire station.

Mullan

Fuels Assessment – 1 mile from home sites

Located near the eastern extent of Shoshone County, Mullan sits along Interstate 90, and the South Fork of the Coeur d'Alene River. This community is fairly flat in comparison to other towns in the County. Forests not only surround the community, there are natural forest areas within the borders of town as well. Access to and from Mullan is provided by Interstate 90 both to the east and west.



Forest conditions in the area differ from one side of town to the other. North of Mullan, the slopes are mostly south facing and dominated by Douglas-fir, ponderosa pine, western white pine, and assorted other species. The south side of town is relatively flat to north facing and supports western red cedar, western white pine, western hemlock, grand fir, and lodgepole pine. Slopes in both locations range from fairly flat to over 40%.

In the Mill Creek drainage north of Mullan, a few dozen homes are located very near the main road. The forests in this drainage directly abut private homes. As is the case with other home sites in the county, these homes would greatly benefit from the construction of defensible space; removal of hazard trees, pruning, and removal of slash and other debris. There has been forest management activities conducted on private property west side of the road. Selective harvesting in this area has resulted in a reduced wildfire risk.

Fuels Assessment – 3 miles from community center

There is no significant difference between the forest conditions immediately surrounding the townsite and the conditions found within a 3 mile radius except for the ecological differences dictated by changes in elevation. Landowners in this zone should consider silvicultural prescriptions that will not only accomplish their management objectives, but will also lessen the wildland fire risk to the individual property and the community. These types of practices, implemented on a broad scale, have the potential to make a meaningful difference in fire protection to the community of Mullan.

From Mullan elevations climb to over 5,000 feet on US Forest Service managed land. The BLM is also a significant landowner within 1 mile of the community. Forest health issues dominate any discussion of this forest ecosystem as insects have infected large areas killing thousands of trees. Dead trees are easily seen from I-90 near Mullan and into Montana. This landscape presents a significant fire risk to the communities of Mullan and Larson and the homes along the South Fork of the Coeur d'Alene River. The federal land management agencies responsible for the stewardship of these forests should make every effort to mitigate the potential for loss due to a wildfire.

Community Risk Assessment

Mullan recorded 821 residents during the 2000 Census. This community has approximately 426 structures located within 3 miles of the city center. Not all of these structures are considered at high risk to wildfire loss. Buildings within 1 mile of the city center are at risk, but not to the degree of structures located beyond this distance. It is estimated that 60 of these structures are at high risk and that the remaining 366 have a moderate risk to wildfire. Shoshone County Fire District №3 and the Mullan Volunteer Fire Department both provide structural fire protection. The Idaho Department of Lands provides wildland fire protection.

As mentioned, the homes located in the northwest corner of the community along Mill Creek have been the beneficiaries of good forest management practices near their homes. However, there are still a few activities that will further increase the defensibility of these homes such as pruning. While most of this area is private land, there is a small amount of BLM ground. Firewise techniques should be conducted from the edge of the BLM land on the northern extent southward on the east facing slopes all the way to the area just above Faye Street.

The homes along the northern edge of the community are bordered by forest. Normally, this condition would dictate that a large buffer zone be created upslope of the homes where trees are thinned and debris is removed. However, the trees that border the homes along the northern edge of the community only extend upslope approximately 300 to 400 feet and give way to shrubs, scattered trees, and the Mullan "M". Homeowners should create a defensible space around their homes that includes pruning, thinning, debris and slash removal, and other Firewise landscaping and construction techniques.

South Mullan is divided into two distinct groups of homes separated by a stand of trees bordering Boulder Creek. This stand is substantial and provides both a visual and a noise buffer from the Interstate. However, this dense thicket of conifers is also a fire risk. Given the average August conditions at midday, a fire starting on one side of the community could spread to the other side in as little as 45 minutes. The number of homes in the area and the impact forest management activities would have on lessening potential losses justifies giving this area a high priority for treatment.

Further south of the community, timber harvesting activities have left a stand that will retard the spread of wildfire. It is strongly recommended that the patches of trees surrounding and within South Mullan be thinned and pruned with all of the slash removed.

Residents are advised to create defensible space around their homes in conjunction with the fuel mitigation activities on forested areas both within and surrounding the community. Many homeowners in South Mullan have wood piles against structures, rain gutters filled with needles, and trees touching or overhanging roofs and siding. These conditions put all homes in the community at risk. A community focus to make homes "fire-safe" would benefit the entire town.

Beyond the community's borders is a variety of wildland urban interface conditions from houses in the valley surrounded by a combination of trees and grass fields to homes located completely within the forest. While fuel conditions are not at the highest risk for wildfire spread,

homeowners are advised to create defensible space and limit the potential that a fire could ignite on their property.

Nine Mile Creek Drainage

Fuels Assessment – 1 mile from home sites

The Nine Mile Creek drainage runs primarily north-south from Wallace through the community of Bunn. Nine Mile Road provides access between Wallace and Bunn and the communities to the north including Prichard and Murray. The ownership of the drainage is a scattering of BLM, US Forest Service, and private owners. Forest conditions in the drainage support wet site tree species such western red cedar, western hemlock, grand fir, and some of the drier site species such as Douglas-fir and ponderosa pine.

Forest management activities in this drainage have created a mosaic of forest conditions from dense forests to young, open timber. Fire spread would not be expected to move rapidly or build intense heat except for the influence of the very steep slopes. In less than 5 miles, the elevation rises from 2,700 feet in Wallace to 4,186 feet at Dobson Pass. These steep slopes will dictate that any fire fighting activities will only be able to hold a control line at the crest of ridges. Home site protection will be reliant on the creation of defensible space prior to an ignition.

Steep canyon walls and the north-south orientation of the drainage both contribute to the wet microsite conditions found in the area. Although this translates into a reduced ignition risk compared with the dry conditions to the east in Canyon Creek, it also means that the site has produced more biomass that will be available to burn. This increased fuel loading is a concern, especially when high temperatures, low humidity, and winds combine to further increase the wildland fire potential.

A few homes in Nine Mile Creek are surrounded by fields and some have thinned trees near their home. These sites are considerably more protected from a potential forest fire than their neighbors.

Fuels Assessment – 3 miles from community center

There is no significant difference between the forest conditions surrounding the home sites and the timber found along the ridges. The differentiation can be ignored in favor of considering the creation of defensible zones around the homes.

Two escape routes for residents of this community are available. The most immediate route would be towards Wallace to the south. In the event this route is blocked, it would be possible to drive north over Dobson Pass to Prichard. These escape routes should be clearly marked.

Community Risk Assessment

Nine Mile Creek drainage is located north of Wallace and has approximately 77 structures. All of these structures are surrounded by the forest and are difficult to access due to terrain. These structures are considered to be at high risk to loss in the event of a wildfire.

Structural fire protection is provided by Fire District №1 with stations in Wallace and Osburn. Wildland fire protection is provided by the Idaho Department of Lands.

The greatest risk for casualty loss in the Nine Mile Creek drainage is a wildfire that starts in the vicinity of Wallace and spreads up-canyon in the direction of Bunn and Dobson Pass. If this ignition is accompanied by upslope southerly winds, the steep canyon walls may funnel heat,

flames, and smoke up the river. This "worst-case-scenario" wildfire would be difficult to suppress. It would be challenging to evacuate the residents of the area by exiting the drainage via the Nine Mile Creek Road to the north into Prichard. The creation of defensible zones around home sites according to Firewise standards is the key to protecting personal property.

Aggressive home defensible space activities should be carried out by all homeowners as many of the homes in this drainage have wood porches, trees overtopping roofs, firewood stacked against houses and garages, and other high risk conditions.

Analysis of the region indicates that forest conditions along the ridge separating Nine Mile Creek and Canyon Creek are at a high risk to fire ignition and subsequent spread. Past forest management activities will help mitigate potential spread, but it is unlikely that these activities will serve to halt a fire's advance. Once a fire has started in either of these drainages, it is likely that the fire will spread over the ridge and down the adjoining canyon moving with the prevailing northwesterly winds. Fires that back down a slope move more slowly, but tend to burn intensely because of an ample supply of oxygen. In both drainages, defensible space around homes will be the key factor saving residential property in the event of a wildfire.

Forest management activities along the ridge separating Canyon Creek and Nine Mile Creek may prove to be beneficial to many of the surrounding communities. Drastic forest stand modifications are warranted in this zone. Forest fuel modifications would reduce the risk of fire spread dramatically. This entire ridge would benefit from slash treatments involving a mixture of piling and burning and/or underburning in the fall or spring. This would reduce the potential for loss due to a wildfire in Wallace and all communities in both Canyon Creek and Nine Mile Creek. The majority of these modifications will be on private and BLM forestlands.

Osburn

Fuels Assessment – City Limits

The city of Osburn is a concentration of homes and businesses located mainly to the south of I-90. The southwestern perimeter of this community defines the wildland-urban interface for these residents. Unlike most communities in Shoshone County, homes and businesses are not densely concentrated along the forested slopes rising from the valley floor. For the most part, structures are set back from the forest edge providing a defensible buffer against a possible wildland fire.

