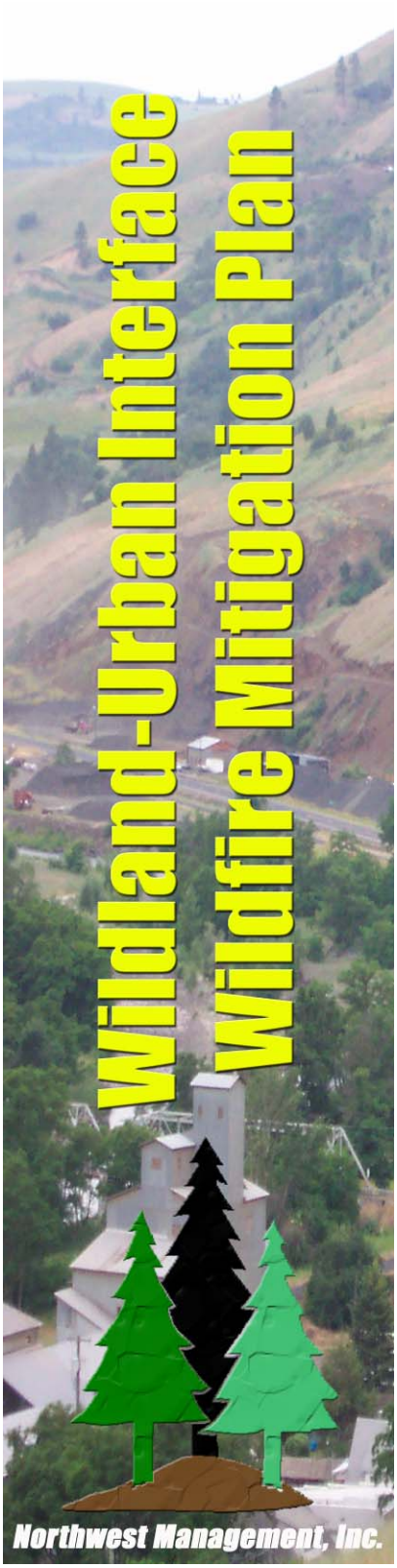


Latah County, Idaho, All Hazards Mitigation Plan

Volume II

Wildland-Urban Interface Wildfire Mitigation Plan

June 20, 2005

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

This plan was developed by the Latah County All Hazards 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 All Hazard 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 hazard events while reducing factors of risk.

Latah County Commissioners
and the employees of Latah County

Clearwater Resource Conservation and Development Council, Inc.

USDI Bureau of Land Management

USDA Forest Service

Idaho Bureau of Homeland Security

Federal Emergency Management Agency

Natural Resources Conservation Service

Idaho Department of Lands

City of Bovill
City of Deary
City of Genesee
City of Juliaetta
City of Kendrick
City of Moscow
City of Onaway
City of Potlatch
City of Troy

Moscow Fire Department
Troy Rural Fire District
Genesee City & Rural Fire Department
Gritman Medical Center
Latah County Highway Districts
Kendrick Fire Department
Deary Rural Fire District
Bovill Rural Fire District
Potlatch Rural Fire District
Juliaetta Fire Department
Latah County Disaster Services
Troy Police Department
&
Local Businesses and Citizens of Latah County

To obtain copies of this plan contact:

Latah County Commissioners Office
Latah County Courthouse
522 South Adams
Moscow, Idaho 83843

Phone: 208-883-7208
Fax: 208-883-2280
Email: bocc@latah.id.us

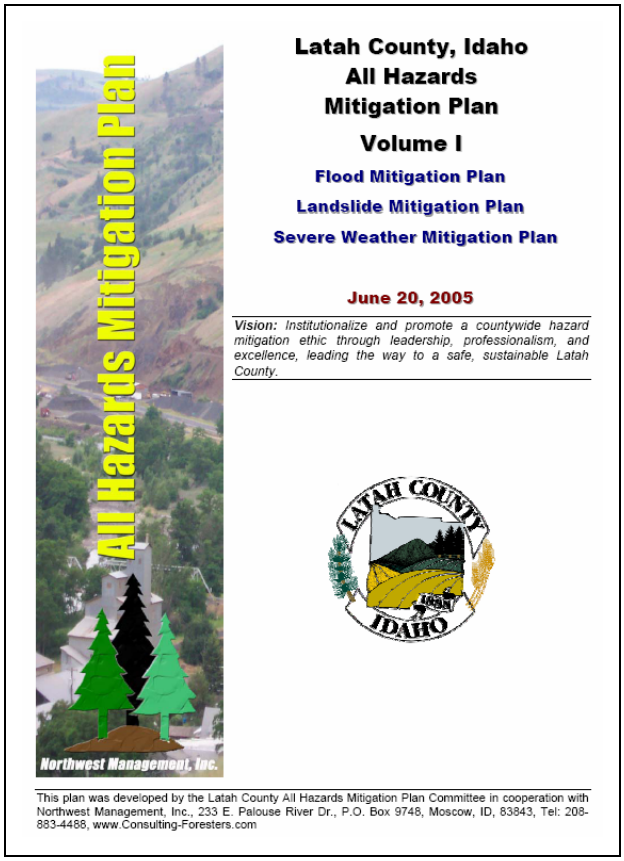
Table of Contents

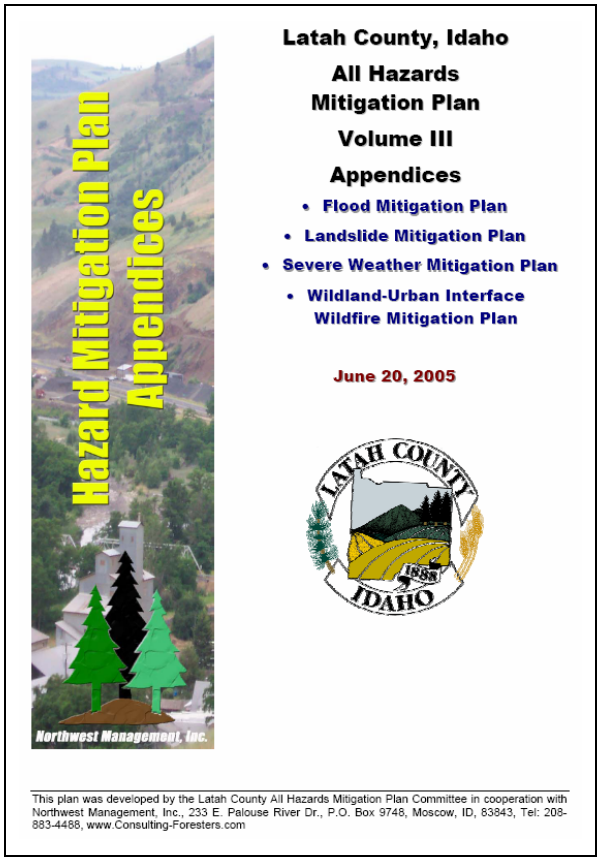
Foreword

The **Latah County All Hazards Mitigation Plan** was developed during 2004-05 by the Latah County Hazard Mitigation Planning Committee in cooperation with Northwest Management, Inc., of Moscow, Idaho. Three bound documents have been produced as part of this planning effort. They include:

- Volume I: All Hazards Mitigation Plan including chapters of;
  - Flood Mitigation Plan
  - Landslide Mitigation Plan
  - Severe Weather Mitigation Plan
- Volume II: Wildland-Urban Interface Wildfire Mitigation Plan
- Volume III: Appendices for Volumes I & II

The Latah County Wildland-Urban Interface Wildfire Mitigation Plan, in addition to being compatible with FEMA requirements is also compatible with the National Fire Plan, the Healthy Forests Restoration Act, and the Idaho Implementation Strategy for the National Fire Plan. Although it is being published as a separate document, it should be considered one chapter of this All Hazards Mitigation Plan and is hereby incorporated into this plan's contents.





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

FEMA

August 29, 2005

Jack Nelson, Chair
Latah County Board of Commissioners
522 South Adams
Moscow, Idaho 83843

Dear Chairman Nelson:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has approved the Latah County All Hazards Mitigation Plan. The following plan participants are now eligible to apply for the Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation project grants through August 29, 2010:

Latah County
Bovill
Dreary
Moscow
Genesee
Juliaetta
Kendrick
Onaway
Potlatch
Troy

The plan's approval provides the participants eligibility to apply for hazard mitigation projects through your state. Grant applications will be evaluated individually according to the specific eligibility and other requirements of the particular hazard mitigation grant program. For example, a mitigation project identified in the approved plan may or may not meet the eligibility requirements for Hazard Mitigation Grant Program (HMGP) funding.

Over the next five years we encourage Latah County to follow the plan's schedule for monitoring and updating the plan, develop further mitigation actions, and continue the multi-jurisdictional partnership exemplified in the plan. The plan must be reviewed, revised as appropriate, and resubmitted for approval within five years in order to continue project grant eligibility.

If you have questions regarding your plan's approval or FEMA's mitigation grant programs, please contact our state counterpart, Idaho Bureau of Homeland Security, who coordinates and administers these efforts for local entities.

Sincerely,

Carl L. Cook, Jr., Director
Mitigation Division

cc: Stephen Weiser, Idaho Bureau of Homeland Security

Enclosure

JV:gb

www.fema.gov

Chapter I: Overview of this Plan and its Development

1 Introduction

This Wildland-Urban Interface Wildland Fire Mitigation Plan for Latah 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 Latah County, Idaho. The planning team responsible for implementing this project was led by the Latah County Commissioners. Agencies and organizations that participated in the planning process included:

- Latah County Commissioners and County Departments
- City of Bovill
- City of Deary
- City of Genesee
- City of Juliaetta
- City of Kendrick
- City of Moscow
- City of Onaway
- City of Potlatch
- City of Troy
- Idaho Department of Lands
- USDI Bureau of Land Management, (also providing funding through the National Fire Plan)
- Idaho Bureau of Homeland Security
- Clearwater Resource Conservation and Development Council, Inc.
- USDA Forest Service
- Moscow Fire Department
- Troy Rural Fire District
- Genesee City & Rural Fire Department
- Gritman Medical Center
- Latah County Highway Districts
- Kendrick Fire Department
- Deary Rural Fire District
- Bovill Rural Fire District
- Potlatch Rural Fire District
- Juliaetta Fire Department

- Latah County Disaster Services
- Troy Police Department
- Bennett Lumber Products
- Northwest Management, Inc.

The Latah County Commissioners solicited competitive bids from companies to provide the service of leading the assessment and the writing of the **Latah County All Hazards Mitigation Plan**. The Commissioners selected Northwest Management, Inc., to provide this service. In addition, the Clearwater Resource Conservation and Development Council, Inc., solicited bids from companies and organizations to lead efforts in preparing the **Latah County Wildfire Mitigation Plan**. Northwest Management, Inc., was also selected to provide this service to the County. 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 Co-Managers from Northwest Management, Inc., were Dr. William E. Schlosser, and Mr. Vincent P. Corrao.

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 and 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 Homeland Security
4040 Guard Street, Bldg 600
Boise, ID 83705

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

- 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

The Wildland-Urban Interface Wildfire Mitigation Plan component of this All Hazards 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 Latah 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 include:

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 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:

- Fire fighter 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
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
- Idaho Bureau of Homeland Security
- 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 fire fighters 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 Latah 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 Latah 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 Latah 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 Wildfire Mitigation Plan; 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.

1.1.3.1.1 Mission Statement

To make Latah 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.

1.1.3.1.2 Vision Statement

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

1.1.3.1.3 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 Latah County
- Strategically locate and plan fuel reduction projects
- Provide recommendations for alternative treatment methods, such as brush density, herbicide treatments, fuel reduction techniques, and disposal or removal of treated fuels
- Meet or exceed the requirements of the National Fire Plan and FEMA for a County level Fire Mitigation Plan

Chapter 2: Documenting the Planning Process

2 Initiation

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 Description of the Planning Process

The Latah County All Hazards 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 Commissioner's Office 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 throughout the process):

1. **Collection of Data** about the extent and periodicity of hazards in and around Latah County. This included an area encompassing Benewah, Shoshone, Clearwater, Nez Perce Counties to insure a robust dataset for making inferences about hazards in Latah County specifically.
2. **Field Observations and Estimations** about risks, juxtaposition of structures and infrastructure to risk areas, access, and potential treatments.
3. **Mapping** of data relevant to pre-disaster mitigation control and treatments, structures, resource values, infrastructure, risk assessments, 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 acknowledgement 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 signature of the final document.

2.2 The Planning Team

Planning efforts were led by the Project Co-Directors, Dr. William E. Schlosser, of Northwest Management, Inc. and Mr. Vincent P. Corrao, B.S. Dr. Schlosser's education includes 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). Mr. Corrao holds a bachelor's degree in Forest Resource Management, is a Certified Forester with the Society of American Foresters, and is President of Northwest Management, Inc. Leading efforts from Latah County, was Sandy Rollins, Latah County Disaster Services Coordinator, who organized meetings, facilitated information management, and coordinated many activities associated with the development of the plans.

They led a team of resource professionals that included Latah County government, incorporated cities, city and rural fire protection, law enforcement, State of Idaho Bureau of Homeland Security, Idaho Department of Lands, the US Forest Service, the Bureau of Land Management, fire mitigation specialists, resource management professionals, and hazard mitigation experts.

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 adequately 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.

2.2.1 Multi-Jurisdictional Participation

CFR requirement §201.6(a)(3) calls for multi-jurisdictional planning in the development of hazard mitigation plans which impact multiple jurisdictions. This Wildfire Mitigation Plan is applicable to the following Jurisdictions:

- Latah County, Idaho
- City of Bovill
- City of Deary
- City of Genesee
- City of Juliaetta
- City of Kendrick
- City of Moscow
- City of Onaway
- City of Potlatch
- City of Troy

In addition, the University of Idaho, Risk Management Department, participated in the planning committee meetings, provided input, and exchanged information used in the hazard mitigation plan.

All of these jurisdictions were represented on the planning committee, in public meetings, and participated in the development of hazard profiles, risk assessments, and mitigation measures. The monthly planning committee meetings were the primary venue for authenticating the planning record. However, additional input was gathered from each jurisdiction in a combination of the following ways:

- Planning committee leadership visits to scheduled municipality public meeting (e.g., County Commission meetings, City Hall meetings) where planning updates were provided and information was exchanged.
- One-on-one visits between the planning committee leadership and the representatives of the municipality (e.g., meetings with County Commissioners, or City Councils in chambers).

- Special meetings at each jurisdiction by the planning committee leadership requested by the municipality involving elected officials (mayors and County Commissioners), appointed officials (e.g., County Assessor, Sheriff, City Police), municipality employees, local volunteers (e.g., fire district volunteers), business community representatives, and local citizenry.
- Written correspondence was provided monthly between the planning committee leadership and each municipality updating the cooperators in the planning process, making requests for information, and facilitating feedback.

Planning committee leadership (referenced above) included: Sandy Rollins, Latah County Disaster Services Coordinator, Dr. William E. Schlosser, Vincent P. Corrao, Toby Brown, Tera Duman, Dennis Thomas, and Vaiden Bloch, all of Northwest Management, Inc., and Dan Pierce, Clearwater Resource Conservation and Development Council, Inc., Coordinator.

Like other rural areas of Idaho and the USA, Latah County's human resources have many demands put on them in terms of time and availability. None of the elected officials (County Commissioners and City Mayors) serve in a full-time capacity: all of them have other employment and serve the community through a convention of community service. Recognizing this, many of the jurisdictions decided to identify a representative from the jurisdiction to cooperate on the planning committee and then report back to the remainder of their organization on the process and serve as a conduit between the planning committee and the jurisdiction. This was the case with the Latah County Commissioners where one of the Commissioners attended the planning committee meetings as a regular attendee. It should be noted that all of the County Commissioners attended multiple hazard mitigation planning committee meetings.

At the city level, all of the City Mayor offices were represented in a variety of ways. In some instances the Mayor personally attended the meetings (e.g., City of Troy). More commonly, the Mayor of a municipality appointed a representative from the municipality to provide this representation on the committee meetings. For example, the Chief of the Kendrick Fire Department represented the Mayor of the City of Kendrick, the Moscow Fire Chief (a paid full-time position) represented the Mayor of Moscow (a part-time position). In the cases when the Mayors were unable to attend, the planning committee leadership provided communications and feedback with the municipality directly to insure the multi-jurisdictional planning necessitated by this process.

2.3 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.

2.3.1 News Releases

Under the auspices of the Latah County All Hazards Mitigation Planning Committee, news releases were submitted to the Latah Eagle newspaper. Informative flyers were also distributed around town and to local offices through the committee.

2.3.1.1 Newspaper Articles

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

Latah County sets out all hazards mitigation plan

BY WILLIAM E. SCHLOSSER
Latah County

The Latah County All Hazards Mitigation Plan has been launched to complete an All Hazards Mitigation Plan for Latah County as part of the FEMA program. The Latah County All Hazards Mitigation Plan will include risk analysis at the community level with predictive models for where disasters are likely to occur. The local contact for this effort is Latah County Disaster Services Coordinator Sandy Rollins. Northwest Management, Inc. has been retained by the county to provide risk assessments, mapping, field inspections, interviews, and to collaborate with the committee to prepare the plan. The coordinating team includes fire districts, land managers, elected officials, community members and others. Northwest Management specialists will conduct an analysis and make recommendations for potential treatments to mitigate the loss potential from these natural hazards.

One of the first steps in gathering information about risk in the county is to conduct a homeowner's survey. Northwest Management, Inc., in cooperation with the planning committee, will be mailing a brief survey to randomly selected homeowners in the county seeking details about home construction materials, proximity to water sources, and past experiences with hazards in the county. This survey is very important to the success of 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. A notice on the date and location of these meetings will be posted in local newspapers.

For more information on the All Hazard Mitigation Plan project in Latah County contact Northwest Management, Inc. project director Dr. William Schlosser (208) 883-4488 or Latah County Disaster Services Coordinator Sandy Rollins at (208) 883-2265.

2.3.2 Public Mail Survey

In order to collect a broad base of perceptions about wildland fire and individual risk factors of homeowners in Latah County, a mail survey was conducted. Approximately 266 residents of Latah County were randomly selected to receive a mail survey.

The public mail survey developed for this project has been used in the past by Northwest Management, Inc., during the execution of other Hazard 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 mailings was sent August 24, 2004, and included a cover letter, a survey, and an offer of receiving a custom GIS map of the area of their selection in Latah 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 September 7, 2004, encouraging their response. A final mailing, with a revised cover letter pleading with them to participate, was sent to non-respondents on September 17, 2004.

Surveys were returned during the months of August, September, October, and November. A total of 123 residents responded to the survey as of November 23, 2004. The effective response rate for this survey was 46%. Statistically, this response rate allows the interpretation of all of the response variables significantly at the 99% confidence level.

2.3.2.1 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.

Of the 123 respondents in the survey, approximately 46% were from the Moscow area, 10% from Troy, 9% were from Potlatch, 7% from Deary, 10% from Viola, 4% from Kendrick, 4% from Juliaetta, with the remaining respondents from other areas in the county.

The vast majority of the respondents (98%) correctly identified that they have emergency telephone 911 services in their area. Structure fire protection in Latah County is limited to those living within the rural fire districts. Many of the residents living in the rural areas of the west and northwestern regions of the county and in the Kendrick-Juliaetta area are without rural structural fire protection. Approximately 97% of the respondents to the survey indicated they have rural structural fire protection. Analysis of this data indicates that 4% of those living outside of a fire protection district believe they have structural fire protection. However, approximately 100% of those respondents who live inside of a structure fire protection area reported they believe they have rural fire protection services.

Respondents were asked to indicate the type of roofing material covering the main structure of their home. Approximately 58% of respondents living in a rural area indicated their homes were covered with a composite material (asphalt shingles). About 38% of these residents indicated their homes were covered with a metal (eg., aluminum, tin) roofing material. Roughly 8% of the rural respondents indicated they have a wooden roofing material such as shakes or shingles.

The average driveway length of respondents to the survey was 432 feet long (0.08 miles). The longest reported was 3,960 feet (0.75 miles). Of those respondents (3%) with a driveway over ½ mile long, approximately 33% do not have turnouts allowing two vehicles to pass. Approximately

66% of the respondents indicated an alternate escape route was available in an emergency which cuts off their primary driveway access.

Survey recipients were asked to report emergency services training received by members of the household. Their responses are summarized in Table 2.1.

Table 2.1. Emergency Services Training received by household.

Type of Training	Percent of Households
Wildland Fire Fighting	30%
City or Rural Fire Fighting	17%
EMT (Emergency Medical Technician)	14%
Basic FirstAid/ CPR	79%
Search and Rescue	11%

Residents were asked to indicate which, if any, of the disasters listed in Table 2.2 have affected their home, property or business within Latah County during the past 10 years.

Table 2.2. Disasters affecting homes in Latah County.

↓Hazard↓	Percent of respondents reporting hazard occurrence during the period 1993-2003, near their home.	If YES, Complete these questions…	Percent of respondents experiencing damage to their home or property.	Approximate average damage caused by each hazard (during the period 1993-2003)
Wildfire	8%	→	3%	$650
Flood	18%	→	11%	$2,417
Earthquake	4%	→	--	$--
Landslide	4%	→	2%	$5,300
Wind Storm	34%	→	13%	$1,121
Winter Storm / Tornado	16%	→	9%	$1,446
Civil Unrest / Terrorism	1%	→	--	$--

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	51%
	Medium size fuels (brush, large shrubs, small trees)	2	33%
	Heavy, large fuels (woodlands, timber, heavy brush)	3	15%
Slope Hazard	Mild slopes (0-5%)	1	53%
	Moderate slope (6-20%)	2	35%
	Steep Slopes (21-40%)	3	9%
	Extreme slopes (41% and greater)	4	3%
Structure Hazard	Noncombustible roof and noncombustible siding materials	1	30%
	Noncombustible roof and combustible siding material	3	40%
	Combustible roof and noncombustible siding material	7	4%
	Combustible roof and combustible siding materials	10	26%
Additional Factors	Rough topography that contains several steep canyons or ridges	+2	Average -2.2 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 for those living in both rural and urban areas.

Fuel hazard __1.6___ x Slope Hazard ___1.6___ = ____2.6____		
Structural hazard	+	____4.4__
Additional factors	(+ or -)	____-2.2__
Total Hazard Points	=	____4.8__.

Table 2.4. Percent of respondents in each risk category as determined by the survey respondents.
00% – Extreme Risk = 26 + points
05% – High Risk = 16–25 points
33% – Moderate Risk = 7–15 points
62% – Low Risk = 6 or less points

Values below are the average response value to each question for those living in **rural areas only**.

Fuel hazard	1.8	x Slope Hazard	1.7	= 3.1
Structural hazard		+		4.4
Additional factors		(+ or -)		-1.8
Total Hazard Points		=		5.7 .

Table 2.5. Percent of respondents in each risk category as determined by the survey respondents.

00% – Extreme Risk = 26 + points
08% – High Risk = 16–25 points
35% – Moderate Risk = 7–15 points
56% – Low Risk = 6 or less points

Values below are the average response value to each question for those living in **urban areas only**.

Fuel hazard	1.3	x Slope Hazard	1.5	= 2.0
Structural hazard		+		4.4
Additional factors		(+ or -)		-2.7
Total Hazard Points		=		3.7 .

Table 2.6. Percent of respondents in each risk category as determined by the survey respondents.

00% – Extreme Risk = 26 + points
00% – High Risk = 16–25 points
31% – Moderate Risk = 7–15 points
69% – Low Risk = 6 or less points

Many Latah County residents have been affected by at least one of the hazards covered by the All Hazards Mitigation Plan (wildfire, flood, landslide, and severe storm). The survey included a series of questions asking respondents to rank (scale of 1-7) the importance or risk to the county as a whole from the hazards specified in Table 2.7.

Table 2.7 Respondent's ranking of risk to Latah County.

Type of Hazard	Ranking "1"	Ranking "2"	Ranking "3"	Ranking "4"	Ranking "5"	Ranking "6"	Ranking "7"
Wildfire	42%	5%	7%	6%	3%	7%	19%
Flood	12%	22%	12%	18%	13%	16%	7%
Earthquake	21%	17%	5%	4%	16%	23%	15%
Landslide	9%	15%	24%	15%	19%	12%	6%
Wind Storm	8%	20%	19%	17%	16%	12%	8%
Severe Weather	8%	9%	17%	26%	16%	17%	6%
Civil Unrest/Terrorism	16%	8%	13%	11%	12%	7%	31%

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 share with homeowners how to reduce the potential for casualty loss surrounding your home?" 40% of respondents indicated a desire to participate in this type of training.

Homeowners were also asked, "How Hazard 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 2.8.

Table 2.8. Public Opinion of Hazard Mitigation Funding Preferences.

	100% Public Funding	Cost-Share (Public & Private)	Privately Funded (Owner or Company)
Home Defensibility Projects →	13%	42%	45%
Community Defensibility Projects →	46%	49%	5%
Infrastructure Projects Roads, Bridges, Power Lines, Etc. →	72%	20%	8%

We wish to thank all Latah County residents completing and returning these surveys.

2.3.3 Committee Meetings

The following list of people who participated in the planning committee meetings, volunteered time, or responded to elements of the Latah County All Hazard Mitigation Plan's preparation.

NAME **ORGANIZATION**

- Alan Martinson ..... Latah County Disaster Services
- Alice Pope Barbut ..... Latah County Resident
- Bill Krick ..... Genesee City and Rural Fire Department
- Bob Leonard..... South Latah County Highway District
- Brad Dorendorf..... Mayor, City of Boville
- Brett Bennett ..... Bennett Lumber Products
- Charles Craig ..... Gritman Medical Center
- Charles Doty ..... President, Clearwater RC&D
- Dan Carscallen..... North Latah County Highway District
- Dan Pierce ..... USDA-NRCS and Clearwater RC&D
- Dana Magnuson..... Mayor, City of Kendrick
- Darrell Kilgore ..... Chief, Genesee City Fire Department
- David Brown..... Mayor, City of Potlatch
- Dick Hodge..... Clearwater RC&D
- Don Strong ..... Chief, Moscow Fire Department
- Ed Button ..... Moscow Fire Department
- Greg Yuncevich..... Bureau of Land Management
- Jeff Halbrook ..... Hazard Mitigation Contractor
- Jeff Lohman ..... Mayor, City of Juliaetta
- John A. "Jack" Nelson ..... Latah County Commissioner
- John Henderson..... Mayor, City of Deary
- John Oppenheimer..... Idaho Conservation League
- Ken Whitney..... Mayor, City of Troy
- KT Whiteley..... Troy Police Department
- Larry Dawson ..... Forest Supervisor, Clearwater National Forest
- Marshall Comstock..... Mayor, City of Moscow

- Michael Linderman ..... Latah County Emergency Planning Committee
- Michelle Fuson ..... Latah County Planning and Building
- Mike McGee ..... Juliaetta Fire Department
- Nancy Spink ..... University of Idaho
- Paul J. Kimmell ..... Latah County Commissioner
- Rex Benson..... Mayor, City of Onaway
- Roger Kechter ..... Idaho Department of Lands
- Ron Stearns ..... Troy Rural Fire District
- Sandy Rollins ..... Latah County Disaster Services
- Steve Fiscus..... Latah County Assessor
- Tami Parkinson ..... USDA Forest Service
- Tim Sperber ..... Mayor, City of Genesee
- Tom S. Stroschein..... Latah County Commissioner
- Tom McWilliams..... USDA Forest Service
- Val Norris ..... Chief, Kendrick Fire Department
- Vincent Corrao ..... Northwest Management, Inc.
- Wayne Rausch..... Latah County Sheriff
- William Schlosser..... Northwest Management, Inc.

2.3.3.1 Committee Meeting Minutes

Committee Meetings were scheduled and held from September 2004 through February 2005.

2.3.3.1.1 September 28th, 2004 – Latah County Courthouse

Members the Latah County All Hazards Committee would like to see at the Meetings:

- Idaho Department of Lands
- County Sheriff's Office
- City of Moscow- Les McDonald
- LECP Chair- Tom Eisenberg
- Bennett Lumber
- Potlatch Corp and other major landowners
- University of Idaho
- USDA Forest Service
- Moscow Fire Dept.- Ed Button
- Highway Districts
- Idaho State Police Troopers- Lonnie Richardson
- Idaho Transportation Department- John Ward
- Idaho Conservation League

Debbie Ruppe, North Central Field Officer, Idaho Bureau of Homeland Security may not give money unless a disaster actually happens but there are funds available for pre-mitigation activities if the plan identifies them.

Don Strong Chief (Moscow Fire Dept.): How are the communities on the fire list chosen (since they are all cities = lower risk from fire)?

Vinny: Communities are listed by population but funding usually covers outside areas (by WUI)

Don: Different communities need to talk to each other and coordinate even train together? Most don't even know if they can talk. There are mutual aid agreements but who knows if everything will work when a disaster actually happens. The Flannigan Ck. Fire had about 13 agencies involved and it worked okay but no one knew what would happen. Also, many communities have equipment but not enough manpower.

Debbie Ruppe: Go to www.sidc.id.gov and fill out the assessment of community capabilities. The state is putting together a plan for communication (even between states).

Don: The County needs a full-time person to apply for grants to get assistance. Maybe there is funding to get a grant writer.

Ruppe: Pre-Disaster- FEMA prioritized properties who've continually received damages. There are none in Latah so we would get no pre-disaster money.

MAPS: Were displayed and discussed

Floods: Highway District (esp. South) are getting information about 100-yr flood and determine if the culverts can handle the flows.

Fires: Districts are determined by taxes (Boise) some questioned there accuracy. (Don says they should be accurate)

Ruppe: Does response time determines some district boundaries?

Mutual aid agreements should help prevent insurance problems (not crossing district boundaries because insurance stops)

Don: But rates are sometimes based on mileage (over 5 miles increases insurance).

Kt: The state doesn't do structures so the area in the middle of the districts is not covered.

Ruppe: Should boundaries be expanded? This is a big issue for other counties in the region.

Michelle: The focus should be on property vs. structures (unrealistic because the area is so rural). A lot of people don't really know what protection they have!

Vinny: Education for those outside 15-20 minute response time could help a lot. (Everyone on Committee agrees)

Alice Barbut: Many people don't know what defensible space, how long response time is, or how everything affects their neighbors (access, turnarounds, etc.).

Primary Access:

Keep open Highways 95, 8, 9, 3, & 6

Secondary Access:

Highway 99? (may close)

Ruppe: No FMP/AHMP plans have been completely approved by FEMA (all ours have been conditionally approved, meaning they need "minor tweaking").

Sandy Rollins: Nov. 6 Safety Fair might be a good place to advertise since she will have a booth there anyway. Just give out some information, press releases, maps (WUI Severity)…

Ruppe: Everything has to be paid by the end of the funding period (May 31, 2005) and the final to FEMA

Sandy: Next meeting could be a working lunch Nov. 9 at 12 noon… 3 to 4 PM??

2.3.3.1.2 November 9th, 2004 – Latah County Courthouse

Minutes updated from September meeting add the attendance records for each meeting.

Review of what each chapter in the plan contains and what will be included.

Explanation of the WUI and population density.

State monitors well, springs, and surface water. Juliaetta water collection from the Potlatch River is a necessity.

Troy City is having a plan written and is an open water collection from the Reservoir. Primary water source.

Nez Perce Latah Sperry grade out of Kendrick bridge is not adequate to cover the weight of fire trucks.

WUI Round it off to cover Viola community.

Invite the USFS and the CPTPA to the next meeting.

Genesee Fire requires more training and recruitment for volunteers. The Rurals can fight Wildland fire.

Kendrick equipment not readily available. Currently, they rely heavily on Nez Perce County Sheriff's Posse to respond to fires in the area; however, this service will not be available much longer. Juliaetta needs facility and rolling stock. Brick and mortar is also necessary. Juliaetta and Kendrick are not rural fire districts.

New rural fire district in Kendrick and Juliaetta proposal that needs to happen

Brett Bennett to share their GIS data on the rural fire districts boundaries.

Hazard Profiling- Hazards ignitions and extent of fires.

Flood plains are established throughout the entire County. Landslide risk of where roads fail or restrict the primary or secondary roads. Troy near Puffy's place major slide.

Sandy has the landslides file folder to put events on the map.

Discussion on seismic index and also fault lines within the County. Little risk in Latah County.

Contact Tami Parkinson for Forest Service input of treatment areas and past fuel treatment areas.

Public meeting locations- Moscow/ Juliaetta Kendrick/ Potlatch/ Deary

Put in the Lewiston paper also the advertisement of public meetings.

Sandy to write a letter to the newspapers Moscow, Lewiston, and the Eagle about the meetings.

Reference the Troy water plan in the AHMP. Tentatively Jan 17-20 for the public meetings. Could have the Courthouse or Fairgrounds or the 1912 Building. 5:30 PM for Moscow, Potlatch noon, Kendrick Juliaetta maybe noon at Senior Centers, Potlatch at 7:00 PM

Next Committee Meeting February 1 at noon at the Courthouse.

Communications between groups and for radio communications.

Mutual Aid Agreement need to be established between all Rural Districts- update all of them, many are out-dated. Standardize the Mutual Aid Agreements are available.

Hospital is in a low spot and could need assistance from the County. Health Districts to be invited for water quality and health issues.

2.3.3.1.3 February 1, 2005 – Latah County Courthouse

The purpose of the February 1st committee meeting was to present the draft plan to committee members for review. Sandy Rollins provided lunch for the nearly 30 members that attended. Bill Schlosser and Tera Duman of Northwest Management, Inc. began the meeting by passing out copies of the Draft All Hazards Mitigation Plan as well as the Draft Wildfire Mitigation Plan and Draft Appendices document. Bill went through each document explaining the overall setup and nature of the information. Comments and questions were received. Bill also explained the appropriate avenues for submitting comments during the review period and set the next meeting date for March 1st.

Following are some of the comments that were brought up at the meeting.

- Add Kendrick and Juliaetta to participants list.
- Add “rural” and “urban” to table headings in survey results.
- Remove “Terrorism” from table on page 12.
- Check earthquake data in Table 2.7.
- Make changes and corrections to committee member names and affilitations.
- Add Forest Service Resources and Capabilities.
- Clarify Hazus data.
- Add February 1996 flood information.
- Reword section 4.6.
- Add Juliaetta flood assessment.
- Highway districts need GPS in pickups to record slide data.
- Change Cherry Lane reference to McGary Grade.
- Add and change names on signature page.

2.3.4 Public Meetings

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

The initial schedule of public meetings included four locations in the county and were attended by a number of individuals on the committee and from the general public. The planning committee was approached by some community members requesting another public meeting after the initial series was completed. The planning team quickly agreed to the additional location and time in Moscow, Idaho, and advertised the meeting and held it on February 15,

2005. Meeting announcements for both rounds of public meetings are attached below in Figures 2.1 and 2.2.

Figure 2.1. Public meeting announcement for January 2005 meetings.

Latah County, Idaho All Hazard Mitigation Plan

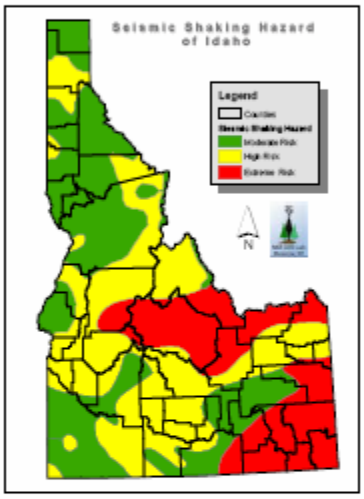
Public Meetings!

Deary: January 25, 2005, Deary Fire Hall, 7 - 9 pm.
Potlatch: January 26, 2005, Potlatch Train Depot, 12 - 2 pm.
Moscow: January 26, 2005, 1912 Building, 412 E. 3rd, 7 - 9 pm.
Kendrick: January 27, 2005, Kendrick Golden Sun Center, 7 - 9 pm.

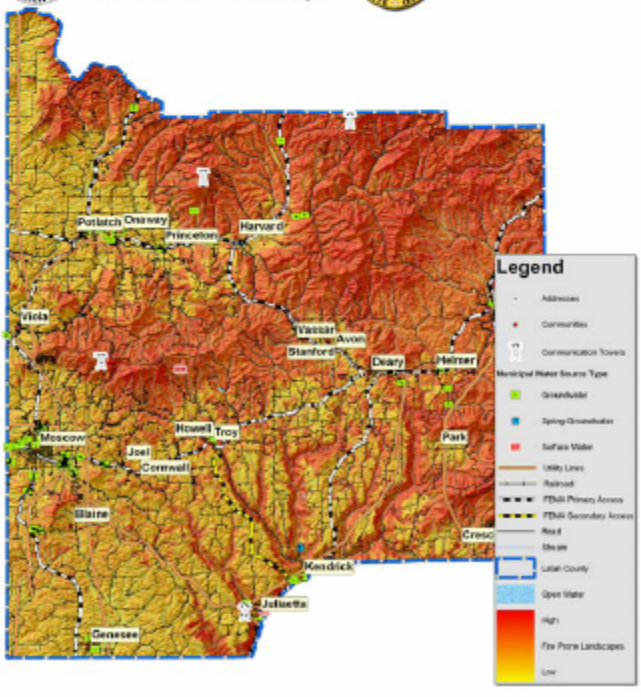
These public meetings will address the **All Hazards Mitigation Plan** for our communities. These meetings are open to the public and will include slideshow presentations from hazard mitigation specialists working on the Latah County All Hazards Mitigation Plan. Public input is being sought in order to better frame the County's efforts of hazard mitigation treatments, fire district resource enhancements, and public land management.

This meeting will last for approximately 1.5 hours.

Please attend and participate!



Latah County, Idaho
All Hazards Mitigation Plan
Fire Prone Landscapes



Topics of discussion include:

- Landslides
- Severe Weather
- Earthquakes
- Floods
- Wildfire

Discuss ***YOUR*** priorities for how our communities can best mitigate these risks.

This meeting will last for approximately 1.5 hours and include refreshments, a slideshow, information on the planning process, and schedules for completion. We want your input.

For more information on Hazard Mitigation Plan projects in Latah County, contact your County Commissioners, Dan Pierce at the Clearwater RC&D office at 208-882-4960 ext. 4, William E. Schlosser at the Northwest Management, Inc., office in Moscow at 208-883-4488, or Sandy Rollins at Latah County Disaster Services Department at 208-883-2265. ***We'll see you there!***

Figure 2.2. Public meeting announcement for February 2005 meetings.

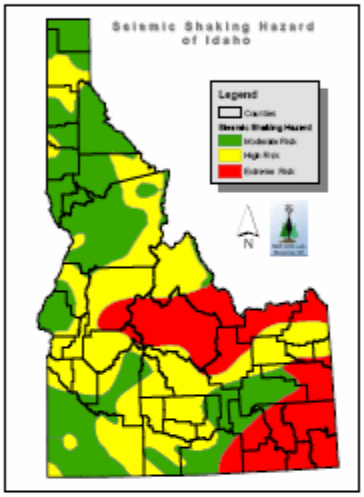
Latah County, Idaho
All Hazard
Mitigation Plan
Public Meeting!

Moscow: February 15, 2005, Latah County Fairgrounds - 7:30 - 9:00 pm.

This public meeting will address the **All Hazards Mitigation Plan** for Latah County. This meeting is open to the public and will include slideshow presentations from hazard mitigation specialists working on the Latah County All Hazards Mitigation Plan. Public input is being sought in order to better frame the County's efforts of hazard mitigation treatments, fire district resource enhancements, and public land management.

This meeting will last for approximately 1.5 hours.

Please attend and participate!



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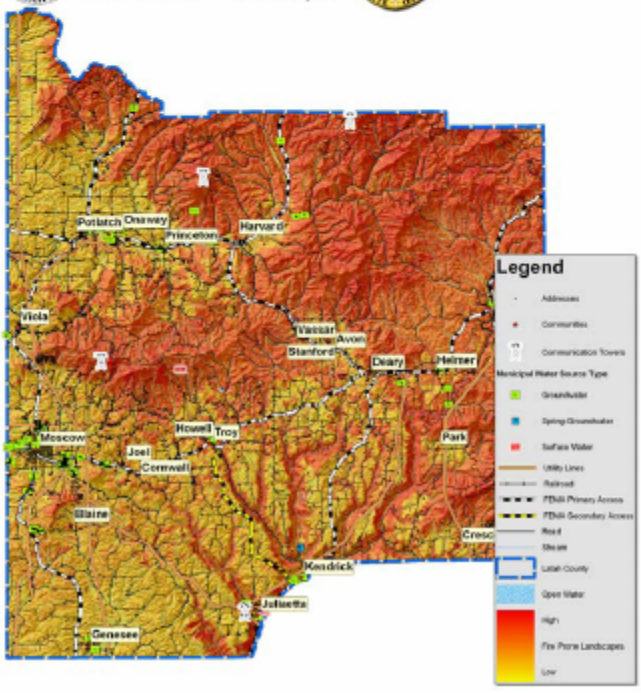
All Hazards Mitigation Plan
Fire Prone Landscapes



Topics of discussion include:

- Landslides
- Severe Weather
- Earthquakes
- Floods
- Wildfire

Discuss *YOUR* priorities for how our communities can best mitigate these risks.

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2.3.4.1 January 26th, 2005, Deary Fire Hall

Attendees:	Tera Duman	Northwest Management, Inc.
	Brian Robertson	Deary Rural Fire District
	Tim Jones	Deary Rural Fire District
	Sandy Rollins	Latah County Disaster Services
	William Schlosser	Northwest Management, Inc.
	Rob Lundy	Deary Rural Fire District

Bill Schlosser began the presentation at 7 pm. The group had several questions about the general organization of the All Hazard Mitigation Plan and how it would help them secure funding for mitigation projects and emergency services enhancements.

Several issues facing the Deary Rural Fire District and area residents were discussed. A summary of these discussions follows:

The fire department would like to be informed of building permits filed within their jurisdiction, so that they are not only aware of the new structure, but also so they can help the new owners meet the International Fire Code guidelines adopted by the state (County has not yet adopted). They believe this would help alleviate some of the emergency water source and access issues commonly found on new construction sites in the wildland urban interface. Currently, the county building inspectors do not check new construction sites for compliance to the International Fire Code.

Currently, the Deary and Troy Rural Fire Districts travel out of their district to respond to emergency calls in the Kendrick-Juliaetta area. This is a liability and personnel risk to these departments, but it also costs them money, which they are not compensated for. They believe that a new fire district should be formed to help protect the Kendrick and Juliaetta residents.

There is currently no wildland fire protection in a large area stretching from just south of Genesee to the Nez Perce – Latah County line. This area is characterized by south aspect breaklands and are at high risk of experiencing an uncontrolled rangeland fire. An abundance of CRP in this area adds to the risk as these fuels typically burn more intensely than cultivated farmland. Annual burning of fields by local farmers adds to the fire potential. Genesee provides some wildland fire protection; however, their department is not equipped to handle this type of fire. Attendees at the meeting would like the All Hazards Mitigation Plan to recommend that the Idaho Department of Lands annex this area into their wildland fire protection district.

