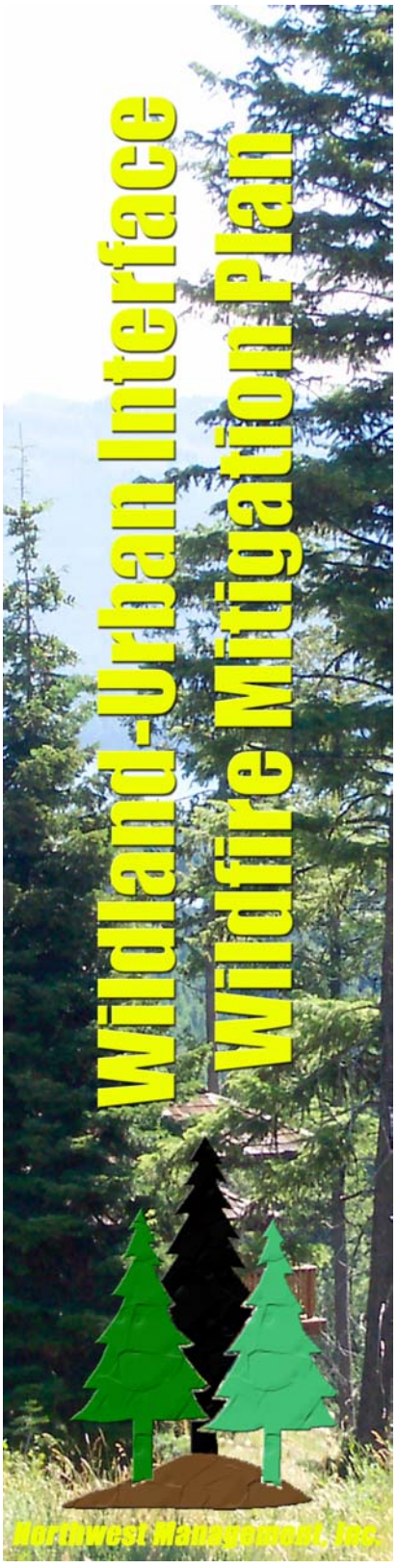

Valley County, Idaho
Wildland-Urban Interface
Wildfire Mitigation Plan

Main Document

July 26, 2004

Vision: *Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Valley County.*

This plan was developed by the Valley County Wildland-Urban Interface Wildfire Mitigation Plan Committee in cooperation with Northwest Management, Inc., 233 E. Palouse River Dr., P.O. Box 9748, Moscow, ID 83843, Tel: 208-883-4488, www.Consulting-Foresters.com

Acknowledgments

This Wildland-Urban Interface Wildfire Mitigation Plan represents the efforts and cooperation of a number of organizations and agencies, through the commitment of people working together to improve the preparedness for wildfire events while reducing factors of risk.

Valley County Commissioners
and the employees of Valley County

West Central Highlands Resource
Conservation and Development Council

USDI Bureau of Land Management

USDA Forest Service

Idaho Department of Homeland Security

Federal Emergency Management Agency

Idaho Department of Lands &
Southern Idaho Timber Protective Association

Northwest Management, Inc.
Cascade City & Rural Fire Department
Donnelly City & Rural Fire Department
McCall City & Rural Fire Department
Yellow Pine Rural Fire Department
&
Local Businesses and
Citizens of Valley County

To obtain copies of this plan contact:

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Table of Contents

Chapter 1: Overview of this Plan and its Development

1 Introduction

This Wildland-Urban Interface Wildland Fire Mitigation Plan for Valley County, Idaho, is the result of analyses, professional cooperation and collaboration, assessments of wildfire risks and other factors considered with the intent to reduce the potential for wildfires to threaten people, structures, infrastructure, and unique ecosystems in Valley County, Idaho. The planning team responsible for implementing this project was led by the Valley County Commissioners. Agencies and organizations that participated in the planning process included:

- USDI Bureau of Land Management
- USDA Forest Service
- Idaho Department of Lands
- Southern Idaho Timber Protective Association
- Tamarack Resort
- Local Fire Departments
- Valley County Planning and Zoning
- Valley County Emergency Management
- Northwest Management, Inc.

The Valley County Commissioners solicited competitive bids from companies to provide the service of leading the assessment and the writing of the **Valley County Wildland-Urban Interface Wildland Fire Mitigation Plan**. The Commissioners selected Northwest Management, Inc., to provide this service. Northwest Management, Inc., is a professional natural resources consulting firm located in Moscow, Idaho. Established in 1984 NMI provides natural resource management services across the USA. The Project Manager from Northwest Management, Inc. was Dr. William E. Schlosser, a professional forester and regional planner.

1.1 Goals and Guiding Principles

1.1.1 Federal Emergency Management Agency Philosophy

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

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

FEMA will only review a local hazard mitigation plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). Draft versions of local hazard mitigation plans will not be

reviewed by FEMA. FEMA will review the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will be unable to approve it prior to adoption. In Idaho the SHMO is:

Idaho Bureau of Disaster Services
4040 Guard Street, Bldg 600
Boise, ID 83705
Jonathan Perry, 208-334-2336 Ext. 271

A FEMA designed plan will be evaluated on its adherence to a variety of criteria.

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

1.1.2 Additional State and Federal Guidelines Adopted

This Wildland-Urban Interface Wildfire Mitigation Plan will include compatibility with FEMA requirements while also adhering to the guidelines proposed in the National Fire Plan, the Idaho Statewide Implementation Plan, and the Healthy Forests Restoration Act (2004). This Wildland-Urban Interface Wildland Fire Mitigation 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–May 2002.
- The Idaho Statewide Implementation Strategy for the National Fire Plan–July 2002.
- Healthy Forests Restoration Act (2004)
- 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 Natural Hazards Mitigation Plan.

"When implemented, the 10-Year Comprehensive Strategy will contribute to reducing the risks of wildfire to communities and the environment by building collaboration at all levels of government."
- The NFP 10-Year Comprehensive Strategy August 2001

The objective of combining these four complimentary 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 Lewis County while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

1.1.2.1 National Fire Plan

The goals of this Wildland-Urban Interface Fire Mitigation Plan identifies opportunities to:

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restore Fire-Adapted Ecosystems
4. Promote Community Assistance

Its three guiding principles are:

1. Priority setting that emphasizes the protection of communities and other high-priority watersheds at-risk.
2. Collaboration among governments and broadly representative stakeholders
3. Accountability through performance measures and monitoring for results.

This Wildland-Urban Interface Fire Mitigation Plan fulfills the County's part of the National Fire Plan's 10-Year Comprehensive Strategy and the Idaho Statewide Implementation Strategy for the National Fire Plan. The projects and activities recommended under this plan are in addition to other Federal, state, and private / corporate forest and rangeland management activities. The implementation plan does not alter, diminish, or expand the existing jurisdiction, statutory and regulatory responsibilities and authorities or budget processes of participating Federal, State, and tribal agencies.

By endorsing this implementation plan, all signed parties agree that reducing the threat of wildland fire to people, communities, and ecosystems will require:

- Firefighter and public safety continuing as the highest priority.
- A sustained, long-term and cost-effective investment of resources by all public and private parties, recognizing overall budget parameters affecting Federal, State, Tribal, and local governments.
- A unified effort to implement the collaborative framework called for in the Strategy in a manner that ensures timely decisions at each level.
- Accountability for measuring and monitoring performance and outcomes, and a commitment to factoring findings into future decision making activities.
- The achievement of national goals through action at the local level with particular attention on the unique needs of cross-boundary efforts and the importance of funding on-the-ground activities.
- Communities and individuals in the wildland-urban interface to initiate personal stewardship and volunteer actions that will reduce wildland fire risks.
- Management activities, both in the wildland-urban interface and in at-risk areas across the broader landscape.

- Active forestland and rangeland management, including thinning that produces commercial or pre-commercial products, biomass removal and utilization, prescribed fire and other fuels reduction tools to simultaneously meet long-term ecological, economic, and community objectives.

The National Fire Plan identifies a three-tiered organization structure including 1) the local level, 2) state/regional and tribal level, and 3) the national level. This plan adheres to the collaboration and outcomes consistent with a local level plan. Local level collaboration involves participants with direct responsibility for management decisions affecting public and/or private land and resources, fire protection responsibilities, or good working knowledge and interest in local resources. Participants in this planning process include Tribal representatives, local representatives from Federal and State agencies, local governments, landowners and other stakeholders, and community-based groups with a demonstrated commitment to achieving the strategy's four goals. Existing resource advisory committees, watershed councils, or other collaborative entities may serve to achieve coordination at this level. Local involvement, expected to be broadly representative, is a primary source of planning, project prioritization, and resource allocation and coordination at the local level. The role of the private citizen is not to be under estimated, as their input and contribution to all phases of risk assessments, mitigation activities, and project implementation is greatly facilitated by their involvement.

1.1.2.2 Idaho Statewide Implementation Strategy

The Strategy adopted by the State of Idaho is to provide a framework for an organized and coordinated approach to the implementation of the National Fire Plan, specifically the national "10-Year Comprehensive Strategy Implementation Plan".

Emphasis is on a collaborative approach at the following levels:

- County
- State

Within the State of Idaho, the Counties, with the assistance of State and Federal agencies and local expert advice, will develop a risk assessment and mitigation plan to identify local vulnerabilities to wildland fire. A Statewide group will provide oversight and prioritization as needed on a statewide scale.

This strategy is not intended to circumvent any work done to date and individual Counties should not delay implementing any National Fire Plan projects to develop this county plan. Rather, Counties are encouraged to identify priority needs quickly and begin whatever actions necessary to mitigate those vulnerabilities.

It is recognized that implementation activities such as; hazardous fuel treatment, equipment purchases, training, home owner education, community wildland fire mitigation planning, and other activities, will be occurring concurrently with this County wide planning effort.

1.1.2.2.1 County Wildland Fire Interagency Group

Each County within the state has been requested to write a Wildland Fire Mitigation Plan. These plans should contain at least the following five elements:

1) Documentation of the process used to develop the mitigation plan. How the plan was developed, who was involved and how the public was involved.

2) A risk assessment to identify vulnerabilities to wildfire in the wildland-urban interface (WUI).

3) A prioritized mitigation strategy that addresses each of the risks. Examples of these strategies could be: training for fire departments, public education, hazardous fuel treatments, equipment, communications, additional planning, new facilities, infrastructure improvements, code and/or ordinance revision, volunteer efforts, evacuation plans, etc.

4) A process for maintenance of the plan which will include monitoring and evaluation of mitigation activities annually

5) Documentation that the plan has been formally adopted by the involved agencies. Basically a signature page of all involved officials.

This five-element plan is an abbreviated version of the FEMA mitigation plan and will begin to meet the requirements for that plan. To develop these plans each county should bring together the following individuals, as appropriate for each county, to make up the County Wildland Fire Interagency Group. It is important that this group has representation from agencies with wildland fire suppression responsibilities:

- County Commissioners (Lead)
- Local Fire Chiefs
- Idaho Department of Lands representative
- USDA Forest Service representative
- USDI Bureau of Land Management representative
- US Fish and Wildlife representative
- Bureau of Indian Affairs
- Local Tribal leaders
- Bureau of Disaster Services
- LEPC Chairperson
- Resource Conservation and Development representative
- State Fish and Game representative
- Interested citizens and community leaders as appropriate
- Other officials as appropriate

Role of Resource Conservation and Development Councils (RC&D): If requested by the County Commissioners, the local RC&D's may be available to assist the County Commissioners in evaluating each County within their council area to determine if there is a wildland fire mitigation plan in place, or if a plan is currently in the development phase. If no plan is in place, the RC&D's, if requested, could be available to assist the Commissioners with the formation of the County Wildland Fire Interagency Group and/or to facilitate the development of wildland fire mitigation plan.

If a plan has been previously completed, the Commissioners will determine if the recommended five elements have been addressed. The Counties will provide a copy of the completed mitigation plan to the Idaho Department of Lands National Fire Plan Coordinator, which will include a contact list of individuals that developed the plan.

1.1.2.3 National Association of State Foresters

1.1.2.3.1 Identifying and Prioritizing Communities at Risk

This plan is written with the intent to provide the information necessary for decision makers (elected officials) to make informed decisions in order to prioritize projects across the entire county. These decisions may be made from within the council of Commissioners, or through the recommendations of ad hoc groups tasked with making prioritized lists of projects. It is not necessary to rank projects numerically, although that is one approach, rather it may be possible to rank them categorically (high priority set, medium priority set, and so forth) and still accomplish the goals and objectives set forth in this planning document.

The following was prepared by the National Association of State Foresters (NASF), June 27, 2003, and is included here as a reference for the identification of prioritizing treatments between communities.

Purpose: To provide national, uniform guidance for implementing the provisions of the "Collaborative Fuels Treatment" MOU, and to satisfy the requirements of Task e, Goal 4 of the Implementation Plan for the 10-Year Comprehensive Strategy.

Intent: The intent is to establish broad, nationally compatible standards for identifying and prioritizing communities at risk, while allowing for maximum flexibility at the state and regional level. Three basic premises are:

- Include all lands and all ownerships.
- Use a collaborative process that is consistent with the complexity of land ownership patterns, resource management issues, and the number of interested stakeholders.
- Set priorities by evaluating projects, not by ranking communities.

The National Association of State Foresters (NASF) set forth the following guidelines in the Final Draft Concept Paper; Communities at Risk, December 2, 2002.

Task: Develop a definition for "communities at risk" and a process for prioritizing them, per the Implementation Plan for the 10-Year Comprehensive Strategy (Goal 4.e.). In addition, this definition will form the foundation for the NASF commitment to annually identify priority fuels reduction and ecosystem restoration projects in the proposed MOU with the federal agencies (section C.2 (b)).

1.1.2.3.2 Conceptual Approach

1. NASF fully supports the definition of the Wildland Urban Interface (WUI) previously published in the Federal Register. Further, proximity to federal lands should not be a consideration. The WUI is a set of conditions that exists on, or near, areas of wildland fuels nation-wide, regardless of land ownership.
2. Communities at risk (or, alternately, landscapes of similar risk) should be identified on a state-by-state basis with the involvement of all agencies with wildland fire protection responsibilities: state, local, tribal, and federal.
3. It is neither reasonable nor feasible to attempt to prioritize communities on a rank order basis. Rather, communities (or landscapes) should be sorted into three, broad categories or zones of risk: high, medium, and low. Each state, in collaboration with its local partners, will develop the specific criteria it will use to sort communities or landscapes into the three categories. NASF recommends using the publication

"Wildland/Urban Interface Fire Hazard Assessment Methodology" developed by the National Wildland/Urban Interface Fire Protection Program (circa 1998) as a reference guide. (This program, which has since evolved into the Firewise Program, is under the oversight of the National Wildfire Coordinating Group (NWCG)). At minimum, states should consider the following factors when assessing the relative degree of exposure each community (landscape) faces.

- **Risk:** Using historic fire occurrence records and other factors, assess the anticipated probability of a wildfire ignition.
- **Hazard:** Assess the fuel conditions surrounding the community using a methodology such as fire condition class, or [other] process.
- **Values Protected:** Evaluate the human values associated with the community or landscape, such as homes, businesses, and community infrastructure (e.g. water systems, utilities, transportation systems, critical care facilities, schools, manufacturing and industrial sites, and high value commercial timber lands).
- **Protection Capabilities:** Assess the wildland fire protection capabilities of the agencies and local fire departments with jurisdiction.

4. Prioritize by project not by community. Annually prioritize projects within each state using the collaborative process defined in the national, interagency MOU "For the Development of a Collaborative Fuels Treatment Program". Assign the highest priorities to projects that will provide the greatest benefits either on the landscape or to communities. Attempt to properly sequence treatments on the landscape by working first around and within communities, and then moving further out into the surrounding landscape. This will require:
   - First, focus on the zone of highest overall risk but consider projects in all zones. Identify a set of projects that will effectively reduce the level of risk to communities within the zone.
   - Second, determining the community's willingness and readiness to actively participate in an identified project.
   - Third, determining the willingness and ability of the owner of the surrounding land to undertake, and maintain, a complementary project.
   - Last, set priorities by looking for projects that best meet the three criteria above. It is important to note that projects with the greatest potential to reduce risk to communities and the landscape may not be those in the highest risk zone, particularly if either the community or the surrounding landowner is not willing or able to actively participate.
5. It is important, and necessary, that we be able to demonstrate a level of accomplishment that justifies to Congress the value of continuing the current level of appropriations for the National Fire Plan. Although appealing to appropriators and others, it is not likely that many communities (if any) will ever be removed from the list of communities at risk. Even after treatment, all communities will remain at some, albeit reduced, level of risk. However, by using a science-based system for measuring relative risk, we can likely show that, after treatment (or a series of treatments), communities are at "*reduced risk*".

Similarly, scattered, individual homes that complete projects to create defensible space could be "counted" as "households at reduced risk". This would be a way to report progress in reducing risk to scattered homes in areas of low priority for large-scale fuels treatment projects.

Using the concept described above, the NASF believes it is possible to accurately assess the relative risk that communities face from wildland fire. Recognizing that the condition of the vegetation (fuel) on the landscape is dynamic, assessments and re-assessments must be done on a state-by-state basis, using a process that allows for the integration of local knowledge, conditions, and circumstances, with science-based national guidelines. We must remember that it is not only important to lower the risk to communities, but once the risk has been reduced, to maintain those communities at a reduced risk.

Further, it is essential that both the assessment process and the prioritization of projects be done collaboratively, with all local agencies with fire protection jurisdiction – federal, state, local, and tribal – taking an active role.

1.1.2.4 Healthy Forests Restoration Act

On December 3, 2003, President Bush signed into law the Healthy Forests Restoration Act of 2003 to reduce the threat of destructive wildfires while upholding environmental standards and encouraging early public input during review and planning processes. The legislation is based on sound science and helps further the President's Healthy Forests Initiative pledge to care for America's forests and rangelands, reduce the risk of catastrophic fire to communities, help save the lives of firefighters and citizens, and protect threatened and endangered species.

Among other things the Healthy Forests Restoration Act (HFRA):

- Strengthens public participation in developing high priority projects;
- Reduces the complexity of environmental analysis allowing federal land agencies to use the best science available to actively manage land under their protection;
- Creates a pre-decisional objections process encouraging early public participation in project planning; and
- Issues clear guidance for court action challenging HFRA projects.

The Valley County Wildland-Urban Interface Wildfire Mitigation Plan is developed to adhere to the principles of the HFRA while providing recommendations consistent with the policy document which should assist the federal land management agencies (US Forest Service and Bureau of Land Management) with implementing wildfire mitigation projects in Valley County that incorporate public involvement and the input from a wide spectrum of fire and emergency services providers in the region.

1.1.3 Local Guidelines and Integration with Other Efforts

1.1.3.1 Valley County Comprehensive Growth and Development Plan

The Valley County Comprehensive Growth and Development Plan (June 25, 2001) is a guide that establishes goals and objectives to help the County grow and develop. The Valley County Comprehensive Plan includes a forecast of conditions that are anticipated to occur within the next twenty-five-year period, 2000 to 2025. The Plan addresses and includes all 14 comprehensive planning components of the "Idaho Local Planning Act of 1975" as supplemented and amended.

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

1. Population
2. Private Property Rights
3. Natural Resources
4. Hazardous Areas
5. Special Areas and Sites
6. Transportation
7. Housing
8. Community Design
9. Economic Development
10. Recreation and Open Space
11. Public Facilities, Utilities, and Services
12. Education
13. Land Use
14. Implementation

Within each chapter of the comprehensive plan are goals and objectives, which help establish development guidelines and public policy. Goals are defined as statements, which indicate a general aim or purpose to be achieved. Goals reflect countywide values. Objectives are defined as guidelines, which establish a definite course to guide present and future decisions. The Valley County Comprehensive Plan is directed toward all land within the County including Federal, State, Public and Private lands.

This Wildland-Urban Interface Wildfire Mitigation Plan will "dove-tail" with the County's Comprehensive Plan during its development and implementation to insure that the goals and objectives of each are integrated together. In many sections of this document, direct reference will be made to specific recommendations that are amplified or enhanced in this document. This planning effort fully adopts the goals and objectives of the County's Comprehensive Plan.

1.1.3.2 Valley County Fire Mitigation Planning Effort and Philosophy

The goals of this planning process include the integration of the National Fire Plan, the Idaho Statewide Implementation Strategy, the Healthy Forests Restoration Act, and the requirements of FEMA for a county-wide Fire Mitigation Plan which will be a component of the County's All Hazards Mitigation Plan. This effort will utilize the best and most appropriate science from all partners, the integration of local and regional knowledge about wildfire risks and fire behavior, while meeting the needs of local citizens, the regional economy, the significance of this region to the rest of Idaho and the Inland West.

1.1.3.2.1 Mission Statement

To make Valley County residents, communities, state agencies, local governments, and businesses less vulnerable to the negative effects of wildland fires through the effective administration of wildfire hazard mitigation grant programs, hazard risk assessments, wise and efficient fuels treatments, and a coordinated approach to mitigation policy through federal, state, regional, and local planning efforts. Our combined prioritization will be the protection of people,

structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy.

1.1.3.2.2 Vision Statement

Institutionalize and promote a countywide wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Valley County.

1.1.3.2.3 Goals

- To reduce the area of WUI land burned and losses experienced because of wildfires where these fires threaten communities in the wildland-urban interface
- Prioritize the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local and regional economy
- Educate communities about the unique challenges of wildfire in the wildland-urban interface (WUI)
- Establish mitigation priorities and develop mitigation strategies in Valley County
- Provide recommendations for alternative treatment methods, such as modifying forest stand density, herbicide treatments, fuel reduction techniques, and disposal or removal of treated slash
- Meet or exceed the requirements of the National Fire Plan and FEMA for a County level Fire Mitigation Plan
- Establish an annual review of this plan and mitigation projects for prioritization

Chapter 2: Planning Process

2 Documenting the Planning Process

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

2.1.1 Description of the Planning Process

The Valley County Wildland-Urban Interface Wildfire Mitigation Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Section 1.0 of this document. The County's local coordinator contacted these organizations directly to invite their participation and schedule meetings of the planning committee. The planning process included 5 distinct phases which were in some cases sequential (step 1 then step 2) and in some cases intermixed (step 4 completed though out the process):

1. **Collection of Data** about the extent and periodicity of wildfires in and around Valley County. This included an area encompassing Adams, Gem, Payette, Washington, and Valley Counties to insure a robust dataset for making inferences about fires in Valley County specifically; this included a wildfire extent and ignition profile.
2. **Field Observations and Estimations** about wildfire risks including fuels assessments, juxtaposition of structures and infrastructure to wildland fuels, access, and potential treatments by trained wildfire specialists.
3. **Mapping** of data relevant to wildfire control and treatments, structures, resource values, infrastructure, fire prone landscapes, and related data.
4. **Facilitation of Public Involvement** from the formation of the planning committee, to a public mail survey, news releases, public meetings, public review of draft documents, and acceptance of the final plan by the signatory representatives.
5. **Analysis and Drafting of the Report** to integrate the results of the planning process, providing ample review and integration of committee and public input, followed by acceptance of the final document.

Planning efforts were led by the Project Director, Dr. William E. Schlosser, of Northwest Management, Inc. Dr. Schlosser holds 4 degrees in natural resource management (A.S. geology; B.S. forest and range management; M.S. natural resource economic & finance; Ph.D. environmental science and regional planning). Valley County Clerk, Leland Heinrich, was the County's Coordinator instrumental for pulling together the planning team which worked to complete this plan. This team of resource professionals that included fire mitigation specialists, wildfire control specialists, resource management professionals, and hazard mitigation experts.

They were the point-people to share data and information with during the plan's development. They and the planning team met with many residents of the county during the inspections of communities, infrastructure, and hazard abatement assessments. This methodology, when coupled with the other approaches in this process, worked effectively to integrate a wide spectrum of observations and interpretations about the project.

The planning philosophy employed in this project included the open and free sharing of information with interested parties. Information from federal and state agencies was integrated

into the database of knowledge used in this project. Meetings with the committee were held throughout the planning process to facilitate a sharing of information between cooperators.

When the public meetings were held, many of the committee members were in attendance and shared their support and experiences with the planning process and their interpretations of the results.

2.2 Public Involvement

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

2.2.1 News Releases

Under the auspices of the Valley County Wildland-Urban Interface Wildfire Mitigation Planning Committee, news releases were submitted to area news papers and radio during the planning process.

2.2.1.1 Radio Messages

A short news release was aired over the **KMCL** radio station the week prior to the public meetings announcing the goals of the planning committee, the purpose of the mitigation plan, the date and times of public meetings, and contact information.

2.2.1.2 Newspaper Articles

Committee and public meeting announcements were published in local newspapers ahead of each meeting. The following is an example of one of the newspaper announcements that ran in the local newspaper.

Valley County Plans to Mitigate Wildfire Risk

Cascade, Idaho—The Valley County Commissioners have created a Wildfire Mitigation Plan Committee to complete a Wildfire Mitigation Plan for Valley County as part of the National Fire Plan authorized by congress and the Whitehouse. The Valley County Fire Mitigation Plan will include risk analysis at the community level with predictive models for where fires are likely to ignite and where they are likely to spread rapidly once ignited. Northwest Management, Inc. has been retained by Valley County to provide wildfire risk assessments, mapping, field inspections, interviews, and to collaborate with the committee to prepare the plan. The coordination for this effort is being provided by Lee Heinrich, Valley County Clerk. The committee includes rural and wildland fire districts, land managers from SITPA, the IDL, the US Forest Service, the BLM, elected officials, businesses, and others. Specialists on the committee are conducting analysis of fire prone landscapes and making recommendations for potential treatments. Specific activities for homes, structures, infrastructure, and resource capabilities will be proposed as part of the analysis.

One of the most important steps in gathering information about fire risk in Valley County is to conduct a homeowner's survey. Northwest Management, Inc., in cooperation with local fire officials, have mailed a brief survey to randomly selected homeowners in the

county seeking details about home construction materials, proximity to water sources, and other risk factors surrounding homes. This survey is very important to the success o f the plan. Those homes that receive a survey are asked to please take the time to complete it thereby benefiting the community overall.

The planning team will be conducting Public Meetings to discuss preliminary findings and to seek public involvement in the planning process in March. A notice on the date and location of these meetings will be posted in local newspapers. For more information on the Fire Mitigation Plan project in Valley County contact your County Commissioner, Northwest Management, Inc. project director Dr. William Schlosser (208) 883-4488, or the Valley County Clerk Lee Heinrich at (208)382-7100.

2.2.2 Public Mail Survey

In order to collect a broad base of perceptions about wildland fire and individual risk factors of homeowners in Valley County, a mail survey was conducted. Using a state and county database of landowners in Valley County, homeowners from the Wildland-Urban Interface surrounding each community were identified. In order to be included in the database, individuals were selected that own property and have a dwelling in Valley County, as well as a mailing address in Valley County. This database created a list of 1,476 unique names to which was affixed a random number that determined to the probability of being selected for the public mail survey. A total of 234 landowners were mailed surveys.

The public mail survey developed for this project has been used in the past by Northwest Management, Inc., during the execution of other WUI Wildfire Mitigation Plans. The survey used The Total Design Method (Dillman 1978) as a model to schedule the timing and content of letters sent to the selected recipients. Copies of each cover letter, mail survey, and communication are included in Appendix III.

The first in the series of mailing was sent February 18, 2004, and included a cover letter, a survey, and an offer of receiving a custom GIS map of the area of their selection in Valley County if they would complete and return the survey. The free map incentive was tied into assisting their community and helping their interests by participating in this process. Each letter also informed residents about the planning process. A return self-addressed enveloped was included in each packet. A postcard reminder was sent to the non-respondents on February 25, 2004, encouraging their response. A final mailing, with a revised cover letter pleading with them to participate, was sent to non-respondents on March 4, 2004.

Surveys were returned during the months of February through May. A total of 176 residents responded to the survey (as of May 19, 2004 – this will be updated until the final plan is completed). No surveys were returned as undeliverable. The effective response rate for this survey was 75%. Statistically, this response rate allows the interpretation of all of the response variables significantly at the 99% confidence level.

2.2.2.1 Survey Results

A summary of the survey's results will be presented here and then referred back to during the ensuing discussions on the need for various treatments, education, and other information.

All of the respondents have a home in Valley County, and 98% consider this their primary residence (although the survey did not ask how much of each year is spent in their Valley County residence). About 28% of the respondents were from the McCall area, 24% were from

the Cascade area, 17% were from the Donnelly area, 16% from Lakefork, and 4% from Yellow Pine, with the remainder from other communities scattered across the county.

Virtually all of the respondents (98%) correctly identified that they have emergency telephone 911 services in their area. The ability of respondents to correctly identify if they are covered by a city or rural fire district was exceptionally good. Respondents were asked to identify if their home is protected by a rural or city fire district. Many of the county's residents have rural or city fire protection. Of the respondents, 86% correctly identified they live in an area protected by a rural or city fire district. Only 2% responded they do not have a fire district covering their home, when in fact they do. Approximately 3% of the respondents indicated that they were outside of a fire protection district when in reality they are inside of a protection district. The additional 10% of the respondents indicated they believe they are outside of a protection district, and in fact, they are correct. These results would indicate that only 5% of the county's residents are incorrect about their belief concerning fire district coverage of their home. This compares very favorable in comparison to other counties in the region and in Idaho where the incorrect responses might approach 25% of the households sampled.

Respondents were asked to indicate the type of roofing material covering the main structure of their home. Approximately 13% of respondents indicated their homes were covered with a composite material (asphalt shingles). About 81% indicated their home were covered with a metal (eg., aluminum, tin) roofing material. Roughly 4% of the respondents indicated they have a wooden roofing material such as shakes or shingles. The additional 3% of respondents had a variety of combustible and non-combustible materials indicated.

Residents were asked to evaluate the proximity of trees within certain distances of their homes. Often, the density of trees around a home is an indicator of increased fire risk. The results are presented in Table 2.1.

Table 2.1 Survey responses indicating the proximity of trees to homes.

Number of Trees	Within 250 feet of your home	Within 75 feet of your home
None	3%	5%
Less than 10	17%	34%
Between 10 and 25	26%	40%
More than 25	54%	21%

Approximately 75% of those returning the survey indicated they have a lawn surrounding their home. Of these individual homesites, 94% indicated they keep this lawn green through the fire season.

The average driveway length of the respondents was approximately 370 feet long, from their main road to their parking area. Roughly 28% of the respondents had a driveway over ½ mile long, and a corresponding 54% had a driveway over ¼ of a mile long. Of these homes with lengthy driveways, roughly 50% have turnouts allowing two vehicles to pass each other in the case of an emergency. Approximately 68% of all homeowners indicated they have an alternative escape route, with the remaining 32% indicating only one-way-in and one-way-out.

Nearly all respondents (99%) indicated they have some type of tools to use against a wildfire that threatens their home. Table 2.2 summarizes these responses.

Table 2.2. Percent of homes with indicated fire fighting tools in Valley County.

99% – Hand tools (shovel, Pulaski, etc.)

9% – Portable water tank

Table 2.2. Percent of homes with indicated fire fighting tools in Valley County.
14% – Stationery water tank
46% – Pond, lake, or stream water supply close
23% – Water pump and fire hose
22% – Equipment suitable for creating fire breaks (bulldozer, cat, skidder, etc.)

Roughly 38% of the respondents in Valley County indicated they have someone in their household trained in wildland fire fighting. Approximately 16% indicated someone in the household had been trained in structural fire fighting. However, it is important to note that these questions did not specify a standard nor did it refer to how long ago the training was received.

A couple of questions in the survey related to on-going fire mitigation efforts households may be implementing. Respondents were asked if they conduct a periodic fuels reduction program near their homesites, such as grass or brush burning. Approximately 78% answered affirmative to this question, while 34% responded that livestock (cattle, horses, sheep) graze the grasses and forbs around their home sites.

Respondents were asked to complete a fuel hazard rating worksheet to assess their home's fire risk rating. An additional column titled "results" has been added to the table, showing the percent of respondents circling each rating (Table 2.3).

Circle the ratings in each category that best describes your home.

Table 2.3. Fuel Hazard Rating Worksheet		Rating	Results
Fuel Hazard	Small, light fuels (grasses, forbs, weeds, shrubs)	1	42%
	Medium size fuels (brush, large shrubs, small trees)	2	28%
	Heavy, large fuels (woodlands, timber, heavy brush)	3	30%
Slope Hazard	Mild slopes (0-5%)	1	69%
	Moderate slope (6-20%)	2	24%
	Steep Slopes (21-40%)	3	6%
	Extreme slopes (41% and greater)	4	1%
Structure Hazard	Noncombustible roof and noncombustible siding materials	1	15%
	Noncombustible roof and combustible siding material	3	74%
	Combustible roof and noncombustible siding material	7	3%
	Combustible roof and combustible siding materials	10	7%
Additional Factors	Rough topography that contains several steep canyons or ridges	+2	Average -2.3 pts
	Areas having history of higher than average fire occurrence	+3	
	Areas exposed to severe fire weather and strong winds	+4	
	Areas with existing fuel modifications or usable fire breaks	-3	
	Areas with local facilities (water systems, rural fire districts, dozers)	-3	

Calculating your risk

Values below are the average response value to each question.

Fuel hazard __1.9___ x Slope Hazard ____1.4___ = ____2.6____		
Structural hazard	+	____3.4__
Additional factors	(+ or -)	___-2.3__
Total Hazard Points	=	____3.7__.

Table 2.4. Percent of respondents in each risk category as determined by the survey respondents.
00% – Extreme Risk = 26 + points
03% – High Risk = 16–25 points
17% – Moderate Risk = 6–15 points
80% – Low Risk = 6 or less points

Maximum household rating form score was 19 points, as assessed by the homeowners. These numbers were compared to observations made by field crews trained in wildland fire fighting. These results indicate that for the most part, these indications are only slightly lower than the risk rating assigned by the “professionals”. Anecdotal evidence would indicate that Valley

County landowners involved in this survey have a more realistic view of wildfire risk than the landowners in other Idaho counties where these questions have been asked.

Finally, respondents were asked "if offered in your area, would members of your household attend a free, or low cost, one-day training seminar designed to teach homeowners in the wildland–urban interface how to improve the defensible space surrounding your home and adjacent outbuildings?" A majority of the respondents, 69% indicated a desire to participate in this type of training.

Homeowners were also asked, "How do you feel Wildland-Urban Interface Fire Mitigation projects should be funded in the areas surrounding homes, communities, and infrastructure such as power lines and major roads?" Responses are summarized in Table 2.5.

Table 2.5. Public Opinion of Wildfire Mitigation Funding Preferences.

	Mark the box that best applies to your preference		
	100% Public Funding	**Cost-Share (Public & Private)**	**Privately Funded (Owner or Company)**
Home Defensibility Projects →	27%	42%	32%
Community Defensibility Projects →	44%	55%	1%
Infrastructure Projects Roads, Bridges, Power Lines, Etc. →	70%	16%	13%

2.2.3 Committee Meetings

The following list of people who participated in the planning committee meetings, volunteered time, or responded to elements of the Valley County Wildland-Urban Interface Wildfire Mitigation Plan's preparation.

- Greg Bassler .....Northwest Management, Inc.
- Tyler Bentley .....USDA Forest Service
- Toby Brown .....Northwest Management, Inc.
- Tera Duman .....Northwest Management, Inc.
- James Haas .....Cascade Rural Fire District
- Lee Heinrich .....Valley County Clerk
- Ken Homik.....Northwest Management, Inc.
- Ronn Julian .....USDA Forest Service
- John Lillehaug .....Idaho Department of Lands
- Jeff Luff .....USDA Forest Service
- John McGee.....Northwest Management, Inc.
- Dusty Pence.....USDA Forest Service
- Gary Phillips .....USDA Forest Service
- William E. Schlosser .....Northwest Management, Inc.

- Steve Stuebner .....Tamarack Resort
- Richard Taplin .....Ponderosa State Park
- Leo VanHoover .....Yellow Pine Resident
- Lois VanHoover.....Yellow Pine Resident
- Mark Woods .....Southern Idaho Timber Protective Association

Committee Meetings were scheduled and held on the following dates:

November 6, 2003

William E. Schlosser, project director from Northwest Management, Inc., gave an overview of the company and general information about the development and planning of the Valley County Fire Mitigation Plan. Contact information was exchanged between members of the committee and Northwest Management, Inc.

Specific discussion items:

- Schedule of meetings: NMI would like to hold one meeting each month until the conclusion of the planning process. We would suggest the second Tuesday of each month. A lunch time meeting would be preferable if schedules allow. We can move the meeting location around as needed (McCall, Donnelly, Cascade). Most meetings will be concluded within one hour.
- Map Products: A variety of mapping products will be created during this planning process. John McGee and Lee Heinrich both have a set of current maps showing landowners, rural and wildland fire districts, past fires, and fire prone landscapes. Please take a look at them and provide any comments to refine the information. Especially evaluate the rural and wildland fire districts for boundary changes that may have occurred since the data was collected. The Donnelly Rural Fire District was voted on during the November 4, 2003, election. As of the time of map printing we did not know if this passed or not (hopefully it did!) Also, please make note of any communities that are not identified on the maps so that we can update the communities database. If additional GIS data is available (USFS-Fire Regime and Condition Class?), please provide it on disk to Dr. Schlosser.
- Resources and Capabilities Guide: Normally, we develop a county-wide booklet detailing the resources and capabilities of the Rural and Wildland Fire Districts protection services in each county. The Valley Interagency Interface Group Operations Plan seems to service this need very well. We suggest that we add to it, 81/2 x 11district maps for each district and use this as the summary of the resources in the county. Please update any changes to this Operations Plan.
- Fire Risk Assessments: NMI wildland fire personnel are making site visits to all of the identified communities in the County. We are making observations about the fuels in each community, the access, developing potential treatments, and taking pictures. Each of the communities will have a FEMA Hazard Assessment form completed that details information in the FEMA format. We will also create a written summary of observations. If anyone has Fire Mitigation Projects identified please let us know so that we can integrate it into the County's Plan.
- Public Involvement: We want to encourage public participation in this planning process. If there are any members of the community that want to participate please invite them to do so. They need to attend the monthly meetings and provide feedback. This committee

(VIIG) is part of that process, therefore we need to keep a roster of those that attend meetings. Please include your e-mail address for announcements. We will also be sending out a public mail survey. We have received as high as 90% response rate on these survey averaging 60% in neighboring counties. The Valley County Assessor's office will be providing the mailing list of residents that we will randomly select names from. After the assessments are completed, we will hold public meetings in the county to share information on the process and facilitate public input. This will come before the draft plan is completed. The VIIG Committee will be the first to review this document, then it goes out the general public. After all comments are integrated into the revised document, it is give to the County Commissioners for final approval. This then becomes the County's Fire Mitigation Plan and we move into the implementation phase.

December 9, 2003

NMI representative gave an overview of project status since last meeting and ask for any information the committee was able to produce so far.

Other items discussed included:

- Schedule of Meetings: Reminder, we would like to hold one meeting each month until the conclusion of the planning process. We are shooting for the second Tuesday of each month.
- Resources and Capabilities Guide: As part of today's meeting we would like a group discussion on the existing resources and needs for the County. This might be additional water tenders, pumper trucks, buildings, training, a new station house, anything that will increase the capabilities of the County's Fire Districts to meet the needs of wildland fire fighting in the County and provide for parity between the districts. We will discuss it at this meeting and come up with some ideas and recommendations to put into the plan.
- Fire Risk Assessments: During the week of December 8 -12, we have Tera Duman and Ken Homik doing field visits to all of the communities and subdivisions that have not yet been visited. They may be calling on some of the fire district personnel for added information. We will have their summaries available at the January meeting for review.
- Planned Activities: If you or your agency knows of any planned activities in terms of fire mitigation work scheduled for Valley County, please let us know so that we can include it in the final plan.

January 13, 2004

General Notes: Next meeting is scheduled for Wednesday, February 11 at the Cascade Rural Fire Station (109 E. Pine Street) in Cascade at 1:00PM.

The community assessments were discussed at length. Comments made by the committee included:

- Tyler Bentley - USFS: Communities missed for assessments: Patty Flat, Trails End (McLain (sp?) Ranch (South Fork), Big Creek Edwardsburg (1.5 hours past Yellow Pine), individual Ranches (at least mention the major ones), Taylor Creek Ranch (15 homes at end of airstrip)
    - VIIG – on internal USFS website – fire and aviation -2002 version. He will email electronic copy of document to Lee and/or Dr. Schlosser.
    - Update last 4 pages – equipment list – and email to John or Bill.

- Mark Woods: Need to clarify in the plan who is responsible for structural and/or wildland fires. Make the distinction.
    - Question on prioritizing communities and treatments – more political, let commissioners and group decide. Possibly just give top 5 or 10.
    - Question on FEMA forms – would like to see some clarification if possible. Write up paragraph with instructions.
- Tyler Bentley - USFS: Do we want to incorporate what Jeff Jones is doing? Possibly. Tyler indicated that what he has seen of Jeff's work does not necessarily match up with what is going on the ground.
- John Lillehaug – IDL: Why are the standards different between communities, ie spacing?
    - Yellow Pine: IDL spent $80,000 in treatments and is not mentioned.
    - Will our comments be heard? Yes. Please provide for incorporation.
- Lee Heinrich - County Clerk: Not going to curtail process and impose artificial deadlines. Want a good product rather than meet a deadline.
- Mark Woods: VIIG has not been active in the last year. Has to dovetail with LAPC. Use operations guide as a tool to re-invigorate the group.

Comments on radio, communications, and other resource and capabilities items were also provided:

Narrow band radios

- James Haas – Cascade Rural fire: Has been working on gaining narrow band radios. Their district is having major problems with redundancy striking. He is also working on enhanced 911.
- Other Agencies:
    - IDL: will have soon.
    - USFS: has or is in transition.
    - SITPA: working on, not there yet

Solution: The committee suggested putting narrow band in hands of rural and in dispatch ICS.

Problems: will have to update twice: 1) narrow band, 2) narrow band digital. Also have a need for hardware and a common frequency use plan.

More Repeaters

- SITPA and USFS: no plans for more, don't need.
- Rurals: Need more. Repeaters may be adequate but Rurals need narrow band. Redundancy issue – have extra repeater in case one goes down.

Wireless Internet Connections

- Cascade Rural is working on a remote dispatch center, trucks, etc.

Fire District Boundaries

- City of Cascade – just annexed ½ square mile area, jurisdiction area change.

- Brundage Mtn. under contract.
- Homes outside of district want protection but district can't provide. There were no recommendations for those that live far way and un-accessible.

Water Storage

- James Haas: City of Cascade is working on storage, new lines, and new subdivisions.
- West Mountain Area: Older subdivision is becoming a problem due to the lack of building codes and other regulations. They also lack a water supply. Newer subdivisions in the area have new facilities (water, electrical, etc.).

Facilities

- All three districts have good facilities (newer buildings with meeting rooms), but may need additional equipment. They also have additional room for equipment storage.

Volunteer Retention

- Volunteers usually have full time jobs. Difficult to get time off from work to respond. Often loose promotions, vacation time, or their job. Small companies cannot afford people leaving for fire and rescue calls.

Training Opportunities

- Provide training, could use money to help pay for materials. 2 courses/year/district (6 weeks/course) $2000/program. Coordinate between districts to reduce program costs? May get too much training, gets confusing, can't go to all.
- BDS training on different systems: ICS system for disaster services and ICS for wildland fire.
- All Risk Unified Dispatch System – sounds like it may be coming soon.

Disaster Preparedness

- No fatalities in the county this year. All felt there were very good personnel, mobilization, and communication. They have been very lucky. Fires started at the north end of county would have had different results if they had started in any other area. Need to look at where ignition occurred! Recognize that there has been a significant change where people live and how they live.
- Good mutual aid agreements.
- Need to update Rural, City, and wildland fire equipment lists. Boise has equipment in Cascade and Warm Lake. BLM doesn't provide any response in Valley County.

Misc. Comments

Email surveys to each member; send email to each fire chief asking what the equipment needs are.

Mark Wood's comments: What is the private landowners' responsibility for doing defensible space? How can they expect fire district to provide protection?

Document in county assessment that this community is at high risk and need a defensible space. Insurance company reads this and drops insurance for those homes. Who is liable?

Areas where fuel treatment projects have been completed: Yellow Pine, Jughandle, and Gods Acre.

March 30, 2004

- Public Meetings will be held on April 6, 7, & 8 at 7pm
- Notice of meetings was placed in the Advocate & Star News
    - Haven't put the notice on Mountain Air Radio
    - Mr. Stuebner will put it in the Idaho Statesman after William Schlosser sends the notice out to e-mail list
    - Bill needs to send a copy of public meeting notice to e-mail list
- William Schlosser needs SITPA logo by Thursday (April 1)
- William Schlosser gave quick explanation concerning the signature page of the plan document and what would happen if an agency, fire department, etc. didn't sign
- The Forest Service is currently doing several different mitigation projects around Warm Lake because there is no fire protection in that area.

Dr. Schlosser gave the committee a preview of the public presentation and opened it up for discussion and comments. No additions or changes were made.

- The black area on one of the maps in the presentation is part of the wilderness area managed by the Salmon-Challis National Forest
- Committee members want to post a map at the public meetings that show the specific treatment areas recommended in the map
    - Need to make sure to say that they are proposed areas
    - Include a reference to agency responsible for treatment, so the meeting doesn't get bogged down in too much detail

June 18, 2004

DR. William Schlosser	NMI
Dennis Thomas	NMI
Lee Heinrich	Court Clerk Valley County
Mark Woods	SITPA
Dusty Pence	USFS / Boise NF
Sam Hescock	USFS / Payette NF

Introduction and agenda / William Schlosser

Dr. Schlosser requested any additional edits be sent to NMI staff [Toby Brown, Terra Dunn, and Bill] by June 23, 2004.

Review of Valley County draft Plan and edits.

Dr. Schlosser asked group how the edits looked for the draft plan at this time.

Mark Woods thought the Plan looked good to date.

Lee Heinnich approved edit [4.2.1.4 Building Codes], County Commissioner will address future planning and zoning issues.

Dusty Pence will e-mail Dr. Schlosser changes to 4.6

Sam Hesock will provided write up's and edits up for 4.4.2.3.18 through 4.4.2.3.23

Big Creek-Edwardsburg, Trails End Subdivision, Taylor Range, Elk Creek, Yellow Jacket Range, Lake Fork Guard Station.

Sam Hescock asked Bill what format he would like fire history.

Dr. Schlosser explained the relevance to provided the documentation of fire history to show that the county has a fire problem. And what format to send the data in.

Dusty Pence and Sam Hescock will e-mail Bill data.

Sam Hescock requested restructure paragraph 5.3 page 148.

Dr. Schlosser requested additional fuel reduction projects be e-mailed to NMI staff by June 23, 2004 before plan goes out to public review.

Sam Hescock will sent all updated information by deadline date.

Dusty Pence commented that section 5.4 Warm Lake does not have a community water resource.

Dr Schlosser asked Lee Heinrich how long to put the document out for public review. Lee responded two weeks.

NMI will start working on the edits next week and have the plan ready for public review by the last week in June, 2004. public review will be completed by the middle of July, 2004. NMI will compete the edits from Public review the third week of July.

Lee Heimlich stated the last public meeting will be held at a regular commissioners meeting at the commissioners office.

Public will be able to review the plan at the following locations:

McCall	Cascade	Yellow Pine
County Court House	Post Office	
USFS	USFS	
IDL		
SITPA		
Library		

NMI will prepare a press release before the public review.

Dr Schlosser led a discussion who will sign the document, for the different committee members.

Public survey revealed people would pay for some treatment, County to take lead. County Commissioner will resume responsibility to identify priority area's of treatment with input from Fire Committee.

Some discussion what the WUI is and Dr. Schlosser explained once the commissioner sign document they have identified the WUI.

Review of the infrastructure map. Committee Members identified additional infrastructure on Maps. NMI will updated at there GIS lab.

Dr. Schlosser thank individuals for attending the meeting. He encouraged committee members to e-mail all additional edits and changes to the draft by June 23, 2004

2.2.3.1 Public Meetings

Public meetings were held during the planning process, as an integral component to the planning process. It was the desire of the planning committee, and the Valley County Commissioners to integrate the public's input to the development of the fire mitigation plan.

Formal public meetings were scheduled on April 6, 2004, at Cascade, Idaho, on April 7, 2004, at McCall, Idaho, and on April 8, 2004, at Donnelly, Idaho. The purpose of these meetings was to share information on the planning process with a broadly representative cross section of Valley County landowners. Both meetings had wall maps posted in the meeting rooms with many of the analysis results summarized specifically for the risk assessments, location of structures, fire protection, and related information. The formal portion of the presentations included a PowerPoint presentation made by Project Director, Dr. William E. Schlosser. During his presentations, comments from committee members, fire chiefs, and others were encouraged in an effort to engage the audience in a discussion.

It was made clear to all in attendance that their input was welcome and encouraged, as specific treatments had not yet been decided, nor had the risk assessment been completed. Attendees were told that they could provide oral comment during these meetings, they could provide written comment to the meetings, or they could request more information in person to discuss the plan. In addition, attendees were told they would have an opportunity to review the draft plan prior to its completion to further facilitate their comments and input.

The formal presentations lasted approximately 1½ hours and included many questions and comments from the audience. Following the meetings, many discussions continued with the committee members and the general public discussing specific areas, potential treatments, the risk analysis, and other topics.

Attendance at the public meetings included 11 individuals at the Cascade meeting, 5 in McCall, and 4 at Donnelly. The following are comments, questions or suggestions from the meetings:

2.2.3.1.1 Cascade Public Meeting

April 6, 2004 – American Legion Hall – 7pm

The meeting started with a presentation by Dr. William Schlosser. Dr. Schlosser presentation was aimed at informing the audience why the plans were being created, the congressional actions authorizing the plans, who had been involved at the local level in the planning committee, and the work accomplished. He stressed that the goal of the public meeting was to gather comments, ideas, and input from the public on the work that the committee had done to date. Comments made during the meeting would be noted and made part of the final plan document. Comments could also be made in writing to Dr. Schlosser at the Northwest Management office in Moscow Idaho.

Discussions took place during and after the presentation. The points of the discussions follow:

The High Valley area contains several subdivisions, but is not considered in the plan as a separate community. Discussion followed looking at the definition of a community and if the High Valley area required separate consideration. Consensus was it does not require separate consideration. There was some discussion as to who/how High Valley was covered by rural fire district or thru agreements with IDL/Gem County in Ola. The group would like to see some comment in the plan on how the High Valley area is covered for fire protection.

There was a general discussion on the problems that local volunteer fire departments face. The major issues cited were recruiting and keep young volunteers, equipment and budgets. No new

solutions to these dilemmas were voiced. Dr. Schlosser mentioned a piece of legislation working its way thru congress that would provide a 2% discount on home mortgage rates for volunteer firefighters.

There was a recommendation from the audience about widening high-tension powerline rights of way. This would reduce the hazard of trees falling into the lines and causing fires, or severing power to local communities. Wider powerline rights of way would also reduce the risk to wooden poles actually being destroyed during major fire events.

During fire responses or evacuations several of the secondary roads identified on the maps may not be wide enough to handle both evacuees leaving an area and emergency vehicles entering. Could these be looked at, and what standard width is necessary?

Additional dry season water sources around the WUI would help in initial response to fires. Local fire officials commented on the current location of large underground water tanks currently in place for fire response. During the dry season additional portable water bladders are placed around the county for use by fire trucks, but they do not work for helicopters. Additional ponds in the area would increase fire preparedness for both fire trucks and helicopters.