The exception to this is found along the city perimeter near 1st Street where homes are encroaching on forestland. This proximity to the forest is coupled with risky homeowner practices such as stacks of firewood against wood siding, a continuous ladder of limbs from the ground, branches overhanging wood decks and siding, and other high ignition risk practices. This highest risk area is only 2,200 feet long and would benefit from the combination of homeowners reducing their individual risk factors and the creation of a community defensible zone such as a shaded fuel break.

This area is a high priority for the community of Osburn for a number of reasons. First, the predominant direction of fire spread in this region is from the southwest to the northeast; thus, a fire that ignites on the ridge south of Osburn has the potential to spread in the direction of the

community. Second, this area is the city's primary water source. Third, a structure fire near these homes has the potential to burn uphill and ignite the forest. Mitigation activities have the potential to reduce the risk of casualty loss in Osburn.

Fuels Assessment – 1 mile from home sites

The community of Osburn is located in the I-90 corridor between Wallace and Kellogg. Homes and businesses are generally in a concentrated cluster near the Interstate. Steep hillsides rise from the community edge. Scattered mining enterprises are located in the valleys to the south of Osburn with gravel roads dead-ending a few hundred yards up each hill. Forests in these areas are characteristically north aspect habitiat types dominated by western red cedar, western white pine, Douglas-fir, ponderosa pine, and grand fir. Forest health is generally good with a few pockets of dead or dying trees, but not the extent found in other parts of Shoshone County.

Forest management activities on the hillslopes south of Osburn have thinned forestlands leaving healthy dominant and co-dominant trees with little underbrush. The slopes north of Osburn were not burned like those to the east nor do they have the same environmental challenges as the slopes to the west resulting in a fully forested hillside. This south aspect is dominated by ponderosa pine and Douglas-fir with scattered shrubs in the understory. Because of the exposure to direct sunlight, the forest habitat is much drier than that across the valley on north facing aspects.

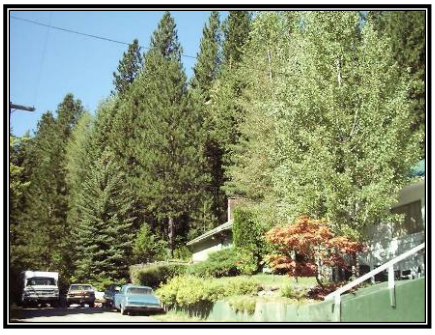
Fuels Assessment – 3 miles from community center

The lands beyond the 1 mile perimeter of Osburn are primarily federally managed forestlands. These forests are characteristic of high elevation woodlands with past evidence of fire scars and forest health challenges. Most of the lands in this zone are well roaded with primary access provided by the I-90 corridor as well as from secondary points to the north and south.

Community Risk Assessment

The community of Osburn had 1,579 residents at the Census in 2000. Although this community is concentrated in a definable city, there are many smaller communities in the immediately surrounding area. These communities include Silverton, Terror Gulch, Sunnyslope, Big Creek, and parts of Moon Creek. There are roughly 1,179 buildings within 3 miles of the city center. Out of these structures, nearly 611 are considered to be at high risk to wildfire. These structures are outside of the community center along the edges and scattered throughout the river drainages and forested areas.

Shoshone County Fire District №1 provides structural fire protection with a station located in Osburn. Wildland fire protection is provided by the Idaho Department of Lands.



Silverton

Silverton is located between Osburn and Wallace on the north side of I-90. This small community is home to the historic Wallace Ranger District headquarters of the US Forest Service. This heavily wooded area demonstrates

specific factors that increase risk for the residents of this community. The perimeter of the community, with the exception of those structures within a few hundred feet of I-90, has a high risk of wildland fire loss. Additionally, the forestlands beyond the immediate community boundary have high wildfire risk factors that include reduced forest health, limited access, and steep slopes.

Within the community, residents should reduce individual home site risk factors by stacking firewood away from flammable structures, eliminating tall and cured grasses next to structures, removing dead and dying trees from the immediate location vicinity of structures, and thinning and pruning healthy trees around homes.

The entire community should be protected by a defensible zone that provides a fuel break to prevent the movement of a fire between the forest and the homes. Although this would be an extensive project, land managers would be able to take advantage of natural fuel breaks like openings and fields and roadways. In addition, the fuel break would not have to be a drastic treatment as the project area would concentrate on removing ground and ladder fuels, thinning subordinate stems, piling, and disposing of the debris.

Beyond the fuel break, federal land managers should consider forest management activities targeting improved forest health and reduction of fire risk to this community.

Sunnyslope & Terror Gulch

The community of Sunnyslope holds a singular distinction as being one of the few communities in Shoshone County built above the valley floor. Although this real estate provides scenic views of the surrounding landscape, it also provides increased risk of wildfire loss from fires igniting below and spreading uphill. Access to this area is provided through Terror Gulch where over 40 structures are located. The access road to Sunnyslope and to the homes in Terror Gulch is less than a mile and not at high risk to wildfire.

However, the lands on the west side of Terror Gulch represent some degree of risk as past forest management activities have left logging debris and brush fields that if ignited could provide embers and firebrands that would ignite dry fuels surrounding these homes. In addition, the private roads would be difficult for fire suppression equipment to traverse in order to access the BLM and US Forest Service lands located to the west and north. The roadway is partially eroded from inadequate drainage structures. It is narrow and has many tight turns with limited turnouts. This road is a primary access point to fight wildfires located north of I-90. Any fire in this location would likely threaten homes in Terror Gulch and Sunnyslope. Because of these factors, it is highly recommended that Shoshone County and the landowners in this area cooperate to improve the running surface of this road.

The homeowners in Terror Gulch are mostly located near the stream with access provided across private bridges. These bridges should be evaluated and rated with weight limits posted onsite and kept on record at the Shoshone County Fire District №1 office. These homes are at a low to moderate fire risk, but they would still benefit from the creation of defensible space.

Within Sunnyslope, the risk factors are generally moderate. The forest surrounding this community is dominated by young ponderosa pine with an understory of grasses and forbs. While most of the homes are surrounded by green lawns or paved road surfaces, some are adjacent to the forest type fuels. A defensible zone around this community could be created by pruning trees along the perimeter of the community. The few homes surrounded by flammable materials on all sides would benefit from defensible space treatments, improved access, and reduced home site risk factors.

Pinehurst

Fuels Assessment – 1 mile from home sites

Pinehurst is located just 4 miles within the western boundary of Shoshone County. This community is one of only two that has fairly flat terrain, gentle slopes, and a dispersed neighborhood of homes. The forests in this area are a mixture of ponderosa pine, Douglas-fir, and western larch, with wetter site species scattered mostly on north or east aspects. These forests experience fire spread primarily through the fine herbaceous fuels. This type of surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrubs and tree branches, contribute to the intensity.

The homes in this community are concentrated around the downtown area, south of the golf course, and in Pine Creek.

Fuels Assessment – 3 miles from community center

Private, BLM, and US Forest Service owners are well represented in this area. However, unlike most of the I-90 corridor, these properties are not bounded by the high ridges characteristic of the Silver Valley. Instead, slowly climbing river valleys dominate. The management on these lands is highly varied with some parcels showing evidence of logging and effective forest management for reducing fire risk in the wildland-urban interface, particularly in the French Creek drainage.

Community Risk Assessment

Pinehurst reported a population of 1,722 residents during the 2000 Census, earning it the distinction as the second largest community in the County. When considering an area about 1 mile beyond the city center, there are approximately 724 structures. The downtown area has a low risk to wildfire. The structures along the community perimeter and scattered in the drainages, on the hillsides, and in the forestlands total 269 structures that have a high risk to wildfire loss.

This area receives structural fire protection from Shoshone County Fire District №2 with a station in Pinehurst. Wildland fire protection is provided by the Idaho Department of Lands.

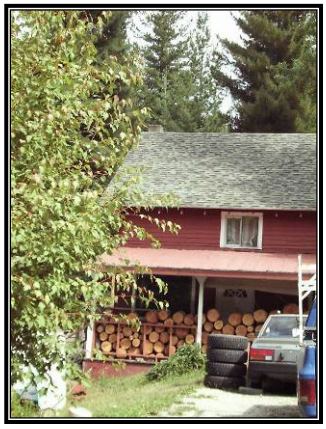
Downtown

The downtown area of Pinehurst has many large trees, mostly ponderosa pine. Homes are concentrated into a continuous block with the outer perimeter directly flanking forest type fuels. While some of these trees are young, most are mature with a continuous underbrush layer. To further complicate matters, many of the outer perimeter homes show risk factors such as wooden

decks, firewood stacked against the homes, cured and tall grasses near the homes, and other factors that increase structural ignitability.

As with many communities in the county, Pinehurst will benefit greatly from the creation of a community defensible zone such as a shaded fuel break or greenbelt. This type of treatment will be most effective along the southern border of the community. The western side of the community is flanked by Pine Creek and has ample hardwoods and wet site shrubs to provide a suitable defensible zone in all but the most extreme drought years.

Fairview Avenue



Fairview Avenue accesses a small area including Camas Street and Underwood Avenue on the east side of Pinehurst where just over a dozen homes are located. These homes are surrounded by tall shrubs, forbs, grasses, and mature trees. In addition, the majority of these homes exhibit risk factors such as firewood stacked on wooden decks against wood siding. Some have cedar shake roofs, and most are at high risk to wildfire loss. It is highly recommended that these homeowners reduce specific risk factors around their own homes and that a community defensible zone be created. The fuel break would be shaped like a horseshoe that is open to the west.