Home address signs were erected throughout the county several years ago as part of the Enhanced 911 service. These signs have become difficult to see or are no longer present. The Deary Rural Fire District recommended that these signs should be made visible once again and possibly more permanent to aid in emergency response.

Several years ago the repeater used by the Deary Rural Fire District and officials in Bovill was moved from McGary Butte to Elk Butte due to the loss of affordable power. Since the move, the radio coverage has decreased from about 95% to approximately 70% throughout these districts. Recently, power has been restored to McGary Butte and it would be beneficial to either add an additional repeater on McGary Butte to supplement the Elk Butte repeater or move the repeater location entirely. This would drastically improve radio and dispatch communications across this part of the county. They believe it would cost approximately $7,500 to move the repeater location back to McGary Butte.

There is a need for road improvements throughout Latah County. Specific areas mentioned include: Flat Creek crossing on Highway 9 frequently floods the road, flooding over the road

near the White Pine Café in Troy, and water drainage off streets in Deary due to runoff from Spud Hill.

Other Deary Rural Fire District needs include:

Daytime Volunteers

Additional Training

Younger Volunteers – (Possible implementation of the "CERT" program)

Renegotiation of district boundaries with Troy Rural Fire District in order to better serve residents of both districts (some areas within the Troy district are closer and more efficient for the Deary Department to respond to and vice versa).

2.3.4.2 January 27th, 2005, Potlatch Train Depot

Attendees:	Toby Brown	Northwest Management, Inc.
	Tera Duman	Northwest Management, Inc.
	Sandy Rollins	Latah County Disaster Services
	Dan Pierce	Clearwater RC&D
	Sara McCullough	Clearwater RC&D

Toby went through an abbreviated version of the presentation due to the lack of attendees that hadn't seen the slides before and answered any questions that came up. Primary topics included how the FEMA funding worked locally and the impacts of the Healthy Forests Restoration Act on mitigation projects in the wildland urban interface, particularly those administered by the USDA Forest Service.

2.3.4.3 January 27th, 2005, Moscow 1912 Building

Attendees:	Tera Duman	Northwest Management, Inc.
	Toby Brown	Northwest Management, Inc.
	Sandy Rollins	Latah County Disaster Services
	Chris King	Moscow Resident
	Dan Pierce	USDA-NRCS Clearwater RC&D
	Jeff Handel	Idaho Department of Lands
	Don Strong	Moscow Fire Department
	Michael Linderman	Latah County Emergency Planning Committee
	Diane Corrao	Northwest Management, Inc.

Toby began the presentation at 7pm. Attendees discussed some of the funding opportunities afforded by adoption of the All Hazards Mitigation Plan and some of the mitigation steps the city of Moscow and the County have taken already. The County Courthouse, Latah Health Services, and Latah County Fairgrounds as well as the Colfax radio station (99.5) were set up with generators in preparation for Y2K. Some of the other issues discussed were:

- IDL cannot provide wildland fire protection to the currently unprotected area near Genesee because there is no timber. This could be changed by state legislation or possible on a subscription basis. Genesee rural fire department is semi-equipped to handle these fires.
- Not necessarily the Moscow Dept., but other fire departments have trouble getting volunteers that are available during the day. Implementation of the "CERT" program (Community Emergency Response Team) may assist in minimizing some of this need. Volunteers in most departments are also in need of additional training. New programs

may be able to pay volunteers to go to training, if their employers will allow them to miss work.

- Latah County needs to update rural addressing and post signs that are visible at the end of driveways.
- The County needs to involve fire districts in new permit and inspection process. Most fire districts are unaware of new structures and their addresses within their jurisdiction. New sites and access issues should be inspected by the fire department or at least by an inspector who can enforce the International Fire Code. The State has already adopted the International Fire Code, but the County has not enforced the regulations.
- The IDL can communicate fairly well with the fire depts. and the Sheriffs office, but many local departments have dead spots due to the poor location of repeaters. County should consider sharing repeaters amongst some or all of the different response organizations.
    - New narrow band radios do not get very good long range coverage and may require several additional repeaters, but they do offer twice as many frequencies.
- Some of the smaller shelters throughout the county do not have back up power. Busch distributors will provide fuel trucks to refill tanks if power goes out for an extended period. Generators can also be fueled by natural gas. Many area buildings are not currently hardwired for generator hookup. Communities also need to have an emergency number to call utility companies, so they can avoid automated systems.
- Several bridge crossings throughout the county are either not signed with weight rating information or will not accommodate emergency equipment. Many private driveways are not adequate for emergency vehicles. They lack the necessary width, turnouts, turnaround areas, and many are too steep. County needs to enforce road requirements. Several county roads dead end at homes. Planning and Zoning department is as much accountable for the current situation as homeowners. Response teams need a current map of the county that shows “safe” bridge crossings, water availability, etc.
- Public education is important. “Code of the West” pamphlets are good for private landowners. Education campaigns are cheap and effective. Voluntary actions by homeowners benefit everyone.
- Need to establish more dry hydrants or underground tanks in denser housing areas such as the Nearing Edition. These are general requirements of onsite water sources, which the county needs to enforce.
- Many of the county mutual aid agreements are out-dated or non-existent. There are some regional models to base these from.
- Sheriffs office has obtained a mobile command unit, but there are currently no employees trained to use it.

2.3.4.4 January 28th, 2005, Kendrick Golden Sun Senior Center

Attendees:	Tera Duman	Northwest Management, Inc.
	Toby Brown	Northwest Management, Inc.
	Sandy Rollins	Latah County Disaster Services
	Lizzie Baumgardner	JCIA and Juliaetta Volunteer Fire Department
	Roger Kechter	Idaho Department of Lands
	Mike McGee	Juliaetta Fire Department
	Dan Pierce	USDA-NRCS Clearwater RC&D
	Val Norris	Kendrick Fire Department
	Betty J. McMahon	Kendrick Fire Department
	Rose Norris	Kendrick Fire Department/City Councilwoman

Toby began the presentation at 7 pm. The group had several questions about the meaning of the maps and the funding opportunities that may come out of the All Hazard Mitigation Plan.

After the presentation, the discussion was primarily concentrated on the current state of the local fire departments and the lack of a rural fire district. The following are the highlights and needs of these departments.

- There is currently no rural fire district for the Kendrick-Juliaetta area. The city fire chiefs have been trying for several years to start a new rural department, but the local residents have repeatedly voted "no". The city fire chiefs believe that locals do not understand the financial benefit of having the rural coverage. The city departments respond to some rural calls, but they mostly rely on neighboring districts or locals with their own equipment. The ambulance responds to calls without the assistance of the fire department.
    - The Nez Perce Sheriffs office will not be responding to emergencies in the Kendrick-Juliaetta area any more.
- The Juliaetta Fire Department is in dire need of updated equipment. Their 1956, open cab truck has failed during emergency calls and their personal safety equipment is not up to current standards. Since this is the first year they have received a budget from the city council, they are not even eligible to apply for grants. Due to the lack of space in their truck storage garage, they must keep the rest of their equipment either at the Kendrick Fire Department or in a storage unit, which slows their response time significantly. They believe that if they were a self-sufficient, functioning department, they would attract more volunteers.
    - Primary needs at this time are: rolling stock and associated equipment, PPEs, training, and a bigger storage facility.

Other emergency response issues affecting the Kendrick-Juliaetta area are:

- Dispatch is the only facility in the area that has back up power or is capable of receiving a generator. The city wells do not have back up power, but they do have a spring that helps refill part of their water supply. Attendees suggested acquiring mobile repeaters with their own back up power.
- Moscow Mountain is the only repeater in the county that has back up power, but reception from this repeater is not very good in Kendrick or Juliaetta.
- Kendrick and Juliaetta hire a state building inspector from Lewiston. Fire departments are not notified of new building permits or involved in the inspection process at all. Latah County needs to enforce current building codes and adopt the International Fire Code, which the State has already adopted.
- Rural addressing throughout the county is very poor. Road signs are also mismarked or completely missing in many areas. The County's taxing addresses are incorrect and in need of updating. Many districts rely on Bennett Lumbers Map Books rather than County produced maps.
- McGary and Sperry bridges are not adequate for large, heavy trucks and either need redecked, reinforced, or replaced.
- Ambulance crew is in need of additional training, although this is a private company. The local fire departments are working on joint training with the ambulance team.

- There are very few HAZMAT certified people in the area for the high traffic volume that travels through and the presence of the bulk plants within the towns.

Dr. William E. Schlosser presented an overview of the hazards mitigation planning efforts for Latah County. Questions and comments from the audience focused on hazard preparedness, impacts of multiple hazards (fire, flood, severe weather) and how well prepared the county is to provide emergency services.

The creation of additional protection areas for structural fire protection were discussed and ideas were shared on how to make it happen.

2.3.4.5 February 15, 2005 – Latah County Fairgrounds

Attendees:	Gregory Bassler	Richard Lyon
	Tera Duman	Diane Albright
	Dan Pierce	Alice Pope-Barbut
	Mary Ann Green	Sandy Rollins
	Bob Hassolis	Jeff Halbrook
	Jo Campbell	Willemina Kardong
	Dick Hodge	Ciara Cusack
	Roberty Barkley	Tom McWilliams
	Roger Kechter	Harley Wright
	Vincent Corrao	And others not signed in

This public meeting was added to the schedule after concern came up that not enough of the public was informed of the previous meetings. NMI agreed to do another meeting to insure public participation. This meeting was well attended by both committee members and Latah County residents, especially residents of the Nearing Subdivision north of Moscow. Tera Duman of Northwest Management, Inc. began the presentation at 7:30. There were several comments and questions throughout the presentation. Many of the area resident attendees were interested in the wildfire aspect of the plan.

After the formal presentation, Tera and Vinny went over some of the critical issues that have come up in the previous meetings including the creation of a Kendrick-Juliaetta Rural Fire District, lack of back-up power for infrastructure components (shelters, water systems, radio stations, etc.), and current and ongoing mitigation projects. Other issues that came up during the discussion were: appropriate radio stations to listen to for emergency broadcasts, repeater capabilities, back-up power systems for shelters and administration buildings, availability of funding for hazardous fuel reduction projects, and educational avenues for spreading the word about hazard mitigation.

The meeting concluded at approximately 8:45 pm; however, most attendees spent some time reviewing the wall maps and asking committee members questions.

Figure 2.3. Public meeting slideshow overview.

The public meeting slide show (title slide above) is outlined below.

Table 2.9. Public meeting slide show

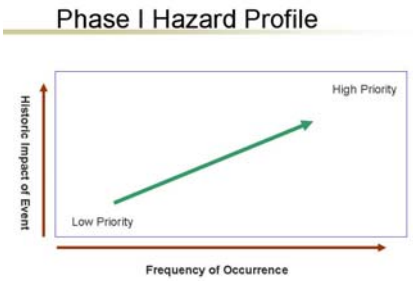
Slide 1

Slide 2

Slide 3

Slide 4

Slide 5



Slide 6

FEMA Requirements

(Outstanding Rating)

- Adoption by Local Government Body
- Multi-Jurisdictional Planning
- Identification of Hazards & Risk Assessment
  - Profiling Hazard Events
  - Mapping Juxtaposition of Hazards, Structures, Infrastructure
  - Potential Dollar Losses to Vulnerable Structures (B/C Analysis)
- Documented Planning Process
- Assessing Vulnerability
- Mitigation Goals
- Analysis of Mitigation Measures
- Monitoring, Evaluating & Updating the Plan (5 year cycles)
- Implementation Through Existing Programs
- Public Involvement

Slide 7

Wildfire Mitigation: National Policy

- **National Fire Plan (2000)**
  - Preparedness
  - Rehabilitation & Restoration
  - Hazardous Fuel Reduction
  - Community Protection
  - Accountability
- **Statewide Implementation Strategy**
  - Idaho Bureau of Homeland Security
  - Idaho Implementation Strategy of the National Fire Plan

Slide 8

Healthy Forests Restoration Act

- 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.

Slide 9

Funding Opportunities

- **Federal Monies**
  - National Fire Plan
  - Healthy Forests Restoration Act
  - Federal Emergency Management Agency
- **State Monies**
  - Statewide Implementation Efforts
  - Idaho Bureau of Homeland Security
- **The Goal is Hazard Reduction**
  - Protection of People and Structures
  - Protection of Infrastructure
  - Protection of Economy
  - Protection of Ecosystems

Slide 10

Recommendations

- WUI Safety & Policy
- People & Structures
- Infrastructure
- Resources & Capabilities
- Regional Land Management Recommendations

We will revisit this list at the end of the presentation…

Slide 11

Slide 12

Slide 13

Slide 14

Slide 15

Slide 16

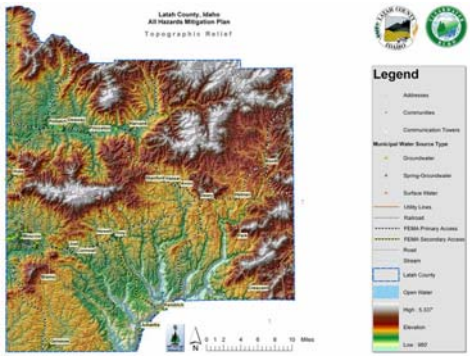
Slide 17

Slide 18

Hazard Mitigation Approach

- Hazard Profile
- Risk Assessment
- Vulnerability Appraisal
- Mitigation Strategy Development
- Prioritization and Planning
- Implement the Plan!

Slide 19



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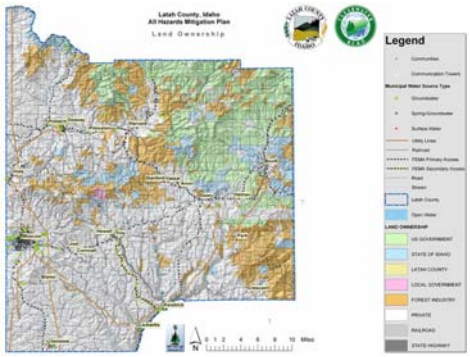

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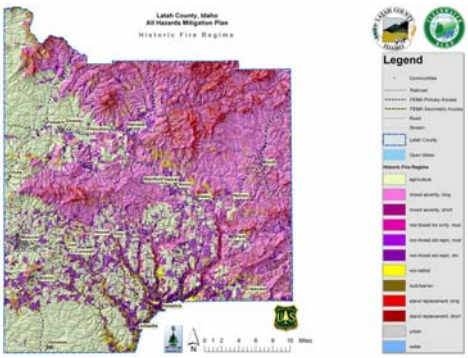

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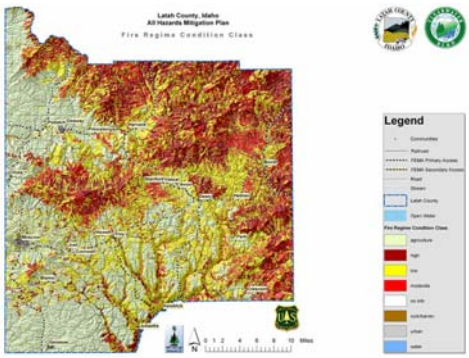

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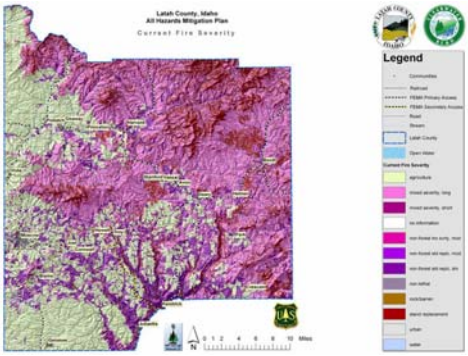

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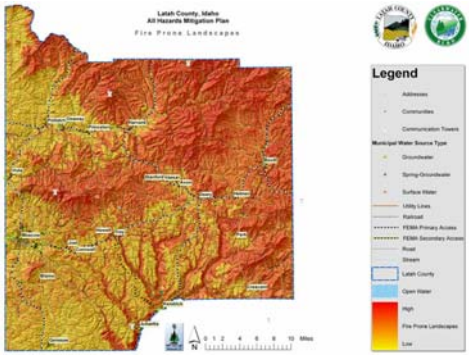

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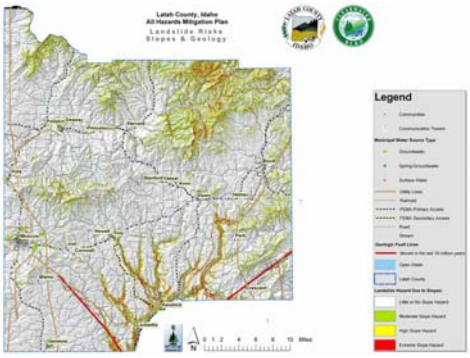

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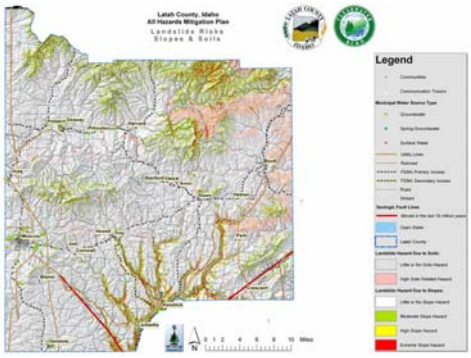

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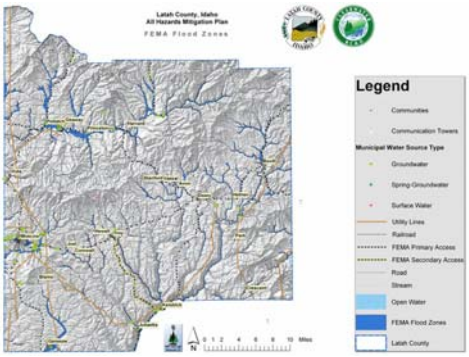


Slide 28

Wildland-Urban Interface

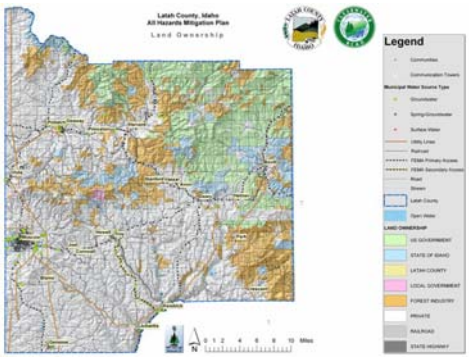
- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – 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.

Slide 29

Defining Latah County's Wildland-Urban Interface

- Unique to each area & it changes over time
- Based on where structures are currently located
- Uses mathematical formulae and geospatial relationships to visually represent where the WUI exists
- *When you see it, you'll understand what we mean*

Slide 30



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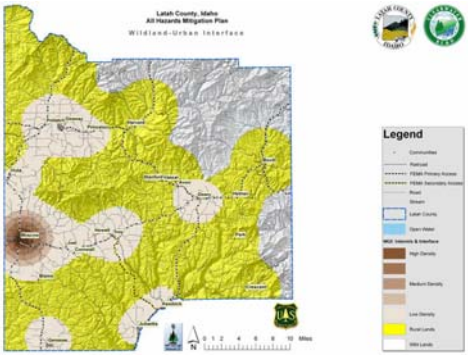


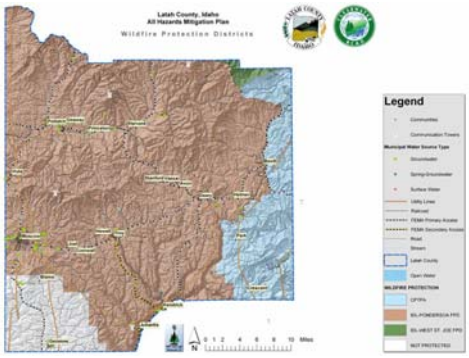
Slide 32

Slide 33

Preparedness

- City Fire Protection
- Rural Fire Protection
- Wildland Fire Protection

Slide 34



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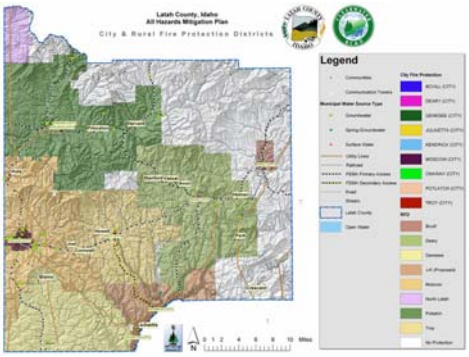
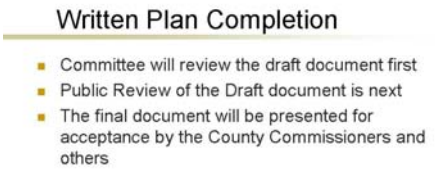


Slide 36

Public Involvement

- Public Mail Survey was sent to 230 households in Latah County
  - A total of 122 surveys were returned so far (53% response rate)
- Four Public Meetings will be held in January
- Public Review of the DRAFT Plans will be facilitated once all sections have been completed and reviewed by the committee

Slide 37



Slide 38

Slide 39

2.3.5 Documented Review Process

Review and comment on these plans has been provided through an number of avenues for the Committee members as well as the members of the general public.

During regularly scheduled committee meetings in the Fall of 2004 and winter of 2005, the committee met to discuss findings, review mapping and analysis, and provide written comments on draft sections of the document. During the public meetings attendees observed map analyses, photographic collections, and discussed general findings within the All Hazards Mitigation Plan.

The first draft of the document was prepared after the public meetings and presented to the committee on February 1, 2005, for a full committee review. The committee was given 1 month to provide comments to the plan.

On March 1, 2005, the planning committee met again to review changes in the document and to prepare a public review version of the documents. The revised draft was available at selected locations around Latah County for open public review with announcements in the local media regarding the month long review period. The public review period officially closed on April 6, 2005.

A pre-adoption FEMA review of the plan was submitted to the Idaho Bureau of Homeland Security and forwarded to FEMA. Review comments by FEMA were integrated into a revised version of the planning documents and finalized on June 17, 2005. This plan was adopted by the Latah County Commissioners and all listed municipalities beginning on June 20, 2005.

2.3.6 Continued Public Involvement

Latah County is dedicated to involving the public directly in review and updates of the Hazard Mitigation Plan. The Latah County Commissioners, through the Interface Hazard Mitigation Committee are responsible for the annual review and update of the plan as recommended in the "Recommendations" section of this document.

The public will have the opportunity to provide feedback about the Plan annually on the anniversary of the adoption of this plan, at the meeting of the County Commissioners. Copies of the Plan will be catalogued and kept at all of the appropriate agencies in the county. The existence and location of these copies will be publicized. Instructions on how to obtain copies of the plan will be made available on the County's Internet web site. The Plan also includes the address and phone number of the county Planning Division, responsible for keeping track of public comments on the Plan.

In addition, copies of the plan and any proposed changes will be posted on the county website. This site will also contain an email address and phone number to which people can direct their comments and concerns.

A public meeting will also be held as part of each annual evaluation or when deemed necessary by the Interface Hazard Mitigation Committee. The meetings will provide the public a forum for which they can express its concerns, opinions, or ideas about the Plan. The County Public Information Officer will be responsible for using county resources to publicize the annual public meetings and maintain public involvement through the public access channel, webpage, and newspapers.

Chapter 3: Latah County Characteristics

3 Background and Area Description

3.1 Demographics

Latah County reported a total population of 34,935 in 2000 with approximately 13,838 housing units. Latah County has nine incorporated communities; Moscow (pop. 21,291), Potlatch (pop. 791), Deary (pop. 552), Troy (pop. 798), Juliaetta (pop. 609), Kendrick (pop. 369), Bovill (pop. 305), Onaway (pop. 230), and Genesee (pop. 965). The total land area of the county is roughly 1,076.89 square miles (689,209.6 acres).

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

Subject	Number	Percent
Total population	**34,935**	**100.0**
SEX AND AGE		
Male	18,107	51.8
Female	16,828	48.2
Under 5 years	1,897	5.4
5 to 9 years	2,090	6.0
10 to 14 years	1,827	5.2
15 to 19 years	3,872	11.1
20 to 24 years	5,756	16.5
25 to 34 years	5,130	14.7
35 to 44 years	4,374	12.5
45 to 54 years	4,214	12.1
55 to 59 years	1,527	4.4
60 to 64 years	965	2.8
65 to 74 years	1,556	4.5
75 to 84 years	1,102	3.2
85 years and over	625	1.8
Median age (years)	28.4	(X)
18 years and over	27,857	79.7
Male	14,469	41.4
Female	13,388	38.3
21 years and over	24,124	69.1
62 years and over	3,838	11.0
65 years and over	3,283	9.4
Male	1,444	4.1
Female	1,839	5.3
RELATIONSHIP		
Population	**34,935**	**100.0**

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

Subject	Number	Percent
Total population	**34,935**	**100.0**
In households	31,010	88.8
Householder	13,063	37.4
Spouse	6,783	19.4
Child	7,849	22.5
Own child under 18 years	6,845	19.6
Other relatives	493	1.4
Under 18 years	124	0.4
Nonrelatives	2,822	8.1
Unmarried partner	668	1.9
In group quarters	3,925	11.2
Institutionalized population	355	1.0
Noninstitutionalized population	3,570	10.2
HOUSEHOLDS BY TYPE		
Households	**13,063**	**100.0**
Family households (families)	7,879	60.3
With own children under 18 years	3,823	29.3
Married-couple family	6,791	52.0
With own children under 18 years	3,113	23.8
Female householder, no husband present	673	5.2
With own children under 18 years	448	3.4
Nonfamily households	5,184	39.7
Householder living alone	3,431	26.3
Householder 65 years and over	891	6.8
Households with individuals under 18 years	3,944	30.2
Households with individuals 65 years and over	2,965	22.7
Average household size	2.37	(X)
Average family size	2.92	(X)
HOUSING TENURE		
Occupied housing units	**13,059**	**100.0**
Owner-occupied housing units	7,661	58.7
Renter-occupied housing units	5,398	41.3
Average household size of owner-occupied unit	2.56	(X)
Average household size of renter-occupied unit	2.11	(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

Latah County had a total of 13,838 housing units and a population density of 32.4 persons per square mile reported in the 2000 Census (Table 3.1). Ethnicity in Latah County is distributed: white 93.9%, black or African American 0.6%, American Indian or Alaskan Native 0.6%, Asian 2.1%, two or more races 1.5%, and Hispanic or Latino 2.1%.

Specific economic data for individual communities is collected by the US Census; in Latah County this includes Moscow, Potlatch, Deary, Troy, Juliaetta, Kendrick, Bovill, Onaway, and Genesee. Latah County households earn a median income of $32,524 annually. In 2000, Deary, Troy, Juliaetta, Bovill, Onaway, and Genesee had median household incomes of $36,167, $36,250, $33,295, $36,875, and $39,821, respectively, which were all above the County median income during the same period. The communities of Moscow, Potlatch, and Kendrick had median household incomes of $26,884, $28,021, and $31,000 in 2000, which is below the Latah County median income during the same period. Table 3.2 shows the dispersal of households in various income categories of all communities.

Table 3.2 Income in 1999.

Households	**13,063**	**100.0**
Less than $10,000	1,871	14.3
$10,000 to $14,999	1,127	8.6
$15,000 to $24,999	2,134	16.3
$25,000 to $34,999	1,757	13.5
$35,000 to $49,999	2,009	15.4
$50,000 to $74,999	2,390	18.3
$75,000 to $99,999	1,001	7.7
$100,000 to $149,999	547	4.2
$150,000 to $199,999	110	0.8
$200,000 or more	117	0.9
Median household income (dollars)	32,524	(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 Latah County, a significant number of families are at or below the poverty level. Approximately 7.9% of Latah County families are below poverty level (Table 3.3).

Table 3.3 Poverty Status in 1999 (below poverty level).

Families	620	(X)
Percent below poverty level	(X)	7.9
With related children under 18 years	381	(X)
Percent below poverty level	(X)	9.8
With related children under 5 years	248	(X)
Percent below poverty level	(X)	15.4
Families with female householder, no husband present	146	(X)
Percent below poverty level	(X)	21.7

Table 3.3 Poverty Status in 1999 (below poverty level).		
With related children under 18 years	133	(X)
Percent below poverty level	(X)	28.8
With related children under 5 years	48	(X)
Percent below poverty level	(X)	46.6
Individuals	5,186	(X)
Percent below poverty level	(X)	16.7
18 years and over	4,451	(X)
Percent below poverty level	(X)	18.5
65 years and over	162	(X)
Percent below poverty level	(X)	5.4
Related children under 18 years	712	(X)
Percent below poverty level	(X)	10.2
Related children 5 to 17 years	399	(X)
Percent below poverty level	(X)	7.8
Unrelated individuals 15 years and over	3,355	(X)
Percent below poverty level	(X)	41.9

(Census 2000)

The unemployment rate was 4.9% in Latah County in 1999, compared to 4.4% nationally during the same period. Approximately 5.6% of the Latah 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 Occupation and Industry	Latah County	
	Number	Percent
OCCUPATION		
Management, professional, and related occupations	6,807	39.5
Service occupations	2,831	16.4
Sales and office occupations	4,165	24.2
Farming, fishing, and forestry occupations	421	2.4
Construction, extraction, and maintenance occupations	1,432	8.3
Production, transportation, and material moving occupations	1,567	9.1
INDUSTRY		
Agriculture, forestry, fishing and hunting, and mining	972	5.6
Construction	807	4.7
Manufacturing	941	5.5
Wholesale trade	282	1.6
Retail trade	1,969	11.4
Transportation and warehousing, and utilities	435	2.5
Information	442	2.6
Finance, insurance, real estate, and rental and leasing	513	3.0
Professional, scientific, management, administrative, and waste management services	1,131	6.6
Educational, health and social services	6,847	39.8
Arts, entertainment, recreation, accommodation and food services	1,507	8.7

Table 3.4 Occupation and Industry	Latah County	
	Number	Percent
Other services (except public administration)	802	4.7
Public administration	575	3.3

Approximately 55% of Latah County's employed persons are private wage and salary workers, while around 36.4% are government workers (Table 3.5).

Table 3.5 Class of Worker	Latah County	
	Number	Percent
Private wage and salary workers	9,498	55.1
Government workers	6,275	36.4
Self-employed workers in own not incorporated business	1,350	7.8
Unpaid family workers	100	0.6

(Census 2000)

3.2.1 Description of Latah County

Information summarized from the Latah County Area soil survey manuscript.

Latah County area, Idaho is in the southwestern part of the Idaho Panhandle. It is the location of the University of Idaho. Towns in the area are Moscow, Bovill, Onaway, Deary, Genesee, Juliaetta, Kendrick, Potlatch, and Troy. Most of the survey area is a broad loess-covered plain about 2,400 to 3,000 feet above sea level. A large part of this area is cultivated. The main crops are wheat, barley, and peas. Woodland is mostly in the higher rainfall zones in the northern and eastern parts of the survey area. The western part includes the dunelike topography of the Palouse hills. Dissecting the loess-covered plain are deep canyons along the Potlatch River and its tributaries in the southern part of the survey area. Most areas of these canyons are in woodland. Rangeland is on south-facing slopes near Juliaetta and Kendrick. Elevation ranges from about 1,000 feet above sea level along the Potlatch River to about 2,800 feet. Wooded ridges and low mountains occur above the loess-covered plain along Paradise Ridge, Tomer Butte, and the Palouse Range and in the northern part of the soil survey area. The highest elevation in the survey area is Moscow Mountain, which is 4,983 feet above sea level.

3.2.1.1 Recreation

This region offers a variety of recreational opportunities. The Clearwater National Forest offers easily accessible opportunities to hunt, fish, hike, or camp. The Palouse and Potlatch Rivers and Spring Valley and Moose Creek Reservoirs provide many fishing and other recreational opportunities; however, many of the lesser known tributaries are popular holes for the more adventuresome. Hunting for deer, elk, black bear, moose, and game birds including Hungarian partridges, valley quail, grouse, and ring-necked pheasant is especially intense every fall. During the winter, snowmobiling has become a very popular sport, with a smaller amount of cross-country skiing and snowshoeing.

Moscow has become well-known as the "Heart of the Arts", partially due to the presence of the University of Idaho. There are many recreational opportunities both on and off campus. The community offers several theatres, art exhibits, and music and dance festivals throughout the year. The annual Renaissance Fair, Rendezvous in the Park, and Latah County Fair celebrations keep the community spirit alive and attract visitors from all around.

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 staggering numbers of visitors that travel to this location.

3.2.1.2 Resource Dependency

The communities of Latah 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. The findings of this group indicate that Genesee was the only community experiencing significant growth, 30%, between 1990 and 2000 (Harris *et al.* 2003).

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). Kendrick was not included in this study. Their findings indicated:

- Moscow ..... Travel & Tourism
- Potlatch ..... Wood Products and Mining
- Deary ..... Wood Products and Travel & Tourism
- Troy ..... Agriculture Only
- Juliaetta ..... Wood Products and Agriculture
- Genesee ..... Agriculture Only

Harris *et al.* (2003) further evaluated Idaho communities based on their level of direct employment in several industrial sectors. Their findings for communities in Latah 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 Government	Federal Government	Mining and Minerals
Moscow	Med. High	Low	Low	High	High	Low	Low
Potlatch	Med. High	Med. Low	High	Med. Low	Med. High	Low	Med. High
Deary	Med. High	Low	High	Med. High	High	Low	Med. Low
Troy	Med. Low	High	Med. Low	Low	High	Low	Low
Juliaetta	Med. Low	Med. High	High	Low	High	Low	Low
Genesee	Med. Low	High	Low	Low	High	Low	Low

NA = Not Available

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

3.2.1.2.1 Forestry, Agriculture, and Ranching

Over the past century, employment through agricultural farming, timber harvesting, and livestock ranching has been significant in the region. As one of the most productive non-irrigated wheat growing regions in the world, agriculture is the major contributor to the economic stability of the County. Most of the southern and western parts of the county are used for cultivated crops, mainly wheat, dry peas, barley, lentils, oats, hay, and pasture. Smaller acreages are

used for production of alfalfa, grass, rape, and clover seed. High yields are obtained, especially of winter wheat and peas.

Latah County Area's woodland resource has been a major economic factor for more than 100 years. Pioneer farmers began by clearing forested land on the eastern side of the county and using the logs and lumber as building materials. Around the turn of the century the lumber industry began extensive operations in the northern, northeastern, and eastern parts of the county. Today, about 115,000 acres in the county is privately owned woodland. The woodland is owned by about 1,400 individuals and corporations. In addition, about 81,000 acres is administered by federal and state agencies. There are several lumber mills operating in the area including Bennett Lumber Products, Idaho Cedar Sales, Potlatch Corporation, and Plummer Forest Products with many independent logging operators keeping the mills supplied with logs from state and national forest land and from private woodland. The University of Idaho, College of Natural Resources, located at Moscow, assists the forest industry through its research programs and extension services. Several commercially valuable species of trees are produced on the woodland soils in the area.

Ponderosa pine and Douglas-fir are the main lumber producing species, although grand fir, larch, western white pine, western redcedar, and lodgepole pine also are important.

About 196,000 acres of native grazing land is in Latah County. Of this total, about 15,000 acres is rangeland and 181,000 acres is grazable woodland. About 5 percent of the agricultural income of the survey area is from the sale of livestock products. The rangeland is mainly in the canyon adjacent to the lower part of the Potlatch River and it tributaries. It is mainly on south-facing slopes. The grazable woodland is in the open forested areas and where timber harvesting, fire, or other disturbance has opened the forest canopy sufficiently to allow the production of understory vegetation. Cow and calf operations are the primary type of operation, although some calves are held over or are purchased to be sold as yearlings. The average size of the ranches is about 1,000 acres. Typically, there is a winter feeding period of 5 or 6 months. Feed for winter is usually produced on farms. Those few livestock operations that have canyon rangeland available can shorten the winter feeding period to 3 or 3 1/2 months. The grazing season begins early in April on the rangeland and lasts until mid-December. Grazing on the forested land begins in mid-May and lasts until late in October. Most livestock spend summer and fall on forested range. Calving usually occurs from late in January until early in March. The natural vegetation on much of the rangeland has been largely depleted by continuous heavy use early in spring since the 1880's. Much of the original bluebunch wheatgrass and Idaho fescue has been replaced by annual bromegrasses and sod-forming bluegrasses. The amount of forage produced in the woodland areas depends mainly on the amount of light that reaches the forest floor. After logging or fire, there is a large increase in the production of understory vegetation for a number of years. As the canopy closes, the understory production decreases. In many areas the diversity of the tree canopy in the potential plant community allows only sparse production of understory vegetation.

3.3 Cultural Resources

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their proposals on historic properties, and to provide state historic preservation officers, tribal historic preservation officers, and, as necessary, the Advisory Council on Historic Preservation a reasonable opportunity to review and comment on these actions.

Cultural resource impacts were qualitatively assessed through a presence/absence determination of significant cultural resources and mitigation measures to be employed during

potential mitigation activities such as thinning, prescribed fire, road construction, flood abatement, and other activities.

Typical archeological sites include settlements, lithic scatters, village sites, rock art, and hunting blinds. The Nez Perce had a network of trails throughout the area which included various trade routes, as well as gathering and hunting routes. Some of the same trails were later used by homesteaders and miners. Traditional Cultural Properties (TCPs) are cultural resources defined as a significant place or setting, and does not necessarily have any associated material remains. For example, a TCP can be a mountain, river, or natural feature (i.e., rock formation, meadow, etc.). Some of these are present in Latah County. The integrity of some cultural resources has been impacted in the past by logging activities, road building, mining, and grazing.

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 3.7.

Table 3.7. National Register of Historic Places in Latah County, Idaho.

Item Number	Resource Name	Address	City	Listed	Multiple
1	**Administration Building, University of Idaho**	University of Idaho campus	Moscow	1978	Tourtellotte,J.E. & Co
2	**American Legion Cabin**	US Alt. 95	Potlatch	1986	
3	**Bank of Juliaetta**	301 Main St.	Juliaetta	1998	Nave, James H., Penland, Bun
4	**Bethany Memorial Chapel**	Kendrick-Deary Hwy	Kendrick	1979	
5	**Green Boarding House**	850 Pine St	Potlatch	1986	White,C. Ferris
6	**Commercial Historic District**	Roughly Pine St. between Seventh and Fifth Sts	Potlatch	1986	White,C. Ferris, Homes,A.M
7	**Cordelia Lutheran Church**	S. of the jct. of Genesee-Troy and Danielson Rds.	Moscow	1995	
8	**Cornwall, Mason, House**	308 S. Hayes St	Moscow	1977	Taylor & Lauder
9	**Davids' Building**	3rd and Main Sts	Moscow	1979	
10	**First Methodist Church**	322 E. 3rd St	Moscow	1978	Black,H.N.
11	**Fort Russell Neighborhood Historic District**	Roughly bounded by Jefferson, Monroe, 2nd and D Sts	Moscow	1980	Multiple
12	**Four-Room House**	1015 Pine St	Potlatch	1986	
13	**Freeze Community Church**	1 mi. W of US 95	Potlatch	1990	
14	**Genesee Exchange Bank**	Walnut St	Genesee	1979	Klapp,Frank & Son
15	**Hotel Bovill**	602 Park St	Bovill	1994	
16	**Hotel Moscow**	4th and Main Sts	Moscow	1978	Shields,M.J. & Co., Taylor & Lauder
17	**Hotel Rietmann**	525 and 529 S. Main St	Troy	2001	

Table 3.7. National Register of Historic Places in Latah County, Idaho.					
Item Number	**Resource Name**	**Address**	**City**	**Listed**	**Multiple**
18	**Kappa Sigma Fraternity, Gamma Theta Chapter**	918 Blake St	Moscow	1996	
19	**Kenworthy Theatre**	508 S. Main St	Moscow	2001	
20	**Kirby, Thomas, House**	102 N. 9th St	Kendrick	1999	
21	**Lieuallen, Almon Asbury, House**	101 S. Almon St	Moscow	1978	
22	**McConnell, W. J., House**	110 S. Adams St	Moscow	1974	Stick/Eastlake
23	**McConnell-McGuire Building**	Main and 1st Sts	Moscow	1978	Lewis,W.J., Ogilbee,M.D.
24	**Memorial Gymnasium**	University of Idaho campus	Moscow	1977	Lange,David
25	**Moscow Carnegie Library**	110 S. Jefferson St	Moscow	1979	Vernon,Watson
26	**Moscow High School**	410 3rd E	Moscow	1992	
27	**Moscow Post Office and Courthouse**	Washington and 3rd Sts	Moscow	1973	US Treasury Dept
28	**Nob Hill Historic District**	Roughly bounded by Fourth, Spruce, Third, and Cedar Sts.	Potlatch	1986	White,C. Ferris, Holmes,A.M
29	**Nu Art Theatre**	516 S. Main St.	Moscow	2001	Moscow
30	**Ridenbaugh Hall**	University of Idaho campus	Moscow	1977	Ritchie,W.A
31	**Sigma Alpha Epsilon Fraternity House**	920 Deakin St	Moscow	1993	Carpenter, Charles
32	**Skattaboe Block**	Main and 4th Sts	Moscow	1978	Taylor & Lauder
33	**St. Joseph's Catholic Church**	1st and Cedar	Bovill	1982	Tourtellotte & Hummel
34	**Terteling, Joseph A., House**	1015 Fir St	Potlatch	1986	Holmes,A.M.
35	**Three-Room House**	940 Cedar St	Potlatch	1986	White,C. Ferris
36	**University of Idaho Gymnasium and Armory**	University of Idaho campus	Moscow	1983	Tourtellotte,John E. & Company
37	**Vollmer Building**	Walnut St	Genesee	1979	Shepherd,J.J., Mesker Bros.
38	**White Spring Ranch**	1004 Lorang Rd	Genesee	2004	
39	**Workers' Neighborhood Historic District**	Roughly Spruce St. between Eighth and Fifth	Potlatch	1986	White,C. Ferris

Hazard mitigation activities in and around these sites has the potential to affect historic places. In all cases, mitigation work will be intended to reduce the potential of damaging the site due to natural and man caused disasters. Areas where ground disturbance will occur will need to be inventoried depending on the location. Such actions may include, but are not be limited to, constructing firelines (handline, mechanical line, etc.), building 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, 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) may also need to be identified. Potential impact to TCPs will depend on what values make the property important and will be assessed on an individual basis.

3.4 Transportation & Infrastructure

Primary access to and from Latah County is provided by US Highway 95. This is a two-lane paved road with turnouts that traverses the western side of the county running north and south. This access is a primary north-south route for Idaho transportation networks, as the only road providing access between northern and southern Idaho. State highways 3, 6, 8, and 9 provide additional access to the smaller, more remote towns and recreation areas in the central and eastern parts of Latah County. These routes also offer paved, two-lane connections between communities. Secondary roads (many gravel) provide access to the adjoining areas within the county. A variety of trails and closed roads are to be found throughout the region.