The meeting ended at 8:45.

2.2.3.1.2 McCall Public Meeting

April 7, 2004 – American Legion Hall – 7pm

The meeting started with a presentation by Dr. William Schlosser. Dr. Schlosser presentation was aimed at informing the audience why the plans were being created, the congressional actions authorizing the plans, who had been involved at the local level in the planning committee, and the work accomplished. He stressed that the goal of the public meeting was to gather comments, ideas, and inputs from the public on the work that the committee had done to date. Comments made during the meeting would be noted and made part of the final plan document. Comments could also be made in writing to Dr. Schlosser at the Northwest Management office in Moscow Idaho.

Discussions took place during and after the presentation. The points of the discussions follow:

The Elk Creek road from Warren (Idaho County) to Big Creek (Valley County) has been reopened. This road should be a secondary road on the infrastructure map. This would provide a second escape route from Big Creek. Also add the road to the Idaho County infrastructure map.

Phone lines as part of the necessary infrastructure of the county. People felt that any main fiber optic or phone lines that feed the communities were a vital part of the communications net needed during fires as well as an integral part of the modern economy. It was pointed out ”you can’t buy gas to get out of town if the phone lines are down, because the pumps won’t take your credit card”.

No one knew of any main gas transportation lines. The railroad south of Cascade is still active for tourist trains and should be included on the infrastructure map.

Idaho power has secured a permit from the USFS to add an additional high-tension powerline to the county. This line should be noted on the infrastructure map.

There was a general discussion on the state of the McCall rural fire district. The district appears to be well equipped and staffed. The fire districts biggest concerns are with narrow access roads/ driveways to homes, the heavy accumulation of fuels in and around some local communities/subdivisions and the lack of water access points to Lake McCall.

Access to water for fighting structure and wildland fires was discussed at length. Although many communities are on Payette Lake, there are a limited number of access points for trucks to draft water from the lake. An intriguing idea was for the fire districts to secure a fire patrol boat/portable hydrant. The boat would enable the districts to more easily patrol for fires in campgrounds along the lake, directly assist in fighting structure and wildfires adjacent to the lake, and in filling operations. Due to the narrow and slow access roads a boat would also have a faster response time to many communities around the lake. This idea could also be applied to the communities of Cascade and Donnelly on Lake Cascade.

The idea of a "Defensible space" denotes that someone else may be defending the space, or that all fire is bad. An audience member remarked that at a conference he attended in Nevada an Australian noted that they refer to them as "Asset protection zones" This presents more of a positive connotation that the intent is to protect an investment made in the structure or community.

2.2.3.1.3 Donnelly Public Meeting

April 8, 2004 – Donnelly Rural Fire District Firehouse – 7pm

The meeting started with a presentation by Dr. William Schlosser. Dr. Schlosser presentation was aimed at informing the audience why the plans were being created, the congressional actions authorizing the plans, who had been involved at the local level in the planning committee, and the work accomplished. He stressed that the goal of the public meeting was to gather comments, ideas, and inputs from the public on the work that the committee had done to date. Comments made during the meeting would be noted and made part of the final plan document. Comments could also be made in writing to Dr. Schlosser at the Northwest Management office in Moscow Idaho.

During the presentation there we some comments made regarding pre-commercial thinning slash. A member of SITPA answered the question and explained the process by which forest management of slash from commercial and non commercial actions was regulated by the state. In this case he was able to directly answer the concern voiced and the mitigation taken by the landowner.

A general discussion regarding the current state of the Donnelly Fire District began after the presentation. The district was recently changed into a formal taxing district from a subscriber association. The general feeling was that the main firehouse was well equipped and had a sufficient volunteer staff. Concerns were raised that there was not a full time fireman at the station. There are currently no satellite stations in the Donnelly district. A new station will be built as part of the Tamarack subdivision to the southwest. To the North there is a desire to establish a substation at Lake Fork. Conversations continue in the community to make this a reality, but it is still in the planning stage.

Another discussion point was water availability for structure and wildland fire fighting. The idea of requiring new subdivisions to provide water systems (hydrants or tanks) for firefighting was put forward. This is something that could be implemented thru the local Planning and Zoning Commission.

The county is upgrading their building codes to international standard. As part of this upgrade there was public sentiment that requiring pretreatment for defensible space be included in the upgrade.

County bridges are inspected on a regular basis. If the bridge is unable to handle normal legal loads, they are posted. If a bridge is not deficient, it is not posted. Private bridges are not

inspected. It is left to the local fire districts to notify owners of private bridges that may not carry local fire trucks. It is not clear if this is being accomplished. The location of these private bridges has not been compressively located or mapped.

Some of the newer subdivisions are “gated communities”. Local fire districts and wildland firefighters are often not given the keys or codes to open these gates. These gates cannot be opened with a pair of bolt cutters and do pose an obstacle to fire response.

The meeting ended at 8:40pm

2.2.3.2 Meeting Notices

Public notices of this meeting were printed in the **Advocate**, **Star News**, and the **Idaho Statesman** the weeks of March 28 and April 4, 2004. Notices were also posted at City Hall, County Court House, Idaho Department of Lands, and the office of the Payette National Forest’s McCall Ranger District.

Valley County Wildfire Mitigation Plan Seeks Public Input

Cascade, Idaho—The Valley County Commissioners created an Interagency Wildfire Mitigation Planning Committee to develop a Wildfire Plan for Valley County as part of the National Fire Plan authorized by congress and the Whitehouse. The Valley County Wildfire Mitigation Plan includes risk analysis at the community level with predictive models for where fires are likely to ignite and where they are likely to spread rapidly once ignited. Additional assessments include a resource and capabilities evaluation of the County’s city and rural fire departments, critical infrastructure, and policy at the county and city level. Northwest Management, Inc. has been retained by Valley County to provide wildfire risk assessments, mapping, field inspections, interviews, and to collaborate with the committee to prepare the plan. The coordination for this effort is being provided by Lee Heinrich, Valley County Clerk. The committee includes rural and wildland fire districts, land managers, elected officials, agency representatives, and others. Specialists are conducting analysis of fire prone landscapes and making recommendations for potential treatments at the community level. Specific activities for homes, structures, infrastructure, and resource capabilities will be proposed as part of the analysis.

The committee launched a public survey in February that is almost completed. Many area homeowners were asked to participate in this unique survey. Already over 65% of the 215 surveys have been returned. This information has been very useful in gauging public input to key factors of the plan.

Another important opportunity for the citizens of Valley County will happen in early April as the committee sponsors 3 public meetings. These evening meetings (7:00-8:30) are open to the public and provide an opportunity to learn about the wildfire risk assessments for Valley County and the preparedness of fire fighting agencies and departments to respond to wildfires. Potential treatment options will be discussed during these meetings. Public input is encouraged at the meetings as all gathered information will be included in the final plans. The schedule of the meetings is as follows:

April 6, Cascade – American Legion Hall, 105 E. Mill Street

April 7, McCall – American Legion Hall, (basement) 216 E. Park Street

April 8, Donnelly – Donnelly Rural Fire District Station, W. Roseberry Road

All meetings are from 7:00 P.M. to 8:30 P.M. For more information on the Fire Mitigation Plan project in Valley County contact your County Commissioner, Northwest Management, Inc.

project director Dr. William Schlosser (208) 883-4488, or the Valley County Clerk's Office, Lee Heinrich at (208) 382-7100.

2.3 Review of the WUI Wildfire Mitigation Plan

Review of sections of this document were conducted by the planning committee during the planning process as maps, summaries, and written assessments were completed. These individuals included fire mitigation specialists, fire fighters, planners, elected officials, and others involved in the coordination process. Preliminary findings were discussed at the public meetings, where comments were collected and facilitated.

The results of these formal and informal reviews were integrated into a DRAFT Wildland-Urban Interface Wildfire Mitigation Plan. This plan was given to members of the planning committee on May 21.

Review of the DRAFT document by the Valley County Interagency Wildland Mitigation Planning Committee is scheduled to be made from this date until June 4, 2004.

From here we suggest that amendments and changes to this document be sent to Northwest Management, Inc. for inclusion in a revised plan. We will meet again on June 4 (location?) and discuss changes to the document. Please e-mail or fax edits to the Northwest Management, Inc. office directly ahead of the meeting so that we can discuss those changes in their entirety at the June 4 meeting. We can then schedule the public review to be released from June 8 – June 22. Again changes and modifications can be sent to Northwest Management, Inc. for inclusion in the final plan. The completed plan can be adopted by the County Commissioners on or after June 28, depending on the comments received and any actions needed as a result. *This is a suggested time frame only.* Suggestions and comments on this would be appreciated. The ultimate decision is made by the County Commissioners.

You can send comments directly to Schlosser@consulting-foresters.com or call Northwest Management, Inc. at 208-883-4488 fax at 208-883-1098.

Chapter 3: County Characteristics & Risk Assessment

3 Background and Area Description

3.1 Demographics

Valley County reported an increase of approximately 3% per year in total population from 6,109 in 1990 to 7,651 in 2000. Valley County has two incorporated communities, McCall (pop. 5,286) and Cascade (pop. 2,333). McCall has experienced a 53% increase in population between 1990 and 2000 averaging slightly less than 6% annually. Unincorporated communities include Smith's Ferry, Alpha, Warm Lake, Landmark, Yellow Pine, Big Creek, Donnelly, Roseberry, Lake Fork, Lardo, and Edwardsburg. The total land area of the county is roughly 3,678 square miles (2,353,920 acres).

Table 3.1 summarizes some relevant demographic statistics for Valley County.

Table 3.1 Selected demographic statistics for Valley County, Idaho, from Census 2000.

Subject	Number	Percent
Total population	7,651	100.0
SEX AND AGE		
Male	3,981	52.0
Female	3,670	48.0
Under 5 years	317	4.1
5 to 9 years	457	6.0
10 to 14 years	598	7.8
15 to 19 years	560	7.3
20 to 24 years	194	2.5
25 to 34 years	658	8.6
35 to 44 years	1,260	16.5
45 to 54 years	1,458	19.1
55 to 59 years	474	6.2
60 to 64 years	548	7.2
65 to 74 years	692	9.0
75 to 84 years	365	4.8
85 years and over	70	0.9
Median age (years)	43.9	(X)
18 years and over	5,841	76.3
Male	2,963	38.7
Female	2,878	37.6
21 years and over	5,690	74.4
62 years and over	1,415	18.5
65 years and over	1,127	14.7
Male	552	7.2

Table 3.1 Selected demographic statistics for Valley County, Idaho, from Census 2000.

Subject	Number	Percent
Female	575	7.5
RELATIONSHIP		
Population	7,651	100.0
In households	7,580	99.1
Householder	3,213	42.0
Spouse	2,020	26.4
Child	1,875	24.5
Own child under 18 years	1,652	21.6
Other relatives	190	2.5
Under 18 years	114	1.5
Non-relatives	282	3.7
Unmarried partner	124	1.6
In group quarters	71	0.9
Institutionalized population	64	0.8
Non-institutionalized population	7	0.1
HOUSEHOLDS BY TYPE		
Households	3,213	100.0
Family households (families)	2,292	71.3
With own children under 18 years	917	28.5
Married-couple family	2,030	63.2
With own children under 18 years	744	23.2
Female householder, no husband present	169	5.3
With own children under 18 years	111	3.5
Nonfamily households	921	28.7
Householder living alone	788	24.5
Householder 65 years and over	251	7.8
Households with individuals under 18 years	982	30.6
Households with individuals 65 years and over	1,081	33.6
Average household size	2.36	(X)
Average family size	2.78	(X)
HOUSING TENURE		
Occupied housing units	3,208	100.0
Owner-occupied housing units	2,537	79.1
Renter-occupied housing units	671	20.9
Average household size of owner-occupied unit	2.42	(X)
Average household size of renter-occupied unit	2.16	(X)

(X) Not applicable
[1] Other Asian alone, or two or more Asian categories.
[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] In combination with one or more other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.
Source: U.S. Census Bureau, Census 2000 Summary File 1, Matrices P1, P3, P4, P8, P9, P12, P13, P,17, P18, P19, P20, P23, P27, P28, P33, PCT5, PCT8, PCT11, PCT15, H1, H3, H4, H5, H11, and H12.

3.2 Socioeconomics

Valley County had a total of 3,208 occupied housing units and a population density of 2.1 persons per square mile reported in the 2000 Census. Ethnicity in Valley County is distributed: white 96.4%, black or African American 0.0%, American Indian or Alaskan Native 0.7%, Asian 0.3%, Hispanic or Latino 2.0%, two or more races 1.4%, and some other race 1.1%.

Specific economic data for individual communities is collected by the US Census; in Valley County this includes McCall and Cascade. McCall households earn a median income of $38,678 annually and Cascade has a median income of $34,278, both of which compares to the Valley County median income during the same period of $36,927. Table 3.2 shows the dispersal of households in various income categories in Valley County.

Table 3.2 Income in 1999	**Valley County**	
	Number	**Percent**
Households	**3,213**	**100.0**
Less than $10,000	240	7.5
$10,000 to $14,999	239	7.4
$15,000 to $24,999	510	15.9
$25,000 to $34,999	515	16.0
$35,000 to $49,999	633	19.7
$50,000 to $74,999	658	20.5
$75,000 to $99,999	226	7.0
$100,000 to $149,999	125	3.9
$150,000 to $199,999	39	1.2
$200,000 or more	28	0.9
Median household income (dollars)	36,927	(X)

(Census 2000)

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of its projects on minority or low-income populations. In Valley County, a significant number, 6.2%, of families are at or below the poverty level (Table 3.3).

Table 3.3 Poverty Status in 1999 (below poverty level)	**Valley County**	
	Number	**Percent**
Families	**142**	**(X)**
Percent below poverty level	(X)	6.2
With related children under 18 years	86	(X)
Percent below poverty level	(X)	8.8
With related children under 5 years	25	(X)
Percent below poverty level	(X)	8.1
Families with female householder, no husband present	**54**	**(X)**

Table 3.3 Poverty Status in 1999 (below poverty level)	Valley County	
	Number	Percent
Percent below poverty level	(X)	32.0
With related children under 18 years	35	(X)
Percent below poverty level	(X)	28.7
With related children under 5 years	6	(X)
Percent below poverty level	(X)	23.1
Individuals	**701**	**(X)**
Percent below poverty level	(X)	9.3
18 years and over	501	(X)
Percent below poverty level	(X)	8.7
65 years and over	61	(X)
Percent below poverty level	(X)	5.6
Related children under 18 years	179	(X)
Percent below poverty level	(X)	10.1
Related children 5 to 17 years	150	(X)
Percent below poverty level	(X)	10.4
Unrelated individuals 15 years and over	257	(X)
Percent below poverty level	(X)	21.5

(Census 2000)

The unemployment rate was 3.8% in Valley County in 1999, compared to 4.4% nationally during the same period. Approximately 7.0% of the Valley County employed population worked in natural resources, with much of the indirect employment relying on the employment created through these natural resource occupations; Table 3.4 (Census 2000).

Table 3.4 Employment and Industry	Valley County	
	Number	Percent
Employed civilian population 16 years and over	3,599	100.0
OCCUPATION		
Management, professional, and related occupations	1,070	29.7
Service occupations	678	18.8
Sales and office occupations	843	23.4
Farming, fishing, and forestry occupations	72	2.0
Construction, extraction, and maintenance occupations	579	16.1
Production, transportation, and material moving occupations	357	9.9
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	253	7.0
Construction	478	13.3
Manufacturing	242	6.7
Wholesale trade	63	1.8
Retail trade	469	13.0
Transportation and warehousing, and utilities	186	5.2
Information	52	1.4

Table 3.4 Employment and Industry	Valley County	
	Number	Percent
Finance, insurance, real estate, and rental and leasing	174	4.8
Professional, scientific, management, administrative, and waste management services	197	5.5
Educational, health and social services	514	14.3
Arts, entertainment, recreation, accommodation and food services	452	12.6
Other services (except public administration)	206	5.7
Public administration	313	8.7

Approximately 63% of Valley County's employed persons are private wage and salary workers, while around 24% are government workers (Table 3.5).

Table 3.5 Class of Worker	Valley County	
	Number	Percent
Private wage and salary workers	2,270	63.1
Government workers	848	23.6
Self-employed workers in own not incorporated business	452	12.6
Unpaid family workers	29	0.8

(Census 2000)

3.2.1 European Settlement of Valley County

Information summarized from the Valley County Comprehensive Plan.

Prior to the gold rush of the 1860's, Native Americans camped in Round Valley to hunt and to dig and dry camas roots. Packer John Welch, who had contracted to freight supplies from Umatilla Landing on the Columbia River to miners of Idaho City, established a camp on Gold Fork Creek and a brush cabin on Clear Creek in the 1860's. He also established a station near what later became the town site of Cascade.

During the 1870's, prospectors and miners followed in Packer John's footsteps to scour the valley and surrounding mountains for gold. The Clara Foltz mines opened on Paddy Flat, and other diggings commenced on Boulder and Gold Fork Creeks. Also during the 1870's, two salmon fisheries operated seasonally on Payette Lake.

In the late 1870's, the last of the Sheepeater Tribe was removed from Long Valley and Round Valley to a reservation. As the gold sources dwindled, a few of the miners took up squatter's rights. James Horner built a cabin on Clear Creek in 1881. Other miners settled on the Payette River. In 1883, S. M. Sisk, a young miner from New York, settled near the old townsite of Crawford. Later the same year, L.S. Kimble came from Illinois and began to cut trees at Tamarack Falls. A year later he moved to the site of VanWyck and opened the region's first blacksmith shop. After Kimble came W.D. Patterson, T. L. Worthington, L.M. Gorton, John DeHaas, E.A. Smith and many others who contributed to the development around VanWyck, Crawford, and Alpha.

Land survey maps drawn in the 1890's show four schools: one at Alpha and three in the Crawford-VanWyck area. Pioneer testimony tells about a fifth school located on Timber Ridge near McCall. The maps also point out sawmills at Warner's Pond and on Gold Fork Creek, as well as a small reservoir near VanWyck. And, in 1896, the Warren Dredge Co. opened a sawmill on Payette Lake.

The 1890's brought a period of strife for the new settlers. Ranchers from south of Long Valley annually brought their large herds of cattle to graze in Long Valley. The homesteaders resented the intrusion and retaliated on several occasions by slaughtering the outsider's cattle. This tension existed for some years until the U.S. Forest Service began to regulate grazing.

Although gold was first discovered in the Thunder Mountain area in 1893, enthusiasm for the area didn't begin until 1902, when W.H. Dewey began mining on a large scale. As many as 3,000 miners swarmed into the region seeking their fortunes. As a result, the town of Roosevelt evolved, only to be destroyed by an immense landslide in 1908. Because the area had never lived up to mining expectations, activity there died out soon after the landslide.

Probably the most important event in the Valley County area in the twentieth century was the coming of the railroad. In 1914, the Union Pacific completed its track from Emmett to McCall, making commercial logging profitable. Logging then became, along with farming and ranching, the economic mainstay of Long Valley for many years. Towns distant from the railroad, such as Alpha, Crawford, and Roseberry, soon lost their vitality and died. Towns near the railroad, such as Cascade, Donnelly, and McCall, thrived and became the population centers of Valley County. Elo, Thunder City, Pearsol, Norwood, and Spink eventually lost their activity to the three major towns. There were numerous private mills located throughout the county in the 1900's. In October of 1977 the last log went through the Boise Cascade Corporation's sawmill on Payette Lake in McCall – in May of 2001 Boise Cascade Corporation's sawmill in Cascade was closed.

In 1917, Valley County was created by the Idaho State legislature. Prior to that, it had been part of Boise County and Idaho County, both of which were created when Idaho was a territory. The portion of Boise County appears to have been in the North Fork of the Payette River drainage. The portion of Idaho County appears to have been in the Salmon River drainage.

In 1948, the Cascade Dam was completed on the Payette River. The reservoir was created for retention of water for irrigation and flood control. The back waters from this dam covered some of the best farming and ranch land in the valley and caused the rerouting of Highway 55 over Little Donner. It also caused many families to be relocated, some of them against their will. Since then the reservoir has been renamed to Lake Cascade and has become a renowned fishery.

3.2.2 Description of Valley County

Valley County is located in Central Idaho. It is bounded on the north by Idaho County, on the west by Adams and Gem County, on the south by Boise County, and on the east by Custer and Lemhi County.

Valley is a large county covering approximately 3,678 square miles. Of this, 88.1% is federally owned, 3.2% is state land, 0.1% belongs to the county, and the remaining 8.7% is in private ownership. The majority of the private lands are confined to Long Valley, Round Valley, and High Valley on the western edge of the county. Less than ten percent of the county is available for development or habitation and nearly all of this private land is concentrated on the western side. Approximately 1.0% of the total privately owned lands are currently used for agricultural production, while 84.9% is residential housing.

Valley County has altitudes ranging from 2,850 feet to nearly 9,700 feet. The topography is extremely varied, from high elevation meadows to steep mountainous terrain. The lower elevation valley regions are located on the western side of the county and are separated into Long Valley, Round Valley, and High Valley. The Payette and Boise National Forest share in the management of the entire central and eastern portions of the Valley County.

The flatter valley regions are very fertile and have numerous water resources, including mineral hot springs. Farming and ranching has been historically, and continues to be, an important component of the County's economy. The tourism industry has grown significantly in the last few decades. Valley County is well known for having some of the most multifaceted recreational opportunities in the state. The populations of the relatively small communities inevitably double during the summer months. Winter sports are also very popular with snowmobiling, skiing, and the McCall Winter Carnival attracting flocks of visitors annually. Buyers from the nearby Treasure Valley and beyond frequently purchase or build second homes in this area. It is determined that 80% of the home owners in Valley County do not live full-time in Valley County.

3.2.3 Highways

State Highway 55 is the sole mainstream transportation route through the county. This narrow two-lane highway travels through the flatter valley regions on the western side of the county. There are numerous other county and forest roads crisscrossing the area; however, Highway 55 is the only route connecting Valley County with resources in northern and southern Idaho. Due to the mountainous terrain, there are only a few forest routes extending into the Payette and Boise National Forest to access distant rural communities. The majority of these roadways are unimproved or one-lane gravel routes, which may or may not be opened year round. Highway 55 and most other travel routes in Valley County are bordered by sections of timberland.

3.2.4 Rivers

The major rivers in the county are the North Fork Payette River, the Middle Fork Payette River, and the East, Middle, and South Forks of the Salmon River. The North Fork Payette River is dammed near Cascade forming Lake Cascade Reservoir (A.K.A. Lake Cascade), a significant economic and socially valuable entity. Other important bodies of water are Payette Lake, Little Payette Lake, Warm Lake, Horsethief Reservoir, and Deadwood Reservoir.

3.2.5 Temperature

In the Valley County Area, summers are warm in the valley regions, but are much cooler in the mountains. Winters are typically cold throughout. Valleys are commonly colder than the lower slopes of adjacent mountains because of cold air drainage. In the mountains precipitation occurs throughout the year, and a deep snowpack accumulates during winter. Valley precipitation in summer falls as showers; some thunderstorms occur. In winter the ground is covered with snow much of the time.

3.2.6 Geology

Near McCall, Idaho, three major groups of Idaho rocks border one another; granite of the Idaho batholith, flood-basalt flows of the Columbia River Basalt Group, and metamorphosed island-arc Sedimentary and volcanic rocks of the Seven Devils Group.

McCall is also at the end of Long Valley, a major tectonic and structural feature of west central Idaho. The West Mountain escarpment is the high ridge formed along the west side of the Long Valley fault. West Mountain and Long Valley are part of a group of linear north-south ranges and valleys formed by block faulting during the late Tertiary and Quaternary. The Miocene Columbia River Basalts overlies the gneissic and granitic rocks of the Idaho batholith's west border and is commonly tilted 15°-30° west. As West Mountain rose and Long Valley subsided, as much as 7,000 feet of alluvium accumulated in the valley. The broad, high elevation region north of McCall was mostly buried by an ice cap during Pleistocene glaciations. At the same time, cirque and small valley glaciers formed on West Mountain. During at least three periods of glaciations,

major valley glaciers flowed from Ice cap in to the north end of Long Valley and formed large arcuate moraines. Most recently, during the Pinedale Glaciation, the North Fork valley glacier carved the basin and deposited the moraines which form Payette Lake, and the Lake Fork valley glacier formed the moraine of Little Payette Lake. During earlier glaciations the valley glaciers were thicker and longer, forming the prominent medial moraine, Timber Ridge.

The braided meltwater streams from these glaciers coursed across the valley depositing sand and gravel. During the older, most extensive glaciations, the braided streams formed the broad, gently sloping area southwest of Timber Ridge that now is the high terrace above the Payette River. The younger, Pinedale age meltwater formed the lower gravelly terrace on which the McCall airport is located.

The glacial deposits are divided into two categories on the basis of origin. "Till" is deposited directly by a melting glacier as it forms a moraine. "Outwash" is deposited by the meltwater streams leading away from the glacier. The older moraines and outwash plains are not only distinctive because of their position farther out in the valley, but surfaces of these older landforms have been eroded and weathered faster than the younger moraines and outwash. The greater weathering is revealed by examining the soils.

3.2.7 Recreation

Valley County has many outstanding tourism and recreational facilities. The county offers a full panorama of recreational opportunities ranging from boating on Payette or Cascade Lake to skiing at Brundage Mountain.

The economic impacts of these activities to the local economy and the economy of Idaho have not been enumerated. However, they are substantial given the many months of the year that activities take place and the large numbers of visitors that travel to this location.

The Boise National Forest encompasses much of the central and southern portions of the County while the Payette National Forest manages much of the northern end of the county.

3.2.7.1 Boise National Forest

Extensive outdoor recreational activities occur (hunting, four-wheeling, etc.) in the Boise National Forest. There are also numerous developed and undeveloped campsites throughout the Forest. Deadwood Reservoir and Warm Lake are popular vacation and recreational destinations. The Forest Service maintains a lodge and store on the north shore of Warm Lake to accommodate tourists and summer vacationers that own cabins and second homes on the lake front.

3.2.7.2 Payette National Forest

The Payette National Forest covers the northern and northeastern regions of Valley County. There are widespread outdoor recreational activities throughout the Forest including hunting, fishing, four-wheeling, hiking, and camping. Some of the developed campsites available to the public are located within a few minutes of civilization, while access to others is limited to foot or four-wheeler traffic. The small towns of Yellow Pine and Big Creek located in the heart of the Payette National Forest offer only a few services to visitors.

3.2.7.3 Ponderosa State Park

The character of the park is molded by its diverse topography. It ranges from arid sagebrush flats to a lakeside trail; from flat, even ground to steep cliffs; and from dense forest to spongy marsh. Nature trails and dirt roads have been developed so visitors can enjoy these areas. Camping is available in the park and in nearby Lakeview Village. The park maintains 11 miles of groomed cross country ski trails and one-and-one half miles are lighted for night skiing.

The main unit of Ponderosa State Park covers most of a 1,000-acre peninsula that juts into Payette Lake, just outside McCall. This section of Ponderosa State Park has approximately 200 campsites and all have water and electricity.

At the north end of Payette Lake lies the 630-acre North Beach Unit —the largest public sandy beach on the lake. Twenty-two primitive campsites are available. The Payette River winds placidly through timbered country and provides excellent canoeing. The area is also a sanctuary for wildlife including deer, ducks, fish and numerous small fur-bearing animals. There are vault toilets, but no other facilities.

The park's namesake, the 150-foot-tall ponderosa pine, is the most noticeable species of tree. Douglas-fir and grand fir, lodgepole pine and western larch also grow in the park. Birds often sighted include osprey, red-tailed hawks, bald eagles, Canada geese, wood ducks and mallards, along with a variety of songbirds, woodpeckers, hummingbirds and ravens. Deer, red fox, beavers, muskrats and bear have also been spotted in the area. The park is rich in wildflowers, especially along the interpretive trail that winds around Meadow Marsh.

3.2.7.4 Lake Cascade State Park

Lake Cascade, which is formed by the Cascade Dam is part of the Boise Project. Managed by the Bureau of Reclamation, this 44 square mile lake offers 86 miles of shoreline. The most popular Reclamation recreational reservoir in Idaho, Lake Cascade's annual visitation exceeds 300,000 people. Boating, fishing, camping, horseback riding, mountain biking, hiking, wildlife viewing, and swimming are the major recreational activities at Lake Cascade. Fish species include rainbow and brown trout, coho and kokanee salmon, smallmouth bass, bullhead catfish, and yellow perch.

Approximately 15 designated campsites within Lake Cascade State Park are located all around the perimeter of Lake Cascade Reservoir; each one with a different view of the lake. Popular for all types of boating, prevailing winds on the water make it especially well-suited for sailing and windsurfing. Rainbow trout, Coho salmon, and small mouth bass and perch can be caught from the shore or by boat in the summer or through the ice in the winter.

The North Fork of the Payette River, with its world-class kayaking rapids, flows to the south of Cascade. A challenging nine-hole golf course graces the southeast shore of the reservoir. During the winter 800 miles of groomed snowmobile trails are available in the area.

Visitors will find 300 tent and RV campsites scattered around the reservoir. The campgrounds each feature restroom facilities and domestic water. Other amenities vary. Cascade features two group camp areas, Snowbank and Poison Creek. These sites are open grassy areas with few trees, but they offer great seclusion for small to medium-sized groups. Osprey Point is the secluded, yet accessible, site of our three group yurts. Yurts feature wood stoves for heat, propane lighting, a propane stove for cooking, beds and other furniture.

3.2.7.5 Frank Church River of No Return Wilderness

The Frank Church River of No Return Wilderness Area covers a comparatively small region in the northeastern corner of Valley County. The United States Congress designated the Frank Church-River of No Return Wilderness in 1980 and it now has a total of 2,366,757 acres, all of which is in Idaho. Few places in America, and nowhere outside of Alaska, provide a Wilderness experience to match the sheer magnitude of the Frank Church-River of No Return, the second largest unit of the National Wilderness Preservation System in the Lower 48 (second in size only to California's Death Valley Wilderness).

It is a land of clear rivers, deep canyons, and rugged mountains. Two white-water rivers draw many human visitors: the Main Salmon River in neighboring Idaho and Lemhi Counties and the Middle Fork of the Salmon, which begins runs along the eastern boundary of Valley County. Trout fishing usually rates from good to excellent. The Middle Fork, the Selway, and a portion of the Main Salmon are Wild and Scenic Rivers. The Salmon River Mountains dominate the interior of the Wilderness. Without a major crest, these mountains splay out in a multitude of minor crests in all directions, and rise gradually to wide summits. Great forests of Douglas-fir and lodgepole pine cover much of the area, with spruce and fir higher up and ponderosa pine at lower altitudes. The forests are broken by grassy meadows and sun-washed, treeless slopes. As many as 370 species of wildlife have been identified in a single year, including eight big game animal species.

3.2.7.6 Payette Lake

The Payette Lake Dam was built in 1944 for irrigational purposes, but has become the main summertime attraction for the community of McCall. Recreational activities near the lake include boating, fishing, camping, hiking, and many others. A large portion of the lake's shoreline has been developed for residential properties, many of which are solely vacation or summer homes. Ponderosa State Park and the Idaho Department of Lands also maintain property bordering Payette Lake.

3.2.7.7 Warm Lake

Warm Lake is a 640 acre lake about 25 miles east of Cascade on Forest Service Road 22 (Warm Lake Highway). The U.S. Forest Service maintains a campground, day use area and boat ramp on the north shore. Two private lodges also provide services. Summer homes and cabins line much of shore, particularly on the north side. This area is very popular for camping, fishing, hiking, and many water sport activities. The greater Warm Lake area has a rich mining history, evidence of which can still be seen today.

3.2.7.8 Deadwood Reservoir

The Deadwood Reservoir was built in 1930 by the Boise Project. Deadwood Reservoir is three and one half miles long and covers 3,180 acres. Deadwood Dam is a concrete-arch structure that provides a regulated flow for the power plant at Black Canyon Diversion Dam and for irrigation in the Payette Division and Emmett Irrigation District. Hiking, boating, camping, and fishing are the major recreation activities at Deadwood Reservoir. Available species include Atlantic, Chinook, and kokanee salmon, and rainbow and cutthroat trout. The Idaho state record Atlantic salmon (13 lb. & 4 oz., 29 3/4 inches) was taken in 1995 from Deadwood reservoir.

3.2.7.9 Idaho State Centennial Trail

The Idaho State Centennial Trail passes through central Valley County just east of Warm Lake. The Trail extends about 1,200 miles from Nevada to the Canadian border passing through 11 national forests, 1,200 miles of rugged sagebrush desert, and the largest contiguous wilderness in the lower 48 states. The trail provides for a variety of uses: horseback riding, hiking, cross-country skiing, snowmobiling, mountain biking, motorized trail biking, and even conventional vehicle use where the "trail" is actually a road.

3.2.7.10 Boating and Kayaking

Boating and kayaking are very popular activities in Valley County. Payette Lake and Lake Cascade, which can be access via Highway 55, swarm with various types of boaters and recreation users during the warmer months. Boat ramps and docks are conveniently located at several points around both water bodies. The numerous rivers throughout the county boast some of the best whitewater kayaking in the country.

3.2.7.11 Camping

Camping is another popular activity enjoyed by the residents and visitors of Valley County. Both state parks and the national forests provide campsites varying from wheelchair accessible to isolated sites. The amenities vary from full RV hookup to only a cleared tent site.

3.2.7.12 Fishing and Hunting

Fishing and hunting is very important to Valley County both from a recreational standpoint and as an economic resource. A wide variety of fish can be caught in Valley County including: trout, bass, catfish, salmon, whitefish, crappie, perch, and pike. The rivers and many of the stocked lakes provide excellent fisheries.

For those people who prefer a gun or bow to a fly rod, Valley County offers a bounty of hunting experiences. Wild birds and game, like deer, elk, bear, pheasant, quail, partridge, chukar, grouse, wild duck, geese, and doves are found in abundance.

3.2.7.13 Winter Sports

For those people who enjoy winter sports, Valley County has a variety of activities to interest them. Skiers will be exhilarated by the challenging slopes of Brundage Mountain and upcoming Tamarack Resort. Snowmobilers are not left out; miles of designated snowmobile areas attract many local and out of town thrill seekers.

3.2.8 Resource Dependency

The economy of Valley County has been dependent upon the government, timber, mining, and agriculture. With major segments of the economy being seasonal employers, high unemployment has been a part of the traditional economic pattern. The single most important fact about the economy of Valley County is that the economic pattern is in a state of change.

Limited supplies of private timber and restrictive government land-use policies have resulted in a dramatic decline of the timber industry. Declines in timber harvest create a hardship on the county. These “forest funds” play an important role in funding county schools and roads. The timber industry is crucial to the economy in Valley County.

Mining has had good and bad years. In the 50's the leading industry was mining. In the late 90's reclamation was begun on the Stibnite mine. The effect of mining on the current economy has become negligible due to the inability to comply with restrictive government land-use policies.

The size and number of farms maintained for agricultural purposes has decreased and croplands are being purchased and developed to satisfy the demand for recreational housing. Agriculture has declined as an employer from 168 jobs in 1980 to 133 jobs in 1996.

Tourism has become more influential to the local economy. Retail and services are now the top employment category, with government second, and construction third.

Total civilian employment in the county grew 22% from 1985 to 1995. McCall is the top work destination for Valley County employees, with unincorporated Valley County second, and Cascade third.

The communities of Valley County have been evaluated by the University of Idaho College of Natural Resources Policy Analysis Group (PAG) for the degree of natural resource dependency each community experiences.

Idaho communities with more than 10% employment in resource-based sectors (wood products, travel & tourism, agriculture, and mining) were evaluated by Harris *et al.* (2003). Their findings indicate the following (Harris *et al.* 2000):

- McCall .....Travel and Tourism Only
- Cascade .....Travel & Tourism Only
- Donnelly .....Travel and Tourism Only
- Smith's Ferry .....Travel & Tourism and Agriculture

From 1993 to 1998 sawmill capacity dropped rapidly in response to dwindling public log supplies. Only two of five dominant companies operating in 1995 were still operating in 1998, and one of these, Boise Cascade, closed two of its large sawmills during this period. In the mid-1980s Boise Cascade operated three sawmills, one plywood mill, and a finishing-planer mill. Idaho closures included its Council and Horseshoe Bend sawmills. Only two facilities remained open in 1999, the sawmill in Cascade and a plywood mill in Emmett. In the last few years, both of these mills closed, along with Croman's mill.

Similar trends are occurring elsewhere in Idaho. In north central Idaho, Potlatch Corporation's Jaype mill in Pierce closed in 2002, and its Lewiston plant has been steadily reducing employees. Other recent closings of Idaho mills have occurred in Coeur d'Alene, Boise, and Grangeville, and in Baker, Oregon (Harris *et al.* 2000).

Harris *et al.* (2003) further evaluated Idaho communities based on their level of direct employment in several industrial sectors. Their findings for communities in Valley County are summarized in Table 3.6.

Table 3.6. Levels of direct employment by industrial sector

Community	Economic Diversity Index	Agriculture	Timber	Travel and Tourism	State / Local Gov.	Federal Gov.	Mining and Minerals
McCall	High	Low	Low	High	Med. Low	Low	Low
Cascade	High	Low	Med. Low	Med. High	High	Med. High	Low
Donnelly	Med. Low	Low	Low	High	Med. Low	Low	Low
Smith's Ferry	Low	High	Low	High	Low	Low	Low

A “low” level of direct employment represents 5% or less of total employment in a given sector; “med. low,” 6 to 10%; “med. high” 11 to 19%; and “high” 20% or more of total employment in a given sector.

Source: Harris *et al.* 2000

3.3 Growth and Development

Valley County has recently developed a Comprehensive Growth and Development Plan. The Valley County Comprehensive Plan is a guide that establishes goals and objectives to help the County grow and develop. The Valley County Comprehensive Plan includes a forecast of conditions that are anticipated to occur within the next ten to fifteen year period, 2000 to 2025.

The Valley County Comprehensive Plan is directed toward all land within the County including Federal, State, Public and Private lands. This Wildland-Urban Interface Wildfire Mitigation Plan is developed to dove-tail with the goals and objectives of the Comprehensive Plan. For more details on the Comprehensive plan, contact the Valley County Commissioners Office.

3.3.1 Population

The year 2000 US Census established the Valley County population at 7,651. Table 3.7 shows population projections for Valley County (adapted from the Valley County Comprehensive Plan 2003). This projected population increase represents about 3,200 new residents to Valley County during the next 20 years.

Table 3.7 Population Projections for Valley County, Idaho

1950	1960	1970	1980	1990	1997	2000	2010	2015	2020
4,270	3,663	3,609	5,604	6,109	8,099	7,858	11,495	12,618	13,880

3.4 Cultural Resources

Cultural resource impacts were qualitatively assessed through a presence/absence determination of significant cultural resources and mitigation measures to be employed during potential fire mitigation activities such as thinning and prescribed fire.

The United States has a unique legal relationship with Indian tribal governments defined in history, the U.S. Constitution, treaties, statutes, Executive Orders, and court decisions. Since the formation of the union, the United States has recognized Indian tribes as domestic dependant nations under its protection. The Federal Government has enacted numerous regulations that establish and define a trust relationship with Indian tribes.

The northern extent of Valley County is within the area ceded to the Federal Government by the Nez Perce Indians in 1855 and 1863. The last members of the Sheepeater Tribe were removed from Long Valley and Round Valley to a reservation in the 1870s. The Shoshone and Paiute Indians also traveled through this area historically for hunting, gathering, and trading with other Tribes.

The relationship between Federal agencies and sovereign tribes is defined by several laws and regulations addressing the requirement of Federal agencies to notify or consult with Native American groups or otherwise consider their interests when planning and implementing Federal undertakings, among these are:

- **EO 13175, November 6, 2000**, Consultation and Coordination with Indian Tribal Governments.

- **Presidential Memorandum, April, 1994**. Government-Government Relations with Tribal Governments (Supplements EO 13175). Agencies must consult with federally recognized tribes in the development of Federal Policies that have tribal implications.
- **EO 13007, Sacred sites, May 24, 1996**. Requires that in managing Federal lands, agencies must accommodate access and ceremonial use of sacred sites and must avoid adversely affecting the physical integrity of these sites.
- **EO 12875, Enhancing Intergovernmental Partnerships, October 26, 1993**. Mainly concerned with unfunded mandates caused by agency regulations. Also states the intention of establishing "regular and meaningful consultation and collaboration with state, local and tribal governments on matters that significantly or uniquely affect their communities."
- **Native American Graves Protection and Repatriation Act (NAGPRA) of 1989**. Specifies that an agency must take reasonable steps to determine whether a planned activity may result in the excavation of human remains, funerary objects, sacred objects and items of cultural patrimony from Federal lands. NAGPRA also has specified requirements for notifying and consulting tribes.
- **Archaeological Resources Protection Act (ARPA), 1979**. Requires that Federal permits be obtained before cultural resource investigations begin on Federal land. It also requires that investigators consult with the appropriate Native American tribe prior to initiating archaeological studies on sites of Native American origin.
- **American Indian Religious Freedom Act (AIRFA), 1978**. Sets the policy of the US to protect and preserve for Native Americans their inherent rights of freedom to believe, express, and exercise the traditional religions of the American Indian . . . including, but not limited to access to sacred sites, use and possession of sacred objects, and the freedom to worship through ceremonies and traditional rites.
- **National Environmental Policy Act (NEPA), 1969**. Lead agency shall invite participation of affected Federal, State, and local agencies and any affected Indian Tribe(s).
- **National Historic Preservation Act (NHPA), 1966**. Requires agencies to consult with Native American tribes if a proposed Federal action may affect properties to which they attach religious and cultural significance. (Bulletin 38 of the act, identification of TCPs, this can only be done by tribes.)
- Treaties (supreme law of the land) in which tribes were reserved certain rights for hunting, fishing and gathering and other stipulations of the treaty.
- Unsettled aboriginal title to the land, un-extinguished rights of tribes.

3.4.1 National Register of Historic Places

The National Park Service maintains the National Register of Historical Places as a repository of information on significant cultural locale. These may be buildings, roads or trails, places where historical events took place, or other noteworthy sites. The NPS has recorded sites in its database. These sites are summarized in Table 3.8.

Table 3.8 National Register of Historic Places in Valley County, Idaho.					
Item Number	**Resource Name**	**Address**	**City**	**Listed**	**Multiple**
1	Big Creek Commissary	Payette National Forest	Yellow Pine and Big Creek	2000	USDA Forest Service
2	Braddock Gold Mining and Milling Company Log Building and Forge Ruins	Suicide Rock	Thunder City	1985	
3	Brown Tie and Lumber Company Mill and Burner	ID 55 at Payette Lake	McCall	1986	
4	Cabin Creek Ranch	Cabin Creek @ Jct. with Big Creek	Payette National Forest, Black Butte	1990	
5	Elo School	SE of ID 55 on Farm to Market Road	McCall	1982	Pekkala, Abram
6	Matt N. Hill Homestead Barn	SE of McCall	McCall	1982	
7	Thomas Jarvis Homestead	E of Lake Fork on Finn Road	Lake Fork	1982	
8	John G. Johnson (Rintakangas) Homestead	NE of Lake Fork off Pearson Road	Lake Fork	1982	
9	John S. Johnson (Sampila) Homestead	NE of Lake Fork off Pearson Road	Lake Fork	1982	Niemala, Heikki, & Matt
10	John Korvola Homestead	Roseberry Road and Farm to Market Road	Donnelly	1982	
11	Charles Koski	SE of McCall	McCall	1982	Koski, Charles
12	Krassel Ranger Station	S Fork of Salmon River, 11 milies W of Yellow Pine	Payette National Forest, Yellow Pine	1992	CCC, USDA Forest Service
13	Gust Laituri Homestead	NE of Lake Fork off Pearson Road	Lake Fork	1982	Laituri, Gust
14	Long Valley Finnish Church	SE of Lake Fork	Lake Fork	1980	Heikkila, John and Ruuska, John
15	Jacob and Herman Mahala Homestead	N of Donnelly	Donnelly	1982	
16	Jacob Maki Homestead	Off ID 55	Donnelly	1982	
17	McCall Building	310 E Lake Street	McCall	1981	
18	North Fork Payette River Bridge	ID 55, 2.5 miles N of Smith's Ferry	Smith's Ferry	1999	Kyle, Charles A.
19	Herman Ojala Homestead	NE of Lake Fork off Pearson Road	Lake Fork	1982	
20	Rice Meetinghouse	NE of McCall	McCall	1980	Gustafson, Gus
21	Roosevelt Lake	E of Yellow Pine	Yellow Pine	1972	

Table 3.8 National Register of Historic Places in Valley County, Idaho.					
Item Number	**Resource Name**	**Address**	**City**	**Listed**	**Multiple**
22	Matt Ruatsale Homestead	N of Kantola Lane	Lake Fork	1982	
23	Southern Idaho Timber Protective Association (SITPA) Buildings	1001 State Street	McCall	1990	Lapinoja, Gust and Heikkila, John
24	Southern Idaho Timber Protective Association (SITPA) Buildings	ID 55	Smith's Ferry	1990	Lapinoja, Gust and Heikkila, John
25	Stibnite Historic Mining District	US Forest Road 412	Yellow Pine	1987	
26	Nickolai Wargelin Homestead	SE of McCall	McCall	1982	

(NRHP 2003)

Fire mitigation activities in and around these sites has the potential to affect historic places. In all cases, the fire mitigation work will be intended to reduce the potential of damaging the site due to wildfire. Areas where ground disturbance will occur will need to be inventoried depending on the location. Such actions may include, but not be limited to, constructed firelines (handline, mechanical line, etc.), new roads to creeks to fill water tankers, mechanical treatments, etc. Only those burn acres that may impact cultural resources that are sensitive to burning (i.e., buildings, peeled bark trees, etc.) would be examined. Burns over lithic sites are not expected to have an impact on those sites, as long as the fire is of low intensity and short duration. Some areas with heavy vegetation may need to be examined after the burn to locate and record any cultural resources although this is expected to be minimal. Traditional Cultural Properties (TCPs) will also need to be identified. Potential impact to TCPs will depend on the values that make the property important and will be assessed on an individual basis.

From the County's Comprehensive Plan, the following goals are enumerated:

Special Areas and Sites Goal № I

To identify, protect, and maintain historically significant buildings and sites within Valley County.

Special Areas and Sites Objectives:

1. Promote continued identification and mapping of cultural and historical resources within the county.
2. Promote establishment of buffer zones surrounding historically significant buildings and sites.
3. Explore ways to provide incentives for owners of historically significant buildings to preserve and maintain them.

3.5 Transportation

State Highway 55 is the only arterial highway in Valley County; thus it is the transportation lifeline of Valley County. It is a two-lane road that runs north to south through Long Valley connecting Cascade, Donnelly, and McCall and provides the only major outlet to urban areas north and south of the county. The Idaho Transportation Department has long range plans for two alternate routes and one reroute of Highway 55 in Valley County.

Due to the rugged mountainous terrain, many east-west routes intersecting Highway 55 are not passable year-round. A route to Yellow Pine is maintained year-around when funding is available. The Warm Lake Road to Stanley is used extensively during the summer months and when passable in the winter.

Ribboning the county are numerous graded and drained, improved and unimproved roads used primarily for logging, mining, and access to private property as well as recreational activities. These roads provide access through Forest Service lands. The Valley County Road Department maintains 714 miles of roadway. Of these roadways, 187 miles are paved; the remaining 527 miles are gravel.

Three public airports are available for general aviation use in Cascade, Donnelly, and McCall. Other public airports are located in the back country and are operated by the state department of Aeronautics. Charter flights are available to various points of passengers and freight. There numerous private grass airstrips.

The Idaho Northern and Pacific Railroad line currently links Cascade and Emmett although there are no longer commercial operations on this line. A sightseeing train hauls passengers on tours between Horseshoe Bend and Cascade. Additionally, the Idaho Historical Railroad provides sightseeing tours for passengers between Cascade and Smith's Ferry on the Thunder Mountain Line.

Transportation networks in the county have been challenged by a number of communities with only one, two, or three access points suitable for use during an emergency. The communities of Yellow Pine and Warm Lake are prime examples.

3.6 Vegetation & Climate

Vegetation in Valley County is a mix of forestland and rangeland ecosystems. An evaluation of satellite imagery of the region provides some insight to the composition of the forest vegetation of the area. The full extent of the county was evaluated for cover type as determined from Landsat 7 ETM+ imagery in tabular format, Table 3.9.

The most represented vegetated cover types are forest ecosystems with Douglas-fir, lodgepole pine, subalpine and dry (xeric) forests dominating (Table 3.9).

Table 3.9 Cover Types in Valley County

	Acres	Percent of County's Total Area
Douglas-fir	553,820	23.2%
Lodgepole Pine	378,554	15.9%
Mixed Subalpine Forest	214,869	9.0%
Mixed Xeric Forest	162,623	6.8%
Subalpine Fir	146,000	6.1%
Ponderosa Pine	122,985	5.1%
Warm Mesic Shrubs	109,454	4.6%
Subalpine Pine	96,534	4.0%
Herbaceous Burn	84,813	3.6%
Mountain Big Sagebrush	63,683	2.7%
Montane Parklands and Subalpine Meadow	59,888	2.5%
Agricultural Land	58,170	2.4%
Basin & Wyoming Big Sagebrush	42,003	1.8%
Douglas-fir/Lodgepole Pine	40,851	1.7%

Table 3.9 Cover Types in Valley County	Acres	Percent of County's Total Area
Subalpine fir/Whitebark Pine	35,774	1.5%
Water	34,945	1.5%
Shrub Dominated Riparian	34,252	1.4%
Perennial Grass Slope	33,397	1.4%
Grand Fir	23,202	1.0%
Foothills Grassland	15,976	0.7%
Wet Meadow	10,596	0.4%
Douglas-fir/Grand Fir	10,331	0.4%
Needleleaf Dominated Riparian	9,255	0.4%
Aspen	7,786	0.3%
Shallow Marsh	6,222	0.3%
Graminiod or Forb Dominated Riparian	4,785	0.2%
Broadleaf Dominated Riparian	3,762	0.2%
High Intensity Urban	3,261	0.1%
Curlleaf Mountain Mahogany	2,779	0.1%
Perennial Grassland	2,718	0.1%
Bitterbrush	2,601	0.1%
Deep Marsh	2,260	0.1%
Low Sagebrush	1,907	0.1%
Herbaceous Clearcut	1,707	0.1%
Mountain Low Sagebrush	1,689	0.1%
Alpine Meadow	1,376	0.1%
Disturbed, Low	999	0.0%
Low Intensity Urban	815	0.0%
Mixed Needleleaf/Broadleaf Forest	671	0.0%
Engelmann Spruce	251	0.0%
Disturbed, High	222	0.0%
Mud Flat	130	0.0%
Shrub/Steppe Annual Grass-Forb	107	0.0%
Exposed Rock	99	0.0%

Vegetative communities within the county follow the strong moisture and temperature gradient related to the major river drainages. Ample precipitation and soil conditions result in a relatively well vegetated environment. As moisture availability increases, so does the abundance of conifer species, with subalpine forest communities present in the highest elevations where precipitation and elevation provide more available moisture during the growing season.

3.6.1 Forests

The harvest of timber and other products from forestland in Valley County is essential to the local economy. Continuation of harvest operations, thinning, and other silvicultural practices ensures the safety and improves the health and diversity of the land. Much of Valley County's forested area is being used under a multiple use concept such as timber production, livestock grazing, wildlife habitat, recreation, and watershed protection. Certain areas are classified as

critical and have been set aside for a specific use, and should continue to be managed for that use.

