

# Mullen Hill Terrace Mobile Home Park Spokane County, Washington

## Community Wildfire Protection Plan

**August 4<sup>th</sup>, 2006**

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*Vision: Promote a wildfire hazard mitigation ethic through leadership, professionalism, and excellence, leading the way to a safe, sustainable Mullen Hill Terrace community.*

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This plan was developed by the Mullen Hill Terrace Community Wildfire Protection 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](http://www.Consulting-Foresters.com)

## Acknowledgments

This Community Wildfire Protection Plan represents the efforts and cooperation of the Mullen Hill Terrace Mobile Home Park owner and a number of residents, organizations, and agencies; through the commitment of people working together to improve the preparedness for wildfire events while reducing factors of risk.

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**Brett Smith, Mullen Hill Terrace Mobile Home Park Owner,  
Mullen Hill Terrace Tenant's Association,  
and  
Tenants of the Mullen Hill Terrace Mobile Home Park**

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Spokane County Fire Protection  
District #3



FIREWISE Communities



**SPOKANE COUNTY**  
Spokane County, Washington

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WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

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# Chapter I: Overview of this Plan and its Development

## 1 Introduction

This Community Wildfire Protection Plan for the Mullen Hill Terrace Mobile Home Park in Spokane County, Washington 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 ecosystems within the park. Residents, agencies, and organizations that participated in the planning process included:

- Brett Smith, Mullen Hill Terrace Mobile Home Park Owner
- Jim Williams, Mullen Hill Terrace Mobile Home Park Manager
- Mullen Hill Terrace Tenant's Association
- Tenants of Mullen Hill Terrace Mobile Home Park
- Spokane County Fire Protection District #3
- Spokane County Fire Protection District #8
- Spokane County Commissioners
- Washington Department of Natural Resources
- Northwest Management, Inc.

The Washington Department of Natural Resources solicited competitive bids from companies to provide the service of leading portions of the assessment and the writing of the **Mullen Hill Terrace Mobile Home Park Community Wildfire Protection Plan**. Northwest Management, Inc., a professional natural resources consulting firm located in Moscow, Idaho, was selected to provide this service. 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 Mrs. Tera R. King.

### 1.1 Goals and Guiding Principles

#### 1.1.1 United States Government Accounting Office

Technology Assessment - April 2005 – “Protecting Structures and Improving Communications during Wildland Fires”

##### 1.1.1.1 Why GAO Did A Study

Since 1984, wildland fires have burned an average of more than 850 homes each year in the United States and, because more people are moving into fire-prone areas bordering wildlands, the number of homes at risk is likely to grow. The primary responsibility for ensuring that preventative steps are taken to protect homes lies with homeowners and state and local governments, not the federal government. Although losses from wildland fires made up only 2 percent of all insured catastrophic losses from 1983 to 2002, fires can result in billions of dollars in damages.

Once a wildland fire starts, various parties can be mobilized to fight it, including federal, state, local, and tribal firefighting agencies and, in some cases, the military. The ability to communicate among all parties - known as interoperability - is essential but, as GAO reported

previously, is hampered because different public safety agencies operate on different radio frequencies or use incompatible communications equipment.

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

#### **1.1.1.2 What GAO Found**

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

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

Existing technologies, such as audio switches, can help link incompatible communication systems, and new technologies, such as software-defined radios, are being developed following common standards or with enhanced capabilities to overcome incompatibility barriers. Technology alone, however, cannot solve communications problems for those responding to wildland fires. Rather, planning and coordination among federal, state, and local public safety agencies is needed to resolve issues such as which technologies to adopt, cost sharing, operating procedures, training, and maintenance. The Department of Homeland Security is leading federal efforts to improve communications interoperability across all levels of government. In addition to federal efforts, several states and local jurisdictions are pursuing initiatives to improve communications interoperability.

#### **1.1.2 Additional State and Federal Guidelines Adopted**

This Community Wildfire Protection Plan will include compatibility with FIREWISE Communities requirements for a community plan, while also adhering to the guidelines proposed in the National Fire Plan, the Washington Statewide Implementation Plan, and the Healthy Forests Restoration Act (2004). This Community Wildfire Protection Plan has been prepared in compliance with:

- The National Fire Plan; A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment 10-Year Comprehensive Strategy Implementation Plan–May 2002.
- The Washington Statewide Implementation Strategy for the National Fire Plan–July 2002.

The objective of combining these 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 the Mullen Hill Terrace Mobile Home Park while facilitating new opportunities for pre-disaster mitigation funding and cooperation.

### **1.1.2.1 National Fire Plan**

The goals of this Community Wildfire Protection 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 Community Wildfire Protection Plan fulfills the National Fire Plan's 10-Year Comprehensive Strategy and the Washington 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 plan, all signed parties agree that reducing the threat of wildland fire to people, communities, and ecosystems will require:

- Firefighter and public safety continuing as the highest priority.
- A sustained, long-term and cost-effective investment of resources by all public and private parties.
- 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.
- Active forestland 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 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, homeowner's associations, 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 underestimated, 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 Washington Statewide Implementation Strategy**

The Strategy adopted by the State of Washington 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". Although the Strategy focuses on County level planning, the principles apply to local Community Wildfire Protection Planning as well. The following is a short summary regarding some of the guidelines set forth in the document.