Country Club Lane

Country Club Lane crosses Little Pine Creek to access an area containing a few dozen homes. The fuels within the community are generally controlled as most of the residents keep green lawns and trimmed bushes around their homes. However, it is the perimeter of this neighborhood that provides concern from a wildfire control standpoint. Many of the outer perimeter homes are shrouded by tall trees and thick shrubs and exhibit many characteristics that increas structural ignitability. Residents along the perimeter should be encouraged to reduce specific site risk factors. A community buffer zone should be created to help protect the neighborhood from wildland fire.

Prichard, Eagle, Murray

Fuels Assessment – 1 mile from home sites

All communities in this area are characterized as a mostly flat river bottom transitioning to steep, timbered slopes. Forest fuels are fairly homogenous throughout the area even though topography is mixed.

Land along the river is mostly privately owned and is the location of almost all homes in the area. In all areas, the lighter fuels transition quickly to mature or over mature timber with a closed canopy. Where the canopy is open, ladder fuels are present.

A few structures are surrounded by large expanses of fields or grassy meadows. These are located in the lower most portions of the main river canyon and also in the Eagle Creek drainage. These areas have large greenbelts surrounding structures and are fairly defensible. Most area; however, have structures that are surrounded by timber. Structures are also built against the steep slopes.

Timbered fuels are almost universally mature or over mature, close canopied mixed conifer with a heavy component of down wood debris. On north slopes and in the draws, there is a cedar component in the forest structure. Only where residential or logging activity has occurred is there less ground fuel loading. Fire would spread rapidly through the grassy fuels particularly when cured and/or during windy conditions. If not stopped quickly, fires would transition into timber fuels. Forest type fuels tend to support a more intense fire and could include individual tree torching, crowning, and spotting. Because of the steepness of the canyons, structures adjacent to or within the forest would be at great risk should a crown fire occur.

The forests surrounding Murray have slightly different characteristics than the forests near Eagle and Prichard. This community is located at a slightly higher elevation with little to no open fields. The forests have a closed canopy with a component of dead or dying Douglas-fir on steep slopes. Some of these areas have been commercially thinned.

The Prichard-Murray Volunteer Fire Department has a station with 11 volunteers near Prichard to provide structural fire protection. Wildland fire protection is provided by the US Forest Service.

Murray

The Census of 2000 estimated that there were 100 residents living in Murray. There are approximately 65 buildings in this community all of which are considered to be at high risk to wildfire loss. The Prichard-Murray Volunteer Fire Department has a station with 5 volunteers in Murray to provide structural fire protection. Wildland fire protection is provided by the US Forest Service.

The homes are highly concentrated in the community of Murray. The forestlands to the north have been managed to differing degrees with a mixture of young and older forests. Forest health issues have been prevalent creating a large component of dead or dying trees surrounding the community. A community defensible zone where high risk fuels are removed will serve to greatly reduce the risk of casualty loss of homes in the event of a wildfire. In this zone, the removal of shrubs and ladder fuels should be a priority. A fire line around the perimeter should be created. Because of the forest habitat type and aspect, this defensible zone will have to be maintained into the future with periodic slashing of the shrubs and tree growth that will re-sprout after treatment. Maintenance needs should be evaluated every 5 years.

US Forest Service Development Road 939 begins in the center of Murray and extends in a northeasterly direction into the forestlands. There is a locked gate preventing access to this route. In the event of a wildfire evacuation and emergency access may be delayed because of this locked gate. The community should ensure the key to this gate is readily available in the case of an emergency.

Finally, many of the homes in Murray are at high risk to fire spread because of risk factors such as firewood stacked against homes, dry grasses and shrubs against structures, tires piled against homes, and needles or leaves on roofs. All of these factors and others combine to increase the chance that individual homes will ignite in the event of a wildfire that creates flying embers or spreads along the ground through cured grasses or shrubs. Individual homeowners should reduce

this risk by creating defensible space according to Firewise landscaping and construction standards.

Prichard & Eagle

Although the Census reports that there were only 20 individuals living in Prichard during 2000, this number does not represent the high number of recreational homes and the many individuals that receive their mail in other locale. There are approximately 164 structures within 3.25 miles of Prichard including those associated with the community of Eagle. These buildings are located primarily along the Coeur d'Alene River near paved roads. However, these building sites are also surrounded by dense forests with a high propensity for fire ignition and rapid fire spread. All of these buildings are at high-risk to wildfire loss. The Prichard-Murray Volunteer Fire Department has a station in Murray with 3 volunteers to provide structural fire protection. Wildfire protection is provided by the US Forest Service.

The homes of this region are at a high degree of risk because many of them are located in the forest with trees adjacent to and overhanging roofs and siding. Forest health issues have created a significant component of dead and dying trees. Standing dead and down wood will increase the intensity of a wildland fire.

It is strongly recommended that each sub-community in this area create home defensible space that includes the removal of understory shrubs and grasses and thinning and pruning nearby trees. Community defensible zones will be difficult to create due to the rough terrain and the influence of the North Fork of the Coeur d'Alene River.

Access to this area is provided by numerous paved roads that will serve as evacuation routes in all directions. However, because of the high recreational use, it is doubtful that all visitors in the area will know of these evacuation routes in the event of a wildfire. Therefore, these routes should be clearly signed. Access to some homes is provided by a bridge spanning the North Fork of the Coeur d'Alene River. The weight capacity of this bridge is unknown and should be evaluated and posted as soon as possible.

The homes in the community of Eagle have a low risk rating because of cattle grazing and forest management activities.

Smelterville

Fuels Assessment – 1 mile from home sites

The area around Smelterville is a superfund clean up site where forest vegetation is sparse and wildfire risk is low.

Community Risk Assessment

Smelterville had a population of 464 individuals reported during the 2000 Census. This is a small community with a concentration of buildings near the community center and a dispersion of structures in the surrounding hillsides and near the airport. There are approximately 369 structures within 1.25 miles of the community center. There are approximately 130 outlying structures that are at moderate risk to wildfire loss. Many of these structures are associated with mining activities. Structural fire protection for Smelterville is provided by Shoshone County Fire District №2 with stations in Pinehurst and Kellogg. Wildfire protection services are provided by the Idaho Department of Lands.

Wallace

Fuels Assessment – 1 mile from home sites

Wallace has a long history with wildland fires. During 1910 Fire, lives were lost and a portion of the community was burned. Today, Wallace is the county seat and home to over 1,000 people. However, the forests that fueled the 1910 Fire have grown back and are once again cause for concern.

North of the South Fork of the Coeur d'Alene River, south-facing hillsides still bear the scars of the 1910 and more recent wildfires. Forest vegetation has been slow to reclaim these sites leaving scattered trees, little underbrush. Although this is a reminder of the catastrophe the region experienced long ago, it also provides a natural buffer against a wildfire that might occur today. These areas have a low risk of rapid wildfire spread and require little in the way of fuel mitigation efforts.

The Canyon Creek drainage and the Nine Mile drainage lie north and east of Wallace. The fuels treatment recommendations for these watersheds are detailed in separate sections of this document.

The south side of the Coeur d'Alene River is forested with a diversity of tree species where forest health is generally good with a few isolated exceptions. These forests are young with a developing shrub layer that is not currently a high concern for wildfire spread except on the southern slope.

Fuels Assessment – 3 miles from community center

The land south of Wallace to the 3 mile buffer perimeter is a checkerboard of ownerships including the US Forest Service, the BLM, the State of Idaho, and private owners. Public access is provided on the Placer Creek Road (USFS Road #456). Various forest health conditions and use patterns have created a moderate to high fire danger in this drainage. Concerns in this area include damage caused by a severe microburst and insect and disease problems scattered throughout the valley. Recreational access has increased in recent years both on the main road and on trails.

Many legacy trees in this area bear the scars of past fires. Forests surrounding Wallace are dominated by Douglas-fir, ponderosa pine, western larch, grand fir, and other species. The slopes are predominately south facing. This area has a moderate to high risk for wildfire ignition due to the fuels, the southerly aspect, the potential for lightning strikes, and the potential for ignition from human sources.

A fuel break extending from both sides of Placer Creek Road from the edge of the BLM ownership to the summit at Moon Pass should be created. In this zone, trees should be thinned leaving only scattered fire-resistant mature trees such as ponderosa pine and western larch. Logging debris should be piled and removed, shrubs and non-merchantable trees should be cut to the ground, and trees left onsite should be pruned. This fuel break will allow resource managers a better opportunity to suppress a fire that starts to the south. The

resulting buffer will allow fire fighters a control point while also reducing the potential for human caused ignitions.

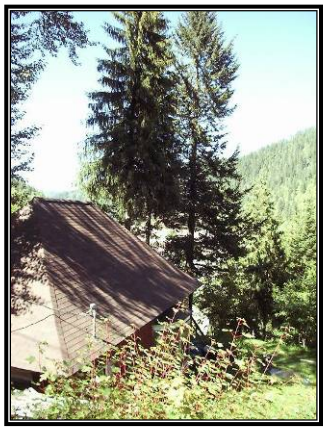
A number of areas in this valley have burned in the past creating a mosaic of forest conditions from mature forests to brushy hillsides. The US Forest Service and the BLM should consider prescribed burning in these brush fields in order to provide an opportunity for reforestation and to reduce the fire risk. This valley has been identified as a priority area for Shoshone County because of the existence of high risk fuels, intense recreational access, and increased potential for ignitions. In addition, Placer Creek is a municipal water source for Wallace and should be protected from the negative effects of a stand replacing wildland fire.