Many of the roads in the county were originally built to facilitate logging and farming activities. As such, many of these roads can support timber harvesting equipment, logging trucks, farming equipment, and fire fighting equipment referenced in this document. However, many of the new roads have been built for home site access, especially for new sub-divisions of homes. In most cases, these roads are adequate to facilitate equipment. County building codes for new developments should be adhered to closely to insure this tendency continues.

The most limiting points of access generally occur along the state highways connecting the smaller communities on the east side of the county. These routes are prone to closure due to extreme winter weather or wildfire due to their abutment to wildland fuels. In some cases the highway route is the only maintained route accessing the community, especially during the winter months.

Latah County has both significant infrastructure and unique ecosystems within its boundaries. Of note for this Hazard Mitigation Plan is the existence of the only state highway route connecting north and south Idaho (US Highway 95) and the presence of high tension power lines supplying the communities of Latah, Benewah, Nez Perce, Clearwater, and Shoshone Counties as well as neighboring communities in nearby Washington state.

3.5 Vegetation & Climate

Vegetation in Latah County is a mix of forestland and agricultural ecosystems. An evaluation of satellite imagery of the region provides some insight to the composition of the vegetation of the area. The full extent of the county was evaluated for cover type as determined from Landsat 7 ETM+ imagery in tabular format, Table 3.8.

The most represented vegetated cover type is agricultural land at approximately 28% of the total area. The next most common vegetation cover type represented is a foothills grassland at 12%. Mixed mesic forests represent approximately 12% of the total area as well (Table 3.8).

Table 3.8. Vegetative Cover Types in Latah County	**Acres**	**Percent of County's Total Area**
Agricultural Land	190,819	28%
Foothills Grassland	81,752	12%
Mixed Mesic Forest	80,584	12%
Western Red Cedar/Grand Fir Forest	54,989	8%

Table 3.8. Vegetative Cover Types in Latah County	Acres	Percent of County's Total Area
Warm Mesic Shrubs	42,176	6%
Douglas-fir	37,596	5%
Mixed Xeric Forest	33,271	5%
Grand Fir	31,320	5%
Ponderosa Pine	30,815	4%
Western Hemlock	18,853	3%
Douglas-fir/Grand Fir	16,934	2%
Cloud	10,910	2%
Lodgepole Pine	9,511	1%
Shrub Dominated Riparian	6,940	1%
Mixed Needleleaf/Broadleaf Forest	4,385	1%
Douglas-fir/Lodgepole Pine	4,340	1%
Western Red Cedar/Western Hemlock	3,829	1%
Needleleaf/Broadleaf Dominated Riparia	3,593	1%
Mixed Riparian (Forest and Non-Forest)	3,378	0%
Western Larch	3,147	0%
Needleleaf Dominated Riparian	2,792	0%
Urban	2,584	0%
Mixed Barren Land	2,574	0%
Western Larch/Douglas-fir	2,393	0%
Mixed Non-forest Riparian	1,258	0%
Exposed Rock	1,188	0%
Western Red Cedar	1,154	0%
Western Larch/Lodgepole Pine	1,009	0%
Broadleaf Dominated Riparian	929	0%
Montane Parklands and Subalpine Meadow	800	0%
Subalpine Fir	463	0%
Cloud Shadow	418	0%
Cottonwood	394	0%
Disturbed Grassland	283	0%
Water	211	0%
Curlleaf Mountain Mahogany	143	0%
Graminiod or Forb Dominated Riparian	115	0%
Mixed Subalpine Forest	14	0%
Engelmann Spruce	6	0%
Total	**687,874**	

Vegetative communities within the county follow the strong moisture and temperature gradient related to the major river drainages. Limited precipitation and steep slopes result in a relatively arid environment in the southern portion of the county, limiting vegetation to drought-tolerant plant communities of grass and shrublands, with scattered clumps of ponderosa pine and Douglas-fir at the higher elevations. 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.

3.5.1 Monthly Climate Summaries in Latah County

3.5.1.1 Potlatch, Idaho

Period of Record Monthly Climate Summary

Period of Record : 3/ 1/1915 to 9/30/2002

Table 3.9 Climate summaries for Potlatch, Idaho in Latah County.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	35.8	41.6	48.3	57.3	66.2	73.0	82.7	82.9	73.3	60.5	45.3	37.4	58.7
Average Min. Temperature (F)	20.8	24.7	28.3	32.8	37.8	43.1	45.6	44.1	38.7	33.1	28.5	23.2	33.4
Average Total Precipitation (in.)	2.88	2.48	2.38	2.06	2.11	1.88	0.82	0.81	1.35	1.92	2.97	3.11	24.77
Average Total SnowFall (in.)	14.9	8.0	4.5	1.2	0.1	0.0	0.0	0.0	0.0	0.3	4.9	11.4	45.4
Average Snow Depth (in.)	3	2	0	0	0	0	0	0	0	0	0	2	1

Percent of possible observations for period of record. Max. Temp.: 93% Min. Temp.: 92.9% Precipitation: 93.1% Snowfall: 91.9% Snow Depth: 84%

3.5.1.2 Moscow, Idaho

Period of Record Monthly Climate Summary

Period of Record : 11/7/1893 to 9/30/2004

Table 3.10 Climate summaries for Moscow, Idaho in Latah County.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.7	40.1	47.5	56.9	65.3	72.7	82.8	82.5	72.9	60.0	44.4	36.3	58.0
Average Min. Temperature (F)	22.5	26.0	30.6	35.7	41.2	46.3	50.3	49.8	44.1	37.4	30.6	25.0	36.6
Average Total Precipitation (in.)	2.97	2.20	2.26	1.89	2.02	1.64	0.73	0.80	1.23	1.85	3.03	2.94	23.56
Average Total SnowFall (in.)	16.2	9.1	5.0	1.2	0.1	0.0	0.0	0.0	0.0	0.3	5.3	12.5	49.6
Average Snow Depth (in.)	4	2	0	0	0	0	0	0	0	0	0	2	1

Percent of possible observations for period of record. Max. Temp.: 99.1% Min. Temp.: 99.1% Precipitation: 99.3% Snowfall: 98.3% Snow Depth: 80%

3.5.1.3 Elk River, Idaho (Clearwater County)

Period of Record Monthly Climate Summary Adjacent to Latah County near the city of Bovill

Period of Record : 1/ 1/1952 to 9/30/2004

Table 3.11 Climate summaries for Elk River, Idaho in Clearwater County.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	34.3	39.9	46.0	54.3	63.9	71.6	81.2	81.4	71.8	58.6	42.2	34.5	56.6
Average Min. Temperature (F)	18.1	20.4	24.1	30.5	36.8	42.9	45.4	44.0	37.1	30.3	25.5	19.7	31.2
Average Total Precipitation (in.)	5.41	4.11	3.42	2.80	2.92	2.35	1.11	1.17	1.75	2.75	4.55	5.01	37.37
Average Total SnowFall (in.)	30.9	17.7	12.3	2.6	0.4	0.0	0.0	0.0	0.0	0.3	12.5	26.6	103.3
Average Snow Depth (in.)	23	24	15	2	0	0	0	0	0	0	2	11	7

Percent of possible observations for period of record. Max. Temp.: 97.9% Min. Temp.: 97.5% Precipitation: 98.7% Snowfall: 98.4% Snow Depth: 97.4%

The following is summarized from the Soil Survey for the Latah County area:

In winter the average temperature is 32 degrees F, and the average daily minimum temperature is 25 degrees. The lowest temperature on record, which occurred at Moscow on December 30, 1968, is -42 degrees. In summer the average temperature is 63 degrees, and the average daily maximum temperature is 80 degrees. The highest recorded temperature, which occurred at Moscow on August 4, 1961, is 109 degrees.

The total annual precipitation is 23.37 inches. Of this, 8 inches, or 35 percent, usually falls in April through September, which includes the growing season for most crops. In 2 years out of 10, the rainfall in April through September is less than 7 inches. The heaviest 1-day rainfall during the period of record was 2.1 inches at Moscow on November 26, 1964. Thunderstorms occur on about 16 days each year, and most occur in summer.

Average seasonal snowfall is 47 inches. The greatest snow depth at any one time during the period of record was 36 inches. On an average of 20 days, at least 1 inch of snow is on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 50 percent. Humidity is higher at night, and the average at dawn is about 65 percent.

3.6 Ecosystems

Latah 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 farming) has altered plant community succession and has resulted in dramatic shifts in the fire regimes and species composition (USDA 1999). As a result, forests and rangelands in Latah 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 forests and rangelands, has resulted in significant safety risks to fire fighters and

higher costs for fire suppression (House of Representatives, Committee on Agriculture, Washington, DC, 1997).

Plant community and structure within Latah County is best represented by a combination of dry, semi mesic on the southern portions of the county, and mesic forest types on the northern boundaries. The drier, semi mesic sites consist of more open park-like stands of fire-adapted ponderosa pine, western larch, and Douglas-fir that have been replaced through ecological succession with dense and decadent stands of fire intolerant species such as grand fir. These species are more susceptible to high intensity wildland fire. In some dry meadows and grassland habitats, a shift in fire regimes has resulted in changes in ecological succession patterns, such as accelerated encroachment of trees and shrubs. A shift in plant species composition, due to invasion and spread of invasive herbaceous species, has also influenced fire regime and frequency. The more mesic sites are best represented by western white pine, Douglas fir, western larch, grand fir and some ponderosa pine on the southerly slopes and ridgetops with a climax species being western hemlock and western redcedar. These sites typically experienced a longer fire interval that was stand replacing in nature. The conditions of these stands have declined at a faster rate than historically due to the introduction of blisterrust to western white pine causing a high mortality rate within this species. This ongoing mortality coupled with other insects and disease affecting other species has increased the fuel loads beyond natural accumulations. This shift in forest composition and structure has had an influence on the fire regimes and frequency of these wetter sites.

3.7 Soils

Soil is the most important natural resource in the survey area. Among the marketable products derived from the soil are the crops produced on the farms; the livestock that graze the rangeland, pastures, and woodland; and the trees that are harvested. To provide adequate water for the farms, several hundred ponds have been built to supplement the water available from streams. No extensive areas of underground water have been found in sufficient volume for irrigation. About 271,000 acres in the county is used as cropland, which includes hayland and pastureland. The major crops are winter wheat, dry peas, barley, lentils, oats, and hay. The most productive cropland soils are those of the Palouse series. About 60,000 acres of the soils in the county have been identified as prime farmland. The soils that make up this acreage are the Athena, Palouse, Hampson, Taney, and Thatuna soils; the Larkin and Southwick silt loams that have slopes of less than 7 percent; and the Latah, Latahco, Lovell, and Westlake soils that have slopes of 0 to 3 percent.

Most of the survey area is a broad loess-covered plain about 2,400 to 3,000 feet above sea level. These soils are generally very deep, loamy, and gently sloping to steep. Dissecting the loess-covered plain are deep canyons along the Potlatch River and its tributaries in the southern part of the county. These soils generally are shallow and moderately deep on south-facing slopes and very deep on north-facing slopes. These areas tend to be steep to very steep. Rock fragments are common. Wooded ridges and low mountains occur above the loess-covered plain along Paradise Ridge, Tomer Butte, and the Palouse Range and in the northern part of the county. Here the soils generally are deep to very deep and rock fragments are common. These soils are often found on steep slopes. Volcanic ash is common on north-facing slopes.

Soil erosion began soon after the land was first cultivated or cleared of trees. Voluntary soil conservation associations were established in four communities in 1936 to begin a concerted effort to combat soil erosion and the resultant siltation on the flood plain. The Latah Soil Conservation District was formed in 1940 under Idaho State Law Title 22, Chapter 27, known as the Soil Conservation Districts Laws. It was the first legal soil conservation district to be formed in Idaho. The topography of the area contributes to the serious hazard of erosion, especially in

steep concave areas on north-facing slopes where drifted snow collects. The cropland that extends into the cutover timbered soils is more severely limited as to crops that can be grown, tillage practices that can be used, and other management considerations. Much of the cutover area is used for pasture and hayland. Appropriate cropland management is vital to the effective control of erosion. Annual cropping, minimum tillage, cross-slope farming, divided-slope farming, and critical area seeding are important to the success of any cropping system. In addition, such practices as waterways, diversions, and tile lines can be used where needed.

3.8 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 majority of Latah County has not been designated by the IWRB as a ground water system. 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 moderate moisture infiltration. Slopes are moderate to steep, however, headwater characteristics of this watershed lead to a high degree of infiltration as opposed to a propensity for overland flow. Thus sediment delivery efficiency of first and third order streams is fairly low on stable soils. The bedrock is typically well fractured and moderately soft. This fracturing allows excessive soil moisture to rapidly infiltrate into the rock and thus surface runoff is rare. Natural mass stability hazards associated with slides are low. Natural sediment yields are low for these watersheds. However, disrupted vegetation patterns from 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 logging, grazing, and 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.

Timberlands in the region have been extensively harvested for the past four decades, therefore altering riparian function by removing streamside shade and changing historic sediment deposition. Riparian function and channel characteristics have been altered by ranch and residential areas as well. The current conditions of wetlands and floodplains are variable. Some wetlands and floodplains have been impacted by past management activities.

Table 3.12. Idaho Water Resources database of municipal water supplies in Latah County.

NAME	SERVICE TYPE	SOURCE NAME	SOURCE TYPE	LATITUDE	LONGITUDE	POPULATION
APPALOOSA HORSE CLUB	Non-community Non-transient	WELL #1	Groundwater	46.73338	-117.03836	50
ARNYS MOBILE HOME PARK	Community	WELL #1	Groundwater	46.71966	-116.96487	35
BEL AIR MOBILE HOME PARK	Community	NEW WELL	Groundwater	46.75019	-116.99589	125
BEL AIR MOBILE HOME PARK	Community	OLD WELL	Groundwater	46.75049	-116.99546	125
BENNETT LUMBER COMPANY	Non-community Non-transient	N WELL BY HWY	Groundwater	46.92105	-116.76853	150
BENNETT LUMBER COMPANY	Non-community Non-transient	S WELL BY POND	Groundwater	46.91986	-116.76836	150
BENSONS MOBILE HOME PARK	Community	ORIGINAL WELL#1	Groundwater	46.65685	-116.99725	27
BOVILL WATER DEPT	Community	WELL #2 N OF CH	Groundwater	46.86184	-116.39793	275
BOVILL WATER DEPT	Community	WELL #1 CITY H	Groundwater	46.86111	-116.39758	275
BOVILL WATER DEPT	Community	WELL #3 E OF CH	Groundwater	46.86113	-116.39741	275
CAMP GRIZZLY BOY SCOUTS	Non-community Transient	WELL #1	Groundwater	46.94225	-116.65723	210
CONE DELFRED SUBD	Community	WELL	Groundwater	46.91342	-116.83678	40
COUNTRY HOMES MOBILE PARK	Community	WELL #2 PITLESS	Groundwater	46.71108	-116.95141	116
COUNTRY HOMES MOBILE PARK	Community	WELL #1 IN W H	Groundwater	46.71134	-116.95186	116
DEARY CITY OF	Community	WELL #2 PITLESS	Groundwater	46.79106	-116.51925	529
DEARY CITY OF	Community	WELL #1 IN W H	Groundwater	46.79116	-116.51926	529
EMPIRE MOBILE HOME PARK	Community	NORTH WELL	Groundwater	46.74999	-116.99390	35
EMPIRE MOBILE HOME PARK	Community	OLD WELL	Groundwater	46.74839	-116.99365	35
EMPIRE MOBILE HOME PARK	Community	EAST WELL	Groundwater	46.74876	-116.99282	35
EVERGREEN TRAILER COURT	Community	NORTHEAST WELL	Groundwater	46.71899	-116.96220	65
GENESEE CITY OF	Community	N W WELL #5	Groundwater	46.55956	-116.93236	775

Table 3.12. Idaho Water Resources database of municipal water supplies in Latah County.

NAME	SERVICE TYPE	SOURCE NAME	SOURCE TYPE	LATITUDE	LONGITUDE	POPULATION
GENESEE CITY OF	Community	WELL #3 S W	Groundwater	46.54968	-116.92416	775
HELMER WATER ASSN	Non-community Transient	WELL	Groundwater	46.80189	-116.46968	30
HIDDEN VILLAGE MOBILE HOME COURT	Community	WELL #7 N W	Groundwater	46.65915	-117.00304	94
HIDDEN VILLAGE MOBILE HOME COURT	Community	WELL #6 S W	Groundwater	46.65875	-117.00492	94
HOO DOO HARVARD WATER AND SEWER DIST	Community	WELL NEW	Groundwater	46.94729	-116.79245	80
JULIAETTA CITY OF	Community	WELL #9	Groundwater	46.57924	-116.71054	560
JULIAETTA CITY OF	Community	WELL #7	Groundwater	46.59181	-116.72485	560
KENDRICK CITY OF	Community	WELL 4,NEW WELL	Groundwater	46.61295	-116.65905	325
KENDRICK CITY OF	Community	WELL #2 CITY CE	Groundwater	46.61429	-116.65046	325
KENDRICK CITY OF	Community	WELL #1 SOUTH	Groundwater	46.61169	-116.66288	325
LONE JACK STEAK COMPANY	Non-community Transient	WELL #1	Groundwater	46.92977	-116.93327	25
MINERAL MOUNTAIN REST AREA IDT	Non-community Transient	WELL	Groundwater	47.04130	-116.87222	100
MOSCOW ELKS GOLF COURSE	Non-community Transient	WELL	Groundwater	46.72400	-116.94257	100
MOSCOW WATER DEPT	Community	WELL #6	Groundwater	46.74102	-116.99537	14,000
MOSCOW WATER DEPT	Community	WELL #2	Groundwater	46.73484	-117.00232	14,000
MOSCOW WATER DEPT	Community	WELL #8	Groundwater	46.74036	-117.01328	14,000
MOSCOW WATER DEPT	Community	WELL #3	Groundwater	46.73518	-117.00221	14,000
MOSCOW WATER DEPT	Community	WELL #9	Groundwater	46.73455	-117.03223	14,000
MOUNTAIN MART	Non-community Transient	WELL #1	Groundwater	46.70749	-117.00477	100
MOUNTAIN VIEW M H PLAZA	Community	WELL #2 S W	Groundwater	46.71637	-116.96693	89
MOUNTAIN VIEW M H PLAZA	Community	WELL #3 N	Groundwater	46.71726	-116.96662	89

Table 3.12. Idaho Water Resources database of municipal water supplies in Latah County.

NAME	SERVICE TYPE	SOURCE NAME	SOURCE TYPE	LATITUDE	LONGITUDE	POPULATION
MOUNTAIN VIEW M H PLAZA	Community	WELL #1 S E	Groundwater	46.71638	-116.96491	89
NORTH TOMER BUTTE	Community	EASTMAN #3	Groundwater	46.71700	-116.90987	259
NORTH TOMER BUTTE	Community	WOODLAND #2 W	Groundwater	46.71761	-116.91066	259
ONAWAY WATER AND SEWER ASSN	Community	WELL	Groundwater	46.92840	-116.88882	290
PALOUSE HILLS ADVENTIST SCHOOL	Non-community Non-transient	N WELL	Groundwater	46.71998	-116.96292	60
POTLATCH CITY OF	Community	WELL #3 BALL FL	Groundwater	46.92784	-116.90316	880
POTLATCH CITY OF	Community	WELL #4 S W POT	Groundwater	46.92073	-116.90349	880
POTLATCH CITY OF	Community	WELL #2 W POT	Groundwater	46.92562	-116.90599	880
POTLATCH CITY OF	Community	WELL #1 RIDGE W	Groundwater	46.93054	-116.91939	880
POTLATCH PACK IRELANDS CAFE	Non-community Transient	WELL #1	Groundwater	46.92889	-116.93424	75
SCHIERMANS SLURP AND BURP	Non-community Transient	WELL #1	Groundwater	46.72664	-116.96254	50
STADIUM DRIVE MOBILE HOME PARK	Community	WELL NEW	Groundwater	46.72008	-117.03481	96
SYRINGA MOBILE HOME PARK	Community	WELL #10 N OF L	Groundwater	46.74230	-116.94176	300
SYRINGA MOBILE HOME PARK	Community	WELL #1 S W	Groundwater	46.74118	-116.94795	300
SYRINGA MOBILE HOME PARK	Community	WELL #2 S E	Groundwater	46.74134	-116.94601	300
SYRINGA MOBILE HOME PARK	Community	WELL #3 REC	Groundwater	46.74227	-116.94745	300
SYRINGA MOBILE HOME PARK	Community	WELL #4 E PMPHS	Groundwater	46.74252	-116.94532	300
SYRINGA MOBILE HOME PARK	Community	WELL #7 E CNTRL	Groundwater	46.74236	-116.94486	300
SYRINGA MOBILE HOME PARK	Community	WELL #8 RES	Groundwater	46.74268	-116.94460	300
TROY CITY OF	Community	DUTHIE PARK	Groundwater	46.73972	-116.76901	860
TROY CITY OF	Community	WELL #1 BIG ME	Groundwater	46.75030	-116.76591	860
UNIVERSITY OF IDAHO	Community	WELL #3	Groundwater	46.73692	-117.02088	8,589

Table 3.12. Idaho Water Resources database of municipal water supplies in Latah County.

NAME	SERVICE TYPE	SOURCE NAME	SOURCE TYPE	LATITUDE	LONGITUDE	POPULATION
UNIVERSITY OF IDAHO	Community	WELL #4	Groundwater	46.73512	-117.02492	8,589
USFS GIANT WHITE PINE CAMPGROUND	Non-community Transient	WELL	Groundwater	47.01055	-116.67771	25
USFS LAIRD PARK CAMPGROUND	Non-community Transient	WELL	Groundwater	46.94301	-116.64575	86
USFS LITTLE BOULDER CREEK CAMPGROUND	Non-community Transient	WELL 2	Groundwater	46.78538	-116.45799	25
USFS LITTLE BOULDER CREEK CAMPGROUND	Non-community Transient	WELL 1	Groundwater	46.77093	-116.45750	25
VALHALLA HILLS MHP	Community	WELL #1 HLSD W	Groundwater	46.69344	-117.01341	75
VIOLA WATER AND SEWER DIST	Community	WELL #2 S	Groundwater	46.83561	-117.03955	98
Y TRAILER COURT	Community	WELL #1	Groundwater	46.93212	-116.93302	55
JULIAETTA CITY OF	Community	COX SPRING	Spring-Groundwater	46.58213	-116.70260	560
KENDRICK CITY OF	Community	STANTON SPRING	Spring-Groundwater	46.64149	-116.65355	325
JULIAETTA CITY OF	Community	POTLATCH RIVER	Surface Water	46.58398	-116.70058	560
TROY CITY OF	Community	BIG CREEK	Surface Water	46.80389	-116.81111	860

3.9 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 Latah County, winds are generally from a southwesterly direction throughout the year. 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.

Latah County is in the North Idaho Airshed Unit 12A: 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.

Some of the Class I airsheds in northern Idaho include:

- **Hell's Canyon Wilderness Area:** A sensitive Class I airshed, the Hell's Canyon Wilderness Area (86,116 acres), is located south of Latah County. This area is managed for high scenic and recreation values.
- **Selway-Bitterroot Wilderness:** Another Class I Airshed is the Selway-Bitterroot Wilderness (1.1 million acres). The Selway-Bitterroot Wilderness is southeast of Latah County.

All of the communities within Latah 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).

3.10 Wildland-Urban Interface

3.10.1 People and Structures

The Wildland-Urban Interface has gained attention through efforts targeted at wildfire mitigation, however, this analysis technique is also useful when considering other hazards because the concept looks at where people and structures are concentrated in any particular region. For Latah County, the WUI shows the relative concentrations of structures scattered across the county.

A key component in meeting the underlying need for protection of people and structures is the protection and treatment of hazards in the wildland-urban interface. The wildland-urban interface refers to areas where wildland vegetation meets urban developments, or where forest fuels meet urban fuels in the case of wildfires (such as houses). These areas encompass not only the interface (areas immediately adjacent to urban development), but also the continuous slopes that lead directly to a risk to urban developments be it from wildfire, landslides, or floods. Reducing the 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 danger by creating defensible areas around them and taking other measures to minimize the risks to their structures (USFS 2001). With treatment, a wildland-urban interface can provide fire fighters a defensible area from which to suppress wildland fires or defend communities against other hazard risks. In addition, a wildland-urban interface that is properly 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 interface conditions have been identified for use in wildfire control efforts (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 location of structures in Latah 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 disaster 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.

Figure 3.1. Wildland-Urban Interface in Latah County.

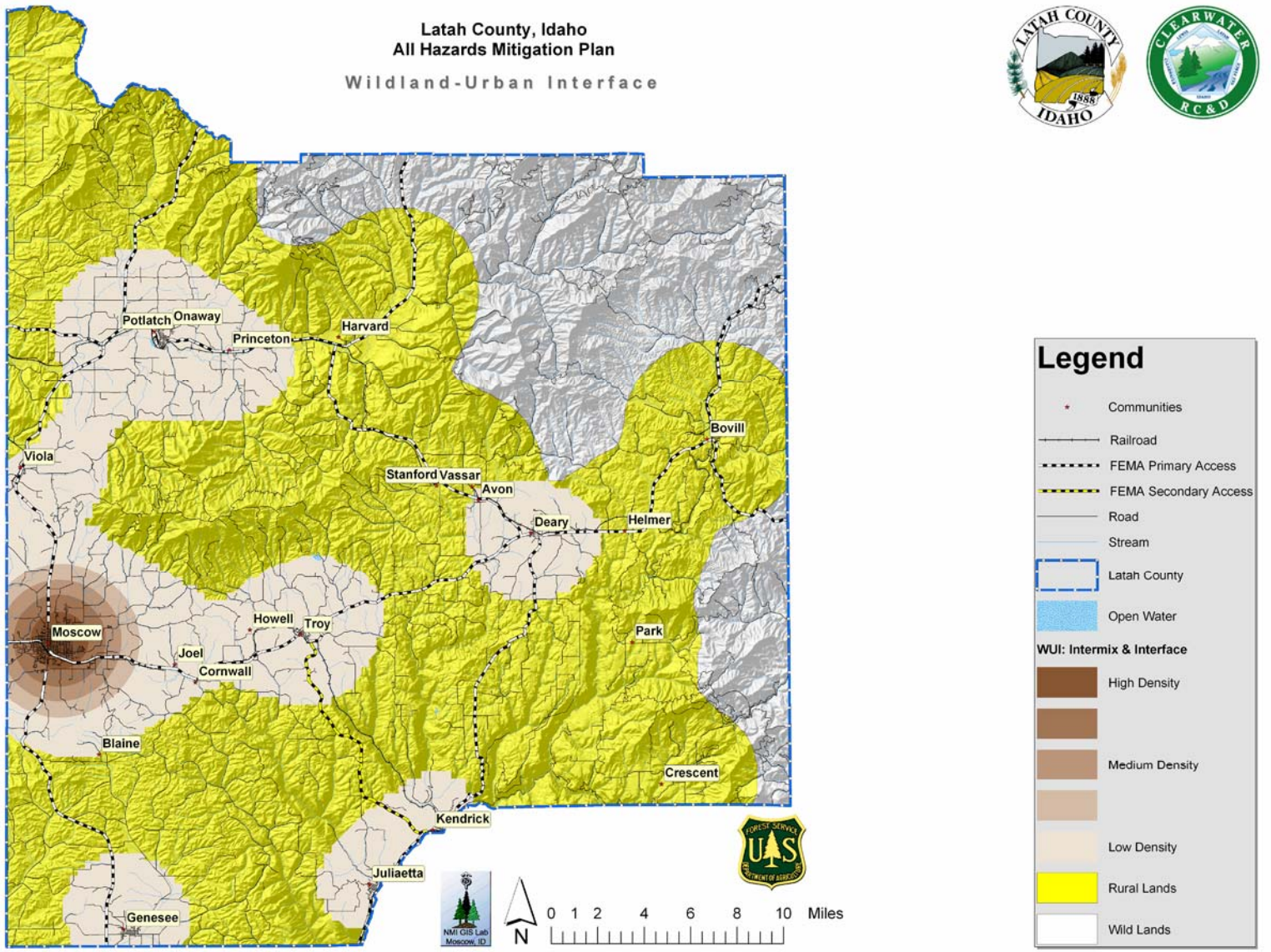


Figure 3.2. Topographic relief of Latah County, Idaho.

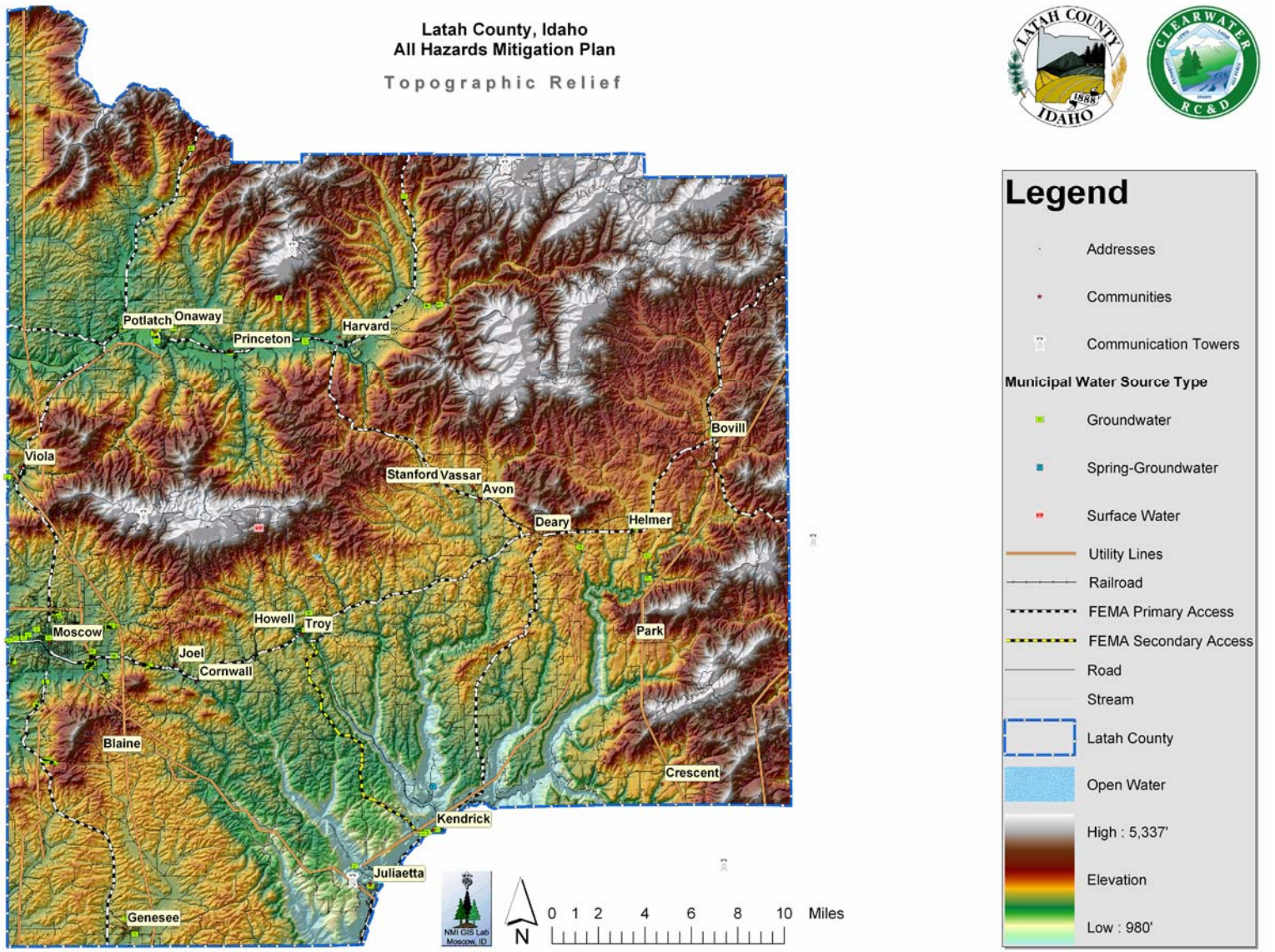
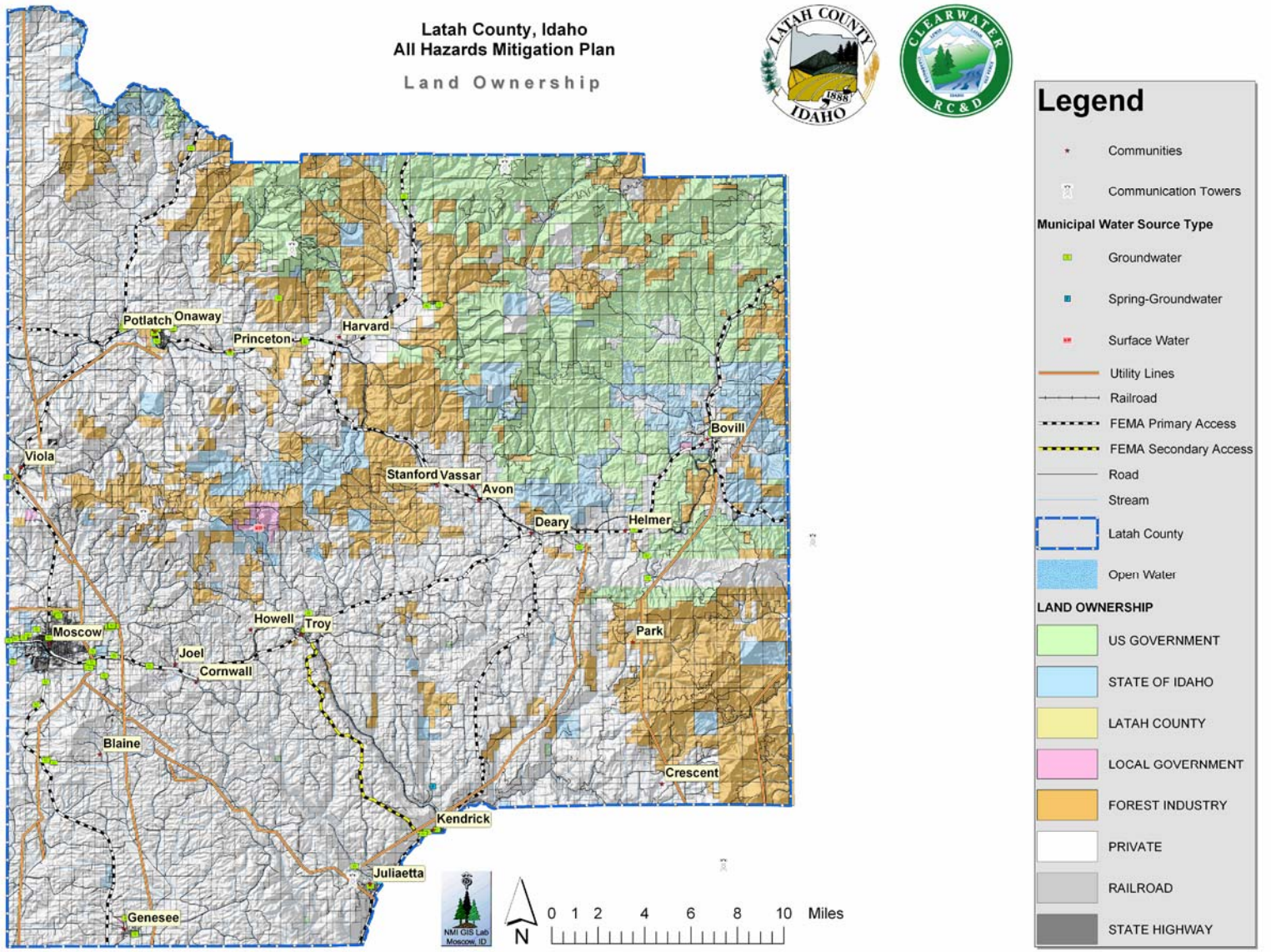


Figure 3.3. Land Ownership in Latah County.



Chapter 4: Risk and Preparedness Assessments

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, topography in which the fire is burning, and the weather and atmospheric conditions during a fire event. At the landscape level, both topography and weather are beyond our control. We are powerless to control winds, temperature, relative humidity, atmospheric instability, slope, aspect, elevation, and landforms. It is beyond our control to alter these conditions, and thus impossible to alter fire behavior through their manipulation. When we attempt to alter how fires burn, we are left with manipulating the third component of the fire environment; fuels which support the fire. By altering fuel loading and fuel continuity across the landscape, we have the best opportunity to 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 contribute significantly to determining fire behavior. Wind, moisture, temperature, and relative humidity ultimately determine the rates at which fuels dry and vegetation cures, and whether fuel conditions become dry enough to sustain an ignition. Once conditions are capable of sustaining a fire, atmospheric stability and wind speed and direction can have a significant 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.

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. The combination of light fuels and dry sites lead to fires that typically display the highest rates of spread. In contrast, south and west slopes tend to receive more direct sun, and thus have the highest temperatures, lowest soil and fuel moistures, and lightest fuels. 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.

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 buildings are all examples. The physical properties and characteristics of fuels govern how fires burn. Fuel loading, size and shape, moisture content and continuity and arrangement all have an 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, 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, the some of the principles that govern fire behavior have been identified and are recognized.

4.2 Wildfire Hazards

4.2.1 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 Idaho Department of Lands of fire ignitions dating from 1983 to 2002. Using this data on past fire extents and fire ignition data, the occurrence of wildland fires in the region of Latah County has been evaluated.

The following (Table 4.1) is a summary of fire ignitions within Latah County as recorded by the Idaho Department of Lands for the period 1983-2002.