Boise, a private corporation, owns a large portion of the private timber property in Valley County. Recently, Boise has sold several parcels of timberland for real estate development. This trend is likely to continue in the future as the demand for housing intensifies.

From the County's Comprehensive Plan, the following goals are enumerated:

Natural Resources Goal № III

To maintain sustainable commercial harvesting and use of renewable timber land resources.

Natural Resources Forest Objective:

Take an active role in the revision of the National Forests' plans to improve forest health.

Natural Resources Goal № V

To protect vegetation as a valuable resource in Valley County.

Natural Resources Forest Objective:

Promote the protection of vegetated areas in Valley County from the intrusion of invader species plants and noxious weeds by supporting noxious weed eradication.

Implementation:

The Wildland-Urban Interface Wildfire Mitigation Plan has been developed to integrate the above stated goals and objectives, to adhere to this management philosophy, and implement, through targeted fuels management, policy development, and educational objectives, the goals enumerated above.

3.6.2 Monthly Climate Summaries In or Near Valley County

3.6.2.1 McCall, Idaho (105708)

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1930 to 12/31/2003

Table 3.10 Climate records for MCCall, Idaho (Valley County)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	30.6	35.7	41.5	50.6	61.2	69.6	80.7	80.0	70.1	57.5	40.3	31.5	54.1
Average Min. Temperature (F)	11.0	13.2	18.1	26.0	33.8	39.8	44.2	41.9	35.0	28.2	21.9	14.4	27.3
Average Total Precipitation (in.)	3.54	2.85	2.57	2.03	2.28	2.05	0.71	0.82	1.38	2.02	3.02	3.56	26.81
Average Total SnowFall (in.)	37.0	25.3	18.8	5.4	0.8	0.0	0.0	0.0	0.1	1.8	16.4	31.9	137.6
Average Snow Depth (in.)	26	32	27	7	0	0	0	0	0	0	3	14	9

Percent of possible observations for period of record. Max. Temp.: 96.9% Min. Temp.: 97% Precipitation: 98% Snowfall: 96.1% Snow Depth: 92.8%

3.6.2.2 Cascade, Idaho (101514)

Period of Record Monthly Climate Summary

Period of Record : 8/ 1/1948 to 12/31/2003

Table 3.11 Climate records for Cascade, Idaho (Valley County)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	29.7	35.4	42.2	51.9	62.3	70.8	81.6	80.7	70.9	57.7	40.3	30.7	54.5
Average Min. Temperature (F)	10.8	13.4	18.8	26.3	33.4	39.6	44.3	42.4	34.9	27.8	21.5	13.4	27.2
Average Total Precipitation (in.)	2.90	2.28	2.04	1.71	1.80	1.67	0.50	0.67	1.02	1.64	2.66	3.17	22.06
Average Total SnowFall (in.)	25.7	17.0	11.7	3.7	0.6	0.0	0.0	0.0	0.1	1.3	11.7	24.7	96.6
Average Snow Depth (in.)	15	17	12	2	0	0	0	0	0	0	1	8	5

Percent of possible observations for period of record. Max. Temp.: 99.4% Min. Temp.: 99.4% Precipitation: 99.3% Snowfall: 99.4% Snow Depth: 98.9%

3.6.2.3 Yellow Pine, Idaho (109951)

Period of Record Monthly Climate Summary

Period of Record : 8/ 1/1970 to 12/31/2003

Table 3.12 Climate records for Yellow Pine, Idaho (Valley County)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	33.2	38.6	45.0	51.7	61.3	69.8	80.0	80.1	70.1	57.8	40.2	32.5	55.0
Average Min. Temperature (F)	9.1	11.2	18.0	23.8	30.2	35.5	39.1	37.3	30.5	24.6	18.2	9.7	23.9
Average Total Precipitation (in.)	3.26	2.69	2.45	2.03	1.97	1.94	1.08	1.03	1.59	1.77	3.45	3.66	26.94
Average Total SnowFall (in.)	24.4	18.3	11.4	6.0	1.0	0.1	0.0	0.0	0.1	2.3	15.7	25.9	105.1
Average Snow Depth (in.)	21	24	19	5	0	0	0	0	0	0	3	12	7

Percent of possible observations for period of record. Max. Temp.: 90.8% Min. Temp.: 90.4% Precipitation: 90.9% Snowfall: 92.9% Snow Depth: 91.6%

3.6.2.4 Deadwood Dam, Idaho (102385)

Period of Record Monthly Climate Summary

Period of Record : 12/6/1929 to 6/30/1975

Table 3.13 Climate records for Deadwood Dam, Idaho (Valley County)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	29.8	37.0	42.4	51.4	62.5	70.5	82.5	81.8	72.0	59.3	41.3	31.3	55.1
Average Min. Temperature (F)	4.7	8.4	11.8	21.1	28.5	35.0	38.8	36.8	31.1	25.6	17.8	9.2	22.4
Average Total Precipitation (in.)	5.23	3.93	3.43	1.97	1.89	1.98	0.56	0.69	1.04	2.29	3.74	5.52	32.26
Average Total SnowFall (in.)	49.8	33.2	25.0	8.1	1.3	0.0	0.0	0.0	0.1	3.8	21.6	43.7	186.5
Average Snow Depth (in.)	37	46	45	24	2	0	0	0	0	0	5	19	15

Percent of possible observations for period of record. Max. Temp.: 98.8% Min. Temp.: 98.6% Precipitation: 99.2% Snowfall: 98.2% Snow Depth: 95.4%

3.7 Wildfire Hazard Profiles

3.7.1 Wildfire Ignition Profile

Fire was once an integral function of 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 (Johnson 1998). The fires burned from 1 to 47 years apart, with most at 5- to 20-year intervals (Barrett 1979). With infrequent return intervals, plant communities tended to burn more severely and be replaced by vegetation different in composition, structure, and age (Johnson *et al.* 1994). Native plant communities in this region developed under the influence of fire, and adaptations to fire are evident at the species, community, and ecosystem levels. Fire history data (from fire scars and charcoal deposits) suggest fire has played an important role in shaping the vegetation in the Columbia Basin for thousands of years (Steele *et al.* 1986, Agee 1993).

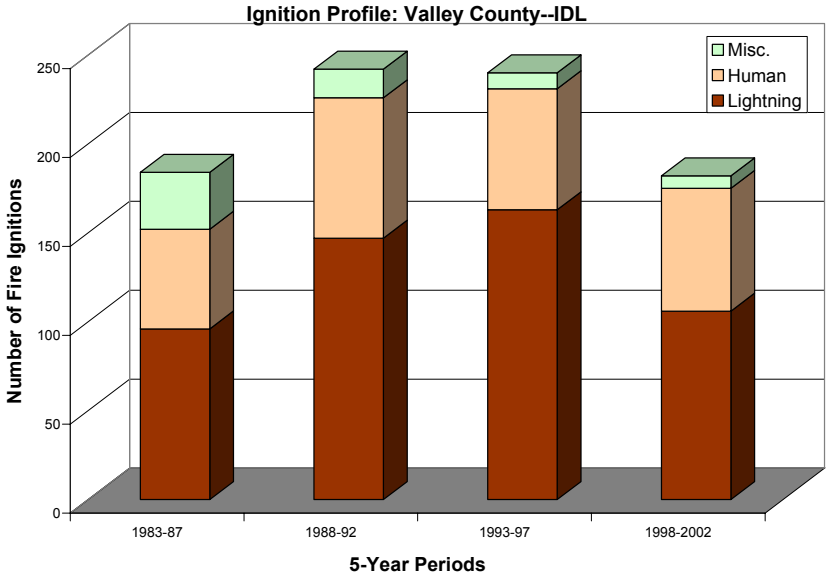
Detailed records of fire ignition and extent have been compiled by the USDA Forest Service, Payette and Boise National Forests and are available in GIS shape file format. The Idaho Department of Lands also keeps very detailed records of fire ignitions dating back to 1983; however, this database has not been recorded in a GIS format. Both sources contain very pertinent information, but, unfortunately, the two cannot be considered collectively. Using the databases independently, past fire extents, fire ignition data, and the occurrence of wildland fires in the region of Valley County has been evaluated.

In the Appendix (Table IV.1) is a summary of fire ignitions within the Valley County wildland-urban interface as recorded by the Idaho Department of Lands for the period 1983-2002. This database contains the most accurate information regarding fire ignitions in the Valley County wildland-urban interface, but may not accurately represent Valley County as a whole. As this table indicates, many fires have burned in the Valley County wildland-urban interface. Figures

3.1 & 3.2 summarize fire ignitions and acres burned by 5-year periods (1983-2002). There were approximately 848 recorded fire ignitions during this 20 year period by the IDL, with the highest number of total ignitions occurring over the two 5-year periods (1988-1992 and 1993-1997), Figure 3.1. Concurrently, the total acres burned during the period 1988-1992 also peaked with 5,338 acres burned (Figure 3.2).

The average number of acres burned each year since 1983 has been approximately 8.8 acres, with the largest fire at 2,700 acres (Needles Fire-1989). The average amount spent on fire suppression during this same period is $5,132.

Figure 3.1. Valley County Wildfire Ignition Profile.



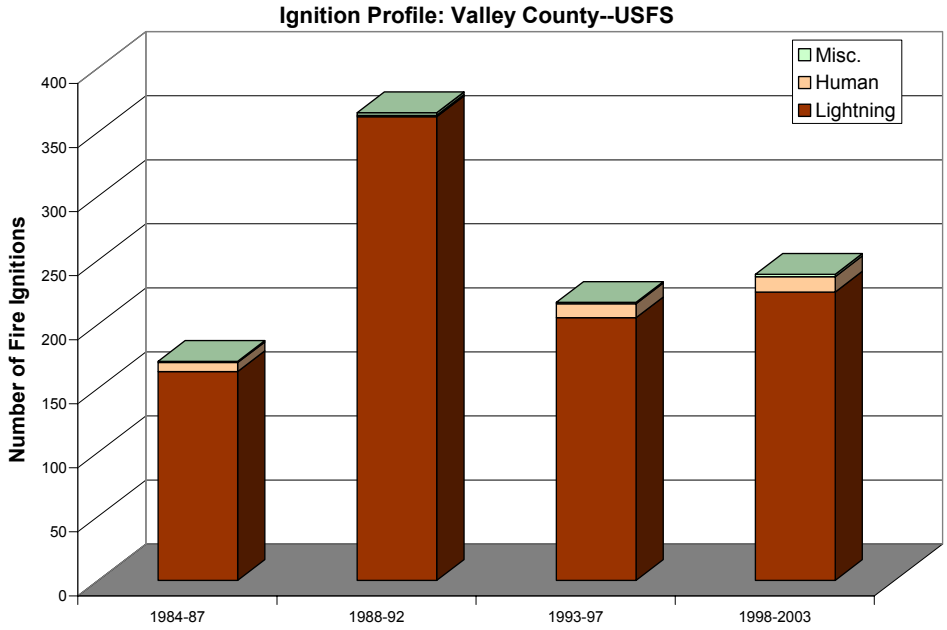


Figure 3.2. Valley County Wildfire Extent Profile

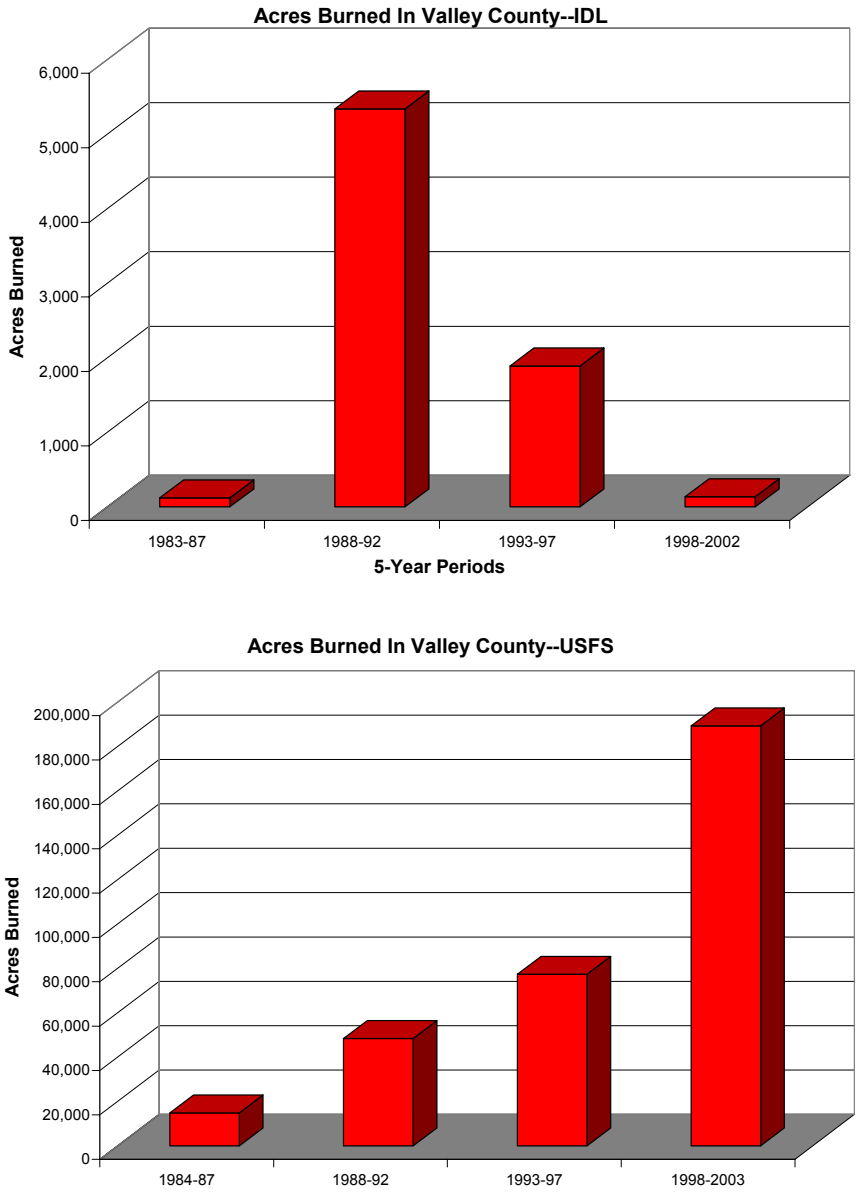


Table 3.14. Number of wildfire ignitions (profile) 1993-2003

	1983-1987		1988-1992		1993-1997		1998-2002	
	IDL	USFS*	IDL	USFS	IDL	USFS	IDL	USFS**
Lightning Ignition	96	163	147	362	163	205	106	225
Human Ignition	56	7	79	1	68	11	69	12
Miscellaneous Ignition	32	1	16	2	9	1	7	2
Total Acres Burned	120.9	14837.8	5,338.60	48385	1889.8	77320.4	135.9	189294.6

*USFS data begins 1984
**USFS data includes 2003

Since 1983, the IDL data shows that roughly 60% of all fires in the County have been ignited by nature, while the remaining 40%, on average have been human caused (including miscellaneous causes – 8%). The USFS data shows that roughly 95% of all fires in the County have been ignited by nature, while the remaining 5%, on average have been human caused (including miscellaneous causes). The data would seem to indicate that the total number of ignitions in Valley County has been relatively constant approximately between 180 and 240 ignitions each 5-year period (between 40 and 44 each year on average, except 1998 where the USFS recorded 73 ignitions) . Table 3.15 summarize ignition causes and extent as recorded in the Idaho Department of Lands database (roughly equivalent to a representation of ignitions in the Wildland-Urban Interface).

Table 3.15. Number of Fires by Cause and year in Valley County as recorded by the Idaho Department of Lands.

YEAR	Lightning (1)	Campfire (2)	Smoking (3)	Debris Burning (4)	Arson (5)	Equipment Use (6)	Railroad (7)	Children (8)	Miscellaneous (9)	Total Acres Burned
1983	13	1		2	1	2		1	2	3.5
1984	12	2		1	1	1		2	3	2.2
1985	21	4	2	5		1		1	10	20.2
1986	42	3		6		1			6	69.6
1987	8	10		4	3	2			11	25.4
1988	7	4	1	7	3	4		1	3	33.8
1989	50	4		6					6	5138.8
1990	38	2	1						3	17.4
1991	26	10	10	3		2			1	46.5
1992	26	6	6	4	1	4			3	102.1
1993	25	1	1	5		1		2	1	13.4
1994	38	7	2	6	2	1	1		2	1794.8
1995	50	2	3	4	1	2			2	22.1
1996	13	8	6	3				1	3	12.5
1997	37	3	5	1					1	47
1998	27	4	3	2		1				17.8
1999	7	8	10	3		1			2	92.31
2000	13	1	3		1	1		1	2	6
2001	21	8		8	1	1			3	9.05
2002	38	4	3	1	2			2		10.75
Totals	**512**	**92**	**56**	**71**	**16**	**25**	**1**	**11**	**64**	**7485.21**

Data provided by the Idaho Department of Lands.

The USDA Forest Service records fire ignitions on federal lands in Valley County. Table 3.16 summarizes ignition causes on these "Rural and Wildlands" in Valley County.

Table 3.16. Number of Fires by Cause and year in Valley County, on USDA Forest Service Lands.

YEAR	Lightning (1)	Campfire (2)	Smoking (3)	Debris Burning (4)	Arson (5)	Equipment Use (6)	Railroad (7)	Children (8)	Miscellaneous (9)	Total Acres Burned
1984	18	1								1.7
1985	25									12165.7
1986	59	1	1	2				1		1049.5
1987	55		2	6						1620.9
1988	24		1	3						17277.5
1989	153			4						16300.2
1990	66			3						3858.0
1991	51		1	3				1	1	8826.7
1992	50						3		1	2122.6
1993	18								1	3.5
1994	86		1	4						76177.0
1995	43			2						494.0
1996	39			3						606.9
1997	19			1						39.0
1998	46								1	113.3
1999	35			4						1795.9
2000	27			2						174686.8
2001	27			2			1		1	2773.5
2002	58			3						124.2
2003	32									9800.9
Total	**931**	**2**	**6**	**42**			**4**	**2**	**5**	**329837.8**

Data provided by the USFS

3.7.2 Wildfire Extent Profile

Across the west, wildfires have been increasing in extent and cost of control. The National Interagency Fire Center (2003) reports nearly 88,500 wildfires in 2002 burned a total of nearly 7 million acres and cost $1.6 billion (Table 3.17). By most informed accounts, the 2003 totals will be significantly higher in terms of acres burned and cost.

Table 3.17. National Fire Season 2002 Summary	
Number of Fires (2002 final)	88,458
10-year Average (1992-2001)	103,112
Acres Burned (2002 final)	* **6,937,584**
10-year Average (1992-2001)	4,215,089
Structures Burned (835 primary residences, 46 Commercial buildings, 1500 outbuildings)	2,381
Estimated Cost of Fire Suppression (Federal agencies only)	$ 1.6 billion

- *This figure differs from the 7,184,712 acres burned estimate provided by the National Interagency Coordination Center (NICC). The NICC estimate is based on information contained in geographic area and incident situation reports prepared at the time fires occurred. The 6,937,584 estimate is based on agency end-of-year reports.*

The National Interagency Fire Center, located in Boise, Idaho, maintains records of fire costs, extent, and related data for the entire nation. Tables 3.18 and 3.19 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 in areas like Valley County.

Table 3.18. Total Fires and Acres 1960 - 2002 Nationally

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

Year	Fires	Acres	Year	Fires	Acres
2002	88,458	* **6,937,584**	1980	234,892	5,260,825
2001	84,079	3,555,138	1979	163,196	2,986,826
2000	122,827	8,422,237	1978	218,842	3,910,913
1999	93,702	5,661,976	1977	173,998	3,152,644
1998	81,043	2,329,709	1976	241,699	5,109,926
1997	89,517	3,672,616	1975	134,872	1,791,327
1996	115,025	6,701,390	1974	145,868	2,879,095
1995	130,019	2,315,730	1973	117,957	1,915,273
1994	114,049	4,724,014	1972	124,554	2,641,166
1993	97,031	2,310,420	1971	108,398	4,278,472
1992	103,830	2,457,665	1970	121,736	3,278,565
1991	116,953	2,237,714	1969	113,351	6,689,081
1990	122,763	5,452,874	1968	125,371	4,231,996
1989	121,714	3,261,732	1967	125,025	4,658,586
1988	154,573	7,398,889	1966	122,500	4,574,389
1987	143,877	4,152,575	1965	113,684	2,652,112
1986	139,980	3,308,133	1964	116,358	4,197,309
1985	133,840	4,434,748	1963	164,183	7,120,768
1984	118,636	2,266,134	1962	115,345	4,078,894
1983	161,649	5,080,553	1961	98,517	3,036,219
1982	174,755	2,382,036	1960	103,387	4,478,188
1981	249,370	4,814,206			

(National Interagency Fire Center 2003)

Table 3.19. Suppression Costs for Federal Agencies Nationally

Year	Bureau of Land Management	Bureau of Indian Affairs	Fish and Wildlife Service	National Park Service	USDA Forest Service	Totals
1994	$98,417,000	$49,202,000	$3,281,000	$16,362,000	$678,000,000	**$845,262,000**
1995	$56,600,000	$36,219,000	$1,675,000	$21,256,000	$224,300,000	**$340,050,000**
1996	$96,854,000	$40,779,000	$2,600	$19,832,000	$521,700,000	**$679,167,600**
1997	$62,470,000	$30,916,000	$2,000	$6,844,000	$155,768,000	**$256,000,000**
1998	$63,177,000	$27,366,000	$3,800,000	$19,183,000	$215,000,000	**$328,526,000**
1999	$85,724,000	$42,183,000	$4,500,000	$30,061,000	$361,000,000	**$523,468,000**
2000	$180,567,000	$93,042,000	$9,417,000	$53,341,000	$1,026,000,000	**$1,362,367,000**
2001	$192,115,00	$63,200,000	$7,160,000	$48,092,000	$607,233,000	**$917,800,000**
2002	$204,666,000	$109,035,000	$15,245,000	$66,094,000	$1,266,274,000	**$1,661,314,000**

(National Interagency Fire Center 2003)

Although many very large fires, growing to over 250,000 acres have burned in the Idaho Panhandle, which Valley County is a part, actual fires in this county have usually been controlled at much smaller extents. This is not to imply that wildfires are not a concern in this county, but to point to the aggressive and professional manner to which the wildland and rural fire districts cooperate in controlling these blazes. The Southern Idaho Timber Protective Association provides primary wildfire protection in the western areas of the County where the population centers are located. The Payette National Forest and the Boise National Forest both provide primary wildfire response in the areas of their forests. Four rural and city fire districts augment these services with home protection and related services.

The USFS (Payette and Boise National Forests) have summarized past large fire events that have burned in Valley County. The data is provided in map format in Appendix I. This data includes information on over 1,500 “large” fires, in addition to the fires summarized in Appendix IV. Data indicates that over 1.2 million acres have burned from 1948-2000, with an average fire size of approximately 800 acres (of those fires that exceeded 100 acres). This data is available for the interested reader by contacting the USFS offices in Valley County.

3.8 Analysis Tools and Techniques to Assess Fire Risk

Valley County and the adjacent counties of Adams, Gem, Washington, Payette, and Boise, were analyzed using a variety of techniques, managed on a GIS system (ArcGIS 8.2). Physical features of the region were represented by data layers including roads, streams, soils, elevation, and remotely sensed images from the Landsat 7 ETM+ satellite. Field visits were conducted by specialists from Northwest Management, Inc., and others. Discussions with area residents and fire control specialists augmented field visits and provided insights to forest health issues and treatment options.

This information was analyzed and combined to develop an assessment of wildland fire risk in the region.

3.8.1 Fire Prone Landscapes

Schlosser *et al.* 2002, developed a methodology to assess the location of fire prone landscapes on forested and non-forested ecosystems in the western US. Working under an agreement with the Clearwater Resource Conservation and Development Council, Inc., (RC&D), Northwest Management, Inc., a natural resources consulting firm, completed a similar assessment for five counties in the north central Idaho area including Clearwater County, Idaho County, Latah County, Lewis County, and Nez Perce County. In a separate project, also funded by the Bureau of Land Management working in cooperation with Elmore, Ada, Canyon, and Owyhee Counties, through the Southwestern RC&D Area, Northwest Management, Inc., completed a Fire Prone Landscapes assessments on those listed areas.

The goal of developing the Fire Prone Landscapes analysis is to make inferences about the relative risk factors across large geographical regions (multiple counties) for wildfire spread. This analysis uses the extent and occurrence of past fires as an indicator of characteristics for a specific area and their propensity to burn in the future. Concisely, if a certain combination of vegetation cover type, canopy closure, aspect, slope, stream and road density have burned with a high occurrence and frequently in the past, then it is reasonable to extrapolate that they will have the same tendency in the future, unless mitigation activities are conducted to reduce this potential.

The analysis for determining those landscapes prone to wildfire utilized a variety of sources.

Digital Elevation: Digital elevation models (DEM) for the project used USGS 10 meter DEM data provided at quarter-quadrangle extents. These were merged together to create a continuous elevation model of the analysis area.

The merged DEM file was used to create two derivative data layers; aspect and slope. Both were created using the spatial analyst extension in ArcGIS 8.2. Aspect data values retained one decimal point accuracy representing the cardinal direction of direct solar radiation, represented in degrees. Slope was recorded in percent and also retained one decimal point accuracy.

Remotely Sensed Images: Landsat 7 Enhanced Thematic Mapper (ETM+) images were used to assess plant cover information and percent of canopy cover. The Landsat ETM+ instrument is an eight-band multi-spectral scanning radiometer capable of providing high-resolution image information of the Earth's surface. It detects spectrally-filtered radiation at visible, near-infrared, short-wave, and thermal infrared frequency bands from the sun-lit Earth. Nominal ground sample distances or "pixel" sizes are 15 meters in the panchromatic band; 30 meters in the 6 visible, near and short-wave infrared bands; and 60 meters in the thermal infrared band.

The satellite orbits the Earth at an altitude of approximately 705 kilometers with a sun-synchronous 98-degree inclination and a descending equatorial crossing time of 10 a.m. daily.

Image spectrometry has great application for monitoring vegetation and biophysical characteristics. Vegetation reflectance often contains information on the vegetation chlorophyll absorption bands in the visible region and the near infrared region. Plant water absorption is easily identified in the middle infrared bands. In addition, exposed soil, rock, and non-vegetative surfaces are easily separated from vegetation through standard hyper-spectral analysis procedures.

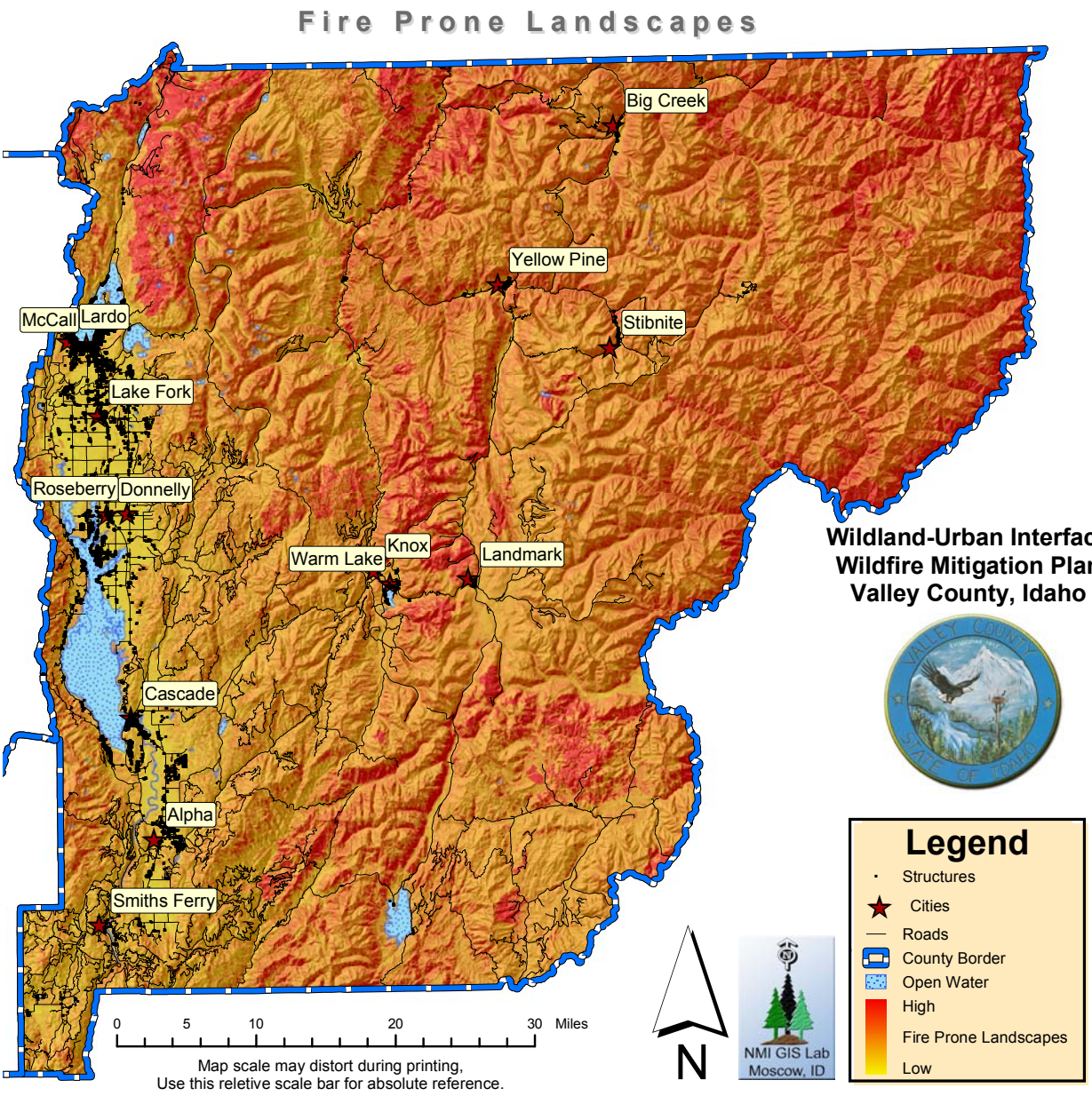
Two Landsat 7 ETM images were obtained to conduct hyper-spectral analysis for this project. The first was obtained in 1998 and the second in 2002. Hyper-spectral analysis procedures followed the conventions used by the Idaho Vegetation and Land Cover Classification System, modified from Redmond (1997) and Homer (1998).

Riparian Zones: Riparian zones were derived from stream layers created during the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

Wind Direction: Wind direction and speed data detailed by monthly averages was used in this project to better ascertain certain fire behavior characteristics common to large fire events. These data are spatially gridded Average Monthly Wind Directions in Idaho. The coverage was created from data summarized from the Interior Columbia Basin Ecosystem Management Project (Quigley *et al.* 2001).

Past Fires: Past fire extents represent those locations on the landscape that have previously burned during a wildfire. Past fire extent maps were obtained from a variety of sources for the central Idaho area including the USFS Boise National Forest, USFS Payette National Forest, and the Idaho Department of Lands.

Fire Prone Landscapes: Using the methodology developed by Schlosser *et al.* (2002), and refined for this project, the factors detailed above were used to assess the potential for the landscape to burn during the fire season in the case of fire ignition. Specifically, the entire region was evaluated at a resolution of 10 meters (meaning each pixel on the screen represented a 10 meter square on the ground) to determine the propensity for a particular area (pixel) to burn in the case of a wildfire. The analysis involved creating a linear regression analysis within the GIS program structure to assign a value to each significant variable, pixel-by-pixel. The analysis ranked factors from 0 (little to no risk) to 100 (extremely high risk) based on past fire occurrence. In fact, the maximum rating score for Valley County was 100 with a low of 7.



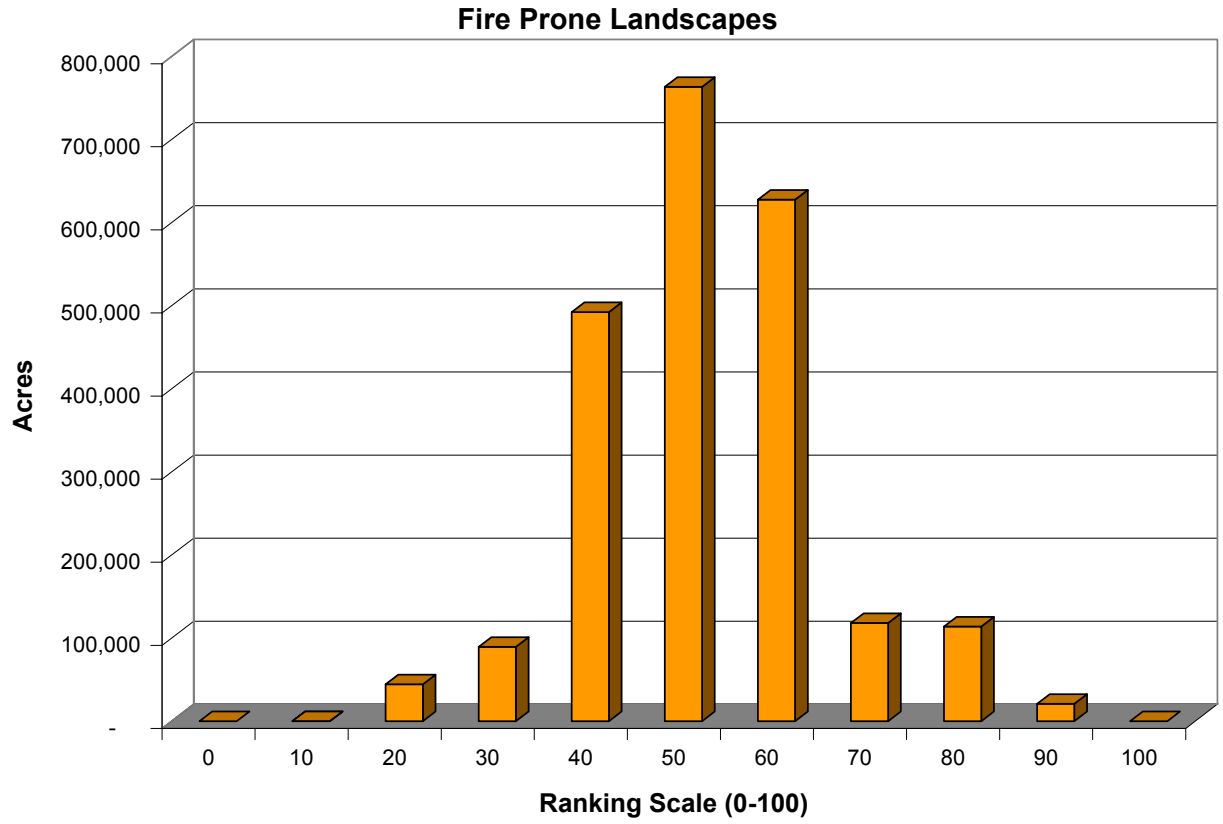
This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.

The maps depicting these risk categories display yellow as the lowest risk and red as the highest with values between a constant gradient from yellow to orange to red (Table 3.20). While large maps (16 square feet) have been provided as part of this analysis, smaller size maps are presented in Appendix I.

Table 3.20. Fire Prone Landscape rankings and associated acres in each category for Valley County.

Color Code	Value	Total	Percent of Total Area
	0	-	0%
	10	14	0%
	20	44,444	2%
	30	89,330	4%
	40	492,282	22%
	50	763,634	34%
	60	627,709	28%
	70	118,037	5%
	80	113,938	5%
	90	20,907	1%
	100	2	0%

Figure 3.3: Distribution of area by Fire Prone Landscape Class in Valley County.



The risk category values developed in this analysis should be considered **ordinal data**, that is, while the values presented have a meaningful ranking, they neither have a true zero point nor scale between numbers. Rating in the “40” range is not necessarily twice as “risky” as rating in the “20” range. These category values also do not correspond to a rate of fire spread, a fuel loading indicator, or measurable potential fire intensity. Each of those scales is greatly

influenced by weather, seasonal and daily variations in moisture (relative humidity), solar radiation, and other factors. The risk rating presented here serves to identify where certain constant variables are present, aiding in identifying where fires typically spread into the largest fires across the landscape.

3.8.2 Fire Regime Condition Class

The US Forest Service has provided their assessment of Fire Regime Condition Class for the forested areas of Valley County to this WUI Fire Mitigation Plan analysis. These measures of forest conditions are the standard method of analysis for the USDA Forest Service.

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (Agee 1993, Brown 1995). Coarse scale definitions for natural (historical) fire regimes have been developed by Hardy *et al.* (2001) and Schmidt *et al.* (2002) and interpreted for fire and fuels management by Hann and Bunnell (2001). The five natural (historical) fire regimes are classified based on average number of years between fires (fire frequency) combined with the severity (amount of replacement) of the fire on the dominant overstory vegetation. These five regimes include:

I – 0-35 year frequency and low (surface fires most common) to mixed severity (less than 75% of the dominant overstory vegetation replaced);

II – 0-35 year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);

III – 35-100+ year frequency and mixed severity (less than 75% of the dominant overstory vegetation replaced);

IV – 35-100+ year frequency and high (stand replacement) severity (greater than 75% of the dominant overstory vegetation replaced);

V – 200+ year frequency and high (stand replacement) severity.

As scale of application becomes finer these five classes may be defined with more detail, or any one class may be split into finer classes, but the hierarchy to the coarse scale definitions should be retained.

A fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime (Hann and Bunnell 2001). Coarse-scale FRCC classes have been defined and mapped by Hardy *et al.* (2001) and Schmidt *et al.* (2001) (FRCC). They include three condition classes for each fire regime. The classification is based on a relative measure describing the degree of departure from the historical natural fire regime. This departure results in changes to one (or more) of the following ecological components: vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated disturbances (e.g. insect and diseased mortality, grazing, and drought). There are no wildland vegetation and fuel conditions or wildland fire situations that do not fit within one of the three classes.

The three classes are based on low (FRCC 1), moderate (FRCC 2), and high (FRCC 3) departure from the central tendency of the natural (historical) regime (Hann and Bunnell 2001, Hardy *et al.* 2001, Schmidt *et al.* 2002). The central tendency is a composite estimate of vegetation characteristics (species composition, structural stages, stand age, canopy closure, and mosaic pattern); fuel composition; fire frequency, severity, and pattern; and other associated natural disturbances. Low departure is considered to be within the natural (historical) range of variability, while moderate and high departures are outside.

Characteristic vegetation and fuel conditions are considered to be those that occurred within the natural (historical) fire regime. Uncharacteristic conditions are considered to be those that did not occur within the natural (historical) fire regime, such as invasive species (e.g. weeds, insects, and diseases), "high graded" forest composition and structure (e.g. large trees removed in a frequent surface fire regime), or repeated annual grazing that maintains grassy fuels across relatively large areas at levels that will not carry a surface fire. Determination of the amount of departure is based on comparison of a composite measure of fire regime attributes (vegetation characteristics; fuel composition; fire frequency, severity and pattern) to the central tendency of the natural (historical) fire regime. The amount of departure is then classified to determine the fire regime condition class. A simplified description of the fire regime condition classes and associated potential risks are presented in Table 3.21. Maps depicting Fire Regime and Condition Class are presented in Appendix I.

Table 3.21. Fire Regime Condition Class Definitions.

Fire Regime Condition Class	Description	Potential Risks
Condition Class 1	Within the natural (historical) range of variability of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are similar to those that occurred prior to fire exclusion (suppression) and other types of management that do not mimic the natural fire regime and associated vegetation and fuel characteristics. Composition and structure of vegetation and fuels are similar to the natural (historical) regime. Risk of loss of key ecosystem components (e.g. native species, large trees, and soil) is low.
Condition Class 2	Moderate departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe). Composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate. Risk of loss of key ecosystem components is moderate.
Condition Class 3	High departure from the natural (historical) regime of vegetation characteristics; fuel composition; fire frequency, severity and pattern; and other associated disturbances.	Fire behavior, effects, and other associated disturbances are highly departed (more or less severe). Composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. Risk of loss of key ecosystem components is high.

An analysis of Fire Regime Condition Class in Valley County shows that approximately 45% of the County is in Condition Class 1 (low departure), just about 33% is in Condition Class 2 (moderate departure), with 19% in Condition Class 3 (Table 3.22).

Table 3.22. FRCC by area in Valley County.

	Condition Class	Acres	Percent of Area
1	low departure	1,085,757	45%
2	moderate departure	779,531	33%
3	high departure	459,595	19%
4	agriculture	24,449	1%
5	rock/barren	1,751	0%
7	urban	2,166	0%
8	water	33,946	1%

See Appendix I for maps of Historic Fire Regime, Fire Regime Conditions Class, and Current Fire Severity.

3.8.3 Current Fire Severity

Current fire severity (CFS) is an estimate of the relative fire severity if a fire were to burn a site under its current state of vegetation. In other words, how much of the overstory would be removed if a fire were to burn today. The US Forest Service (Flathead National Forest) did not attempt to model absolute values of fire severity, as there are too many variables that influence fire effects at any given time (for example, temperature, humidity, fuel moisture, slope, wind speed, wind direction).

The characterization of likely fire severity was based upon historic fire regimes, potential natural vegetation, cover type, size class, and canopy cover with respect to slope and aspect. Each cover type was assigned a qualitative rating of fire tolerance based upon likely species composition and the relative resistance of each species to fire. The US Forest Service researchers defined 3 broad classes of fire tolerance: high tolerance (<20 percent post-fire mortality); moderate tolerance (20 to 80 percent mortality); and low tolerance (>80 percent mortality). We would expect that fires would be less severe within cover types comprised by species that have a high tolerance to fire (for example, western larch and ponderosa pine). Conversely, fires would likely burn more severely within cover types comprised by species having a low tolerance to fire (for example grand fir, subalpine fir). Data assignments were based upon our collective experience in the field, as well as stand structure characteristics reported in the fire-history literature. For example, if they estimated that a fire would remove less than 20 percent of the overstory, the current fire severity would be assigned to the non-lethal class (that is, NL). However, if they expected fire to remove more than 80 percent of the overstory, the current fire severity was assigned to a stand replacement class (that is, SR or SR3).

3.8.3.1 Purpose

Fire is a dominant disturbance process in the Northern Rockies. The likely effect of fire upon vegetation (i.e., current fire severity) is critical information for understanding the subsequent fire effects upon wildlife habitats, water quality, and the timing of runoff. There have been many reports of how fire suppression and timber harvest has affected vegetation patterns, fuels, and fire behavior. The US Forest Service researchers from the Flathead National Forest, derived the current fire severity theme explicitly to compare with the historical fire regime theme to evaluate how fire severity has changed since Euro-American settlement (that is, to derive fire-regime condition class).

3.8.3.2 General Limitations

These data were designed to characterize broad scale patterns of estimated fire severity for use in regional and subregional assessments. Any decisions based on these data should be supported with field verification, especially at scales finer than 1:100,000. Although the resolution of the CFS theme is 90 meter cell size, the expected accuracy does not warrant their use for analyses of areas smaller than about 10,000 acres (for example, assessments that typically require 1:24,000 data).

Current fire severity rule-set was developed for an "average burn day" for the specific vegetation types in our area. Any user of these data should familiarize themselves with the rule sets to better understand our estimate of current fire severity.

Table 3.23. Predicted Fire Severity by area in Valley County.

Predicted Fire Severity		Acres	Percent of Area
1	Non-lethal	79,910	3%
2	Mixed severity, short interval	57,895	2%
3	Mixed severity, long interval	739,582	31%
4	Mixed severity, variable interval	70,034	3%
5	Stand replacement, forest	1,153,986	48%
6	Stand replacement, non-forest, short return interval	136,242	6%
7	Mixed severity, non-forest, moderate return interval	77,266	3%
8	Stand Replacement, non-forest, moderate return interval	9,968	0%
10	Agriculture	24,449	1%
11	Rock / barren	1,751	0%
13	Urban	2,166	0%
14	Water	33,946	1%

See Appendix I for a map of Current (Predicted) Fire Severity.

3.8.4 On-Site Evaluations

Fire control and evaluation specialists as well as hazard mitigation consultants evaluated the communities of Valley County to determine, first-hand, the extent of risk and characteristics of hazardous fuels in the Wildland-Urban Interface. The on-site evaluations have been summarized in written narratives and are accompanied by photographs taken during the site visits (Appendix V). These evaluations included the estimation of fuel models as established by Anderson (1982). These fuel models are described in the following section of this document.

In addition, field personnel completed FEMA's Fire Hazard Severity Forms and Fire Hazard Rating Criteria Worksheets. These worksheets and standardized rating criteria allow comparisons to be made between all of the counties in the country using the same benchmarks. The FEMA rating forms are summarized for each community in Appendix II.

3.8.5 Fuel Model Descriptions

Anderson (1982) developed a categorical guide for determining fuel models to facilitate the linkage between fuels and fire behavior. These 13 fuel models, grouped into 4 basic groups: grass, chaparral and shrub, timber, and slash, provide the basis for communicating fuel

conditions and evaluating fire risk. There are a number of ways to estimate fuel models in forest and rangeland conditions. The field personnel from Northwest Management, Inc., that evaluated communities and other areas of Valley County have all been intricately involved in wildland fire fighting and the incident command system. They made ocular estimates of fuel models they observed. In an intense evaluation, actual sampling would have been employed to determine fuel models and fuel loading. The estimations presented in this document (Chapter 3) are estimates based on observations to better understand the conditions observed.

Fuel Model 0- This type consists of non-flammable sites, such as exposed mineral soil and rock outcrops. Other lands are also identified in this type.

3.8.5.1 Grass Group

3.8.5.1.1 Fire Behavior Fuel Model 1

Fire spread is governed by the fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires are surface fires that move rapidly through the cured grass and associated material. Very little shrub or timber is present, generally less than one-third of the area.

Grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations that met the above area constraint. Annual and perennial grasses are included in this fuel model.

This fuel model correlates to 1978 NFDRS fuel models A, L, and S.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and alive, tons/acre 0.74
Dead fuel load, ¼-inch, tons/acre 0.74
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 1.0

3.8.5.1.2 Fire Behavior Fuel Model 2

Fire is spread primarily through the fine herbaceous fuels, either curing or dead. These are surface fires where the herbaceous material, in addition to litter and dead-down stemwood from the open shrub or timber overstory, contribute to the fire intensity. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area may generally fit this model; such stands may include clumps of fuels that generate higher intensities an that may produce firebrands. Some pinyon-juniper may be in this model.

This fuel model correlates to 1978 NFDRS fuel models C and T.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and alive, tons/acre 4.0
Dead fuel load, ¼-inch, tons/acre 2.0
Live fuel load, foliage, tons/acre 0.5
Fuel bed depth, feet 1.0

3.8.5.1.3 Fire Behavior Fuel Model 3

Fires in this fuel are the most intense of the grass group and display high rates of spread under the influence of wind. Wind may drive fire into the upper heights of the grass and across

standing water. Stands are tall, averaging about 3 feet (1 m), but considerable variation may occur. Approximately one-third or more of the stand is considered dead or cured and maintains the fire. Wild or cultivated grains that have not been harvested can be considered similar to tall prairie and marshland grasses.

This fuel correlates to 1978 NFDRS fuel model N.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre 3.0
Dead fuel load, ¼-inch, tons/acre 3.0
Live fuel load, foliage tons/acre 0
Fuel bed depth, feet 2.5

3.8.5.2 Shrub Group

3.8.5.2.1 Fire Behavior Fuel Model 4

Fire intensity and fast-spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrubs, 6 or more feet tall, such as California mixed chaparral, the high pocosin along the east coast, the pinebarrens of New Jersey, or the closed jack pine stands of the north-central States are typical candidates. Besides flammable foliage, dead woody material in the stands significantly contributes to the fire intensity. Height of stand qualifying for this model depends on local conditions. A deep litter layer may also hamper suppression efforts.

This fuel model represents 1978 NFDRS fuel models B and O; fire behavior estimates are more severe than obtained by Models B or O.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre 13.0
Dead fuel load, ¼-inch, tons/acre 5.0
Live fuel load, foliage, tons/acre 5.0
Fuel bed depth, feet 6.0

3.8.5.2.2 Fire Behavior Fuel Model 5

Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Usually shrubs are short and almost totally cover the area. Young, green stands with no dead wood would qualify: laurel, vine maple, alder, or even chaparral, manzanita, or chamise.

No 1978 NFDRS fuel model is represented, but model 5 can be considered as second choice for NFDRS model D or as third choice for NFDRS model T. Young green stands may be up to 6 feet (2m) high but have poor burning properties because of live vegetation.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre 3.5
Dead fuel load, ¼-inch, tons/acre 1.0
Live fuel load, foliage, tons/acre 2.0
Fuel bed depth, feet 2.0

3.8.5.2.3 Fire Behavior Fuel Model 6

Fires carry through the shrub layer where the foliage is more flammable than fuel model 5, but this requires moderate winds, greater than 8 mi/h (13 km/h) at mid-flame height. Fire will drop to the ground at low wind speeds or at openings in the stand. The shrubs are older, but not as tall as shrub types of model 4, nor do they contain as much fuel as model 4. A broad range of shrub conditions is covered by this model. Fuel situations to be considered include intermediate stands of chamise, chaparral, oak brush, low pocosin, Alaskan spruce taiga, and shrub tundra. Even hardwood slash that has cured can be considered. Pinyon-juniper shrublands may be represented but may over-predict rate of spread except at high winds, like 20 mi/h (32 km/h) at the 20-foot level.

The 1978 NFDRS fuel models F and Q are represented by this fuel model. It can be considered a second choice for models T and D and a third choice for model S.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acres..... 6.0
Dead fuel load, 1/4 –inch, tons/acre 1.5
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet..... 2.5

3.8.5.2.4 Fire Behavior Fuel Model 7

Fires burn through the surface and shrub strata with equal ease and can occur at higher dead fuel moisture contents because of the flammability of live foliage and other live material. Stands of shrubs are generally between 2 and 6 feet (0.6 and 1.8 m(high. Palmetto-gallberry understory-pine overstory sites are typical and low pocosins may be represented. Black spruce-shrub combinations in Alaska may also be represented.

This fuel model correlates with 1978 NFDRS model D and can be a second choice for model Q.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre 4.9
Dead fuel load, ¼-inch, tons/acre 1.1
Live fuel load, foliage, tons/acre 0.4
Fuel bed depth, feet..... 2.5

3.8.5.3 Timber Group

3.8.5.3.1 Fire Behavior Fuel Model 8

Slow-burning ground fires with low flame lengths are generally the case, although the fire may encounter an occasional “jackpot” or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humilities, and high winds do the fuels pose fire hazards. Closed canopy stands of short-needle conifers or hardwoods that have leafed out support fire in the compact litter layer. This layer is mainly needles, leaves, and occasionally twigs because little undergrowth is present in the stand. Representative conifer types are white pine, and lodgepole pine, spruce, fire and larch

This model can be used for 1978 NFDRS fuel models H and R.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch, dead and live, tons/acre 5.0
Dead fuel load, ¼-inch, tons/acre 1.5
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 0.2

3.8.5.3.2 Fire Behavior Fuel Model 9

Fires run through the surface litter faster than model 8 and have longer flame height. Both long-needle conifer stands and hardwood stands, especially the oak-hickory types, are typical. Fall fires in hardwoods are predictable, but high winds will actually cause higher rates of spread than predicted because of spotting caused by rolling and blowing leaves. Closed stands of long-needled pine like ponderosa, Jeffrey, and red pines, or southern pine plantations are grouped in this model. Concentrations of dead-down woody material will contribute to possible torching out of trees, spotting, and crowning.