Community Risk Assessment

Wallace had a population of 1,010 reported in the 2000 Census. This community has approximately 394 buildings located within 1 mile of the community center. The downtown area is considered at low risk to wildfire loss; however, the perimeter of the community, especially along the southern edge, is at high risk to loss. Out of the nearly 400 buildings located around this community, approximately 164 have a high risk to wildland fire. The Shoshone County Fire Protection District №1 provides structural fire protection for homes in the city. The Idaho Department of Lands provides wildland fire protection.

South Hill

The south side of town, east of Placer Creek, climbs from the South Fork of the Coeur d'Alene River to a steep, forested ridge. Homes have been built on this hillside within thick stands of trees and herbaceous shrubs such as ninebark, ocean spray, snowberry, and others. Residents on this hillside have a very high risk to losses from a wildfire in the surrounding forestlands and from a structure fire igniting brush and timber within the neighborhood.



These many factors combine to create an increased risk to property and life safety. This area has a thick shrub layer, a high density of trees with branches extending to the ground, limited access, and tightly packed homes. The South Hill is closely situated above the downtown area of Wallace and below inaccessible forestlands. This neighborhood has a high risk of a structure fire spreading to the forest and subsequently threatening other homes. In order to reduce the risk of casualty loss in the event of a fire, this community should consider implementing the following mitigation techniques:

- Remove and chip underbrush from the immediate vicinity of homes and extending upslope.
- Prune all trees to a height at least 15 feet above the ground or roof tops.
- Greatly reduce or eliminate parked cars along the main streets as these hinder access by fire fighting equipment.
- Limit or restrict new home construction on the South Hill until fire access and basic risk mitigation has been addressed.
- Thin trees in the forestland above the neighborhood to eliminate ladder fuels and open up the canopy. Dispose of the slash and debris.

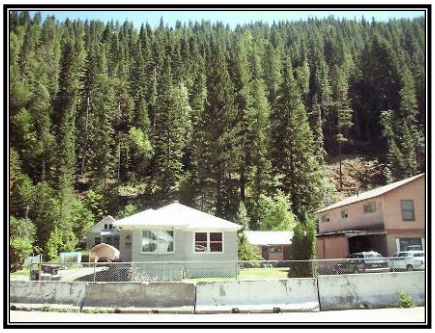
- Maintain this defensible zone by conducting maintenance activities at least every 5 years.

The South Hill is considered to have the highest risk to potential casualty loss in the event of a wildfire in Shoshone County.

Placer Creek Area

Placer Creek gained notoriety as the locale Edward Pulaski and his 45 man crew evaded the 1910 Fire by seeking refuge in a mine shaft. Although six members of that crew perished, the tale of the leadership that Pulaski exhibited is legendary. Placer Creek is important today for a variety of reasons including the location of the Wallace watershed, access to Moon Pass and other backcountry areas, and as a home for many residents of Wallace.

Most of the homes along Placer Creek have excellent access although some are restricted by an unrated private bridge. These bridges should be evaluated for weight loads, posted, and a record kept on file at the local fire station.



Limited forest management activities on the east side of Placer Creek have removed high risk fuels. These activities will enhance a neighborhood defensible space that should be created around homes along Placer Creek. This fuel break should extend from Pearl Street south and southwesterly along Placer Creek Road to the end of the home sites.

The area adjacent to Placer Creek in the northwestern reaches of Wallace appear to have a slight to moderate risk to loss from wildfire but would benefit from homeowners on the perimeter creating a fire-resistant buffer along the west side of the community.

Chapter 6

Mitigation Recommendations

Critical to implementation of this Community Wildfire Protection Plan are the identification and implementation of an integrated schedule of action items targeted at achieving a reduction in the number of human caused fires and the impact of wildland fires in Shoshone County. This section of the plan identifies and prioritizes potential mitigation actions, including treatments that can be implemented in the county to pursue that goal. As there are many land management agencies and thousands of private landowners in Shoshone County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across various ownerships.

The federal land management agencies in Shoshone County, specifically the USDA Forest Service and USDI Bureau of Land Management, are participants in this planning process and have contributed to its development. Where available, their schedule of land treatments have been considered in this planning process to better facilitate a correlation between their identified planning efforts and the efforts of Shoshone County.

Shoshone County encourages the building of 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.

All risk assessments were made based on the conditions existing during 2010. Therefore, 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 regularly to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

Maintenance and Monitoring

As part of the policy of Shoshone County, the Community Wildfire Protection Plan will be reviewed at least annually at special meetings of the WUI planning committee, open to the public and involving all municipalities/jurisdictions, where action items, priorities, budgets, and modifications can be made or confirmed. Amendments to the plan should be documented and attached to the formal plan as an amendment. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

Prioritization of Mitigation Activities

The action items recommended in this chapter were prioritized through a group discussion and voting process. The action items in Tables 6.1 – 6.4 are ranked as "High", "Moderate", or "Low" priorities for Shoshone County as a whole. The CWPP committee does not want to restrict funding to only those projects that are high priority because what may be a high priority for a specific community may not be a high priority at the county level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying criteria is a necessity for a functional mitigation program at the county and community level.

Policy and Planning Efforts

Wildfire mitigation efforts must be supported by a set of policies and regulations at the county level that maintain a solid foundation for safety and consistency. The recommendations enumerated here serve that purpose. Because these items are regulatory in nature, they will not necessarily be accompanied by cost estimates. These recommendations are policy related and therefore are recommendations to the appropriate elected officials; debate and formulation of alternatives will serve to make these recommendations suitable and appropriate.

Table 6.1. Action Items in Safety and Policy.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.1.a: Improve address and road signage to include address block numbers on street signs within cities and rural address numbers along the nearest public access road. Establish and enforce a penalty for non-compliance.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Commission **Support:** Shoshone County Emergency Management	2011-2013	New project from Multi-Hazard Plan
6.1.b: Develop Shoshone County Planning and Zoning policy to encourage or require new developments in the wildland urban interface to create a wildfire defensible space around new structures.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Commission and city councils **Support:** Shoshone County Emergency Management, Planning & Zoning, and Building	2011	New project from Multi-Hazard Plan
6.1.c: Develop a Shoshone County Evacuation Plan to include recommended escape routes, provide signage to indicate where the routes are, and add these routes to the County's sign maintenance program.	**CWPP Goal #5** Priority Ranking: Moderate	**Lead:** Shoshone County Commission **Support:** Shoshone County Emergency Management and Road Department	2015	New project
6.4.d: Develop a Shoshone County ordinance or WUI code that establishes adequate road and bridge standards, structural water supply, and prohibits building on inaccessible sites.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Planning & Zoning **Support:** Shoshone County Fire Districts and Fire Chief's Association	2015	New project
6.4.e: Establish a mechanism that will ensure Shoshone County receives additional tax revenues to compensate for coverage provided to new construction.	**CWPP Goal #5** Priority Ranking: Moderate	**Lead:** Shoshone County Commission **Support:** City governments	2020	New project

Fire Prevention and Education Projects

The protection of people and structures will be tied together closely because the loss of life in the event of a wildland fire is generally linked to a person who could not, or did not, flee a structure threatened by a wildfire or to a firefighter combating that fire. Many of the recommendations in

this section involve education and increasing wildfire awareness among Shoshone County residents.

Residents and policy makers of Shoshone County should recognize certain factors that exist today, the absence of which would lead to increased risk of wildland fires in Shoshone County. The items listed below should be acknowledged and recognized for their contributions to the reduction of wildland fire risks:

Forest Management has a significant impact on the fuel composition and structure in Shoshone County. The forest management programs of the Idaho Department of Lands, federal agencies, and several industrial forestland companies in the region have led to reduction of wildland fuels. Hazardous fuels generated from forest practices on state and private land are treated in accordance with regulations in Idaho Code and Administrative Rules. Furthermore, forests are dynamic systems that will never be completely free from risk. Treated stands will need repeated treatments to reduce the risk to acceptable levels in the long term.

Industry has played a significant role in shaping the landscape of Shoshone County. Evidence of past mining and timber harvest activities as well as construction of the railroads is clearly evident in the Silver Valley and beyond. It has had a noticeable affect on the vegetation composition and growth patterns in many areas. Early industrial operations and settlement in Shoshone County required a significant amount of the nearby timber resource. Additionally, contamination of the soil by early mining practices has led to some species conversions and retarded the growth of most plants. Settlement of the area also brought in white pine blister rust, a disease that decimated the native populations of western white pine.

Livestock Grazing in and around the communities of Shoshone County has led to a reduction of many of the fine fuels that would have been found in and around the communities and in the wildlands of Shoshone County. Domestic livestock not only eat these grasses, forbs, and shrubs, but also trample small diameter fuels to the ground where decomposition rates may increase. Livestock ranchers tend their stock, placing additional sets of eyes into the forests and rangelands where they may observe ignitions or potentially risky activities. Livestock grazing in this region should be encouraged in the future as a low cost, positive tool of wildfire mitigation in the wildland urban interface and in the wildlands.