Within the State of Washington, 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 planning effort.

### **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 to make informed decisions in order to prioritize projects within a community. These decisions may be made from within the adopting entities, or through the recommendations of the planning committee 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.

### **1.1.3 Local Guidelines and Integration with Other Efforts**

#### **1.1.3.1 Mullen Hill Terrace Fire Mitigation Planning Effort and Philosophy**

The goals of this planning process include the integration of the National Fire Plan, the Washington Statewide Implementation Strategy, the Healthy Forests Restoration Act, and the requirements of a FIREWISE Community Wildfire Protection 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 and the local economy.

#### **1.1.3.1.1 Mission Statement**

To make the Mullen Hill Terrace Mobile Home Park community, individual residents, state and federal agencies, and local governments 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 community.

#### **1.1.3.1.2 Vision Statement**

Promote a community wildfire hazard mitigation concept through leadership, professionalism, and excellence, leading the way to a safe, sustainable Mullen Hill Terrace Mobile Home Park.

#### **1.1.3.1.3 Goals**

- To reduce the area of land burned and losses experienced because of wildfires where these fires threaten the community, infrastructure, and surrounding landscape
- Prioritize the protection of people, structures, infrastructure, and unique ecosystems that contribute to our way of life and the sustainability of the local community
- To provide a Community Wildfire Protection Plan that will not diminish the private property rights of lease holders in the Mullen Hill Terrace Mobile Home Park and the surrounding WUI area
- Educate residents about the unique challenges of wildfire in the wildland-urban interface (WUI)
- Establish mitigation priorities and develop mitigation strategies for the Mullen Hill Terrace Mobile Home Park
- 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
- Establish funding assistance such as grants to implement proposed projects

## Chapter 2: Documenting the Planning Process

### 2 Initiation

Lease holders within the Mullen Hill Terrace Mobile Home Park contacted the Washington State Department of Natural Resources in the summer of 2003. The lease holders were concerned about the wildfire risk to the mobile home park. An initial assessment of the mobile home park confirmed the tenants concerns.

A meeting with Mr. Brett Smith, Mullen Hill Terrace Mobile Home Park landowner, and the Washington State Department of Natural Resources was conducted in the fall of 2003. Mr. Smith stated that he fully supports reducing the wildland fire risk to the community. In addition, he indicated that he would like to pursue FIREWISE Communities USA status. It was determined that a community wide wildfire risk assessment would be the initial step to achieve the objectives. Mr. Smith agreed to the formation of a committee and will be pursuing that objective.

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 organizations participated.

#### **2.1 Description of the Planning Process**

The Mullen Hill Terrace Mobile Home Park Community Wildfire Protection Plan was developed through a collaborative process involving all of the organizations and agencies detailed in Section 1.0 of this document. The Mullen Hill Terrace CWPP planning committee contacted these organizations directly to invite their participation and schedule meetings. 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 wildfires in and around the Mullen Hill Terrace community.
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 news release, community newsletter announcement, 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 and Tera R. King, B.S., of Northwest Management, Inc. 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). Mrs. King has earned a Bachelor of Science degree in natural resource management from the University of Idaho. Leading efforts from the Mullen Hill Terrace Mobile Home Park were Brett Smith,

Mullen Hill Terrace Mobile Home Park Owner; Jim Williams, Park Manager; and Steve Harris, Washington Department of Natural Resources.

They led a team of resource professionals that included the Mullen Hill Terrace Tenant's Association, area fire protection, local government, Washington Department of Natural Resources, fire mitigation specialists, resource management professionals, and park tenants.

The planning team met with many residents of the park 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 meeting was 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.

## **2.3 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, while in other cases it led to the public becoming more aware of the process without becoming directly involved in the planning.

### **2.3.1 News Releases**

Under the auspices of the Mullen Hill Terrace CWPP planning committee, news release flyers were placed in tenant's mailboxes and inserted into the monthly Mullen Hill Terrace community newsletter. Flyers were also placed on the community bulletin board and hand delivered to several adjacent landowners. Large road signs announcing the FIREWISE Day were placed at the access points near the park the week before the event to attract area residents.

### **2.3.2 Committee Meetings**

Committee meetings were scheduled and held from December 2005 through August 2006.

#### **2.3.2.1.1 December 8<sup>th</sup>, 2005**

Attendance: Len Broderson, WADNR; Jim Curley, MHT; Steve Harris, WADNR; Larry Hogan, MHT; Bruce Holloway, Spokane FPD 3; Chuck Johnson, WADNR; Brett Smith, MHT LLC; Andrew Stenbeck, WADNR; Jim Williams, MHT Manager

Summary: The meeting started at 1030 hours and ended at about 1200 hours. This was the Mullen Hill Terrace Wildfire Planning Team kick-off meeting. The main objective was to bring the team together and provide information about wildfire planning and fuel reduction implementation grants. The team reviewed and discussed team membership, the 2003 Risk Assessment, the proposed Wildland Urban Interface (WUI) and community maps, wildfire protection planning procedures, wildfire protection plan content needs and in-kind match documentation. Action items are in bold print.