NFDRS fuel models E, P, and U are represented by this model. It is also a second choice for models C and S.

Fuel model values for estimating fire behavior

Total fuel load, <3-inch dead and live, tons/acre 3.5
Dead fuel load, ¼-inch, tons/acre 2.9
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 0.2

3.8.5.3.3 Fire Behavior Fuel Model 10

The fires burn in the surface and ground fuels with greater fire intensity than the other timber little models. Dead-down fuels include greater quantities of 3-inch (7.6 cm) or larger limbwood, resulting from overmaturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees are more frequent in this fuel situation, leading to potential fire control difficulties. Any forest type may be considered if heavy down material is present; examples are insect- or disease-ridden stands, wind-thrown stands, overmature situations with dead fall, and aged light thinning or partial-cut slash.

The 1978 NFDRS fuel model G is represented.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre 12.0
Dead fuel load, ¼-inch, tons/acre 3.0
Live fuel load, foliage, tons/acre 2.0
Fuel bed depth, feet 1.0

The fire intensities and spread rates of these timber litter fuel models are indicated by the following values when the dead fuel moisture content is 8 percent, live fuel moisture is 100 percent, and the effective wind speed at mid-flame height is 5 mi/h (8 km/h):

Table 3.24. Comparative Fire Intensities and Rates of Spread in Timber Fuel Models.

Fuel Model	Rate of Spread Chains/hour	Flame length Feet
8	1.6	1.0
9	7.5	2.6
10	7.9	4.8

Fires such as above in model 10 are at the upper limit of control by direct attack. More wind or drier conditions could lead to an escaped fire.

3.8.5.4 Logging Slash Group

3.8.5.4.1 Fire Behavior Fuel Model 11

Fires are fairly active in the slash and herbaceous material intermixed with the slash. The spacing of the rather light fuel load, shading from overstory, or the aging of the fine fuels can contribute to limiting the fire potential. Light partial cuts or thinning operations in mixed conifer stands, hardwood stands, and southern pine harvests are considered. Clearcut operations generally produce more slash than represented here. The less-than-3-inch (7.6-cm) material load is less than 12 tons per acre (5.4 t/ha). The greater-than-3-inch (7.6-cm) is represented by not more than 10 pieces, 4 inches (10.2 cm) in diameter, along a 50-foot (15 m) transect.

The 1978 NFDRS fuel model K is represented by this model.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre 11.5
Dead fuel load, ¼-inch, tons/acre 1.5
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 1.0

3.8.5.4.2 Fire Behavior Fuel Model 12

Rapidly spreading fires with high intensities capable of generating firebrands can occur. When fire starts, it is generally sustained until a fuel break or change in fuels is encountered. The visual impression is dominated by slash and much of it is less than 3 inches (7.6 cm) in diameter. The fuels total less than 35 tons per acres (15.6 t/ha) and seem well distributed. Heavily thinned conifer stands, clearcuts, and medium or heavy partial cuts are represented. The material larger than 3 inches (7.6 cm) is represented by encountering 11 pieces, 6 inches (15.3 cm) in diameter, along a 50-foot (15-m) transect.

This model depicts 1978 NFDRS model J and may overrate slash areas when the needles have dropped and the limbwood has settled. However, in areas where limbwood breakup and general weathering have started, the fire potential can increase.

Fuel model values fore estimating fire behavior

Total fuel load, < 3-inch, dead and live, tons/acre 34.6
Dead fuel load, ¼-inch, tons/acre 4.0
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 2.3

3.8.5.4.3 Fire Behavior Fuel Model 13

Fire is generally carried across the area by a continuous layer of slash. Large quantities of material larger than 3 inches (7.6 cm) are present. Fires spread quickly through the fine fuels and intensity builds up more slowly as the large fuels start burning. Active flaming is sustained for long periods and a wide variety of firebrands can be generated. These contribute to spotting problems as the weather conditions become more severe. Clearcuts and heavy partial-cuts in mature and overmature stands are depicted where the slash load is dominated by the greater-tayhn-3-inch (7.6-cm) diameter material. The total load may exceed 200 tons per acre (89.2 t/ha) but fuel less than 3 inches (7.6 cm_ is generally only 10 percent of the total load. Situations where the slash still has "red' needles attached but the total load is lighter, more like model 12, can be represented because of the earlier high intensity and quicker area involvement.

The 1978 NFDRS fuel model I is represented. Areas most commonly fitting his model are old-growth stands west of the Cascade and Sierra Nevada Mountains. More efficient utilization standards are decreasing the amount of large material left in the field.

Fuel model values for estimating fire behavior

Total fuel load, < 3-inch dead and live, tons/acre 58.1
Dead fuel load, ¼-inch, tons/acre 7.0
Live fuel load, foliage, tons/acre 0
Fuel bed depth, feet 3.0

For other slash situations:

Hardwood slash .....Model 6
Heavy "red" slash.....Model 4
Overgrown slash .....Model 10
Southern pine clearcut slash.....Model 12

The comparative rates of spread and flame lengths for the slash models at 8 percent dead fuel moisture content and a 5 mi/h (8 km/h) mid-flame wind are presented in Table 3.25.

Table 3.25. Comparative Fire Intensities and Rates of Spread in Slash Fuel Models.

Fuel Model	Rate of Spread Feet/hour	Flame length Feet
11	396	3.5
12	858	8.0
13	891	10.5

3.9 Wildland-Urban Interface

3.9.1 People and Structures

A key component in meeting the underlying need is the protection and treatment of fire hazard 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). These areas encompass not only the interface (areas immediately adjacent to urban development), but also the continuous slopes and fuels that lead directly to a risk to urban developments. Reducing the fire hazard in the wildland urban interface requires the efforts of

federal, state, local agencies, and private individuals (Norton 2002). “The role of [most] federal agencies in the wildland urban interface includes wildland fire fighting, 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” (USFS 2001). Property owners share a responsibility to protect their residences and businesses and minimize fire danger by creating defensible areas around them and taking other measures to minimize the fire risks to their structures (USFS 2001). With treatment, a wildland-urban interface can provide firefighters a defensible area from which to suppress wildland fires or defend communities. In addition, a wildland urban interface that is properly thinned will be less likely to sustain a crown fire that enters or originates within it (Norton 2002).

By reducing hazardous fuel loads, ladder fuels, and tree densities, and creating new and reinforcing defensible space, landowners would 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 (McCoy *et al.* 2001 as cited in Norton 2002);
- improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

Four wildland/urban conditions have been identified for use in the wildland urban interface (Norton 2002). These include the Interface Condition, Intermix Condition, Occluded Condition, and Rural 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;
- **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; and
- **Rural Condition** – a situation where the scattered small clusters of structures (ranches, farms, resorts, or summer cabins) are exposed to wildland fuels. There may be miles between these clusters.

The locations of structures in Valley County have been mapped and are presented on a variety of maps in this analysis document; specifically in Appendix I. The location of all structures was determined by examining two sets of remotely sensed images. The more detailed information was garnered from digital ortho-photos at a resolution of 1 meter (from 1998). For those areas not covered by the 1 meter DOQQ images, SPOT satellite imagery at a resolution of 10 meters was used (from 2002). These records were augmented with data collected on hand-held GPS

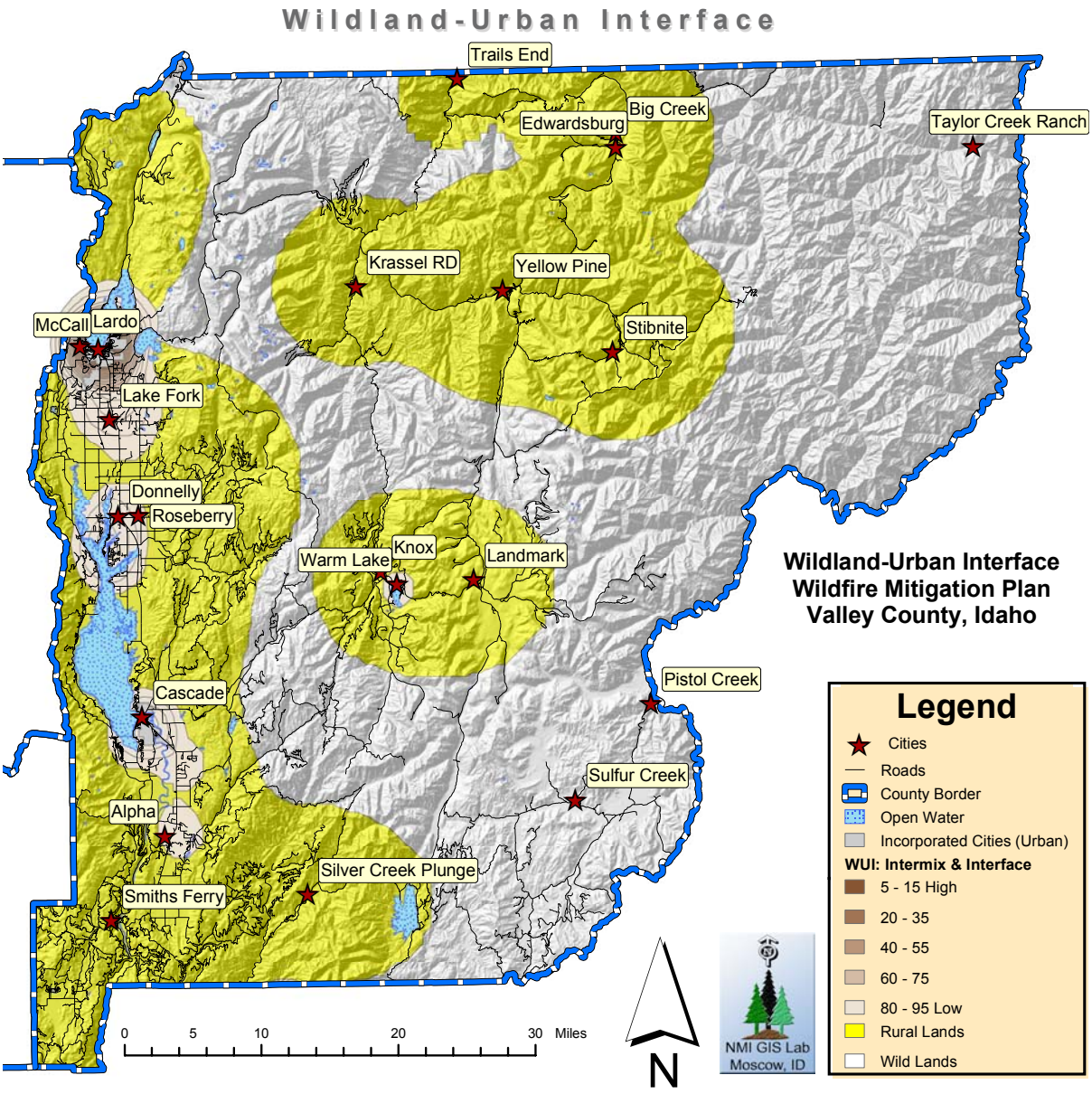
receivers to record the location of structures, especially in areas where new housing developments were seen.

All structures are represented by a “dot” on the map. No differentiation is made between a garage and a home, or a business and a storage building. The density of structures and their specific locations in this management area are critical in defining where the potential exists for casualty loss in the event of a wildfire in the region.

By evaluating this structure density, we can define WUI areas on maps by using mathematical formulae and population density indexes to define the WUI based on where structures are located. The resulting population density indexes create concentric circles showing high density areas of Interface and Intermix WUI, as well as Rural WUI (as defined by Secretary Norton of the Department of Interior). This portion of the analysis allows us to “see” where the highest concentrations of structures are located in reference to high risk landscapes, limiting infrastructure, and other points of concern.

It is critical to understand that in the protection of people, structures, infrastructure, and unique ecosystems, this portion of the analysis only serves to identify structures and by some extension the people that inhabit them. It does not define the location of infrastructure and unique ecosystems. Other analysis tools will be used for those items.

The WUI interface areas as defined here are presented in map form in Appendix I.



This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.

3.9.1.1 Fire Risk Within the WUI

Using the evaluation of where the Wildland-Urban Interface exists in Valley County, we have the ability to observe the fire risk in these areas as evaluated in the Fire Prone Landscapes analysis. The resulting analysis demonstrates that the Intermix and Interface areas of the county, on average have a low risk overall risk rating. However, there are a significant number of acres (approximately 700 acres) rated above 70 on the Fire Prone Landscapes scale. Similarly, the areas identified as Rural follow the overall trend of Valley County's risk rating, with a substantial number of acres rated at 50 and above (Table 3.26).

Figure 3.4. Fire Prone Landscapes within the WUI of Valley County.

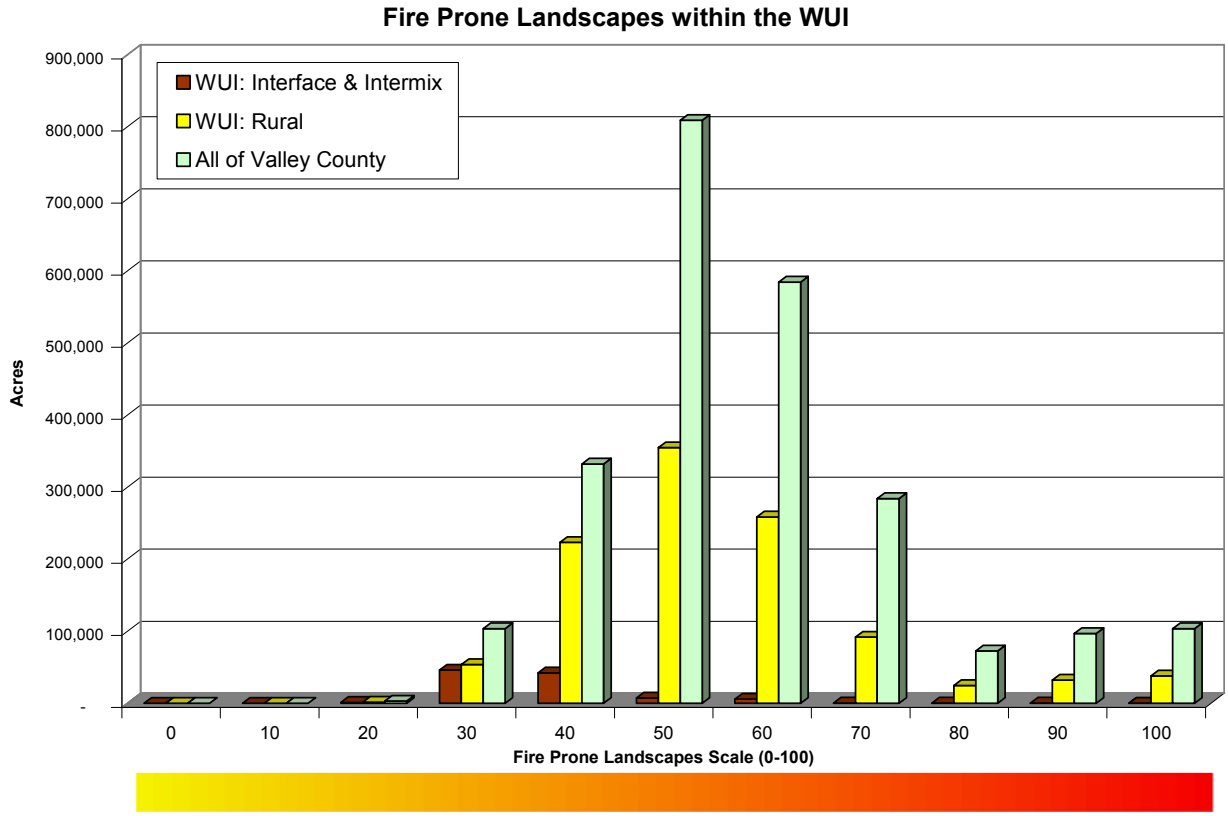


Table 3.26. Fire Prone Landscapes Risk in the WUI of Valley County.

Fire Prone Landscapes Scale	Acres		
	WUI: Interface & Intermix	WUI: Rural	All of Valley County
-	-	-	-
10	5	8	14
20	1,212	1,500	2,823
30	45,868	53,649	103,300
40	42,189	223,152	331,966
50	7,124	354,538	808,893
60	5,652	258,495	584,437
70	277	91,728	283,896
80	222	24,549	72,328
90	139	32,018	96,841
100	71	37,969	103,348
Total Acres	**102,759**	**1,077,607**	**2,387,845**

3.9.2 Infrastructure

Valley County has both significant infrastructure and unique ecosystems within its boundaries. Of note for this WUI Fire Mitigation Plan is the existence of highway routes (eg., State Highway

55 and Warm Lake Highway), and the presence of high tension power lines supplying surrounding counties. The County is also served by two railways. The Idaho Northern and Pacific runs from Cascade along the North Fork Payette River to Emmett, Idaho transporting predominantly timber and forest products, agricultural products, and chemicals. The Idaho Historical Railroad provides sightseeing tours for passengers between Cascade and Smith's Ferry on the Thunder Mountain Line. These resources will be considered in the protection of infrastructural resources for Valley County and to the larger extent of this region, and the rest of Idaho.

High Tension Power Lines have been mapped and are presented in Appendix I. Protection of these lines from loss during a wildfire is paramount in as much as the electrical power they provide serves not only the communities of Valley County but of surrounding counties. The protection of these lines allows for community sustainability, support of the economic viability of Valley County, and the protection of people who rely on that power. Fuels mitigation under power lines has received considerable attention in forested ecosystems as timber is thinned and heavy accumulations of brush are managed. This practice should be mandated into the future. However, the importance of management of rangeland ecosystems under high tension power lines should not be overlooked. Brush intermixed with grasses and other species, during extreme fire weather events, coupled with steep slopes can produce considerable heat and particulate matter. When this occurs under power lines, the result can be arching between lines and even failure of the electrical media itself. Fuel mitigation treatments in high risk areas, especially where multiple lines are co-located, will be recommended for treatments.

Municipal water supplies are scattered across the county. The Idaho Water Resources Board maintains data on 52 municipal water supplies in Valley County. The majority of these (55) are groundwater systems taking water from a well for use by a local water system or business. Two of the existing municipal water supplies are spring-groundwater systems removing water at the surface or just underground from a natural spring. Finally, five municipal water supplies in Valley County are surface water collection points. These are the water supply points which could be most adversely affected by a wildfire because of the impacts that sediment and increased erosion following a fire could pose. These systems will be addressed directly in the section of this document detailing potential treatments. Table 3.27 details some of the attributes of these water collection points.

Table 3.27. Surface Water Collection Points in Valley County.

Name of Collection Point	Type	Source Name	LATITUDE	LONGITUDE	Population Served
PARADISE POINT	Non-community Transient	PAYETTE LAKE	44.96685	-116.05892	50
MCCALL CITY OF	Community	DAVIS BEACH PL	44.92231	-116.09293	3,000
MCCALL CITY OF	Community	MAIN STATION PL	44.91239	-116.09735	3,000
WEST MOUNTAIN WATER ASSN INC	Non-community Transient	RICHARD CREEK	44.48889	-116.09250	150
YELLOW PINE WATER USERS INC	Community	BOULDER CREEK	44.97205	-115.48815	72

3.9.3 Ecosystems

Valley 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. 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, forests and rangelands in Valley County have become more susceptible to large-scale, high intensity fires posing a threat to life, property, and natural resources including wildlife and special status plant populations and habitats. High-intensity, stand-replacing fires have the potential to seriously damage soils and native vegetation. 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 (House of Representatives, Committee on Agriculture, Washington, DC, 1997).

3.10 Soils

Our soil resource is an extremely important component for maintaining a healthy ecosystem and economy. Fire can play an intricate role in this process, if it occurs under normal conditions of light fuels associated with low intensity underburns. However, the buildup of fuels and consequent high severity fires can cause soils to become water repellent (hydrophobic), and thus greatly increases the potential for overland flow during intense rains. Soil in degraded conditions does not function normally, and will not be able to sustain water quality, water yield, or plant communities that have normal structure, composition, and function. Fire is also strongly correlated with the carbon-nutrient cycles and the hydrologic cycle. Fire frequency, extent, and severity are controlled to a large degree by the availability of carbon, as well as the moisture regime (Quigley & Arbelbide 1997).

Soils were evaluated for their propensity to become hydrophobic during and after a fire as evidenced by the presence of clay and clay derivatives (e.g., clay loam, cobbly clay) in the upper soil layers. In addition, their permeability and tendency to allow runoff to infiltrate the soil rapidly was evaluated. In general, with notable exceptions, the majority of the area within the County has fairly low clay content in the Bt horizon. On average these soils are well drained with moderate permeability. However, where the soils derived from basalt exist (western and northwestern edges of the county) the soils are more prone to hydrophobic characteristics.

Low to moderate intensity fires would be not be expected to damage soil characteristics in the region, especially if the hotter fires in this range were limited to small extents associated with jackpots of cured fuels. Hot fires providing heat to the Bt horizon substrate depth have the potential to create hydrophobic characteristics in that layer. This can result in increased overland flow during heavy rains, following wildfire events, potentially leading to mass wasting. Rocky and gravelly characteristics in the A horizon layer would be expected to be displaced, while the silty and loamy fines in these soils may experience an erosion and displacement potential. These soils will experience the greatest potential impacts resulting from hot fires that burn for prolonged periods (especially on steep slopes).

The National Resource Conservation Service (NRCS) has mapped a large portion of Valley County in detail. A complete soil survey for Valley County was distributed in August 2003. Please refer the Valley County NRCS Soil Survey Report to view each soil unit in the County and the associated characteristics relating to the effects of wildland fire.

3.11 Hydrology

The Idaho Water Resource Board is charged with the development of the Idaho Comprehensive State Water Plan. Included in the State Water Plan are the statewide water policy plan, and component basin and water body plans which cover specific geographic areas of the state (IDEQ 2003). The Idaho Department of Water Resources has prepared General Lithologies of the Major Ground Water Flow Systems in Idaho. The regions surrounding most communities

within valleys and other “lowlands” in the county are categorized as possessing Quarternary Undifferentiated Sediments (Qs).

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

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

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

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

A correlation to mass wasting due to the removal of vegetation caused by high intensity wildland fire has been documented. Burned vegetation can result in changes in soil moisture and loss of rooting strength that can result in slope instability, especially on slopes greater than 30%. The greatest watershed impacts from increased sediment will be in the lower gradient, depositional stream reaches.

The Valley County Comprehensive Plan addresses Streams, Rivers, and Wetland issues specifically. The Plan sets forth the following goals in relation to water resources in the county:

Water Resources Goal № I

Conserve and mange groundwater and surface water in all its forms in order to prevent depletion or pollution.

Water Resources Objectives:

1. Orient watershed management practices toward the improvement and maintenance of ground and surface water quality throughout Valley County
2. Take an active role, regarding water quality and quantity, by participation in the revision of the plans of the National Forests and Bureau of Reclamation.
3. Encourage open space buffers adjacent to rivers and creeks in order to preserve riparian areas.
4. Promote agricultural practices which protect and improve water quality and the expansion of those practices.
5. Protect the recreational value of the county’s water bodies and water courses.

6. Protect important riparian areas by:
    a. Promoting the designation and mapping of critical areas.
    b. Promoting the preservation of riparian habitats and stream conditions.
    c. Promoting the rehabilitation and enhancement of degraded riparian habitat and stream conditions.
7. Encourage improvement of irrigation water management practice which conserve water and reduce ground and surface water pollution or contamination.
8. Promote the use of geothermal resources for recreation or commercial useage.
9. encourage the retention of existing wetlands in order to protect water quality and establishment of new wetlands.

These enumerated goals and objectives stated in the Valley County Comprehensive Plan are consistent with this planning effort, and are integrated by this reference.

Of critical importance to Valley County will be the maintenance of the domestic watershed supplies near McCall, Yellow Pine, and the West Mountain residential development near Cascade. More discussion about these watersheds will be provided in the recommendations section.

3.12 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 (USDA Forest Service 2000).

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in Central 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. In Valley County, winds are predominantly from the southwest but occasionally blow from the west to northwest. Air quality in the area and surrounding airshed is generally good to excellent. However, locally adverse conditions can result from occasional wildland fires in the summer and fall, and prescribed fire and agricultural burning in the spring and fall. All major river drainages are subject to temperature inversions which trap smoke and affect dispersion, causing local air quality problems. This occurs most often during the summer and fall months and would potentially affect all communities in Valley County.

Smoke management in Valley County is administered by the Montana/Idaho Airshed Group. Much of the county is in Airshed Units 15 and 16. The McCall impact zone is within Valley County borders. Montana/Idaho Airshed Group Operating Guide (Levinson 2002). An airshed is a geographical area which is characterized by similar topography and weather patterns (or in which atmospheric characteristics are similar, e.g., mixing height and transport winds). The USDA Forest Service, Bureau of Land Management, and the Idaho Department of Lands are all members of the Montana/Idaho State Airshed Group, which is responsible for coordinating burning activities to minimize or prevent impacts from smoke emissions. Prescribed burning must be coordinated through the Missoula Monitoring Unit, which coordinates burn information, provides smoke forecasting, and establishes air quality restrictions for the Montana/Idaho Airshed Group. The Monitoring Unit issues daily decisions which may restrict burning when atmospheric conditions are not conducive to good smoke dispersion. Burning restrictions are

issued for airsheds, impact zones, and specific projects. The monitoring unit is active March through November. Each Airshed Group member is also responsible for smoke management all year.

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority governing air resource management. The act established a process for designation of Class I and Class II areas for air quality management. Class I areas receive the highest level of protection and numerical thresholds for pollutants are most restrictive for this Class. The Selway-Bitterroot, Hells Canyon, and Sawtooth Class 1 Areas could be affected by burning activity in Valley County.

All of the communities within Valley County could be affected by smoke or regional haze from burning activities in the region. Idaho Department of Environmental Quality maintains Air Pollution Monitoring Sites throughout Idaho. The Air Pollution Monitoring program monitors all of the six criteria pollutants. Measurements are taken to assess areas where there may be a problem, and to monitor areas that already have problems. The goal of this program is to control areas where problems exist and to try to keep other areas from becoming problem air pollution areas (Louks 2001).

The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, OAQPS (Organization for Air Quality Protection Standards) is responsible for setting standards, also known as national ambient air quality standards (NAAQS), 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 (Louks 2001).

3.12.1 Fire Mitigation Practices to Maintain Air Quality

Smoke consists of dispersed airborne solids and liquid particles, called particulates, which can remain suspended in the atmosphere for a few days to several months. Particulates can reduce visibility and contribute to respiratory problems. Very small particulates can travel great distances and add to regional haze problems. Regional haze can sometimes result from multiple burn days and/or multiple owners burning within an airshed over too short a period of time to allow for dispersion.

For prescribed fires, there are three principle strategies to manage smoke and reduce air quality effects. They include:

1. **Avoidance -** This strategy relies on monitoring meteorological conditions when scheduling prescribed fires to prevent smoke from drifting into sensitive receptors, or suspending burning until favorable weather (wind) conditions exist. Sensitive receptors can be human-related (e.g. campgrounds, schools, churches, and retirement homes) or wildlife-related (threatened and endangered species and their critical habitats);
2. **Dilution –** This strategy ensures proper smoke dispersion in smoke sensitive areas by controlling the rate of smoke emissions or scheduling prescribed fires when weather systems are unstable, not under conditions when a stable high-pressure area is forming with an associated subsidence inversion. An inversion would trap smoke near the ground; and
3. **Emission Reduction –** This strategy utilizes techniques to minimize the smoke output per unit area treated. Smoke emission is affected by the number of acres burned at one time, pre-burn fuel loadings, fuel consumption, and the emission factor. Reducing the number of acres burned at one time would reduce the amount of emissions generated

by that burn. Reducing the fuel beforehand reduces the amount of fuel available. Prescribed burning when fuel moistures are high can reduce fuel consumption. Emission factors can be reduced by pile burning or by using certain firing techniques such as mass ignition.

Another strategy to manage smoke and reduce air quality effects is to mechanically treat fuels that would otherwise be burned. These methods include mulching, chipping, and relying on decomposition of fuels. However, these methods do not necessarily reduce the fuels accumulation, instead they transform the fuels into a form that has an accelerated decomposition rate. These methods are generally not practical on a broad, landscape scale, but are suited to treatments around communities and structures.

If weather conditions changed unexpectedly during a prescribed burn, and there was a potential for violating air quality standards or for adverse smoke impacts on sensitive receptors (schools, churches, hospitals, retirement homes, campgrounds, wilderness areas, and species of threatened or endangered wildlife), the management organization may implement a contingency plan, including the option for immediate suppression. Considering 1) the proposed action would result in prescribed fire on a relatively small number of acres, 2) burning as part of this mitigation plan's implementation in the County will most likely occur over a 5-year or 10-year period at a minimum, and 3) the County will adhere to Montana/Idaho Airshed Group advisories and management strategies to minimize smoke emissions, prescribed fire activities would not violate national or state emission standards and would cause very minor and temporary air quality impacts. The greatest threat to air quality would be smoke impacts on sensitive receptors; however, the relative scarcity of sensitive receptors within the County minimizes this potential air quality impact.

In studies conducted through the Interior Columbia Basin Management Project, smoke emissions were simulated across the Basin to assess relative differences among historical, current, and future management scenarios. In assessing the whole Upper Columbia Basin, there was a 43 percent reduction in smoke emissions between the historical and current periods (Quigley and Arbelbide 1997). The projected smoke emissions varied substantially with the vastly different management scenarios. The consumptive demand and passive management scenarios were projected to substantially increase smoke emissions above current levels. The active management scenarios were projected to result in a decrease of current levels.

Although prescribed fire smoke would occur more frequently than wildland fire smoke, since prescribed fires are scheduled during the year, the effects of wildland fire smoke on visibility are more acute. Prescribed fires produce less smoke than wildland fires for comparatively shorter periods, because they are conducted under weather conditions that provide for better smoke dispersion. In a study conducted by Holsapple and Snell (1996), wildland fire and prescribed fire scenarios for the Columbia Basin were modeled. In conclusion, the prescribed fire scenarios did not exceed the EPA particulate matter (PM 10) standard in a 24-hour period. Similar projections were observed for a PM 2.5 threshold. Conversely, all wildland fire scenarios exceeded air quality standards. Similar responses were reported by Huff *et al.* (1995) and Ottmar *et al.* (1996) when they compared the effects of wildland fire to prescribed fire on air quality. The impacts of wildland fire and management ignited prescribed fire on air quality vary because of the differences in distribution of acres burned, the amount of fuel consumed per acre (due to fuel moisture differences), and the weather conditions in which typical spring and fall prescribed burns occur. This analysis reveals wildland fire impacts on air quality may be significantly greater in magnitude than emissions from prescribed burns. This may be attributable, in part, to the fact that several states within the project area have smoke management plans requiring favorable weather conditions for smoke dispersion prior to igniting wildland fires (Quigley and Arbelbide 1997).

Chapter 4: Summaries of Risk and Preparedness

4 Overview

4.1 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, the fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to determine how fires burn.

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

4.1.1 Weather

Weather conditions are ultimately responsible for determining fire behavior. Moisture, temperature, and relative humidity 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 affect 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. Wind contributes to spotting potential and may initiate the transition from a surface fire to a crown fire is fuel ladders are present.

4.1.2 Topography

Fires burning in similar fuel conditions burn dramatically different under different topographic conditions. Topography alters heat transfer and localized weather conditions, which in turn influence 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, lower humidity, lower soil and fuel moistures, and lightest fuels. The combination of light fuels and dry sites lead 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 roll 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. In addition, fires often cause “rollers” or burning materials which are released during the fire to roll down the slope causing new ignitions below the fire.

4.1.3 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 homesites (the structures) 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 affect 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, as surface to volume ratio decreases. 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. Finer fuels are much more responsive to changes in relative humidity. 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 potentially development of crown fire. That is, they release much more energy. Fuels are found in combinations of types, amounts, sizes, shapes, and arrangements (vertical and horizontal). It is the unique combination of these factors, along with the topography and weather, which determine how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected affect small changes in any single component has 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, the some of the principles that govern fire behavior have been identified and are recognized.

4.2 Valley County Conditions

Valley County is characterized by a relatively mild summers and cold winters. 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 1994 Corral Fire, 1994 Blackwell Fire, or the 2000 Burgdorf Junction 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 plethora 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, time since last thinning, reforestation success, use of equipment, and many site specific factors such as aspect and slope. 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.

Valley County has had accelerated population growth, particularly in and around McCall and along the valley going south. At the same time, the number and value of resources at risk is on the increase, as more and more homes are built in the midst of fire prone fuels. Human use is strongly correlated with fire frequency, with increasing numbers of fires as use increases. The combination of frequent ignitions and flammable vegetation has greatly increased the probability that incendiary devices will find a receptive fuel bed, resulting in increased fire frequency.

Discarded cigarettes, tire fires, and hot catalytic converters have increased the number of fires experienced along roadways. Careless and unsupervised use of fireworks also contributes their fair share to unwanted and unexpected wildland fires. Further contributing to ignition sources are the debris burners who use fire to rid ditches of weeds and other burnable materials.

Fire departments within Valley County have reported a general increase in the number of fires within the county. Although there have been few homes lost to wildland fires in the recent past, the potential is growing. Fire departments feel as though pure luck has been on the side of many homeowners, as more and more fires seem to be controlled at the doorstep of residents' homes. It is quite probable that homes will eventually be lost to wildland fire. However, there are a number of actions that can be taken now that can decrease the probability that these events will occur.

4.2.1 County Wide Potential Mitigation Activities

There are four basic opportunities for reducing the loss of homes and lives to fires. There are many single actions that can be taken, but in general they can be lumped into one of the following categories:

- Prevention
- Education/ Mitigation
- Readiness
- Building Codes

4.2.1.1 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. Prevention campaigns can take many forms. Traditional "Smokey Bear" type campaigns that spread the message passively through signage can be quite effective. Signs that remind folks of the dangers of careless use of fireworks, burning when windy, and leaving unattended campfires can be quite effective. It's impossible to say just how effective such efforts actually are, however the low costs associated with posting of a few signs is inconsequential compared to the potential cost of fighting a fire.

Slightly more active prevention techniques may involve mass media, such as radio or the local newspaper. Fire districts in other counties have contributed the reduction in human-caused ignitions by running a weekly "run blotter," similar to a police blotter, each week in the paper. The blotter briefly describes the runs of the week and is followed by a weekly "tip of the week" to reduce the threat from wildland and structure fires. The federal government has been a champion of prevention, and could provide ideas for such tips. When fire conditions become high, brief public service messages could warn of the hazards of misuse of fire or any other incendiary devise. Such a campaign would require coordination and cooperation with local media outlets. However, the effort is likely to be worth the efforts, costs and risks associated with fighting unwanted fires.

Fire Reporting: Fires cannot be suppressed until they are detected and reported. As the number and popularity of cellular phones has increased, expansion of the #FIRE program throughout Idaho may provide an effective means for turning the passing motorist into a detection resource.

Burn Permits: The issues associated with debris burning during certain times of the year are difficult to negotiate and enforce. However, there are significant risks associated with the use of fire adjacent to expanses of flammable vegetation under certain scenarios. Fire departments

typically observe the State of Idaho Closed fire season between May 20 to October 20. During this time, an individual seeking to conduct an open burn of any type 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. Although this is a state-wide regulation, compliance and enforcement has been variable between fire districts. Tackling this issue is difficult. Typically, the duty falls to the chief of whichever fire protection district the burning is planned for. However, this leads to an increased burden on the fire chiefs, who are already juggling other department obligations with obligations to work and to home. There is also considerable confusion on the part of the public as to when a permit is necessary and the procedure for which to obtain the permit. The best-intentioned citizen may unknowingly break this law for a lack of understanding. Clearly, there is a need to coordinate this process and educate the public.

4.2.1.2 Education

Once a fire has started and is moving toward home or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event.

The majority of the uncultivated vegetation in Valley County is comprised of timberlands. These fuels tend to be very flammable and can support very fast moving and intense fires. In many cases, homes can easily be protected by following a few simple guidelines that reduce the ignitability of the home. There are multiple programs such as FIREWISE that detail precautions that should be taken in order to reduce the threat to homes, such as clearing timber or cured grass and weeds away from structures and establishing a green zone around the home.

However, knowledge is no good unless acted upon. Education needs to be followed up by action. Any education programs should include an implementation plan. Ideally, funds would be made available to financially assist the landowner making the necessary changes to the home. The survey of the public conducted during the preparation of this WUI Fire Mitigation Plan indicated that approximately 69% of the respondents are interested in participating in this type of an activity.

4.2.1.3 Readiness

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.

In order to assure a quick and efficient response to an event, emergency responders need to know specifically where emergency services are needed. Continued improvement and updating of the rural addressing system is necessary to maximize the effectiveness of a response.

4.2.1.4 Building Codes

The most effective, albeit contentious, solution to some fire problems is the adoption of building codes in order to assure emergency vehicle access and home construction that does not "invite" a fast and intense house fire. Codes that establish minimum road construction standards and access standards for emergency vehicles are an effective means of assuring public and firefighter safety, as well as increasing the potential for home survivability. County building inspectors should look to the fire departments in order to assure adequate minimum standards. Fire districts may want to consider apparatus that may be available during mutual aid events in order that the adopted standards meet the access requirements of the majority of suppression resources. In Valley County, such standards may be drafted in consultation with the Fire Chiefs in order to assure accessibility is possible for all responding resources.

The "New Code of the West" publication currently available at the county courthouse for those seeking building permits is a brochure which provides recommendations for new construction homes being built in the wildland-urban interface. This approach is proven to be only moderately effective.

Coupled with this need for public awareness and resulting action is the potential to implement a set of requirements or recommendations to specify construction materials allowed for use in high risk areas of the county. While a resident of Roseberry may not put his or her structure at undue risk by the use of wooden decking materials, a shake roof, or wooden siding, the same structure in Yellow Pine would be at tremendous risk through this practice. It is the belief of the fire mitigation planning committee that the Valley County Commissioners will consider a policy for dealing with this situation into the future as more and more homes are located in the wildland-urban interface.

4.3 Valley County's Wildland-Urban Interface

Individual community assessments have been completed for all of the populated places in the county. The following summaries include these descriptions and observations. Local place names identified during this plan's development include:

Table 4.1. Valley County Communities

Community Name	Planning Description	Vegetative Community	National Register Community At Risk?[1]
Alpha	Community	Forestland/Rangeland	No
Big Creek	Community	Forestland	No
Cascade	Community	Forestland/Rangeland	Yes
Donnelly	Community	Forestland/Rangeland	Yes
Edwardsburg	Community	Forestland	No
Lake Fork	Community	Forestland/Rangeland	Yes
Landmark	Community	Forestland	No
Lardo	Community	Forestland	No
McCall	Community	Forestland/Rangeland	Yes
Roseberry	Community	Forestland/Rangeland	No
Smith's Ferry	Community	Forestland	Yes
Warm Lake	Community	Forestland	Yes
Yellow Pine	Community	Forestland	Yes

[1]Those communities with a "Yes" in the National Register Community at Risk column are included in the Federal Register, Vol. 66, Number 160, Friday, August 17, 2001, as "Urban

Wildland Interface Communities within the vicinity of Federal Lands that are at high risk from wildfires". All of these communities have been evaluated as part of this plan's assessment.

Site evaluations on these communities are included in subsequent sections. The results of FEMA Hazard Severity Forms for each community are presented in Appendix II.

4.3.1 Mitigation Activities Applicable to all Communities

4.3.1.1 Homesite Evaluations and Creation of Defensible Space

Individual homesite evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Maintaining a lean, clean, green zone within at least 100 feet of structures to reduce the potential loss of life and property is highly recommended. Assessing individual homes in the outlying areas can address the issue of escape routes and home defensibility characteristics. Educating the homeowners in techniques for protecting their homes is critical in these environments.

4.3.1.2 Travel Corridor Fire Breaks

Human ignition points are likely to continue to be concentrated along the roads and railway lines that run through the county. These travel routes have historically served as the primary source of human-caused ignitions. In areas with high concentrations of resource values along these corridors, fire lines may be considered in order to provide a fire break in the event of a roadside ignition. Access route mitigation can provide an adequate control line under normal fire conditions. Alternatively, permanent fuel breaks can be established in order to reduce the potential for ignitions originating from the main travel roads to spread into the surrounding lands.

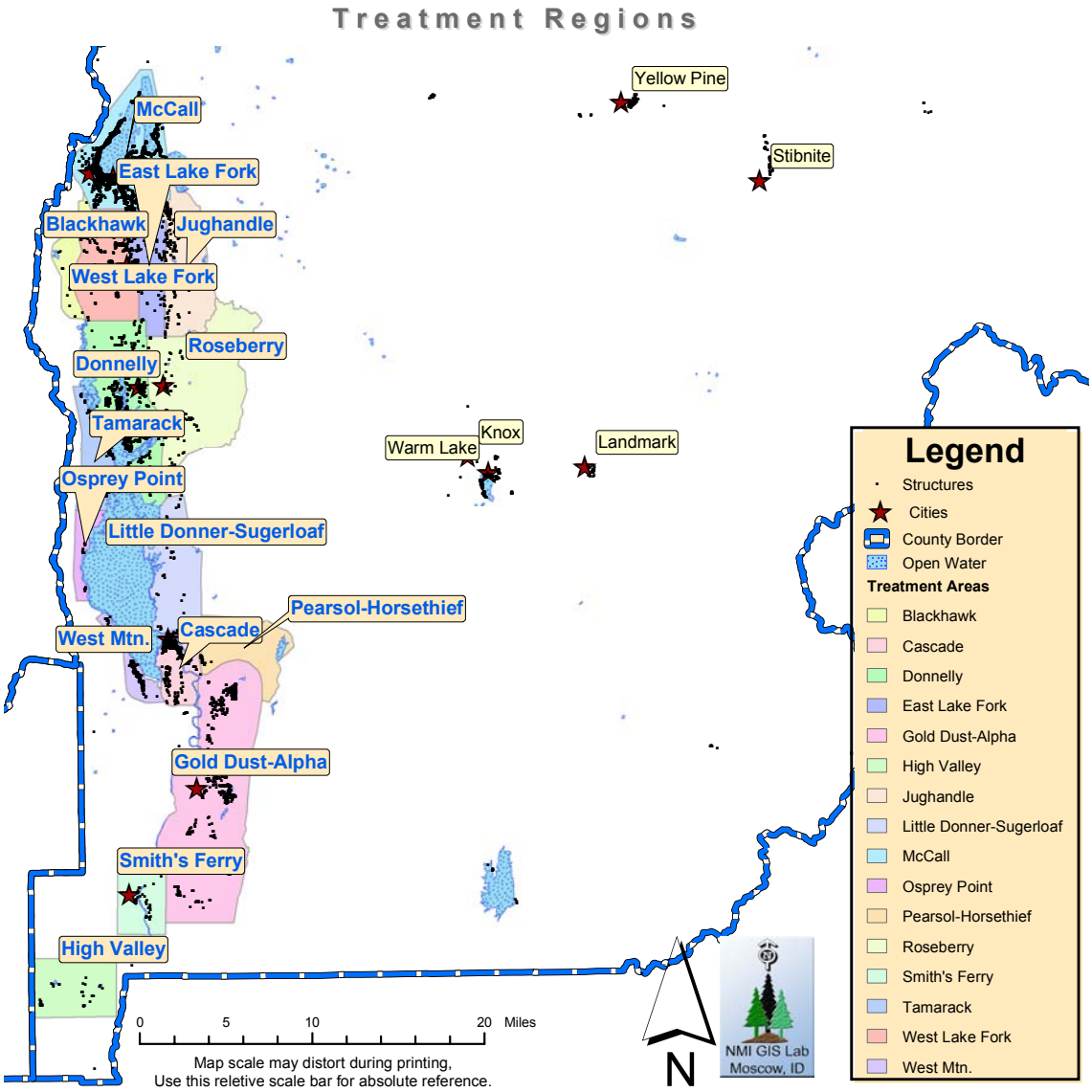
4.3.1.3 Power Line Corridor Fire Breaks

The treatment opportunities specified for travel corridor fire breaks apply equally for power line corridors. The obvious difference between the two is that the focus area is not an area parallel to and adjacent to the road, but instead focuses on the area immediately below the infrastructure element. Protection under the high tension power lines is strongly recommended. This may be an opportunity for intensive livestock grazing practices as a tool for reducing fine fuels around significant infrastructure.

4.4 Valley County Geographic Areas

Significant differences exist in attributes important in the management of fire in urban-wildland interface throughout Valley County. Differences in vegetative patterns, forest and fuels characteristics, residential development practices, fire protection responsibilities, and ignition potential requires a method of partitioning populated areas of the county into locales that share similar characteristics. Discussions with fire and land management personnel have yielded a geographic breakdown of populated areas based on one or more of these characteristics. The geographic areas extend from the McCall area to the north, through the Cascade Reservoir area, south to Smith's Ferry and High Valley. Eighteen individual geographic areas have been defined. Each geographic area is unique in some way that is significant in terms of fire management. In some cases, further differentiation within each geographic area is necessary to address issues associated with individual subdivisions or developed areas.

These treatment regions are mapped in Appendix I and included here for reference.



This map is presented for reference in this section of the plan. This map, and additional maps are detailed in Appendix I.

4.4.1 Rangeland Geographic Areas in Valley County

This section includes assessments for the geographic areas of West Lake Fork, East Lake Fork, and Roseberry Geographic Areas.

4.4.1.1 Vegetative Associations

These communities lie in the river valley region on the western edge of Valley County. This vegetative ecosystem is known as a mid elevation meadow community. Grasses, forbs, sedges, and rushes are typical vegetation. Due to the high water table, the North Fork Payette River valley is luxuriant throughout most of the year and contains very diverse prairie wildflower displays. Several small seasonal melt water streams meander across the valley floor to either the river channel or to drain into small lower elevation wetlands. Woodlands and forests occur on the surrounding hills and mountains.

Approximately 90% of the meadow vegetation community has been converted to various crop or pasture lands. Natural stream channels have been diverted to accommodate road networks, home construction, and other land uses. This practice has eliminated some of the riparian and wetland areas that historically characterized this ecosystem. Agricultural practices have created a patchwork of green, lush vegetation and cured rangeland. This patchwork helps to break the continuity of fuels that are available to burn. Damaging fires in agricultural lands are infrequent; however, these fuel types could potentially support a very fast-moving albeit, low intensity, fire. Under dry and windy conditions, fires in these vegetative types can burn thousands of acres in a single burning period.

4.4.1.2 Overall Fuels Assessment

Fuels throughout the rangeland type communities in Valley County are quite consistent, dominated primarily by agricultural fields with only a few patches of native meadow remaining. Areas dominated by native grasses and cropland can be described as Fuel Models 1 (FM1). Fires in this fuel type tend to spread rapidly, but burn at relatively low intensities. Where grasses become less consistent, wind is needed to push fires through the bunchgrass. Actual burn time is generally short and burned areas cool quickly after passage of the fire front.

Community Assessments: The majority of homes and structures within the valley areas are at low risk of loss to wildland fire. The prevalence of developed agricultural land and grass fuels pose a low threat to homes surrounded by these fuels, as fire typically spreads quickly and burns at relatively low intensities. However, there are a number of individual homes that are at much higher risk to wildland fire loss in the area, largely due to 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. In most cases, maintaining a clean and green lawn or clearing weeds and grasses away from structures is sufficient for protection in lighter fuels. However, considering the high spread rates typical 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 a grass and range fire.

4.4.1.3 Individual Geographic Area Assessments

4.4.1.3.1 East Lake Fork Geographic Area

The East Lake Fork geographic area includes the area east of Highway 55 to Farm to Market Road, and south to Paddy Lane. This area is generally a transition zone from the meadow ecosystem to the more continuous fuel types along the eastern edge of Long Valley. This area is also quite heavily populated, with numerous subdivisions. The increased usage in the area contributes to the overall ignition potential within the area.

4.4.1.3.1.1 Fire Potential

Most of the free water in this area has been diverted to roadside ditches or canals, so the vegetation is somewhat drier than in other parts of the valley. There are a few isolated patches of timber throughout this geographic area, particularly along the banks of the Lake Fork River.

Fuels Assessment

Overall, light, flashy grass fuels with some pockets of timber characterize this area. The direct sun and wind exposure dry and cure the light, flashy grass fuels around mid to late-summer in

normal years. Fires in light fuel types tend to burn with rapid rates of spread, especially when driven by gusty winds. Under summertime conditions with a 20-mile per hour wind, fires in rangeland areas can burn over 3,000 acres in a one-hour. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by dense forest conditions. The moderate intensities and light fuels typically present less of a control problem for suppression resources. They also present less of a hazard for homes and other structures within these fuels if fire resistant materials have been used in home construction and a defensible space has been created prior to the fire event. The rapid rates of spread in these fuel types can present significant suppression challenges and safety issues because of the short time it takes for these fires to grow very large.

The patchy timbered areas are dominated by ponderosa pine. Light grass fuels and the abundance of pine needles cast from overstory trees increases fine fuel loads along the forest floor. Fires in ponderosa pine forests tend to burn at reduced rates of spread relative to open range. If regular forest tending has kept surface fuel loading and ladder fuels to a minimum, fires in this forest type will generally remain on the surface. Light grass and pine needles burn at low intensities, with occasional flare-ups in isolated areas of higher fuel accumulation. However, if heavy surface fuel loads and abundant understory regeneration is present, 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.

Ignition Profile

The ignition profile is significantly augmented by concentrated human use in this geographic area. Although lighting strikes are not common throughout Long Valley, human ignitions pose a greater risk to this area. Lightning strikes in light fuels are quickly extinguished if any precipitation accompanies the storm event. However, human ignitions are possible during any weather condition.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the dry nature of fuels increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires in any fuel type.

4.4.1.3.1.2 Ingress and Egress

Ingress and egress on main roadways throughout this geographic area is generally adequate for emergency vehicles. Also, most private drives are capable of supporting large vehicles due to the flat nature of the topography and lack of heavy fuels. Creating a stable surface in turn around areas may be a concern in wetter areas.

4.4.1.3.1.3 Infrastructure

Many of the homes in the area are supplied with power via overhead wires. In general, most power lines are clear of trees and limbs along the roadways. However, the incidence of limb contact is likely to be highest in the immediate vicinity of the home, as many homes have been

built in patches of timber or have planted ornamental trees in yards. There are two municipal groundwater sources located in this vicinity; however, some residents have personal wells.

4.4.1.3.1.4 Fire Protection

The McCall Fire Protection District provides structural fire protection in the northern portion of the area, with Donnelly Rural Fire District providing structural protection to areas south of Lake Fork. Wildland fire protection is provided by SITPA. Additionally, SITPA has mutual aid agreements with McCall Fire Protection District and Donnelly Rural Fire Department for wildland fire assistance.

4.4.1.3.1.5 Community Risk Assessment

This geographic area is considered to be at moderate risk to wildland fire. The prevalence of light flashy fuels and the abundance of ignition sources increase the probability of rapidly spreading fires. The drier timber types in the area are also available to burn for extended periods during the fire season. Where a defensible space has not been created around homes, rapidly spreading fires can quickly transition into structure fires. Furthermore, homes tend to be nestled into patches of timber, possibly leading to increased fire intensities where mitigation activities have not occurred.