Table 6.2. Action Items for Fire Prevention and Education.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.2.a: Continue to develop youth and adult wildfire education programs.	**CWPP Goal #4** Priority Ranking: High	**Lead:** Shoshone County Fire Prevention Cooperative **Support:** Shoshone County Fire Chief's Association	Annual	Ongoing
6.2.b: Continue to develop the County's Fire Mitigation department including the incorporation of the Firewise Communities/USA program.	**CWPP Goal #4** Priority Ranking: High	**Lead:** Shoshone County Commission and Fire Mitigation **Support:** Shoshone County Fire Districts	Annual	Ongoing

Infrastructure Enhancements

Critical infrastructure refers to the communications, transportation (road and rail networks), energy transport supply systems (gas and power lines), and water supply that service a region or a surrounding area. All of these components are important to northern Idaho and to Shoshone County specifically. These networks are, by definition, a part of the wildland urban interface in the protection of people, structures, infrastructure, and unique ecosystems. Without supporting infrastructure, a community's structures may be protected, but the economy and way of life lost. As such, a variety of components will be considered here in terms of management philosophy, potential policy recommendations, and mitigation recommendations.

Table 6.3. Action Items for Infrastructure Enhancements.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.3.a: Improve resident and firefighter safety by conducting hazardous fuels reduction treatments along primary and secondary access routes.	**CWPP Goal #1 and 3** Priority Ranking: High	**Lead:** Shoshone County Fire Mitigation **Support:** US Forest Service, IDL, BLM, and private landowners	2015	New project
6.3.b: Identify and map potential fuels treatments near communication sites.	**CWPP Goal #1 and 2** Priority Ranking: High	**Lead:** Shoshone County Fire Mitigation **Support:** Utility Companies	2020	New project
6.3.c: Establish a program to inventory private bridges, assess their condition and weight rating, and work with owners to provide signage and improve substandard structures.	**CWPP Goal #5** Priority Ranking: Low	**Lead:** Shoshone County Planning & Zoning and Cities **Support:** Shoshone County Fire Districts and Departments	2020	New project
6.3.d: Continue to inventory and assess public bridges. Improve weight restriction signage on all types of public bridges and replace substandard structures where necessary.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Planning & Zoning and Cities **Support:** Shoshone County Fire Districts and Departments	2020	New project
6.3.d: Conduct an assessment to identify road signage needs, obtain funding to install or replace missing signs countywide, and develop an up-to-date Shoshone County Road Map including road names and numbers.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Planning & Zoning **Support:** Shoshone County Road Department	2012	New project
6.3.e: Install a second repeater in Shoshone County Fire District №2 on Killarney Peak to enhance communications coverage in western Shoshone County and eastern Kootenai County	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Fire District №2 **Support:** Shoshone County and Kootenai County	2015	New project

Table 6.3. Action Items for Infrastructure Enhancements.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.3.f: Work on reducing hazard trees along road corridors and near public facilities (e.g. hospital, schools, etc.) and infrastructure (e.g. communication sites, power lines, etc.).	**CWPP Goal #1, 2, and 4** Priority Ranking: Moderate	**Lead:** Shoshone County Fire Mitigation **Support:** Landowners	2015	New project
6.3.g: Identify, map, and conduct a wildfire hazard assessment of all the drinking water supplies and storage facilities countywide.	**CWPP Goal #4 and 5** Priority Ranking: High	**Lead:** Shoshone County Emergency Management **Support:** Shoshone County Fire Mitigation and landowners	2015	New project
6.3.h: Establish and maintain Moon Pass as an alternate escape route from the St. Joe River valley.	**CWPP Goal #5** Priority Ranking: Moderate	**Lead:** Shoshone County Public Works **Support:** US Forest Service	2015	New project
6.3.i: Establish communication capability in the Avery area that allows for their direct dispatch out of Shoshone County.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Emergency Management **Support:** Citizens of Avery	2015	New project

Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the rural and wildland firefighting districts in Shoshone County. All of the needs identified by the districts are in line with increasing the ability to respond to emergencies and are fully supported by the Community Wildfire Protection Plan committee.

Specific repeated themes of needed resources and capabilities include:

- Retention and recruitment of volunteers
- Training and development of rural fire fighters in structure and wildland fire

Although additional, and specific, needs were enumerated by the districts in Shoshone County, these items were identified by multiple districts and in the public meetings. The implementation of each issue will rely on either the isolated efforts of the rural fire districts or a concerted effort by the county to achieve equitable enhancements across all of the districts. Given historic trends, individual departments competing against neighboring departments for grant monies and equipment will not necessarily achieve countywide equity. However, the Panhandle Lakes Conservation and Development Council, Inc. may be an organization uniquely suited to work with all of the districts in Shoshone County and adjacent counties to assist in the prioritization of needs across district and even county lines. Once prioritized, the Panhandle Lakes RC&D is in a position to assist these districts with identifying, competing for, and obtaining grants and equipment to meet these needs.

Table 6.4. Action Items for Resource and Capability Enhancements.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.4.a: Upgrade radio communications between personnel, vehicles, and stations and allow interoperable (P25) communications with County, State, and Federal responders.	**CWPP Goal #4 and 5** Priority Ranking: High	**Lead:** Shoshone County Emergency Management **Support:** Fire districts, cities, and state and federal agencies	Ongoing	New project from Multi-Hazard Plan
6.4.b: Develop a strategy to establish structural fire protection in the communities of Clarkia and Avery including the necessary apparatus, facility, communications, and training.	**CWPP Goal #3 and 5** Priority Ranking: High	**Lead:** Shoshone County Emergency Management **Support:** IDL and USFS	2011	New project from Multi-Hazard Plan
6.4.c: Continue to improve training program and capabilities for firefighters.	**CWPP Goal #4 and 5** Priority Ranking: High	**Lead:** Shoshone County Fire Districts and Departments **Support:** US Forest Service, BLM, IDL, and Avista	Annual	Ongoing
6.4.d: Obtain funding to update PPE, hand tools, and other miscellaneous equipment for city and rural fire districts.	**CWPP Goal #4 and 5** Priority Ranking: High	**Lead:** Shoshone County Fire Districts and Departments **Support:** US Forest Service, BLM, and IDL	Annual	Ongoing
6.4.e: Enforce existing codes to establish onsite water sources such as dry hydrants or underground storage tanks in rural housing developments.	**CWPP Goal #4** Priority Ranking: Moderate	**Lead:** Shoshone County Commission **Support:** Shoshone County Planning & Zoning, Fire Districts, and city governments	2011	New project
6.4.f: Construct a new fire station for Shoshone County Fire District №2 in Kellogg to house equipment, personnel, and administrative offices.	**CWPP Goal #3 and 5** Priority Ranking: High	**Lead:** Shoshone County Fire District №2 **Support:**	2020	New project
6.4.g: Obtain funding to purchase a 100 foot aerial ladder for assist Shoshone County Fire District №2 with response calls in newly constructed 5 story multi-family housing units in Kellogg.	**CWPP Goal #3 and 5** Priority Ranking: High	**Lead:** Shoshone County Fire District №2 **Support:**	2015	New project
6.4.h Work on obtaining funding for equipment and other needs for the fire districts and departments referenced in Appendix 5.	**CWPP Goal #5** Priority Ranking: High	**Lead:** Shoshone County Fire District and Departments **Support:** IDL	2020	New project

Table 6.4. Action Items for Resource and Capability Enhancements.

Action Item	Goals Addressed (see page 3)	Responsible Organization	Timeline	2010 Status
6.4.i: Make IDL software program currently being used to issue burn permits accessible by Shoshone County Fire Districts.	**CWPP Goal #5** Priority Ranking: Low	**Lead:** IDL **Support:** Shoshone County Fire Districts and Departments	2013	New project
6.4.j: Obtain funding for mobile repeater stations with a backup power source.	**CWPP Goal #5** Priority Ranking: Low	**Lead:** Shoshone County Emergency Management **Support:** Shoshone County Fire Districts and Emergency Medical Services	2015	New project
6.4.k: Construct a new fire station for Shoshone County Fire District №1 in Osburn to house equipment, personnel, and administrative offices.	**CWPP Goal #3 and 5** Priority Ranking: High	**Lead:** Shoshone County Fire District №1 **Support:**	2015	New project
6.4.l: Obtain funding to update Clearwater-Potlatch Timber Protective Association's communication equipment to the new standards.	**CWPP Goal #5** Priority Ranking: Low	**Lead:** Clearwater-Potlatch Timber Protective Association **Support:** IDL	2013	New Project
6.4.m: Coordinate with the West End Fire District, Shoshone County Fire District №3, and local state and federal agencies to determine who does or does not have structural and wildland fire protection responsibilities at the Lookout Ski Area.	**CWPP Goal #3 and 5** Priority Ranking: High	**Lead:** Shoshone County Emergency Management **Support:** Shoshone County Fire District №3, IDL, and US Forest Service	2011	New Project

Proposed Project Areas

The following project areas were identified by the CWPP planning committee as having multiple factors contributing to the potential wildfire risk to residents, homes, infrastructure, and the ecosystem. Treatments within the project areas will be site specific, but will likely include homeowner education, creation of a wildfire defensible space around structures, fuels reduction, and access corridor improvements. All work on private property will be performed with consent of, and in cooperation with the property owners. Specific site conditions may call for other types of fuels reduction and fire mitigation techniques as well. Defensible space projects may include, but are not limited to commercial or precommercial thinning, pruning, brush removal, chipping, prescribed burning, installation of greenbelts or shaded fuel breaks, and general forest health improvements.