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1983	7	Private Property	Equipment Use	Equipment Use, No Further Breakdown	Local Logger	Covered Under Fire Protection Assessment	$ 13,693
1983	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,264
1983	0.1	Private Property	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,066
1983	3	Private Property	Lightning	Lightning	Local Resident	Not Covered Under Fire Protection Assessment	$ 597
1983	0.1	U.S. Forest Service	Lightning	Lightning	USFS Employee	Fire Started On Federal Ownership	$ 37
1983	5	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 3,708
1983	15	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 6,669
1983	6	Private Property	Debris Burning	Yard Grass, Weeds, Ditch	Local Resident	Covered Under Fire Protection Assessment	$ 1,704
1983	6	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 1,331
1983	25	Private Property	Debris Burning	Debris Burning, No Further Breakdown	IDL Employee	Not Covered Under Fire Protection Assessment	$ 561
1983	2	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 117
1983	0.1	Potlatch Corporation	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 444
1983	0.1	U.S. Forest Service	Lightning	Lightning	Unknown	Fire Started On Federal Ownership	$ 467
1983	0.1	U.S. Forest Service	Lightning	Lightning	USFS Lookout	Fire Started On Federal Ownership	$ 851
1983	0.1	Potlatch Corporation	Lightning	Lightning	Unknown	Covered Under Fire Protection Assessment	$ 58
1983	0.1	Potlatch Corporation	Equipment Use	Equipment Use, No Further Breakdown	Unknown	Covered Under Fire Protection Assessment	$ 379
1984	50	Private Property	Equipment Use	Equipment Use, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 10,133
1984	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 536

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1984	0.1	Private Property	Miscellaneous	Broken Powerline, Tree Across Line	Local Resident	Covered Under Fire Protection Assessment	$ 280
1984	1	Private Property	Lightning	Lightning	Unknown	Covered Under Fire Protection Assessment	$ 146
1984	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 247
1984	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 922
1984	0.1	Bennett Lumber Products	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 189
1984	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 152
1984	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 164
1984	0.1	Potlatch Corporation	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 769
1984	0.1	U.S. Forest Service	Lightning	Lightning	Private Citizen	Fire Started On Federal Ownership	$ 451
1984	0.1	State Of Idaho	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 334
1984	0.1	Bennett Lumber Products	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 1,322
1984	0.1	U.S. Forest Service	Lightning	Lightning	Local Logger	Fire Started On Federal Ownership	$ 1,921
1984	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	IDL Employee	Covered Under Fire Protection Assessment	$ 205
1984	0.1	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Private Citizen	Not Covered Under Fire Protection Assessment	$ 202
1984	0.1	State Of Idaho	Campfire	Campfire, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 286
1984	0.1	State Of Idaho	Miscellaneous	Miscellaneous, No Further Breakdown	IDL Employee	Covered Under Fire Protection Assessment	$ 105
1984	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 936
1984	0.1	Private Property	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 95

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1984	0.1	State Of Idaho	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 135
1984	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 103
1984	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 89
1984	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 112
1984	0.1	State Of Idaho	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 99
1984	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 360
1984	0.1	Private Property	Debris Burning	Smoking, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 242
1984	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 128
1985	0.1	Potlatch Corporation	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 2,230
1985	0.5	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 1,903
1985	0.1	State Of Idaho	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 447
1985	0.1	Private Property	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 297
1985	0.1	Potlatch Corporation	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 825
1985	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,122
1985	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 506
1985	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 133
1985	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 336
1985	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 1,110

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1985	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 1,595
1985	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 859
1985	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 961
1985	0.1	State Of Idaho	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 1,537
1985	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 707
1985	1	Potlatch Corporation	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 6,274
1985	0.1	Potlatch Corporation	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 1,255
1985	0.1	Potlatch Corporation	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 2,012
1985	1	Smaller Forest Industry Co.	Lightning	Lightning	USFS Patrol Plane	Covered Under Fire Protection Assessment	$ 2,138
1985	0.1	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 1,330
1985	0.1	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,211
1985	0.5	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 1,903
1985	0.1	State Of Idaho	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 1,537
1985	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 707
1985	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 1,072
1985	0.1	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 1,232
1985	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,559
1985	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 569

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1985	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 661
1985	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 513
1985	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 118
1985	0.1	U.S. Forest Service	Lightning	Lightning	IDL Employee	Fire Started On Federal Ownership	$ 112
1985	1	U.S. Forest Service	Lightning	Lightning	IDL Employee	Fire Started On Federal Ownership	$ 3,473
1985	0.1	Private Property	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 2,519
1985	0.1	Potlatch Corporation	Lightning	Lightning	IDL Patrol Plane	Covered Under Fire Protection Assessment	$ 925
1985	0.1	State Of Idaho	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 469
1985	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 742
1986	0.1	U.S. Forest Service	Lightning	Lightning	Local Logger	Fire Started On Federal Ownership	$ 185
1986	5	Private Property	Children	Children, Under 14	Local Resident	Covered Under Fire Protection Assessment	$ 1,040
1986	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	USFS Employee	Covered Under Fire Protection Assessment	$ 170
1986	0.1	State Of Idaho	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,313
1986	0.1	State Of Idaho	Arson	Blasting, Explosives	Other	Covered Under Fire Protection Assessment	$ 367
1986	0.1	State Of Idaho	Arson	Blasting, Explosives	Other	Covered Under Fire Protection Assessment	$ 685
1986	0.1	Idaho Department of Transportation	Smoking	Smoking, No Further Breakdown	Private Citizen	Not Covered Under Fire Protection Assessment	$ 16
1986	0.1	Private Property	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 411
1986	1	Private Property	Equipment Use	Electric Fence	Local Resident	Covered Under Fire Protection Assessment	$ 314

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1986	0.1	Private Property	Equipment Use	Electric Fence	Local Resident	Covered Under Fire Protection Assessment	$ 345
1986	7	Private Property	Equipment Use	Equipment Use, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 5,448
1986	12	Private Property	Equipment Use	Equipment Use, No Further Breakdown	USFS Lookout	Covered Under Fire Protection Assessment	$ 956
1986	0.1	State Of Idaho	Equipment Use	Equipment Use, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 34
1986	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 348
1986	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 246
1986	1.3	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 843
1986	0.1	Private Property	Debris Burning	Slash Burning, Prescribed	IDL Employee	Covered Under Fire Protection Assessment	$ 389
1986	1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,848
1986	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 888
1986	2	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 3,538
1986	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 285
1986	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,679
1986	2	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 8,840
1986	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 233
1986	2	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,755
1986	0.1	U.S. Forest Service	Equipment Use	Exhaust, Light Equipment, Chainsaw	Local Resident	Fire Started On Federal Ownership	$ 629

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1986	0.1	Potlatch Corporation	Campfire	Campfire, No Further Breakdown	Unknown	Covered Under Fire Protection Assessment	$ 407
1986	0.1	Potlatch Corporation	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 121
1987	0.1	U.S. Forest Service	Lightning	Lightning	USFS Employee	Fire Started On Federal Ownership	$ 236
1987	0.1	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 701
1987	0.1	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 731
1987	0.1	U.S. Forest Service	Lightning	Lightning	Private Citizen	Fire Started On Federal Ownership	$ 410
1987	0.1	U.S. Forest Service	Campfire	Campfire, No Further Breakdown	USFS Employee	Fire Started On Federal Ownership	$ 35
1987	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 509
1987	1	Private Property	Miscellaneous	Field Burning, Prescribed	IDL Employee	Not Covered Under Fire Protection Assessment	$ 67
1987	0.1	Idaho Department of Transportation	Miscellaneous	Burning Vehicle	Local Resident	Covered Under Fire Protection Assessment	$ 89
1987	0.1	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 124
1987	2	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 76
1987	0.1	State Of Idaho	Equipment Use	Equipment Use, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 207
1987	11	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Logger	Covered Under Fire Protection Assessment	$ 8,025
1987	1	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 1,578
1987	1.5	Potlatch Corporation	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 2,952
1987	0.1	Private Property	Campfire	Campfire, No Further Breakdown	Private Citizen	Covered Under Fire Protection Assessment	$ 504

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1987	0.1	Potlatch Corporation	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 77
1987	10	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 5,657
1987	0.1	Potlatch Corporation	Equipment Use	Equipment Use, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 140
1987	0.5	Potlatch Corporation	Lightning	Lightning	Local Resident	No Data	$ 2,904
1988	0.2	Potlatch Corporation	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 133
1988	0.2	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 495
1988	0.2	U.S. Forest Service	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 410
1988	0.1	Private Property	Miscellaneous	Structure Fire	Local Fire Department	Covered Under Fire Protection Assessment	$ 250
1988	0.2	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 2,339
1988	1	Private Property	Miscellaneous	Structure Fire	Local Fire Department	Covered Under Fire Protection Assessment	$ 296
1988	0.1	Private Property	Debris Burning	Slash Burning, Prescribed	Private Citizen	Covered Under Fire Protection Assessment	$ 227
1988	0.3	U.S. Forest Service	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,488
1988	10	Private Property	Equipment Use	Burning Vehicle	Local Resident	Covered Under Fire Protection Assessment	$ 285
1988	10	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 998
1988	0.2	Private Property	Children	Matches	Local Resident	Not Covered Under Fire Protection Assessment	$ 113
1988	1	Potlatch Corporation	Equipment Use	Exhaust, Light Equipment, Chainsaw	Local Resident	Covered Under Fire Protection Assessment	$ 863
1988	0.2	Private Property	Debris Burning	Slash Burning, Prescribed	IDL Employee	Covered Under Fire Protection Assessment	$ 110

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1988	0.2	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,444
1988	40	Private Property	Miscellaneous	Electric Fence	SITPA Employee	Covered Under Fire Protection Assessment	$ 28,641
1988	2	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 6,767
1988	0.3	Private Property	Debris Burning	Trash Burning, Burn Barrel	Local Fire Department	Covered Under Fire Protection Assessment	$ 695
1988	20	Private Property	Debris Burning	Slash Burning, Prescribed	Local Fire Department	Covered Under Fire Protection Assessment	$ 377
1988	4	State Of Idaho	Miscellaneous	Blasting, Explosives	Local Fire Department	Covered Under Fire Protection Assessment	$ 6,652
1988	2	Private Property	Debris Burning	Trash Burning, Piles Or Yard	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 428
1988	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 85
1988	0.1	Smaller Forest Industry Co.	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 193
1989	2	Potlatch Corporation	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 7,886
1989	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 219
1989	0.1	U.S. Forest Service	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 609
1989	0.1	Bennett Lumber Products	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 388
1989	0.1	Burlington Northern Railroad	Debris Burning	Slash Burning, Prescribed	Local Logger	Covered Under Fire Protection Assessment	$ 529
1989	2	Private Property	Children	Children, Under 14	Local Resident	Covered Under Fire Protection Assessment	$ 509
1989	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 141
1989	0.1	Burlington Northern Railroad	Debris Burning	Slash Burning, Prescribed	Local Logger	Covered Under Fire Protection Assessment	$ 678
1989	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 2,185

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1989	0.1	Private Property	Children	Playing With Matches	Local Resident	Covered Under Fire Protection Assessment	$ 87
1989	20	Private Property	Debris Burning	Field Burning, Prescribed	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 377
1989	0.1	Private Property	Miscellaneous	Fireworks	USFS Employee	Covered Under Fire Protection Assessment	$ 53
1989	0.2	Potlatch Corporation	Miscellaneous	Exhaust, Light Equipment, Chainsaw	Local Resident	Covered Under Fire Protection Assessment	$ 1,286
1989	0.1	Potlatch Corporation	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 526
1990	0.1	Idaho Department of Transportation	Miscellaneous	Powerline, Insulator, Transformers, Arc	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 44
1990	0.1	Idaho Parks & Recreation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 383
1990	1	Private Property	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 1,541
1990	0.1	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Resident	Covered Under Fire Protection Assessment	$ 207
1990	200	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Not Covered Under Fire Protection Assessment	$ 5,534
1990	17	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Fire Department	Covered Under Fire Protection Assessment	$ 1,743
1990	3	Private Property	Miscellaneous	Electric Fence	Local Resident	Covered Under Fire Protection Assessment	$ 1,141
1990	100	Private Property	Debris Burning	Field Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 247
1990	0.1	Potlatch Corporation	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 538
1990	1	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 116
1990	0.1	Potlatch Corporation	Campfire	Campfire, No Further Breakdown	USFS Employee	Covered Under Fire Protection Assessment	$ 189
1990	24	Private Property	Debris Burning	Field Burning, Prescribed	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 2,880

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1990	0.1	Potlatch Corporation	Lightning	Lightning	Private Aircraft	Covered Under Fire Protection Assessment	$ 312
1990	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 283
1991	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 418
1991	0.1	Private Property	Debris Burning	Slash Burning, Prescribed	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 214
1991	2	Private Property	Debris Burning	Slash Burning, Prescribed	Local Resident	Not Covered Under Fire Protection Assessment	$ 5,395
1991	0.1	U.S. Forest Service	Equipment Use	Exhaust, Light Equipment, Chainsaw	USFS Employee	Fire Started On Federal Ownership	$ 1,180
1991	1.5	Bennett Lumber Products	Debris Burning	Slash Burning, Prescribed	IDL Employee	Covered Under Fire Protection Assessment	$ 713
1991	0.1	State Of Idaho	Campfire	Campfire, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 114
1991	0.1	Private Property	Miscellaneous	Exhaust, Off Road ATV, Motorcycles	Local Fire Department	Covered Under Fire Protection Assessment	$ 393
1991	0.1	U.S. Forest Service	Campfire	Campfire, No Further Breakdown	Private Citizen	Fire Started On Federal Ownership	$ 85
1991	0.1	Private Property	Campfire	Cooking Fire, Recreation	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 509
1991	5	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Resident	Covered Under Fire Protection Assessment	$ 520
1991	2	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 1,187
1991	0.1	Smaller Forest Industry Co.	Miscellaneous	Burning Vehicle	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 505
1991	0.1	Private Property	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 126
1991	0.5	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Private Citizen	Covered Under Fire Protection Assessment	$ 2,732

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1991	0.1	Potlatch Corporation	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 1,127
1991	0.1	Potlatch Corporation	Miscellaneous	Burning Vehicle	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 455
1992	0.3	Private Property	Debris Burning	Slash Burning, Prescribed	CPTPA Employee	Covered Under Fire Protection Assessment	$ 80
1992	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 321
1992	0.1	Potlatch Corporation	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 257
1992	0.3	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 1,669
1992	26.8	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 9,930
1992	0.1	Idaho Department of Transportation	Equipment Use	Vehicle Collision	Local Resident	Not Covered Under Fire Protection Assessment	$ 142
1992	0.1	County Lands	Equipment Use	Vehicle Collision	Local Resident	Not Covered Under Fire Protection Assessment	$ 468
1992	1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 853
1992	1	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 358
1992	0.1	U.S. Forest Service	Lightning	Lightning	USFS Employee	Fire Started On Federal Ownership	$ 151
1992	1.5	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 8,849
1992	40	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Fire Department	Covered Under Fire Protection Assessment	$ 11,826
1992	376	Private Property	Debris Burning	Field Burning, Prescribed	County Sheriff's Office & ISP	Not Covered Under Fire Protection Assessment	$ 8,647
1992	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 231

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1992	0.1	Bennett Lumber Products	Arson	Playing With Fireworks	USFS Employee	Covered Under Fire Protection Assessment	$ 368
1992	1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 322
1992	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 106
1992	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 432
1992	0.1	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 191
1992	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 168
1992	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 409
1992	0.3	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 828
1992	0.1	State Of Idaho	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 200
1993	26	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Resident	Covered Under Fire Protection Assessment	$ 1,465
1993	7	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 191
1993	5	Private Property	Debris Burning	Trash Burning, Piles Or Yard	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 1,369
1993	0.1	Potlatch Corporation	Campfire	Warming Fire, Hunter Or Fishing	Local Resident	Covered Under Fire Protection Assessment	$ 228
1993	1.5	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 849
1994	33	Private Property	Debris Burning	Trash Burning, Piles Or Yard	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 403
1994	42	Private Property	Debris Burning	Debris Burning, No Further Breakdown	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 864
1994	0.3	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,567

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1994	0.5	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 464
1994	20	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 355
1994	0.1	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 1,543
1994	3	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 4,208
1994	1.5	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 3,004
1994	0.1	Private Property	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 511
1994	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 347
1994	0.2	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 721
1994	3	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 38
1994	14	Private Property	Lightning	Lightning	USFS Lookout	Fire Started On Federal Ownership	$ 14,101
1994	32	Private Property	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 63,139
1994	4	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 34,582
1994	2	U.S. Forest Service	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 7,293
1994	0.3	U.S. Forest Service	Lightning	Lightning	USFS Lookout	Fire Started On Federal Ownership	$ 838
1994	0.1	U.S. Forest Service	Lightning	Lightning	USFS Lookout	Fire Started On Federal Ownership	$ 8,768
1994	2.5	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,926

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1994	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 44
1994	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 104
1994	0.2	Private Property	Lightning	Lightning	USFS Lookout	Covered Under Fire Protection Assessment	$ 1,502
1994	0.1	Private Property	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 193
1994	0.4	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,131
1994	10	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 8,735
1994	80	Private Property	Equipment Use	Equipment Use, No Further Breakdown	County Sheriff's Office & ISP	Not Covered Under Fire Protection Assessment	$ 463
1994	0.1	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 330
1994	32	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Logger	Covered Under Fire Protection Assessment	$ 32,700
1994	1	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 883
1994	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 378
1994	5.5	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 1,427
1994	0.1	Potlatch Corporation	Smoking	Cigarette	Local Resident	Covered Under Fire Protection Assessment	$ 119
1994	0.1	U.S. Forest Service	Lightning	Lightning	USFS Employee	Fire Started On Federal Ownership	$ 540
1994	2	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 720
1994	1	Private Property	Equipment Use	Structure Fire	Local Resident	Covered Under Fire Protection Assessment	$ 226
1994	0.5	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 71

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1994	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 2,975
1994	0.2	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 3,377
1994	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 681
1994	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 306
1994	6	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 75,369
1994	0.2	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 3,140
1994	0.2	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 3,140
1994	0.5	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 6,281
1994	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,256
1994	0.5	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 6,281
1994	0.2	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 1,432
1994	1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 7,358
1994	0.1	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	CPTPA Employee	Covered Under Fire Protection Assessment	$ 253
1994	0.1	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 1,256
1994	0.5	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 6,281
1994	2	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 25,123
1994	1	Potlatch Corporation	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 12,561

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1994	0.2	Potlatch Corporation	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 3,140
1994	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 1,256
1995	3	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 137
1995	1	State Of Idaho	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 2,793
1995	20	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Resident	Covered Under Fire Protection Assessment	$ 286
1995	0.5	Private Property	Debris Burning	Slash Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 1,214
1995	0.1	Potlatch Corporation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 720
1995	10	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 96
1995	0.5	Private Property	Miscellaneous	Exhaust System, Catalytic Converters	County Sheriff's Office & ISP	Not Covered Under Fire Protection Assessment	$ 337
1995	0.2	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 2,198
1995	0.1	State Of Idaho	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 343
1995	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 156
1995	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 285
1996	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 161
1996	0.1	Private Property	Debris Burning	Field Burning, Prescribed	Local Resident	Not Covered Under Fire Protection Assessment	$ 189
1996	3	Private Property	Debris Burning	Field Burning, Prescribed	Local Resident	Not Covered Under Fire Protection Assessment	$ 304
1996	0.1	County Lands	Children	Miscellaneous, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 1,087

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1996	0.1	Private Property	Equipment Use	Burning Vehicle	Local Resident	Covered Under Fire Protection Assessment	$ 136
1996	13	Idaho Department of Transportation	Equipment Use	Equipment Use, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 1,285
1996	0.1	Idaho Department of Transportation	Equipment Use	Miscellaneous, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 319
1996	0.4	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Not Covered Under Fire Protection Assessment	$ 563
1996	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 551
1996	0.1	Private Property	Lightning	Lightning	Local Fire Department	Fire Started On Federal Ownership	$ 682
1996	5	Private Property	Equipment Use	Exhaust System, Catalytic Converters	Local Fire Department	Covered Under Fire Protection Assessment	$ 351
1997	0.2	Private Property	Debris Burning	Campfire, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 270
1997	0.2	Private Property	Lightning	Lightning	Local Fire Department	Not Covered Under Fire Protection Assessment	$ 614
1997	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 227
1997	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 35
1997	3	Idaho Parks & Recreation	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 8,060
1997	0.1	State Of Idaho	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 2,149
1997	0.1	State Of Idaho	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,061
1997	0.2	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 833
1997	0.5	Bennett Lumber Products	Children	Children, Under 14	Unknown	Covered Under Fire Protection Assessment	$ 461
1997	0.1	State Of Idaho	Miscellaneous	Miscellaneous, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 251

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1997	3	Private Property	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 7,636
1997	0.5	Bennett Lumber Products	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 3,235
1997	0.1	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,073
1997	3	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 15,167
1997	2.5	Private Property	Campfire	Campfire, No Further Breakdown	Local Fire Department	Covered Under Fire Protection Assessment	$ 3,569
1997	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Local Resident	Covered Under Fire Protection Assessment	$ 243
1998	10	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 2,830
1998	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 470
1998	0.1	U.S. Forest Service	Lightning	Lightning	Local Fire Department	Fire Started On Federal Ownership	$ 2,784
1998	66	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Resident	Covered Under Fire Protection Assessment	$ 37,495
1998	0.1	U.S. Forest Service	Lightning	Lightning	Local Resident	Fire Started On Federal Ownership	$ 727
1998	3	Private Property	Miscellaneous	Powerline, Insulator, Transformers, Arc	Local Fire Department	Covered Under Fire Protection Assessment	$ 2,456
1998	6	Private Property	Miscellaneous	Miscellaneous, No Further Breakdown	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 5,415
1998	4	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 3,840
1998	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 104
1998	0.2	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 64
1998	0.2	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 307

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1998	0.1	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ -
1999	0.5	U.S. Forest Service	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 1,490
1999	0.1	U.S. Forest Service	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 472
1999	12	Coeur d' Alene Tribe	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 8,262
1999	0.1	Coeur d' Alene Tribe	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 598
1999	0.25	Coeur d' Alene Tribe	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 3,620
1999	9	U.S. Forest Service	Lightning	Lightning	IDL Patrol Plane	Fire Started On Federal Ownership	$ 51,185
1999	0.1	Idaho Parks & Recreation	Equipment Use	Equipment Use, No Further Breakdown	Private Citizen	Covered Under Fire Protection Assessment	$ 492
1999	0.5	Coeur d' Alene Tribe	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 7,156
1999	51	Coeur d' Alene Tribe	Miscellaneous	Electric Fence	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 16,526
1999	0.3	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 1,999
1999	0.75	Idaho Parks & Recreation	Lightning	Lightning	Private Citizen	Covered Under Fire Protection Assessment	$ 6,454
1999	0.1	U.S. Forest Service	Lightning	Lightning	IDL Employee	Fire Started On Federal Ownership	$ 348
1999	20	Coeur d' Alene Tribe	Debris Burning	Yard Grass, Weeds, Ditch	County Sheriff's Office & ISP	Not Covered Under Fire Protection Assessment	$ 1,382
1999	0.1	State Of Idaho	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 406
1999	0.1	State Of Idaho	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 932
1999	0.6	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 7,514

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
1999	0.2	Crown Pacific Inland	Lightning	Lightning	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,939
1999	0.1	U.S. Forest Service	Miscellaneous	Miscellaneous, No Further Breakdown	USFS Employee	Fire Started On Federal Ownership	$ 350
1999	0.2	U.S. Forest Service	Lightning	Lightning	USFS Patrol Plane	Fire Started On Federal Ownership	$ 5,087
2000	0.25	Private Property	Debris Burning	Field Burning, Prescribed	IDL Employee	Not Covered Under Fire Protection Assessment	$ 43
2000	0.1	U.S. Forest Service	Campfire	Campfire, No Further Breakdown	USFS Employee	Fire Started On Federal Ownership	$ 196
2000	0.1	Private Property	Miscellaneous	Playing With Fireworks	Local Logger	Covered Under Fire Protection Assessment	$ 1,008
2000	0.1	Idaho Department of Transportation	Equipment Use	Equipment Use, No Further Breakdown	CPTPA Employee	Not Covered Under Fire Protection Assessment	$ 44
2000	9	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 1,224
2000	0.3	State Of Idaho	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 2,906
2000	0.1	Private Property	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 626
2000	0.3	Private Property	Debris Burning	Slash Burning, Prescribed	CPTPA Patrol Plane	Covered Under Fire Protection Assessment	$ 1,968
2000	0.3	Private Property	Debris Burning	Field Burning, Prescribed	IDL Employee	Covered Under Fire Protection Assessment	$ 378
2000	0.2	Private Property	Debris Burning	Field Burning, Prescribed	Other State Agencies	Not Covered Under Fire Protection Assessment	$ 87
2000	903	Private Property	Arson	Arson, No Further Breakdown	Local Resident	Not Covered Under Fire Protection Assessment	$ 54,564
2000	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 474
2000	0.5	State Of Idaho	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 3,362
2000	5	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 29,527

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
2000	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 311
2000	1.5	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 246
2000	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 35
2000	1	Private Property	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 645
2000	2	Private Property	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 2,866
2000	0.2	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 2,043
2000	0.3	U.S. Forest Service	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 4,611
2000	0.3	U.S. Forest Service	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 4,536
2000	0.2	U.S. Forest Service	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 3,317
2000	0.3	U.S. Forest Service	Lightning	Lightning	CPTPA Patrol Plane	Fire Started On Federal Ownership	$ 3,418
2000	0.1	Private Property	Equipment Use	Exhaust, Light Equipment, Chainsaw	Local Fire Department	Covered Under Fire Protection Assessment	$ 449
2000	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 360
2000	2	Private Property	Debris Burning	Field Burning, Prescribed	Local Resident	Not Covered Under Fire Protection Assessment	$ 185
2000	0.1	Private Property	Equipment Use	Powerline, Insulator, Transformers, Arc	Local Logger	Covered Under Fire Protection Assessment	$ 202
2001	0.25	Private Property	Debris Burning	Illegal Burning	Local Fire Department	Covered Under Fire Protection Assessment	$ 549
2001	0.1	Private Property	Miscellaneous	Fireworks	Local Resident	Covered Under Fire Protection Assessment	$ 373

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
2001	0.3	Private Property	Campfire	Cooking Fire, Recreation	IDL Employee	Covered Under Fire Protection Assessment	$ 2,188
2001	0.1	Private Property	Campfire	Warming Fire, Recreation	Private Citizen	Covered Under Fire Protection Assessment	$ 78
2001	0.1	Private Property	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 567
2001	0.1	Private Property	Debris Burning	Debris Burning, No Further Breakdown	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 238
2001	4	Private Property	Debris Burning	Trash Burning, Burn Barrel	Local Resident	Covered Under Fire Protection Assessment	$ 1,928
2001	2	Private Property	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 10,007
2001	125	Private Property	Debris Burning	Field Burning, Prescribed	Local Resident	Covered Under Fire Protection Assessment	$ 6,066
2001	0.1	Private Property	Lightning	Lightning	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 72
2001	2	Private Property	Lightning	Lightning	CPTPA Employee	Covered Under Fire Protection Assessment	$ 19,278
2001	0.1	Private Property	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 1,142
2001	0.1	Private Property	Lightning	Lightning	Local Resident	Covered Under Fire Protection Assessment	$ 807
2001	0.1	Private Property	Lightning	Lightning	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 97
2001	0.1	U.S. Forest Service	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 2,377
2001	0.1	State Of Idaho	Lightning	Lightning	IDL Employee	Covered Under Fire Protection Assessment	$ 2,233
2001	0.5	Private Property	Miscellaneous	Guns, Tracer Bullets	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 458

Table 4.1. Wildfire Ignition Profile from Idaho Department of Lands data in Latah County

YEAR	OUTSIZE (Acres)	Land Owner	General Cause	Specific Cause	REP NAME	PROTECT	TOTAL COST
2002	0.1	Private Property	Lightning	Lightning	Local Fire Department	Covered Under Fire Protection Assessment	$ 80
2002	1.5	Idaho Department of Transportation	Miscellaneous	Unknown	Private Citizen	Covered Under Fire Protection Assessment	$ 803
2002	0.1	Potlatch Corporation	Lightning	Lightning	USFS Employee	Covered Under Fire Protection Assessment	$ 1,874
2002	30	Private Property	Equipment Use	Welding, Cutting Torch	Local Fire Department	Covered Under Fire Protection Assessment	$ 13,848
2002	15	Private Property	Miscellaneous	Unknown	Unknown	Covered Under Fire Protection Assessment	$ 659
2002	4	Bennett Lumber Products	Miscellaneous	Slash Burning, Prescribed	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 17,095
2002	35	Private Property	Debris Burning	Trash Burning, Piles Or Yard	Private Citizen	Not Covered Under Fire Protection Assessment	$ 16,222
2002	0.3	Potlatch Corporation	Campfire	Warming Fire, Hunter Or Fishing	Forest Industry Employee	Covered Under Fire Protection Assessment	$ 609
2002	0.2	Idaho Department of Transportation	Equipment Use	Burning Vehicle	County Sheriff's Office & ISP	Covered Under Fire Protection Assessment	$ 281
2002	0.1	Private Property	Lightning	Lightning	Local Logger	Covered Under Fire Protection Assessment	$ 542
2002	0.1	Potlatch Corporation	Equipment Use	Equipment Use, No Further Breakdown	Local Logger	Covered Under Fire Protection Assessment	$ 859
2002	1.5	U.S. Forest Service	Miscellaneous	Miscellaneous, No Further Breakdown	Other Federal Agencies	Fire Started On Federal Ownership	$ 2,860

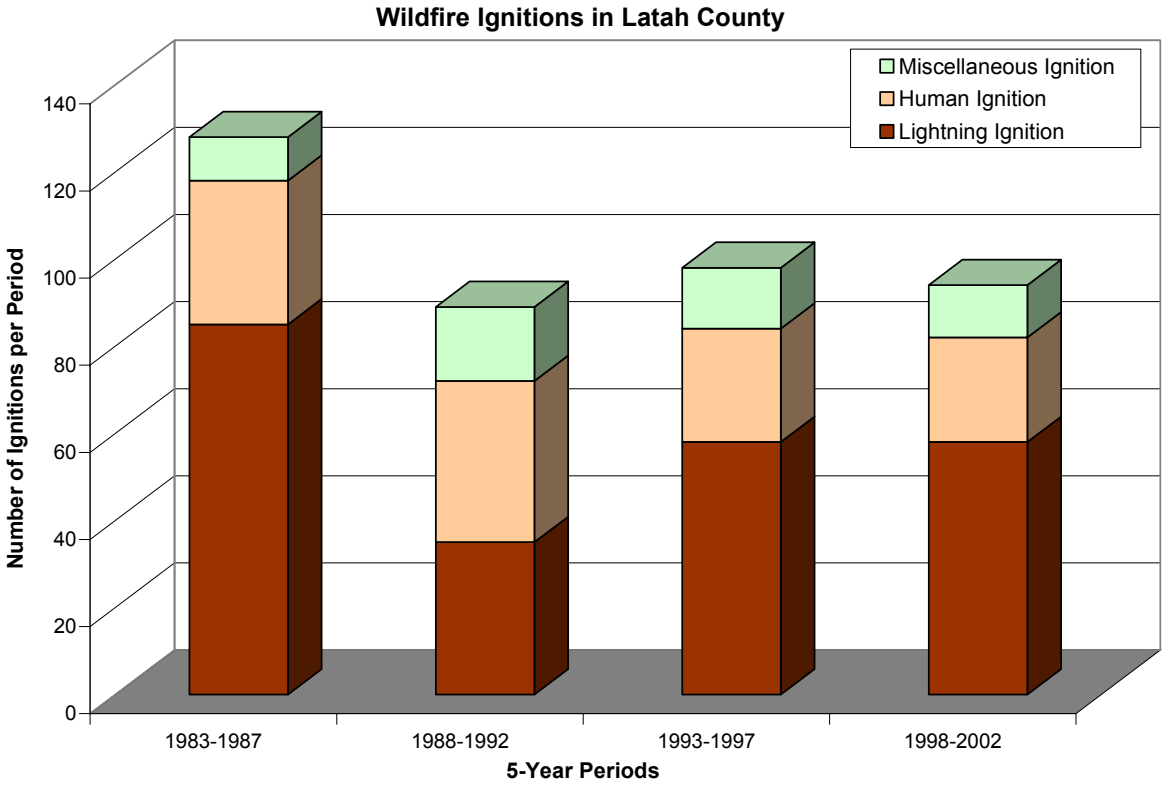
The Idaho Department of Lands maintains a database of wildfire ignitions in Idaho for those areas where the Idaho Department of Lands provides primary wildfire suppression services. Their database includes ignitions from 1983 through 2002 (Table 4.2). An analysis of the ignitions in Latah County reveals that approximately 233 wildfires have been ignited during this period in Latah County (4.2).

Table 4.2. Summary of wildfire ignitions in Latah County from the Idaho Department of Lands database.

General Cause	Number of Ignitions	Percent of Total Ignitions
Lightning	236	57.7%
Campfire	15	3.7%
Smoking	2	0.5%
Debris Burning	54	13.2%
Arson	4	1.0%
Equipment Use	39	9.5%
Railroad	0	0.0%
Children	6	1.5%
Miscellaneous	53	13.0%
Total	**409**	

Many fires have burned in the region of Latah County (Tables 4.1 & 4.2). Figures 4.1 & 4.2 summarize fire ignitions and acres burned by 5-year periods (1983-2002). There were approximately 409 fire ignitions during this 20 year period, with the highest number of total ignitions occurring over the decade 1983-1988 (Figure 4.2). Lightning caused ignitions account for approximately 58% of all ignitions during this period (Table 4.2), with debris burning and equipment use both accounting for the largest number of human caused ignitions.

Figure 4.1. Latah County Wildfire Ignition Profile in 5-Year Periods from the Idaho Department of Lands dataset.



The Idaho Department of Lands dataset is a tabular dataset which does not include specific geographic data on the exact location of the ignitions, but it does include the fire's name.

4.2.2 Wildfire Extent Profile

Across the west, wildfires have been increasing in extent and cost of control. The National Interagency Fire Center (2005) reported over 77,500 wildfires in 2004 which burned a total of 6.7 million acres and cost $890 million in containment (Table 4.3). Data summaries for 2000 through 2004 are provided and demonstrate the variability of the frequency and extent of wildfires nationally (Table 3.3). It is important to note that the 10 year moving average number of acres burned reported each year has been increasing constantly since 2000.

Table 4.3. National Fire Season Summaries.

Statistical Highlights	2000	2001	2002	2003	2004
Number of Fires	122,827	84,079	88,458	85,943	77,534
10-year Average ending with indicated year	106,393	106,400	103,112	101,575	100,466
Acres Burned	**8,422,237**	**3,555,138**	**6,937,584**	**4,918,088**	**6,790,692**
10-year Average ending with indicated year	3,786,411	4,083,347	4,215,089	4,663,081	4,923,848
Structures Burned	861	731	2,381	5,781	1,095

Table 4.3. National Fire Season Summaries.

Statistical Highlights	2000	2001	2002	2003	2004
Estimated Cost of Fire Suppression (Federal agencies only)	$1.3 billion	$917 million	$ 1.6 billion	$1.3 billion	$890 million

The National Interagency Fire Center, located in Boise, Idaho, maintains records of fire costs, extent, and related data for the entire nation. Tables 4.4 and 4.6 summarize some of the relevant wildland fire data for the nation, and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained.

These statistics (Table 4.4) 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.

Table 4.4. Total Fires and Acres 1960 - 2004 Nationally.

Year	Fires	Acres	Year	Fires	Acres
2004	77,534	* 6,790,692	1981	249,370	4,814,206
2003	85,943	4,918,088	1980	234,892	5,260,825
2002	88,458	6,937,584	1979	163,196	2,986,826
2001	84,079	3,555,138	1978	218,842	3,910,913
2000	122,827	8,422,237	1977	173,998	3,152,644
1999	93,702	5,661,976	1976	241,699	5,109,926
1998	81,043	2,329,709	1975	134,872	1,791,327
1997	89,517	3,672,616	1974	145,868	2,879,095
1996	115,025	6,701,390	1973	117,957	1,915,273
1995	130,019	2,315,730	1972	124,554	2,641,166
1994	114,049	4,724,014	1971	108,398	4,278,472
1993	97,031	2,310,420	1970	121,736	3,278,565
1992	103,830	2,457,665	1969	113,351	6,689,081
1991	116,953	2,237,714	1968	125,371	4,231,996
1990	122,763	5,452,874	1967	125,025	4,658,586
1989	121,714	3,261,732	1966	122,500	4,574,389
1988	154,573	7,398,889	1965	113,684	2,652,112
1987	143,877	4,152,575	1964	116,358	4,197,309
1986	139,980	3,308,133	1963	164,183	7,120,768
1985	133,840	4,434,748	1962	115,345	4,078,894
1984	118,636	2,266,134	1961	98,517	3,036,219
1983	161,649	5,080,553	1960	103,387	4,478,188
1982	174,755	2,382,036			

(National Interagency Fire Center 2004)

Table 4.5. 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
2004	$ 147,165,000	$ 63,452,000	$ 7,979,000	$ 34,052,000	$ 637,585,000	**$890,233,000**
2003	$151,894,000	$ 96,633,000	$ 9,554,000	$ 44,557,000	$ 1,023,500,000	**$1,326,138,000**
2002	$ 204,666,000	$ 109,035,000	$ 15,245,000	$ 66,094,000	$ 1,266,274,000	**$1,661,314,000**
2001	$ 192,115,00	$ 63,200,000	$ 7,160,000	$ 48,092,000	$ 607,233,000	**$917,800,000**
2000	$180,567,000	$ 93,042,000	$ 9,417,000	$ 53,341,000	$ 1,026,000,000	**$1,362,367,000**

Table 4.5. 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
1999	$ 85,724,000	$ 42,183,000	$ 4,500,000	$ 30,061,000	$ 361,000,000	**$523,468,000**
1998	$ 63,177,000	$ 27,366,000	$ 3,800,000	$ 19,183,000	$ 215,000,000	**$328,526,000**
1997	$ 62,470,000	$ 30,916,000	$ 2,000	$ 6,844,000	$ 155,768,000	**$256,000,000**
1996	$ 96,854,000	$ 40,779,000	$ 2,600	$ 19,832,000	$ 521,700,000	**$679,167,600**
1995	$ 56,600,000	$ 36,219,000	$ 1,675,000	$ 21,256,000	$ 224,300,000	**$340,050,000**
1994	$ 98,417,000	$ 49,202,000	$ 3,281,000	$ 16,362,000	$ 678,000,000	**$845,262,000**

(National Interagency Fire Center 2005)

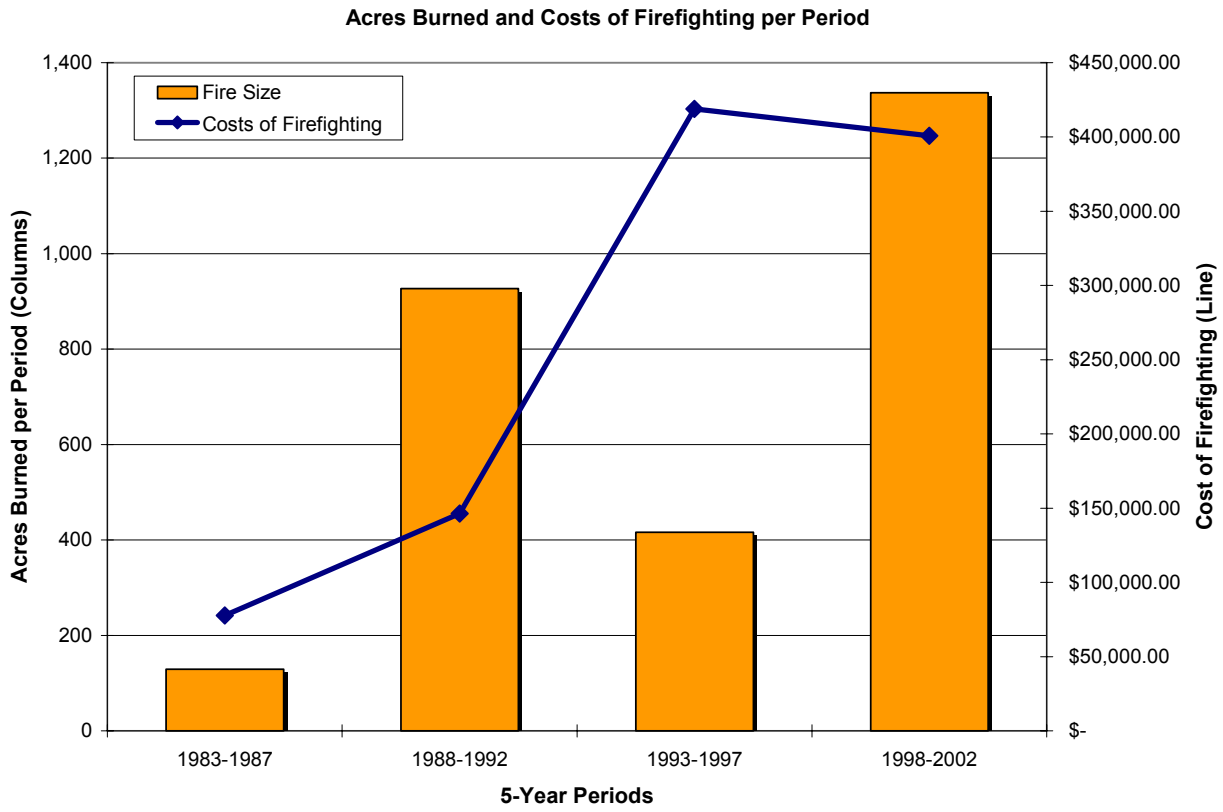
Although many very large fires, growing to over 250,000 acres have burned in North Central Idaho, which Latah County is a part, actual fires in this county have usually been controlled at much smaller extents. Large fires have occurred in and around Latah County (Tables 4.1 & 4.3). When considering the past 20 years of data provided by the Idaho Department of Lands.

Table 4.6. Wildfire Ignition and Extent Profile in Latah County from the Idaho Department of Lands database 1983-2002.

	1983-1987	1988-1992	1993-1997	1998-2002
		--- Number of Ignitions ---		
Lightning Ignition	85	35	58	58
Human Ignition	33	37	26	24
Miscellaneous Ignition	10	17	14	12
Acres Burned	129.2	926.8	416.3	1337.3
Costs of Fire fighting	$77,719.02	$ 146,396	$ 418,878	$ 400,742

The Idaho Department of Lands provides primary wildfire protection in Latah County, rural and city fire districts augment these services with home protection and related services.

Figure 4.2. Past wildfire extent profile by 5–year period in Latah County.



4.3 Wildfire Hazard Assessment

Latah County and the adjacent counties of Latah, Clearwater, Nez Perce, and Idaho Counties, 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.

4.3.1 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. Northwest Management, Inc., a natural resources consulting firm, has completed similar assessments on over 30 counties and Indian Reservations in Idaho, Montana, Nevada, and Washington to determine fire prone landscape characteristics.

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 this 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 degrees and retained two decimal points 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).

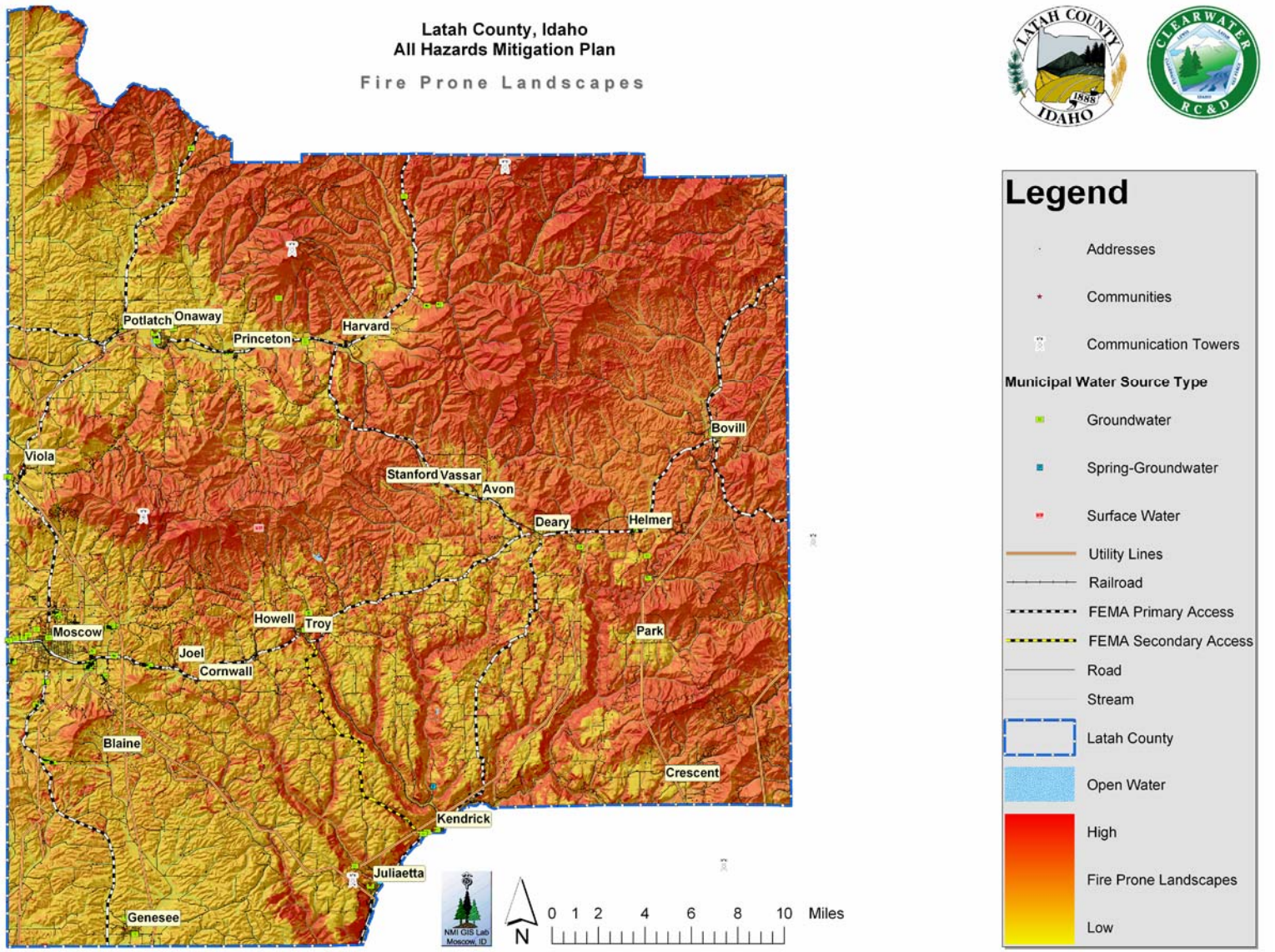
Wind Direction: Wind direction and speed data detailed by monthly averages was used in this project to better ascertain certain fire behavior characteristics common to large fire events. These data are spatially gridded Average Monthly Wind Directions in Idaho. The coverage was created from data summarized 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 North Central Idaho area including the USFS Nez Perce and Clearwater National Forests and the Idaho Department of Lands.

Fire Prone Landscapes: Using the methodology developed by Schlosser *et al.* (2002, 2003, 2004), 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 Latah County was 95 with a low of 23.

Figure 4.3. Fire Prone Landscapes in Latah County, Idaho.