4.4.1.3.1.6 Mitigation Activities

Mitigation activities are necessary around many home sites that have been built within the timbered areas. Homes within these timbered patches need to be evaluated in order to determine risks to the home and the necessary steps to reduce home ignitability. Mitigation activities around the home can enhance the survivability of individual homes as well as reduce the probability of ignitions originating around the home spreading to fuels beyond the home site.

Once a fire has started and is moving toward homes or other values resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home.

“Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations.

4.4.1.3.2 West Lake Fork Geographic Area

The West Lake Fork geographic area includes the area east of the Payette River to Highway 55, south to Smiley Lane, including the community of Lake Fork. This geographic area is primarily a farming and ranching community, with the majority of lands in agriculture or pasture. There are some remnant patches of meadow vegetation along fencelines, ditches, and in untellable areas. There has been some construction of subdivisions in the area, including the Payette River Subdivision and the Brookdale Meadows Subdivision, with other residential development concentrated along the Payette River and along the Highway 55 corridor.

4.4.1.3.2.1 Fire Potential

This geographic area is dominated by light grasses and irrigated cropland. There are pockets of forested vegetation along the Payette River floodplain, dominated by ponderosa pine with a small component of lodgepole pine. Abundant natural and human ignition sources are present throughout the area. The agricultural nature of the land serves to break native fuel continuity in many portions of the geographic area.

Fuels Assessment

Fires in these light grass and cropland fuel types can burn with rapid rates of spread, especially when driven by gusty winds. Under summertime conditions with a 20-mile per hour wind, fires in light grass fuels can burn over 3,000 acres in a one-hour. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by dense forest conditions. The moderate intensities and light fuels typically present less of a control problem for suppression resources. They also present less of a hazard for homes and other structures within these fuels if fire resistant materials have been used in home construction and a defensible space has been created prior to a fire event.

Irrigation helps to break fuel continuities in this area by keeping cultivated crops green late into the growing season. However, once irrigation is stopped, cultivated crops cure rapidly. Once these crops become available to burn, they can have a significant affect on wildland fire spread, providing a continuous fuel bed to sustain fire spread.

Along the Payette River corridor, vegetative communities shift rapidly from small riparian cottonwood forests to mixed ponderosa and lodgepole pine before reaching grass rangelands. These pine-dominated forests have moderate surface fuels, including grass, brush and pine needles. Lodgepole stands tend to be dense and unhealthy, particularly in the vicinity of the Payette River Subdivision. Fires in these fuels generally burn at low intensities and at relatively slow rates of spread under normal conditions. However, where dead fuels and live ladder fuels have been allowed to accumulate in the understory, fires will burn at significantly higher intensities. Furthermore, the combination of drought conditions with hot, windy weather can lead to the development of very intense, crown fires that present significant control problems. Such conditions would pose a significant threat to homes in the Payette River Subdivision.

Ignition Profile

As with many areas in Valley County, the number of ignition sources is significantly augmented by human ignition sources. Lightning down-strikes are not uncommon in the valley bottom. However, lightning strikes in light fuels are frequently quickly extinguished if any precipitation accompanies the storm event. Natural ignitions are more likely in the forested areas around the Payette River, where trees and large woody fuels are able to sustain fire during precipitation events.

Human caused fires contribute significantly to the probability of fires in this area. Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions. Recreational use along the Payette River also contributes to the probability of a human ignition in the area.

The abundance of human and natural ignition sources and the dry nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel type and fuel moisture as well as on weather conditions at the time of ignition. Fires

during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires regardless of fuel type.

4.4.1.3.2.2 Ingress and Egress

Overall, there are very few access and egress issues in this geographic area. The vast majority of roads are in the broad, flat agricultural area between Highway 55 and the Payette River. It is unlikely that these roads would be compromised for an extended period in the event of a wildland fire. The moderate road density in the area provides alternate escape routes for most areas, including homes in the Brookdale Meadows Subdivision.

Access to areas within the Payette Lakes Subdivision is somewhat problematic. Hogue Hollow Drive provides the only access to homes along the Payette River, potentially resulting in bottlenecks, which can increase evacuation time and decrease response time. The lack of a secondary access-escape route increases overall risk to this community.

Road signs and house numbers throughout the area help to reduce response times for emergency services.

4.4.1.3.2.3 Infrastructure

Idaho Power maintains a high-tension power line that passes through this area. It is unlikely that this line would be threatened by a fire event because of the use of steel support structures. Municipal power is supplied to many areas within the area by aboveground power lines. In general, there are few trees in the vicinity of the overhead wires. However, where trees are close to lines, they should be managed in order to reduce the potential of arcing or downed lines from fallen trees or limbs.

4.4.1.3.2.4 Fire Protection

McCall Fire Protection District provides structural fire protection in the northern portion of the area, while Donnelly Rural Fire Department providing protection to areas south of Lake Fork. Wildland fire protection is by mutual agreement between McCall Rural Fire District and SITPA.

4.4.1.3.2.5 Community Risk Assessment

Much of this geographic area is considered to be at low risk to loss from wildland fire. Predominantly light fuel conditions throughout the area present little risk to homes and infrastructure. The rural settlement pattern throughout the agricultural portion of the area results in a low density of homes, most of which have sufficient defensible space. Recently subdivided areas such as Brookdale Meadows have been built with fire resistant materials and have adequate defensible space and green lawns of sufficient size to protect the home from a grassland fire.

Homes within the Payette River Subdivision are at significantly elevated risk due to the lack of an alternate ingress-egress route and the prevalence of dense stands of lodgepole pine. Furthermore, many homes lack an adequate defensible space and are constructed with combustible materials, including overhanging wooden decks. Access issues, home site characteristics, and potential fire behavior under extreme weather events increases the risk to this area. The greatest potential for wildland fire development is likely to originate from within the community due to a human ignition, then spreading between home sites in the light grass fuels.

4.4.1.3.2.6 Mitigation Activities

Little mitigation activities are needed in most areas with light fuels due to the presence of adequate defensible space. However, all homeowners can benefit from an education campaign designed to raise awareness of practices to help maintain the reduced potential for home ignition. Mitigation activities are necessary in the Payette River Subdivision. Mitigation activities should start around the home and progress toward the fringes of wooded areas. Mitigation activities around the home can enhance the survivability of individual homes as well as reduce the probability of fires spreading between homes.

Once a fire has started and is moving toward homes or other values resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home.

"Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations.

4.4.1.3.3 Roseberry Geographic Area

The Roseberry geographic area encompasses the area east of Highway 55 to the SITPA protection boundary, south of Paddy Flat Road, including Finlandia Estates and Paddy Flat.

4.4.1.3.3.1 Fire Potential

The western portion of this geographic area is dominated by meadow grasslands and agriculture, transitioning to pine forest in the vicinity of SimpCo Estates and Finlandia Estates. Fuels around Paddy Flat tend to be light grasses as well.

Fuels Assessment

Grass fuels are most prevalent in the western portion of the geographic area and in the Paddy Flat area. Fire spread in these fuel types can be very rapid, capable of spread at more than four miles an hour. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by dense forest conditions. The moderate intensities and light fuels typically present less of a control problem for suppression resources. They also present less of a hazard for homes and other structures within these fuels, if fire resistant materials have been used in home construction and defensible space has been created prior to a fire event. However, fires in light fuels can pose a significant threat to life and property simply because of the rapid rates of spread associated with these fuels.

Light grass fuels and the abundance of pine needles cast from overstory trees in forested areas increases fine fuel loads along the forest floor. These light fuels generally burn at low intensities, with occasional flare-ups in isolated areas of higher fuel accumulation. However, if heavy surface fuel loads and abundant understory regeneration is present, fires in these 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.

Ignition Profile

Natural ignitions become increasingly probable with increasing elevation and timber. Down strikes in timbered areas are more likely to ignite large woody fuels capable of sustaining fire during brief rain events than in the light range fuels within the bottom of Long Valley.

The ignition profile also is significantly augmented by concentrated human use in this geographic area. Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line sparks resulting from tree contact can also ignite fuels, especially during windy conditions.

The abundance of human and natural ignition sources and the drier nature of grass and forest fuels in the area increase the probability of wildland fire in this geographic area. Once ignited, fire characteristics will depend on fuels type and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires in any type of fuel.

4.4.1.3.3.2 Ingress and Egress

Ingress and egress in most of this geographic area is suitable for emergency vehicles, with wide roads and light fuels within the valley bottom. There are a few notable exceptions. Finlandia Estates is accessed via a single access road, and a number of the homes in the area are accessed via dead end roads. The lack of an alternate escape route increases overall threat to these residents.

Homes and recreation areas in the Paddy Flat area are accessed via an unimproved road passing over Paddy Flat Summit. Although there are alternate escape routes from Paddy Flat, this road is well maintained and the most direct route from the area. This road has been identified as a primary escape route and should be maintained as such.

4.4.1.3.3.3 Infrastructure

Homes in Finlandia Estates and SimpCo Estates are served by below ground power, although there are aboveground power lines throughout the area. Tree contact with power lines is generally not a concern in most areas in the valley. Power is provided to the Paddy Flat Subdivision via above ground lines that follow the general path of the road.

4.4.1.3.3.4 Fire Protection

Donnelly Rural Fire Department provides structural fire protection throughout this geographic area, with wildland protection provided by SITPA and the USDA Forest Service.

4.4.1.3.3.5 Community Risk Assessment

This area is at moderate risk to the effects of wildland fire. The factor that contributes most significantly to the overall risk is the location of rural subdivisions in timbered areas.

4.4.1.3.3.5.1 Finlandia Estates

There are approximately 15 structures within Finlandia Estates nestled into the timber on the lower slopes. This is a fairly steep, dry west facing slope. The predominant forest type in this area is mature ponderosa pine, most of which has been thinned recently. There are a few small

piles left over from the harvest operations; however, most of the slash has been removed; thus, reducing the fuel loading. However, there are areas that remain untreated, which are characterized by thick pine regeneration that could lead to the development of intense fire, especially under extreme fire weather conditions. The primary risks in this subdivision are the lack of an alternate escape route into the valley and home site characteristics, including use of flammable construction material and the lack of defensible space directly around homes. Additionally, there is no visible numbering (addressing) of homes.

4.4.1.3.3.5.2 SimpCo Estates

The SimpCo Estates are a recently subdivided group of homes located southeast of Roseberry on Barker Lane. There are approximately 10 residences currently, but at least 18 home sites have been approved for construction. This subdivision occurs primarily in the grasslands of the valley, but abuts timber on its eastern and northern borders. Lodgepole and ponderosa pine with occasional Douglas-fir are most prominent. Forested areas along the main access road have been thinned with only moderate surface fuels being left on the site. This significantly reduces the risk of a wildfire threatening this escape route, residents, or homes. Stands abutting homes off Barker Lane did not appear to have been thinned and dense pine regeneration is beginning to encroach on the grassland. These homes are at moderate risk due to the closer proximity of these fuels. Even though many of the residences are on short dead end driveways, the escape routes to the main access road are bordered by grass species; thus reducing their risk of being trapped by wildfire.

4.4.1.3.3.5.3 Paddy Flat Subdivision

Paddy Flat Subdivision is accessed via Paddy Flat Road that takes off of Highway 55 between Lake Fork and Donnelly. The first mile of Paddy Flat road is paved. After crossing Farm to Market road, Paddy Flat road becomes Forest Service Road 388, a single lane road with turnouts that winds over Paddy Flat Summit. Paddy Flat Subdivision is located south and west of Paddy Flat Guard Station, a USFS facility. The subdivision is made up of a several summer homes that can only be accessed via snowmobiles in winter. USFS Road 388 is not maintained during the winter months.

The homes in Paddy Flat Subdivision are nestled into the timber. The subdivision is on private forest land that has been managed. Timber harvesting has created a mosaic of stocking densities and stand structures creating variable fuel loading conditions in and around the home sites. Forest Service and Idaho Department of Lands property adjacent to privately owned land is more heavily stocked and contains heavy fuel loading, ladder fuels and forest health issues that increase the potential for fire spread.

4.4.1.3.3.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations.

Mitigation activities are necessary around a number of home sites within Finlandia Estates, Paddy Flat, and to a somewhat lesser extent, SimpCo Estates. Forest Service land adjacent to

the Paddy Flat subdivision needs emphasis to receive funding for fuels reduction projects. Homes within timbered areas need to be evaluated in order to determine risks to the home and the necessary steps to reduce home ignitability. Mitigation activities around the home can enhance the survivability of individual homes as well as reduce the probability of ignitions originating around the home spreading to the dry fuels beyond the home site.

Homeowners within Finlandia Estates have expressed interest in coordinated mitigation activities. This interest should be encouraged, with the possible development of a community defensible plan, including the augmentation of water sources for fire suppression. The need for mitigation work and the existing interest within the development make this area a good candidate for a fire mitigation grant.

4.4.2 Forestland Geographic Areas of Valley County

This section includes assessments for the geographic areas of McCall, Tamarack, Osprey Point, Little Donner-Sugarloaf, West Mountain, Pearsol-Horsethief, Blackhawk Estates, Golddust-Alpha-Round Valley, Jughandle, Warm Lake, Donnelly, Cascade, Yellow Pine, Trails End Subdivision (formerly known as Shirley McClain Ranch), Big Creek, and Edwardsburg.

4.4.2.1 Vegetative Associations

Vegetative structure and composition within Valley County is closely related to elevation, aspect and precipitation. Relatively mild and moist environments characterize the undulating topography of the region which transitions from the meadow and agriculture plant communities of the valley bottoms to forested ecosystems. The forest communities contain high fuel accumulations that have the potential to burn at moderate to high intensities. Highly variable topography coupled with dry, windy summer weather conditions typical of the region is likely to create extreme fire behavior conditions.

The transition between developed agricultural land and timberlands occurs abruptly. Relatively moist valley vegetative patterns shift toward forested communities dominated by ponderosa pine, western larch, and Douglas-fir at the lower elevations, transitioning to lodgepole pine and grand fir at the higher elevations. Engelmann spruce is 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 grasslands; 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 moister 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 wildfire.

Many lower elevation forested areas throughout Valley County are highly valued for their scenic qualities as well as for their proximity to travel corridors. These attributes have led to increased recreational home development and residential home construction in and around forest fuel complexes. The juxtaposition of highly flammable forest types and rapid home development will continue to challenge the ability to manage wildland fires in the wildland-urban interface.

4.4.2.2 Overall Fuels Assessment

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 homesites 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 affect 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, as surface to volume ratio decreases. 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 potentially development of crown fire. 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 determine how fires will burn.

The study of fire behavior recognizes the dramatic and often-unexpected affect small changes in any single component has 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.

Community Assessments: The majority of homes and structures within and surrounding these 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, but burns at relatively high intensities in the brush and forest tree fuels, especially where declining forest health is a factor. Many homes are at low risk because of the management of fuels in the area immediately surrounding the structures and their access routes. There are a number of individual homes that are at much higher risk to wildland fire loss in the area, largely due to 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 fire.

4.4.2.3 Individual Geographic Area Assessments

4.4.2.3.1 McCall Geographic Area

The McCall Geographic Area includes all the area from the Adams County line to the east shore of Payette Lake, and south to the Farm to Market Road. McCall is the largest community in Valley County, with a thriving tourist and recreation based economy. The real estate market reflects the increasing popularity of this forested community, with rapid subdivision development

on much of the private land in and around McCall. Situated on the banks of Payette Lake and surrounded by State and National Forest lands, McCall offers recreational opportunities throughout the year. The abundance of outdoor recreation and the wild, forested character of the area offers a “wilderness” setting for home development. The personality of the area is preserved to varying degrees as development continues. The desire to “live in the woods” has led to the development of significant wildland-urban interface issues, as many homeowners are unwilling to compromise the forested and secluded character of their property to mitigate the wildland fire potential that exists throughout the area.

The vast majority of residential development in the McCall area is at some risk to loss from wildland fire. The potential for casualty loss in the greater McCall area varies from low in areas immediately adjacent to the town center, to extremely high in many areas surrounding Payette Lake. Overall, potential for wildland fire loss is heavily skewed toward high risk. There is little differentiation between forest and urban fuels in many areas, creating conditions in which homes essentially become a component of the wildland fuel complex.

Development in the McCall area was initially concentrated in the narrow strip of private land along banks of Payette Lake, more recently spreading along the valley floor and along the foothills to the west. Much of the early development was unregulated and unplanned, with dense development concentrated along narrow roads. More recent developments and subdivisions have been subject to access and fire codes in order to secure protection from the McCall Rural Fire District. Because of the interaction between the developers and the Fire Department, the recent subdivisions are generally much more defendable from both wildland and structural fire, with adequate access, secure water sources, and below-ground utilities. These characteristics are lacking in many of the areas that have not been subject to development codes.

Because of the striking difference in building practices and fuel conditions between early, unregulated development in the Payette Lakes area and more recent, planned subdivisions, these areas will be discussed separately in the community assessments.

4.4.2.3.1.1 Fire Potential

Fuels Assessment

The vegetation in the northern portion of Valley County follows the moisture gradient associated with elevation and aspect. Vegetative communities range from a moist meadow and agriculture ecosystem to drier Douglas-fir forests with a mature ponderosa pine component to large stands of continuous lodgepole pine to high elevation spruce-fir forests. During the last 15 years, large areas of mixed lodgepole and subalpine fir forests have been burned. Evidence of the Blackwell and Corral Fires of 1994 can be seen to the north and east of town. The fires burned an estimated 60,000 acres in this forest type.

The majority of forested lands immediately adjacent to Payette Lake are a mix of ponderosa pine, western larch, Douglas-fir and grand fir, with components of Engelmann spruce and lodgepole pine. Perhaps the most striking component of the forested environment in the immediate vicinity of McCall are the large, mature ponderosa pine that can be found along the lower elevations around McCall and Payette Lake and on drier aspects along the Highway 55 corridor from the north. These large fire resistant pine suggest the role periodic fire once played in the development of the vegetative community in keeping the establishment of shade tolerant, fire susceptible tree species to a minimum. Periodic fires historically perpetuated the dominance of pine in these areas, as there is sufficient moisture to support more mesic tree species in the

absence of fire distrurbance. Now, after disruption of the historic fire regime, dense understories of spruce, fir and other species have emerged.

These seral pine forests will progressively become more dominated by shade-tolerant species if left unmanaged, increasing the potential for development of stand replacing fires. Although this understory provides an effective visual screen for homes, it provides a fuel ladder for the development of torching and spotting in the event of a wildland fire. The mature overstory of ponderosa pine generates large quantities of needle cast each season, creating fine fuel beds that promote rapid surface fire spread. Within this volatile fuel complex are numerous houses, many of which are overtopped by trees of various species. In areas where this condition exists, there is little differentiation between wildland and urban fuels. In essence, the home serves as a fuel source in the event of a wildland fire. These conditions are common around the East Shore of Payette Lake along the Miles Standish Road, Pinehurst Boulevard, and Pilgrim Cove. These forest conditions are also typical in the vicinity of the Spring Mountain Ranch Subdivision, east of McCall.

On north and east slopes, or where moisture becomes more available, forest composition switches to western larch and mixed fir forest types, with a reduced ponderosa pine component. The increased abundance of moisture supports growth of shade-tolerant conifers, creating both vertical and horizontal fuel continuity. These forest conditions are typical in the vicinity of the West Shore of Payette Lake, north from Highway 55, east of Warren Wagon Road. These conditions are also typical in the McCall area to the south of Highway 55, along the Payette River drainage.

Outside the city limits of McCall within the broad, rolling Payette River Valley, a mix of meadow vegetation consisting of grasses, forbs, and sedges and small stands of ponderosa and lodgepole pine comprise the majority of native fuels.

The Idaho Department of Lands is continuing hazard management practices within the Payette Lake and McCall vicinity. The hazard management practices have been targeted along roads, subdivisions and homesites. Units of the Narrows Timber sale to the west of the Warren Wagon road have been completed. The mechanical treatments have significantly reduced fuel loads with fuels generated by harvest activity piled and burned. Fuel reduction activities have also taken place along travel corridors and along private ownership boundaries in the area. These treatments will significantly increase suppression resource effectiveness and reduce the potential for development of high intensity, wildland fire. Similar hazard treatments are planned along the east side of Payette Lakes and on multiple state endowment lands in the McCall vicinity.

Ignition Profile

Natural ignitions are significantly augmented by human ignition sources in the McCall area due to the heavy recreational use in the area. Although lightning down-strikes are not uncommon in the valley bottom, there is a much greater probability of wildland fire originating from human ignition sources within developed areas.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions. The high proportion of non-resident visitors in the area adds to overall risk. Non-residents are unlikely to be aware of local fire danger conditions and are more likely to unknowingly use fire during restricted periods during the summer. The abundance of human and natural ignition sources

and the nature of fuels in the area increase the probability of wildland fire in this geographic area.

4.4.2.3.1.2 Ingress-Egress

Hazards associated with fuel conditions and the high densities of homes in the area are compounded by issues associated with emergency vehicle access. Many of the residences along the Lake are accessed via narrow, single-lane, unimproved roads that are inaccessible to all but the smallest emergency vehicles. Many access roads and driveways are lined with mature trees that are spaced so closely that access is prohibited. Many other access roads are steep, with non-existent or inadequate turn-around areas for emergency vehicles. The inability of emergency resources to safely access and egress a structure or group of structures precludes suppression resources from engagement. This situation becomes much more serious during the summer months, when adjacent forest fuels dry and are capable of sustaining ignition.

There has been significant effort in signing of roads and numbering of houses, facilitating emergency response. However, many smaller roads and drives that access multiple homes remain unsigned, and large portions of the homes along the lake remain unnumbered.

Roads in the newer, planned subdivisions have been constructed wide enough to accommodate emergency vehicles, with either loop roads or cul-de-sacs with wide turning radii. Most observed roads were of grades suitable for emergency vehicles, with some exceptions. Most new roads are well signed, and most homes have been numbered.

4.4.2.3.1.3 Infrastructure

Electricity in the area is provided largely by aboveground power lines. The unplanned development in this area has led to an abundance of overhead wires throughout much of the lake area, many of which are in direct contact with tree limbs. The abundance of overhead utilities and maturing trees dramatically increases the potential for downed power lines and arcing. This creates safety hazards to the public as well as to emergency resources. In newer developments, the vast majority of utilities are buried, alleviating many of these problems.

There are three surface water resources near Payette Lake that enhance the nine ground water sources that provide water to residences in the area. Ground water wells are generally protected from the effects of wildland fire; however, surface water utilities could potentially be heavily damaged. The loss of vegetation in a watershed could lead to rapid runoff of surface water, sedimentation, and contamination of the water source.

4.4.2.3.1.4 Fire Protection

Structural and wildland fire protection is provided by the McCall Fire Protection District. Wildland protection on adjacent IDL and Boise Corporation land is provided by SITPA. The USDA Forest Service also provides wildland fire protection in the area. Fire hydrants are available only within the city limits of McCall. This leaves the majority of the east shore un-serviced by hydrants.

Many subdivisions have installed varying numbers of dry hydrants for emergency use water. These water sources are imperative during times of need. However, the water supply from these sources is finite and may be inadequate during large fire events.

4.4.2.3.1.5 Community Risk Assessment

There are multiple infrastructure, vegetation, and home construction characteristics that virtually ensure loss of structures in the event of a wildfire ignition in this area. Community design attributes that expose this area to significant risk include issues associated with emergency vehicle access; design and materials used in home construction, availability and effectiveness of fire protection resources, among others.

The developed land on the shores of Payette Lake represent the highest risk areas in Valley County. The density of homes in such a heavily forested environment present significant wildland-urban interface concerns. Many homes have been constructed on parcels less than one tenth of one acre, resulting in densities that match or exceed those typically found on city blocks. In an attempt to remain secluded and maintain the “wilderness” character of the area, native trees and brush of all species grow in close proximity to provide effective visual screens from nearby neighbors. The probability of fire moving from a home to native fuels, then to an adjacent home is quite high. During extreme fire weather conditions, such a scenario would likely end with catastrophic results. The potential for loss of highly valuable homes along the Lake cannot be overemphasized.

Forest fuels in the residential areas to the east of Warren Wagon road along Payette Drive and the smaller drives and lanes are thick, with abundant ladder fuels. The vast majority of homes accessed from the Lick Creek Road lack a defensible space and have significant access issues. These conditions are particularly evident in the Pilgrim Cove-Shady Lane area, as well as further north along the homes accessed via Beech Way. The threat posed by ignitions originating within the residential area is at least as great as that posed by fire spreading to homes from adjacent wildlands. There is little to no defensible space around the majority of the homes in this area. The abundance of moss and ladder fuels increases the probability of tree torching, potentially leading to spotting and aerial fire spread.

As mentioned previously, many homes have been built with non-combustible roofing material, Although use of fire-resistant roofing material can significantly reduce the ignition potential of a home, use of combustible material in construction of a deck or for siding can significantly increase the ignitability of a home. In keeping with the character of a forested setting, many homes have been constructed with flammable wood materials. Although the use of natural materials may enhance the aesthetic quality of the home site, use of such materials entails an increase in fire risk. This potential is further increased when firewood and other flammable materials are stored under or beside the structure. This scenario was observed on many homesites during field visits.

Recent and Planned Subdivisions include Kings Pines Estates, Meadow Lake Estates and Spring Mountain Ranch.

The recent boom in the popularity of McCall is most vividly manifested in the surge in development in the greater McCall area. Many large land parcels have recently been subdivided into lots of varying size. The planning of these communities has enabled city, county and emergency response officials to require construction standards in order to obtain the necessary building permits. This has alleviated many of the issues common to the unregulated development around the Payette Lake shore.

The subdivisions that have been constructed in forested areas have treated the native vegetation to some degree. Forest structure within Kings Pines Estates, Meadow Lake Estates and Spring Mountain Ranch has been altered enough to significantly reduce the risk of crown fire development, as trees are widely spaced. However, the properties along the fringes of these

subdivisions are adjacent to continuous forest fuels. These conditions can pose a threat to properties that have not broken the fuel continuity between the wildlands and the house parcels.

Although the potential for development of high intensity wildfires have been significantly reduced by vegetative treatments in many areas, many homes still lack a defensible space. In many cases, homeowners have chosen to keep tree densities highest in the immediate vicinity of the home in order to maintain some degree of visual screen from the roadways. Often times, tree density is highest within a short radius of the home. Such conditions leave homes at risk from wildfire.

Most observed homes were constructed with metal roofing material or with fire resistant composite shingles. Many homes are of log or exposed wood exteriors, with wooden decks that often extend out into wildland fuels. This combination of flammable siding and decking material puts these homes at risk to loss from wildland fire.

4.4.2.3.1.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home.

"Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Other specific activities are likely to include improvement of emergency water supplies in areas not served by hydrants and management of trees and vegetation along power line right-of-ways. Furthermore, building codes and standards for subdivision development should be expanded to single home construction as well.

The fuels abatement work that has already been completed on state endowment lands will need to be maintained into the future. Forests are dynamic and ever changing. A program of monitoring and tending designed to maintain favorable conditions should be initiated and continued over the long term.

During the public meetings held in association with this wildfire mitigation plan, a recommendation was made to purchase a fire patrol boat capable of drafting water from Payette Lake to fill water trucks on shore or to shoot water directly on structures or wildfires near the beach. The actual ownership of the boats would either be SITPA or the rural fire department. This type of resource, available during the summer and fall when activities on the lake are already busy, is seen as a positive tool for preparedness against wildfires in this area. Establishing dry hydrants in strategic locations around the lake would also help alleviate this need.

4.4.2.3.2 Blackhawk Estates Geographic Area

The Blackhawk Estates Geographic Area includes the lands east of Abbott Way to the Payette River, and south to Smiley Lane, including the Blackhawk Ranch and Blackhawk Estates Subdivision and Pine Terrace Estates. This geographic area is defined by the sense of community in the area as well as by the wildland fuels in the area.

This area is characterized by moderate home density, with homes ranging from the modest to very exclusive. The Blackhawk geographic area is in the relatively early stages of development. The Blackhawk Development promises to retain the open spaces and wild character by leaving over half of the land within the area as common areas or as wildlife preserves. Home construction will be clustered on lots ranging from one to three acres in size. Building in the Pine Terrace area has been ongoing for a number of years, with homes typically clustered on lots with an average size of one acre or less.

4.4.2.3.2.1 Fire Potential

This geographic area is a relatively dry environment, dominated by vegetation that tends to cure in mid summer. The area is also characterized by an abundance of potential ignition sources from both natural and human causes. Overall, the dry environmental conditions and abundance of light fuels increases the probability of an ignition source finding a receptive fuel bed and developing into a wildland range or forest fire.

Fuels Assessment

The area can be described as a combination of high sage meadow interspersed with lodgepole and ponderosa pine. Tree densities increase in draws and along drainage bottoms or wherever moisture becomes more abundant. Lodgepole pine is common along cool air drainages and cool, moist pockets. Ponderosa pine becomes more dominant on warm aspects and west of West Mountain Road around Blackhawk Lake. Forest vegetation patterns shift in the vicinity of the lake, where more abundant moisture supports the growth of mixed species stands, including Douglas-fir, larch and ponderosa pine as well as an understory vegetation community.

Drying and curing is most rapid in the open areas where conditions allow for rapid drying of light grass and sage surface fuels by the effect of direct sun and wind. Fires in light fuel types tend to burn with rapid rates of spread, especially when driven by gusty winds. Under summertime conditions with a 20-mile per hour wind, fires in grass and sage dominated areas can burn over 3,000 acres in a one-hour. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by dense forest conditions. The moderate intensities and light fuels typically present less of a control problem for suppression resources. They also present less of a hazard for homes and other structures within these fuels if fire resistant materials have been used in home construction and defensible space has been created prior to a fire event.

Areas dominated by ponderosa pine tend to be quite dry as well, as south and west aspects increase the drying effect of the sun and the wind. Light grass fuels and the abundance of pine needles cast from overstory trees increases 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 areas. If regular forest tending has kept surface fuel loading and ladder fuels to a minimum, fires in this forest type will generally remain on the surface. Light grass and pine needles burn at low intensities, with occasional flare-ups in isolated areas of higher fuel accumulation. However, if heavy surface fuel loads and abundant understory regeneration is present, fires in these dry 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.

In draws and cool air drainages where lodgepole pine densities increase, shading and the reduced effect of wind helps to hold moisture a bit longer into the season. The compact needle litter under closed stands of lodgepole generally supports slow-burning surface fires. However, under extreme weather conditions fires in these fuel types can present significant control problems. Individual and group tree torching, large flame lengths, development of crown fire, and long-range spotting can easily overwhelm suppression forces, posing significant threat to homes and other infrastructure in the area. Although such fires are typically infrequent, 100+ year events, occurrences can lead to widespread loss of homes and other structures if precautionary measures have not been taken in advance.

Ignition Profile

Human habitation and use in the area significant adds to the overall ignition profile. Natural ignition sources from summertime lightning storms are quite; however, lightning strikes in light fuels are frequently quickly extinguished if any precipitation accompanies the storm. Natural ignitions are more common in forested areas, where trees and downed woody fuels are able to sustain fire during precipitation events, emerging hours or days later when surface fuels again dry.

Human ignitions contribute significantly to the probability of fires in this area. Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the dry nature of fuels in the area increase the probability of wildland fire. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires regardless of whether the event occurs in forest or rangeland fuels.

4.4.2.3.2.2 Ingress and Egress

Overall, access and egress within this geographic area is considered to be fair to good. Roads within the area have generally been constructed in a manner adequate for access by emergency vehicles. Road signs and house numbers are present as well, facilitating emergency response. Most homes are accessed via loop roads or short cul-de-sacs with large turning radii. Forest vegetation along roadways generally does not pose a significant problem, as corridors tend to be relatively wide. The abundance of well-maintained roads in the area provides adequate access and egress in most areas.

There are some individual exceptions in the area, specifically in the Pine Terrace area. Some driveways are narrow and surrounded by dense vegetation. Although driveways tend to be short, the dense vegetation and narrow right-fo-way can pose significant dangers for suppression resources. These conditions may preclude engagement by emergency resources and may cut-off escape by landowners caught off guard by rapidly advancing wildfire. The density of homes in the area may lead to bottlenecks and slow access and egress in the event of an unexpected evacuation.

4.4.2.3.2.3 Infrastructure

Most homes in the area are serviced via underground utilities, reducing the probability of power line-related fires. There are aboveground wires running along roads in the Pine Terrace area. Vegetation in the vicinity of these power lines needs to be managed in order to avoid contact with overhead wires.

4.4.2.3.2.4 Fire Protection

The McCall Fire Protection District provides structural fire protection in the majority of this geographic area, including all portions of the Blackhawk Development. Donnelly RFD provides structure protection in the southern third of the geographic area. Wildland fire protection is provided by mutual agreement between McCall Fire Protection District, Donnelly Rural Fire Department, and SITPA.

There are no municipal water sources in the Blackhawk Estates geographic area; thus, homeowners obtain water through personal wells.

4.4.2.3.2.5 Community Risk Assessment

The majority of homes in this geographic area are at moderate risk from the effects of wildland fire. Many homes in the Blackhawk area were constructed with fire-safe material and generally maintain an adequate defensible space. These building and landscaping techniques should be encouraged into the future.

Significant work has been completed to abate the wildland fuel hazard to the community. Commercial and pre-commercial treatments have helped to reduce ladder fuels and reduce tree density, increasing forest vigor and reducing potential for high intensity wildland fire. Lands west of the Blackhawk area have also been well managed and maintained by Boise Corporation as private industrial timberlands. Land management practices and hazard fuel treatments have created forested conditions that facilitate suppression operations. Furthermore, road access within the area reduces initial attack times for ground-based resources.

Homes in the Pine Terrace are generally area reasonably defensible, although there are a number of homes surrounded by young trees and flammable vegetation serving as visual screens. The desire for visual screening can significantly increase the probability of home ignition if not managed in consideration of wildland fire.

4.4.2.3.2.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home.

"Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County

should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations.

The fuels abatement work that has already been completed in the Blackhawk vicinity will need to be maintained into the future. Forests are dynamic and ever changing. A program of monitoring and tending designed to maintain favorable conditions should be initiated and continued over the long term.

4.4.2.3.3 Jughandle Geographic Area

The Jughandle Geographic Area includes the area east of Farm to Market Road, to the SITPA protection boundary, south to Paddy Flat Road. This area becomes more timbered east of Farm to Market Road as elevation begins to increase and grasslands give way to continuous timber. The timbered areas are also favored building locations for Valley County residents, with high population densities in a number of planned and unplanned subdivisions throughout the area.

4.4.2.3.3.1 Fire Potential

This geographic area supports consistent and continuous forestlands east of Farm to Market Road, with forest vegetation following the moisture gradient associated with elevation and aspect. The lowest elevations immediately to the east of Farm to Market Road support light grass fuels. Low elevation forests are generally drier and more fire prone due to the predominantly west exposure of the area. These forest types also tend to coincide with residential development, increasing the potential for urban interface fire events.

Fuels Assessment

Vegetation within the Jughandle Geographic Area transitions from grass rangelands to open pine stands on the lowest south and west slopes, to mixed pine and fir as elevation increases. Fuels in this area tend to be somewhat fire prone, due to the dry aspect and the abundance of fuels in the understory. Historically, these forest types were “fire maintained,” with frequent, low intensity fires clearing fuels from the forest floor and maintaining well-spaced forest stands. However, management actions in many of the residential forests over the past decades has resulted in areas with multi-layered forest structure and abundant ladder fuels. These conditions increase the potential for fires to move from the surface to overstory trees. Furthermore, fires burn with much greater intensity and are difficult to control; potentially posing a significant threat to lives and property.

The level of residential forest management within this area is quite varied. Some forests have been well managed, with little fuel accumulations, while other forest owners have chosen passive management, allowing for development of continuous vertical and horizontal fuels.

As elevation and aspect increase available moisture, forest composition transitions to moister 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 wildfire.

Ignition Profile

Natural ignitions become increasingly probable with increasing elevation and timber. Down strikes in timbered areas are more likely to ignite large woody fuels capable of sustaining fire during brief rain events than in the light range fuels within Long Valley.

The ignition profile is also significantly augmented by concentrated human use in this geographic area. Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the drier nature of grass and forest fuels in the area increase the probability of wildland fire in this geographic area. Once ignited, fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires in any type of fuel.

4.4.2.3.3.2 Ingress and Egress

Road access within this geographic area ranges from very good to very poor. Ingress and egress routes tend to deteriorate in areas of concentrated development, particularly in the Jughandle Subdivision as well as to homes in the Boulder Creek area. Steep roads and lack of alternate escape routes complicates both emergency response and evacuation. One way in, one way out roads in the Jughandle Estates area pose can pose additional risks to suppression resources and homeowners.

4.4.2.3.3.3 Infrastructure

Many homes in the area are serviced by aboveground utilities. Most power lines are immediately east of Farm to Market Road are clear of trees and limbs along the roadways. However, the incidence of limb contact is likely to be highest in the immediate vicinity of the home, as many homes have been built in patches of timber. This is particularly true in Jughandle Estates, where tree density increases. Fires resulting from power line contact are most likely during wind events, which can also serve to fan fires.

There is one municipal ground water source in the Jughandle geographic area; however, some residents may have personal wells or obtain water from municipal wells in neighboring geographic areas.

4.4.2.3.3.4 Fire Protection

McCall Fire Protection District provides structural fire protection in the northern portion of the area, with Donnelly RFD providing protection to areas south of Lake Fork and Jughandle Estates. Wildland fire protection is by mutual agreement between McCall RFD and SITPA. The USDA Forest Service also provides wildland fire protection. Ground-based initial attack times can be quite long in the area to the east of Jughandle Estates due to poor road access.

4.4.2.3.3.5 Community Risk Assessment

This geographic area is at moderate risk to wildland fire. Risk is elevated in residential forest areas, particularly in those forest areas that have not been managed in regard to wildland fire. Risk is also elevated in forested areas that have been subdivided, namely Jughandle Estates. The combination of steep slopes, thick forest fuels, and drier forest habitat type significantly

increases the potential for fire to become established and spread upslope through the subdivision. The steep and windy access roads, many of which are one way in-one way out, ending with cul-de-sacs with turning radii that would not accommodate large emergency vehicles, also elevate the fire hazard.

Many homes have been built with large wooden porches that extend out over dry slopes covered by cured native fuels. In some cases firewood is being stacked under porches or adjacent to homes with flammable siding, significantly increasing the threat of loss to homes. Furthermore, there did not appear to be sufficient water supplies for structural protection throughout the subdivision.

Although many homes are at elevated risk to wildland fire, many other residents in the area have been implementing hazardous fuels treatments to protect their homes. Through encouragement from the homeowners association and through the auspices of the National Fire Plan, many individual home assessments have been completed, and many have reduced risk to their homes by adopting firewise landscaping techniques and limbing and thinning of many of the trees in the immediate vicinity of the home.

Additionally, the State of Idaho is actively managing endowment lands to the north of the Jughandle area and planning additional sales to the north and east of the subdivision. The State and SITPA have taken additional precautions in treating and disposing of natural and harvest activity fuels in the area in an effort to protect both the endowment lands and private residential lands.

4.4.2.3.3.6 Mitigation Activities

Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the structure.

Continued expansion and implementation of a defensible space program within Jughandle Estates will help to reduce the threat to individual homes in the area. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations.

4.4.2.3.4 Donnelly Geographic Area

The Donnelly Geographic Area includes the community of Donnelly and all areas west of Highway 55 to Cascade Reservoir, south from Smiley Road to Highway 55 milepost 121. Within this area are four discrete areas of residential development that have characteristics that significantly contribute to urban interface risk. These areas include the Day Star Road area, the Wagon Wheel area, Dawn Drive, and areas accessed via Norwood road. Poor ingress and egress, thick forest fuels, and the lack of defensible space around many homes contributes significantly to risk of both people and homes in these areas.

4.4.2.3.4.1 Fire Potential

Forested vegetation within this area tends to be concentrated along the lakeshore, shifting to grass and grazed and non-grazed pastureland further away from the lakeshore. Residential development is concentrated in these forested areas with very high housing densities.

Fuels Assessment

Many of the timbered areas along Cascade Reservoir are dominated by heavily overstocked, even-aged stands of lodgepole pine or mixed pine-fir and spruce with heavy concentrations of dead and downed surface material in some areas. Under normal to moist conditions with little wind, fires in these fuel types would move quite slowly due to the compact needle mat, shading, and lack of light grass surface fuels. Intensities would increase when fuel jackpots are encountered, resulting in isolated torching. Under such conditions, fire suppression resources would likely be successful in controlling the fire before any significant damage occurs. However, during periods of hot, dry and windy weather, fires in these lodgepole forests can quickly erupt into high intensity, destructive fires with frequent torching and possible crown fire development. The predominant southwest winds in the area expose the north and east shore to wind conditions that can contribute to development of high intensity, uncontrollable wildland fire.

Grasslands and native meadow vegetation outside the forested areas present hazards as well. Many of these grass dominated areas have historically been irrigated or used as pasture land, which helps to reduce fine fuel loads. However, in recent years, many of these areas have not been grazed, due to subdivision development and changing land use patterns. The extended availability of these fuels and the rapid rates of spread associated with consistent grass fuel beds increases the potential for fast moving fires to burn at moderate intensities with large flame lengths.

Ignition Profile

The ignition profile in this area is significantly augmented by concentrated human use in residential and recreational areas along Cascade Reservoir. Although lightning strikes are not uncommon throughout Long Valley, human ignitions are much more probable in this area, posing a significantly elevated risk.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires along the reservoir shore are just a few of the countless potential human ignition sources in the area. Recreational use associated with the large camp grounds off Norwood Road contributes to the ignition profile. Additionally, power line fires resulting from tree contact are also probable in this area, as many overhead wires are closely adjacent to or touching tree limbs. The potential for a power line fire is greatest during windy conditions, when down tree limbs are likely to cause arcing and strong gusts are able to push fire through dry fuels.

The abundance of human and natural ignition sources and the dry nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires in any fuel type.

4.4.2.3.4.2 Ingress and Egress

Ingress and egress are of particular concern in this area, as many of the residential roads are one way in, one way out and dead-end at the Reservoir. Many of these access roads are also

overtopped with forest fuels, potentially jeopardizing safe entry or exit for suppression and civilian traffic.

Ingress and egress issues are of greatest concern on the small peninsula accessed via Dawn Drive. This windy, narrow, rolling road is the only access to developments along the lakeshore. The road is also surrounded by heavy timber, leading to the potential for road access to become compromised in the event of a fire. Dawn Drive is inadequate to handle rapid evacuation of the homes in the area. Furthermore, the lack of clear and understandable signing in the area can lead to long emergency response times.

Tamarack Falls Road and West Roseberry Road provide two escape routes from the Norwood Road area. The Wagon Wheel area has numerous short, dead-end roads that do not provide alternate escape routes for many residents in the area. Loomis Lane provides the only access to Highway 55 for the entire area. The lack of an alternate escape route increases the potential for bottlenecks and traffic delays in the event of a wildland fire. This will slow response and escape times for fleeing residents.

Homes accessed by Day Star Road and Lee Way only have one ingress-egress route as well. Day Star Road has been gated at the southern end of the subdivision. This reduces available travel routes to and from the area, potentially leading to delay and increased risk exposure for residents and suppression resources.

4.4.2.3.4.3 Infrastructure

A high voltage Idaho Power transmission line does pass to the east of Donnelly and south through a portion of this geographic area. Steel power line construction generally reduces the potential for these support structures to be impacted by wildland fire. However, there are numerous aboveground power lines that supply power to homes throughout the geographic area. In many cases, these lines are in close proximity or in contact with surrounding trees; thus, increasing the potential for downed lines to spark fires. Additionally, the poles are frequently of wood construction, which could by consumed in a fire causing loss of power to wells and contributing to the risk of residents and fire suppression personnel.

There are eleven ground water sources serving residents in the Donnelly geographic area. These utilities are not likely to be seriously affected by wildland fire.

4.4.2.3.4.4 Fire Protection

Donnelly Rural Fire Department provides structural fire protection throughout this geographic area, with wildland protection provided by SITPA.

4.4.2.3.4.5 Community Risk Assessment

Overall, the homes and developments in the forested areas along Lake Cascade are at heightened risk of structural loss from wildland fire. These clusters of residences are commonly nestled into stands of thick timber on dead end roads. The ignition risk imposed by human use in these areas is quite high, increasing the chance of fires in the area. The high proportion of absentee landowners in this area increases the likelihood of misuse of fire, as many folks coming for the weekend may be unaware of fire restrictions in the area.

The concentration of resources in this area significantly increases the potential for loss. Travel routes are of primary concern. One-way in, one-way out access roads are not only dangerous for firefighters, they also increase the likelihood of residents becoming trapped. In many cases, homes are located on small, timbered lots very close together. The lack of a defensible space

around each home increases its likelihood of ignition by oncoming wildfires or adjacent house fires. Residences throughout the communities are almost exclusively constructed with wood siding and decks; thus, further increasing their risk of ignition.

4.4.2.3.4.5.1 Sage Meadow Estates

This subdivision is located on a small peninsula on the north end of Lake Cascade. South Norwood Road provides the primary access into the area; however, this and several other side roads dead end near the waterfront. These homes have been built very close together with thick lodgepole pine and other shrubs intermixed. Most residences have been constructed with wood siding and decks, but most have either metal or composite roofing. Primary ignition sources are related to human use. During severe weather and drought conditions, it is possible for human caused fire to quickly spread to a home, moving between homes and the wildland. This could lead to widespread loss and possible compromising of the escape route.

4.4.2.3.4.5.2 Hill House Loop

Hill House Loop is a short loop road off Rainbow Point Road on the north shore of Lake Cascade. Lodgepole pine has become very thick between houses and along the roadway. The primary fire concern for residents is a fire starting in the vicinity of a home, spreading through the timber and threatening other homes and lives. This is an older subdivision with a variety of manufactured homes in addition to homes built using vinyl or wood siding.

4.4.2.3.4.5.3 Dawn Drive and Westside RV Park

Dawn Drive is a dead end road leading south from West Roseberry Road onto a small peninsula on the northern shore of Lake Cascade. Westside RV Park is located at the junction of these two roadways. There are both older and newer homes scattered along Dawn Drive, most of which have wood siding and decking. These homes have been built very close together with “dog-hair” lodgepole pine growing between homes and beginning to crowd the roadway. The RV park is also very full. Besides trailers, there are numerous other vehicles, wood piles, and other items, intermingled with thick, small diameter lodgepole pine. As mentioned previously, travel routes to and from this area are severely limited, increasing the probability of entrapment of residents or fire suppression personnel. Due to heavy fuels, lack of an alternate escape route, and little to no defensible spaces around homes, this area is a high risk area for an urban interface fire.

4.4.2.3.4.5.4 Day Star Road

There is a small subdivision on the northeast shore of Lake Cascade accessed by Day Star Lane off the old State Highway 15. The Gold Fork River to the north, and Lake Cascade to the west, borders this area. Ponderosa pine, Engelmann spruce, grand fir, and Douglas-fir surround these homes. However, it is apparent that efforts have recently been made to reduce the fuels and create adequate defensible spaces by thinning the trees around some homes and on unsold lots. Additionally, many of the residences are situated on fairly large lots, which decrease the likelihood of a fire spreading from home to home. Day Star Lane is a thru road; however, it has been gated at the southern end of the subdivision.

4.4.2.3.4.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in

the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

Development of a community evacuation plan is necessary to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape route signage would reduce chaos and escape times for fleeing residents. Because of the exceptionally poor access in the Dawn Drive area, a community safety zone should also be established in the event of compromised evacuation. Efforts should be made to educate homeowners through existing homeowners associations or creation of such organizations to act as conduits for this information.

An interagency emergency fire plan should also be developed and adopted in order to increase efficiency and reduce potential for entrapment of suppression resources. Clear lines of communication should be ensured and exact suppression responsibilities should be assigned. The poor access to some areas increases the risk of bottlenecks developing from responding emergency resources. Mass mobilization of suppression resources in the Dawn Drive area in particular could potentially result in catastrophic consequences in the event of a high intensity, rapidly spreading wildland fire.

4.4.2.3.5 Tamarack Geographic Area

The Tamarack Geographic Area includes the area from the No Business Road and West Mountain Road junction, south to the Donnelly RFD protection Boundary, west of Cascade Reservoir to County Line. Interface issues will likely develop over time, as increased development inside and outside of the Tamarack Resort area draw more people and more residential growth in the area.

The Tamarack Resort will be the largest concentration of resources in this geographic area. Tamarack is a four-season resort, offering cross-country and downhill skiing, golfing, mountain biking, and a variety of water sports on Lake Cascade. As of the winter 2003-2004, Tamarack Resort has several structures completed on site. Three, 30-foot diameter yurts, two 70-foot by 30-foot modular office buildings, a 1,800-square-foot Mountain Control Building and a 1,200 square-foot winter-storage structure for two snow cats. A 1,100-square-foot building to house the Trailhead Café was recently completed, along with two model home products – a 1,200-square-foot cottage and an 1,800-square-foot chalet.

On tap for construction in the summer of 2004 will be 42 cottages and chalets, a four-story, 60,000-square-foot Members Lodge for the Club at Tamarack, seven buildings to support alpine skiing operations in the winter of 2004-2005, and approximately 25-40 private residences.

In the fall of 2003, all of the major roads were built at Tamarack, and the utilities were installed underneath the roadways. Road construction standards and road layout will provide adequate emergency access to homes. Most roads will be interconnected or loop roads, provide safe and easy access to homes. Since nearly all construction will take place on relatively flat to rolling terrain, there will be a few large hills or grades to be negotiated by emergency vehicles.

Water will be supplied by three wells, one of which is a primary and two auxiliary wells. Multiple creeks and streams also provide drafting opportunities.

It is assured that Tamarack Resort will have far reaching affects on Valley County, drawing an increasing number of visitors and seasonal residents. Within this geographic area, significant

development along the lakeshore and within the private lands on the lower flanks of West Mountain can be expected. Thus impacts to the area will not be isolated to the resort area, but will likely spread to the north and south as well.

4.4.2.3.5.1 Fire Potential

Fuels Assessment

The forest structure and the majority of native vegetation within the base area of Tamarack have been modified in preparation of continuing construction. Prior to modification, forest composition in the base area was comprised of a mix of ponderosa pine, western larch, and mixed grand fir and Douglas-fir, with some aspen. The trees and patches of forest remaining in areas to be developed as home sites are generally well spaced, with high crowns and few ladder fuels. Numerous roads, cross-country ski trails and hiking trails effectively disrupt the continuity of fuels in the base area, providing multiple firebreaks. Furthermore, most of the area to be developed is rolling, with few steep aspects that would increase the potential for rapid fire spread. In general, it appears as much of the fuels hazard within the base has been reduced through timber harvest and other forestry practices completed prior to building construction.

Beyond the village area, the cutting of the ski runs has disrupted the fuel continuity in the alpine ski area. The ski runs act to isolate pockets of timber and forest fuels from one another, providing effective firebreaks and opportunities for suppression resources in the event of wildland fire within the ski area.

The Boise National Forest administers lands to the north and west of the village. The lower portion of the National Forest has good road access in the unlikely occurrence of wildland fire. The forest habitat type of the BNF land is classified as wet Douglas-fir and grand fir, which are indicative of an infrequent fire regime. The likelihood of a lightning-caused wildfire in this area is low. If a fire were to occur in this area, it would most likely start near the ridgetop along the lightening belt far above the road system and the resort. Fire spread would most generally be upslope. Downslope fire spread would be less likely than upslope, and if it were to occur, the road system would offer some deterrent to spread and aid in containment efforts.