5-Year Fuels Reduction Project Plan

5-Year Plan projects were initially ranked by the number of structures, or the value of resources, at risk based on the following thresholds:

- High Priority = ≥50 structures

- Medium Priority = 10 to 49 structures
- Low Priority = < 10 structures

Once these priorities were established, the planning committee reviewed the rankings and made changes based on the presence of critical infrastructure or other extenuating circumstances that they felt justified a high or lower ranking.

The planning committee does not want to restrict funding to only those projects that are high priority because what may be a high priority for a specific community may not be a high priority at the county or agency level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying criteria, landowner participation, and available dollars is a necessity for a functional mitigation program at the county and community level.

Table 6.5. Proposed 5- Year Fuels Reduction Project Areas.

Map Id#	Project Name	# of Acres	# of Structures	Project Work Order	Priority Ranking
46	Wallace 46	113	113	1	High
49	Canyon Creek	598	138	2	High
36	South Kingston	1,198	217	3	High
27	Pine Creek	471	171	4	High
5	Drummond Peak	122	2	5	Moderate
6	French Gulch	119	0	6	High
50	Nine Mile	887	112	7	High
8	Hunt Gulch	145	0	8	High
9	Kellogg Golf Course	326	1	9	High
10	Kingston 10	80	18	10	Moderate
11	Kingston 11	18	22	11	Moderate
35	Silverton	125	65	12	High
29	Pinehurst 29	113	58	13	High
23	North Kingston	269	58	14	High
15	Mullan 15	32	20	15	Moderate
16	Mullan 16	21	52	16	High
17	Mullan 17	21	0	17	Low
18	Mullan 18	66	0	18	Low
19	Mullan 19	15	2	19	Low
20	Mullan 20	18	15	20	Moderate
21	Mullan 21	14	11	21	Moderate
22	Murray	163	95	22	High
14	McPhee Gulch 14	188	13	23	Moderate
24	Osburn 24	21	24	24	Moderate
25	Osburn 25	313	73	25	High

Table 6.5. Proposed 5- Year Fuels Reduction Project Areas.

Map Id#	Project Name	# of Acres	# of Structures	Project Work Order	Priority Ranking
26	Page Fuel Break	35	12	26	Moderate
4	Deadmans Eddy	197	26	27	Moderate
28	Pinehurst 28	14	11	28	Moderate
13	McPhee Gulch 13	57	1	29	Low
30	Pinehurst 30	72	43	30	Moderate
31	Pinehurst 31	20	2	31	Low
32	Pinehurst 32	85	39	32	Moderate
33	Pinehurst 33	84	16	33	Moderate
34	Placer Creek	443	0	34	Low
12	Lucky Friday Avista Line	1,124	1	35	Low
3	Cataldo 3	74	25	36	Moderate
37	St Joe Calder	14	0	37	Low
38	St Joe Herrick	133	5	38	Low
39	St Joe Hoyt	13	5	39	Low
40	St Joe Huckleberry Flat	9	2	40	Low
41	St Joe Marble Creek 41	2	1	41	Low
42	St Joe Marble Creek 42	14	1	42	Low
43	St Joe Mica Creek	163	9	43	Low
44	St Joe Trout Creek	52	16	44	Moderate
45	Sunnyslope	90	33	45	Moderate
1	Avery	143	98	46	High
47	Wallace 47	95	0	47	Low
48	Wallace 48	11	36	48	Moderate
2	Cataldo 2	213	5	49	Low
7	Gold Ridge	237	7	50	Low
51	BLM Denver Creek	45	0	51	Low
52	BLM Mullan Units	246	0	52	Low
53	BLM Pinehurst RX 1	75	0	53	Low
54	BLM Pinehurst RX 2	13	0	54	Low
55	BLM Pinehurst Thinning	45	0	55	Low
56	BLM Tiger Gulch	323	0	56	Low
57	USFS Beaver Creek	28,189	63	57	High
58	USFS Blue Alder	13,800	0	58	Low
59	USFS Joe Cat	2,301	0	59	Low
60	USFS MnM	11,080	293	60	High
61	USFS Prichard Murray	25,072	410	61	High

Table 6.5. Proposed 5- Year Fuels Reduction Project Areas.

Map Id#	Project Name	# of Acres	# of Structures	Project Work Order	Priority Ranking
62	USFS Pulaski Peak	9,981	147	62	High
63	USFS Rolling Hills	3,955	0	63	Low
64	USFS Runt Ski	530	1	64	Low
65	USFS Two Mile	7,600	484	65	High
66	USFS Teratoid Teepee	22,778	23	66	Moderate
67	BLM South Wallace	1,275	0	67	Low
68	Avista ROW Clearing 68	198	4	68	Moderate
69	Avista ROW Clearing 69	295	54	69	Moderate
70	Avista ROW Clearing 70	310	57	70	Moderate

The Shoshone County Fire Mitigation program is responsible for implementation of non-agency projects. Project boundaries were purposely drawn without regard to land ownership in order to capture the full breadth of the potential wildland fire risk. Coordination and participation by numerous landowners will be required for the successful implementation of the identified projects.

The Idaho Department of Lands, Bureau of Land Management, and US Forest Service have also delineated fuels reduction projects in their 5-year planning horizon. Projects on state or federal ownerships will be administered by the appropriate agency. Nevertheless, projects delineated by the land management agencies were included in the prioritization of projects in Shoshone County as a way for the planning committee and Shoshone County residents to express their concerns and influence how each agency ranks these types of projects within their respective management regimes and forest planning documents.

The Shoshone County Forest Health Collaborative will also be working on developing project areas that meet their program goals and objectives. These projects will also have positively effect the wildland fire risk by reducing fuel loading and improving overall forest health. The Forest Health Collaborative-designated project areas will be incorporated into the Shoshone County Community Wildfire Protection Plan's 5-Year Fuels Reduction Plan as they are developed.

Figure 6.1. Map of Proposed 5-Year Project Plan – East Silver Valley.

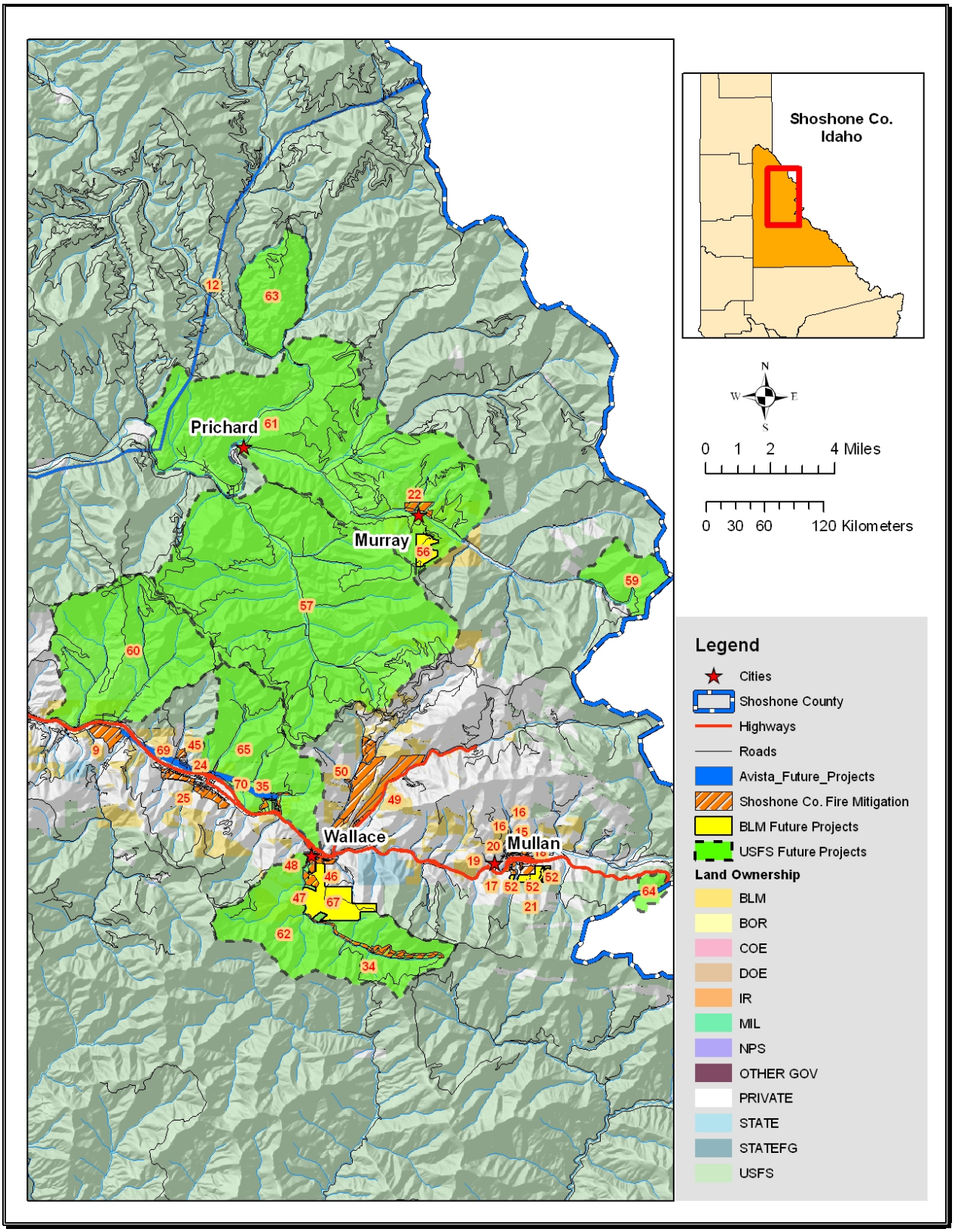


Figure 6.2. Map of Proposed 5-Year Project Plan – West Silver Valley.