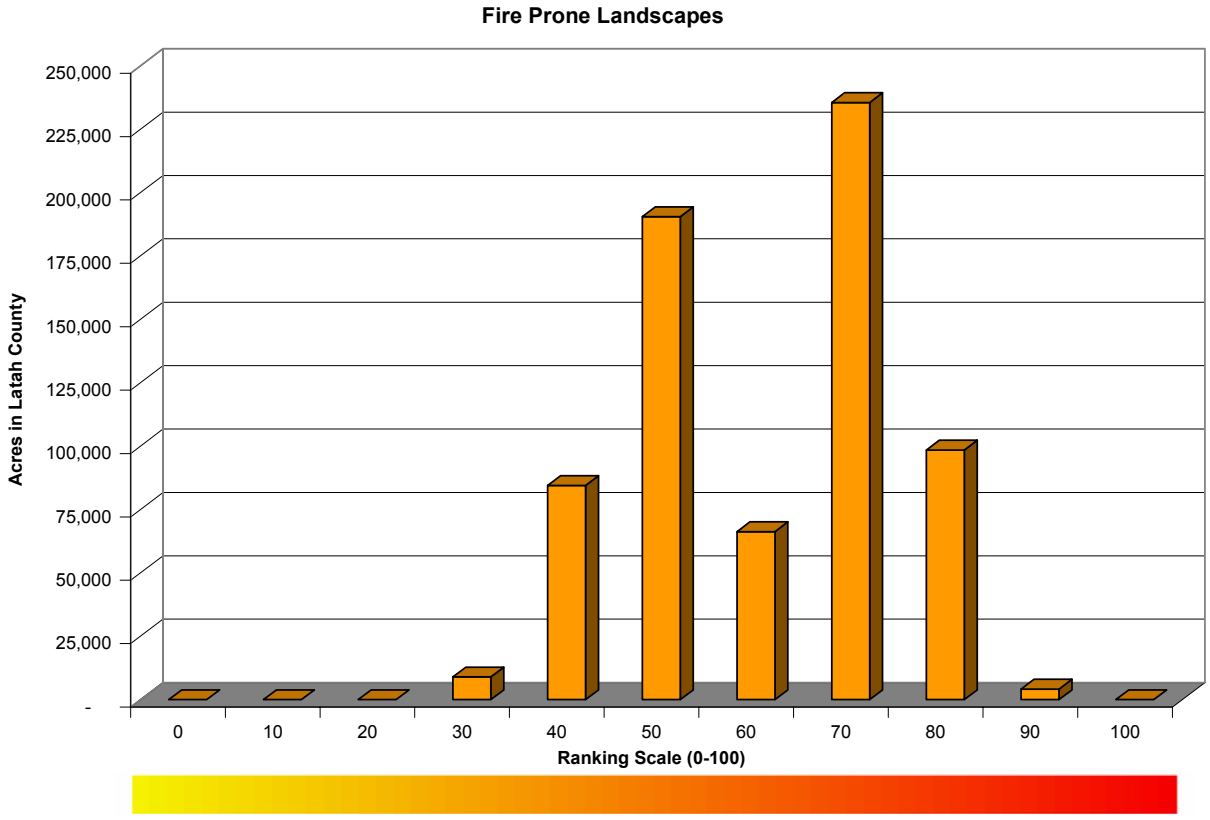


The maps depicting these risk categories display yellow as the lowest risk and red as the highest with values between a constant gradient from yellow to orange to red (Table 4.7). While large maps (16 square feet) have been provided as part of this analysis, smaller size maps are presented in Appendix I.

Table 4.7. Fire Prone Landscape rankings and associated acres in each category for Latah County.

Color Code	Value	Total Acres	Percent of Total Area
	0	-	0%
	10	-	0%
	20	-	0%
	30	8,972	1%
	40	84,511	12%
	50	190,488	28%
	60	66,307	10%
	70	235,514	34%
	80	98,471	14%
	90	4,203	1%
	100	10	0%

Figure 4.4. Distribution of Fire Prone Landscapes in Latah County by ranking scale.



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.

4.3.2 Historic Fire Regime

In the fire-adapted ecosystems of Idaho, fire is undoubtedly the dominant process in terrestrial systems that constrains vegetation patterns, habitats, and ultimately, species composition. Land managers need to understand historical fire regimes (that is, fire frequency and fire severity prior to settlement by Euro-Americans) to be able to define ecologically appropriate goals and objectives for an area. Moreover, managers need spatially explicit knowledge of how historical fire regimes vary across the landscape.

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

A database of fire history studies in the region was used to develop modeling rules for predicting historical fire regimes (HFRs). Tabular fire-history data and spatial data was stratified into ecoregions, potential natural vegetation types (PNVs), slope classes, and aspect classes to derive rule sets which were then modeled spatially. Expert opinion was substituted for a stratum when empirical data was not available.

Fire is the dominant disturbance process that manipulates vegetation patterns in Idaho. The HFR data were prepared to supplement other data necessary to assess integrated risks and opportunities at regional and subregional scales. The HFR theme was derived specifically to estimate an index of the relative change of a disturbance process, and the subsequent patterns of vegetation composition and structure.

4.3.2.1 General Limitations

These data were derived using fire history data from a variety of different sources. These data were designed to characterize broad scale patterns of historical fire regimes 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 HFR theme is 30 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).

Figure 4.5. Natural Historic Fire Regimes in Latah County, Idaho.

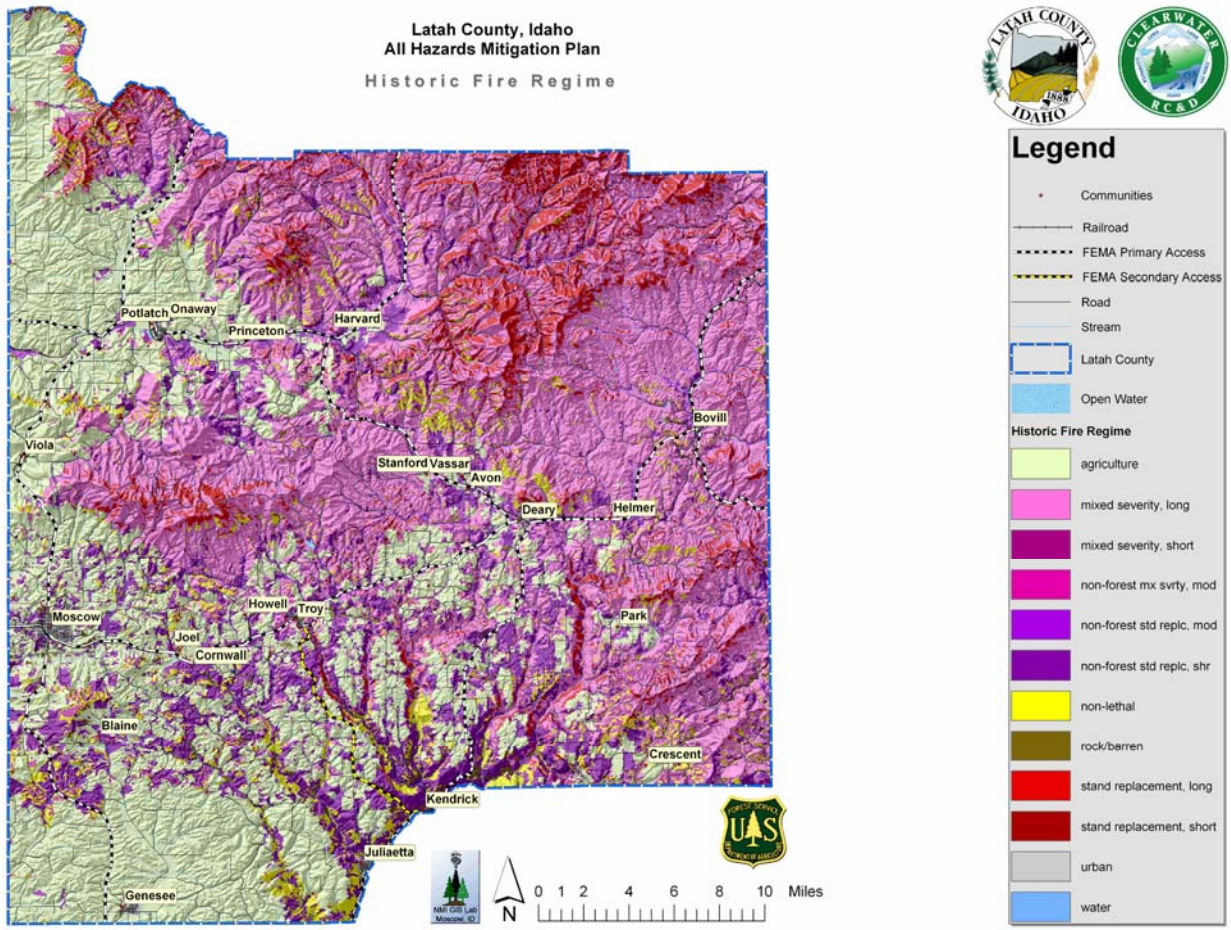


Table 4.8. Natural Historic Fire Regimes in Latah County, Idaho.

Natural Historic Fire Regime	Acres	Percent of Area
Non-lethal Fires	36,102	5%
Mixed severity, short return interval	13,048	2%
Mixed severity, long return interval	280,027	41%
Stand replacement, short return interval	3,575	1%
Stand replacement, long return interval	44,442	6%
Non-forest stand replacement, short return interval	85,478	12%
Non-forest mixed severity, moderate return interval	282	0%
Non-forest stand replacement, moderate return interval	6,107	1%
Agriculture	211,943	31%
Rock / barren	4,507	1%
Urban	2,910	0%
Water	304	0%

4.3.3 Fire Regime Condition Class

A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning (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 4.9. Maps depicting Fire Regime and Condition Class are presented in Appendix I.

Table 4.9. 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 Latah County shows that approximately 35% of the County is in Condition Class 1 (low departure), just about 15% is in Condition Class 2 (moderate departure), with 17% of the area in Condition Class 3 (Table 4.10).

Table 4.10. FRCC by area in Latah County.

Condition Class		Acres	Percent of Area
1	Low departure	244,266	35%
2	Moderate departure	105,314	15%
3	High departure	117,717	17%
4	Agriculture	211,943	31%
5	Rock / barren	4,507	1%
7	Urban	2,910	<1%
8	Water	304	<1%
9	No info	1,765	<1%

See Appendix I for maps of Fire Regime and Conditions Class.

The US Forest Service has provided their assessment of Fire Regime Condition Class for the natural vegetation areas of Latah County to this WUI Wildfire Mitigation Plan analysis (Jones 2003). These measures of forest conditions are the standard method of analysis for the USDA Forest Service.

4.3.4 Predicted 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).

4.3.4.1 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).

4.3.4.2 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 4.11. Predicted Fire Severity by area in Latah County.

	Predicted Fire Severity	Acres	Percent of Area
1	non-lethal	4,151	1%
2	mixed severity, short	5,422	1%
3	mixed severity, long	282,497	41%
5	stand replacement	84,516	12%
6	non-forest std replc, shr	84,319	12%
7	non-forest mx svrty, mod	250	0%
8	non-forest std replc, mod	6,107	1%
10	agriculture	211,943	31%
11	rock/barren	4,507	1%
13	urban	2,910	<1%
14	water	304	<1%
15	no information	1,799	<1%

See Appendix I for a map of Predicted Fire Severity.

4.3.5 On-Site Evaluations

Fire control and evaluation specialists as well as hazard mitigation consultants evaluated the communities of Latah County to determine 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. 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.

4.3.6 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 Latah 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.

4.3.6.1 Grass Group

4.3.6.1.1 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

4.3.6.1.2 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

4.3.6.1.3 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

4.3.6.2 Shrub Group

4.3.6.2.1 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

4.3.6.2.2 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

4.3.6.2.3 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

4.3.6.2.4 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

4.3.6.3 Timber Group

4.3.6.3.1 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

4.3.6.3.2 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

4.3.6.3.3 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 limb-wood, resulting from over-maturity 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, over-mature 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 4.12. 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.

4.3.6.4 Logging Slash Group

4.3.6.4.1 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

4.3.6.4.2 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

4.3.6.4.3 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 area involvement.

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 4.12.

Table 4.13. Comparative Fire Intensities and Rates of Spread in Slash Fuel Models.

Fuel Model	Rate of Spread Chains/hour	Flame length Feet
11	6.0	3.5
12	13.0	8.0
13	13.5	10.5

4.4 Latah County Conditions

Latah County is comprised by two ecological subregions, the Palouse Prairie in the westernmost portion of the County and the Clearwater Mountains and Palouse Range of the Northern Rockies in the central and eastern portions. The Palouse prairie comprises moderately to strongly dissected loess-covered basalt plains, hills with large steptoes, undulating plateaus, and some river break lands. The central portion of the county is a transition zone between prairie and forest, with a number of broad to deeply incised drainages and minor mountain ranges that define vegetative communities.

The combination of deep and productive soils make this area well suited to growth of both prairie and forest vegetation. The relatively arid meadow-steppe ecosystem of the Palouse Prairie is dominated by bluebunch wheatgrass, Idaho fescue, and a plethora of wildflowers. Those lowland areas receiving slightly more precipitation are typically covered with a mixture of Idaho fescue, common snowberry, and other brush species; however, the deep loamy soils are still too dry to support forest-type vegetation. Over the course of the past century, most of the native meadow-steppe grasslands have been converted to agriculture fields. The Palouse Prairie is one of the most productive dry-farmed winter wheat regions in the world.

Primarily coniferous woodlands occur in the central and eastern regions. The transition zone between forest and meadow-steppe vegetation consists of a complex interfingering dependent on localized topographic and climatic conditions. A ponderosa pine habitat forms the lower timberline on hills and low mountains. Mixed Douglas-fir, lodgepole pine, and western larch forests dominate at higher elevations, while isolated fragments of the western red cedar, Engelmann spruce, and grand fir occur on sheltered north slopes and in frost pockets.

Latah County is characterized by relatively mild winters and warm, dry summers. Although relatively infrequent, fires in the forest fuel types present throughout much of the County have the potential to result in large, intense fires, resulting in high social and economic costs. This potential was realized in the summer of 2003 when several homes where lost to wildfire in the Flannigan Creek drainage on the north-east fringe of Moscow Mountain. This event clearly illustrates the mounting urban-interface issue facing Latah County. Population growth rates have been greatest in the western portion of the County around Moscow with development sprawling north toward Viola and Potlatch and east toward Troy and Deary. The growing appreciation for seclusion has led to significant development in many of the lower elevation forests. Frequently, this development is in the dry ponderosa pine forest types where light surface grass and needle fuels create forest fuel conditions that are at a high propensity for fire occurrence. Human use is strongly correlated with fire frequency, with increasing numbers of fires as use increases. Discarded cigarettes, tire fires, and hot catalytic converters increase the potential for fire starts along roadways. Careless and unsupervised use of fireworks also contributes to unwanted and unexpected wildland fires. Further contributing to ignition sources are the debris burners and "sport burners" who use fire to rid ditches of weeds and other burnable materials. The increased potential for fire starts and the fire prone landscapes in which homes have been constructed greatly increases the potential for fires in interface areas.

Fire departments within Latah County have reported a general increase in the number of fires within the County. Although there have been only a 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.

4.4.1 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

4.4.1.1 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 10 and October 20. During this time, an individual seeking to conduct any type of 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. However, this leads to an increased burden on the fire chiefs, who are already juggling other department committments 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 on when a permit is needed and the necessary channels to obtain a permit.

4.4.1.2 Education

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 of the home as to whether the home will survive the passing fire front. Also of vital importance is the accessibility of the home to emergency apparatus. If the home cannot be protected safely, fire fighting 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 Latah County is comprised of grass and brush rangeland. Although these fuels are very flammable and can support very fast moving fires, fires in these fuel types tend to be of relatively low intensity. 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 detailing precautions that should be taken in order to reduce the threat to homes, such as clearing cured grass and weeds away from structures and establishing a green zone around the home. 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 49% of the respondents are interested in participating in this type of activity.

4.4.1.3 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.

4.4.1.4 Building Codes

The most effective, all be it 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 fire fighter 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 Latah County, such standards may be drafted in consultation with the Fire Chiefs in order to assure accessibility is possible for all responding resources.

Coupled with this need 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 Genesee 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 Bovill would be at tremendous risk through this practice. The Latah County Commissioners may want to consider a policy for dealing with this situation into the future as more and more homes are located in the wildland-urban interface.

4.5 Latah 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 4.14. Latah County Communities.

Community Name	Planning Description	Vegetative Community	National Register Community At Risk?[1]
Moscow	Community	Rangeland	Yes
Genesee	Community	Rangeland	Yes
Troy	Community	Forestland	Yes
Deary	Community	Forestland	Yes
Helmer	Community	Forestland	Yes
Bovill	Community	Forestland	Yes
Harvard	Community	Forestland	Yes

Table 4.14. Latah County Communities.

Community Name	Planning Description	Vegetative Community	National Register Community At Risk?[1]
Princeton	Community	Rangeland	Yes
Potlatch	Community	Rangeland/Forestland	Yes
Onaway	Community	Rangeland	Yes
Viola	Community	Rangeland/Forestland	Yes
Juliaetta	Community	Rangeland	Yes
Kendrick	Community	Rangeland	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.

4.5.1 Mitigation Activities Applicable to all Communities

4.5.1.1 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. Current management of the vegetation surrounding homes provides good protection; however, maintaining a lean, clean, green zone within 100 feet of structures to reduce the potential loss of life and property is 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 hot, dry environments.

4.5.1.2 Travel Corridor Fire Breaks

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, particularly along U.S. Highway 95. In areas with high concentrations of resource values along these corridors, plow or disk lines may be considered in order to provide a fire break in the event of a roadside ignition. Passage with a disk parallel to an access route 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 highway to spread into the surrounding lands.

4.5.1.3 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. Fuel reduction projects under the high tension power lines are strongly recommended.

4.6 Rangeland Communities in Latah County

Communities of Genesee, Kendrick, Juliaetta, Moscow, Onaway, and Princeton.

4.6.1 Vegetative Associations

These communities lie in the vegetative ecosystem known as the "Palouse Prairie" community. These areas are typically characterized by rolling hills, deep soils, and a mild climate. The landscape surrounding Genesee, Moscow, Onaway, and Princeton has been almost completely developed for agricultural purposes, primarily the production of winter wheat with various rotation crops. Juliaetta and Kendrick lie in the bottom of the drainage created by the Potlatch River, which also serves as the line between Latah and Nez Perce Counties. The south aspect slope rising from the river bottom is much warmer and drier than the prairie region due to the increased solar exposure. Much of this area is too steep to support extensive agricultural development; however, livestock utilize the available bunchgrasses and other forbs. The principal vegetation in non-agriculturally developed areas is Idaho fescue, bluebunch wheatgrass, prairie junegrass, and various wildflowers. Short shrubs, especially snowberry and wild rose, are also common in more sheltered areas.

Before the development of agriculture and other land uses, the Palouse Prairie Bioregion had a rich fire history, with relatively frequent fires. Agricultural practices surrounding rangeland communities within Latah County 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. This pattern is particularly apparent around Genesee and Moscow.

The last decade has seen the increase in the occurrence of Cheatgrass (Bromus tectorum L.), an exotic grass species that is able to out-compete native bunchgrasses. Cheatgrass responds well to soil disturbance and is found in abundance along roadsides, driveways, new construction areas, recently burned areas, and particularly along the river breaks. Over time, vegetative species composition in unmanaged land has shifted toward fire prone species, particularly in high use areas where disturbance is common.

4.6.2 Overall Fuels Assessment

Fuels throughout the rangeland community in Latah County are quite consistent, dominated primarily by agricultural fields with only a few patches of native prairie remaining. Areas dominated by native grasses and cropland can be described as either Fuel Model 1, 2, or 3 (FM 1,2or 3), depending on stage in agricultural production. During the period while grain crops are cured prior to harvest, the mature crops are similar to tall grass (FM 3, greater than 2.5 feet in height). Fires in this fuel type tend to spread rapidly with large flame lengths. Post harvest fuels are more typical of FM1, as residual harvest stubble is typically less than 1 foot in height. Flame lengths and rates of spread are reduced in the post-harvest condition. However, fires in these fuels can still spread quite rapidly and generate moderate flame lengths. Fuels between 1 foot and 2.5 feet can be described as FM2. Burn time in all grass fuels is generally short and burned areas cool quickly after passage of the fire front. Nonetheless, fires in these fuels can be quite threatening if immediately adjacent to homes. Overall, the threat posed by native and cultivated fuels in the vicinity of Genesee is low.

Ignition Profile:

Human ignitions from both planned and unplanned events are the greatest component of the overall ignition profile. Natural ignitions from summertime lightening storms are uncommon, although not necessarily rare. 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.

Contributing significantly to the ignition profile are accidental ignitions from machinery during harvest and the planned ignitions from burning of residual stubble following grain harvest. Although these burning activities have historically not resulted in significant structural damage, the frequency of burning increases the potential for escaped fire. Residential living and recreational use in the area also contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, fireworks, and roadway fires, are just a few of the countless potential human ignition sources in the area.

4.6.3 Individual Community Assessments

4.6.3.1 Genesee

The community of Genesee is located in the south western portion of Latah County, on the Nez Perce-Latah County line just to the east of Highway 95. Aside from the concentration of homes within the community's boundaries, there are many homes scattered throughout the rural areas of this town. Genesee is surrounded entirely by agricultural fields, with little native vegetation in the vicinity. The few patches of timber in the area are usually associated with home sites and pose very little direct threat to homes and resources within the area.

4.6.3.1.1 Fire Potential

Fuels Assessment and Ignition Profile: Both the fuels assessment and ignition potential for the community of Genesee fit the prior description for rangeland communities. Again, the dominance of agricultural practices in the vicinity of Genesee reduces the overall potential for loss due to fire.

4.6.3.1.2 Community Risk Assessment

Risk to Homes and Businesses: The majority of homes and structures in the Genesee vicinity 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. 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.

Risk to Critical Infrastructure: Similarly, there is very little threat to the infrastructure serving Genesee. Highway 95 is the primary access route to the community. Additionally, there are a number of secondary routes throughout the area. The potentially for these routes to be compromised for any duration due to wildland fire is very low.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection in the area is provided by the Genesee City and Rural Fire Department. These fire departments provide quick response for emergencies in the area. Wildland fire protection is provided by the Genesee Rural

Fire Department and the Ponderosa Forest Protection District of the Idaho Department of Lands in forest fuel types.

4.6.3.1.3 Potential Mitigation Activities

The community of Genesee is at low risk of wildland fire due to the agricultural development in the area. However, homes and other structures in outlying areas abutting wildland or agricultural fuels are at an elevated risk. The use of fire in agricultural practices and the proximity to Highway 95 slightly elevates the fire risk by contributing to potential ignition sources.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a fire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating or expanding defensible space around structures that are at risk can significantly reduce the potential for loss. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

The community of Genesee and the surrounding area should focus on projects that will increase the safety of citizens and emergency personnel by improving access and reducing emergency response times. These projects could include providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.6.3.2 Kendrick and Juliaetta

The communities of Kendrick and Juliaetta are located within the steep Potlatch River canyon along the southern boarder of Latah County. Due to the close proximity and geographic similarities between the two communities, they will be assessed together.

Deeply incised canyons carved by the Potlatch River and smaller creeks and drainages are the dominant landscape feature of the area. The Potlatch River serves as the boarder between Latah County and Nez Perce County to the east. Highway 3 provides the primary access to Kendrick from Deary and continues south through Juliaetta, joining with Highway 12 downstream at the Clearwater River. Highway 99 also provides access from Troy. Both Highway 3 and 99 descend steep grades from the Prairie Steppe region above into the deep canyon carved by the Potlatch River. Other drainages that join the Potlatch from the north include Bear Creek in the Kendrick area and Middle Potlatch Creek and Little Potlatch Creek in the Juliaetta area. These drainages have carved steep canyons through the underlying basalt as well, giving the area its deep canyon landscape.

4.6.3.2.1 Fire Potential

Fuels Assessment: The intersections of the Potlatch River and smaller feeder drainages create multiple aspects with very steep slopes. Most areas have some southerly aspect, resulting in hot, dry environmental conditions. The thin soils in the area also have very low moisture retention ability, resulting in dry vegetative species composition. The combination of steep

slopes, south aspects and xeric species composition result in a landscape that is very fire prone.

Vegetation is dominated by short grasses with scattered timber on the driest sites, with an increasing tree and shrub component on hard east or northeast aspects and along creek drainages. These fuels can best be described as short grass (FM 1) or grass and timber (FM 2). These fuels become available to burn early in the year due to the dry nature of the area. The steep slopes lead to increased rates of spread and increased intensities. However these light, flashy fuels burn out quickly with little residual heat following passage of the flaming front.

Fuels in the more heavily timbered areas can be described as FM 2 or 9 where light grass surface or pine litter are the primary carrier under open pine stands, or FM 5 where shrubs comprise the fuel bed. Fires in these fuel types are generally surface fires that burn with low to moderate intensities. However intensities increase dramatically when burning on steep slopes such as those in the Kendrick-Juliaetta area or when jackpots or consistent ladder fuels are encountered. Under extreme conditions, fires in these fuels can develop extremely high intensities, with torching, mid to long-range spotting.

Ignition Profile: Natural ignitions from summertime lightening storms are relatively uncommon, although not necessarily rare within the Potlatch Canyon. However, lightning strikes in light fuels are 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 ignition sources contribute significantly to the overall ignition profile. Roadway ignitions from discarded cigarettes or overheated auto components from the long ascent or decent into the canyon are not uncommon. Residential living and recreational use in the area also contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, and fireworks are just a few of the countless potential human ignition sources in the area. Charred shrubs and trees within the area are evidence of the potential for fires to quickly spread upslope from accidental ignitions.

4.6.3.2.2 Community Risk Assessment

Risk to Homes and Businesses: The homes and businesses immediately adjacent to the Highway 3 corridor are at low risk to wildland fire. Generally, these structures are surrounded by urban landscaping, with the dry, xeric slopes behind and leading away from the community centers. Fires starting low on the steep slopes would quickly spread up and away from most homes and businesses.

However, homes on midslope locations are at a much elevated risk. This is particularly true in the Juliaetta area where multiple homes have been built high above the valley on the South Grade and Dennler Loop Roads and the American Ridge Road. Fires originated below the steep slopes leading to homes in these areas would burn with very rapid rates of spread and at high intensities. Without adequate defensible space and use of fire retardant building materials these homes would be at a significantly elevated risk of loss.

Roads in this area are quite steep, although they appear to be wide enough to accommodate most emergency traffic. The road network in the area does provide for an alternative escape route to the north in the event an escape to the south were compromised. However, these roads are steep with many switchbacks, slowing egress.

Local Preparedness and Fire fighting Responsibilities: Structural protection for Kendrick and Juliaetta is provided by the Kendrick City Fire Department and the Juliaetta City Fire

Department, respectively. There is no rural structural fire protection in this area; however, the Ponderosa Area of the Idaho Department of Lands provides wildland fire protection.

Wildland fire protection is provided by the Ponderosa Area of the Idaho Department of Stale Lands. The office is located at 3130 Highway 3 in Deary, Idaho. The Fire Protection District encompasses approximately 732,000 acres. The close proximity of the Ponderosa District provides quick initial attack response to wildland fires in the area.

4.6.3.2.3 Potential Mitigation Activities

The overall wildland fire risk in the Kendrick-Juliaetta area is moderate due primarily to the residential development of the steep, arid slopes of the Potlatch Canyon. In order to reduce the risk to homes located on fire-prone areas, home defensibility measures should be adopted. Homes and businesses within the bottom of the canyon are at very little risk.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics, including the increased hazard associated with use of flammable building material and the risk associated with locating homes on steep, dry slopes. Creating or expanding defensible space around structures that are at any degree of risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees and brush in the immediate vicinity of the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

Providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines can also help to further reduce the overall risk to the area. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.6.3.3 Moscow

Moscow is the largest community in Latah County, set in the midst of the rolling Palouse Prairie. Land use in the vicinity of Moscow is dominated by agriculture, with large fields of wheat, hay, peas and other crops surrounding the majority of town. To the south and east of Moscow is Paradise Ridge, which supports mixed pine and fir forest. Paradise Ridge has also been a favored area for residential development, exposing homes in the area to varying degrees of wildland fire risk. There is essentially no measurable threat to the homes within the city center. Homes on the periphery are at some risk where cured grain fields abut the homes.

4.6.3.3.1 Fire Potential

Fuels Assessment: Fuels in the vicinity of Moscow are a combination of rangeland and forest fuels. The availability of agricultural lands surrounding the periphery of town is seasonally dependent, with live crop moisture remaining high into mid July. Once cured, grain crops such as wheat become available to burn. In the unharvested state, mature wheat fields can be described as Fuel Model 3 (FM3), with average fuel bed depth of 2.5 feet or more. Following harvest, wheat fields can be described as FM 1 or 2, depending on stubble height. All these fuel

models have the potential to burn at high intensities with very rapid rates of spread. However these light, flashy fuels burn out quickly with little residual heat following passage of the flaming front.

Forest fuels along Paradise Ridge can be described as FM 2 or 9 where light grass surface or pine litter are the primary carrier under open ponderosa pine stands, to FM 5 where low shrubs comprise the fuel bed. This is a warm, low elevation site that cures early in the summer months. There is a considerable understory fuel ladder in many areas. When draped with pine needle cast from the overstory trees, this creates a highly flammable ladder fuel that can contribute to torching and an overall increase in fire behavior.

The shrub layer is often interspersed with fine grass fuels that that cure early in the year. The presence of the fine fuels in the shrub understory increases fine fuel continuity, providing a consistent fuel bed for fire to spread. Fires in these fuel types are generally surface fires that burn with low to moderate intensities, but spread with moderate rates of spread. Spread rates escalate dramatically when under the influence of slope and wind. Fire intensities can increase dramatically when jackpots or consistent ladder fuels are encountered. Under extreme conditions, fires in these fuels can develop extremely high intensities, with torching, crowning and long-range spotting.

Ignition Profile: Human ignitions from both planned and unplanned events are the greatest component of the overall ignition profile. Natural ignitions from summertime lightening storms are uncommon, although not necessarily rare. 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.

Contributing significantly to the ignition profile are the planned ignitions from burning of residual stubble following grain harvest. Although these burning activities have historically not resulted in significant structural damage, the frequency of burning increases the potential for escaped fire. Residential living and recreational use in the area also contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, fireworks, and roadway fires, are just a few of the countless potential human ignition sources in the area.

A roadway ignition off South Mountain View Road between East Palouse River Road and the Troy Highway demonstrates the potential for accidental ignitions in residual stubble. The fire burned with rapid rates of spread toward Mountain View Trailer Court. Fortunately, the quick response time of the Moscow Rural Fire Department helped to contain the fire within 20 yards of the homes.

4.6.3.3.2 Community Risk Assessment

Risk to Homes and Businesses: The overall risk to homes in the Moscow area is low, with isolated areas of high risk associated with Paradise Ridge. The prevalence of agricultural land along the periphery of town helps to reduce overall risk. These fields can present a significant threat to homes and structures when cured. However, most homes and structures have an adequate fire break of green lawn, roadways or other natural or man made fire breaks, providing adequate protection from direct flame impingement. However, where fuel breaks or defensible space do not exist, the risk presented by these fuels is significant.

Paradise Ridge represents the largest concentration of urban interface in the Moscow assessment. The abundance of dry pine, grass and brush fuels, moderate slopes and windy conditions increases the probability for ignitions to develop into wildland fires, threatening homes and lives in the area.

Many homes have adequate defensible space; however some homes and many outbuildings and garages directly abut wildland fuels. Some structures were observed to have considerable accumulations of dry pine needles on roofs and gutters, increasing the probability of home ignition from long-range spotting. Cedar shake roofing material was also noted in the area, dramatically elevating the potential for home ignition from long-range spotting. Driveway access is good to very poor, with some homes accessed via narrow, overgrown drives with inadequate turn-arounds.

Road access via Blaine road is quite good. Blaine road is quite wide, paved, and not too steep heading south from Lenville Road. Blaine continues on to the south over the top of Paradise Ridge, providing an alternate escape route.

Risk to Critical Infrastructure: There are a number of primary and secondary escape routes available throughout the area. Most of these are surrounded by agricultural fields and are at very little risk of being compromised.

There are a number of communication sites on Paradise Ridge and Moscow Mountain that may be threatened in the event of wildland fire.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection provided by the Moscow Volunteer Fire Department. The State of Idaho Department of Lands has equipment and responsibility for the wildland fire protection in this area. The Ponderosa District IDL office is stationed along Highway 3 approximately 1 mile south of Deary.

4.6.3.3.3 Potential Mitigation Activities

The community of Moscow is at low risk of wildland fire due to the agricultural development in the area. However, homes and other structures in outlying areas abutting wildland or agricultural fuels are at an elevated risk. The use of fire in agricultural practices and the proximity to Highway 95 slightly elevates the fire risk by contributing to potential ignition sources.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a fire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating or expanding defensible space around structures that are at risk can significantly reduce the potential for loss. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

The community of Moscow and the surrounding area should focus on projects that will increase the safety of citizens and emergency personnel by improving access and reducing emergency response times. These projects could include providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.6.3.4 Potlatch, Onaway, and Princeton

The communities of Potlatch, Onaway, and Princeton are located on Highway 6, east of Highway 95. Due to the geographic proximity and the situational similarities between these communities, they will be assessed together. Differences in community characteristics that warrant detailed description will be addressed separately.

Potlatch, Onaway, and Princeton are located within the Palouse River valley. The valley continues to broaden to the west from Princeton toward Potlatch and Onaway. The topography of much of the surrounding area is gentle to rolling, particularly toward the west end of the Palouse valley near Highway 95. This makes much of the area well-suited to agricultural production. There are a number of timbered stringers that run from the outskirts of town south toward Moscow Mountain and the Palouse Range. These stringers intermix with the agricultural land before transitioning to pine and fir forest on the flanks of the Palouse Range.

4.6.3.4.1 Fire Potential

Fuels Assessment: The fuels immediately adjacent to the Potlatch, Onaway, and Princeton community centers are primarily agricultural, with very little wildland fuel in the vicinity. The availability of these agricultural lands to burn is seasonally dependent, with live crop moisture remaining high into mid July. Once cured, grain crops such as wheat become available to burn. In the unharvested state, mature wheat fields can be described as Fuel Model 3 (FM3), with average fuel bed depth of 2.5 feet or more. Following harvest, wheat fields can be described as FM 1 or 2, depending on stubble height. All these fuel models have the potential to burn at high intensities with very rapid rates of spread. However the light, flashy fuels burn out quickly with little residual heat following passage of the flaming front.

Fuels in the timbered stringers can be described as FM 2 or 9 where light grass surface or pine litter are the primary carriers under open pine stands, to FM 5 where low shrubs comprise the fuel bed. Fires in these fuel types are generally surface fires that burn with low to moderate intensities. However intensities increase dramatically when jackpots or consistent ladder fuels are encountered. Under extreme conditions, fires in these fuels can develop extremely high intensities, with torching, crowning and long-range spotting.

Ignition Profile: Human ignitions from both planned and unplanned events are the greatest component of the overall ignition profile. Natural ignitions from summertime lightening storms are uncommon, although not necessarily rare. 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.

Contributing significantly to the ignition profile are the planned ignitions from burning of residual stubble following grain harvest. Although these burning activities have historically not resulted in significant structural damage, the frequency of burning increases the potential for escaped fire. Residential living and recreational use in the area also contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, fireworks, and roadway fires, are just a few of the countless potential human ignition sources in the area. Evidence of such a roadway ignition is visible just east of Potlatch, where blackened brush and scorched trees demonstrates the ignition potential associated with travel routes.

4.6.3.4.2 Community Risk Assessment

Risk to Homes, Businesses and Critical Infrastructure: The majority of homes and structures in the Potlatch-Onaway vicinity 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 during most periods of the year. Risk does increase toward late summer and fall as crops cure and become available to burn. However, there are generally few homes that would be threatened in the event of an agricultural fire.

There is scattered development outside the community centers of both Potlatch, Onaway, and Princeton. In particular along Rock Creek Road, East Rock Creek Road, and Dobyn Lane in the Potlatch-Onaway area and along Bear Creek Road outside Princeton. Homes' defensibility in these areas could be further augmented, although there are generally few highly hazardous areas.

There are 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.

Similarly, there is very little threat to the infrastructure serving the area. Highway 6 and Highway 95 are the primary access routes to the communities. Additionally, there are a number of secondary routes throughout the area that would provide adequate escape routes in the event of a large wildland fire. The potential for these routes to be compromised for any duration due to wildland fire is very low.

Local Preparedness and Fire fighting Responsibilities:

Fire protection in Potlatch, Onaway, and Princeton is provided by the Potlatch Rural Fire District. Wildland fire Protection is provided by the Idaho Department of Lands, Ponderosa District located in Deary.

4.6.3.4.3 Potential Mitigation Activities

As mentioned, the wildland fire risk in the Potlatch-Onaway and Princeton areas is generally quite low. The predominance of agricultural ground and lack of forested wildland fuels helps to maintain this reduced risk. However, there are a number of activities that can help to maintain or further reduce the fire risk.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating a defensible space around structures that are at risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

Residents in the Potlatch-Princeton area should also focus on projects that will increase the safety of citizens and property in the event of a wildfire emergency. These projects could include

providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.7 Forestland Communities in Latah County

Communities of Bovill, Deary, Harvard, Helmer, Troy, and Viola. The Moscow Mountain Area will be addressed separately to respond to the unique conditions in this area.

4.7.1 Vegetative Associations

Vegetative structure and composition within the central and eastern portion of Latah 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 Palouse prairie communities of the west to the forested ecosystems of the east. Highly variable topography coupled with dry, windy weather conditions typical of the region contribute to the potential for large fire development.

The transition between developed agricultural land and timberlands occurs abruptly, usually along distinct land use and property boundaries. In the higher, mountainous areas, moisture becomes more abundant due to a combination of higher precipitation and reduced solar radiation. Vegetative patterns shift from forested communities dominated by ponderosa pine, western larch, and Douglas-fir at the lower elevations to grand fir pine and western white pine and lodgepole pine at the higher elevations. Engelmann spruce and western red cedar are commonly found in moist draws and frost pockets.

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

Many lower elevation forested areas throughout Latah County are highly valued as building sites because of 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.

As elevation and aspect increase available moisture, forest composition transitions to highly productive forest types dominated by grand fir and red cedar. These highly productive forests reflect the high levels of available moisture and the deep soils in these areas. Increases in moisture and cooler mountain climates keep forest fuels moist for longer periods during the

summer. This increases the time between fire events, resulting in varying degrees of fuel accumulation. Fire frequency in cedar-hemlock forest types can be quite long, with fire free intervals of hundreds of years or more in some areas. Fire events are often limited to lightning-spot fires of limited size in moist habitats, burning only in the compact needle litter and dead and downed material. However, extreme summer drought coupled with high wind events increases the probability of large, stand-replacing fires. Examples of massive, stand replacing fires have occurred throughout history in these habitat types, most notably in 1910 when hundreds of thousands of acres in north Idaho where burned by wildfire.

Considerable development has occurred in these forest types as well. Although fire occurrence in these forest types is less frequent, when fires do occur they tend to be large, high-intensity fires that resist most control efforts. Homes, infrastructure and other valued resources are at significant risk during these infrequent, high-intensity fire events.

Land ownership throughout the forested portions of Latah County is a mix of state, federal, private-non industrial, and private industrial forest lands. Differing land management objectives between landowners has led to a mosaic of forest conditions throughout the County, ranging from mature old-growth forest to recently harvested clearcuts. Fire potential throughout the actively managed areas is largely determined by slash treatments following harvest. Areas that have actively treated slash through mechanical or prescribed fire treatments are typically at reduced risk of wildland fire, although the open conditions created following timber harvesting allows for the development of light grass and brush fuels that dry early and are exposed to the effects of wind. Fire potential throughout the remaining areas is dependent on past management techniques, current forest structure and fuel load, and forest habitat type. It is difficult to speak in general terms, as a myriad of forest conditions exist throughout the County.

4.7.2 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 home sites 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, 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, the some of the principles that govern fire behavior have been identified and are recognized.

The homes, structures and infrastructure throughout Latah County fall along a spectrum from low to moderate to high risk of loss to wildland fire. The specific characteristics of a given site largely determine the relative risk to wildland fire, making generalized discussion of overall County conditions somewhat difficult. High-risk interface conditions tend to peak along the slopes of Moscow Mountain, where xeric fuel types, poor accessibility, poor water supply, lack of defensible space and home construction materials predispose numerous homes to loss in the event of a wildland fire. Many community centers are at very little risk, often times due to isolation from wildland fuels, good accessibility, proximity to emergency response resources, or some combination of these factors. Between community centers are isolated homes, ranches and cabins outside incorporated areas and beyond structural fire protection boundaries. These isolated structures are frequently at elevated risk due primarily to the lack of structural fire protection, posing a significant management challenge to the County.

The urban interface trend is likely to continue to expand throughout Latah County, as development continues along Moscow Mountain and in other forested areas of the County. Contributing to this trend is the sale of high-value industrial timberlands for development along travel corridors, such as the lands offered by Potlatch Corporation off Highway 9 between Deary and Harvard. The sale of these lands and the continued subdivision of other private lands will continue to trend in interface development experienced County and nationwide.

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.

4.7.3 Individual Community Assessments

4.7.3.1 Bovill

The community of Bovill is located at the junction of Highway 8 and Highway 3 in west central Latah County. Bovill sits in the wide flood plain of the Potlatch River, surrounded by forestland that has historically sustained this community. Much of forestland surrounding Bovill is privately owned and managed for timber production. Past harvest activities have broken fuel continuity across the landscape, creating a mosaic of age classes throughout the forest.

4.7.3.1.1 Fire Potential

Fuels Assessment: The community of Bovill itself sits in a large, wide meadow created within the flood plain of the Potlatch River. Very few wildland fuels directly abut the homes or

structures. Streets and green lawns are the primary feature within the community center, with very little potential for wildland fire to move from outside the community into populated areas.

Dense mixed stands of Douglas- and grand fir mix with western larch in close proximity to the community. The forest type surrounding Bovill is quite moist, only becoming available to burn during late summer. Fuels in the surrounding forest can best be described as FM 5 where the understory is dominated by brush, to FM 8 where compact needle litter comprises the understory, to FM 10 where heavy concentrations of dead and downed woody fuels exist. In areas with few surface fuels, fires typically spread slowly and burn at relatively low intensities. However during extreme fire weather conditions fires in these fuels can erupt into stand replacing, high intensity wildland fires. In such a case wooden structures in Bovill may be at some risk from spotting and radiant heat. However, it is likely that a fire would be traveling away from the community.

Grass fuels within the riparian area or in the meadows of the East Fork Road can be described as FM 1, 2 or 3 (short grass, grass and timber, or tall grass). Fires in these fuel types typically burn rapidly and at high intensities, however the resonance time is low and burned areas cool quickly after passage of the fire front.

Ignition Profile: Residential living and recreational use in the area contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, and fireworks are just a few of the countless potential human ignition sources in the area.

Ignitions associated with mechanized forest management activities are possible in the area. It is likely that such an ignition would be distant from the community and pose little direct threat to Bovill.