The most likely way that a wildfire would occur in the area near the forest boundary would be a human-caused fire that could be triggered by a careless camper, sparks from an ATV, motorcycle or chain saw, or a cigarette. Some stands of Douglas-fir and grand fir forest in this area are very densely stocked. If a human-caused fire occurred in late summer or early fall when annual forest conditions are the driest, there is a possibility that torching and crowning could occur in densely stocked stands. It is not likely that a running crown fire would eventuate unless there was a strong wind present to push the fire to the east and there was an extended drought period preceding the fire start.

At present time, the overall wildland fire risk to the resort is low and future fuels treatments on the BNF administered lands will be considered. At the time of this plan, Forest Plan direction calls for fuels treatments to be focused on and around Communities at Risk. Since overall wildland fire risk to the resort is low, fuels treatments in this area will not be a high priority or the primary focus. Tamarack Resort officials would like to minimize the risk that a human-caused fire could pose to the Tamarack community by thinning national forest land immediately to the west of the resort. Resort officials hope that national forest officials will develop a project for this work in the foreseeable future.

Community Risk Assessment

The overall wildland fire threat to Tamarack resort appears to be quite low. Since the majority of building and construction has yet to occur, it is difficult to say in definitive terms as to the true potential for loss to wildland fire. However, resort planners have designed a master plan that will provide for emergency accessibility and the necessary water supply infrastructure for the community. The rolling terrain that characterized the village area and the continuation of firewise forestry practices prior and during home construction will maintain the overall threat to the community at a low level.

Development of this magnitude could certainly strain local emergency services. Tamarack Resort will apply for grants to finance the construction and equipping of a new fire station to be located at the resort to provide quick and timely emergency response to the community. A new station also would assist in expanding the boundary of the Donnelly Fire District to cover some homes along West Mountain Road to the south of the resort that are currently not covered by fire protection district.

Potential Mitigation Activities

Since few permanent structures are as of yet complete, planners and developers have the greatest opportunity to maintain low level of risk throughout the community. Resort officials should emphasize the use of Fire-Wise construction materials in building construction materials throughout the community. Fire-wise should be a requirement, not an option and no matter where the property is located. This will help maintain the low fire hazard rating.

Resort officials are also encouraged to continue treating native forest fuels around home sites to remove the hazard before development occurs. Fire-wise construction guidelines and treating native fuels around homes should be a requirement, not an option. The practices remove the potential fire hazard reducing the chance, if fire were to occur, the loss of the home.

Educate property owners about maintaining a 150’ defensible space around homes by thinning trees to a spacing of 25 feet (or until there is a minimum distance of 20 feet between crowns), pruning branches 17 feet above ground (or 50% of live crown, whichever is less), and keeping the area clear of surface fuels and flammable objects such as wood piles by providing all buyers with information pamphlets when they purchase a home or property in Tamarack.

Landscaping techniques employed should utilize low-flammability vegetation and establishment of green areas within 50 feet of homes in order to reduce the threat of fire spreading to homes from the wildland.

The two statements above should be included in a set of standards for homes being built in Tamarack. Planning and zoning protocols within Valley County or subdivision covenants would be an appropriate mechanism. There is a great opportunity at this time, to build a resort/community that will at completion be far ahead of the game when it comes to fire risk.

The Cascade Ranger District administers the Boise National Forest lands to the North, South and West of the resort. The area in Poison Creek has been partially harvested in the late 1980’s when the road system was built and 302 acres of timber ground was treated. The area will likely again see some considerable harvest activity in the scheduled upcoming West Mountain North timber sale. The combination of these two timber sale entries and the associated road system will have significantly altered the continued nature and arrangement of the fuels which results in a reduced risk of wildfire spread. The Boise National Forest Land and Resource Management Plan directs the management and treatments on National Forest System lands. Prescriptions and specifications for projects are based on site-specific analysis, when local needs and objectives are addressed, and any over riding land management direction.

The forest habitat type for this area is a wet Douglas-fir/Grand Fir reflecting a Fire Regime 5 with infrequent fire return intervals. Fire history in the area is small fires starting near the ridge top. The last moderately large fire to happen on West Mountain since 1919 was in 1989, when a 90-acre blaze occurred. Local winds also show if a fire were to start in or around the area of the resort, it would be most likely be pushed up and away from the resort. However, there are no guarantees when wildfires are burning.

4.4.2.3.5.2 Ingress-Egress

West Mountain Road provides the main travel route for the entire geographic area. Most areas along the road are in relatively open forest stands or in grassy areas, which reduces the probability of fire events compromising ingress or egress. Improvements on the Tamarack Falls Road will increase vehicle capacity, facilitating evacuation in the event of an emergency.

Road construction standards and road layout throughout Tamarack Resort will provide adequate emergency access to homes. Most roads will be interconnected or loop roads, providing safe and easy access to homes. Since nearly all construction will take place on relatively flat to rolling terrain, there will be few large hills or grades to be negotiated by emergency vehicles.

4.4.2.3.5.3 Infrastructure

Significant infrastructure improvement is currently ongoing along the West Mountain Road corridor south from Tamarack Falls Road to Tamarack Resort. Significant improvements to the power delivery system will assure power lines are clear and free of trees and branches.

In the fall of 2003, all of the major roads were built at Tamarack, and the utilities (sewer, water, electricity, telephone and cable TV) were installed underneath the roadways. Water will be supplied by three wells, one of which is a primary and two auxiliary wells. Multiple creeks and streams also provide drafting opportunities.

4.4.2.3.5.4 Fire Protection

Development of this magnitude could certainly strain local emergency services. Tamarack Resort will apply for grants to finance the construction and equipping of a new fire station to be located at the resort to provide quick and timely emergency response to the community. A new station would also assist in expanding the boundary of the Donnelly Fire District to cover some homes along West Mountain Road to the south of the resort that are currently not covered by a fire protection district. The expansion of emergency response services will contribute significantly to the safety of residents in the area.

4.4.2.3.5.5 Community Risk Assessment

The majority of existing structures in this geographic area outside of Tamarack Resort are at moderate risk to loss from wildland fire. Contributing to this risk is small lot size and vegetative condition around many of the older homes. Some structures lack defensible space and some have been built with materials that are not favorable for surviving a wildland fire event. Some are located in light grass fuels with patchy timber, however many have not taken necessary precautions in order to maintain an effective visual screen.

Since the majority of building and construction has yet to occur, it is difficult to predict the potential for loss to wildland fire in definitive terms. However, resort planners have designed a master plan that will provide for emergency accessibility and the necessary water supply

infrastructure for the community. The rolling terrain that characterizes the village area and the continuation of firewise forestry practices prior to home construction will maintain the overall threat to the community at a low level.

At present time, the overall wildland fire risk to the resort is low and future fuels treatments on the Boise National Forest administered lands will be considered. At the time of this plan, Forest Plan direction calls for fuels treatments to be focused on and around Communities at Risk according to the National Register. Since overall wildland fire risk to the resort is low, fuels treatments in this area will not be a high priority or the primary focus of Boise National Forest fuels reduction projects. Tamarack Resort officials would like to minimize the risk that a human-caused fire could pose to the Tamarack community by thinning national forest land immediately to the west of the resort. Resort officials hope that national forest officials will develop a project for this work in the foreseeable future.

4.4.2.3.5.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

Since few permanent structures are as of yet complete, planners and developers have the greatest opportunity to maintain low level of risk throughout the community. Resort officials should emphasize the use of firewise building materials in construction throughout the community. Firewise building codes and landscaping techniques should be a requirement, not an option, regardless of property location. This will help maintain the low fire hazard rating.

Resort officials are also encouraged to continue treating native forest fuels around home sites to remove the hazard before development occurs. These timber management practices remove the potential fire hazard reducing the probability of the loss of a structure if fire were to occur.

Educate property owners about maintaining a 150’ defensible space around homes by thinning trees to a spacing of 25 feet (or until there is a minimum distance of 20 feet between crowns), pruning branches 17 feet above ground (or 50% of live crown, whichever is less), and keeping the area clear of surface fuels and flammable objects such as wood piles by providing all buyers with information pamphlets when they purchase a home or property in Tamarack.

Landscaping techniques employed should utilize low-flammability vegetation and establishment of green areas within 50 feet of homes in order to reduce the threat of fire spreading to homes from the wildland.

Planning and zoning protocols within Valley County or subdivision covenants would be an appropriate mechanism to enforce strict building codes and landscaping regulations. There is a great opportunity at this time, to build a resort community that will be far ahead of the game when it comes to fire risk.

The Cascade Ranger District administers the Boise National Forest lands to the North, South and West of the resort. 302 acres of timber ground in Poison Creek was partially harvested in the late 1980’s when the road system was built. This general area will likely see more harvest activity in the upcoming West Mountain North timber sale. The combination of these two timber

sales and the associated road system will have significantly altered the nature and arrangement of the fuels, which results in a reduced risk of wildfire spread. The Boise National Forest Land and Resource Management Plan directs the management and treatments on National Forest System lands. Prescriptions and specifications for projects are based on site-specific analysis, when local needs and objectives are addressed, and any overriding land management direction.

4.4.2.3.6 Osprey Point Geographic Area

Osprey Point Geographic Area includes all areas south of Donnelly RFD protection boundary to God's Acres and west of Cascade Reservoir to the County line. This geographic area is at significantly elevated risk because there is no structural fire protection throughout the geographic area.

4.4.2.3.6.1 Fire Potential

Fuels Assessment

The narrow band of private land between the lake and the National Forest lands along West Mountain tend to be heavily stocked, with a mix of ponderosa and lodgepole pine, larch, Douglas- and grand fir, and spruce. The east aspect reduces solar radiation and increases available moisture, with dry site species generally restricted to the lowest elevations near the lakeshore.

Forest types quickly shift to fir and spruce with interspersed lodgepole pine as moisture becomes more available. Large fires in mid elevation mixed species stands tend to be relatively infrequent due to the increased availability of moisture from increased precipitation and shading. The brush and compact surface fuels under a closed canopy of mixed species stands generally supports slow-burning surface fires, with flare-ups in areas of concentrated dead and down fuels. However, under extreme weather conditions fires in these fuel types can present significant control problems, especially where shade tolerant species create ladder fuels under the maturing canopy. Individual and group tree torching, large flame lengths, development of crown fire, and long-range spotting can easily overwhelm suppression forces, posing significant threat to homes and other infrastructure in the area. Such fires are typically infrequent, 80 to 100 year events. At the highest elevations, large fire occurrence is even more infrequent. When such events do occur, they tend to burn in an intense, stand-replacing manner, presenting significant control problems.

Ignition Profile

The ignition profile is significantly augmented by concentrated human use in this geographic area. Although lightning strikes are not uncommon throughout Long Valley, human ignitions pose a greater risk to this area. The potential for human ignitions is likely to increase over time, as residential development continues and road use increases with the overall growth of the area.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the dry nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuels type and fuel moisture as well as on weather conditions at the time of ignition. Fires

during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires in any fuel type.

4.4.2.3.6.2 Ingress and Egress

West Mountain Road provides a secure and adequate primary travel route from this area. The development that has occurred in this area has been largely unregulated, with little consideration of emergency vehicle access requirements or accessibility standards. Many homes are accessed via steep and narrow dead-end driveways. In many cases, these roads are not adequate for large emergency vehicles, potentially precluding engagement by suppression personnel during hazardous fire conditions.

4.4.2.3.6.3 Infrastructure

The residential power lines in the area are primarily above ground, often times interlaced through tree branches. This increases the probability of fire starts from downed power lines and also poses safety hazards for emergency personnel.

There is only one municipal groundwater source in the Osprey Point geographic area.

4.4.2.3.6.4 Fire Protection

The residential region of this geographic area currently does not have any organized structural fire protection; however, the Boise National Forest and SITPA provide wildland protection.

4.4.2.3.6.5 Community Risk Assessment

This area is considered to be at very high risk to wildland fire due to the lack of structural or wildland fire protection. The lack of initial attack suppression forces significantly increases the probability of large fire development during dry times of the year. The probability of structural fires transitioning to wildland fires is significantly increased as well, as delayed response times may allow for complete involvement of structures and spotting to adjacent wildlands.

Significant mitigation work has taken place in this geographic area. Seventy-six of the 92 landowners in the God's Acres area have created defensible space around their homes. National Fire Plan Project monies were augmented with the proceeds from commercial timber sales to offset the defensible space treatment costs. The timber sales also had the added benefit of reducing tree density and ladder fuels in the areas beyond the home. In total, 35 truckloads of logs were hauled amounting to 113 MBF in commercial timber. To date, 85% of the planned work has been completed, with only some pruning to be done to complete the project. The success of the project demonstrates the acceptability of community-based mitigation treatments. The project also has also helped to raise fire awareness throughout the area as well as to bring members of the community together into an active, cohesive homeowners association.

4.4.2.3.6.6 Mitigation Activities

Expansion of district boundaries to provide structural and wildland protection would be a first step in mitigating wildland fire risk to the area. This should be a priority in the overall County Fire Mitigation Plan. In the absence of fire protection, homeowners need to take additional precautions in order to increase the defensibility of their homes and to provide safe travel routes.

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations

Boise National Forest lands along the entire private boundary should be targeted for treatment in order to further reduce the risks to homes down slope, as well as to improve suppression responsibilities for fires moving upslope from home sites or from roadside ignitions. Specific treatment regimes will depend on existing forest and fuel conditions. However, the treatments should focus on reducing torching and crown fire potential by removing ladder fuels, thinning and pruning of mature trees, and disposing of slash. The treatments will likely involve a combination of commercial and pre-commercial vegetative treatments. This will augment the effectiveness of treatments already complete in the God’s Acres area. Treatments should be targeted along the entire private-Forest Service ownership boundary throughout the entire area, extending into the Tamarack Geographic Area. The first priority should focus on creation of community defensible space.

4.4.2.3.7 Little Donner-Sugarloaf Geographic Area

The Little Donner-Sugarloaf Geographic Area including lands south of Highway 55 milepost 121 to Warm Lake Road, from Lake Cascade east to Colter Road. This area is a dry, wind exposed site with abundant human ignitions. There is a history of wildland fires in this area including a potentially destructive fire burning roughly 65 acres in the early 1990’s.

4.4.2.3.7.1 Fire Potential

This area is characterized by an abundance of potential ignition sources from both natural and human causes. With nothing to break the winds that blow across Cascade Lake, this part of the valley is also exposed to the predominantly southwest wind direction typical throughout the region during the summer months. Overall, the abundance of light fuels and wind exposure increases the probability of an ignition developing into a range or forest fire.

Fuels Assessment

Much of this area is a dry southwest aspect with forested areas dominated by ponderosa pine with a grass and brush understory. Forest fuels tend to be more dense in the vicinity of homes. Curing is rapid in this area where relatively open conditions allow for rapid drying of light grass and other surface fuels by the effect of sun and wind. Fires in light fuel types tend to burn with rapid rates of spread, especially when driven by gusty winds common along the lakeshore. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by heavy forest fuels. However, if heavy surface fuel loads and abundant understory regeneration is present, fires in these forest types can burn at high intensities, leading to torching and possible development of crown fire runs. These conditions present significant control problems for suppression resources and can pose a significant threat to homes in the fire path. Fires driven by the southwest winds would also present significant control problems as well as a significant threat to homes and suppression resources in the area, particularly if defensible space has not been created prior to the fire event.

Ignition Profile

Human habitation and use significantly adds to the overall ignition profile in the area. Natural ignition sources from summertime lightning storms are common throughout Valley County. However, the probability of human caused fires contributes significantly to the probability of fires in this area. Residential living and recreational use present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources. Power line fires resulting from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires regardless of fuel types.

4.4.2.3.7.2 Ingress and Egress

Access along Osprey Ridge Road and Pine Lakes Ranch Road provides adequate access to homes located on these loop roads. However, poor ingress and egress to the homes along Crown Point Parkway significantly increases the overall risk to the area. The Parkway provides the only access route to the numerous houses and developments along the lake. Many of these are accessed via one-way in-one way out side roads or driveways that do not provide adequate turn-around areas for large emergency apparatus. The lack of alternate escape routes and the high probability of bottlenecks along the Parkway in the event of a mass evacuation significantly increase risk to the area.

4.4.2.3.7.3 Infrastructure

An Idaho Power high-tension power line parallels Highway 55 through the geographic area. There are also many aboveground wires servicing homes in the area. The consistent wind and light fuels significantly increases the probability of downed power lines igniting the dry fuels, potentially developing into a large wildland fire.

There is currently only one municipal ground water source serving the residents of the Little Donner-Sugarloaf geographic area. Other residents access water via personal wells.

4.4.2.3.7.4 Fire Protection

Homes within this area receive structural fire protection from the Cascade Rural Fire Department. Wildland fire protection is provided by SITPA. Fire response times are quick in this area; however, even with rapid response times, fires can spread quickly, as demonstrated by the 65-acre fire in the early 1990's.

4.4.2.3.7.5 Community Risk Assessment

The combination of light, dry fuels, exposure to wind, and abundant human use increases the probability of a wildland fire occurrence. The high density of homes, poor access, and lack of defensible space poses significant threat to residents and homes in the Crown Point Parkway area. Overall, this area has a high potential for destructive urban-wildland interface fires potentially threatening numerous homes and the lives and safety of residents and emergency personnel.

4.4.2.3.7.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

Development of a community evacuation plan is necessary to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape route signage would reduce chaos and escape times for fleeing residents. Because of the poor access along Crown Point Parkway, a community safety zone should also be established to ensure the safety of residents in the event of compromised evacuation. Efforts should be made to educate homeowners through existing homeowners associations or creation of such organizations to act as conduits for this information.

An area specific interagency emergency fire plan should also be developed and adopted in order to increase efficiency and reduce potential for entrapment of suppression resources. Clear lines of communication should be ensured and exact suppression responsibilities should be assigned. The poor access to some areas increases the risk of bottlenecks developing from responding emergency resources. Mass mobilization of suppression resources could potentially result in catastrophic consequences in the event of a high intensity, rapidly spreading wildland fire.

4.4.2.3.8 West Mountain Geographic Area

The West Mountain Geographic Area includes the area from God’s Acres, south along West Mountain Road to junction with Lakeshore Drive. This area is defined by pre-existing interface issues in the area, as well as by the significant potential for interface conditions to deteriorate in the near future. Hundreds of acres of Boise Corporation timberland was recently sold in the Willow Creek area and will be targeted for residential subdivision. This change in land use will significantly increase the number of homes in the area and compound pre-existing interface issues already present in the area.

4.4.2.3.9 Fire Potential

This area is characterized by thick, dense timber stands from mountainside to lakeshore with few breaks in continuity. The slope rises steeply in the Willow Creek area that is proposed for subdivision. These conditions significantly increase the overall risk to the area.

Fuels Assessment

The West Mountain area is dominated by a dense, mixed conifer stand of Engelmann spruce, grand fir, Douglas-fir, and some ponderosa pine. There is an accumulation of dead and down wood and other surface fuels, due to past logging activities and prolonged fire suppression, not only on the timbered slopes behind the subdivision, but also adjacent to houses. Although the frequency of fires on east aspect slopes in these habitat types is low, the potential risk of experiencing a very severe stand replacing wildfire due to deteriorating forest conditions is significant. A fire in these fuels during severe fire weather conditions would burn at extremely

high intensities and large flame lengths. Such fires would essentially be uncontrollable and present significant threat to homes and the lives of residents and suppression personnel.

Ignition Profile

The ignition profile in this area is significantly augmented by concentrated human use in residential and recreational areas along Cascade Reservoir. Lightning strikes are not uncommon throughout Long Valley or along the West Mountain Ridge; however, human ignitions are much more probable in this area posing a significantly elevated risk.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires along the reservoir shore are just a few of the countless potential human ignition sources in the area. Additionally, power line fires resulting from tree contact are also probable in this area, as many overhead wires are laced within tree limbs. The potential for a power line fire is greatest during windy conditions, when down tree limbs are likely to cause arcing and strong winds are able to push fire through forest fuels.

The abundance of human and natural ignition sources and the dense nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds will likely lead to widespread resource loss in the area.

4.4.2.3.9.1 Ingress-Egress

Ingress and egress issues significantly heighten the risk within this geographic area. West Mountain Road is the only road accessing the west shore of the lake. Many sections of this roadway directly abut heavy fuels making escape to the north or south potentially hazardous. Within the subdivision, there are several secondary roads leading down to the reservoir, some of which are very narrow and overgrown dead ends. Even though efforts have been made to provide highly visible addressing of homes, many bridges, cattleguards, and one-way in, one-way out roads lack signage. These dangerous conditions would preclude engagement by suppression resources and possibly lead to entrapment of residents.

4.4.2.3.9.2 Infrastructure

Idaho Power maintains a high tension power line that runs along West Mountain Road. There is also a tangled web of power lines within the residential areas, criss-crossing the roads and among homes. Sections of these lines are dangerously close to trees and branches. This increases the risk of ignition, as well as presents hazards for suppression personnel who may be endanger by overhead wires during suppression operations.

Residents of the West Mountain geographic area can access water through either a surface water facility or one of the three ground water sources. Some residents have drilled personal wells.

4.4.2.3.9.3 Fire Protection

The Cascade Rural Fire Department provides structural protection in this area. Wildland fire protection is provides by SIPTA and the USDA Forest Service. Both the Cascade RFD and SITPA (SITPA station is located in Cascade) maintain stations in the vicinity of the area, providing rapid response times.

4.4.2.3.9.4 Community Risk Assessment

The narrow strip of privately owned land between West Mountain Road and the Boise National Forest boundary has been heavily developed. Primary residences and summer homes are located along the southwestern corner of the reservoir and extending north along most of the western shore. Wood siding and decking are popular construction materials in the area. Few homes have created any type of defensible space around structures. There is very little buffer between the homes and forest fuels. The fuel continuity within the area leads to conditions in which the homes essentially will act as fuel in the event of a wildland fire.

4.4.2.3.9.5 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations. Improving road signage and identification of one-way in-one way out roads should be a component of mitigation activities in order to reduce the threat to suppression resources. Access improvement should also be considered, such as extending roads to form loop roads.

Development of a community evacuation plan is necessary to assure an orderly evacuation in the event of a threatening wildland fire. Designation and posting of escape route signs would reduce chaos and escape times for fleeing residents. Because of the exceptionally poor access in the area, a community safety zone should also be established in the event of compromised evacuation. Efforts should be made to educate homeowners through existing homeowners associations or creation of such organizations to act as conduits for this information.

Vegetative treatments designed to reduce surface and ladder fuels, reduce tree density, and increase effective crown height should be enacted in the Willow Creek area prior to subdivision development. Although much of the Boise land has been well managed prior to sale, all necessary treatments should take place prior to home construction.

Boise National Forest lands should also be targeted for vegetative treatments prior to home construction in the Willow Creek area. Competing treatments before home construction would alleviate many of the complicating factors associated with pre-commercial and commercial treatments adjacent to residential areas. Treatment objectives should be focused on increasing community resistance to wildfire and reducing the probability of torching, crowning, and development of high intensity wildland fire.

4.4.2.3.10 Cascade Geographic Area

The Cascade Geographic Area includes the town of Cascade as well as the area south from Warm Lake Road to Moores Creek, east from Lake Shore Drive to Payette River and Thunder City Road.

4.4.2.3.11 Fire Potential

Fuels Assessment

Much of this area is covered by agricultural fields or native meadow vegetation. Near the lake shore drier fuel types are more common. These areas are dominated by ponderosa pine with a grass and brush understory. Sagebrush is prominent along some of the eastern lake shore. Fires in light fuel types tend to burn with rapid rates of spread, especially when driven by gusty winds common along the lakeshore. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by heavy forest fuels. However, if heavy surface fuel loads and abundant understory regeneration is present, fires in these drier forest types can burn at high intensities, leading to torching and possible development of crown fire runs. These conditions present significant control problems for suppression resources and can pose a significant threat to homes in the fire path. Fires driven by the predominant southwest wind would also present significant control problems as well as a significant threat to homes and suppression resources, particularly if a defensible space has not been created prior to the fire event.

Dead and downed fuel accumulations tend to be somewhat higher in the state endowment land between Cabarton Road and Lakeshore Drive. This is particularly true in the Landale Lane and Panorama Drive Area. In addition, there are accumulations of regeneration in the area that could lead to development of torching of overstory trees. Most of this fuel is upslope, behind the homes in the area.

Ignition Profile

Human habitation and use significantly adds to the overall ignition profile in the area. Natural ignition sources from summertime lightning storms are common throughout Valley County. However, the probability of human caused fires contributes significantly to the probability of fires in this area. Residential living and recreational use present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources in the area. Power line fires resulting from tree contact can also spark fires, especially during windy conditions.

The abundance of human and natural ignition sources and the nature of fuels in the area increase the probability of wildland fire. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires regardless of fuel types.

4.4.2.3.11.1 Ingress-Egress

The primary access into the area is from State Highway 55, a paved two-lane highway that extends to the north and south. There are several additional primary travel routes within the valley. Most of these roads are located in areas with little risk due to the agricultural and pasture land use. Some signing of these roads as alternate escape routes would help visitors in the area. Many of the subdivisions near the lake shore are accessed by one-way in, one-way out roads that could potentially become threatened in the event of a wildfire. This type of access road also inhibit the safe and timely evacuation of residents as well as increases the risk to suppression personnel. Road names and house numbers are generally present throughout the area, yet many of the bridges in the vicinity of Cascade lack adequate signing and weight ratings.

Most roads in the Cascade vicinity are adequate for most emergency vehicle traffic, although some spur roads are rough and lack adequate turnouts. Access issues tend to be more pronounced in older developments and are often associated with driveway access. Steep and

narrow driveways complicate access by large emergency vehicles in scattered areas throughout this area.

4.4.2.3.11.2 Infrastructure

Idaho Power maintains a number of high-tension power lines in the vicinity. The risk to these is quite low because of light fuels in most areas. Many of the older homes are supplied with power by aboveground wires, while the newer subdivisions are serviced by underground utilities.

Many residents of the Cascade geographic area receive water by drilling personal wells; however, there is a municipal water source near the southern end of the treatment area.

4.4.2.3.11.3 Fire Protection

The Cascade City Fire District provides structural fire protection within Cascade city limits, with the Cascade Rural Fire District providing structural fire protection in the remainder of the area. There are Mutual Aid Agreements in place with all the Fire Department in the valley floor along Highway 55. SIPTA provides wildland fire protection in the area.

4.4.2.3.11.4 Community Risk Assessment

This geographic area is at moderate risk from wildland fire. The greatest risk is associated with the heavy recreational and residential use in the area and the prevalence of light, flashy fuels. The receptive nature of these fuels to ignition sources increases the probability of the area experiencing a fire. Homes and resources can generally be easily protected from these types of fires; however, these measures must be taken prior to the fire event. Fires in these fuel types spread rapidly, allowing little time to prepare a home in advance of a fire.

Many homes are in need of a defensible space. As in many residential areas, much of the vegetation around the home has been retained to provide visual screening from neighboring homes. This screening is often very close to the home, leading to increased fire intensities in the immediate vicinity.

4.4.2.3.11.5 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by homeowner actions prior to the event. In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the structure.

"Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Other specific activities are likely to include improvement of emergency water supplies in areas not served by hydrants and management of

trees and vegetation along power line right-of-ways. Furthermore, building codes and standards for subdivision development should be expanded to single home construction as well.

State endowment lands between Cabarton Road and Lakeshore Drive should be considered for hazard mitigation treatments. Hazard treatments should concentrate on reducing ladder fuels and dead and downed fuels in order to facilitate fire suppression activities and reduce the potential for development of high intensity wildland fire. Such a treatment would protect the timber values on state lands as well as reduce risk to homes in the area.

4.4.2.3.12 Pearsol-Horsethief Geographic Area

The Pearsol-Horsethief geographic area encompasses the Warm Lake Road corridor, including Eagle Nest Estates, south to the Township 14 North line, and east from Thunder City Road to Little Horsethief Reservoir, including Horsethief Basin. This area is likely to see increases in subdivision development in upcoming years, as timberlands formerly owned and managed by Boise Corporation are sold for residential development.

4.4.2.3.12.1 Fire Potential

Fuels Assessment

Grasses associated with relatively open ponderosa pine and mixed pine-fir forests comprise the bulk of the fuels in this area. Fires in light fuel types tend to burn with rapid rates of spread, especially when driven by gusty winds common along the lakeshore. Although these fires can spread rapidly, they do not burn with the same intensity as fires fueled by heavy forest fuels. However, if heavy surface fuel loads and abundant understory regeneration is present, fires in these dry forest types can burn at high intensities, leading to torching and possible development of crown fires. These conditions present significant control problems for suppression resources and can pose a significant threat to homes in the fire path. Fires driven by the predominant southwest wind would also present significant control problems as well as a significant threat to homes and suppression resources in the area, particularly if defensible space has not been created prior to the fire event.

Much of the area surrounding the Horsethief Reservoir has been actively managed by Boise Corporation for timber production. Fuels generated by harvest activities have been disposed of resulting in relatively open stands that facilitate fire suppression activities.

Ignition Profile

The popularity of the Horsethief Reservoir and the surrounding area for recreation use significantly increases ignition potential in the area. Recreation use is generally strongly correlated with human-caused fire starts. Ignitions from unattended campfires, discarded cigarettes, fireworks, and vehicle fires augment the natural ignition profile. Natural ignition sources from summertime lightning storms are also common throughout Valley County.

The abundance of human and natural ignition sources and the nature of fuels in the area increase the probability of wildland fire. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds can quickly lead to fast-moving, destructive wildfires regardless of fuel types.

4.4.2.3.12.2 Ingress-Egress

Access to the Pearsol-Horsethief area is via the Warm Lake Highway. Development along the Little Pearsol Road is accessed by a dead end road with no other alternate escape routes. The Horsethief Reservoir can be accessed via the Warm Lake Highway or the Corral Creek Road. Access to Eagle Nest Estates is good with well planned loop roads and large cul-de-sacs.

4.4.2.3.12.3 Infrastructure

An Idaho Power transmission line runs through the area. Furthermore, homes in the Little Pearsol area receive power via above-ground power lines.

Due to the lack of concentrated human development in the Pearsol-Horsethief geographic area, there are no municipal water sources; thus, residents much access water by drilling personal wells.

4.4.2.3.12.4 Fire Protection

The Cascade Rural Fire District provides structural fire protection in the Pearsol-Eagle Nest area. There is no structural protection near the Horsethief Reservoir area, although SITPA provides wildland fire protection in the area.

4.4.2.3.12.5 Community Risk Assessment

4.4.2.3.12.5.1 Little Pearsol Lane

The primary risk to residents of this subdivision is the lack of an alternate escape route into the valley. There are 15 or so residences scattered among a recently thinned ponderosa pine stand off Little Pearsol Lane. Slash and surface fuels created by the harvest operation have been removed, reducing the potential for high intensity wildland fire. Most the residents in this area have cleared a reasonable defensible space around their property. However, there are a few that could use additional thinning of trees to reduce the fire risk. Homes in this area have been built almost exclusively with wood siding and decking, which is unfavorable for protection against wildfires.

4.4.2.3.12.5.2 Eagle Nest Estates

Eagle Nest Estates is a new subdivision being built north of the Warm Lake Road near Davis Reservoir. The landowner has recently thinned and burned the slash from the ponderosa pine stand in the area where homes are being built. They have also installed underground power lines and constructed a system of roads that loop back to the main access road. Most of the residents have built their homes on large parcels and cleared an adequate defensible space. This development serves as an example of a development designed with fire management in mind.

4.4.2.3.12.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure

surviving a passing fire front is largely dependent on the structural and landscaping characteristics of the home.

Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, firefighting resources will not jeopardize lives to protect a structure. The current lack of an alternative route to the homes in the Little Pearsol area presents operational safety issues. In order to address this issue, residents should consider extending Little Pearsol Lane to form a loop road.

In many cases, homes survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home. “Living with Fire, A Guide for the Homeowner” is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Other specific activities are likely to include improvement of emergency water supplies in areas not served by hydrants and management of trees and vegetation along power line right-of-ways. Furthermore, building codes and standards for subdivision development should be expanded to single home construction as well.

State endowment lands should be considered for hazard mitigation treatments. Hazard treatments should concentrate on reducing ladder fuels and dead and down fuels in order to facilitate fire suppression activities and reduce the potential for development of high intensity wildland fire. Such a treatment would protect the timber values on state lands as well as reduce risk to homes in the area.

4.4.2.3.13 Gold Dust- Alpha-Round Valley Geographic Area

The Gold Dust-Alpha-Round Valley Geographic area includes the area from T14 N line, south to Round Valley, east from Payette River to Middle Fork-North Fork Divide.

4.4.2.3.13.1 Fire Potential

The landscape from Alpha south to Round Valley begins to transition from grass to forested habitats. Timbered foothills to the south, east and west bind the valley. Settlement is concentrated along the valley bottom and along Highway 55, with some residential development on the lower foothills. At the far southern end of the valley, the North Fork of the Payette River drops steeply toward Smith’s Ferry as it travels toward the Snake River.

Fuels Assessment

Forest vegetation in the Alpha-Round Valley area tends to be isolated along riparian areas, with increasing tree establishment further upslope. The flow of both moisture and cool air along draws and creek bottoms in this portion of the County generally favors the establishment of lodgepole pine, particularly toward Highway 55. The compact needle litter under closed stands of lodgepole in these areas generally support slow-burning surface fires. However, during dry summertime weather conditions fires in these fuel types can present significant control problems. Individual and group tree torching, large flame lengths, development of crown fire, and long-range spotting can easily overwhelm suppression forces, posing significant threat to homes and other infrastructure in the area. Although such fires are typically infrequent, 100+ year events, such fire occurrences have led to widespread loss of homes and other improvements.

Outside of these cold air drainages on the lower foothills are stands of mixed pine and fir. Between the foothills and forested riparian corridors, grasses and shrubs dominate. Many areas dominated by light, flashy grass fuels have historically been grazed. However, reduction in grazing over the last years has allowed for an accumulation of fine fuels. Fires in these areas are typically fast moving surface fires, especially when pushed by wind. Fire frequency can be high, due to the drying effect of sun and warm temperatures on light, flashy fuels. As grasslands transition into dry ponderosa pine and Douglas-fir habitats, fire frequency remains high. Low stocking levels in the understory resulting from a lack of sunlight and moisture allows for the growth of fine grass fuels. Historically, these forest types were “fire maintained,” with frequent, low intensity fires clearing fuels from the forest floor and maintaining well-spaced forest stands.

As elevation and aspect increase available moisture, forest composition transitions to more moist 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 a 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 accumulation fuel large, intense wildfire.

The narrow band of land along the low foothills to the east and west is owned and actively managed by Boise Corporation and the IDL as timberlands. The management activities by these landowners have provided road access and created forest conditions that generally facilitate fire suppression activities. Forestlands beyond Boise Corporation ownership are managed by the US Forest Service, Boise National Forest.

Ignition Profile

The ignition profile in this area is significantly augmented by concentrated human use in the area. Lighting strikes are also quite common, especially in forested areas and as elevation increases.

Residential living and recreational use in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires along the reservoir shore are just a few of the countless potential human ignition sources in the area. The abundance of available light flashy fuels and abundant ignition sources contributes significantly to fire potential.

Additionally, power line fires resulting from tree contact are also probable in this area, as many overhead wires are laced within tree limbs. The potential for a power line fire is greatest during windy conditions, when down tree limbs are likely to cause arcing and strong winds are able to push fire through forest fuels.

The abundance of human and natural ignition sources and the dry, flashy nature of fuels in the area increase the probability of wildland fire in this geographic area. Fire characteristics will depend on fuel types and fuel moisture as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity and strong winds could pose significant threat to life and home.

4.4.2.3.13.2 Ingress-Egress

Roads in the valley bottom are generally adequate for most emergency vehicle traffic, although some spur roads are rough and lack adequate turnouts. Access issues, often associated with driveway access, tend to be more pronounced in older areas of development. Steep and narrow

driveways complicate access by large emergency vehicles in scattered areas throughout this area.

4.4.2.3.13.3 Infrastructure

An Idaho Power high-tension power line parallels Highway 55 through the geographic area. There are many aboveground wires servicing homes in the area. The consistent wind and dry fuels significantly increases the probability of downed power lines igniting the dry fuels, potentially developing into a large wildland fire.

There is only one municipal water source in the Golddust-Alpha-Round Valley geographic area, which is located near the community of Alpha. Other residents; therefore, gain access to water by drilling personal wells.

4.4.2.3.13.4 Fire Protection

Structural fire protection is provided by the Cascade RFD, which maintains its Station 2 on Clear Creek Road, less than a mile off of Highway 55. SIPTA and the USDA Forest Service provide wildland fire protection in the area. There are a number of creeks and ponds that could serve as draft or dipping sources within the area.

4.4.2.3.13.5 Community Risk Assessment

Residential development in this area is concentrated along the Clear Creek Road and Cabarton Road to the east and west of Alpha, as well as along the perimeter of Round Meadows.

4.4.2.3.13.5.1 Clear Creek Road and Cabarton Road

The threat posed by wildland fire in these areas is variable, with pockets of moderate risk. Many home sites along the lower portion of Clear Creek Road and Cabarton Road are situated in the wooded areas that generally follow the draws and creek channels. Forest fuels in these areas are generally dominated by lodgepole pine along riparian areas, and mixed pine and fir farther upslope. Although overall fuel continuity of the area is quite inconsistent, many homes have been constructed in thick patches of timber. There is consistency and continuity to the fuels within these patches creating the potential for development of destructive forest fires.

Many homes in the area do not have adequate defensible space. Homes surrounded by light, flashy fuels are at increased risk to fire loss due to the rapid rates of spread typical in these fuel types. Although surface fires in grass and pine needles may not burn at extremely high intensities, they can easily transition from the wildland to the home if a fire resistant buffer has not been created in the immediate vicinity of the home or outbuilding.

Homeowners that have not implemented a more aggressive program of pruning and thinning in the vicinity of structures are also at an elevated risk. Individual and group tree torching near the home exposes the home to high levels of radiant heat, as well as to firebrands. This is of particular concern when homes have been constructed with flammable building materials.

4.4.2.3.13.5.2 Round Valley

Round Valley is a broad, flat valley used primarily for agriculture. Although most homes are adjacent to Round Valley, many are tucked into areas of pine regeneration, with little defensible space.

The forested land surrounding Round Valley is continuous mixed fir. Under extreme weather conditions, wind driven fires pushed down slope could pose a serious threat to homes in the Round Valley area. A more probable threat is likely to come from roadway ignitions spreading quickly upslope in the dry grass and pine litter. The probability of home survivability could be further increased by the creation of defensible space.

4.4.2.3.13.5.3 Gold Dust Area

There are approximately 20 homes located at the end of Golddust Road off State Highway 55. Even though this is a dead end road, the scattered lodgepole pine along the roadway and around homes are not creating a high-risk situation. The greatest risk to the area would come from a fast moving, grass and range fire. The abundance of light flashy fuels and ignition sources increases this potential significantly. Most residents have cleared a reasonable defensible space around their property. Some additional thinning along the eastern edge would provide an additional fuel break for potential wildfires.

4.4.2.3.13.6 Mitigation Activities

"Home protection starts at the home." Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

Homeowners in the Gold Dust area have expressed interest in pursuing fuels work on the east and south side of the development. The treatments should focus on reducing ladder fuels and increasing crown base height as well as increasing suppression effectiveness. State endowment lands to the west of Round Valley road should also be evaluated for potential treatment, both to further reduce risk to homes downslope as well as to protect state endowment lands.

4.4.2.3.14 Smith's Ferry Geographic Area

The Smith's Ferry Geographic Area includes the area around the community, as well as lands within T11N, R3E, sections 2,3,10,11,14,15, 22, and 23. There are a number of factors that contribute to the overall interface hazard in the area. Currently, residents of Smith's Ferry are unprotected by any structural fire protection. The vegetative characteristics in the vicinity of the residential areas greatly increase the fire hazard. Finally, the abundance of ignition sources from recreational and forest industry use in the area significantly increases the potential for fire starts. These factors significantly increase the overall risk to the community. Furthermore, this area is likely to see increases in housing density. Plans for the construction of a subdivision east of the community will lead to additional interface fire potential in the near future.

4.4.2.3.14.1 Fire Potential

Fuels Assessment

Forest structure to the east of Smith's Ferry is a combination of dry and mesic forest types. The dry, west aspects and rocky soils limit availability of moisture in many areas; thus, supporting forest communities dominated by ponderosa pine with a mixed grass and shrub understory.

Fuels tend to be relatively light, supporting frequent low intensity burns fueled by light loads of grass and dead and downed wood. However, these fire behavior characteristics are significantly enhanced by steep slopes, which may lead to torching and potential crown fire events during extreme weather. Where aspect becomes more northerly or wherever moisture becomes more available, forest types shift toward western larch, Douglas-fir and grand fir, with some areas of lodgepole pine and Engelmann spruce also represented. The larch-fir forest type is typical on the west side of the river. Fires in these forest types are slow-moving surface fires carried in the compact needle litter understory. Concentrations of dead and downed stem wood support higher intensity burns. Fires in these fuel types can lead to torching and spotting when burning under a forest canopy.

Much of the land to the east and west of Smith's Ferry is in Boise Corporation ownership. As such, the majority of Boise lands have been managed in the past using a combination of even and un-even aged timber management. These practices have helped to create more open forest stand conditions, which facilitate fire suppression activities. These same conditions also allow for earlier drying of surface fuels and stimulation of the growth of grass and other fine fuels which lead to more rapid rates of spread. However, the reduced risk associated with the increased ability to control wildland fires in the treated forest generally outweighs the risk associated with fire events in mature and overmature forest conditions.

Ignition Profile

The community of Smith's Ferry is situated in the steep and rocky Payette River Canyon. Over time, the erosive action of the water has carved a steep, deeply cut channel, full of rapids and eddies. The river attracts thousands of adventure seekers in search of white water kayaking opportunities each year. This concentrated recreational use significantly increases the ignition potential in the area. Furthermore, Highway 55 provides the access to the community and serves as the primary travel route from Boise to areas to the north. As such, Highway 55 is a very heavily traveled route. Travel corridors are strongly correlated with fire starts, as discarded cigarettes, tire fires and vehicle fires significantly increases the potential for fire starts in the area. Lastly, heavy forest practices in the area increases the potential for accidental fire starts. Ignitions from land clearing, equipment, and debris burning can spark wildland fire.

In addition to human-caused fires, natural ignitions from lightning events increases the risk to wildland fire impinging on the community.

4.4.2.3.14.2 Ingress-Egress

The primary access route to homes on the east side of the Payette River is by a single unrated bridge at Cougar Mountain Outfitters. It is possible, yet unlikely, that residents to the south of the bridge could be cut-off in the event of a wildland fire, with no alternative escape route. Although current fuel conditions along Packer John Road make this scenario unlikely, residents or forest users farther downstream could be cut-off from escape to Highway 55.

Highway 55 provides the only paved access route to Smith's Ferry. It is possible that a wildland fire burning under extreme conditions could compromise travel on the highway. It is unlikely that travel to both the north and south of Smith's Ferry would be compromised simultaneously. However, such an event could slow the movement of suppression resources to aid in the protection of the community and at a minimum would disrupt commerce and travel.

There are significant access issues in the area, particularly to the east of Highway 55. Homes in this area are accessed via steep roads that cannot accommodate emergency vehicles. Although the access routes are short, these homes would be indefensible in the event of a fire moving upslope from Highway 55.

4.4.2.3.14.3 Infrastructure

An Idaho Power transmission line runs through the geographic area. The right-of-way for the line has been well maintained, reducing the potential for tree contact and arcing. There are many aboveground power lines that provide service to homes in the area. Many of these are in close proximity to tree limbs, increasing the potential for downed power lines.

There is one municipal water source near the center of the geographic area that most residents likely have access to.

4.4.2.3.14.4 Fire Protection

As mentioned, Smith's Ferry currently does not have any structural fire protection, which significantly increases the overall risk to the community. SIPTA and the USDA Forest Service provide wildland fire protection in the area.

4.4.2.3.14.5 Community Risk Assessment

The primary fire risks to the community of Smith's Ferry are the homes tucked into the timber along the mountainside to the west of Highway 55. These homes are accessed via steep roads that cannot accommodate emergency vehicles. Although the access routes are short, these homes would be indefensible in the event of a fire moving upslope from Highway 55. These homes also lack defensible space and have been built with materials that are not conducive to survival of a wildland fire event.

There are a number of homes to the east of the Payette River, to the north along Hamden Drive, to the south along Packer John Road, and along other small drives and roads. Some of these homes have an adequate defensible space, while many others have trees and flammable vegetation in the immediate vicinity of the residence. Forest fuels are consistent to the east of residential development, although the majority of the fuels have been treated. Nonetheless, the potential for wildland fire to move downslope or up the Payette River Canyon is not inconceivable.

4.4.2.3.14.6 Mitigation Activities

Expansion of district boundaries or creation of a Smith's Ferry-High Valley Fire District to provide structural protection would be a first step in mitigating fire risk in the area. This should be a priority in the overall County Fire Mitigation Plan. In the absence of fire protection, homeowners need to take additional precautions in order to increase the defensibility of their homes and to provide safe travel routes.

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

4.4.2.3.15 High Valley Geographic Area

The High Valley Geographic Area includes the area from the Valley-Gem County line, east to State Highway 55, within the greater High Valley area. The High Valley area receives heavy summertime recreation use, with few full time residents. The area is composed of a large natural grassland valley surrounded by mixed conifer forest.

4.4.2.3.15.1 Fire Potential

Fuels Assessment

High Valley is native grassland that grades into sagebrush communities and a conifer forest. The forested areas are dominated by multi-aged stands of mixed conifers, primarily lodgepole pine, ponderosa pine, and Douglas fir on the dry aspects mixed with grand fir and spruce on the shaded aspects and along water courses. The timberland surrounding High Valley is mostly managed, showing recent logging and thinning activity. Fuel accumulations from logging is light. Understory ladder fuels are light to moderate in the managed stands and moderate to severe in the unmanaged stands and on northern aspects. Understory shrubs include broadleaf hardwoods as well as ceanothus in many areas with light grass intermixed.

Ignition Profile

Man caused fires and lightning are the most likely source of ignitions in this area. A major transmission line travels through the valley crossing over timbered areas. High wind events could potentially spark a fire from this line.

Landowners often burn roadside grass to open drainage systems, improve visibility and reduce mowing. Fires that are started in the grassland have the potential to spread to the sagebrush community and then into forested areas if left unattended. In most areas, fire spread would be slow due to the moderate to light ground fuels. Increased winds coming off the open valley; however, would severely increase the wildfire potential throughout the area.

4.4.2.3.15.2 Ingress-Egress

The primary access to High Valley is via the unimproved High Valley Road from Smith's Ferry. Travel time for vehicles is quite long. This road is very windy and narrow from Smith's Ferry over the pass to High Valley proper. This road would hamper rapid response to a major wildfire. Response from the west out of Gem County is similar. High Valley road travels over a pass between Valley and Gem counties. The road is narrow and windy making emergency response difficult and slow.

Most of the structures in the High Valley area are in private, gated subdivisions. The structures are nestled into the timber and along the valley at the timber interface. Some structures are located out in the open valley bottom. Roads to the structures and subdivisions are mostly privately owned with locked gates. Access to many structures is on narrow driveways with limited turn around areas to accommodate emergency vehicles.

4.4.2.3.15.3 Infrastructure

Idaho Power maintains a high-tension power line right-of-way that passes through the area. The transmission line passes over timberland and could be affected in the event of a wildfire. An underground telephone line travels along the High Valley road from Smiths Ferry. There is little potential that this line would be affected by a wildfire.

4.4.2.3.15.4 Fire Protection

There is no structural fire protection in High Valley. Wildland fire protection is split between IDL and SITPA. High Valley has an abundance of water resources available for fighting wildfire including streams, ponds, stock tanks and lakes.

4.4.2.3.15.5 Community Risk Assessment

The lack of structural fire protection and delayed response times due to the remote nature of High Valley results in a high risk to the area. Many of the homes have attempted to maintain a secluded character by retaining vegetation in the immediate vicinity of the homes. This results in narrow, overgrown driveways with poor access to individual homes and a general lack of defensible space around home sites.

4.4.2.3.15.6 Mitigation Activities

Expansion of district boundaries or creation of a new fire district in the Smith's Ferry-High Valley area to provide structural protection would be a first step in mitigating fire risk in the area. This should be a priority in the overall County Fire Mitigation Plan. In the absence of fire protection, homeowners need to take additional precautions in order to increase the defensibility of their homes and to provide safe travel routes.

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents within this geographic area must be made aware of the characteristics that increase interface risk in the area. Residents should be encouraged to work with local fire departments and fire management agencies within the county to complete individual homesite evaluations. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Home defensibility steps should be enacted based on the results of these evaluations.

4.4.2.3.16 Rural Community of Yellow Pine

4.4.2.3.16.1 Fire Potential

Fuels Assessment

Several small streams drain into the East Fork of the South Fork of the Salmon near this community; thus, there is a multitude of varying aspects and timber types surrounding the area. The low elevation south, southeast, and southwest aspects are generally populated by dry ponderosa pine and Douglas-fir, which supports fast-moving, intense wildfires. The low to mid-elevation north, northeast, and northwest aspects favored by cool, moist Douglas-fir and true fir habitats more commonly experience low intensity ground fires with occasional single tree torching in heavier fuel pockets. Finally, the higher elevations forest stands consisting of lodgepole, western larch, Englemann spruce, and a variety of other conifer species typically experience stand replacing, severe wildfires with high rates of tree mortality regardless of aspect. Fires in these fuel types tend to be high intensity, fast-moving ground and surface fires due to greater quantities of dead and down fuels. Crowning, spotting, and torching of individual trees also makes direct attack suppression efforts difficult and dangerous for firefighters. These fire behavior characteristics are significantly enhanced by steep, highly variable slopes and the potential for extreme weather conditions.

The gentler slope to the west of the community towards the river is primarily a mature ponderosa pine stand that has been commercially thinned to reduce the fire hazard. Since much of the slash from the harvest operation has been removed, this tends to support lower intensity, but frequent surface fires. This type of fire is much more easily controlled by suppression efforts.

Ignition Profile

Natural ignitions from lightning strikes are the primary source of starts in remote forest locations like Yellow Pine. The abundance of steep slopes, dry weather, and receptive fuels increases the probability of a lightning strike resulting in a large wildland fire.

The occurrence of man-caused fires is also high in the Yellow Pine area due to intense human activity, particularly recreational use. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources. Travel corridors are strongly correlated with fire starts; as discarded cigarettes, tire fires, and vehicle fires significantly increase the potential for fire starts. Lastly, heavy forest practices in the area increases the potential for accidental fire starts. Ignitions from land clearing, equipment, and debris burning can spark wildland fire.

Power line corridors can become a significant ignition concern, especially in extreme wind events. Branches or trees coming into contact with live wires could easily ignite nearby fuels.

Fire characteristics will depend on fuel types and moisture levels as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity, and strong winds could pose significant threat to life and property.

4.4.2.3.16.2 Ingress-Egress

The primary access into Yellow Pine is by Primary Forest Route 48 from McCall, which is a gravel, mostly one lane, road. Additional access can also be gained by Forest Route 674 from Warm Lake, Forest Route 413 from the Landmark Ranger Station, Forest Route 340 from Big Creek, or Forest Route 412 from Stibnite; however, these are generally unimproved roads that increase travel time significantly.

Emergency response from remote wildland fire suppression teams or from McCall or Cascade would be considerable simply due to the extreme distance and difficult access routes.