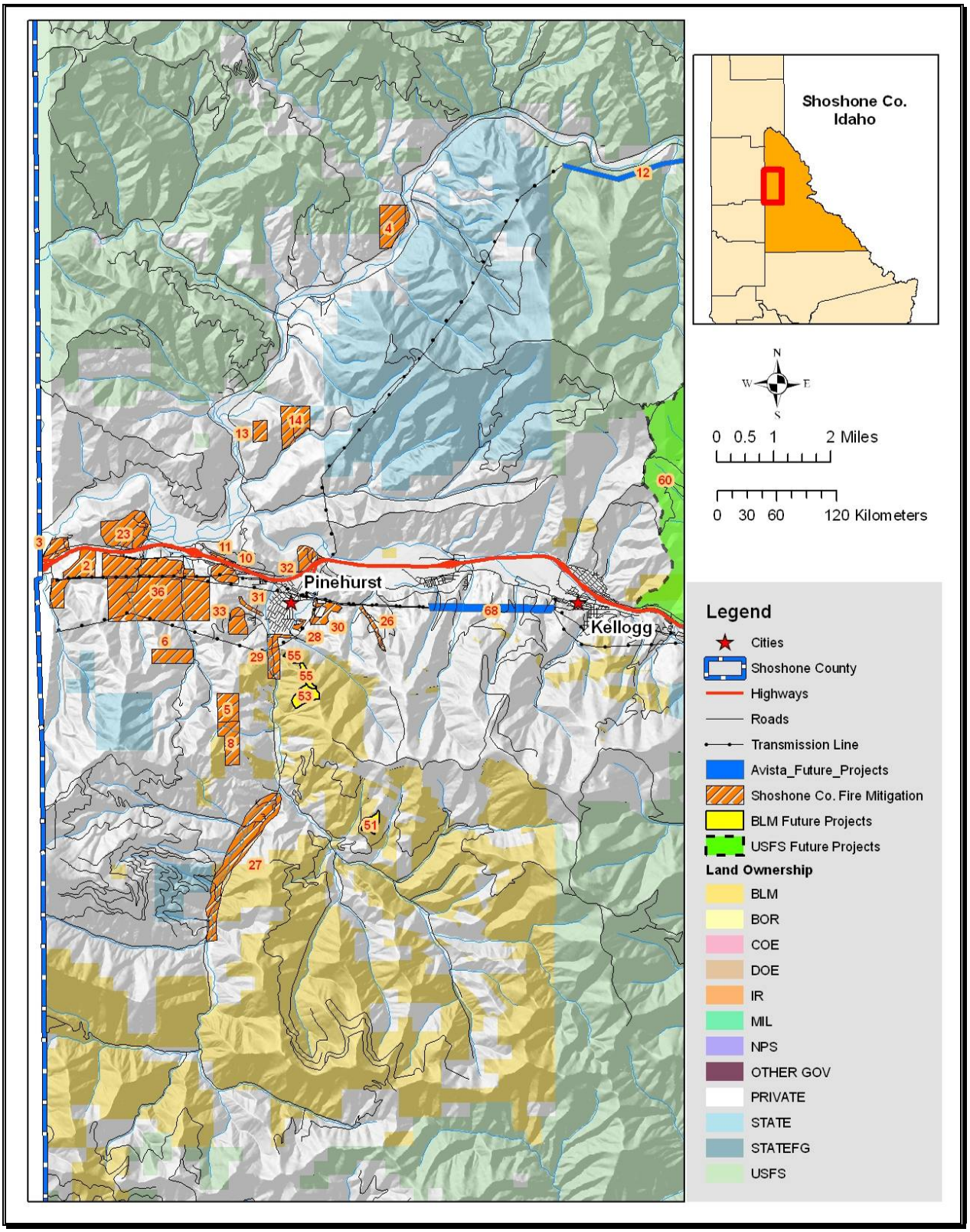


Figure 6.3. Map of Proposed 5-Year Project Plan – Avery.

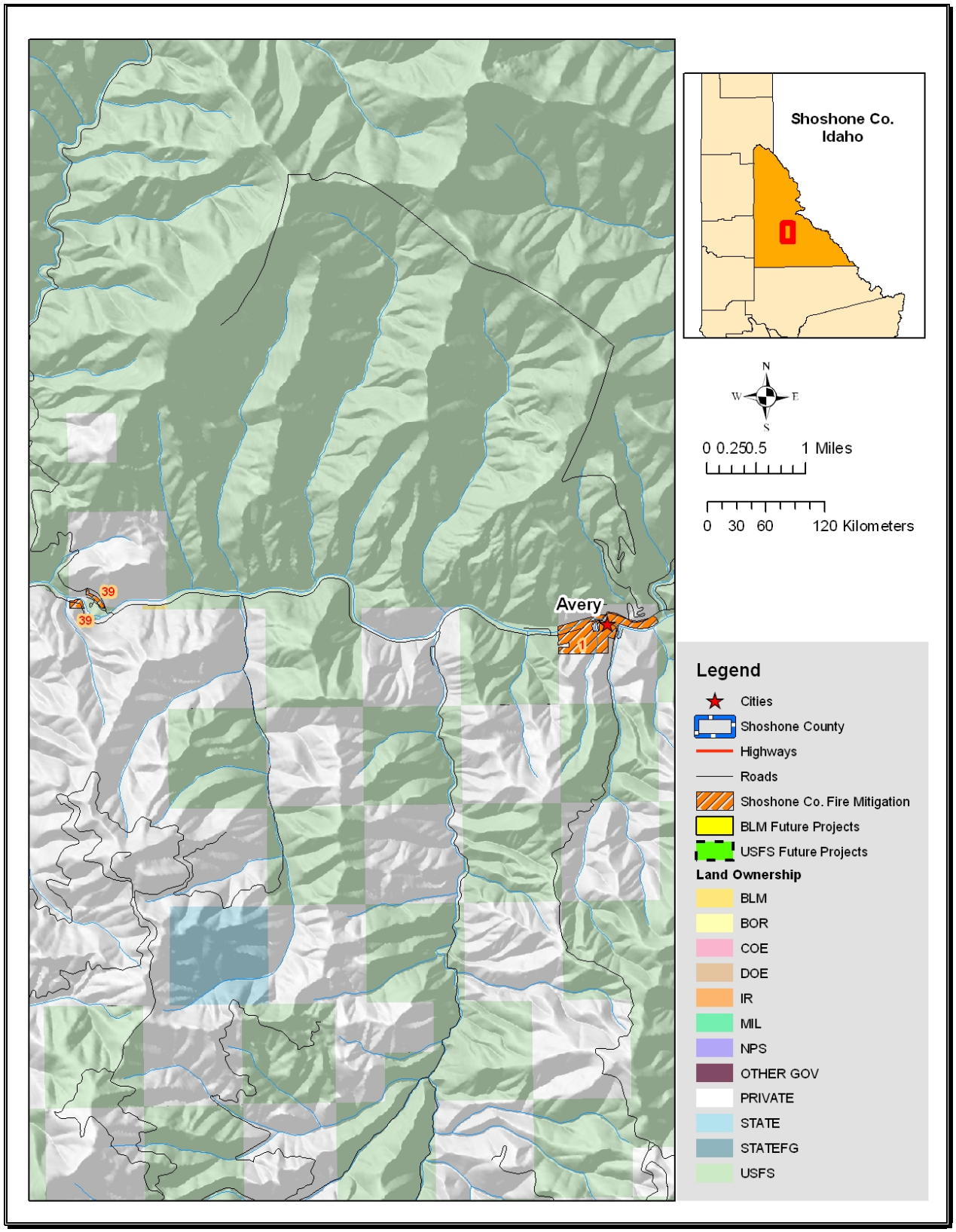
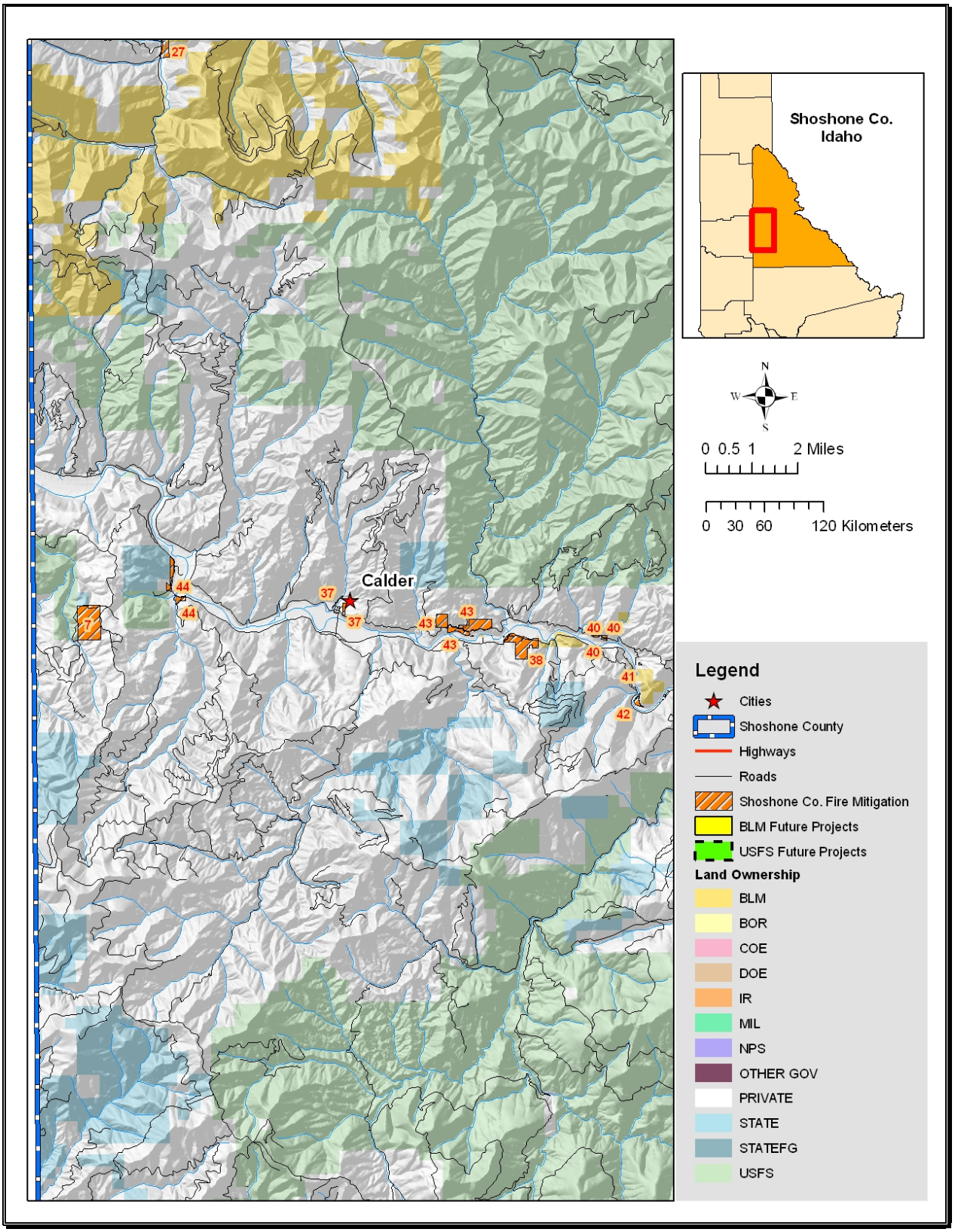