Natural ignitions from summer lightning storms contribute to the overall ignition profile in the area. Although ignitions typically occur further upslope on ridges and mountainsides, natural ignitions can occur in the drainage bottom. During extreme weather events, fires upslope of Bovill could possibly be pushed down toward the homes. Although the probability of such events is quite low, it is possible.

4.7.3.1.2 Community Risk Assessment

Risk to Homes and Businesses: Homes and businesses within the community of Bovill are at low risk to wildland fire. Although forest land is in close proximity to the community, it does not continue into the community. Homes on the periphery would be at highest risk in the event of a large wildland fire. The homes within the community are well protected by residential landscaping, streets and other characteristics associated with the urban landscape. The community is located in a flat area, and city streets are well maintained.

Risk to Critical Infrastructure: There is little infrastructure in the community that is at risk to wildland fire. It is unlikely that travel routes would be jeopardized in the event of a fire.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection is provided by the Bovill Fire Protection District. The close proximity of emergency resources to all corners of the community helps to keep response times to a minimum. The community is serviced by a hydrant system and the Potlatch River is in close proximity, providing ample water resources.

Wildland fire protection is provided by the Ponderosa Area of the Idaho Department of Lands and the Clearwater-Potlatch Timber Protection Association in Elk River, Idaho. The relatively close proximity of the Ponderosa District and the Clearwater-Potlatch Timber Protective Association provides quick initial attack response to wildland fires in the area.

4.7.3.1.3 Potential Mitigation Activities

There are a number of activities that can help to maintain the low risk in most areas, and reduce fire risk in the few areas where it does exist. Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics, including the increased hazard associated with use of flammable roofing material. Creating a defensible space around structures that are at any degree of risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

Providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines can also help to further reduce the overall risk to the area. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.7.3.2 Deary and Helmer

The community of Deary is located on Highway 8 between the junctions of Highway 3 from the south and the Harvard Deary cut-off (Highway 9) from the north. Helmer is located 5 miles to the east of Deary on Highway 8. Because of the geographic proximity and similarities in vegetation, the communities will be considered together.

The landscape in the Deary-Helmer area is a combination of steppe-prairie that has been largely converted to agricultural and timber stringers. Forest habitats become more consistent at increasing elevations and along creek drainages. Forest tree species is a mix of ponderosa pine, Douglas-fir, larch and dry lodgepole pine. Cedar and Grand fir are also present in moist creek bottoms and cold air drainages.

4.7.3.2.1 Fire Potential

Fuels Assessment: The fuels immediately adjacent to Deary and Helmer are a mix of light, flashy grass and agricultural fuels and forest fuels. The availability of the agricultural lands to burn is seasonally dependent, with live crop moisture remaining high into mid July. Once cured, grain crops such as wheat become available to burn. In the unharvested state, mature wheat fields can be described as Fuel Model 3 (FM3), with average fuel bed depth of 2.5 feet or more. Following harvest, wheat fields can be described as FM 1 or 2, depending on stubble height. All these fuel models have the potential to burn at high intensities with very rapid rates of spread. However these light, flashy fuels burn out quickly with little residual heat following passage of the flaming front.

Fuels in the timbered areas can be described as FM 2 or 9 where light grass surface or pine litter are the primary carrier under open pine stands, to FM 5 where low shrubs comprise the fuel bed. On south and west slopes exposed to wind and sun, the light grasses and pine needle litter are quite fire prone, drying early in the season and remaining available to burn well into the

fall. These fuel types extend into the northern portion of Deary on the flanks of Potato Hill. Fires in these fuel types are generally surface fires that burn with low to moderate intensities. However intensities increase dramatically when jackpots or consistent ladder fuels are encountered. Under extreme conditions, fires in these fuels can develop extremely high intensities, with torching, crowning and long-range spotting.

Many of the forested lands in the area are actively managed as timber grounds by private, non-industrial landowners or by large corporate land owners such as Potlatch Corporation. Timber harvest practices in the area help to break fuel continuity and reduce stand densities. Slash is generally treated following harvest, either by piling and burning or by broadcast burning. This effectively reduces fire hazard in the short as well as long term development of the stand.

Ignition Profile: Natural ignition frequency increases in forested areas with increasing elevation. Potato Hill and the higher hills north of the Deary-Helmer area have the highest potential for lightning ignitions. However, lighting strikes do occur at all elevations and in valley bottom locations throughout Latah County. Down strikes in timbered areas are more likely to ignite large woody fuels capable of sustaining fire during brief rain events than are frequently associated with summer storm events. These brief showers are frequently sufficient to extinguish lighting fires in light fuels in unsheltered areas such as cultivated fields.

Residential living and the proximity to travel corridors in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are all potential ignition sources. Equipment use in forest management and agricultural practices also increases the probability of ignitions in the area. Power lines fires from tree contact can also spark fires, especially during windy conditions.

There is considerable recreational use of Potato Hill north of Deary, with a number of recreational trails frequented by motorized users. Use in this area further augments the ignition profile by exposing motorized equipment to dry forest fuels.

Slash management activities in the area often utilize prescribed fire in order to abate the hazard from harvest operations. Much of this activity is quite distant from the community centers and posting little threat.

4.7.3.2.2 Community Risk Assessment

Risk to Homes and Businesses: Risk in the Deary-Helmer area is isolated to the north end of Deary, where wildland fuels mix with residential development on the flanks of Potato Hill. Some of these homes have been built with materials that are unfavorable for survival of a wildland fire event. Use of cedar shake roofing material was noted in the area. The combination of this highly flammable roofing material and the dry forest type increases the probability of structural loss. Furthermore, access to some homes may be difficult due to narrow roads and lack of adequate turn-arounds.

There are isolated patches of timber south of Highway 8 in Deary, however these pose little risk to the community. The periphery of town is surrounded by light fuel, flashy grass or agricultural fuels, except where noted on Potato Hill. These homes in the peripheral area are generally well separated from burnable vegetation by green lawns or roads. There are isolated outbuildings that have accumulation of light, flammable vegetation in their immediate vicinity, increasing the chance of fire loss.

Homes south of Deary are accessed by Bear Ridge Road, Drury Road and Texas Ridge Road are generally at low risk, although there are a number of homes at significantly higher risk due to lack of defensible space surrounding the home. Many homes have been tucked into the

timbered stringers between agricultural fields. Although these stringers are usually narrow, there is the potential for development of high intensity wildland fires.

The few homes and businesses in the Helmer area are at low risk to wildland fire. Most structures have been constructed in openings with light fuels in the immediate vicinity, making them quite defensible in the event of a wildland fire. The ranches and homes off the Park Road are quite safe as well, as there is very little infringement of forest fuels in residential areas.

Risk to Critical Infrastructure: There are a number of well-maintained highways and secondary roads leading in all directions from theses communities. It is highly unlikely that any of these routes would be compromised for any duration due to the light fuels in the vicinity of the road corridors. There are some short segments of secondary road that travel through heavily timbered areas. However, road segments are generally quite limited and alternative travel routes generally exist.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection in the Deary and Helmer area is provided by the Deary Rural Fire District. Wildland fire protection is provided by the Ponderosa Area of the Idaho Department of Lands. The office is located at 3130 Highway 3 in Deary, Idaho. The Fire Protection District encompasses approximately 732,000 acres. The close proximity of the Ponderosa provides quick initial attack response to fires in the Deary-Helmer area.

4.7.3.2.3 Potential Mitigation Activities

The overall wildland fire risk in the Deary-Helmer area is quite low due in large part to the lack of forested wildland fuels in the vicinity of homes. However, there are a number individual homes in the area that are at elevated risk, primarily on the north end of Deary and in isolated areas in the rural areas south of Deary. There are a number of activities that can help to maintain the low risk in most areas, and reduce the fire risk where it does exist.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics, including the increased hazard associated with use of flammable roofing material. Creating a defensible space around structures that are at any degree of risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

Providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines can also help to further reduce the overall risk to the area. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.7.3.3 Harvard

The small community of Harvard lies just to the east of the Highway 6 and the Harvard-Deary Cutoff (Highway 9), along the Palouse River. The Palouse River Valley narrows in the Harvard vicinity, with Gold Hill to the north and Moon Hill and Mt. Margaret to the Palouse Range to the

south. Highway 6 continues to the north and east into the St. Joe National Forest and the White Pine Recreation Area.

4.7.3.3.1 Fire Potential

Fuels Assessment: Harvard is surrounded primarily by light grass fuels, with forested vegetation confined outside of the community center. Lower elevation areas that have been developed for residential or ranching use are generally a mix of forest and cultivated fields, with few homes directly abutting forestland fuels. Much of the area is grazed or otherwise managed in a manner that helps to reduce fine fuel loads.

Forest fuel composition in this portion of Palouse River Drainage is largely determined by aspect and elevation. Southerly exposures support xeric pure or mixed stands of ponderosa pine and Douglas-fir at low elevations. Forest surface fuels tend to have a high concentration of light grasses and needle litter that dry quickly and are largely responsible for rapid fire spread. Dead and downed branchwood accumulations and scattered areas of wind throw add to surface fuel accumulations, leading to increases in surface fire intensity. Above the dry forest habitats, mesic mixed species stands of grand fir, western red cedar, and western larch populate the mid elevations and along draws and cool-air drainages. Above the fir-larch zone, forest species composition remains mesic through to the highest elevations in the area.

Land ownership patterns in this area are a combination of private and private industrial timberlands. Forest management practices have broken the continuity of fuels at a landscape level in the Harvard area. Slash generated by harvest activities is generally broadcast burned or pile and burned, reducing the hazard from activity fuels.

Ignition Profile: Natural ignition frequency increases in forested areas with increasing elevation in the Harvard area. However, lightning strikes do occur at all elevations and in valley bottom locations throughout Latah County. Down strikes in timbered areas are more likely to ignite large woody fuels capable of sustaining fire during brief rain events than are frequently associated with summer storm events. These brief showers are frequently sufficient to extinguish lighting fires in light fuels in unsheltered areas.

Residential living and the proximity to travel corridors in the area present innumerable ignition sources. Debris burning, discarded cigarettes, children playing with matches, fireworks, roadway fires, and camp fires are all potential ignition sources. Equipment use in forest management practices also increases the probability of ignitions in the area. Power line fires from tree contact can also spark fires, especially during windy conditions.

4.7.3.3.2 Community Risk Assessment

Risk to Homes and Businesses: The overall risk to homes in the Harvard community center is quite low. Homes in the outlying areas along Old River Road, Jerome Creek and Meadow Creek Road are at a slightly elevated risk, although the potential for homes to be threatened in this area is quite low as well.

Bennett Lumber operates a large mill to the west of Harvard, just to the north of the Palouse River. The mill is a large contributor to the economy of the local area as well as to all of Latah County. Forest land is confined to areas south of the Palouse River and the mill. It is highly improbable that the mill would be directly threatened by wildland fire.

There are a number of primary roads that serve as escape routes in the event of a large wildland fire, including Highway 6 to the east and the Harvard-Deary cutoff to the south. It is

quite unlikely that either of these roads would be compromised for any duration of time in the event of a wildland fire.

Local Preparedness and Fire fighting Responsibilities:

Structural fire protection is provided by the Potlatch Rural Fire District, with wildland fire protection provided by the Idaho Department of Lands, Ponderosa District located in Deary.

4.7.3.3.3 Potential Mitigation Activities

The wildland fire risk in the Harvard area is quite low. The lack of forested wildland fuels in the vicinity of homes reduces the overall wildland fire risk. However, there are a number of activities that can help to maintain or further reduce the fire risk.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating a defensible space around structures that are at any degree of risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel.

Providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines can also help to further reduce the overall risk to the area. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.7.3.4 Moscow Mountain

Moscow Mountain is the prominent feature of the Palouse Range, extending from Viola east to Deary. Its close proximity to the Moscow and the scenic and recreational value of the area has resulted in considerable development along the flanks of Moscow Mountain. Development along Moscow Mountain has frequently taken place without consideration for the potential for wildland fire, resulting in interface conditions that pose a significant threat to the homes in the area as well as to the safety of residents and personnel who may be engaged in suppression efforts in the event of a wildland fire.

4.7.3.4.1 Fire Potential

Fuels Assessment: Land ownership patterns along Moscow Mountain are a combination of private, private industrial timberlands owned primarily by Bennett Lumber and Potlatch Corporation. Slash generated from timber harvest activities is usually piled and burned or broadcast burned, reducing the fire hazard associated these fuels. The University of Idaho also owns considerable acreage on Moscow Mountain and manages these lands as Experimental Forest. The majority of low elevation private lands suitable for development are owner occupies, generally comprised of residential homes with small timbered lots.

Forest fuel composition along Moscow Mountain is largely determined by aspect and elevation. The south face of Moscow Mountain tends to support xeric mixed stands of ponderosa pine and

Douglas-fir at low elevations. Low and mid-elevation forests toward the west end of Moscow Mountain tend to be quite arid due to the south and west aspect and the expose to the prevailing wind. Forest surface fuels tend to have a high concentration of light grasses and needle litter that dry quickly and are largely responsible for rapid fire spread. Dead and downed branchwood accumulations and scattered areas of wind throw add to surface fuel accumulations, leading to increases in surface fire intensity. The combination of prolonged drought and bark beetle activity has resulted in increased mortality in some areas of Moscow Mountain. Many areas are also thick with natural pine and fir regeneration, providing abundant ladder fuels for the transition from a surface fire to the upper forest strata. The combination of dense, dry forest fuels, moderate to steep slopes, and the exposure to the prevailing wind significantly increases the potential for rapid fire spread.

Moisture availability tends to increase further to the east, with dry-site pine inhabiting the lowest elevations along Moscow Mountain. Above the dry forest habitats, mesic mixed species stands of grand fir, western red cedar, and western larch populate the mid elevations and along draws and cool-air drainages. Forest species composition remains mesic throughout the elevation range east of Tamarack Road toward Highway 9 and Deary. However, there are numerous areas were slope, aspect and fuel characteristics are similar to those described above. Thus risk of rapid fire spread is present throughout the lower elevations along Moscow Mountain.

The north aspect of Moscow Mountain tends to have slightly higher moisture availability, due to the shading effect of the north aspect. However, there are many arid sites on the north face as well, particularly along the lowest flanks of the mountain extending north toward Potlatch and Princeton. The north side of the mountain was the site of the 2003 Flannigan Creek fire that burned roughly 200 acres and destroyed multiple homes during its initial run. The fire initially started in light grass fuels, and was pushed through dry stands of mixed ponderosa pine, Douglas-fir and lodgepole pine during a severe fire weather day with high temperatures, low humidity and moderate winds.

Ignition Profile: Natural ignition frequency increases with increasing elevation along Moscow Mountain, although lighting strikes do occur throughout all elevations in Latah County. Down strikes in timbered areas are more likely to ignite large woody fuels capable of sustaining fire during brief rain events than are frequently associated with summer storm events. These brief showers are frequently sufficient to extinguish lighting fires in light fuels in unsheltered 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. Moscow Mountain also serves as a high-use recreation area for nearby residents. Concentrated use increases the potential for accidental or careless ignitions from recreational users. Power lines fires 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 many areas around Moscow Mountain. 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.

4.7.3.4.2 Community Risk Assessment

Risk to Homes and Businesses: There are numerous homes in the Moscow Mountain area that are at high risk to wildland fire. The concentrations of homes on the south and west ends of Moscow Mountain represent the highest risk areas, specifically, the Nearing and Tatkinmah

subdivisions. These developments are accessed via the Saddle Ridge Road and the private Tolo Trail off the Foothills County Road. There are also homes at risk on the north face of Moscow Mountain along Flannigan Creek Road, Rock Creek Road, Davis Road, Marshall Road, Hatter Creek Road and Bear Creek Road.

There are numerous factors that contribute to interface risk in the area, including the dry pine habitat type, the abundance of dry fuels, steep slopes, exposure to wind, and a high ignition potential. Hazards associated with fuel conditions and the high densities of homes in the area are compounded by issues associated with emergency vehicle access. Multiple residences are accessed via narrow, single-lane, unimproved roads that are inaccessible to all but the smallest of emergency vehicles. 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. Water availability in many areas is limited, further reducing the effectiveness of suppression efforts. This situation becomes much more serious during the summer months, when adjacent forest fuels dry and are capable of sustaining ignition.

Many homes have been built with non-combustible roofing material, however there are homes roofed with cedar shakes. Use of this roofing material dramatically increases the risk to these homes, as cedar shakes are susceptible to ignition from long-range spotting as well as through direct or indirect flame contact. 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.

In some areas, there is little to no defensible space surrounding the home. 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.

A number of single family residences are located in both subdivisions. Predominant plant growth is a mixture of mature, small, and middle sized coniferous trees of various species, including ponderosa pine and lodgepole pine. There are also bushes and other growth along the County and interior roads and driveways as well as in the forest, which include substantial amounts of ladder fuels.

Risk to Critical Infrastructure: The West Twin communication site and Paradise Ridge media towers would be at risk in the event of a wildfire in these vicinities.

Local Preparedness and Fire fighting Responsibilities:

Structural fire protection is provided by the Moscow Rural Volunteer Fire Department, with wildland protection provided by the Idaho Department of Lands, Ponderosa District located in Deary. Potential Mitigation Activities

The Moscow Mountain area represents the highest concentration of homes and lives at risk to wildland fire all of Latah County. The Flannigan Creek Fire of 2003 illustrates the devastating potential for wildfire impact within Moscow Mountain.

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating a defensible space around structures that are at risk can significantly reduce the potential loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel. Educating homeowners in techniques for protecting their homes is critical in areas where heavy fuels are present.

Residents in the Moscow Mountain area should also focus on projects that will increase the safety of citizens and property in the event of a wildfire emergency. These projects could include providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.7.3.5 Troy

The community of Troy is located to the east of Moscow, near the junction of Highway 8 and Highway 99. Troy sits in the West Fork Creek drainage, below the meadow-steppe prairie that surrounds Moscow and Deary. Troy is surrounded by forested vegetation; however, very little of this vegetation directly infringes on the community

4.7.3.5.1 Fire Potential

Fuels Assessment: The community center of Troy is surrounded by mixed species forest of Douglas- and grand fir, with ponderosa pine on dry south and west-facing slopes. Fuels in the moist forest type can best be described as FM 5 where the understory is dominated by brush, to FM 8 where compact needle litter comprises the understory, to limited representation of FM 10 where heavy concentrations of dead and downed woody fuels exist. Only under very dry conditions do fires in these fuel types present a significant control problem. However, when extreme fire conditions do emerge, controlling fires in these fuels can be very difficult.

On pine dominated sites, fuels can be described as FM 2 where a grassy understory is present, and a FM 9 where surface fuels are dominated by pine needle cast. The light grasses and pine needle litter surface fuels are quite fire prone, drying early in the season and remaining available to burn well into the fall. Fires in these fuel types are generally surface fires that burn with low to moderate intensities. However intensities increase dramatically when jackpots or consistent ladder fuels are encountered. Under extreme conditions, fires in these fuels can develop extremely high intensities, with torching, crowning and long-range spotting.

The availability of agricultural lands surrounding the periphery of town to burn is seasonally dependent, with live crop moisture remaining high into mid July. Once cured, grain crops such as wheat become available to burn. In the unharvested state, mature wheat fields can be described as Fuel Model 3 (FM3), with average fuel bed depth of 2.5 feet or more. Following harvest, wheat fields can be described as FM 1 or 2, depending on stubble height. All these fuel models have the potential to burn at high intensities with very rapid rates of spread. However

these light, flashy fuels burn out quickly with little residual heat following passage of the flaming front.

Ignition Profile: Human ignitions from both planned and unplanned events are the greatest component of the overall ignition profile. Natural ignitions from summertime lightening storms are uncommon, although not necessarily rare. 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.

Contributing significantly to the ignition profile are the planned ignitions from burning of residual stubble following grain harvest. Although these burning activities have historically not resulted in significant structural damage, the frequency of burning increases the potential for escaped fire. Residential living and recreational use in the area also contribute to the ignition profile. Debris burning, discarded cigarettes, children playing with matches, fireworks, and roadway fires, are just a few of the countless potential human ignition sources in the area.

4.7.3.5.2 Community Risk Assessment

Risk to Homes and Businesses: The overall risk to the community of Troy is quite low, with isolated areas of moderate risk where outside the community center along Randall Flat Road, Dutch Flat Road and toward Tamarack Road. Risk is elevated in these areas by lack of defensible space, poor access and presence of dry pine fuels. However, the risk is throughout the area is scattered and could be easily mitigated by adopting a number of defensible space measures.

Risk associated with agricultural fields can easily be mitigated by creating defensible space around homes and outbuildings. Roadside ignition potential can also be reduced by creating fuel breaks of plowed dirt along farm fields where paralleled by roads.

North Idaho Cedar Products of Troy presents some unique challenges for the community. The dangers associated with cedar log decks very near the community center was demonstrated last July when a fire possibly started by fireworks burned a considerable volume of cedar logs. The high-intensity fire that resulted could have easily moved to the surrounding forest land had wildland fuel conditions been drier. This event also demonstrates how easy cedar bark and log decks ignite, and the potential for incendiaries from the roadside or from firebrands generated at a distance to cause considerable loss.

Risk to Critical Infrastructure: There are multiple escape routes throughout the area that are suitable as escape routes. Most pass through agricultural land and are at very little risk of being compromised for any duration. Roads segments that pass through forested areas are quite short and well-buffered, reducing the potential for compromised access.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection for the community of Troy is provided by the Troy Rural Fire District. The State of Idaho Department of Lands has equipment and responsibility for the wildland fire protection in this area. The Ponderosa District IDL office is stationed along Highway 3 approximately 1 mile south of Deary.

4.7.3.5.3 Potential Mitigation Activities

Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating a defensible space around structures that are at risk to agricultural fires or forest fires can significantly reduce the potential

loss of life and property. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and thinning fuels along access routes would reduce the risk of residents becoming trapped and increase the responsiveness and safety of suppression vehicles and personnel. Educating homeowners in techniques for protecting their homes is critical in areas where any type of fuel abuts valued resources.

Residents in the Troy area should also focus on projects that will increase the safety of citizens and property in the event of a wildfire emergency. These projects could include providing signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

Community members, fire department representatives and mill owners should determine how to best address the fire hazard issues associated with the mill. An acceptable means of reducing the financial risk of inventory loss and the resulting risk to homes surrounding the mill can only be arrived through engaged conversation of all involved parties.

4.7.3.6 Viola

The community of Viola is located off Highway 95, about 10 miles north of Moscow. The community itself is quite small and concentrated along Main Street, just to the east of Highway 95. The residential areas east of Viola are addressed in the Moscow Mountain assessment. This includes homes and structures accessed via the Saddle Ridge Road and Flannigan Creek Road.

4.7.3.6.1 Fire Potential

Fuels Assessment: Vegetation in the immediate vicinity of Viola is primarily cultivated and well landscaped. There is very little wildland fuel in the area. There are a few isolated timbered areas associated with homes off the Four Mile Road; however these areas are generally at very low risk to wildland fire. The majority of land east of Viola is farmed. Isolated stringers of timber due approach the town, although town itself is isolated from any forest fuels.

Patches of high grasses associated with ditches and other non-maintained areas in the vicinity of the community center are present and are available to burn once cured. However, these areas are quite small and pose no significant threat to resources in the area. Cultivated fields could also serve as fuel for a fast-moving grass fire once they become available to burn. Fires in these fuel types (FM 3 prior to harvest, FM 1 or 2 following harvest) have the potential to spread rapidly and burn at high intensities. However, there is very little direct threat to Viola from such an event.

Ignition Profile: The greatest potential contributor to the ignition profile in the vicinity of Viola is Highway 95. This main highway provides numerous potential ignition sources, including discarded cigarettes, tire and vehicle fires, etc. However, the light fuels in the immediate vicinity of Viola are isolated and would not pose a threat to resources in the area. Other human ignition sources could also spark fires. Such sources could include fireworks, children playing with matches, debris burning, etc. Mechanized harvesting of the cultivated fields could also spark fires during harvest. Following harvest, grain fields are often burned under controlled conditions.

The potential for natural ignitions cannot be ruled out, as lightning strikes are possible in all parts of Latah County.

4.7.3.6.2 Community Risk Assessment

Risk to Homes and Businesses: The risk to homes and structure in the immediate vicinity of Viola is very low. Most homes and buildings are isolated from forest, agricultural, or grass fuels in the area. Field burning practices tend to elevate the fire risk. However, homes in the area are generally surrounded by green, well maintained lawns that would serve as an effective fire break in the event of a grass or agricultural fire, mitigating these risks.

Risk to Critical Infrastructure: Highway 95 and Four Mile Road are primary access routes in the Viola area. The potential for these to become compromised for any length of time is very low.

Local Preparedness and Fire fighting Responsibilities: Structural fire protection is provided by the Moscow Rural Fire Department, with wildland protection provided by the Idaho Department of Lands, Ponderosa District.

4.7.3.6.3 Potential Mitigation Activities

The low risk in the Viola area can be maintained or further reduced by adopting a few simple precautions. Individual home site evaluations can increase homeowners' awareness and improve the survivability of structures in the event of a wildfire. Home assessments can address the issue of escape routes and home defensibility characteristics. Creating or expanding defensible space around structures can further reduce the potential loss. This can be accomplished by individual residents by removing or pruning trees nearby or overhanging the home, keeping the area clear of surface fuels, and locating wood piles, propane tanks, and other flammable objects away from the home. Creating and widening turnouts and mowing fine fuels along access routes would reduce the potential for roadside ignitions.

Projects that reduce emergency response times could also further reduce both wildland and structural fire risk. Such projects may include improving signage and weight rating information at all bridge crossings, identifying dead end roads, signing escape routes, and pruning trees around power lines. Setting up a community wide program to keep vegetation around structures and along roadways green and clear of hazardous surface fuels would reduce the potential loss of life and property in the event of a wildfire. Adopting FIREWISE standards would help to further reduce the potential loss by educating landowners of simple precautions that can help safeguard their home.

4.8 Fire Fighting Resources and Capabilities

Rural and city fire district personnel are often the first responders during emergencies. In addition to house fire protection, they are called on during wildland fires, floods, landslides, and other events. There are many individuals in Latah County serving fire protection districts in various capacities. The following is a summary of the departments and their resources.

The Fire Fighting Resources and Capabilities information provided in this section is a summary of information provided by the Rural Fire Chiefs or Representatives of the Wildland Fire Fighting Agencies listed. Each organization completed a survey with written responses. Their answers to a variety of questions are summarized here. These summaries indicate their perceptions and information summaries.

4.8.1 Bovill Fire Protection District

Bob Shook, Chief, Bovill, ID Phone: (208) 826-3220.

Bovill Fire Protection District is a town based volunteer organization housed in a 1910 building, and is managed by the Chief who reports to three fire district commissioners. Bovill Fire Protection District responds to structural and wildland. Bovill Fire Protection District area is 6 square miles. Currently the incident capacity is one structural fire, as large as approximately 20,000 square feet. The recovery requirements is to refill water tanks, and fuel, and replace SCBA tanks (currently there is no way to refill locally), roll up water hoses and dry out equipment, go over procedures and check status of members involved.

Table 4.15 Bovill Fire Protection District Bob Shook, Chief, Bovill, ID Phone: (208) 826-3220 11/03/02

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Very little training and/or experience	12	5	Need volunteer fire fighters with SCBA and Essentials of Fire Fighting training
	Intermediate Member	Some Essential Fire Fighting Training	2		
	Advanced Member				There are currently no advanced members.
Training	Basic Wildland Training	Red Card Standards			2 days training at state fire school
	Gas and Electrical				
	Hazmat				16 hours
	Basic Structural Training			18	
	FirstAid Training	Refresher Course		20	Provided by local EMT trainers
Protective Equipment	Shirts	Turnouts	10		

Table 4.15 Bovill Fire Protection District 11/03/02		Bob Shook, Chief, Bovill, ID Phone: (208) 826-3220			
	Pants	Turnouts	10		
	Boots	Leather	10		
	Gloves	Leather	5	15	
	Hard Hats	Wildland Helmets		20	
	Goggles	Wildland Goggles		20	
	Oxygen Mask		1		
	First Aid Kits		4		
	Breathing Apparatus	SCBA	10	4	
Hand Tools	Shovels		10	5	
	Pike Poles		2		
	Hooligan Tool		1		
	Fire Extinguisher		6		
	Axes		2		
	Pulaski		5	5	
	Bars		5	10	
	Chainsaw	Pioneer	1	2	Need Newer/ any make
Communications	Radio	Motorola Sp 50	10		
	Mobile Units	Motorola		5	
	Base Station			1	
	Dispatch	Latah County Sheriffs Dispatch	1		
Vehicles	Brush Truck	1968 Kaiser 6x6 with 1500 gal tank and pump	1		
	Engine	1960 IHC pumper, 500 gpm	1		
	Tanker	1976 IHC tanker, 2000 gal tank, no pump	1		
Other Equipment	Portable Pump			1	
	Nozzel	2 ½"	2		
	Nozzel	1 ½"	4		
	Scuba Air Packs	MSA	10		
	Exhaust Fan	Ventury (portable)	1		
	Foam Equipment			1	

4.8.2 Deary Rural Fire District

Tim Jones, Chief, Deary, ID Phone: (208) 877-1271(H)

Deary Fire District is a volunteer organization housed in a 2 bay 50' x 100' station, with attached meeting hall and kitchen, and is managed by three elected fire district commissioners and a fire chief. Deary responds to structural and wildland fires. Currently the incident capacity is one single family incident, or a small grass fire and the recovery takes one to two hours.

Deary Rural Fire District has Mutual Aide Agreements with: Bovill, Troy, Moscow, Potlatch and IDL.

Table 4.16. Deary Rural Fire District.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Very basic training	13		Only 1 or 2 members are available during daytime hours
	Intermediate Member		4		3 or 4 members regularly attend the monthly training sessions provided
	Advanced Member				4 or 5 members are trained on SCBA
Training	Basic Wildland Training		5		
	Basic Structural Training		5		
	Basic SCBA Training		12		
	FirstAid Training		5		Certified EMTs trained as fire fighters
Protective Equipment	Shirts	Nomex	10	5	
	Pants	Nomex	10	5	
	Boots	Wildland Leather		15	
	Gloves	Leather	10	5	
	Hard Hats		10	5	
	Goggles	Wildland	10	5	
	Headlamps			15	
	Fire Shelters		2	13	
	Breathing Apparatus	SCBA	8		
Hand Tools	Shovels		8		
	Pulaski's		4		
	Swatters		2		
	McLeod Rake		2		
	Chainsaw	1995 Stihl	1		
	Chainsaw	2002 Stihl	1		
Communications	Mobile Radios	Motorola / Kenwood	10		
	Hand-held Radios	Motorola	15	5	
	Base Station	Motorola	1		
	Repeaters	Motorola	2	1	
	Dispatch	Latah County 911	1		24 hours 7 days a week
Vehicles	Water Tender	1985 Autocar 5000 gal	1		
	Structural	1975 Chevrolet pumper	1		

Table 4.16. Deary Rural Fire District.

	Item	Description	Existing	Needed	Details
	Engine				
	Structural Engine	2005 International 4x4 pumper, 1000 gal tank, 1500 gpm pump	1		
	Wildland Engine	1970 6X6 Army Brush truck	1		
	Wildland Engine	1971 6X6 Army Brush truck	1		
	Wildland Engine	1977 Ford F-600 4X4	1		
	Quick Response	1995 Ford	1		
	Ambulance	2002 Ford / Wheeled Coach	1		
Other Equipment	Portable Pump	1993 Waterous Pressure	1		
	Portable Pump	2002 Waterous Volume	1		
	Extrication Equipment	Holmatro spreader, cutter, ram, and air lifting bags	1		
	ATV	2005 Kodiak 4x4 ATv	1		
	Foam Equipment	Foam injection brush	1		
	Foam Equipment	1995 Foam Injection (QRU)	1		

4.8.3 Genesee City and Rural Fire Department

Darrel Kilgore, Chief, Genesee, ID Phone: (208) 285-0144 (H)

Genesee Volunteer Fire Department is a volunteer organization housed in a 2 bay building, which stores 3 vehicles per bay, and is managed by board of directors comprised of the volunteers. The City of Genesee and the Genesee Fire District provides annual funding for the organization. Genesee responds to structural, agricultural, and vehicle fires. Currently the incident capacity is two single family incidents or one large incident and recovery takes one half hour to approximately one hour.

Table 4.17. Genesee City and Rural Fire Department.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	In-House training and equipment practice, not certified	25		
	Intermediate Member	Formal Training and certifications			Need volunteer EMTs that meet National Registry standards
	Advanced Member	Veteran and Nationally certified			Need paid or volunteer trainers for Structural, Wildland, and HazMat
Training	Basic Wildland Training				All aspects of wildland firefighting

Table 4.17. Genesee City and Rural Fire Department.

	Item	Description	Existing	Needed	Details
	Basic Structural Training				Any and all aspects of structural fire review and training
	HazMat Training				Need volunteers to be certified for HazMat incidences and situations.
Protective Equipment	Shirts	Nomex			
	Pants	Nomex			
	Turnouts	Full Turnout Suit	27	5	
	Boots	Wildland Leather			
	Gloves	Leather	27	10	
	Hard Hats				
	Goggles	Wildland			
	Headlamps				
	Fire Shelters		0	2	
	Breathing Apparatus	MSA	6	6	
	Breathing Apparatus	SCBA	6	6	
Hand Tools	Shovels		15	0	
	Pulaski's		8	0	
	Fire Swatter		1	9	
	Chainsaw	1985 Homelite	1	1	
Communications	Mobile Radios	Midland FM	5		
	Handheld Radios	Motorola Radius P 1225	20		
	Base Station	Station Radio	1		
	Repeaters	Moscow Mountain	1		
	Repeaters	McGary Butte	1		
	Dispatch	Latah County 911	1		24 hours 7 days a week
Vehicles	Structural Engine	1964 International Pumper 4X4	1	1	Need newer
	Wildland Engine	1983 Chevy 1 ton Brush Truck 4X4	1	1	
	Wildland Engine	1996 International Chief Series4X4	1		Rural truck
	Wildland Engine	1975 International 4X4	1	1	Rural truck
	Ambulance	1994 Ford E350 Type III	1		
	Water Truck		1		Available from local chemical/fertilizer companies in Genesee
	Dozer		1		Available from Roach Construction in Genesee
	Agricultural		1		Available from farmers

Table 4.17. Genesee City and Rural Fire Department.

	Item	Description	Existing	Needed	Details
	Tractors				
	Back hoe		1		Available from City of Genesee
	Utility Vehicles	4X4	1		Personal vehicles are available
	Excavators with Thumb		1		Available from Roach Construction in Genesee
Other Equipment	Smoke Ejector	1999 Honda	1		
	Smoke Ejector	1965 Electric	1		
	Smoke Ejector	1968 Electric	1		
	Foam Equipment	Fire Foam 103	1	1	Mounted on truck
	Extrication	Holmatro Combi-Cutter Spreader	1		
	Portable Generator	4500 watt	1		
	Scene Lights		2	2	
	Air bags for lifting vehicles and debris		2	2	

4.8.4 Juliaetta Volunteer Fire Department

Mike McGee, Chief, Juliaetta, ID Phone: (208) 276-7022 (H)

Juliaetta Volunteer Fire Department is an all volunteer department of the City of Juliaetta. The response service area is the corporate City Limits of Juliaetta. The Juliaetta VFD responds to residential, commercial and industrial structural fires, motor vehicle accidents, HAZMAT Incidences and assists J-K Ambulance at their request. Current capacity is one incident at this time. Recovery time is approximately ½ to one hour.

Table 4.18. Juliaetta Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member		5	15	Fire Fighters Essential Training to achieve Fire Fighter Certification
	Intermediate Member		1	15	
	Advanced Member		1	15	
Training	Basic Wildland Training		0	15	
	Basic Structural Training		5	15	
	Incident Command (ICS)		5	15	
	Vehicle Extrication		5	15	
	HazMat		1	15	
	Basic Safety Training		1	15	

Table 4.18. Juliaetta Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
	Advanced Safety Training		5	15	
	FirstAid	Refresher Course	3	15	
Protective Equipment	Bunker Gear	Structural	2	15	Balance of current bunker
	NFPA 1991				Gear purchased in 1982, in need of replacement
	Headlamps		0	15	In need of replacement
	Bunker boots	Structural	15	15	In need of replacement
	Helmets	Structural	2	15	Balanced purchased in 1982
	1 piece jump suits		0	15	
	Photo Ionization Detector (PID)		1	1	
	SCBA's	MSA	8	16	With space bottles
	Gloves	Leather	20	10	
	Nomex hoods		12	15	Existing hoods are short style; need long style
	Hard Hats	Wildland	0	15	
	Survivair		16	16	Near end of 15 year service life
	Goggles	Wildland	10	4	
	Fire Shelters		12		
Hand Tools	Shovels	#2 round nose, #2 flat nose	1	10	
	Pulaski's		2	15	
	Fire Swatters		0	5	
	Garbage Rake		0	2	
	Signal Whistles		0	15	
	Chainsaw	2004 Stihl 029	1	2	
	Fire Axes		3	0	
	McLeod's		0	1	
Communications	Mobile Radios	Motorola Radius CM 300	2	5	
	Portable Radio	Motorola T110 6 channel	4	0	Nearing end of service life
	Base Station	Motorola Radius CM 300	1	1	
	Pagers	Motorola minitor IV	10	15	
	Cell Phones		0	15	
	Bull Horn		0	1	
	County-wide Tactical Channel	Monitored and dispatched by Latah County	0		
	Laptop Computers	Wireless	0	1	
	Repeater		0	0	
	Dispatch	Latah County Sheriffs Department	1	0	911 System

Table 4.18. Juliaetta Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
Vehicles	Structural Engine	1956 Seagrave w/ 500 gallon tank, 1250 gpm pump	1	2	Current vehicle is 49 years old, parts are no longer available
	Utility Vehicle	Dodge 1985 4x4 150 pickup	1	1	Out of service due to lack of funding for repairs
	Command vehicle		0	1	
	Quick Response Engine		0	1	
	Brush Truck		0	1	
Facility	Fire Station		1	1	Current facility inadequate due to small size (24x30 ft), no storage
Other Equipment	Float pump		0	2	
	1-3/4" structural hose		450'	600'	
	2-1/2" fire hose		2200'	2400'	Existing hose dates back to 1941
	Generator	Honda 3500 Watt minimum	0	1	
	Akron Foam Nozzles-induction system		0	1	
	Hallingon Tool		0	1	
	Scene lighting		0	many	
	Smoke ejector		1	0	
	Portable Pump		0	1	
	Power Cord		0	300'	

4.8.5 Kendrick Volunteer Fire Department

Val Norris, Chief, Kendrick, ID Phone: (208) 289-3066 (H)

Kendrick Volunteer Fire Department is a volunteer organization housed in a 4 bay building furnished by the city of Kendrick. It stores 1 fire vehicle and is managed by the fire department volunteers. The City of Kendrick provides annual funding for the organization. Kendrick responds to structural, agricultural, and vehicle fires in the town of Kendrick.

Table 4.19. Kendrick Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	In-house training and equipment practice, not certified	5	4	Additional members
	Intermediate Member	Formal training and certification	7	5	Remaining members need to be certified
	Advanced Member	Veteran and Nationally certified	0	1	Need a member of the department to be certified to train members in Fire Essentials.
Training	Basic Wildland Training	Wildland Basic Course	2	10	All aspects of wildland fire fighting.
	Basic Structural		7	5	Any and all aspects of structural fire

Table 4.19. Kendrick Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
	Training				review and training.
	HazMat		3	9	Need volunteers to be certified for the HazMat incidences and situations.
Protective Equipment	Helmets	NFPA Compliance	12	4	
	Wildland Shirts	Nomex	0	12	Perimeter wildland fire fighting
	Wildland Pants	Nomex	0	12	Perimeter Wildland fire fighting
	Flashlights	PPE	15	4	Need 4 large scene flashlights
	Turnouts	Full Turnout Suits	12	4	
	Gloves	Leather	15	5	
	Goggles	Wildland	0	12	
	Wildland Boots	Leather	0	12	
	Breathing Apparatus	SCBA	6 Scotts	6 Survivair	
	Air Bottles		32	20	
	Headlamps		0	12	
	Hardhats		1	11	
	Boots	PPE	15	4	
Hand Tools	Pulaski		6	4	
	Fire Swatter		0	4	
	Halligan Tool		0	1	Forcible Entry
	Piercing, Nozzle		0	1	
	Pike Pole		1	1	Additional equipment
	Chainsaw	2002 65 cc Stihl	1	1	
	Shovels		6	6	
Communications	Mobile Radio	Motorola 1225	1	1	
	Handheld Radio	3 Kenwood, 3 Motorola	6	12	Upgrade to Motorola 1250 w/ alpha numeric
	Pagers	Motorolas	5	7	Equip all personnel with pagers
	Repeaters	J-K & Moscow Mountain	1		
	Base Stations	Station radio and truck radio	2	0	
	Dispatch	Latah 911			24 hours a day, 7 days a week
Vehicles	Structural Engine	1974 American LaFrance 1250 gallon pump	1	1	
	Structural Engine	1000 gallon	0	1	Need newer backup and to meet water flows for the High School and other facilities in town.
	Dump Truck		1		Available from City of Kendrick
	Back hoe		1		Available from City of Kendrick
	Water Trucks		0	0	Available from local chemical/fertilizer companies in Kendrick

Table 4.19. Kendrick Volunteer Fire Department.

	Item	Description	Existing	Needed	Details
	Quick Response Vehicle		0	1	Quicker Response and use for extrication and wildland around the perimeter of the town
	Utility Vehicle	4x4	1		Personal vehicles available
Other Equipment	Positive Pressure Ventilation Fan		1	0	
	Water Curtain		0	2	To cool exposures
	Monitor	500 gpm	0	1	Cooling LP tanks in town and cooling exposures
	Portable generator	3000 Watt Honda Generator	1	0	
	Scene Lights		0	2 sets	Scene Lighting needed for fire truck
	Air bags		0	2	Lifting debris and assisting in extrication

4.8.6 Moscow Rural Fire District

Don Strong, Chief, Moscow, ID 229 Pintail Lane Phone: (208) 882-2831, Fax: (208)-882-5746

There is a Moscow Volunteer Fire Department and a Moscow Rural Fire Department. There is a great deal of overlap in the two departments in terms of response to fires, equipment and personnel within and outside the Moscow city limits. Many of the same personnel serve both organizations. All volunteers in Moscow Rural must first take structural fire suppression training before being eligible to join Moscow Rural. The Moscow Rural Fire District shares space with the Moscow Fire Department at 229 Pintain Lane and maintains its own station at 1420 White Avenue. Three elected fire district commissioners manage Moscow Rural. The Moscow Volunteer Fire Department administration is organized as a department of city management. The Chief is appointed by Moscow and serves as the Chief for both the Moscow Fire Department and Moscow Rural. The district and department respond to structural, wildland, agricultural, and vehicle fires. Currently the incident capacity is two incidents, one large and one small and the recovery takes approximately one hour.