Forest fuels commonly abut roadways. It is likely that one or more of the escape routes would become impassable during a wildfire event. This is not only extremely hazardous for residents of Yellow Pine, but it will also slow the response and effectiveness of emergency equipment and personnel.

Most of the homes and structures in this area are near the community center; however, there are a few outliers in the surrounding area. These outlying homes are generally more difficult and dangerous for large vehicles to access due to inferior road construction. Many private driveways are single lane, dead ends that have no turnouts or turnaround areas.

4.4.2.3.16.3 Infrastructure

Above ground power lines provide electricity to the citizens of Yellow Pine. The power line corridors have generally been cleared of abutting timber and other fuels; however, these buffers need to be maintained regularly due to the high potential of sparks.

Three large gas tanks are currently located above ground within the community center. Burying these in a less hazardous area would significantly decrease the possibility of an explosion in the event of a wildfire.

Currently, there is only one surface water source providing residents of Yellow Pine with water. Some citizens have chosen to drill personal wells.

4.4.2.3.16.4 Fire Protection

Structural fire protection is provided by the Yellow Pine Rural Fire Department. The USDA Forest Service and the Idaho Department of Lands are responsible for wildland fire protection in this area; however, by agreement, the Forest Service maintains sole protection responsibilities. The East Fork of the Salmon River and Johnson Creek would be potential water resources near the community in the event of a fire.

4.4.2.3.16.5 Community Risk Assessment

The forested area in which the community of Yellow Pine sits has a high probability of experiencing a wildland fire. The conditions for potentially severe, high intensity fires such as heavy continuous fuels, steep slopes, and up canyon winds are all present. Furthermore, recreational activities and vehicle travel in the area increase potential ignition sources. The likelihood of a wildfire occurring and the remoteness of the community put Yellow Pine at high risk. The road conditions and distance from additional fire suppression resources in other communities limits their ability to respond quickly.

Under the auspices of the Idaho Department of Lands, citizens of Yellow Pine have taken measures to protect residents from the effects of wildfire. Thinning, pruning, and removing slash and debris from the ponderosa pine stand downslope of town significantly reduces the likelihood of an oncoming wildland fire travelling up the canyon and threatening residents. In addition, campfires in this area are strictly prohibited.

Most of the homes in the community have been built using wood siding and decking, which is unfavorable for protection against wildfire. Also, many homeowners stack firewood under decks or against structures. Homes built near the main street through town generally have an adequate defensible space; however, those nearer the perimeter are generally adjacent to or within heavier fuels. These are also the homes most at-risk to wildfire spreading from the forestlands into the community.

4.4.2.3.16.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics.

Also of vital importance is the accessibility of the home to emergency apparatus. If safety procedures cannot be followed, firefighting resources will not jeopardize lives to protect a structure. The current condition of escape routes and driveways in the Yellow Pine area present operational safety issues. In order to address this issue, residents should consider roadside treatment options.

The mitigation treatments administered by the Idaho Department of Lands along the west side of the community are a very positive proactive step towards protection from wildland fire. Treatment areas should be maintained periodically to preserve their effectiveness. Similar treatments around homes, campsites, and other high use areas would further reduce the risk of loss by fire.

In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Other specific activities are likely to include improvement of emergency water supplies in areas not served by hydrants and management of trees and vegetation along power line right-of-ways. Furthermore, building codes and standards for subdivision development should be expanded to single home construction as well.

4.4.2.3.17 Rural Community of Warm Lake

4.4.2.3.17.1 Fire Potential

Fuels Assessment

Warm Lake is fed by Warm Lake Creek and drains along with several other small streams into the South Fork of the Salmon River. The low to mid elevations with north and east aspects are generally populated by lodgepole pine habitat types. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter debris; however, slow burning ground fires with low flame lengths and occasional jackpot flare ups are common. The "dog-hair" lodgepole pine habitats among and surrounding the cabins generally experiences stand replacing fires, although at infrequent return intervals. An example of this can be seen by the mortality in the lodgepole pine stand caused by the recent fire along Forest Route 474 approximately 3 miles north of Warm Lake. Low to mid elevations with dry, open, southern aspects exhibiting ponderosa pine and Douglas-fir habitat types tend to support fast-moving, intense surface fires with occasional jackpots and torching of individual trees. Fires in the high elevation lodgepole pine and mixed true fir habitat types are typically higher intensity, fast-moving ground and surface fires regardless of aspect due to greater quantities of dead and down fuels. Crowning, spotting, and torching of individual trees also make direct attack suppression efforts difficult and dangerous for firefighters.

The USDA Forest Service maintains a small picnic area near the main Warm Lake Lodge and a camping area with bathroom facilities on the north side of the road on the north shore. The camping areas are mostly clear of timber and other fuels. There are only a few moderate slopes around the lake in the area in which homes have been built. Nevertheless, there are some steeper aspects rising from this small valley, particularly to the east. Dense lodgepole pine stands are dominant in the area surrounding Warm Lake. Most property owners have made attempts to keep these commonly small diameter trees near their homes in order to maintain an "outdoorsy" look.

Ignition Profile

Natural ignitions from lightning strikes and man-caused starts are equally responsible for wildfires in Warm Lake.

Natural ignitions from lightning strikes are the primary source of starts in remote forest locations like Warm Lake. The abundance of steep slopes, dry weather, and receptive fuels increases the probability of a lightning strike resulting in a large wildland fire.

The occurrence of man-caused fires is also high due to intense human activity, particularly recreational use. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are just a few of the countless potential human ignition sources.

Travel corridors are strongly correlated with fire starts; as discarded cigarettes, tire fires, and vehicle fires significantly increase the potential for fire starts. Lastly, forest practices in the area increases the potential for accidental fire starts. Ignitions from land clearing, equipment, and debris burning can spark wildland fire.

Power line corridors can become a significant ignition concern, especially in extreme wind events. Branches or trees coming into contact with live wires could easily ignite nearby fuels.

Fire characteristics will depend on fuel types and moisture levels as well as on weather conditions at the time of ignition. Fires during periods of drought with high temperatures, low humidity, and strong winds could pose a significant threat to life and property.

4.4.2.3.17.2 Ingress-Egress

The primary access into the summer community of Warm Lake is via Forest Route 22, otherwise known as the Warm Lake Road. This is a paved two lane highway characterized by moderate grades and several tight corners. Due to the intense vehicle use on this road and the proximity of high tension power lines, most of the hazardous fuels have been cleared from the roadway making it a relatively safe escape/access route.

Forest Route 674 from Yellow Pine and Forest Route 579 from Landmark Ranger Station also provide access to Warm Lake; however, these are less attractive escape routes. These roadways are typically more narrow, steep, and windy and are directly adjacent to forest fuels. Additionally, in the event of a wildfire, they may not immediately lead to a more safe area. It is also likely that one or more of these escape routes would become impassable in a wildland fire situation.

Forest Service suppression forces from the Landmark Ranger Station would be able to respond to an emergency relatively quickly; however, additional resources from Cascade, McCall, or other wildland fire protection agencies would be much slower due to the remoteness of the community.

Most of the homes and structures comprising Warm Lake are located on single lane roads that typically dead end near the lake shore. Much of these roadways are adjacent to dense forest stands with few turnouts or turnaround areas making access very difficult and dangerous for large emergency vehicles and personnel. It is likely that an aerial attack would be a much safer form of suppression due the condition of access routes and the ability to dip water from Warm Lake.

4.4.2.3.17.3 Infrastructure

Power is provided to structures in Warm Lake by high tension power lines. This corridor follows nearly the same path as Warm Lake Road. Timber and other fuels have been cleared away from wires and from the ground below the lines. These corridors need to be periodically maintained due to the increases potential of sparks.

There are four ground water sources providing structures and facilities in Warm Lake with water. Many seasonal cabins may not have running water facilities, while some may have drilled personal wells to gain access to water resources.

4.4.2.3.17.4 Fire Protection

There is no formal structural fire protection near Warm Lake; however, the USDA Forest Service provides wildland fire protection in the area. Warm Lake has uncomplicated access to water

resources and the large meadow at the junction of Warm Lake Road and Forest Route 474 could potentially serve as a staging area, helispot, or safety zone for firefighters.

4.4.2.3.17.5 Community Risk Assessment

The primary fire risk in Warm Lake is the abundance of small diameter timber adjacent to homes typically built with wood siding and decking. These homes are highly flammable and very difficult to protect in an emergency situation. Very intense recreational activity including the use of campfires and barbeques significantly increases the likelihood of an ignition. Additionally, many residents commonly drive ATV's, motorcycles, and other recreational type vehicles not only on the established road system, but also on a variety of trails and pathways. These vehicles and their associated fuels could easily cause sparks that ignite nearby fuel beds. A fire start in any part of the community could potentially threaten many residents and structures due to the lack of fuel breaks.

The Forest Service maintains two lodges and a small campground to accommodate the needs of summer residences and visitors. These areas have generally been cleared of hazardous fuels and campfires are restricted to escape proof fire pits. Proactive fire mitigation efforts such as this significantly reduce the risk of an ignition.

The forest habitat types in the surrounding area have a high probability of experiencing a wildland fire. The conditions for potentially severe, high intensity fires such as heavy continuous fuels, steep slopes, and relatively frequent summer lightning events are all present.

4.4.2.3.17.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics.

Also of vital importance is the accessibility of the home to emergency apparatus. If safety procedures cannot be followed, firefighting resources will not jeopardize lives to protect a structure. The current condition of escape routes and driveways in the Warm Lake area present operational safety issues. In order to address this issue, residents should consider roadside treatment options and have a predetermined emergency evacuation plan available.

The mitigation treatments administered by the Forest Service in the campground facility are a very positive proactive step towards protection from wildland fire. Treatment areas should be maintained periodically to preserve their effectiveness. Similar treatments around homes and other high use areas would further reduce the risk of loss by fire.

In many cases, homes' survivability can be greatly enhanced by following a few simple guidelines that reduce the ignitability of the home. "Living with Fire, A Guide for the Homeowner" is an excellent tool for educating homeowners as to the steps to take in order to create an effective defensible space. Residents of Valley County should be encouraged to work with local fire departments and fire management agencies to complete individual homesite evaluations. Home defensibility steps should be enacted based on the results of these evaluations. Other specific activities are likely to include improvement of building codes and campfire and trail restrictions.

The US Forest Service believes there is an essential need to build a bunkhouse at the USDA Forest Service Project Camp at Warm Lake. This would house a six-person fire hand crew and

related fuel reduction personnel. The Fire Crew is the first line of Initial Attack for the entire Urban Interface in the Warm Lake, Landmark, and Yellow Pine areas. Currently the Fire Crew is staying in trailers that the USDA Forest Service rents and moves into the area yearly.

4.4.2.3.18 Big Creek – Edwardsburg

4.4.2.3.18.1 Fire Potential

Fuels Assessment

Big Creek – Edwardsburg is located along the west side of the Frank Church- River of No Return Wilderness, in Valley County at T.21N, R.09 E, Sections 26 and 35 and T. 20 N, R.09 E, Sections 2 and 11. (Latitude 45 7 46, longitude 115 19 17). There are approximately 24 structures within the Edwardsburg community consisting of residences, and various outbuildings as sheds, and barns. Big Creek drains through the community north and then east into the wilderness. Lodgepole pine, mixed fir, Douglas-fir and sub alpine fir habitat types populate the surrounding areas to the west. Fuel Model 8, 9 and 10 would represent areas in and around the area. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter. This area is represented as a Fire Regime 5, lethal, stand replacement in a Condition Class representation of 1 (historical level).

Big Creek is a USDA Forest Service owned and operated facility that acts as a major public portal to the FCRONR Wilderness. There are approximately ten structures in this facility including living quarters, barns, office, storage, outbuildings and gas house. The area has a partially completed fuel break around the area. This fuel break constructed in 2003 is incomplete and lends the structures to be at risk to fire.

Natural ignitions from lightning are the general cause of wildfire in the surrounding area. The Big Creek – Edwardsburg area has been protected from wildfire during 2000 and 2003. These fire threats were from lightning fires from the wilderness. Fire suppression efforts outside of and adjacent to the populated areas have been successfully suppressed.

This area will continue to be threatened from the south/south west by large fires and eventual failure of initial attack suppression forces. Large fires within the past eight years are Indian Fire (2000), Marble Fire (2003), and Diamond Fire (2000). The Federal property adjacent to the area has not received any fuel treatment work that would help protect the area from a large fire.

The community of Edwardsburg is spread over a large area. Treatments within the community have occurred each time structure protection for the community due to large fires. Suppression forces have completed thinning and pruning along roads and onto private properties. This treatment would be partially effective if resources were in position when the fire threat arrived.

4.4.2.3.18.2 Ingress-Egress

The primary access into the Big Creek- Edwardsburg area is via Forest Road 340, which leads approximately 25 miles from the townsite of Yellowpine, Idaho. This road provides a good route of escape if the fire is towards the north/northwest of Edwardsburg. Forest Road 340 also can provide an escape route. This road is not desirable for use as an escape route due to low road maintenance and slow movement. This road will lead to the South Fork Guard Station and eventually to Warren, Idaho. If these roads are cut off due to fire activity, areas best equipped for surviving a large fire would be the Big Creek Air Strip and other areas identified in the Big Creek Evacuation Plan.

4.4.2.3.18.3 Infrastructure

There are no commercial power lines or electricity within the area. Individual generators or natural gas provides power and lighting

4.4.2.3.18.4 Fire Protection

There is no formal structural fire protection for Big Creek or Edwardsburg. The USDA Forest Service provides wild land fire protection in the area.

4.4.2.3.18.5 Community Risk Assessment

The primary risk in Big Creek – Edwardsburg is from the untreated surrounding timbered areas adjacent to the structures. A significant number of residences have received fuel treatment adjacent to the structures during the 2000 and 2003 wildfires seasons. This treatment consisted of thinning, pruning, removal and chipping of the slash alongside of roadways and residences. This was only completed on property with permission from the landowners

The forest habitat types in the surrounding area have a high probability of experiencing a large (100 acres plus) wild land fire. The conditions for potentially severe, high intensity fires as heavy continuous fuels, steep slopes and frequent summer lightning events are all present.

4.4.2.3.18.6 Mitigation Activities

Effective mitigation strategies begin with public awareness campaigns designed to educate homeowners of the risks associated with living in a flammable environment. Residents of Valley County must be made aware that home defensibility starts with the home. Once a fire has started and is moving toward homes or other valued resources, the probability of that structure surviving is largely dependent on the structural and landscaping characteristics.

Also of vital importance is the accessibility of the home to emergency apparatus. If safety procedures cannot be followed, firefighting resources will not jeopardize lives to protect a structure. The current condition of escape routes and driveways in the Warm Lake area present operational safety issues. In order to address this issue, residents should consider roadside treatment options and have a predetermined emergency evacuation plan available.

Mitigation treatments administered by the Forest Service during the wildfire years of 2000 and 2003 were helpful as starting point for fire protection of structures within the community of Edwardsburg and Big Creek. Further fuels reduction treatments remain to be assessed and completed within the private sections. Forest properties need to be evaluated for fuels reduction treatments around the entire private area. These areas need to include removal and thinning of the dense area to reduce the threat of crown fire from entering the community. These treatment areas need to reduce the fire behavior of the fuels from maintaining an active crown fire and reduce spotting distances, allowing equipment and personnel an opportunity to suppress the ground fire prior to reaching the community.

4.4.2.3.19 Trails End Subdivision (formerly known as Shirley McClain Ranch)

4.4.2.3.19.1 Fuels Assessment

Trails End Subdivision is located along the South Fork of the Salmon River at T21N, R07E, Section 2 (Latitude 45 11 14, Longitude 115 33 58). There are approximately 35 structures located here. They consist of approximately 13 residences, barns and various out buildings. Within the Trails end subdivision is another smaller subdivision named Trillium. It currently has no structures. Ponderosa pine and dry Douglas-fir habitat types populate the surrounding areas of this subdivision. Fuel Model 2, 8, and some 9 would represent areas in and around the area. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter. This area is represented as a Fire Regime 1, non- lethal, in a Condition Class 1 status. The Chicken Fire of 1994 threatened this area. The fire burned four small cabins and moved past the subdivision on both sides of the South Fork Salmon River.

Natural ignitions from lightning are the general cause of wildfire in the surrounding area. Fire suppression efforts on adjacent Federal property area have been successfully suppressed.

This area will be threatened from the south/southwest by large fires and eventual failure of initial attack suppression forces. Large fires within the past eight years are Nick Peak Fire (2000), and Chicken Peak (1994). The Federal property adjacent to the area has not received any fuel treatment work that would help protect the area from a large fire. The locations of past large fires were stand replacing and will create a large fuel break and lessen fire intensity and spread towards the subdivision.

4.4.2.3.19.2 Ingress-Egress

The primary access into the Trail Ends Subdivision is via Forest Road 340, from the town of Warren, Idaho. Secondary access would be from Edwardsburg, Idaho. The access from Warren provides a good route of escape if the fire moving from the south/southwest towards the ranch. Forest Road 340 also can provide an escape route up and over Elk Creek Summit into Edwardsburg. This road is not desirable for use as an escape route due to low road maintenance and slow movement.

4.4.2.3.19.3 Infrastructure

There are no commercial power lines or electricity within the area. Individual generators or natural gas provides power and lighting

4.4.2.3.19.4 Fire Protection

There is no formal structural fire protection for the Trails End Subdivision. The USDA Forest Service provides wild land fire protection in the area.

4.4.2.3.19.5 Community Risk Assessment

The primary risk to the Trails End Subdivision is from the remaining, untreated timbered areas adjacent to the structures on both private and Federal properties No known fuels reduction projects have been completed around this property.

The forest habitat types in the surrounding area still have a high probability of experiencing a large (100 acres plus) wild land fire. The conditions for potentially severe, high intensity fires as

heavy fuels, steep slopes, frequent summer lightning events, and light, dry fuels as grass and brush are all present.

4.4.2.3.19.6 Mitigation Activities

No known mitigation measures. A structure protection plan for the structures associated with this property needs to be completed or revised and placed within the Forest Service files for future use.

4.4.2.3.20 Taylor Creek Ranch

Taylor Creek Ranch was burned around during the summer of 2000 by the Diamond Fire. It does not need any work within the Forest boundary.

4.4.2.3.21 Elk Creek Ranch

4.4.2.3.21.1 Fire Potential

Fuels Assessment

Elk Creek Ranch is located on the mouth of Elk Creek where it flows into the South Fork of the Salmon River. There are approximately five structures located here. They consist of one residence, a barn and various out buildings Legal location for this ranch is T21 N, R07E, Section 15 (Latitude 44 22 28, Longitude 115 36 18). Ponderosa pine and dry Douglas fir habitat types populate the surrounding areas of this ranch. Fuel Model 2, 8, and some 9 would represent areas in and around the area. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter. This area is represented as a Fire Regime 1, non- lethal, in a Condition Class 2 status. The wild fires of 1994 and 2000 did not burn onto this area.

Natural ignitions from lightning are the general cause of wildfire in the surrounding area. Fire suppression efforts on adjacent Federal property area have been successfully suppressed.

This area will be threatened from the south/southwest by large fires and eventual failure of initial attack suppression forces. Large fires within the past eight years are Nick Peak Fire (2000), and Chicken Peak (1994). The Federal property adjacent to the area has not received any fuel treatment work that would help protect the area from a large fire.

4.4.2.3.21.2 Ingress-Egress

The primary access into the Elk Creek Ranch is via Forest Road 340, from the town of Warren, Idaho. Secondary access would be from Edwardsburg, Idaho. The access from Warren provides a good route of escape if the fire moving from the south/southwest towards the ranch. Forest Road 340 also can provide an escape route up and over Elk Creek Summit into Edwardsburg. This road is not desirable for use as an escape route due to low road maintenance and slow movement

4.4.2.3.21.3 Infrastructure

There are no commercial power lines or electricity within the area. Individual generators or natural gas provides power and lighting

4.4.2.3.21.4 Fire Protection

There is no formal structural fire protection for the Elk Creek Ranch. The USDA Forest Service provides wild land fire protection in the area.

4.4.2.3.21.5 Community Risk Assessment

The primary risk to the Elk Creek Ranch is from the untreated surrounding timbered areas adjacent to the structures on both private and Federal properties No known fuels reduction projects have been completed around this property.

The forest habitat types in the surrounding area have a high probability of experiencing a large (100 acres plus) wild land fire. The conditions for potentially severe, high intensity fires as heavy continuous fuels, steep slopes, frequent summer lightning events, and light, dry fuels as grass and brush are all present.

4.4.2.3.21.6 Mitigation Activities

No known mitigation measures. A structure protection plan for the structures associated with this property needs to be completed and placed within the Forest Service files for future use.

4.4.2.3.22 Yellow Jacket Ranch

4.4.2.3.22.1 Fire Potential

Fuels Assessment

Yellow Jacket Ranch is located approximately two miles up Elk Creek Road from the South Fork of the Salmon River. There are approximately six structures located here. They consist of one residence, a barn and various out buildings Legal location for this ranch is T21 N, R07E, Sections 13,14, 23 and 24 (Latitude 45 09 30, Longitude 115 32 44). Ponderosa pine and dry Douglas fir habitat types populate the surrounding areas of this ranch. Fuel Model 2, 8, and some 9 would represent areas in and around the area. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter. This area is represented as a Fire Regime 1, non- lethal, in a Condition Class 2 status. The wild fires of 1994 and 2000 did not burn onto this area.

Natural ignitions from lightning are the general cause of wildfire in the surrounding area. Fire suppression efforts on adjacent Federal property area have been successfully suppressed.

This area will be threatened from the south/southwest by large fires and eventual failure of initial attack suppression forces. Large fires within the past eight years are Nick Peak Fire (2000), and Chicken Peak (1994). The Federal property adjacent to the area has not received any fuel treatment work that would help protect the area from a large fire.

4.4.2.3.22.2 Ingress-Egress

The primary access into the Elk Creek Ranch is via Forest Road 340, from the town of Warren, Idaho. Secondary access would be from Edwardsburg, Idaho. The access from Warren provides a good route of escape if the fire moving from the south/southwest towards the ranch. Forest Road 340 also can provide an escape route up and over Elk Creek Summit into Edwardsburg. This road is not desirable for use as an escape route due to low road maintenance and slow movement.

4.4.2.3.22.3 Infrastructure

There are no commercial power lines or electricity within the area. Individual generators or natural gas provides power and lighting

4.4.2.3.22.4 Fire Protection

There is no formal structural fire protection for the Elk Creek Ranch. The USDA Forest Service provides wild land fire protection in the area.

4.4.2.3.22.5 Community Risk Assessment

The primary risk to the Elk Creek Ranch is from the untreated surrounding timbered areas adjacent to the structures on both private and Federal properties No known fuels reduction projects have been completed around this property.

The forest habitat types in the surrounding area have a high probability of experiencing a large (100 acres plus) wild land fire. The conditions for potentially severe, high intensity fires as both heavy continuous fuels, steep slopes, frequent summer lightning events, and light, dry fuels as grass and brush are all present.

4.4.2.3.22.6 Mitigation Activities

No known mitigation measures. A structure protection plan for the structures associated with this property needs to be completed and placed within the Forest Service files for future use.

4.4.2.3.23 Lake Fork Guard Station

4.4.2.3.23.1 Fire Potential

Fuels Assessment

Lake Fork Guard Station is located approximately nine miles east of McCall Idaho on Forest Road 412 (Lick Creek Road) at T.18N, R04 E, Section 3 (Latitude 44 55 35, Longitude 115 57 12). There are approximately five structures located here. They consist of one office, a bunkhouse and various out. Ponderosa pine, grand fir, and dry Douglas fir habitat types populate the surrounding areas of Forest Service Administration site.. Fuel Model 8, 9 and some 10 would represent the area. Fires in these fuel types vary depending on the accumulation of dead and down wood and litter. This area is represented as a Fire Regime 3, mixed severity in a Condition Class 2 status. The wild fires of 1994 did not burn onto this area.

Natural ignitions from lightning are the general cause of wildfire in the surrounding area. Fire suppression efforts on adjacent Federal property area have been successfully suppressed.

This area will be threatened from the south/southwest by large fires and eventual failure of initial attack suppression forces. Large fires within the past eight years are Nick Peak Fire (2000), Corral/Blackwell (1994) and North Fork Lick (1994). The property adjacent to the area has not received any fuel treatment work that would help protect the area from a large fire.

4.4.2.3.23.2 Ingress-Egress

The primary access into the Elk Creek Ranch is via Forest Road 410, from the town of McCall, Idaho. Secondary access would be from Road 412 North. The access from McCall provides a

good route of escape to the north if the fire moving from the south/southwest towards the Guard Station. Forest Road 410 also can provide an escape route up and over Lick Creek Summit into the South Fork Salmon River drainage. This road is desirable for use as an escape route due to past wildfire burned areas from 1994.

4.4.2.3.23.3 Infrastructure

There are no commercial power lines or electricity within the area. Individual generators or natural gas provides power and lighting

4.4.2.3.23.4 Fire Protection

There is no formal structural fire protection for the Lake Fork Guard Station. The USDA Forest Service provides wild land fire protection in the area.

4.4.2.3.23.5 Community Risk Assessment

The primary risk to the Lake Fork Guard Station is from the untreated surrounding timbered areas adjacent to the structures on both private and Federal properties. No known fuels reduction projects have been completed around this property.

The forest habitat types in the surrounding area have a high probability of experiencing a large (100 acres plus) wild land fire. The conditions for potentially severe, high intensity fires as heavy continuous fuels, steep slopes, and frequent summer lightning events.

4.4.2.3.23.6 Mitigation Activities

No known mitigation measures. A structure protection plan for the structures associated with this property needs to be completed and placed within the Forest Service files for future use.

4.5 Fire Fighting Resources and Capabilities

The Fire Fighting Resources and Capabilities information provided in this section (4.5) is a summary of information provided by the Valley Interagency Interface Group (VIIG). VIIG is a cooperating interagency group of Valley County fire suppression entities designed to cooperate with and assist each other and the Group in the planning, recommendation, development, and implementation of programs and projects addressing wildland/urban interface issues in Valley County. Membership in the Valley Interagency Interface Group is open to any entity having land ownership, management, or administrative jurisdiction in Valley County, Idaho. VIIG has developed the Valley Interagency Interface Group Operations Plan, which provides guidance for the Valley Interagency Interface Group in the cooperative management of wildland/urban mitigation, preparation, response and recovery activities in Valley County. As an emergency plan for the county it supports, and is a supplement to, the Valley County Emergency Operations Plan.

Valley Interagency Interface Group Participants include:

- Valley County
- City of McCall
- City of Donnelly

- City of Cascade
- Southern Idaho Timber Protective Association
- McCall Fire Protection District
- Donnelly Rural Fire Protection District
- Cascade Rural Fire Protection District
- Idaho Bureau of Disaster Services
- United States Department of Interior - Bureau of Reclamation
- United States Department of Agriculture - Forest Service - Boise National Forest
- United States Department of Agriculture - Forest Service - Payette National Forest
- American Red Cross

It is recognized that each agency has a primary responsibility to its own governing body, and each agency agrees to send resources to each others aid as circumstances may permit. Formal written agreements or contracts, establishing or in support of the VIIG, or between two or more members of the VIIG are encouraged.

Goals of VIIG:

1. The Group serves to advise the cooperating entities in matters related to the wildland/urban interface.
2. The Group will, through public and agency participation, develop, prioritize, and address wildland/urban interface issues facing the citizens of Valley County.
3. The Group will, through public and agency participation, develop plans and recommend actions for management of identified issues and make recommendations to appropriate levels of government.
4. The Group will promote the development of citizen awareness of wildland/urban interface issues and initiatives.
5. Where plans and recommended actions developed by the Group involve owners and operators of private land and require the assistance of any cooperating entity, the Group may pursue the development of agreements among those owners, operators, and the cooperating entities, in order to implement said plans and/or actions in a timely manner.

4.5.1 Wildland Fire Districts

4.5.1.1 Southern Idaho Timber Protective Association

McCall Headquarters:
Southern Idaho Timber Protective Association
555 Deinhard Lane
McCall, ID 83638
208-634-2268 (links to radio/telephone interface number 634-3030 after hours).

Cascade Field Office:
Southern Idaho Timber Protective Association
810 S. Main
Cascade, ID 83611

208-382-4105

Association Description:

The Southern Idaho Timber Protective Association (SITPA) is a private, non-profit timber protective association that has specialized in wildland fire suppression and hazard reduction services for the past 100 years. Through a formal agreement with the state of Idaho, SITPA is responsible for wildland fire protection on 565,060 acres of private, county, state, and federal forest and range lands within its defined fire protection boundary. SITPA operates two facilities, the headquarters in McCall and a field office/warehouse in Cascade, and staffs three fire lookouts (Brundage Mountain, No Business, and Tripod Lookouts). SITPA employs a total of 23 permanent, permanent part-time and seasonal employees.

Current Resources:

McCall

- Engine 1, Type VI, 1995 Ford F-250, 4x4, 200 gal., 50 gpm
- Engine 3, Type VI, 1970 Gamma Gote ATV, 6x6, 200 gal., 50 gpm
- Engine 10, Type VI, 1997 Ford F-350, 4x4, 300 gal., 50 gpm
- Engine 14, Type VI, 1988 F-350, 4x4, 300 gal., 50 gpm
- Engine 16, Type VI, 1970 Gamma Gote ATV, 6x6, 200 gal., 50 gpm
- Water Tender 27, Type II, 1975 Jeep 5 ton, 6x6, 2500 gal., 264 gpm
- Dozer 46, Type V, 1991 John Deere 550G
- Excavator 52, 2001 CAT 312C
- Transport 40, 1990 Kenworth T800 tractor with trailer

* The Idaho Department of Lands is currently in the process of negotiating a contract to station two Single Engine Air Tankers (SEATS) at McCall in 2004. If successful, the aircraft will be two AT-802 Air Tractors, each with an 800 gallon capacity.

Cascade

- Engine 9, Type VI, 1997 Ford F-350, 4x4, 300 gal., 50 gpm
- Engine 15, Type VI, 1988 Ford F-350, 4x4, 300 gal., 50 gpm
- Engine 17, Type VI, 1970 Gamma Gote ATV, 6x6, 200 gal., 50 gpm
- Engine 22, Type VI, 1997 Ford F-250, 4x4, 200 gal., 50 gpm
- Water Tender 26, Type III, 1970 American General, 6x6, 1500 gal., 138 gpm
- Dozer 48, Type V, 1994 CAT D4C
- Excavator 51, 1997 CAT 312B
- Transport 39, 1980 Astro tractor with trailer

Mutual Aid Agreements:

As an extension of their existing agreement, SITPA functions as an agent of the Idaho Department of Lands (IDL) providing wildland fire protection for the Payette Lakes Supervisory Area and portions of the Southwest Idaho Supervisory Area. In addition, SITPA as an agent of IDL is party to the statewide Cooperative Fire Protection Agreement between USDI-BLM (Idaho), USDI-NPS (Pacific West Field Area), USDI-BIA (Portland Area), USDI-FWS (Pacific Region), USDA-FS (Intermountain and Northern Regions) and IDL. SITPA also functions as an agent of IDL in executing its Cooperative Fire Protection Agreement between USDI-BOR (Pacific Northwest Region) and IDL. In addition, IDL/SITPA has entered into mutual assistance agreements with Cascade Rural Fire Department, Donnelly Rural Fire Department, McCall Fire Protection District, and New Meadows Fire Department for wildland fire protection.

Largest Problem Areas:

Multiple subdivisions throughout SITPA's protection area where people and homes are potentially threatened by wildland fire are the highest concern. Continued population growth and development characterized by an urban population moving to a previously rural environment and seeking to maintain "wilderness" characteristics. The high numbers of part time residents make it difficult to reach homeowners with an effective wildland fire education program.

Resource Needs:

1. Secure regular funding to staff two initial attack engines at Cascade and meet the NWCG staffing standard of three people per engine. Currently the single engine is staffed with two firefighters. Cost: Add four firefighters for 5 month season at $8,900 per firefighter – Total: $35,600.
2. Secure regular funding for two additional firefighters at McCall to meet NWCG staffing standard of three people per initial attack engine. Cost: Add two firefighters for 5 month season at $8,900 per firefighter – Total: $17,800.
3. Secure funding to replace aging Engines 14 and 15 (Type VI) and meet current NWCG standards. Engines currently must be downloaded due to weight restrictions on vehicle chassis. Cost: $98,000.
4. Upgrade/replace Water Tenders 26 and 27. Both are currently serviceable, but both are mounted on 29 and 34 year old Federal Excess Property military truck chassis. Cost: Federal Excess Property.

4.5.1.2 Payette National Forest

Available Resources:

- Engine 1-1, Type IV 4x4 750 gallons (Council)
- Engine 1-2, Type VI 4x4 300 gallons (Council)
- Engine 2-1, Type IV 4x4 750 gallons (Weiser)
- Engine 2-2, Type VI 4x4 300 gallons (Weiser)
- Engine 3-1, Type IV 2x4 750 gallons (New Meadows)
- Water Tender 3, Type II 2600 gallons (New Meadows)
- Engine 4-1, Type IV 4x4 750 gallons (McCall)
- Engine 4-2, Type VI 4x4 300 gallons (McCall)
- Helicopter, Type III w/ 16 Rappellers (Krassell)
- Helicopter 69H, Type II Bell 205++ w/ 15 Rappellers (Price Valley)
- Helicopter, Type II w/ 10 Rappellers (Price Valley)
- Jumper 4-1, Twin Otter w/ 9 Smokejumpers (McCall)
- Jumper 4-2, Turbine DC-3 w/ 8 Smokejumpers (McCall)
- Lead 4-7, Beach Baron (McCall)
- Air Attack, Type II Cessna 206 (McCall)
- Air Attack, Type II Cessna 206 (McCall)
- Detection/Recon, Cessna 206 type (5-7 aircraft) (McCall)
- Pumps-Hose-Radios-misc-Firefighting Equipment, Payette Warehouse (McCall)

4.5.1.3 Boise National Forest

Available Resources – North Zone:

- AFMO Battalion 4, T3 IC w 4x4 (Cascade)
- Crew 41, 6 person hand crew (Warm Lake)
- Patrol 41, 150 gallon Patrol 4x4/FINV (Cascade)
- Engine 42, Type IV 500 gallon 4x2 (Cascade)
- FMO Division 6, T3 IC w/ 4x4 (Garden Valley)
- AFMO Battalion 6, T3 IC w/ 4x4 (Garden Valley)
- Engine 61, Type IV 750 gallon 4x4 (Garden Valley)
- Garden Valley Helitack, T3 Helicopter w/ 12 Rappellers (Garden Valley)
- Boise Hotshots, T1 Crew w/ 20 (Garden Valley)
- AFMO Battalion 5, T3 IC w/ 4x4 (Lowman)
- Engine 51, Type IV 750 gallon 4x4 (Lowman)
- Patrol 51, 75 gallon Patrol 4x4 FINV (Lowman)
- Crew 5, T2 Crew w/ 20

Available Resources – South Zone:

- AFMO Battalion 3, T3 IC w/ 4x4 (Idaho City)
- Engine 31, Type IV 750 gallon 4x4 (Idaho City)
- Patrol 31, 150 gallon Patrol 4x4 (Idaho City)
- Idaho City Hotshots, T1 Crew w/ 20 (Idaho City)
- Crew 3, T2 Crew w/ 20 (Idaho City)
- FMO Division 1, T3 IC w/ 4x4 (Boise)
- AFMO Battalion 1, T3 IC w/ 4x4 (Mountain Home)
- Engine 11, Type IV 750 gallon 4x4 (Lester Creek)
- Engine 21, Type IV 750 gallon 4x4 (Lucky Peak)
- Crew 11, 6 person hand crew (Lester Creek)
- Patrol 11, 150 Patrol 4x4 FINV (Lucky Peak)
- Lucky Peak Helitack, T2 Helicopter w/ 12 Rappellers (Lucky Peak)
- Air Attack (2), T1 and T2 Air Attack (Boise)
- Air Tanker, T2 Air Tanker (Boise)

4.5.2 Rural Fire Districts

4.5.2.1 McCall Fire Protection District

Available Resources:

- Engine 3, International 200 gallon
- Engine 4, GMC 350 gallon
- Engine 7, Mack 500 gallon
- Engine 8, Mack 500 gallon
- Engine 11, Pierce 750 gallon
- Water Tender 1, International 3000 gallon
- Fire Boat, Pumping capabilities 250 GPM
- EMS 01, Ford ISL Ambulance
- EMS 02, Ford ISL Ambulance
- EMS 03, Ford ISL Ambulance

***McCall Fire and EMS have trained Rock Rescue personnel and an eight member Dive team.*

Needed Resources:

- 2000 gallon Tactical Water Tender with 500 gpm pump
- Upgraded Personal Protective Equipment
- Additional drafting locations around Payette Lake (dry hydrants and/or self-filling tanks)

4.5.2.2 Donnelly Rural Fire Protection District

Available Resources:

- Pick-up, Ford 2 ton 4x4
- Engine, Ford ¾ ton 200 gallons
- Engine, International KB12 500 gallons
- Engine, American Lafrance 300 gallons
- Water Tender, Ford 1500 gallons
- Ambulance, 1994 Chevrolet
- Support Vehicle, Light Plant-Back Boards-Medic.-Extrication & Rescue

4.5.2.3 Cascade Rural Fire District and EMS

James Hass, Chief
208-382-3200

Available Resources:

- Engine 1, Structure Engine 1000 gallon (Clear Creek #2)
- Engine 2, 4x4 Structure Engine 1000 galllon (Cascade #1)
- Engine 3, Structure 250 gallon (West Mountain #3)
- Water Tender 1, 6x6 1000 gallon (Cascade #1)
- Water Tender 2, 6x6 1000 gallon (West Mountain #3)
- Water Tender 3, 4x2 1400 gallon (Clear Creek #2)
- Water Tender 4, White 4000 gallon (Cascade #1)
- Rescue 1, 4x4 300 gallon w/ dry chem. . . (Cascade #1)
- Rescue 2, ¾ ton Ford 4x4 (support) (Cascade #1)
- Sled 1, Arctic Cat Snowmobile (Cascade #1)
- Medic 1, Type II 4x4 Ambulance (Cascade #1)
- Medic 2, Type II 4x4 Ambulance (Cascade #1)
- Medic 3, Type II 4x4 Ambulance (Smith's Ferry)

Needed Resources:

- Small 4x4 Brush Trucks
- Brush Fire Fighting Equipment (foam application equipment, hand tools)
- Fold-a-Tanks
- Education Program for homeowners in fire district
- Upgraded Personal Protective Equipment
- Increased Firefighter Training

4.5.2.4 Cascade City Fire Department

Available Resources:

- Engine 182, Structure 500 gallon
- Engine 183, Structure 750 gallon
- Engine 185, Structure/Interface 885 gallon

Needed Resources:

- Brush Fire Fighting Equipment (foam application equipment, small portable water pumps, handtools)
- Small 4x4 Brush Trucks
- Installation of water supply systems in subdivisions that are at high risk (hydrants and/or large water storage tanks)
- Upgraded Personal Protective Equipment
- Increased Firefighter Training

4.6 Issues Facing Valley County Fire Protection

4.6.1 Persistent Rapid Growth

Growth will continue to present the greatest challenge to fire management in the urban interface over the long term. The dramatic increase in demand for second and seasonal homes throughout Valley County has resulted in significant changes in land use patterns. Many agricultural lands and private non-industrial forest lands have been sold and subdivided over the last few decades, pushing residential development further into the timberlands. This trend will continue into the future, as forestlands owned and actively managed by Boise Corporation are sold for real estate development. This will have a dramatic effect on the ability of emergency resources to maintain current levels of fire protection without considerable increases in funding for equipment, personnel, and training. Indeed, most emergency response resources in Valley County are already at a critical threshold. Further increases in protection responsibility will come at the expense of preparedness, as emergency resources are increasingly spread over an expanding protection area.

4.6.2 Accessibility

Fire Chiefs throughout the County have identified home accessibility issues as a primary concern in Valley County. It appears as through many homes and driveways have been constructed without regard to access requirements of large emergency vehicles. Lack of accessibility precludes engagement by suppression resources. Many homes within fire protection districts in Valley County effectively have no fire protection simply because access is not possible or is potentially dangerous. Enforcement of Building Codes, including road and driveway construction standards for fire apparatus established by the International Fire Code would prevent accessibility issues in new developments.

4.6.3 Seasonal residents

Many developments in Valley County contain a significant number of part time residents and second home landowners (estimated at 80% of the county's homeowners). This trend impairs the ability of suppression personnel to contact landowners about concerns or emergencies

affecting their property. Additionally, education programs designed to relay information regarding fire mitigation and safety have difficulty reaching seasonal residents. In many cases, these residents want to maintain an "outdoorsy" look around their home or cabin, but are unaware or are unconcerned with the fire risk associated with these fuels.

4.6.4 Creation of Smith's Ferry Fire District

Currently, the community of Smith's Ferry and homes in the surrounding area including many of those in the growing High Valley residential development are unprotected by any formal structural fire protection district. The Southern Idaho Timber Protective Association and the USDA Forest Service provide wildland fire protection; however, response time for emergency personnel from Cascade or Boise would be relatively slow. Due to the combination of timber and rangelands, a wildfire could potentially spread to residential areas before suppression resources arrived. Communities and private landowners need to take action to create a new fire district in order to provide fire protection resources and personnel to the citizens of Smith's Ferry and the surrounding area.

4.7 Current Wildfire Mitigation Activities in Valley County

4.7.1 Payette Lake Vicinity Timber Sales

There are currently several Idaho Department of Lands timber sales slated in the Payette Lake and city of McCall vicinity. These sales are designed to reduce fuel loading and unhealthy forest conditions; thus, decreasing the potential threat of wildfire. In particular, the McCall Salvage Sale, Eastside Timber Sale, Narrows Timber Sale, and the Falldust Timber Sale will include harvest practices that result in much of the accumulated slash being concentrated near the landings where it can be easily piled and burned when conditions are safe. Additionally, there will be designated Fuel Reduction Zones, which consist of a 100 foot buffer along the perimeter of the sale in areas adjacent to or nearby roads or structures. Within these zones fuels will be further reduced by machine piling the slash and burning the piles when conditions are safe. Sales not specifically mentioned have had forest and hazard management activities accomplished to improve forest health and minimize the threat of a major wildfire event according to the rules and regulations of the Idaho Forest Practices Act.

4.7.2 Yellow Pine Fuels Reduction Project

The community of Yellow Pine received a (HFT) federal grant in 2001. The purpose of the grant was to reduce natural fuels on private land within the townsite. Under the auspices of the Idaho Department of Lands, a total of 331 acres were treated by various methods including thinning, pruning, underburning, and pile burning. The guidelines for pruning varied depending on the presence of structures. Most of the leave stands after thinning had trees spaced approximately 12 to 15 feet apart. In addition to the private land, the Boise and Payette National Forests did some thinning and pruning to provide shaded fuel breaks on their lands around parts of the townsite.

4.7.3 Big Creek – Edwardsburg Fuels Reduction Project

The Payette National Forest, Krassel Ranger District is currently in the planning stages of conducting a fuel reduction project on federal lands surrounding the communities of Big Creek and Edwardsburg and nearby rural ranches. The goal of the project is to create a fuel break approximately ¼ mile wide along private property boundaries by removing hazardous fuels. Work within this WUI area will require collaboration with State, private, and County landowners.

The Big Creek – Edwardsburg area has been repeatedly threatened by large wildfires. This project is intended to reduce the cost of suppression efforts by mitigating the fire risk.

4.7.4 Ponderosa State Park Fuel Reduction Projects

The Ponderosa State Park has considerable issues with fire and the wildland urban interface. Not only does the Park receive a high concentration of recreational use, it is also characterized by fire dependent forest habitat types. In addition to the significant number of recreational developments and structures throughout both the Peninsula and North Beach Units, there are several housing developments nearby that would be in danger in the event of a fire within park boundaries. Officials at Ponderosa State Park have conducted a few small scale thinning and pruning operations designed to reduce the fuel loading and subsequent fire risk around developed or high risk areas. Their goal is to increase these operations to include a greater portion of the timbered areas within the park and to introduce prescribed fire into fire starved ecosystems. High use areas are frequently cleaned and maintained to reduce the risk of accidental ignition. Strict regulations on campfire and off-road vehicle use are also enforced.

4.7.5 USDA Forest Service WUI Projects

The Payette National Forest and the Boise National Forest administer the vast majority of forestlands in Valley County. Both National Forests are playing an active role in reducing fuel loading within wildland urban interface areas. Their primary goal is to reduce hazardous fuels while improving forest health. Decreased fuel loading on public forestlands adjacent to structures or infrastructure will create a defensible space and promote firefighter and public safety. Additionally, these management activities will benefit forest resources and provide economic opportunities. Many of the most recent and current projects are focused on reducing the fire risk near the rural communities of Yellow Pine, Landmark, and High Valley or around new developments within the WUI. Heavily used recreational areas and road corridors are also targeted for treatment.

The Payette and Boise national Forests have both been involved with the use of prescribed fire within the South Fork Salmon River, East Fork of the South Fork Salmon River, Johnson Creek and Warm Lake areas.

These large scale prescribed burns were begun in the late 1980's and are being continued presently. These burns have targeted the ponderosa pine stands to reduce natural fuels accumulations while maintaining the Ponderosa Pine ecosystem. These burns have been performed with the support of the Idaho State Fish and Wildlife Department and Rocky Mountain Elk Foundation for improvement of the winter range area within the South Fork drainage.

There have been approximately 30,000 acres burned by both forest within these areas. The most recent burns were Six Bit (Boise, 2000 acres) and Parks (Payette, 2500 acres). Additional prescribed burns are planned within the East Fork South Fork Salmon River, South Fork Salmon River and Johnson Creek drainages.

Table 4.2. US Forest Service, Boise National Forest, Cascade Ranger District Past WUI Projects: 1996-2004

Date	Project Name	Acres	Legal Location	Treatment Type	Community Protected
1996	Warm Lake Creek HF	580	T15N, R7E, Sec. 7	RX Fire	Warm Lake Summer Homes
1997	Reeves Creek HF	1,900	T16N, R7E, Sec. 32	RX Fire	Paradise Valley Subdivision
1997	Yellow Pine 1	10	T19N, R8E, Sec,	Mech. & RX Fire	City of Yellow Pine

Table 4.2. US Forest Service, Boise National Forest, Cascade Ranger District Past WUI Projects: 1996-2004

Date	Project Name	Acres	Legal Location	Treatment Type	Community Protected
			29		
1998	Chipmunk Creek	2,011	T15N, R7E, Sec. 8	RX Fire	Warm Lake Summer Homes
1998	Yellow Pine 2	98	T19N, R8E, Sec, 29	Mech. & RX Fire	City of Yellow Pine
1999	Yellow Pine 3 & 4	58	T19N, R8E, Sec, 29	RX Fire	City of Yellow Pine
2000	Yellow Pine 5	98	T19N, R8E, Sec, 29	Mech. & RX Fire	City of Yellow Pine
2001	Warm Lake South HF	161	T15N, R6E, Sec. 13	Mech. & RX Fire	Kinney Point Subdivision
2002	Warm Lake North HF	72	T15N, R6E, Sec. 1	Mech. & RX Fire	Shoreline Subdivision
2004	Church Camp HF	56	T15N, R7E, Sec. 7	Mech. & RX Fire	Conservative Baptist Camp

Chapter 5: Treatment Recommendations

5 Overview

Critical to the implementation of this Wildland-Urban Interface Wildfire Mitigation Plan will be the identification of, and implementation of, an integrated schedule of treatments targeted at achieving an elimination of the lives lost, and reduction in structures destroyed, infrastructure compromised, and unique ecosystems damaged that serve to sustain the way-of-life and economy of Valley County and the region. Since there are many land management agencies and hundreds of private landowners in Valley County, it is reasonable to expect that differing schedules of adoption will be made and varying degrees of compliance will be observed across all ownerships.

The Federal land management agencies in Valley County, specifically the USDA Forest Service and the Bureau of Land Management, and the state land management agency, the Idaho Department of Lands, are participants in this planning process and have contributed to its development. Where available, their schedule of WUI treatments has been summarized in this chapter to better facilitate a correlation between their identified planning efforts and the efforts of Valley County.

5.1 Possible Fire Mitigation Activities

As part of the implementation of fire mitigation activities in Valley County, a variety of management tools may be used. Management tools include but are not limited to the following:

- Homeowner and landowner education
- Building code changes for structures and infrastructure in the WUI
- Homesite defensible zone through fuels modification
- Community defensible zone fuels alteration
- Access improvements
- Access creation
- Emergency response enhancements (training, equipment, locating new fire stations, new fire districts, merging existing districts)
- Regional land management recommendations for private, state, and federal landowners

Maintaining private property rights will continue to be one of the guiding principles of this plan's implementation. Sound risk management is a foundation for all fire management activities. Risks and uncertainties relating to fire management activities must be understood, analyzed, communicated, and managed as they relate to the cost of either doing or not doing an activity. Net gains to the public benefit will be an important component of decisions.

5.2 WUI Safety & Policy

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 in

nature and therefore are recommendations to the appropriate elected officials; debate and formulation of alternatives will serve to make these recommendations suitable and appropriate.

As part of the Policy of Valley County in relation to this planning document, this entire **Wildland-Urban Interface Wildfire Mitigation Plan** should be reviewed annually at a special meeting of the Valley County Commissioners, open to the public, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be approved by the Chairman of the County Commissioners, detailing plans for the year's activities, and made available to the general public ahead of the meeting (in accord with the Idaho Open Public Meeting Laws). Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the WUI Wildfire Mitigation Plan (signatures by the cooperators would be collected at the Chairman's discretion). Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

Prioritization of activities recommended in this plan should be made by the Valley County Commissioners consistent with the recommendations made in Chapter 1 of this document. During the annual review of this plan, reprioritization can be justified in response to changing conditions and funding opportunities.

5.2.1 Existing Practices That Should Continue

Valley County currently is implementing many projects and activities that, in their absence, could lead to increased wildland fire loss potential. By enumerating some of them here, it is the desire of the authors to point out successful activities.

- Existing rural addressing efforts have aided emergency responses well.
- The development and implementation of the County's Comprehensive Growth Plan dove-tails with this planning effort well.
- Land management agencies within the County are conducting fuel reduction projects in response to the increasing concern of fire hazard in WUI areas.
- New developments including the Tamarack Resort are implementing building codes and landscaping techniques that increase their safety and the safety and effectiveness of emergency response personnel in the event of a wildland fire.
- The Valley Interagency Interface Group has been developed as a subcommittee of the Local Emergency Planning Committee chartered to facilitate cooperative management of wildland-urban interface issues.