Figure 6.4. Map of Proposed 5-Year Project Plan – Calder.



10-Year Fuels Reduction Project Plan

In an effort to develop a coordinated and sustainable hazardous fuels mitigation program in Shoshone County, the planning committee has identified several long range planning issues. The committee knows these items are on the horizon, but are either a lower priority or have not fully manifested yet.

1. Continue to develop a landscape level approach to hazardous fuels reduction treatments by focusing on linking existing project areas.
2. Reevaluate completed project areas to determine maintenance needs and continue to utilize Shoshone County's weed program to assist with maintenance projects.
3. Evaluate the wildland fire risk to all types of critical infrastructure and develop an appropriate mitigation activity.
4. Address wildland fire risk issues in all new developments and apply Firewise landscaping and construction measures where necessary.
5. Evaluate development plans for the Silver Mountain Resort and the surrounding area, particularly south of Kellogg and ensure wildland fire risk is addressed as these projects move forward.
6. Evaluate the wildfire risk and prevention measures along the two major trail systems in Shoshone County; the Route of the Hiawatha and the Trail of the Coeur d'Alenes.

Shoshone County Forest Health Collaborative

The Shoshone County Forest Health Collaborative's Forest Health Working Group has been charged with developing an on-the-ground project before the end of the 2011 field season. After in-depth consideration of sensitive ecosystem, logistical, and economical components such as soils, access, threatened and endangered species, cultural resources, floodplains, wildfire hazard, proximity to communities, and old growth timber types, the Forest Health Working Group selected the Bureau of Land Management's Mullan South project area as the Collaborative's pilot project. The Working Group also identified the following areas as potential projects for future consideration:

- Beacon Light
- Terror Gulch
- Jacobs Gulch
- Wardner Peak
- Pinehurst South
- Beaver Creek
- Murray
- Prado on the North Fork

Regional Land Management Recommendations

Wildfires will continue to ignite and burn depending on the weather conditions and other factors enumerated earlier. However, active land management that modifies fuels, promotes healthy

forestland conditions, and promotes the use of natural resources (consumptive and non-consumptive) will ensure that these lands have value to society and the local region. The Idaho Department of Lands, U.S. Forest Service, industrial forestland owners, private forestland owners, and all agricultural landowners in the region should be encouraged to actively manage their wildland-urban interface lands in a manner consistent with reducing fuels and risks in this zone.

Chapter 7

Supporting Information

List of Tables

List of Figures

Signature Pages

This Shoshone County Community Wildfire Protection Plan has been developed in cooperation and collaboration with representatives of the following organizations and agencies.

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County of Shoshone

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RESOLUTION 2011-04

A RESOLUTION OF THE SHOSHONE COUNTY BOARD OF COMMISSIONERS DECLARING COUNTY SUPPORT AND ADOPTION OF THE 2011 SHOSHONE COUNTY COMMUNITY WILDFIRE PROECTION PLAN

WHEREAS, the Shoshone County Board of Commissioners supports the Shoshone County Community Wildfire Protection Plan; and

WHEREAS, the Shoshone County Community Wildfire Protection Plan will be utilized as a guide for planning as related to the Multi-Jurisdictional All Hazard Plan, the National Fire Plan, the Healthy Forest Restoration Act, and other purposes as deemed appropriate; and

WHEREAS, the Shoshone County Community Wildfire Protection Plan will serve as a vehicle for planning hazardous fuels and biomass reduction projects for the benefit of Shoshone County as deemed appropriate.

THEREFORE BE IT RESOLVED, that the Shoshone County Board of Commissioners do hereby adopt and will facilitate the implementation of the Shoshone County Community Wildfire Protection Plan.

DATED this 18th day of January 2011.

BOARD OF COUNTY COMMISSIONERS

Vince Rinaldi, Chairman

Jon Cantamessa, Commissioner

Larry Yergler, Commissioner

ATTEST:

Susan K. Hendrixson, Deputy Clerk

Signatures of Participation by Shoshone County Fire Districts and Departments

This Community Wildfire Protection Plan and all of its components identified herein were developed in close cooperation with the participating entities listed. These members of the CWPP planning committee formally recommended that this document be adopted by the Shoshone County Board of Commissioners.

By: Jim Walcker, Chief
Shoshone County Fire District №1

Date: 01/12/11

By: Dale Costa, Chief
Shoshone County Fire District №2

Date: 01-26-11

By: Bruce VanBroeke, Chief
Shoshone County Fire District №3

Date: 01-26-11

By: Tim Powell, Chief
Shoshone County Fire District №4

Date: 1/31/11

By: Steve Coyle, Chief
Prichard-Murray Volunteer Fire Department

Date: 1-18-11

Signatures of Participation by other Shoshone County Entities

This Community Wildfire Protection Plan and all of its components identified herein were developed in close cooperation with the participating entities listed. These members of the CWPP planning committee formally recommended that this document be adopted by the Shoshone County Board of Commissioners.

By: Kurt Pavlat, ~~Acting~~ Field Manager
Coeur d'Alene Field Office, Bureau of Land Management

13 JAN 2011
Date

By: Robert L. Burke, Area Manager
Cataldo Supervisory Area, Idaho Department of Lands

1/12/2011
Date

By: Kimberly Johnson, Acting District Ranger
Coeur d'Alene River Ranger District, Idaho Panhandle National Forest

1-12-2011
Date

By: Wade Sims, District Ranger
St. Joe Ranger District, Idaho Panhandle National Forest

1/13/2011
Date

By: Bob Beitz, Kellogg Operations Manager
Avista Corporation

1-17-2011
Date

By: Henry Nipp, Coordinator
Shoshone County Fire Mitigation Program

1-19-11

By: Tera King, Project Manager
Northwest Management, Inc.

January 12th, 2011
Date

This plan was developed by Northwest Management, Inc. under contract with Shoshone County.

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King, Tera R. and V. Bloch. *Lead Authors.* Shoshone County, Idaho Community Wildfire Protection Plan Appendices. 2011 Revision. Northwest Management, Inc., Moscow, Idaho. January 2010. Pp 51.

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