Table 4.20. Moscow Volunteer Fire Department and Moscow Rural Fire District.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	All members have been trained beyond the Idaho State requirements for structural fires	25		Several members are Idaho State Certified Red Card fire fighters, other members do not meet red card standards for wildland fires.
	Trainer	Paid training officer with wildland fire certification and experience		1	
Training	Basic Wildland Training			25	Need additional wildland fire training.
	Basic Structural Training				Internal training provider
	HazMat Training				Internal training provider

Table 4.20. Moscow Volunteer Fire Department and Moscow Rural Fire District.

	Item	Description	Existing	Needed	Details
	Basic Safety Training				Internal training provider
	EMT Training				Internal training provider
	Weapons of Mass Destruction			25	
Protective Equipment	Shirts	Nomex	25	15	
	Pants	Nomex	25	15	
	Boots	Wildland Leather	15	10	
	Gloves	Leather	25	15	
	Hard Hats		25	10	
	Goggles	Wildland	25	15	
	Headlamps			30	
	Fire Shelters		20	10	
	Breathing Apparatus	SCBA	20	10	
	Fire fighter Day Packs		20	10	
	Hot Shield Fire Protector		20	10	
Hand Tools	Hose Clamps		4	6	
	Saw Chaps		3	3	
	McLeod	1995 Homelite Super e-Z Auto 16" bar	3	3	
	Chainsaw	2000 Stihl- 044 20" bar	2	3	
	Chainsaw	1989 Husqvarna - 272 20" bar	1		
Communications	Mobile Radios	Motorola; HT1000, P1225	25	10	
	Base Station		2	1	Located at White Ave. Station, and S. Main Station
	Repeaters		1		
	Dispatch	Moscow Police/Fire Dispatch	1		24 hours 7 days a week
Vehicles	Structural Engine	2002 Pierce/Kenworth 4X4 1250 gpm, Type 1 pumper, 1,000 gal tank, compressed air foam system	1		
	Structural Engine	1991 International Type 3	1		
	Structural Engine	1993 International 4X4, Type 1, 1,000 gpm, 750 gal tank, class A foam system	1		
	Wildland Engine	1973 Ford 4X4 Type 2 pumper 500 gpm, 750 gal tank		1	250 gpm pump and Class A compressed air foam system with 1000 gallon

Table 4.20. Moscow Volunteer Fire Department and Moscow Rural Fire District.					
	Item	**Description**	**Existing**	**Needed**	**Details**
					tank
	Wildland Engine	1995 Ford 1 ton 4X4 Type 6, 150 gpm, 300 gal tank, class A foam system	1		
	Wildland Engine	1995 Ford 1 ton 4X4 Type 6, 150 gpm, 300 gal tank, class A foam system	1		
	Wildland Engine	1989 International 4X4 2 1/2 ton Type 3, 300 gpm, 750 gal tank, class A foam system	1		
	Water Tender	2000 Freightliner, Type 2, 250 gpm, 3,500 gal tank	1		
	Water Tender	1991 Navistar 4X4, Type 3, 350 gpm, 1,800 gal tank	1		
	Water Tender	1962 White 4X4, Type 3, 350 gpm, 1,500 gal tank	1		
	Pickup	4X4 Crew Cab	1		
Other Equipment	Drip Torch			6	
	Portable Pumps	300 gpm portable pumps	3		
	Portable Tank	Folding water tanks with frame, 1,500 gal	3		One is a 3500 gallon tank and the other two are 2000 gallons a piece.

4.8.7 Troy Rural Fire District

Ron Stearns, Chief, Troy, ID Phone: (208) 835-2427 (H)

Troy Volunteer Fire Department is a volunteer organization housed in 30' x 100' building with a 30' x 30' meeting/office area upstairs, and is managed by a board of directors. The City of Troy and the fire district own the equipment and building. Both the city and district provide annual operating funds for the volunteer department. The district mill levy does not apply to city residents. Troy responds to structural, agricultural, and wildland fires. Currently the incident capacity is one single structure or one medium sized wildland fire and the recovery takes one half hour to approximately one hour.

Troy Volunteer Fire Department has Mutual Aide Agreements with Deary Rural Fire District.

Table 4.21 Troy Volunteer Fire Department

Ron Stearns, Chief, Troy, ID Phone: (208) 835-2427 (H) 11/15/02

	Item	**Description**	**Existing**	**Needed**	**Details**
Personnel	Basic Member	Less than one year on the department	3	0	
	Intermediate Member	One to Five years on the department	10	0	
	Advanced Member	Over Five years of experience	14	0	
Training	Basic Wildland Training		15	12	

Table 4.21 Troy Volunteer Fire Department Ron Stearns, Chief, Troy, ID Phone: (208) 835-2427 (H) 11/15/02					
	Basic Structural Training		17	10	
	HazMat Training		20	7	
Protective Equipment	Shirts	Nomex	30		
	Pants	Nomex	30		
	Turnouts	Full Turnout Suit	30		
	Boots	Wildland Leather	15		
	Gloves	Leather	30		
	Hard Hats		30		
	Goggles	Wildland	30		
	Headlamps			30	
	Fire Shelters		0	0	
	Breathing Apparatus	SCBA	12		
Hand Tools	Chainsaw	1989 Stihl	1		
	Chainsaw	1997 Stihl	1		
Communications	Radios	Motorola	35		
	Base Station	Motorola	1		
	Repeaters	SAR. Moscow Mtn.	1		
	Dispatch	Latah County 911	1		24 hours 7 days a week
Vehicles	Structural Engine	1969 Crown	2		
	Wildland Engines	1985 GMC G30 1 ton	1	1	
	Wildland Engines	1976 International 1600 1 1/2 ton	1		
	Water Tender	1976 International 1850 2 ton 750 gal	1		
	Water Tender	1984 MAC 4,000 gal	1		
	Agricultural Tractors				As available from farmers
	Ambulance	2004 F-350	1	1	
Other Equipment	Foam Equipment		2		Installed on two trucks

4.8.8 Potlatch (Palouse Valley) Rural Fire District

Gary Nagle, Chief, Potlatch, ID Phone: (208) 875-0571 (H)

Potlatch Rural Fire District is a volunteer organization housed in a single story building, and is managed by three elected fire district commissioners. Potlatch responds to structural,

agricultural, industrial, and vehicle fires. Currently the incident capacity is one single family incident or two small grass fires and the recovery takes one half hour to approximately one hour.

Potlatch Rural Fire District has Mutual Aide Agreements with: Palouse, WA, Moscow Fire District, Farmington, WA, Deary Rural Fire District, Idaho Department of Lands, and Bennett Lumber Fire Department.

Table 4.22. Potlatch (Palouse Valley) Rural Fire District.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Up to approx. 40 hours of training/experience	6		9 Additional Ambulance crew members are also trained.
	Intermediate Member	From 40 - 150 hours of training/experience	18		3 members are Idaho State Certified Red Card fire fighters
	Advanced Member	Over 150 hours of training/experience			
Training	Basic Wildland Training				Beginning for some members/ refresher for others
	Basic Structural Training				Beginning for some members/ refresher for others
	HazMat Training				Beginning for some members/ refresher for others
Protective Equipment	Shirts	Nomex	10	5	
	Pants	Nomex	10	5	
	Turnouts	Full Turnout Suit	30		
	Boots	Wildland Leather		15	
	Gloves	Leather	10	5	
	Hard Hats		10	5	
	Goggles	Wildland	10	5	
	Headlamps				
	Fire Shelters				
	Breathing Apparatus	SCBA	6	6	
Hand Tools	Shovels		12	20	
	Pulaski's		6	20	
	Chainsaw	1995 Homelite Super e-Z Auto 16" bar	1	1	
	Chainsaw	2002 Stihl 021 18" bar	1	1	
Communications	Mobile Radios	Sheriff's primary	4		
	Mobile Radios	Search and Rescue	7		
	Mobile Radios	Hospital	3		
	Portable Radios	Search and Rescue	16	15	
	Base Station	Search and Rescue	1		At fire station
	Dispatch	Latah County 911	1		24 hours 7 days a week

Table 4.22. Potlatch (Palouse Valley) Rural Fire District.

	Item	Description	Existing	Needed	Details
Vehicles	Structural Engine	1986 Grumman International Pumper 4X4 1,000 gpm, 1,000 gal tank	1		
	Structural Engine	1995 International 4X4 500 gpm, 1,000 gal tank	1		Used for Structural and Agricultural
	Structural Engine	2001 International 4X4 500 gpm, 1,000 gal tank	1		Used for Structural and Agricultural
	Agricultural Engine	1952 GMC 6X6 200 gpm 1,000 gal tank	1		
	Quick Response	Crew Cab, 1 ton, cabinets for equip. 200 gpm, 300 gal tank, with hose reel		1	
	Water Tender/Tanker	300 gpm, 3,000 gal tank, with hose reel		1	
Other Equipment	Foam Equipment	Low expansion gun	1		
	Foam Equipment	High expansion gun	1		
	Foam Equipment	1995 Foam unit	1		On truck
	Blower	1997 Unifire power blower, model DS-3P4 18", 22,000 CFM	1	1	
	Extrication	Holmatro Spreader and Squeezer 3260 UL		1	
	Hose	1" soft wildland 1,000 ft hose		1	

4.9 Wildland Fire Districts

4.9.1 USDA Forest Service – Palouse Ranger District

Tom McWilliams, Potlatch, ID Phone: (208) 875-1131

Palouse Ranger District is a federal based organization that has protection responsibilities for wildland fire, although the Palouse Ranger District is active in fuel management programs, they are not responsible for suppression in the District. The District is protected by the Idaho Department of Lands, based in Deary, and Clearwater-Potlatch Timber Protection Agency based in Elk River. They have a fire cache on each Forest Service compound.

Table 4.23. Palouse Ranger District - USDA Forest Service.

	Item	Description	Existing	Details
Personnel	Crew	A crew exists of about 20 people		
Protective Equipment	Shirts	Nomex	60	
	Pants	Nomex	60	
	Gloves	Leather	60	
	Hard Hats		30	
	Goggles		30	
	Headlamps		30	
	Fire Shelters		40	
	Breathing Apparatus		N/A	
Hand Tools	Shovels		30	

Table 4.23. Palouse Ranger District - USDA Forest Service.

	Item	Description	Existing	Details
	Pulaskis		30	
	Chainsaw	36	13	
	Chainsaw	44	13	
Communications	Hand Held Radio	King Model GPH	11	
	Base Station	In office	2	
	Dispatch	Grangeville Dispatch	1	24 hours 7 days a week
Vehicles	Wildland Engine	Ford 750 gal	1	
	Wildland Engine	Chevrolet 300 gal	1	
	Pickup 4X2	1997 6 Passenger	3	
	Pickup 4X4		3	
Other Equipment	Drip Torch	Propane	30	
	Terra Torch		1	

4.9.2 Idaho Department of Lands – Ponderosa Fire Protection District

Roger Kechter, Fire Warden Phone (208)-877-1121

Ponderosa Fire Protection District is a state based organization with protection responsibilities for forested lands in most of Latah and the northern most part of Nez Perce County. Forest land in the eastern most portion of Latah County is protected by the Clearwater-Potlatch Timber Protection Association out of Orofino and Elk River. There is a 50 person fire cache at the Ponderosa FPD office.

Table 4.24. Idaho Department of Lands-Ponderosa Fire Protection District.

Equipment Type	Size	Year	Make	Model	Capacity
18 Chainsaws	Various	1982-2002	Stihl	032 to 046	20" to 28" Bars
ATV	350 cc	1988	Yamaha	Big Bear	
ATV	350 cc	1997	Yamaha	Big Bear	
ATV	350 cc	1999	Yamaha	Big Bear	
ATV	600 cc	1999	Yamaha	Grizzly	14 Gal.
ATV	400 cc	1999	Yamaha	Kodiak	
ATV	400 cc	2001	Yamaha	Big Bear	
Crew-Cab	1 T 4X4	1993	GMC	3500	
Crew-Cab	1 Ton 4X4	1995	Chevrolet	3500	
Engine	Type 6 4X4	1968	Jeep	M-715	200 Gal.
Engine	Type 4 4X2	1996	Ford	F-700	650 Gal.
Engine	Type 6 4X4	1992	GMC	3500	200 Gal.
Engine	Type 5 4X4	2000	Ford	F-550	500 Gal.
Pickup	1/2 Ton 4X4	1991	GMC	1500	
Pickup	1/2 Ton 4X4	1994	GMC	1500	
Pickup	1/2 Ton 4X4	1994	GMC	1500	
Pickup	1/2 Ton 4X4	1996	Dodge	1500	

Table 4.24. Idaho Department of Lands-Ponderosa Fire Protection District.

Equipment Type	Size	Year	Make	Model	Capacity
Pickup	1/2 Ton 4X4	1997	Chevrolet	1500	
Pickup	1/2 Ton 4X4	1999	Chevrolet	1500	
Pickup	1/2 Ton 4X4	1999	Chevrolet	1500	
Pickup	1/2 Ton 4X4	1999	Chevrolet	1500	
Pump	1 1/2 Inch	1989	Wajax-Pacific Mark III	Pressure	83 GPM
Pump	1 1/2 Inch	1990	Wajax-Pacific Mark III	Pressure	83 GPM
Pump	1 1/2 Inch	1971	Gorman Rupp	Pressure	55 GPM
Pump	1 Inch	1991	Shindaiwa GP-25	Mini	37 GPM
Pump	2 Inch Volume	1990	Homelite	Volume	170 GPM
Pump	1 1/2 Inch Volume	2002	Honda	Volume	106 GPM
Slip-in Pump			Simms Tank/WA-7 Pump		100 Gal.
Slip-in Pump			Simms Tank/Eco Pump		50 Gal.
Snowmobile		1990	Ski-Doo	Tundra	
Snowmobile		1990	Ski-Doo	Tundra	
Tank, Portable			Fold-a-Tank	Self Supporting	1800 Gal
Tank, Portable			Aluminum		2800 Gal
Trailer	Utility				1 Ton
Trailer	Snowmobile	1990	Trac-Pac		
Trailer	ATV	1990	Homemade		1/4 Ton

4.9.3 Clearwater-Potlatch Timber Protective Association – Elk River Area

Howard Weeks, Fire Warden, Phone: (208) 476-5612

Table 4.25. Clearwater-Potlatch Timber Protective Association-Elk River Area.

	Item	Description	Existing	Details
Protective Equipment	Shirts	Nomex	53	
	Pants	Nomex	46	
	Hard Hats	Wildland	10	
	Goggles	Wildland	5	
	Headlamps		50	
	Fire Shelters		16	
Hand Tools	Shovels		96	
	Pulaski's		78	
	McLeod's		22	
	Combination		10	
	Chainsaw	Stihl 046	2	
	Chainsaw	Stihl 064	5	
Communications	Mobile Radios	King	4	

Table 4.25. Clearwater-Potlatch Timber Protective Association-Elk River Area.

	Item	Description	Existing	Details
	Mobile Radios	Phoenix	2	
	Mobile Radios	Uniden	2	
	Portable Radios	King	10	
	Portable Radios	King	8	
	Base Station	King	4	
	Repeaters		2	
Vehicles	Wildland Engine	6X6, Type 4	4	
	Wildland Engine	1971 Gamma Goat,	3	
	Wildland Engine	3/4 ton, Type 7	4	
	Dozer	1963 Cat D-6	1	
	Backhoe	Case	1	
	ATV	Yamaha	2	
Other Equipment	Drip Torch		5	
	Propane Torch		6	
	Portable Pump	Mark III	2	
	Portable Pump	1 ½" Homelite	6	
	Portable Pumps	1" Homelite	2	
	Portable Pumps	BB4	2	
	Portable Pumps	3" Homelite	3	

4.10 Additional Entities with Fire Suppression Capabilities

4.10.1 Bennett Lumber Fire Department

Brett Bennett, Chief, Princeton, ID Phone: (208) 875-1121.

Bennett Lumber Fire Department is a company based organization housed on the Bennett Lumber mill site, and is managed by the privately owned company's board of directors. Bennett Lumber Fire Department responds to structural, wildland, and saw mill fires. Currently the incident capacity is two or three small wildland fires, or one large fire.

Bennett Lumber Fire Department has mutual aide agreements with Potlatch Rural Fire Department and Idaho Department of Lands.

Table 4.26. Bennett Lumber Fire Department.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Red Card Certified	20		Also have additional support of approximately 7 other members
Training	Fire Behavior	S-290 training course	0	All personnel	
	Urban Interface	S-215 training course	0	All personnel	
	Crew Boss		1	2	
Protective Equipment	Boots	Leather	15	5	
	Gloves		15	5	
	Goggles			25	

Table 4.26. Bennett Lumber Fire Department.

	Item	Description	Existing	Needed	Details
	Headlamps			20	
	Fire Shelters		15	5	
	Breathing Apparatus	151 SCBA 4500 PSI	10		
	Breathing Apparatus	Survivair SCBA 2250 PSI	12		
Hand Tools	Pulaski		25		
	Combi Tools		15		
	McLeod		15		
	Rakes		10		
	Chainsaw	1998 Stihl 066	2		
	Chainsaw	1999 Stihl 044	5		
	Chainsaw	1999 Stihl 036	3		
Communications	Hand-held Radio	Motorola HT1000 16 Channel	10	10	
	Base Station	Uniden Base	1		
	Repeaters	Uniden	1		Moscow Mountain
	Repeaters	GE	1		Puffer Butte
	Repeaters	Motorola	1		Elk Butte
	Dispatch	2-3 Trained Staff	1		Bennett Lumber, Princeton, Idaho
Vehicles	4 X 4 Pickup	3/4 Ton Chevrolet	1		
	Water Tender	1995 Peterbuilt 4000 gal.	1		
	Water Tender	1965 Mack 3000 gal	1		
	Water Tender	1990 Chevrolet 2000 gal	1		
	ATV	1998 Honda 4-Wheeler	1		
	ATV	1999 Honda 4-Wheeler	1		
	ATV	1998 Yamaha 4-Wheeler	2		
	Shop Truck	1998 Chevrolet ¾ Ton	1		
	Fuel Truck	1998 Chevrolet ¾ Ton	1		
	Truck	1998 Peterbuilt	2		
	Structural Engine	1995 Peterbuilt 378/ Tender Engine	1		
	Wildland Engine	1997 Type 6	1		
	Wildland Engine	1990 Type 6	1		
	Wildland Engine	2001 Type 6	1		
	Wildland	1999 Type 5	1		

Table 4.26. Bennett Lumber Fire Department.

	Item	Description	Existing	Needed	Details
	Engine				
Other Equipment	Dozer	Caterpillar D7E	1		
	Dozer	Caterpillar D5H	1		
	Backhoe	1978 Case 580	1		
	Backhoe	1998 Caterpillar 416C4E	1		
	Lowboy	1997 Aspen 65 ton	1		
	Helicopter	Bell 206B	1		
	Trailer	Trailmax 20 ton	1		
	Trucks	1997 - Tractors for Trailers	1		
	Portable Pump	1975 Overhead Truck fill	1		
	Portable Pump	1999 Honda 650 6pm	1		
	Drip Torch		8		
	4-Wheeler mounted Torch		3		
	Hose	5" LDH 650'	1		
	Hose	2 1/2" Truck Hose, 4000'	1		
	Hose	1 1/2" Attack Hose 4000'	1		
	Hose	1" Forestry Hose 2500'	1		
	Hose	3/4" Mop up Forestry 3500"	1		

4.10.2 North Latah Fire District – Farmington

Jerry Wagner, Chief, Farmington, WA Phone: (509) 287-2343

The Farmington Volunteer Fire Department provides the second station for Whitman County Fire District No. 10. It is the primary responder to fires in the North Latah Fire District which contracts annually with Whitman County Fire District No. 10 for the service. It has 24 members. Incident capacity is two single-family dwellings and two 25 acre wildland fires. Recovery time is one hour.

Table 4.27. North Latah Fire District-Farmington.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Minimum 40 hours	10	10	More hours and experience needed
	Intermediate Member	150 hours	9	9	Continued training needed
	Advanced Member	Special training	1	1	FirstAid and CPR
Training	Basic Wildland Training	80 hours	8	8	
	Basic Structural Training	20 hours	12	12	

Table 4.27. North Latah Fire District-Farmington.

	Item	Description	Existing	Needed	Details
	HazMat Training	None	None	None	
Protective Equipment	Shirts	Nomex	None	None	
	Pants	Nomex	None	None	
	Turnouts	Full Turnout Suit	20	2	Includes boots, pants, coat and hat
	Boots	Wildland Leather	2	None	
	Coats		6		
	Gloves	Leather	None	None	
	Hats	N/A	6	N/A	
	Goggles		5		
	Headlamps		N/A	None	
	Fire Shelters		N/A	None	
	Breathing Apparatus	Air packs	7	None	
Hand Tools	Shovels		11	None	
	Pike Pole		4	None	
	Axes		10	None	
	Chainsaw	Stihl 034	1	None	
Communications	Portable Radios	Kenwood	9	1	
	Base Station	Midland	1	1	
	Repeater	Steptoe Butte	1	1	
	Dispatch	Whitcom	1	None	24 hours 7 days a week at Washington State University
Vehicles	Structural Engine	1936 Ford	1		
	Wildland Engine	1957 International	1		
	Wildland Engine	1971 International	1		
	Wildland Engine	1976 International	1		
Other Equipment	Air Bottles		9		
	Gas Mask		1		
	Foam Bucket		5		

4.10.3 North Latah Fire District – Oakesdale

Joe Fox, Chief, Oakesdale, WA Phone: (509)285-5055.

Oakesdale is one of two stations in the Whitman County Fire District No.10, which is managed by three fire district commissioners. The Oakesdale station serves as an additional resource for the Farmington Volunteer Fire Department when fire suppression is necessary for the North Latah County Fire District. It has 23 members, responds to structural, agricultural, and wildland fires and emergency medical calls. Incident capacity at one time is 2-25 acre wildland fire. Recovery takes about 11/2 hours.

Table 4.28. North Latah Fire District-Oakesdale.

	Item	Description	Existing	Needed	Details
Personnel	Basic Member	Minimum 40 hours	10	10	More hours and experience
	Intermediate Member	200 hours	10	10	More hours and experience
	Advanced Member	Special training	2	2	FirstAid and CPR
Training	Basic Wildland Training	100 hours	10	10	
	Basic Structural Training	20 hours	10	10	
	HazMat Training	None	None	None	
Protective Equipment	Shirts	Nomex	None	None	
	Pants	Nomex			
	Turnouts	Full Turnout Suit	25	None	
	Boots	Wildland Leather	5	5	
	Gloves	Leather	10	10	
	Hard Hats		25	5	
	Goggles	Wildland	10	5	
	Headlamps		2	2	
	Fire Shelters		0	2	
	Breathing Apparatus	SCBA	8	5	
Hand Tools	Shovels		9	5	
	Pike Pole		2	4	
	Axes		4	4	
Communications	Portable Radios	Motorola SP 50	10	5	
	Portable Radios	Kenwood	4	2	
	Portable Radios	Midland	4	4	
	Mobile Radios	Motorola, Midland	5	2	
	Base Station	Midland	1		
	Repeater	Steptoe Butte	1		
	Dispatch	Whitcom	1		24 hours 7 days a week at Washington State University
Vehicles	Structural Engine	1965 Int. American LaFrance 750 gpm	1	1	
	Wildland Engine	1957 International Brush 1000gal tank	1	1	
	Wildland Engine	1972 International 4X4 Attack 1,200 gal tank	1	1	
	Wildland Engine	1990 International Attack 1,200 gal tank	1	1	
	Ambulance	1984 Chevrolet 4X4 Squad Suburban	1		
	Water Trucks	Available from local chemical companies	3		

Table 4.28. North Latah Fire District-Oakesdale.					
	Item	**Description**	**Existing**	**Needed**	**Details**
Other Equipment	Winch	200 foot winch mounted on 1990 Engine	1		

4.11 Issues Facing Latah County Fire Protection

4.11.1 Troy Watershed

The community of Troy is primarily dependent on surface runoff from Big Creek Watershed for their water resources. Water is collected along the stream drainage, treated, and then piped to homes and businesses. A severe wildfire in this watershed could cause serious injury to this resource by removing vegetation, creating ash and sediments, and impairing soil properties. Fire mitigation treatments prior to a fire event are a high priority and are imperative to conserving the functionality of the watershed following a wildland fire.

4.11.2 Adoption and Enforcement of the International Fire Code

Currently, fire departments in Latah County are not consistently notified of new construction projects within their jurisdiction; thus, they are not aware of the new addresses or what to expect when they arrive at an incident. The committee working on this plan would like to see the County adopt the International Fire Code, which would place more restrictions on building permittees to provide for safer emergency response to their structures. This would address minimum road widths and grade, adequate turn-around areas, turnouts for driveways over a designated length, and water availability among many other things. The committee would also like funding for the creation of a County Fire Warden position, whose duties would include inspection of new home sites for compliance to the International Fire Code and enforcement of the code. The Fire Warden would also be responsible for notifying the appropriate fire district of new structures as well as providing some situational awareness, so responders would now what to expect and how to prepare for a potential incident.

Figure 4.6. Existing and proposed city and rural fire protection districts in Latah County.

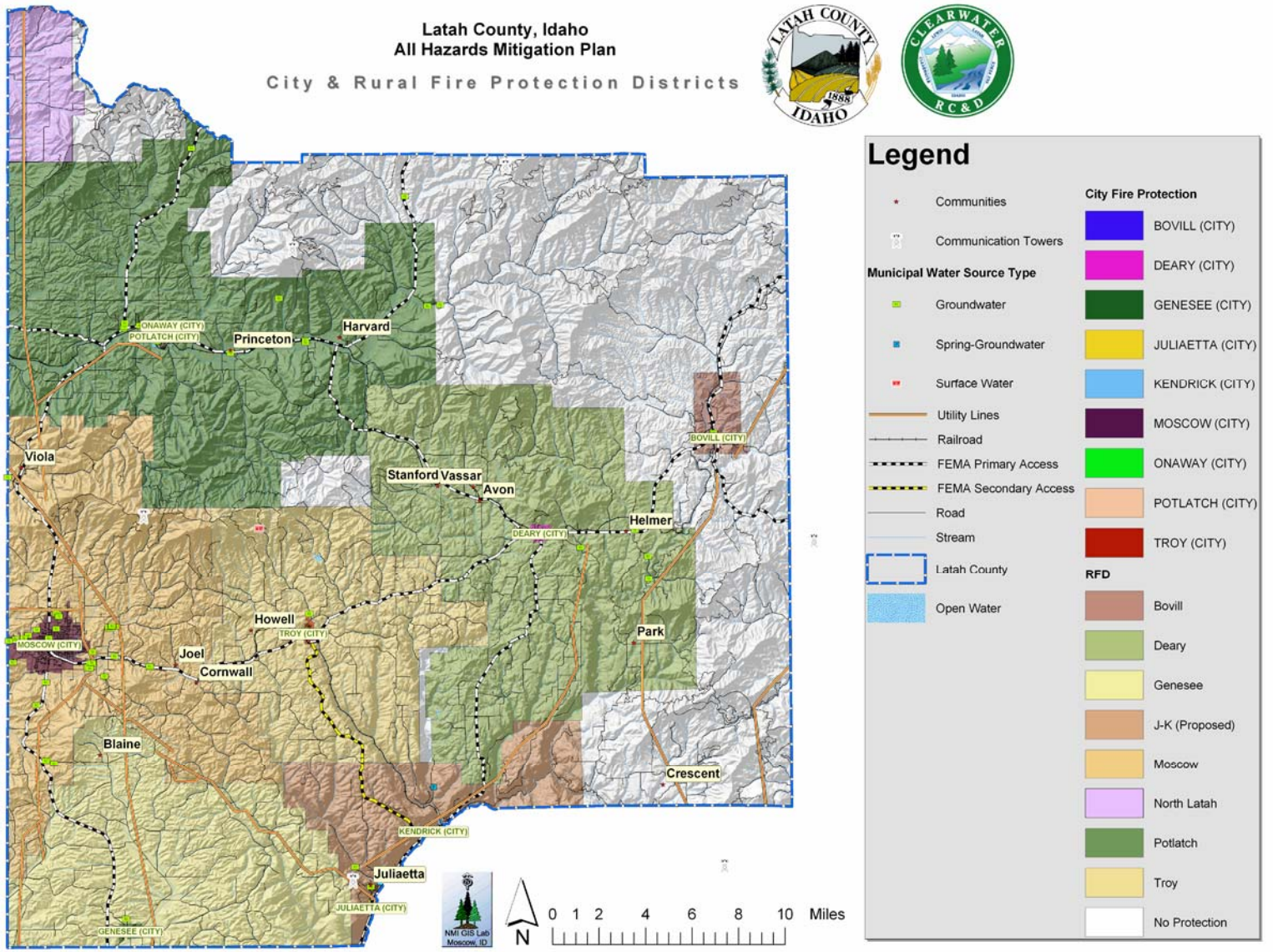
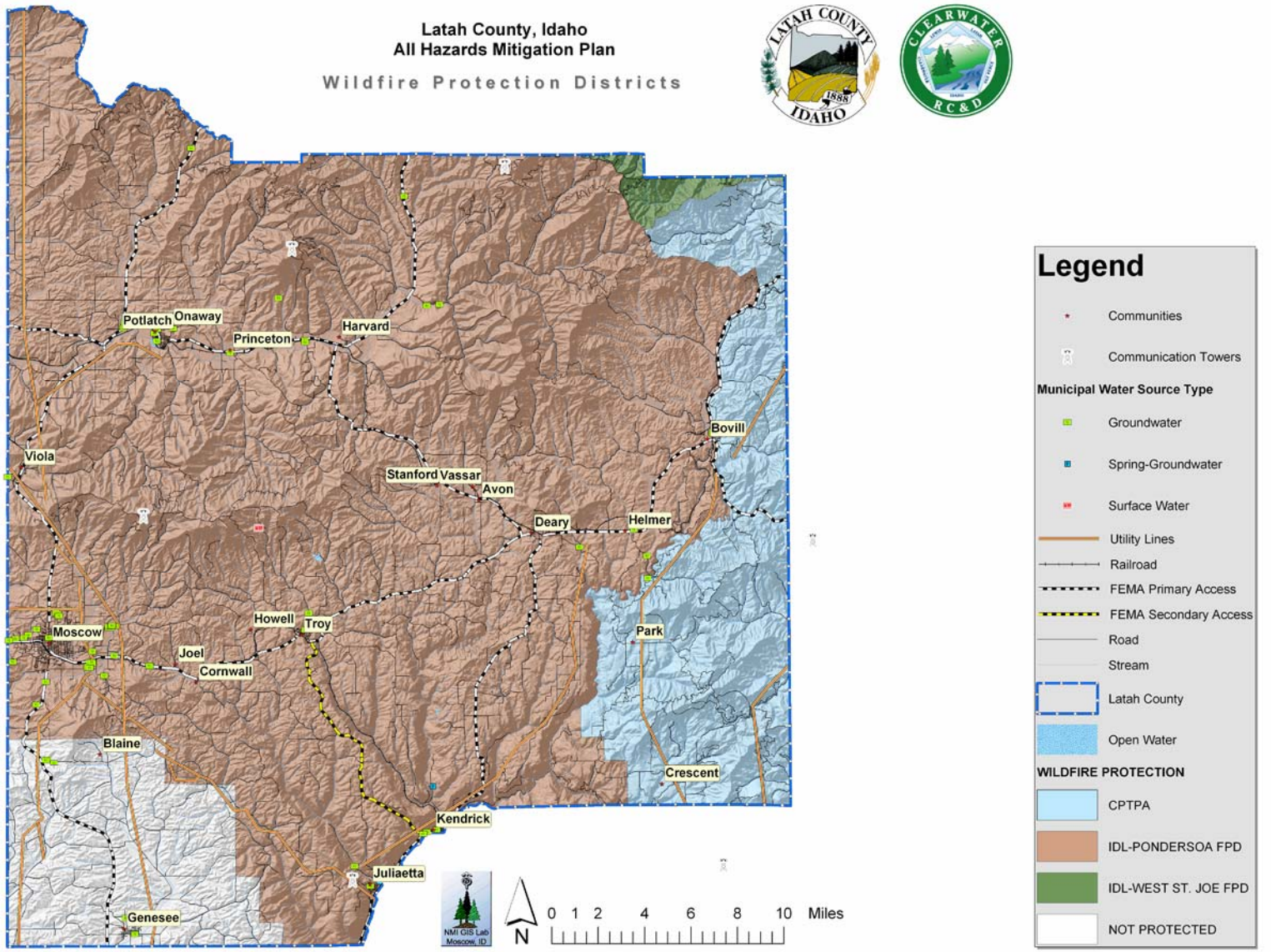


Figure 4.7. Wildland fire protection in Latah County.



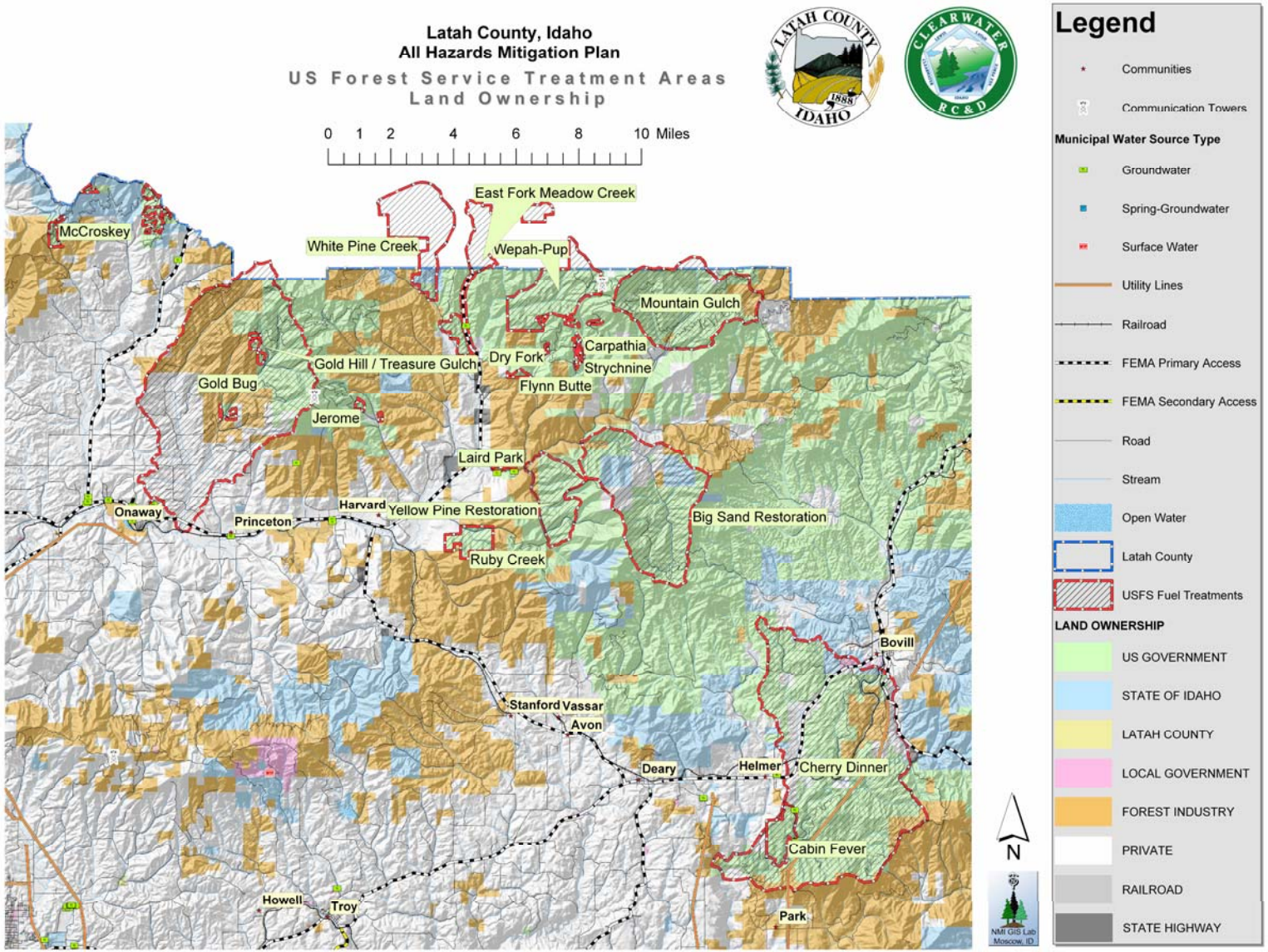
4.12 Current Wildfire Mitigation Activities in Latah County.

The USDA Forest Service, Palouse Ranger District has developed a number of fuels mitigation projects under the Healthy Forests Restoration Act which, when implemented, will lead to a mitigation of the hazardous fuels in Latah County. These proposed projects are consistent with the goals of this County Wildfire Mitgiation Plan. Table 4.29 details the project names are scope of the proposed projects. Figure 4.7 shows the tentative location of each of the listed projects.

Table 4.29. Fuels mitigation projects proposed by the USDA Forest Service.

Project Area	Project Number	Project Type	Acres
Big Sand Restoration	1	Nepa Cleared Projects	7,475
Cabin Fever	2	Nepa Cleared Projects	768
Carpathia	3	Project in Planning Phase	53
Cherry Dinner	4	Project in Planning Phase	19,729
Dry Fork	6	Thinnings	21
East Fork Meadow Creek	7	Nepa Cleared Projects	1,609
Flynn Butte	8	Project in Planning Phase	70
Gold Bug	9	Project in Planning Phase	17,722
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	37
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	52
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	51
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	13
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	24
Gold Hill / Treasure Gulch	10	Nepa Cleared Projects	25
Jerome	11	Thinnings	51
Jerome	11	Thinnings	22
Laird Park	12	Project in Planning Phase	39
McCroskey	13	Nepa Cleared Projects	40
McCroskey	13	Nepa Cleared Projects	91
McCroskey	13	Nepa Cleared Projects	96
McCroskey	13	Nepa Cleared Projects	34
McCroskey	13	Nepa Cleared Projects	161
McCroskey	13	Nepa Cleared Projects	146
Mountain Gulch	14	Nepa Cleared Projects	5,776
Ruby Creek	16	Project in Planning Phase	700
Strychnine	17	Thinnings	24
Strychnine	17	Thinnings	13
Strychnine	17	Thinnings	29
Strychnine	17	Thinnings	37
Strychnine	17	Thinnings	55
Strychnine	17	Thinnings	19
Wepah-Pup	20	Nepa Cleared Projects	2,661
White Pine Creek	21	Nepa Cleared Projects	2,839
White Pine Creek	21	Nepa Cleared Projects	387
Yellow Pine Restoration	22	Nepa Cleared Projects	2,064

Figure 4.8. Fuels treatment areas proposed by the USDA Forest Service, in Latah County.



Chapter 5: Treatment Recommendations

5 Administration & Implementation Strategy

Critical to the implementation of this 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 Latah County and the region. Since there are many land management agencies and thousands of private landowners in Latah 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.

Latah County encourages the philosophy of instilling disaster resistance in normal day-to-day operations. By implementing plan activities through existing programs and resources, the cost of mitigation is often a small portion of the overall cost of a project's design or program.

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

All risk assessments were made based on the conditions existing during 2004-05, thus, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of the county's resources are not static. It will be necessary to fine-tune this plan's recommendations annually to adjust for changes in the components of risk, population density changes, infrastructure modifications, and other factors.

As part of the Policy of Latah County in relation to this planning document, this entire **Wildfire Mitigation Plan** should be reviewed annually at a special meeting of the Latah County Commissioners, open to the public and involving all municipalities/jurisdictions, where action items, priorities, budgets, and modifications can be made or confirmed. A written review of the plan should be prepared (or arranged) 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 Wildfire Mitigation Plan. Re-evaluation of this plan should be made on the 5th anniversary of its acceptance, and every 5-year period following.

5.1 Prioritization of Mitigation Activities

Prioritization of projects will occur at the County, City, agency, and private levels. Differing prioritization processes will occur, however, the county and cities will adopt the following prioritization process, as indicated through the adoption of this plan by each municipality.

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

County Commissioners and the elected officials of all jurisdictions will evaluate opportunities and establish their own unique priorities to accomplish mitigation activities where existing funds and resources are available and there is community interest in implementing mitigation measures. If no federal funding is used in these situations, the prioritization process may be less formal. Often the types of projects that the County can afford to do on their own are in relation to improved codes and standards, department planning and preparedness, and education. These types of projects may not meet the traditional project model, selection criteria, and benefit-cost model. The County will consider all pre-disaster mitigation proposals brought before the County Commissioners by department heads, city officials, fire districts and local civic groups.

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

The prioritization of projects will occur annually and be facilitated by the County Disaster Services Coordinator to include the County Commissioner's Office, City Mayors and Councils, Fire District Chiefs and Commissioners, agency representatives (USFS, State Lands, etc.). The prioritization of projects will be based on the selection of projects which create a balanced approach to pre-disaster mitigation which recognizes the hierarchy of treating in order (highest first):

- People and Structures
- Infrastructure
- Local and Regional Economy
- Traditional Way of Life
- Ecosystems

5.1.1 Prioritization Scheme

A numerical scoring system is used to prioritize projects. This prioritization serves as a guide for the county when developing mitigation activities. This project prioritization scheme has been designed to rank projects on a case by case basis. In many cases, a very good project in a lower priority category could outrank a mediocre project in a higher priority. The county mitigation program does not want to restrict funding to only those projects that meet the high priorities because what may be a high priority for a specific community may not be a high priority at the county level. Regardless, the project may be just what the community needs to mitigate disaster. The flexibility to fund a variety of diverse projects based on varying reasons and criteria is a necessity for a functional mitigation program at the County and community level.

To implement this case by case concept, a more detailed process for evaluating and prioritizing projects has been developed. Any type of project, whether county or site specific, will be prioritized in this more formal manner.

To prioritize projects, a general scoring system has been developed. This prioritization scheme has been used in statewide all hazard mitigations plans. These factors range from cost-benefit ratios, to details on the hazard being mitigated, to environmental impacts.

Since planning projects are somewhat different than non-planning projects when it comes to reviewing them, different criteria will be considered, depending on the type of project.

The factors for the non-planning projects include:

- Cost/Benefit
- Population Benefit
- Property Benefit
- Economic Benefit
- Project Feasibility (environmentally, politically, socially)
- Hazard Magnitude/Frequency
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development
- Potential project effectiveness and sustainability

The factors for the planning projects include:

- Cost/Benefit
- Vulnerability of the community or communities
- Potential for repetitive loss reduction
- Potential to mitigate hazards to future development

Since some factors are considered more critical than others, two ranking scales have been developed. A scale of 1-10, 10 being the best, has been used for cost, population benefit, property benefit, economic benefit, and vulnerability of the community. Project feasibility, hazard magnitude/frequency, potential for repetitive loss reduction, potential to mitigate hazards to future development, and potential project effectiveness and sustainability are all rated on a 1-5 scale, with 5 being the best. The highest possible score for a non-planning project is 65 and for a planning project is 30.