5.2.2 Proposed Activities

Table 5.1. WUI Action Items in Safety and Policy.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.1.a: Consider amending existing building codes to apply equally to new single housing construction as it does to sub-divisions. Make sure existing policy is comprehensive to wildland fire risks.	**Protection of people and structures** by applying a standard of road widths, access, and building regulations suitable to insure new homes can be protected while minimizing risks to firefighters. (defensible space, roads and access management, water systems, building codes, signage, and maintenance of private forest and range lands)	**County Commissioners** in cooperation with Rural Fire Districts and Planning and Zoning.	• Year 1 debate and adoption of revised code if warrented (2004). • Review adequacy of changes annually, make changes as needed.
5.1.b: Develop County policy concerning building materials used in high-risk WUI areas on existing structures and new construction	**Protection of people and structures** by improving the ability of emergency response personnel to respond to threatened homes in high-risk areas.	**County Commissioners Office** in cooperation with Rural Fire Departments	**Year 1 (2004) activity:** Consider and develop policy (if deemed necessary) to address construction materials for homes and businesses located in high wildfire risk areas. Specifically, a County policy concerning wooden roofing materials and flammable siding, especially where juxtaposed near heavy wildland fuels.
5.1.c: Formally recognize Valley Interagency Interface Group (VIIG) as the County's Wildland-Urban Interface Advisory Group.	**Protection of people and structures** by improving the ability of decision makers to make informed decisions about wildfire issues.	**County Commissioners Office**	**Year 1 (2004) activity:** Formally adopt the Valley Interagency Interface Group as a WUI advisory council, its membership and service decided on by the County Commissioners, to collaborate on WUI issues within Valley County. Members potentially to include land management organizations and companies, private landowners, and fire protection personnel.
5.1.d: Develop a County Commissioner's Office policy to support the applications for grant monies for projects resulting from recommendations in this plan.	**Protection of people and structures** by improving the ability of residents and organizations to implement sometimes costly projects.	**County Commissioners Office**	**Ongoing activity:** Support grant applications as requested in a manner consistent with applications from residents and organizations in Valley County.

5.3 People and Structures

The protection of people and structures will be tied together closely as 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. The other incident is a fire fighter who suffers the loss of life during the combating of a fire. Many of the recommendations in this section will define a set of criteria for implementation while others will be rather specific in extent and application.

Many of the recommendations in this section involve education and increasing awareness of the residents of Valley County. These recommendations stem from a variety of factors including items that became obvious during the analysis of the public surveys, discussions during public meetings, and observations about choices made by residents living in the Wildland-Urban Interface. Over and over, a common theme was present that pointed to a situation of landowners not recognizing risk factors:

- Homeowners in the public mail survey ranked their homesite wildfire risk factors significantly lower than a random sample of home rankings completed by fire mitigation specialists.
- Fire District personnel pointed to numerous examples of inadequate access to homes of people who believe they have adequate ingress.
- Discussions with the general public indicated an awareness of wildland fire risk, but they could not specifically identify risk factors.
- Over half of the respondents to the public mail survey indicated (69%) that they want to participate in educational opportunities focused on the WUI and what they can do to increase their home's chances of surviving a wildfire.
- Include info on survey results of funding preferences.

In addition to those items enumerated in Table 5.1, residents and policy makers of Valley County should recognize certain factors that exist today, that in their absence would lead to an increase in the risk factors associated with wildland fires in the WUI of Valley County. These items listed below should be encouraged, acknowledged, and recognized for their contributions to the reduction of wildland fire risks:

- **Livestock Grazing** in and around the communities of Valley 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 Valley County. Domestic livestock not only eat these grasses, forbs, and shrubs, but also trample certain fuels to the ground where decomposition rates may increase. Livestock ranchers tend their stock, placing resource professionals into the forests and rangelands of the area where they may observe ignitions, or potentially risky activities. Livestock grazing in this region should be encouraged into the future as a low cost, positive tool of wildfire mitigation in the Wildland-Urban Interface and in the wildlands.
- **Forest Management** in Valley County has been affected greatly by the reduction of operating sawmills in the region. However, the active forest management program of the Idaho Department of Lands, the Southern Idaho Timber Protective Association, Boise Corporation, USDA Forest Service and many of the private and other industrial forestland owners in the region has led to a significant reduction of wildland fuels where they are closest to homes and infrastructure. An excellent example of this has already been highlighted in this document involving the management of forestlands around the community of Yellow Pine. In addition, forest resource professionals managing these

lands and the lands of the private owners and federal agencies are generally trained in wildfire protection and recognize risk factors when they occur. Although wildfires have taken a toll on the county economically and physically in the past, the presence and activities related to active forest management in Valley County has mitigated wildfire's negative impacts.

- **Agriculture** is a significant component of Valley County's economy. Much of the western portion of the county is intermixed with agricultural crops. The original conversion of these lands to agriculture, was targeted at the most productive soils and juxtaposition to infrastructure. Many of these productive ecosystems were consequently also at some of the highest risk to wildland fires because biomass accumulations increased in these productive landscapes. The result today, is that much of the rangeland historically prone to frequent fires, has been converted to agriculture, which is at a much lower risk. The preservation of a viable agricultural economy in Valley County is integral to the continued management of wildfire risk in this region.

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
5.2.a: Youth and Adult Wildfire Educational Programs	**Protect people and structures** by increasing awareness of WUI risks, how to recognize risk factors, and how to modify those factors to reduce risk	Cooperative effort including: • University of Idaho Cooperative Extension • Idaho Department of Lands • USFS Payette National Forest, USFS Boise National Forest, State and Private Forestry Offices • Local School Districts	Evaluate effectiveness of currently funded central Idaho county education programs. If possible, use existing educational program materials and staffing to share information between counties. These programs may need reformatted for use in Valley County. The FIREWISE program has been developed and implemented in several counties across the State with varying levels of success. This program may be suitable for consideration in Valley County. Costs initially to be funded through existing budgets for these activities to be followed with grant monies to continue the programs as identified in the formal needs assessment.
5.2.b: Wildfire risk assessments of homes in identified communities	**Protect people and structures** by increasing awareness of specific risk factors of individual homesites in the at-risk landscapes. Only after these are completed can homesite treatments follow.	To be coordinated by County Commissioners Office in cooperation with the Rural Fire Departments, community groups, and homeowner associations.	• **Cost:** Approximately $100 per homesite for inspection, written report, and discussions with the homeowners. • **Action Item:** Secure funding and contract to complete the inspections during years 1 & 2 (2004-05) • Homesite inspection reports and estimated budget for each homesite's treatments will be a requirement to receive funding for treatments through grants. • Specific Treatment Area estimates are included below and make recommendations for approximately 3,300 home assessments:

- East Lake Fork Geographic Area: Approximately 10% of the 315 structures need wildfire risk assessment. Estimated cost is $31,500
- West Lake Fork Geographic Area: Approximately 10% of the 300 structures need wildfire risk assessment. Estimated cost is $3,000
- Roseberry Geographic Area: Approximately 60% of the 90 structures need wildfire risk assessment. Estimated cost is $5,400
- McCall Geographic Area: Approximately 80% of the 1,900 home sites need wildfire risk assessment. Estimated cost is $152,000
- West Mountain Geographic Area: Approximately 100% of the 110 structures need wildfire risk assessment. Estimated cost is $11,000
- Cascade Geographic Area: Approximately 75% of the 485 structures need wildfire risk assessment. Estimated cost is $36,375
- Pearsol – Horsethief Geographic Area: Approximately 60% of the 30 structures need wildfire risk assessment. Estimated cost is $1,800
- Golddust – Alpha – Round Valley Geographic Area: Approximately 60% of the 440 structures need wildfire risk assessment. Estimated cost is $26,400

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
• Blackhawk Estates Geographic Area: Approximately 40% of the 25 structures need wildfire risk assessment. Estimated cost is $1,000 • Jughandle Geographic Area: Approximately 75% of the 175 structures need wildfire risk assessment. Estimated cost is $13,125 • Donnelly Geographic Area: Approximately 75% of the 600 home sites need wildfire risk assessment. Estimated cost is $45,000 • Tamarack Geographic Area: Approximately 90% of the 120 structures need wildfire risk assessment. Estimated cost is $10,800 • Osprey Point Geographic Area: Approximately 100% of the 25 structures need wildfire risk assessment. Estimate cost is $2,500 • Little Donner – Sugarloaf Geographic Area: Approximately 75% of the 40 structures need wildfire risk assessment. Estimated cost is $3,000			• High Valley Geographic Area: Approximately 60% of the 35 structures need wildfire risk assessment. Estimated cost is $2,100 • Smith's Ferry Geographic Area: Approximately 95% of the 35 structures need wildfire risk assessment. Estimated cost is $3,325 • Yellow Pine Geographic Area: Approximately 100% of the 90 structures need wildfire risk assessment. Estimated cost is $9,000 • Warm Lake Geographic Area: Approximately 100% of the 156 structures need wildfire risk assessment. Estimated cost is $15,600 • Big Creek – Edwardsburg Geographic Area: To be determined • Trails End Subdivision Geographic Area: To be determined • Taylor Creek Ranch Geographic Area: To be determined
5.2.c: Homesite WUI Treatments	**Protect people, structures, and increase fire fighter safety** by reducing the risk factors surrounding homes in the WUI of Valley County	**County Commissioners** in cooperation with Fire Mitigation Consulting company and Rural Fire Districts *Complete concurrently with 5.2.b.*	• Actual funding level will be based on the outcomes of the homesite assessments and cost estimates • **Estimate** that treatments will cost approximately $1,000 per homesite for a defensible space. Approximately 3,300 homes are potential in this category for an estimated cost of $3,300,000. Total home and business (non-governmental) assessed value in County is roughly $140,306,103 (average $40,894): **B/C Ratio of this treatment is approximately 42:1**, when considered across the entire county. Actual B/C ratio will vary by community. • Homesite treatments can begin after the securing of funding for the treatments and immediate implementation in 2004 and will continue from year 1 through 5 (2008).
5.2.d: Community Defensible Zone WUI Treatments	**Protect people, structures, and increase fire fighter safety** by reducing the risk factors surrounding high risk communities in the	**County Commissioners** in cooperation with Fire Mitigation Consultants and Rural Fire Districts	• Actual funding level will be based on the outcomes of the homesite assessments and cost estimates. • **Years 2-5 (2004-08):** Treat high risk wildland fuels from homesite defensible space treatments (5.4.c)

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
	WUI of Valley County		to an area extending 400 feet to 750 feet beyond home defensible spaces (to be determined during homesite treatments), where steep slopes and high accumulations of risky fuels exist. Should link together home treatment areas. Treatments target high risk concentrations of fuels and not 100% of the area identified. To be completed only after or during the creation of home defensible spaces have been implemented. • Approximate average cost on a per structure basis is $750-$1,500 depending on extent of home defensibility site treatments, for a cost estimate as high as $3.0 million. Couple this cost with the home defensibility space costs of $3.3 million. The number of structures to benefit from these treatments include both homes and businesses (assessed value of $140,306,103). The **average B/C Ratio for these treatments combined in Valley County is 22:1**. Actual B/C ratio by community will be variable.
5.2.e: Maintenance of Homesite WUI Treatments	**Protect people, structures, and increase fire fighter safety** by reducing the risk factors surrounding homes in the WUI of Valley County	**County Commissioners Office** in cooperation with Rural Fire Departments and local home owners	• Homesite defensibility treatments must be maintained periodically to sustain benefits of the initial treatments. • Each site should be assessed 5 years following initial treatment • Follow-up inspection reports with treatments as recommended years 5 through 10.
5.2.f: Re-entry of Homesite WUI Treatments	**Protect people, structures, and increase fire fighter safety** by reducing the risk factors surrounding homes in the WUI of Valley County	**County Commissioners Office** in cooperation with Rural Fire Departments and local home owners	• Re-entry treatments will be needed periodically to maintain the benefits of the initial WUI home treatments. Each re-entry schedule should be based on the initial inspection report recommendations, observations, and changes in local conditions. Generally occurs every 5-10 years.
5.2.g: Access Improvements of bridges, cattle guards, and limiting road surfaces	**Protection of people, structures, infrastructure, and economy** by improving access for residents and fire	**County Roads and Bridges Department** in cooperation with US Forest Service, State of Idaho (Lands and Transportation), and	• **Year 1 (2004):** Update existing assessment of travel surfaces, bridges, and cattle guards in Valley County as to location. Secure funding for implementation of this project (grants)

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
	fighting personnel in the event of a wildfire. Reduces the risk of a road failure that leads to the isolation of people or the limitation of emergency vehicle and personnel access during an emergency.	forestland or rangeland owners.	• **Year 2 (2005):** Conduct engineering assessment of limiting weight restrictions for all surfaces (e.g., bridge weight load maximums). Estimate cost of $250,000 which might be shared between County, USFS, State, and private based on landownership associated with road locations. • **Year 2 (2005):** Post weight restriction signs on all crossings, copy information to rural fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly $45-$55,000 for signs and posting. • **Year 3 (2006):** Identify limiting road surfaces in need of improvements to support wildland fire fighting vehicles and other emergency equipment. Develop plan for improving limiting surfaces including budgets, timing, and resources to be protected for prioritization of projects (benefit/cost ratio analysis). Create budget based on full assessment.
5.2.h: Access Improvements for communities of Yellow Pine, Big Creek, and Edwardsburg.	**Protection of people, structures, infrastructure, and economy** by improving access for residents and fire fighting personnel in the event of a wildfire. Allows for alternative escape route when the primary access is compromised.	**County Roads and Bridges Department** in cooperation with US Forest Service, State of Idaho (Lands and Transportation), industrial forestland owners.	• **Year 1 (2004):** Update existing assessment on limiting areas of road and bridges. Secure funding for implementation of this project based on ownership and use. • **Year 2 (2005):** Secure funding and implement projects to improve limiting access along this road to facilitate broader range of vehicles using this route as an emergency route. No estimate of costs until priorities are set and options identified.
5.2.i: Access Improvements through road-side fuels management: ID 55, Warm Lake Road, West Mountain Road, Forest Route 48, Forest Route 21, Forest Route 674, Forest Route 474,	**Protection of people, structures, infrastructure, and economy** by improving access for residents and fire fighting personnel in the event of a wildfire. Allows for a road based defensible area that	**County Roads and Bridges Department** in cooperation with US Forest Service, State of Idaho (Lands and Transportation), and forestland or rangeland owners.	• **Year 1 (2004):** Update existing assessment of roads in Valley County as to location. Secure funding for implementation of this project (grants). • **Year 2 (2005):** Specifically address access issues listed in column one, plus recreation areas, and others identified in assessment. Target 100' on downhill side of roads and 75' on

Table 5.2. WUI Action Items for People and Structures.

Action Item	Goals and Objectives	Responsible Organization	Action Items, Planning Horizon and Estimated Costs
Forest Route 579, Landmark Stanley Road, Paddy Flat Road, Gold Fork Road, Johnson Creek Road, High Valley Road, Cabarton Road, Crown Point Parkway, Round Valley Road, Forest Route 409, Forest Route 412, Dagger Falls Road, Bear Valley Road, and Forest Route 340, and several other secondary routes and driveways.	can be linked to a terrain based defensible areas.		uphill side for estimated cost of $15,000 per mile of road treated. If 550 miles of roadway are prioritized for treatment (est.) the cost would amount to $ 825,000. • **Year 3 (2006):** Secure funding and implement projects to treat road-side fuels.

5.4 Infrastructure

Significant 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 Valley County. 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 on-the-ground activities.

Communication Infrastructure: This component of the WUI seems to be diversified across the county with multiple source and destination points, and a spread-out support network. Although site specific treatments will impact local networks directly, little needs done to insure the system's viability.

Transportation Infrastructure (road and rail networks): This component of the WUI has some potential limitations in Valley County. The sole connection route between communities of Valley County and beyond is State Highway 55. Specific infrastructure components have been discussed in this plan.

Potential treatments in reference to the rail lines crossing Valley County will be discussed in a subsequent section.

Ignitions along roadways are significant and should be address as part of the implementation of this plan. Various alternatives from herbicides to intensive livestock grazing coupled with mechanical treatments, have been suggested. As part of the multi-agency WUI team proposed in the previous section, these corridors should be further evaluated with alternatives implemented. A variety of approaches will be appropriate depending on the landowner, fuels present, and other factors. These ignitions are substantial and the potential risk of life to residents in the area is significant.

Many roads in the county have limiting characteristics, such as steep grades, narrow travel surfaces, sharp turning radii, low load limit bridges and cattle guards, and heavy accumulations of fuels adjacent to, and overtopping some roads. Some of these road surfaces access remote forestland and rangeland areas. While their improvements will facilitate access in the case of a wildfire, they are not necessarily the priority for treatments in the county.

Roads that have these inferior characteristics and access homes and businesses are the priority for improvements in the county. Specific recommendations for these roads are enumerated in Table 5.3.

Energy Transport Supply Systems (power lines): (Valley County - Appendix I) A number of power lines crisscross Valley County. Unfortunately, many of these power lines cross over forestland ecosystems. When fires ignite in these vegetation types, they tend to be slower moving and burn at relatively high intensities. Additionally, there is a potential for high temperatures and low humidity with high winds to produce enough heat and smoke to threaten power line stability. Most power line corridors have been cleared of vegetation both near the wires and from the ground below. Observations across the county of these high tension power lines lead to the conclusion that current conditions coupled with urban developments have mitigated this potential substantially. It is the recommendation of this Wildfire Mitigation Plan that this situation be evaluated annually and monitored but that treatments not be specifically targeted at this time. The use of these areas as "fire breaks" should be evaluated further,

especially in light of the treatments enumerated in this plan (eg., intensive livestock grazing, mechanical treatments, and herbicide treatments).

Water Supply: In many of Idaho's communities, water is derived from surface flow that is treated and piped to homes and businesses. When wildfires burn a region, they threaten these watersheds by the removal of vegetation, creation of ash and sediment. As such, watersheds should be afforded the highest level of protection from catastrophic wildfire impacts. In Valley County, water is supplied to many homes by single home or multiple home wells. However, the community of Yellow Pine depends on surface water as its primary water source. Many homes on the east side of Payette Lake rely on a surface water resource derived from Payette Lake. Additionally, some homes in the West Mountain subdivision near Cascade use a surface water source as their primary water resource.

As a priority recommendation of this plan, it is strongly suggested that Watershed Management Plans for the McCall-Payette Lake Watershed, Yellow Pine Watershed, and the West Mountain Subdivision Watershed be developed to plan for and implement a management program that specifically mitigates wildfire potential while managing the watersheds for sustained water flow that is clean and timed according to the needs of the community.

5.4.1 Proposed Activities

Table 5.3. Infrastructure Enhancements.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.3.a: Post FEMA "Emergency Evacuation Route" signs along the identified Primary and secondary access routes in the county.	**Protection of people and structures** by informing residents and visitors of **significant infrastructure** in the county that will be maintained in the case of an emergency.	**County Commissioners** in cooperation with Rural Fire Districts and Roads Department.	• Purchase of signs (2004). • Posting roads and make information available to residents of the importance of Emergency Routes
5.3.b: Fuels mitigation of the FEMA "Emergency Evacuation Routes" in the county to insure these routes can be maintained in the case of an emergency.	**Protection of people and structures** by providing residents and visitors with ingress and egress that can be maintained during an emergency.	**County Commissioners** in cooperation with Rural Fire Districts and Roads Department.	• Full assessment of road defensibility and ownership participation (2004). • Implementation of projects (linked to item 5.2.g, 5.2.h, and 5.2.i.
5.3.c. Watershed Management Plan Development McCall-Payette Lake Watershed, Yellow Pine Watershed, and the West Mountain Subdivision Watershed.	**Sustainability of Communities** by increasing the probability that communities will have safe drinking water following a wildfire that burns in the community watershed.	**Water Departments and City Governments.**	• Identify landowners and seek funding to implement the planning process (2004). • Implementation of projects based on results of watershed management plans.

5.5 Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the rural and wildland fire fighting districts in Valley County. All of the needs identified by the districts are in line with increasing the ability to respond to emergencies in the WUI and are fully supported by the planning committee.

Specific reoccurring themes of needed resources and capabilities include:

- More water tenders for Rural Fire Districts with drafting capabilities at unimproved sites
- Improved radio capabilities within each district and for mutual aid operations
- Retention and recruitment of volunteers
- Training and development of rural firefighters in structure and wildland fire
- Incorporation of the communities of Smith's Ferry into current fire districts or the formation of a new district specifically for these residents.

The implementation of each issue will rely on either the isolated efforts of the 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 county wide equity. However, the Valley Interagency Interface Group (VIIG) may be an organization uniquely suited to work with all of the districts in Valley County and adjacent counties to assist in the prioritization of needs across district and even county lines. Once prioritized, the VIIG is in a position to assist these districts with identifying, competing for, and obtaining grants and equipment to meet these needs.

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.4.a: Enhance radio availability in each district, link into existing dispatch, and improve range within the region, update to new digital, narrow band frequency adopted by feds and state.	**Protection of people and structures** by direct fire fighting capability enhancements.	**County Commissioners** in cooperation with rural and wildland fire districts and other emergency services departments.	• **Year 1 (2004):** Summarize existing two-way radio capabilities and limitations. Identify costs to upgrade existing equipment and locate funding opportunities. • **Year 2 (2005):** Acquire and install upgrades as needed. • **Year 2-3 (2005-06):** Identify opportunities for radio repeater towers located in the region for multi-county benefits.
5.4.b: Facility, land, business plan and basic supplies for Smith's Ferry District.	**Protection of people and structures** by direct fire fighting capability enhancements.	**West Central Highlands Resource Conservation and Development Council** in cooperation with County Commissioners and SITPA.	• Estimate of Costs: o $500,000 • **2 Year Planning Horizon**
5.4.c: Retention of Volunteer Fire Fighters	**Protection of people and structures** by direct fire fighting capability enhancements.	**Rural and Wildland Fire Districts** working with broad base of county citizenry to identify options, determine plan of action, and implement it.	• 5 Year Planning Horizon, extended planning time frame • Target an increased recruitment (+10%) and retention (+20% longevity) of volunteers • **Year 1 (2004):** Develop

Table 5.4. WUI Action Items in Fire Fighting Resources and Capabilities.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
			incentives program and implement it.
5.4.d: Obtain fire patrol boat on Payette Lake during the summer and fall fire season.	**Protection of people and structures** by direct fire fighting capability enhancements.	**West Central Highlands Resource Conservation and Development Council** in cooperation with local fire department and SITPA.	• **Year 1 (2004):** Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources. • **Year 1 or 2 (2004-05):** Acquire and deliver needed equipment to district.
5.4.e: Establish dry hydrants in strategic locations around Payette Lake.	**Protection of people and structures** by direct fire fighting capability enhancements.	**West Central Highlands Resource Conservation and Development Council** in cooperation with local and wildland fire departments.	• **Year 1 (2004):** Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources. • **Year 1 or 2 (2004-05):** Acquire and deliver needed equipment to district. • **Year 1 or 2 (2004-05):** Prepare site and install dry hydrant system.
5.4.f: Increased training and capabilities of fire fighters	**Protection of people and structures** by direct fire fighting capability enhancements.	**Rural and Wildland Fire Districts** working with the **BLM, IDL, and USFS** for wildland training opportunities and with the **State Fire Marshall's Office** for structural fire fighting training.	• **Year 1 (2004):** Develop a multi-county training schedule that extends 2 or 3 years in advance (continuously). • Identify funding and resources needed to carry out training opportunities and sources to acquire. • Year 1 (2004): Begin implementing training opportunities for volunteers.

5.6 Regional Land Management Recommendations

In section 5.3 of this plan, reference was given to the role that forestry, grazing and agriculture have in promoting wildfire mitigation services through active management. Valley County is dominated by wide expanses of forest and rangelands intermixed with communities and rural houses.

Wildfires will continue to ignite and burn fuels and homes depending on the weather conditions and other factors enumerated earlier. However, active land management that modifies fuels, promotes healthy range and forestland conditions, and promotes the use of these natural resources (consumptive and non-consumptive) will insure that these lands have value to society and the local region. We encourage the US Forest Service, the Idaho Department of Lands,

Industrial land owners, private land owners, and all other landowners in the region to actively administer their Wildland-Urban Interface lands in a manner consistent with the management of reducing fuels and risks in this zone.

5.6.1 Railroad Right-of-Way

There are currently two active railroads in Valley County. The Idaho Northern and Pacific Railroad hauls goods from Cascade to markets in Emmett and the Idaho Historical Railroad Thunder Mountain Line, which is primarily a passenger tour service. There are a number of curves and sidings where a train may be prone to create sparks, eject hot stack carbon, or blow hot brake shoes, any one of which can easily ignite the light fuels along the railroad corridor. Although there is some potential, this right-of-way has not been a significant source of fire ignitions and is therefore not a priority for fire mitigation treatment in Valley County.

5.7 US Forest Service Planned and Potential Treatments

The following proposed treatments have been provided by the US Forest Service.

5.7.1 Payette National Forest Treatments

Table 5.5. US Forest Service, Payette National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
Meadows Slope	Reduce hazardous fuels and improve forest health by changing Condition Class along Forest Boundary, adjacent to Wildland Urban Interface	Decrease the risk of a wildland fire burning structures or forest resources. Provide economic opportunities through timber sale/mechanical treatment.	National Forest System Lands adjacent to the Timber Ridge, Rock Flat, King's Pine, and Crescent Rim Subdivisions and additional private property east of New Meadows.	Treat approximately 6480 acres of National Forest System Lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health
Brundage VMP/WUI #1	Implement the vegetation management plan for stands within Brundage Mountain Resort including WUI objectives.	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest System Lands within the Brundage Mountain Resort area.	Treat approximately 350 acres using a combination of mechanical and prescribed fire treatments.
Paddy Flat WUI	Reduce the potential for uncharacteristic and or undesired fire, including crown fire, and create conditions that in the case of a wildfire will tend toward a lower risk surface fire.	Reduce the risk of fires encroaching upon and/or threatening private property or inholdings.	National Forest System Lands adjacent to the Paddy Flat Subdivision.	Treat approximately 350 acres using thinning, piling and prescribed burning.
Brundage VMP/WUI #2	Implement the vegetation management plan for stands within Brundage Mountain Resort including WUI objectives.	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest System Lands within the Brundage Mountain Resort area.	Treat approximately 350 acres using a combination of mechanical and prescribed fire treatments.
Lake Fork GS/CG WUI	Reduce the potential for uncharacteristic and or undesired fire, including crown fire, and create conditions that in the case of a wildfire will	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest System Lands within and around Lake Fork Guard Station and Campground.	Treat approximately 50 WUI acres using a combination of thinning, piling, and prescribed burning.

Table 5.5. US Forest Service, Payette National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
	tend toward a lower risk surface fire.			
Brundage Basin/Brundage Reservoir	Reduce the potential for uncharacteristic and or undesired fire, including crown fire, and create conditions that in the case of a wildfire will tend toward a lower risk surface fire.	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest System Lands north and south of Brundage Mountain Resort that fall within the 4.2 MPC plus the powerline cooridor from HWY 55.	Treat approximately 150 WUI and 200 non-WUI acres.
Big Creek	Reduce the potential for uncharacteristic and or undesired fire, including crown fire, and create conditions that in the case of a wildfire will tend toward a lower risk surface fire.	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest Lands surround the community of Big Creek/Edwardsberg	Treat up to 1500 acres surrounding Big Creek Edwardsberg, including rural private inholdings along Logan and Smith Creek.
Yellowpine Thin and Removal	Reduce the potential for uncharacteristic and or undesired fire, including crown fire, and create conditions that in the case of a wildfire will tend toward a lower risk surface fire.	Decrease risk of undesired fires encroaching upon or damaging infrastructure or improvements.	National Forest Lands surround the community of Yellowpine	Treat up to 1500 acres surroundingYellowpine, including rural private inholdings along the East Fork of South Fork River.

Table 5.6. US Forest Service, Payette National Forest Implementation Timelines.

Project	Acres	Planning Timeframe*	Implementation Timeframe*
Meadows Slope	6480 acres	Complete DEIS by January 2004, FEIS by June 2004	Begin implementation in Fall of 2004. Finish implementation in 2008
Brundage VMP/WUI #1	Approximately 350 WUI acres.	EA planned for September 2005.	Currently unscheduled.
Paddy Flat WUI	Approximately 350 WUI acres.	EIS planned for January 2005	Currently unscheduled.
Brundage VMP/WUI #2	Approximately 350 WUI acres.	EA planned for September 2005.	Currently unscheduled.
Lake Fork GS/CG WUI	Approximately 50 acres.	CE planned for September 2006	Currently unscheduled.

Table 5.6. US Forest Service, Payette National Forest Implementation Timelines.

Project	Acres	Planning Timeframe*	Implementation Timeframe*
Brundage Basin/Brundage Reservoir	Approximately 350 acres.	EA planned for September 2007	Currently unscheduled.
Big Creek	Approximately 1500 acres	CAT X or EA planned to begin FY2005	Currently unscheduled.
Yellowpine Thin and Removal	Approximately 1500 acres	CAT X or EA planned to begin FY2005	Currently unscheduled.

5.7.2 Boise National Forest Treatments

Table 5.7. US Forest Service, Boise National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
Church Camp HF Reduction	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning structures around the Conservative Baptist Church Camp. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around the Church Camp.	National Forest System Lands adjacent to private property near the Conservative Baptist Church Camp.	Treat approximately 67 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Six Bit NF Reduction	Reduce hazardous fuels and improve Forest Health by changing Condition Class and reducing fuel loadings in turn decreasing fire behavior within the forest boundary providing for Fire Fighter and Public Safety.	Decrease the fuel loading in turn reducing fire behavior and the risk of a wildland fire burning forest resources and providing for firefighter and public safety.	National Forest System Lands running along and surrounding Six Bit Creek.	Treat approximately 1398 acres of National Forest System Lands with prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Warm Lake North	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around Warm Lake, the community and surrounding summer homes. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake. Providing economic opportunities through mechanical treatments.	National Forest System Lands adjacent to private property near and around Warm Lake, surrounding community and summer homes.	Treat approximately 72 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Kline Mountain HF	Reduce hazardous fuels and improve Forest Health by changing Condition Class and reducing fuel loadings in turn decreasing fire behavior within the forest boundary providing Fire Fighter and Public Safety.	Decrease the fuel loading in turn reducing fire behavior and the risk of a wildland fire burning forest resources and providing for firefighter and public safety.	National Forest System Lands surrounding the Kline Mountain area.	Treat approximately 486 acres of National Forest System Lands with prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Paradise	Reduce hazardous fuels while	Decrease the risk of a wildland fire burning	National Forest System	Treat approximately 100

Table 5.7. US Forest Service, Boise National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
Valley Protection	improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	homes and structures around Warm Lake, Paradise Valley and surrounding summer homes. Treatments will also provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake. Providing economic opportunities through mechanical treatments.	Lands adjacent to private property near and around Warm Lake and the Paradise Valley.	acres of National Forest System Lands with mechanical thinning, mulching and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Warm Lake Highway	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around Warm Lake, the community and surrounding summer homes. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake and provide economic opportunities through mechanical treatments.	National Forest System Lands adjacent to private property near and around Warm Lake, Highway system, surrounding community and summer homes.	Treat approximately 111 acres of National Forest System Lands with mechanical mulching to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Warm Lake East	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around Warm Lake, the community and surrounding summer homes. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake and provide economic opportunities through mechanical treatments.	National Forest System Lands adjacent to private property East of Warm Lake.	Treat approximately 100 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
South Fork HF	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around Warm Lake, the community and surrounding summer homes. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake and may provide economic opportunities through mechanical treatments.	National Forest System Lands adjacent to private property South/South West of Warm Lake.	Treat approximately 900 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.

Table 5.7. US Forest Service, Boise National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
Golden Gate	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around the community of Yellow Pine, Idaho. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around the community of Yellow Pine, Idaho.	National Forest System Lands adjacent to private property near and around the community of Yellow Pine.	Treat approximately 1300 acres of National Forest System Lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Stolle GS HF	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures South of Warm Lake and those near and/or surrounding Stolle Meadows. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Stolle Meadows and may provide economic opportunities through mechanical treatments.	National Forest System Lands adjacent to private property South of Warm Lake near Stolle Meadows.	Treat approximately 25 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Paddy Flat Vegetation Management (WUI element)	Reduce the potential for uncharacteristic and/or undesirable fire, including crown fire, and create conditions that, in the case of a wildfire, will tend toward a lower risk surface fire with flame lengths less than 4 feet.	Decrease the risk of fire encroaching upon and/or threatening private property and also providing for firefighter and public safety through a reduction in potential fir behavior.	National Forest System Lands adjacent to the Paddy Flat Subdivision.	WUI element – Treat approximately 350 acres of National Forest System Lands with a combination of thinning, piling, and prescribed burning.
Crawford HF	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures North East of Cascade, Idaho. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Cascade, Idaho.	National Forest System Lands adjacent to private property 4 miles North East of Cascade, Idaho	Treat approximately 100 acres of National Forest System Lands with prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Shoreline HF	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn	Decrease the risk of a wildland fire burning homes and structures around Warm Lake, the community and surrounding summer homes. Treatments will provide defensible	National Forest System Lands adjacent to private property near and around Warm Lake,	Treat approximately 100 acres of National Forest System Lands with mechanical harvest/thinning

Table 5.7. US Forest Service, Boise National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
	decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around Warm Lake and may provide economic opportunities through mechanical treatments.	the surrounding community and summer homes.	and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Antimony Ridge HF	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around the community of Yellow Pine, Idaho. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around the community of Yellow Pine, Idaho.	National Forest System Lands adjacent to private property 4 miles South of Yellow Pine, Idaho.	Treat approximately 1500 acres of National Forest System Lands with prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Westside Yellow Pine	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures around the community of Yellow Pine, Idaho. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around the community of Yellow Pine, Idaho.	National Forest System Lands adjacent to private property near and around the community of Yellow Pine, Idaho.	Treat approximately 1000 acres of National Forest System Lands with prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Landmark Station	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures in and around the Landmark Station East of Warm Lake. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources in the area and provide for economic opportunities through sale/mechanical treatments.	National Forest System Lands adjacent to private property 13 miles East of Warm Lake.	Treat approximately 90 acres of National Forest System Lands with mechanical harvest/thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.
Maranatha	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire	Decrease the risk of a wildland fire burning structures around the Baptist Church Camp. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources around	National Forest System Lands adjacent to private property near the Baptist Church Camp.	Treat approximately 25 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public

Table 5.7. US Forest Service, Boise National Forest proposed treatment areas.

Project	Summary (Purpose and need) (what risk & mitigation)	Benefit to the Community	Location	Description
	Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	the Church Camp.		safety, and improve Condition Class/forest health.
Williams Creek Summer Homes	Reduce hazardous fuels while improving Forest Health by changing Condition Class and reducing the fuel loadings in turn decreasing fire behavior providing defensible space and Fire Fighter/Public Safety along the Forest Boundary, adjacent to the Wildland Urban Interface.	Decrease the risk of a wildland fire burning homes and structures in and around the area of Williams Creek Summer Homes along Highway 55. Treatments will provide defensible space for fire suppression and provide for firefighters and public safety. Treatments will also benefit forest resources in the area and may provide for economic opportunities through mechanical treatments.	Williams Creek along Highway 55.	Treat approximately 50 acres of National Forest System Lands with mechanical thinning and prescribed fire to reduce the risk of crown fire, improve firefighter and public safety, and improve Condition Class/forest health.

Table 5.8. US Forest Service, Boise National Forest Implementation Timelines.

Project	Acres	Planning Timeframe*	Implementation Timeframe*
Church Camp HF Reduction	67	CE completed June 2003	Begin implementation during spring 2004. Finish implementation in 2005
Six Bit NF Reduction	1398	EA completed March 2002	Prescribe burn during a spring window. Hopefully Spring 2004
Warm Lake North	72	CE completed April 2002	Thin in 2004 and burn piles in 2005.
Kline Mountain HF	486	CE to be completed April 2005	Underburn with burn window in 2005.
Paradise Valley Protection	100	CE to be completed February 2005	Thin Spring/Summer of 2005. Underburn and Pile burn in 2006.
Warm Lake Highway	111	CE completed April 2002	Implement Mulching Contract Spring 2004 and complete project during 2005.
Warm Lake East	100	CE completed April 2002	
South Fork HF	900	CE to be completed in April of 2006	
Golden Gate	1300	EIS to be completed April of 2007	Underburn with burn window in 2007.
Stolle GS HF	25	CE to be completed April 2006	Start the implementation during 2007 and continuing into 2008.

Table 5.8. US Forest Service, Boise National Forest Implementation Timelines.

Project	Acres	Planning Timeframe*	Implementation Timeframe*
Crawford HF	100	CE to be completed April 2006	Underburn during window of 2007
Shoreline HF	100	CE to be completed April 2007	Thin and pile 2007 and burn piles during 2008.
Antimony Ridge HF	1500	CE to be completed April 2008	Start implementation during 2009
Westside Yellow Pine	1000	EIS to be completed April 2007	Start underburning in window during 2008.
Landmark Station	90	CE to be completed April 2007	Start implementation during 2008.
Maranatha	25	CE to be completed April 2008	Start implementation during 2008.
Williams Creek Summer Homes	50	CE to be completed December 2004	Start implementation 2004

Chapter 6: Supporting Information

6

6.1 List of Tables

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6.2 List of Figures

6.3 List of Preparers

The following personnel participated in the formulation, compilation, editing, and analysis of alternatives for this assessment.

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6.4 Signature Pages

This **Valley County Wildland-Urban Interface Wildfire Mitigation Plan** has been developed in cooperation and collaboration with the representatives of the following organizations, agencies, and individuals.

By: Terry F. Gestrin, Chairperson Valley County Commissioner	Date
By: F. Phillip Davis Valley County Commissioner	Date
By: Thomas W. Kerr Valley County Commissioner	Date
By: Kirk Eimers Mayor–City of McCall	Date
By: Larry Walters Mayor–City of Cascade	Date
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By: William E. Schlosser, Ph.D.
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Date

6.5 Glossary of Terms

Anadromous - Fish species that hatch in fresh water, migrate to the ocean, mature there, and return to fresh water to reproduce (Salmon & Steelhead).

Appropriate Management Response - Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

Biological Assessment - Information document prepared by or under the direction of the Federal agency in compliance with U.S. Fish and Wildlife standards. The document analyzes potential effects of the proposed action on listed and proposed threatened and endangered species and proposed critical habitat that may be present in the action area.

Backfiring - When attack is indirect, intentionally setting fire to fuels inside the control line to contain a rapidly spreading fire. Backfiring provides a wide defense perimeter, and may be further employed to change the force of the convection column.

Blackline - Denotes a condition where the fireline has been established by removal of vegetation by burning.

Burning Out - When attack is direct, intentionally setting fire to fuels inside the control line to strengthen the line. Burning out is almost always done by the crew boss as a part of line construction; the control line is considered incomplete unless there is no fuel between the fire and the line.

Canyon Grassland - Ecological community in which the prevailing or characteristic plants are grasses and similar plants extending from the canyon rim to the rivers edge.

Confine - Confinement is the strategy employed in appropriate management responses where a fire perimeter is managed by a combination of direct and indirect actions and use of natural topographic features, fuel, and weather factors.

Contingency Plans: Provides for the timely recognition of approaching critical fire situations and for timely decisions establishing priorities to resolve those situations.

Control Line - An inclusive term for all constructed or natural fire barriers and treated fire edge used to control a fire.

Crew - An organized group of firefighters under the leadership of a crew boss or other designated official.

Crown Fire - A fire that advances from top to top of trees or shrubs more or less independently of the surface fire. Sometimes crown fires are classed as either running or dependent, to distinguish the degree of independence from the surface fire.

Disturbance - An event which affects the successional development of a plant community (examples: fire, insects, windthrow, timber harvest).

Disturbed Grassland - Grassland dominated by noxious weeds and other exotic species. Greater than 30% exotic cover.

Diversity - The relative distribution and abundance of different plant and animal communities and species within an area.

Drainage Order - Systematic ordering of the net work of stream branches, (e.g., each non-branching channel segment is designated a first order stream, streams which only receive first order segments are termed second order streams).

Duff - The partially decomposed organic material of the forest floor beneath the litter of freshly fallen twigs, needles, and leaves.

Ecosystem - An interacting system of interdependent organisms and the physical set of conditions upon which they are dependent and by which they are influenced.

Ecosystem Stability - The ability of the ecosystem to maintain or return to its steady state after an external interference.

Ecotone - The area influenced by the transition between plant communities or between successional stages or vegetative conditions within a plant community.

Energy Release Component - The Energy Release Component is defined as the potential available energy per square foot of flaming fire at the head of the fire and is expressed in units of BTUs per square foot.

Equivalent Clearcut Area (ECA) - An indicator of watershed condition, which is calculated from the total amount of crown removal that has occurred from harvesting, road building, and other activities based on the current state of vegetative recovery.

Exotic Plant Species - Plant species that are introduced and not native to the area.

Fire Adapted Ecosystem - An arrangement of populations that have made long-term genetic changes in response to the presence of fire in the environment.

Fire Behavior - The manner in which a fire reacts to the influences of fuel, weather, and topography.

Fire Behavior Forecast - Fire behavior predictions prepared for each shift by a fire behavior analysis to meet planning needs of fire overhead organization. The forecast interprets fire calculations made, describes expected fire behavior by areas of the fire, with special emphasis on personnel safety, and identifies hazards due to fire for ground and aircraft activities.

Fire Behavior Prediction Model - A set of mathematical equations that can be used to predict certain aspects of fire behavior when provided with an assessment of fuel and environmental conditions.

Fire Danger - A general term used to express an assessment of fixed and variable factors such as fire risk, fuels, weather, and topography which influence whether fires will start, spread, and do damage; also the degree of control difficulty to be expected.

Fire Ecology - The scientific study of fire's effects on the environment, the interrelationships of plants, and the animals that live in such habitats.

Fire Exclusion - The disruption of a characteristic pattern of fire intensity and occurrence (primarily through fire suppression).

Fire Intensity Level - The rate of heat release (BTU/second) per unit of fire front. Four foot flame lengths or less are generally associated with low intensity burns and four to six foot flame lengths generally correspond to "moderate" intensity fire effects. High intensity flame lengths are usually greater than eight feet and pose multiple control problems.

Fire Prone Landscapes – The expression of an area's propensity to burn in a wildfire based on common denominators such as plant cover type, canopy closure, aspect, slope, road density, stream density, wind patterns, position on the hillside, and other factors.

Fireline - A loose term for any cleared strip used in control of a fire. That portion of a control line from which flammable materials have been removed by scraping or digging down to the mineral soil.

Fire Management - The integration of fire protection, prescribed fire and fire ecology into land use planning, administration, decision making, and other land management activities.

Fire Management Plan (FMP) - A strategic plan that defines a program to manage wildland and prescribed fires and documents the fire management program in the approved land use plan. This plan is supplemented by operational procedures such as preparedness, preplanned dispatch, burn plans, and prevention. The fire implementation schedule that documents the fire management program in the approved forest plan alternative.

Fire Management Unit (FMU) - Any land management area definable by objectives, topographic features, access, values-to-be-protected, political boundaries, fuel types, or major fire regimes, etc., that set it apart from management characteristics of an adjacent unit. FMU's are delineated in FMP's. These units may have dominant management objectives and preselected strategies assigned to accomplish these objectives.

Fire Occurrence - The number of wildland fires started in a given area over a given period of time. (Usually expressed as number per million acres.)

Fire Prevention - An active program in conjunction with other agencies to protect human life, prevent modification, of the ecosystem by human-caused wildfires, and prevent damage to cultural resources or physical facilities. Activities directed at reducing fire occurrence, including public education, law enforcement, personal contact, and reduction of fire risks and hazards.

Fire Regime - The fire pattern across the landscape, characterized by occurrence interval and relative intensity. Fire regimes result from a unique combination of climate and vegetation. Fire regimes exist on a continuum from short-interval, low-intensity (stand maintenance) fires to long-interval, high-intensity (stand replacement) fires.

Fire Retardant - Any substance that by chemical or physical action reduces flareability of combustibles.

Fire Return Interval - The number of years between two successive fires documented in a designated area.

Fire Risk - The potential that a wildfire will start and spread rapidly as determined by the presence and activities of causative agents.

Fire Severity - The effects of fire on resources displayed in terms of benefit or loss.

Foothills Grassland - Grass and forb co-dominated dry meadows and ridges. Principle habitat type series: bluebunch wheatgrass and Idaho fescue.

Fuel - The materials which are burned in a fire; duff, litter, grass, dead branchwood, snags, logs, etc.

Fuel Break - A natural or manmade change in fuel characteristics which affects fire behavior so that fires burning into them can be more readily controlled.

Fuel Loading - Amount of dead fuel present on a particular site at a given time; the percentage of it available for combustion changes with the season.

Fuel Model - Characterization of the different types of wildland fuels (trees, brush, grass, etc.) and their arrangement, used to predict fire behavior.

Fuel Type - An identifiable association of fuel elements of distinctive species; form, size, arrangement, or other characteristics, that will cause a predictable rate of fire spread or difficulty of control, under specified weather conditions.

Fuels Management - Manipulation or reduction of fuels to meet protection and management objectives, while preserving and enhancing environmental quality.

Gap Analysis Program (GAP) - Regional assessments of the conservation status of native vertebrate species and natural land cover types and to facilitate the application of this information to land management activities. This is accomplished through the following five objectives:

1. Map the land cover of the United States
2. Map predicted distributions of vertebrate species for the U.S.
3. Document the representation of vertebrate species and land cover types in areas managed for the long-term maintenance of biodiversity
4. Provide this information to the public and those entities charged with land use research, policy, planning, and management
5. Build institutional cooperation in the application of this information to state and regional management activities

Habitat - A place that provides seasonal or year-round food, water, shelter, and other environmental conditions for an organism, community, or population of plants or animals.

Heavy Fuels - Fuels of a large diameter, such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flash fuels.

Hydrologic Unit Code - A coding system developed by the U. S. Geological Service to identify geographic boundaries of watersheds of various sizes.

Hydrophobic - Resistance to wetting exhibited by some soils, also called water repellency. The phenomena may occur naturally or may be fire-induced. It may be determined by water drop penetration time, equilibrium liquid-contact angles, solid-air surface tension indices, or the characterization of dynamic wetting angles during infiltration.

Human-Caused Fires - Refers to fires ignited accidentally (from campfires or smoking) and by arsonists; does not include fires ignited intentionally by fire management personnel to fulfill approved, documented management objectives (prescribed fires).

Intensity - The rate of heat energy released during combustion per unit length of fire edge.

Inversion - Atmospheric condition in which temperature increases with altitude.

Ladder Fuels - Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Landsat Imagery - Land remote sensing, the collection of data which can be processed into imagery of surface features of the Earth from an unclassified satellite or satellites.

Landscape - All the natural features such as grasslands, hills, forest, and water, which distinguish one part of the earth's surface from another part; usually that portion of land which the eye can comprehend in a single view, including all its natural characteristics.

Lethal - Relating to or causing death; extremely harmful.

Lethal Fires - A descriptor of fire response and effect in forested ecosystems of high-severity or severe fire that burns through the overstory and understory. These fires typically consume large woody surface fuels and may consume the entire duff layer, essentially destroying the stand.

Litter - The top layer of the forest floor composed of loose debris, including dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

Maximum Manageable Area - The boundary beyond which fire spread is completely unacceptable.

Metavolcanic - Volcanic rock that has undergone changes due to pressure and temperature.

Minimum Impact Suppression Strategy (MIST) - "Light on the Land." Use of minimum amount of forces necessary to effectively achieve the fire management protection objectives consistent with land and resource management objectives. It implies a greater sensitivity to the impacts of suppression tactics and their long-term effects when determining how to implement an appropriate suppression response.

Mitigation - Actions to avoid, minimize, reduce, eliminate, replace, or rectify the impact of a management practice.

Monitoring Team - Two or more individuals sent to a fire to observe, measure, and report its behavior, its effect on resources, and its adherence to or deviation from its prescription.

National Environmental Policy Act (NEPA) - This act declared a national policy to encourage productive and enjoyable harmony between humans and their environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and will stimulate the health and welfare of humankind; to enrich the understanding of important ecological systems and natural resources; and to establish a Council on Environmental Quality.

National Fire Management Analysis System (NFMAS) - The fire management analysis process, which provides input to forest planning and forest and regional fire program development and budgeting.

Native - Indigenous; living naturally within a given area.

Natural Ignition - A wildland fire ignited by a natural event such as lightning or volcanoes.

Noncommercial Thinning - Thinning by fire or mechanical methods of precommercial or commercial size timber, without recovering value, to meet MFP standards relating to the protection/enhancement of adjacent forest or other resource values.

Notice of Availability - A notice of Availability published in the Federal Register stating that an EIS has been prepared and is available for review and comment (for draft) and identifying where copies are available.

Notice of Intent - A notice of Intent published in the Federal Register stating that an EIS will be prepared and considered. This notice will describe the proposed action and possible alternatives, the proposed scoping process, and the name and address of whom to contact concerning questions about the proposed action and EIS.

Noxious Weeds - Rapidly spreading plants that have been designated "noxious" by law which can cause a variety of major ecological impacts to both agricultural and wild lands.

Planned Ignition - A wildland fire ignited by management actions to meet specific objectives.

Prescribed Fire - Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

Prescription - A set of measurable criteria that guides the selection of appropriate management strategies and actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

Programmatic Biological Assessment - Assesses the effects of the fire management programs on Federally listed species, not the individual projects that are implemented under these programs. A determination of effect on listed species is made for the programs, which is a valid assessment of the potential effects of the projects completed under these programs, if the projects are consistent with the design criteria and monitoring and reporting requirement contained in the project description and summaries.

Reburn - Subsequent burning of an area in which fire has previously burned but has left flareable light that ignites when burning conditions are more favorable.

Riparian Habitat Conservation Areas (RHCA) - Portions of watersheds where riparian-dependent resources receive primary emphasis, and management activities are subject to specific standards and guidelines. RHCAs include traditional riparian corridors, wetlands, intermittent headwater streams, and other areas where proper ecological functioning is crucial to maintenance of the stream's water, sediment, woody debris, and nutrient delivery systems.

Riparian Management Objectives (RMO) - Quantifiable measures of stream and streamside conditions that define good fish habitat and serve as indicators against which attainment or progress toward attainment of goals will be measured.

Road Density - The volume of roads in a given area (mile/square mile).

Scoping - Identifying at an early stage the significant environmental issues deserving of study and de-emphasizing insignificant issues, narrowing the scope of the environmental analysis accordingly.

Seral - Refers to the stages that plant communities go through during succession. Developmental stages have characteristic structure and plant species composition.

Serotinous - Storage of coniferous seeds in closed cones in the canopy of the tree. Serotinous cones of lodgepole pine do not open until subjected to temperatures of 113 to 122 degrees Fahrenheit causing the melting of the resin bond that seals the cone scales.

Stand Replacing Fire - A fire that kills most or all of a stand.

Sub-basin - A drainage area of approximately 800,000 to 1,000,000 acres, equivalent to a 4th - field Hydrologic Unit Code.

Surface Fire - Fire which moves through duff, litter, woody dead and down, and standing shrubs, as opposed to a crown fire.

Watershed - The region draining into a river, river system, or body of water.

Wetline - Denotes a condition where the fireline has been established by wetting down the vegetation.

Wildland Fire - Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Implementation Plan (WFIP) - A progressively developed assessment and operational management plan that documents the analysis and selection of strategies and describes the appropriate management response for a wildland fire being managed for resource benefits. A full WFIP consists of three stages. Different levels of completion may occur for differing management strategies (i.e., fires managed for resource benefits will have two-three stages of the WFIP completed while some fires that receive a suppression response may only have a portion of Stage I completed).

Wildland Fire Situation Analysis (WFSA) - A decision making process that evaluates alternative management strategies against selected safety, environmental, social, economic, political, and resource management objectives.

Wildland Fire Use - The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in FMP's. Operational management is described in the WFIP. Wildland fire use is not to be confused with "fire use", which is a broader term encompassing more than just wildland fires.

Wildland Fire Use for Resource Benefit (WFURB) - A wildland fire ignited by a natural process (lightning), under specific conditions, relating to an acceptable range of fire behavior and managed to achieve specific resource objectives.

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Last Page of Document

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