The guidelines for each category are as follows:

5.1.1.1 Benefit / Cost

The analysis process will include summaries as appropriate for each project, but will include benefit / cost analysis results, Projects with a negative benefit / cost analysis result will be ranked as a 0. Projects with a positive Benefit / Cost analysis will receive a score equal to the projects Benefit / Cost Analysis results divided by 10. Therefore a project with a BC ratio of 50:1 would receive 5 points, a project with a BC ratio of 100:1 (or higher) would receive the maximum points of 10.

5.1.1.2 Population Benefit

Population Benefit relates to the ability of the project to prevent the loss of life or injuries. A ranking of 10 has the potential to impact over 3,000 people. A ranking of 5 has the potential to impact 100 people, and a ranking of 1 will not impact the population. In some cases, a project may not directly provide population benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects the population, but should not be considered to have no population benefit.

5.1.1.3 Property Benefit

Property Benefit relates to the prevention of physical losses to structures, infrastructure, and personal property. These losses can be attributed to potential dollar losses. Similar to cost, a ranking of 10 has the potential to save over $1,000,000 in losses, a ranking of 5 has the potential to save roughly $100,000 in losses, and a ranking of 1 only has the potential to save less than $100 in losses. In some cases, a project may not directly provide property benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly effects property, but should not be considered to have no property benefit.

5.1.1.4 Economic Benefit

Economic Benefit is related to the savings from mitigation to the economy. This benefit includes reduction of losses in revenues, jobs, and facility shut downs. Since this benefit can be difficult to evaluate, a ranking of 10 would prevent a total economic collapse, a ranking of 5 could prevent losses to about half the economy, and a ranking of 1 would not prevent any economic losses. In some cases, a project may not directly provide economic benefits, but may lead to actions that do, such as in the case of a study. Those projects will not receive as high of a rating as one that directly affects the economy, but should not be considered to have no economic benefit.

5.1.1.5 Vulnerability of the Community

For planning projects, the vulnerability of the community is considered. A community that has a high vulnerability with respect to other jurisdictions to the hazard or hazards being studied or planned for will receive a higher score. To promote planning participation by the smaller or less vulnerable communities in the state, the score will be based on the other communities being considered for planning grants. A community that is the most vulnerable will receive a score of 10, and one that is the least, a score of 1.

5.1.1.6 Project Feasibility (Environmentally, Politically & Socially)

Project Feasibility relates to the likelihood that such a project could be completed. Projects with low feasibility would include projects with significant environmental concerns or public opposition. A project with high feasibility has public and political support without environmental concerns. Those projects with very high feasibility would receive a ranking of 5 and those with very low would receive a ranking of 1.

5.1.1.7 Hazard Magnitude/Frequency

The Hazard Magnitude/Frequency rating is a combination of the recurrence period and magnitude of a hazard. The severity of the hazard being mitigated and the frequency of that event must both be considered. For example, a project mitigating a 10-year event that causes significant damage would receive a higher rating than one that mitigates a 500-year event that causes minimal damage. For a ranking of 5, the project mitigates a high frequency, high magnitude event. A 1 ranking is for a low frequency, low magnitude event. Note that only the damages being mitigated should be considered here, not the entire losses from that event.

5.1.1.8 Potential for repetitive loss reduction

Those projects that mitigate repetitive losses receive priority consideration here. Common sense dictates that losses that occur frequently will continue to do so until the hazard is mitigated. Projects that will reduce losses that have occurred more than three times receive a rating of 5. Those that do not address repetitive losses receive a rating of 1. Potential to mitigate hazards to future development Proposed actions that can have a direct impact on the vulnerability of future development are given additional consideration. If hazards can be mitigated on the onset of the development, the county will be less vulnerable in the future. Projects that will have a significant effect on all future development receive a rating of 5. Those that do not affect development should receive a rating of 1.

5.1.1.9 Potential project effectiveness and sustainability

Two important aspects of all projects are effectiveness and sustainability. For a project to be worthwhile, it needs to be effective and actually mitigate the hazard. A project that is questionable in its effectiveness will score lower in this category. Sustainability is the ability for the project to be maintained. Can the project sustain itself after grant funding is spent? Is maintenance required? If so, are or will the resources be in place to maintain the project. An action that is highly effective and sustainable will receive a ranking of 5. A project with effectiveness that is highly questionable and not easily sustained should receive a ranking of 1.

5.1.1.10 Final ranking

Upon ranking a project in each of these categories, a total score can be derived by adding together each of the scores. The project can then be ranking high, medium, or low based on the non-planning project thresholds of:

Project Ranking Priority Score

- High 40-65
- Medium 25-39
- Low 9-25

5.2 Possible Wildfire Mitigation Activities

As part of the implementation of wildfire mitigation activities in Latah County, a variety of management tools may be used. Management tools include but are not limited to the following:

- Homeowner and landowner education
- Policy 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)
- 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.

5.3 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.

Table 5.1. WUI Action Items in Safety and Policy.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.1.a: Amend existing building codes to apply equally to new single housing construction as it does to subdivisions.	**Protection of people and structures** by applying a standard of road widths, access, and building regulations to insure new homes can be protected while curtailing risks to fire fighters (defensible space, 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 (2005). • Review adequacy of changes annually, make changes as needed.
5.1.b: Rural Signage (Road Signs & Rural Fire District Boundary Signs) Improvements across the county	**Protection of people, structures, and infrastructure** by improving the ability of emergency services personnel, residents, and visitors to navigate roads.	Highway Districts in cooperation with County Commissioners and Rural Fire Departments	Can be completed during year 1 (2005) pending funding to implement the project. Estimate $15,000 for signs and posting.
5.1.c: Develop County policy concerning building materials used in high-risk WUI areas on existing structures and new construction (e.g., Troy, Deary, Helmer, Bovill, Kendrick, Juliaetta)	**Protection of people and structures** by improving the ability of emergency response personnel to respond to threatened homes in high-risk areas.	Planning and Zoning in cooperation with County Commissioners Office and Rural Fire Departments	**Year 1 (2005) activity:** Consider and develop policy 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.

Table 5.1. WUI Action Items in Safety and Policy.

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
5.1.d: Develop a formal WUI Advisory Committee to advise County Commissioners on WUI Issues and Treatments	**Protection of people and structures** by improving the ability of decision makers to make informed decisions about wildfire issues.	**County Commissioners Office**	**Year 1 (2005) activity:** Formalize a committee, its membership and service decided on by the County Commissioners, to collaborate on WUI issues within Latah County. Members potentially to include land management organizations and companies, private landowners, and fire protection personnel.
5.1.e: Provide funding for a full-time Geographic Information System position at the Latah County Courthouse.	**Protection of people and structures** by improving County maps and data systems used by emergency services personnel, highway districts and other officials.	**County Commissioners Office** and Planning and Zoning.	**Year 1 (2005) activity:** Seek funding for full-time GIS staff position. Post job listing for potential candidates.
5.1.f: Adoption of International Fire Code and creation of a County Fire Warden position that would inspect sites for compliance to the Code as well as enforce the mandates of the Code.	**Protection of people and structures** by improving the ability of emergency services personnel to safely and effectively respond to home fires.	**Planning and Zoning** with County Commissioners Office and Rural Fire Departments.	**Year 1 (2005) activity:** Consider and develop policy to adopt the International Fire Code regulations adopted by the State of Idaho and seek funding to create a County Fire Warden position.
5.1.g. Creation of Latah County Fire Warden position.	**Protection of people and structures** by improving the ability of decision makers to make informed decisions about wildfire issues, and fire fighters to gain organized training opportunities.	**County Commissioners Office, in cooperation with rural fire protection districts.**	**Year 1 (2005) activity-** Identify funding source and job description to include: • Coordination with rural fire chiefs • Fire Code adherence in the County related to new construction • Training coordinator for Latah County fire chiefs • Coordination as fuel mitigation coordinator for county and cities **Year 1 (2005) activity:** Advertise for position and hire individual for post.

5.4 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 Latah 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, the common theme was present that pointed to a situation of landowners not recognizing risk factors:

- 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 generally identify risk factors.
- A large number of the respondents to the public mail survey (49%) indicated 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.

Residents and policy makers of Latah 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 Latah 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 Latah 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 Latah 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 additional sets of eyes into the forests and rangelands of the county where they may observe ignitions, or potentially risky activities. Livestock grazing in this region should be encouraged in the future as a low cost, positive tool of wildfire mitigation in the Wildland-Urban Interface and in the wildlands.
- **Forest Management** in Latah County has been affected greatly by the reduction of operating sawmills in the region. However, the active forest management program of the U.S. Forest Service, Idaho Department of Lands, and many of the private and industrial forestland owners in the region has led to a significant reduction of wildland fuels where they are closest to homes and infrastructure. In addition, forest resource professionals managing these lands, and the lands of the state and federal agencies are generally trained in wildfire protection and recognize risk factors when they occur. One of the reasons that Latah County forestlands have not been impacted by wildland fires to a greater degree historically, is the presence and activities related to active forest management.
- **Agriculture** is a significant component of Latah County's economy. Much of the rangeland interface is made up of a mosaic of agricultural crops, even extending to the forestland interface. The original conversion of these lands to agriculture from rangeland and forestland, was targeted at the most productive soils and juxtaposition to water. Many of these productive rangeland 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 much of the landscape historically prone to frequent fires, has been converted to agriculture, which is at a much lower risk than prior to its conversion. The preservation of a viable agricultural economy in Latah 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 • State and Private Forestry Offices • Bureau of Land Management • Local School Districts • Cities of Latah County	To start immediately using existing educational program materials and staffing. Formal needs assessment should be responsibility of University of Idaho Cooperative Extension faculty and include the development of an integrated WUI educational series by year 2 (2006). 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 implemented by **County Commissioners Office** in cooperation with the **Rural Fire Departments and Wildland Fire Protection Specialists, and every city municipality in the county**. Actual work may be completed by Wildfire Mitigation Consultants.	• **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 (2005-06) • Homesite inspection reports and estimated budget for each homesite's treatments will be a requirement to receive funding for treatments through grants.
	Home site inspections:	• Bovill Area: 40 structures – 100% in need of assessments, estimated cost $4,000 • Deary Area: 80 structures – 80% in need of assessments, estimated cost $6,400 • Genesee Area: 45 structures – 40% in need of assessments, estimated cost $1,800 • Juliaetta Area: 75 structures – 90% in need of assessments, estimated cost $6,750 • Kendrick Area: 38 structures – 80% in need of assessments, estimated cost $3,040 • Troy Area: 120 structures – 80% in need of assessments, estimated cost $9,600 • Moscow Area: 500 structures – 75% in need of assessments, estimated cost $37,500 • Onaway/Potlatch/Harvard/Princeton: 472 structures – 85% in need of assessments, estimated cost $40,120 • Other rural areas: 3,200 structures – 85% in need of assessments, estimated cost $272,000 • Total Estimated cost for Home site inspections, and fuels treatment recommendation development $381,210	

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.c: Homesite WUI Treatments	**Protect people, structures, and increase fire fighter safety** by reducing the risk factors surrounding homes in the WUI of Latah County	**County Commissioners** in cooperation with Cities, rural fire districts, Idaho Department of Lands, and USDA Forest Service *Complete concurrently with 5.4.b*	• Actual funding level will be based on the outcomes of the homesite assessments and cost estimates • **Estimate** that treatments in rangelands will cost approximately $850 per homesite for a defensible space of roughly 150'. • Estimate that treatments in forestland will cost roughly $1,000 per homesite for a defensible space of about 200'. • Homesite treatments can begin with the securing of funding for the treatments and immediate implementation in 2004 and will continue from year 1 through 5 (2008).
	Home site treatments: *Estimating average cost of $950 per homesite*	• Bovill Area: 40 structures – 100% in need of assessments, estimated cost $417,210 • Deary Area: 80 structures – 80% in need of assessments, estimated cost $60,800 • Genesee Area: 45 structures – 40% in need of assessments, estimated cost $17,100 • Juliaetta Area: 75 structures – 90% in need of assessments, estimated cost $64,125 • Kendrick Area: 38 structures – 80% in need of assessments, estimated cost $28,880 • Troy Area: 120 structures – 80% in need of assessments, estimated cost $91,200 • Moscow Area: 500 structures – 75% in need of assessments, estimated cost $356,250 • Onaway/Potlatch/Harvard/Princeton: 472 structures – 85% in need of assessments, estimated cost $381,140 • Other rural areas: 3,200 structures – 85% in need of assessments, estimated cost $2,584,000 • Total Estimated cost for Home site inspections, and fuels treatment recommendation development $3,619,565	

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.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 WUI of Latah County	**County Commissioners** in cooperation with the **Idaho Department of Lands** and the **BLM** to identify funding availability and project implementation opportunities.	• Actual funding level will be based on the outcomes of the homesite assessments and cost estimates. • **Years 2-5 (2006-09):** Treat high risk wildland fuels from homesite defensible space treatments to an area extending 400 feet to 750 feet beyond home defensible spaces, where steep slopes and high accumulations of risky fuels exist near homes and infrastructure. 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. • **Communities and areas to target:** Others based on additional assessments.
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 Latah 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 • Estimated re-inspection cost will be $50 per homesite on all sites initially treated or recommended for future inspections • 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 Latah 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.

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.g: Access Improvements of bridges, cattle guards, culverts, and limiting road surfaces (e.g. Sperry Bridge, McGary Bridge, Little Bear Creek crossing at Troy, Flat Creek crossing on State Highway 9)	**Protection of people, structures, infrastructure, and economy** by improving access for residents and fire 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.	**Highway Districts** in cooperation with the BLM, State of Idaho (Lands and Transportation), and industrial forestland owners (e.g., Boise Corp.).	• **Year 1 (2005):** Update existing assessment of travel surfaces, bridges, and cattle guards in Latah County as to location. Secure funding for implementation of this project (grants) • **Year 2 (2006):** Conduct engineering assessment of limiting weight restrictions for all surfaces (e.g., bridge weight load maximums). Estimate cost of $100,000 which might be shared between County, BLM, State, and private based on landownership associated with road locations. • **Year 2 (2006):** Post weight restriction signs on all limiting crossings, copy information to rural fire districts and wildland fire protection agencies in affected areas. Estimate cost at roughly $15-$25,000 for signs and posting. • **Year 3 (2007):** 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 through road-side fuels management	**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 can be linked to a terrain based defensible areas.	**County Highway Districts** in cooperation with BLM, State of Idaho (Lands and Transportation), USFS and industrial forestland owners.	• **Year 1 (2005):** Update existing assessment of roads in Latah County as to location. Secure funding for implementation of this project (grants). • **Year 2 (2006):** Specifically address access issues to Troy, Deary, Helmer, Bovill, Viola, and others identified in assessment, such as Highway 12 corridor. Identify forestland and rangeland fuels difficult to control during wildfire that would also respond well to thinning, pruning, and brush cutting (hand pile and burn or chip), while increasing ingress and egress use in wildfire emergencies. Target 100' on downhill side of roads and 75' on uphill side for estimated cost of $15,000 per mile of road treated. If 10 miles of roadway are prioritized for treatment (est.) **B/C Ratio of 14.7:1 is achieved**. This B/C ratio may be maintained in many rural treatment areas of the county. • **Year 3 (2007):** Secure funding and implement projects to treat road-side fuels.

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.i: Development of "Community Emergency Response Team" program in communities.	**Protection of people, structures, infrastructure, and economy** by improving emergency response and recruiting more local residents for emergency response organizations (i.e. fire departments, ambulance, police departments)	**Latah County Disaster Services** and community governments.	• **2005** develop team and objectives, implement program including emergency services personnel

5.5 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 the North Central Idaho Area, and to Latah County specifically. These networks are by definition a part of the Wildland-Urban Interface in the protection of people, structures, **infrastructure**, and unique ecosystems. Without supporting infrastructure a community's structures may be protected, but the economy and way of life lost. As such, a variety of components will be considered here in terms of management philosophy, potential policy recommendations, and recommendations.

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 directly local networks, little needs to be done to insure the system's viability.

Transportation Infrastructure (road and rail networks): This component of the WUI has some significant potential limitations in Latah County. U.S. Highway 95 is the primary maintained route linking north and south Idaho. Thus, most intrastate traffic flowing north to south or vice versa travels through the County. Also, State Highways 3, 6, and 8 connect the more remote communities with the commercial hubs of Moscow and nearby Lewiston and St. Maries. In many cases, these roads are the only primary route to and from the smaller Latah County communities. In the event these highways are disabled, access or evacuation to some areas may become limited to seasonally maintained secondary roads or forest routes.

Other roads in the county have limiting characteristics, such as 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 roads access remote forestland and rangeland areas. While their improvements will facilitate access in the case of a wildfire, they are not 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.

Energy Transport Supply Systems (gas and power lines): A number of power lines crisscross Latah County. Unfortunately, many of these power lines cross over forestland ecosystems. When fires ignite in these vegetation types, the fires 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 Latah County, water is supplied to many homes by single home or multiple home wells. However, the community of Troy depends on the Big Creek Watershed as its primary water source.

As a priority recommendation of this plan, it is strongly suggested that Watershed Management Plans for the Big Creek Watershed be completed 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.

5.5.1 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 County Highway Districts.	• Purchase of signs (2005). • 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 County Highway Districts.	• Full assessment of road defensibility and ownership participation (2005). • Implementation of projects (linked to item 5.2.g, 5.2.h, and 5.2.i.
5.3.c. Watershed Management Plan Completion for the Big Creek 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 (2005). • Implementation of projects based on results of watershed management plans.

5.6 Resource and Capability Enhancements

There are a number of resource and capability enhancements identified by the rural and wildland fire fighting districts in Latah 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 repeated themes of needed resources and capabilities include:

- Improved radio capabilities within each district and for mutual aid operations
- Retention and recruitment of volunteers
- Training and development of rural fire fighters in structure and wildland fire
- Development of rural fire district for the Kendrick-Juliaetta area and supporting equipment and personnel.

Although additional, and specific, needs were enumerated by the districts in Latah County, these items were identified by multiple districts and in the public meetings. The implementation of each issue will rely on either the isolated efforts of the rural fire districts or a concerted effort

by the county to achieve equitable enhancements across all of the districts. Given historic trends, individual departments competing against neighboring departments for grant monies and equipment will not necessarily achieve county wide equity. However, the Clearwater Resource Conservation and Development Council, Inc., may be an organization uniquely suited to work with all of the districts in Latah County and adjacent counties to assist in the prioritization of needs across district and even county lines. Once prioritized, the Clearwater RC&D 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 in to existing dispatch, and improve range within the region, conversion to consistent standard of radio types	**Protection of people and structures** by direct fire fighting capability enhancements.	**Clearwater RC&D** in cooperation with rural and wildland fire districts, and Latah County Commissioners.	• **Year 1 (2005):** Summarize existing two-way radio capabilities and limitations. Identify costs to upgrade existing equipment and locate funding opportunities. • **Year 2 (2006):** Acquire and install upgrades as needed.
5.4.b: 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 (2005):** Develop incentives program and implement it.
5.4.c: 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 and USFS** for wildland training opportunities and with the **State Fire Marshall's Office** for structural fire fighting training.	• **Year 1 (2005):** 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 of each to acquire. • Year 1 (2005): Begin implementing training opportunities for volunteers.

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.d. Develop and update Mutual Aid Agreements between all Rural Fire Districts and the Federal and State wildfire fighting agencies working in and around Latah County.	**Protection of people and structures** by direct fire fighting capability enhancements.	Rural and Wildland Fire Districts, BLM, USFS, BIA, IDL, State Fire Marshall's Office.	• 2005: Identify current mutual aid agreements and needed agreements. • Draft and implement agreements across the county.
5.4.e: Facility, land, business plan, and basic supplies for Kendrick-Juliaetta Rural Fire District.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners and Kendrick and Juliaetta city governments.	• Estimate of costs ○ $500,000 • 2 year planning horizon
5.4.f: Genesee Rural Fire Department to cover wildfires in "no mans Land" to the south.	**Protection of people and structures** by direct fire fighting capability enhancements.	Genesee Rural Fire Department, city of Genesee	• Define boundaries and legally annex this area into the Genesee Rural Fire Department coverage area.
5.4.g: Add additional repeater or move Elk Butte repeater to McGary Butte for better coverage.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners and Rural Fire Departments, cities of Deary and Bovill	• **Year 1 (2005):** Develop a cost analysis of the two projects and decide which one is the most beneficial. Locate funding opportunities. • **Year 2 (2006):** Acquire necessary equipment and implement project.
5.4.h: Establish onsite water sources such as dry hydrants or underground storage tanks for rural housing developments.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners and Rural Fire Departments	• Identify populated areas lacking sufficient water supplies and develop project plans to develop fill or helicopter dipping sites. • Implement project plans.
5.4.i: Acquire vehicle to tow mobile command unit and provide additional training of personnel to operate.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners, Rural Fire Departments, and other emergency response organizations.	• **Year 1 (2005):** Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources. • **Year 1 or 2 (2005-06):** Acquire and deliver needed equipment to district based on prioritization by need and funding awards.

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.j: Obtain updated PPE's and a newer backup structural engine for Kendrick City Fire Department.	**Protection of people and structures** by direct fire fighting capability enhancements.	Kendrick Volunteer Fire Department, City of Kendrick	• **Year 1 (2005):** Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources. • **Year 1 or 2 (2005-06):** Acquire and deliver needed equipment to district based on prioritization by need and funding awards.
5.4.k: Additional storage facility, updated rolling stock, training, and personal protective equipment for Juliaetta City Fire Department.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners, Juliaetta City Council, and Juliaetta City Fire Department.	• Estimate of Costs: ○ $500,000 • **2 Year Planning Horizon**
5.4.l: Obtain mobile repeater stations with back up power source.	**Protection of people and structures** by direct fire fighting capability enhancements.	County Commissioners, Clearwater RC&D, IDL, USDA Forest Service, and local fire departments.	• **Year 1 (2005):** Verify stated need still exists, develop budget, and locate funding or equipment (surplus) sources. • **Year 1 or 2 (2005-06):** Acquire and deliver needed equipment to districts based on prioritization by need and funding awards.

5.7 Regional Land Management Recommendations

Reference has been given to the role that forestry, grazing and agriculture have in promoting wildfire mitigation services through active management. Latah County is a rural county by any measure. It is dominated by wide expanses of forest and rangelands intermixed with communities and rural houses.

Wildfires will continue to ignite and burn depending on the weather conditions and other factors enumerated earlier. However, active land management that modifies fuels, promotes healthy 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 forestland owners, private forestland owners, and all agricultural landowners in the region to actively manage their Wildland-Urban Interface lands in a manner consistent with reducing fuels and risks in this zone.

5.7.1 USDA Forest Service Projects

The Forest Service guiding documents used to determine land use are the National Fire Plan (NFP), Healthy Forest Restoration Act (HFRA), and the goal statements of the Agency to implement ecosystem restoration, protect communities from wildland fires, and to utilize

prescribed fire as a tool in the restoration of the forest and to reduce the effects of wildfire leading to catastrophic loss. During the development of this project acres managed by the Agency that are in Fire Regime Condition Class II and III were analyzed, as defined by the Forest Service and managed by the Agency within the Wildland Urban Interface (WUI), and the vegetation types that are present on these lands. The acres within the WUI in each County have been mapped and these areas have been identified by the Forest Service as high priority areas to be treated under the NFP and the HFRA.

Within Latah County, there are approximately 558,825 acres of Wildland-Urban Interface, of this land the US Forest Service manages approximately 32,307 acres of it. These acres were analyzed for their Current Fire Regime Condition Class. Approximately 17,648 acres of the USDA Forest Service managed lands in Latah County are within the WUI and are also currently rated in Fire Regime Condition Class 2 or 3. These are the priority acres in Latah County for the USDA Forest Service to treat. Appendix I has a map of these areas specifically identified. Most of the high risk lands in the vicinity of Harvard have treatment plans planned or proposed already. Implementation of these projects and future projects in this area is supported by the County. The high risk areas surrounding Bovill and Helmer are a high priority to get mitigation projects proposed and implemented. These projects are a very high priority in terms of the protection of life and resources through targeted fuels management.

Chapter 6: Supporting Information

6

6.1 List of Tables

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.

Table 6.1. List of Preparers

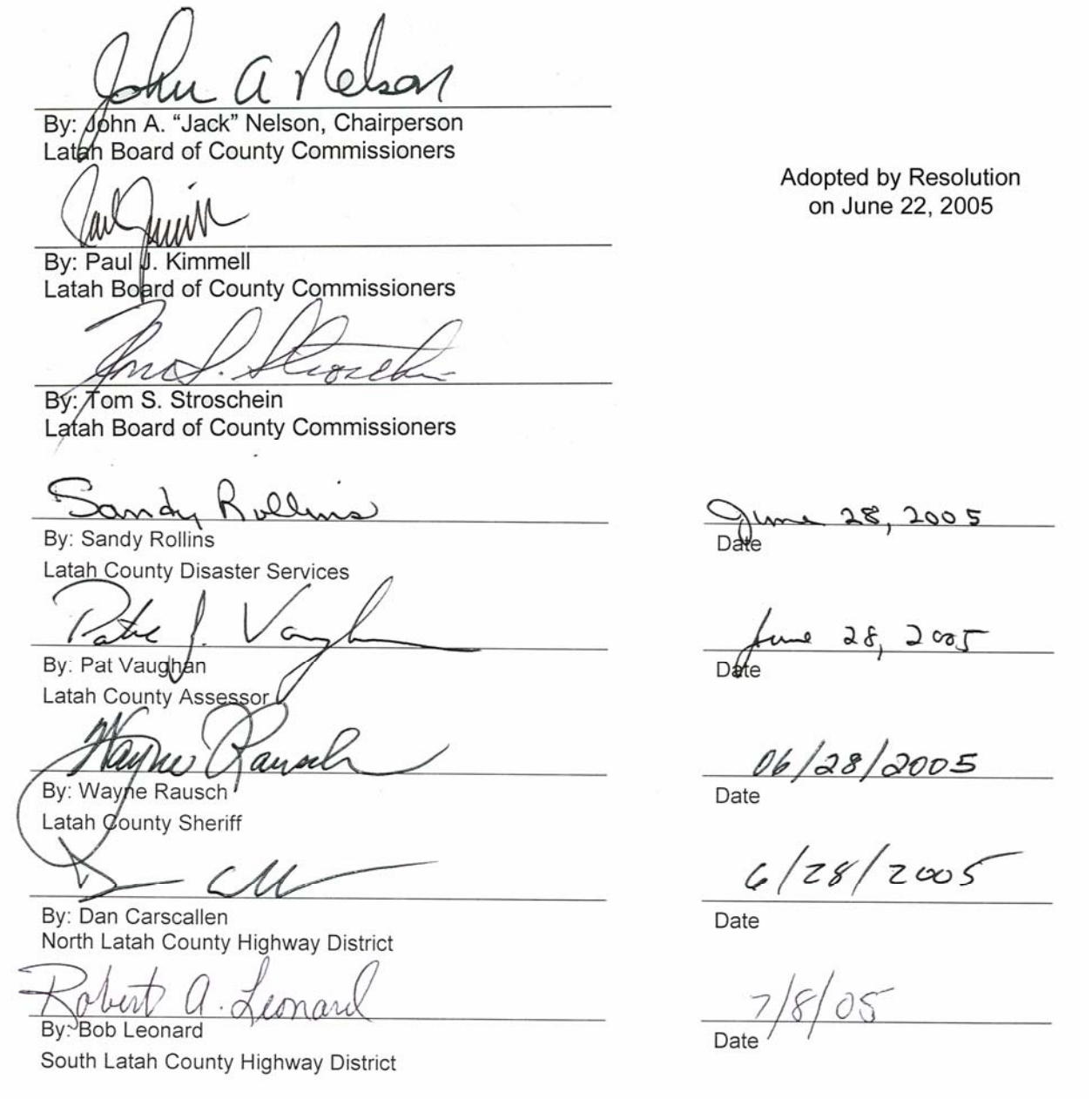
Name	Affiliation	Role
William E. Schlosser, Ph.D.	Northwest Management, Inc.	**Lead Author,** Project Co-Manager, GIS Analyst, Natural Resource Economist, Hazard Mitigation Specialist, Regional Planner
Tera Duman, B.S.	Northwest Management, Inc.	Natural Resource Manager, Fire Control Technician
Vincent P. Corrao, B.S.	Northwest Management, Inc.	Resource Management Specialist, Deputy Project Manager
Toby R. Brown, B.S.	Northwest Management, Inc.	Natural Resource Manager, Project Co-Manager, Hazard Mitigation Specialist
John A. Erixson, M.S.	Northwest Management, Inc.	Range Management, Fire Specialist
Dennis S. Thomas	Northwest Management, Inc.	Fire & Fuels Specialist, Prescribed Burning Manager
Ken Homik, M.S.	Northwest Management, Inc.	Fire Use & Air Quality Specialist
Vaiden E. Bloch, M.S.	Northwest Management, Inc.	GIS Analyst
Greg Bassler, M.S.	Northwest Management, Inc.	Roads Engineer, Timber Sale Layout & Harvest Manager
Chris Terwilliger, B.S.	Northwest Management, Inc.	Resource Manager
Sandy Rollins	Latah County Disaster Services	Coordinator, Project Leadership

6.4 Signature Pages

This **Latah County Wildfire Mitigation Plan** has been developed in cooperation and collaboration with the representatives of the following organizations, agencies, and individuals.

6.4.1 Representatives of Latah County Government

This Wildfire Mitigation Plan and all of its components identified herein were adopted formally through a resolution of the Board of County Commissioners as of 22 June 2005, **resolution number 2005-16**, recorded in the official record of the Latah County Commissioners.



By: John A. "Jack" Nelson, Chairperson
Latah Board of County Commissioners

Adopted by Resolution
on June 22, 2005

By: Paul J. Kimmell
Latah Board of County Commissioners

By: Tom S. Stroschein
Latah Board of County Commissioners

By: Sandy Rollins
Latah County Disaster Services

June 28, 2005
Date

By: Pat Vaughan
Latah County Assessor

June 28, 2005
Date

By: Wayne Rausch
Latah County Sheriff

06/28/2005
Date

By: Dan Carscallen
North Latah County Highway District

6/28/2005
Date

By: Bob Leonard
South Latah County Highway District

7/8/05
Date

6.4.2 Representatives of City Government in Latah County

This All Hazards Mitigation Plan and all of its components identified herein were adopted formally through individual resolutions passed by each city government in Latah County. Individual resolutions of adoption have been included in the next sub-section of this report.

6.4.3 Representatives of City and Rural Fire Districts in Latah County

This Wildfire Mitigation Plan and all of its components identified herein were developed in close cooperation with the participating fire districts listed herein. Those fire districts which are a Latah County Entity or a City entity have shown their organization's adoption through the formal adoption of the County or the City. Fire protection districts which are independent of a city or the county have indicated their formal adoption of the All Hazards Mitigation Plan below:

Bob Shook — 6-29-05

By: Bob Shook, Chief — Date
Bovill Rural Fire Protection District

Tim Jones — 6/29/05

By: Tim Jones, Chief — Date
Deary Rural Fire District

Darrell Kilgore — 7/8/05

By: Darrell Kilgore, Chief — Date
Genesee City Fire Department

Mike McGee — 06-28-05

By: Mike McGee, Chief — Date
Juliaetta City Fire Department

[signature] — 6/28/05

By: Val Norris, Chief — Date
Kendrick City Fire Department

Don Strong — 6-27-05

By: Don Strong, Chief — Date
Moscow City & Moscow Rural Fire Departments

Ronald Stearns — 6/28/05

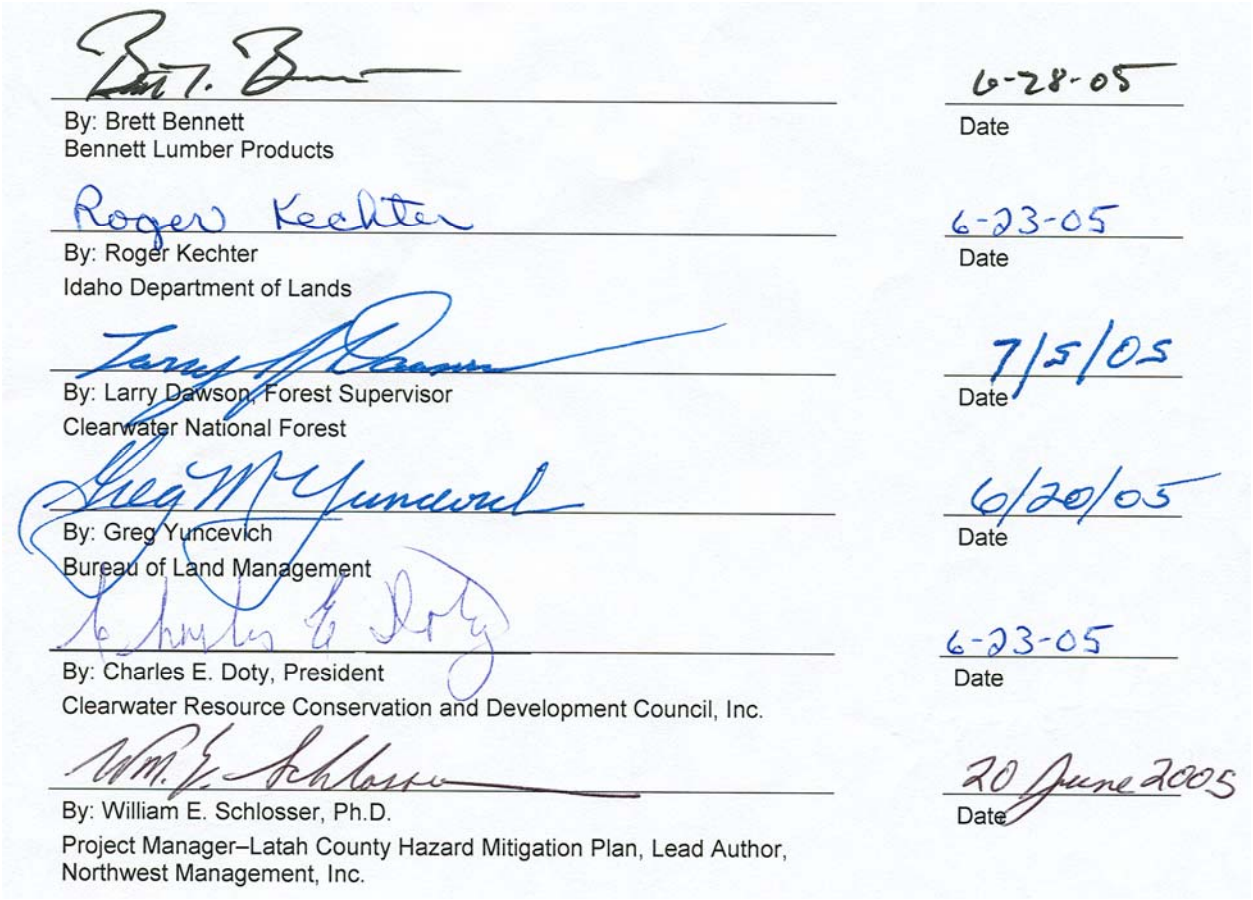
By: Ron Stearns, Chief — Date
Troy Rural Fire District

Gary Nagle — 6-30-05

By: Gary Nagle, Chief — Date
Potlatch Rural Fire District

6.4.4 Representatives of Federal and State Agencies, and Companies

This Wildfire Mitigation Plan was developed in cooperation and collaboration with the additionally listed agencies and organizations. These entities listed below are not elligable to "formally adopt" this plan, but will strive to implement its recommendations.



By: Brett Bennett
Bennett Lumber Products — Date: 6-28-05

By: Roger Kechter
Idaho Department of Lands — Date: 6-23-05

By: Larry Dawson, Forest Supervisor
Clearwater National Forest — Date: 7/5/05

By: Greg Yuncevich
Bureau of Land Management — Date: 6/20/05

By: Charles E. Doty, President
Clearwater Resource Conservation and Development Council, Inc. — Date: 6-23-05

By: William E. Schlosser, Ph.D.
Project Manager–Latah County Hazard Mitigation Plan, Lead Author,
Northwest Management, Inc. — Date: 20 June 2005

6.5 Resolutions of Adoption

The following resolutions have been adopted by the listed municipalities in Latah County.

6.5.1 Resolution of the Commissioners of Latah County, Idaho

Resolution of the Commissioners of Latah County, Idaho

2005-160

A resolution of the Commissioners of Latah County declaring County support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The Board of Latah County Commissioners supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the Latah County Commissioners,

Therefore be it resolved, that the Latah County Commissioners do hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 22 Day of June 2005

Board of County Commissioners
Latah County, Idaho

John A Nelson

By: John A. "Jack" Nelson, Chairperson
Latah Board of County Commissioners

By: Paul J. Kimmell
Latah Board of County Commissioners

By: Tom S. Stroschein
Latah Board of County Commissioners

K Rickert, Deputy 6-22-05

Attested by:
Susan Peterson, Clerk / Auditor / Recorder

6.5.2 Resolution of the City Council of Bovill

Resolution of the City Council of Bovill
located in Latah County, Idaho
#R-2005-

A resolution of the City Council of Bovill declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Bovill supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Bovill has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Bovill,

Therefore be it resolved, that the City Council of Bovill does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 27th Day of June 2005

City Council of Bovill located in Latah County, Idaho

By: Brad Dorendorf
Mayor, City of Bovill

Attested by:
Terry Christie, City Clerk

6.5.3 Resolution of the City Council of Deary

Resolution of the City Council of Deary
located in Latah County, Idaho
190

A resolution of the City Council of Deary declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Deary supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Deary has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Deary,

Therefore be it resolved, that the City Council of Deary does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 20th Day of June 2005

City Council of Deary located in Latah County, Idaho

John W Henderson

By: John Henderson
Mayor, City of Deary

Judy Heath

Attested by:
Judy Heath, City Clerk

6.5.4 Resolution of the City Council of Genesee

Resolution of the City Council of Genesee
located in Latah County, Idaho
2005-2

A resolution of the City Council of Genesee declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Genesee supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Genesee has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Genesee,

Therefore be it resolved, that the City Council of Genesee does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 15th Day of June 2005

City Council of Genesee located in Latah County, Idaho

By: Tim Sperber
Mayor, City of Genesee

CITY OF GENESEE
LATAH CO. IDAHO

Attested by:
Mert Geltz, City Clerk

6.5.5 Resolution of the City Council of Juliaetta

Resolution of the City Council of Juliaetta
located in Latah County, Idaho
#2005-02

A resolution of the City Council of Juliaetta declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Juliaetta supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Juliaetta has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Juliaetta,

Therefore be it resolved, that the City Council of Juliaetta does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 7th Day of June 2005

City Council of Juliaetta located in Latah County, Idaho

Jeff J Lohman

By: Jeff Lohman
Mayor, City of Juliaetta

Becky Jeffs

Attested by:
~~Mary Jo Vallem~~, City Clerk
Becky Jeffs

6.5.6 Resolution of the City Council of Kendrick

Resolution of the City Council of Kendrick
located in Latah County, Idaho
5-2007

A resolution of the City Council of Kendrick declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Kendrick supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Kendrick has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Kendrick,

Therefore be it resolved, that the City Council of Kendrick does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 27th Day of June 2005

City Council of Kendrick located in Latah County, Idaho

Dana Magnuson

By: Dana Magnuson
Mayor, City of Kendrick

Barbara Brady

Attested by:
Barbara Brady, City Clerk

6.5.7 Resolution of the City Council of Moscow

RESOLUTION NO. 2005 - 07

A RESOLUTION OF THE CITY OF MOSCOW, A MUNICIPAL CORPORATION OF THE STATE OF IDAHO, DECLARING SUPPORT AND ADOPTION OF THE LATAH COUNTY ALL HAZARDS MITIGATION PLAN, WHICH INCLUDES THE WILDLAND-URBAN INTERFACE WILDFIRE MITIGATION PLAN; PROVIDING THIS RESOLUTION TO BE EFFECTIVE UPON ITS PASSAGE AND APPROVAL.

WHEREAS, The City Council of Moscow supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

WHEREAS, The City Council of Moscow has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

WHEREAS, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Moscow,

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of the City of Moscow, Idaho that the City Council of Moscow does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

PASSED AND APPROVED by the Mayor of the City of Moscow, Idaho, this 27th day of June, 2005.

Marshall H. Comstock, Mayor

ATTEST:

Stephanie Kalasz, City Clerk

6.5.8 Resolution of the City Council of Onaway

Resolution of the City Council of Onaway
located in Latah County, Idaho
#2005-4

A resolution of the City Council of Onaway declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Onaway supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Onaway has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Onaway,

Therefore be it resolved, that the City Council of Onaway does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 24 Day of June 2005

City Council of Onaway located in Latah County, Idaho

Rex Benson

By: Rex Benson

Mayor, City of Onaway

Dianne Nagle

Attested by:
Diane Nagle, City Clerk

6.5.9 Resolution of the City Council of Potlatch

Resolution of the City Council of Potlatch
located in Latah County, Idaho
#_05-06_

A resolution of the City Council of Potlatch declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Potlatch supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Potlatch has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Potlatch,

Therefore be it resolved, that the City Council of Potlatch does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 27th Day of June 2005

City Council of Potlatch located in Latah County, Idaho

David N Brown

By: David Brown
Mayor, City of Potlatch

Debbie Rynearson

Attested by:
Debbie Rynearson, City Clerk

6.5.10 Resolution of the City Council of Troy

Resolution of the City Council of Troy
located in Latah County, Idaho
2005-01

A resolution of the City Council of Troy declaring City support and adoption of the Latah County All Hazards Mitigation Plan, which includes the Wildland-Urban Interface Wildfire Mitigation Plan.

Whereas, The City Council of Troy supports the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The City Council of Troy has participated in the development of the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan, and

Whereas, The Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan will be utilized as a guide for planning as related to FEMA Pre-Disaster Mitigation, The National Fire Plan, The Healthy Forest Restoration Act, and other purposes as deemed appropriate by the City Council of Troy,

Therefore be it resolved, that the City Council of Troy does hereby adopt, support, and will facilitate the Latah County All Hazards Mitigation Plan and the Wildland-Urban Interface Wildfire Mitigation Plan's implementation.

Passed and approved this 27TH Day of June 2005

City Council of Troy located in Latah County, Idaho

Kenneth Whitney Jr.

By: Ken Whitney
Mayor, City of Troy

Gary W LeFors

Attested by:
Gary LeFors, City Clerk

6.6 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 river's 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 fire fighters 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 network 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 wildlands.

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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