Core Planning Team: The team discussed the need for additional membership. It was determined that the members present constitute a good core team. Involvement of county

commissioners was recommended since their signatures will be necessary for plan adoption. **Chief Holloway agreed to make initial contact with the local area county commissioner, Phil Harris, and inform him of the planning efforts.** It was also recommended that the Spokane County Building and Planning Department be involved with the process. Portions of the community and WUI planning areas lie within Spokane County FPD 8. **Chief Holloway and Steve Harris volunteered to notify Spokane FPD 8 staff.**

Grant Obligation & Objectives: Steve Harris reviewed the National Fire Plan planning grant objectives and obligations. Chuck Johnson informed the group that the Western States Foresters (WSF) grant had been secured and discussed the details of the grant. Chuck stated that the WSF grant could be used to for planning and implementation. Chuck reviewed the process that will be taken to advertise and secure a contractor for plan writing.

Wildfire Risk Assessment Review: Steve Harris reviewed the assessment that was completed in the fall of 2003. The main recommendations from the assessment were presented. They include fuel reduction near homes, landscape changes and access improvement.

Community Boundary: The team reviewed the proposed community boundary map. Chuck Johnson recommended that we adopt a WUI planning area and a community map. It was decided that the map presented depicts the WUI planning area with minor changes in section 18 to align the boundary with Fire District lines. **Steve Harris will make the changes to the WUI planning area map.** It was decided that the community boundary would follow ownership lines of Mullen Hill Terrace MHP LLC. Brett Smith gave Steve Harris a map of the ownership.

Wildfire Protection Plan Content Needs:

- Fire Protection Resource Capabilities and Needs

Wildfire Protection Plan Content Needs continued:

- Prioritized List of Fuel Treatment Projects
  - Include Tree and Shrub Removal Immediately Around Homes
- WUI Description
- Fuel Treatment Area Maintenance
- Critical Infrastructure
- Ingress and Egress

The team discussed tying the wildfire plan in to a stewardship plan. The community is about 90 acres in size and will be able to tap into stewardship funds. **Len and Chuck agreed to discuss the best way to develop a plan to meet the stewardship planning needs.** Team members were encouraged to call or e-mail other plan content requests to Chuck or Steve.

Request For Proposal (RFP): The team agreed that the RFP should contain the standard verbiage and include the needs listed above. In addition, the RFP will notify the contactors that a risk assessment has already been completed and that a community planning team is in place. Chuck Johnson will initiate the RFP process. The RFP will be mailed out to the group prior to submission. Andrew Stenbeck recommended the submitted proposals be distributed prior to the selection meeting to allow team members time to preview. In addition, Andrew recommended the team use a matrix during the selection process.

In-Kind Documentation: The NFP and the WSF grants both have In-kind match requirements. Chuck Johnson informed the team that the match documentation is a requirement. **Team members were requested to document time and expenses including meeting time, travel, building use, printing, and etc.**

Timeline: A tentative timeline for the planning process was discussed. Chuck Johnson reviewed the process. It is anticipated that a plan will be completed by early summer.

Next Meeting: The team decided the next meeting would be scheduled after proposals are returned so we can perform the selection process. **Steve Harris will coordinate the next meeting.**

### **2.3.2.1.2 June 15<sup>th</sup>, 2006**

Attendance: Len Broderson, WADNR; Jim Curley, MHT; Steve Harris, WADNR; Larry Hogan, MHT; Bruce Holloway, Spokane FPD 3; Chuck Johnson, WADNR; Red Kafer, MHT; Randy Chapman, MHT; Gerald Smith, MHT; Mark Richard, Spokane County; Jim Williams, MHT Manager; Tera King, NMI

Tera King from Northwest Management made introductions and briefly reviewed the CWPP planning process. Several handouts were distributed including the "Preparing a CWPP" Handbook, a timeline, a Firewise application form, and the committee draft document.

Draft Review: Tera walked the committee through the Draft CWPP document and asked the group to review its contents over the course of the next two weeks and send any comments and edits they had to the NMI office in Moscow. Several questions and discussions regarding aspects of the plan were discussed at length. Len, Steve, and Chuck, all with the DNR, explained how the plan helped the community get funding to do wildfire mitigation projects on the ground. Since Mullen Hill Terrace will be one of only a few approved CWPP's in the area, they should have a good change of receiving cost-share and grant funding. Steve also helped explain the requirements of becoming a Firewise Community. One of these requirements is to hold a community-wide Firewise Day.

Timeline: A tentative timeline for the planning process was discussed. It was decided that there would likely be two additional committee meetings plus the public meeting before the plan was ready for adoption. The CWPP public meeting/Firewise Day is scheduled for July 29<sup>th</sup> depending on Brett Smith's approval. The adoption process will begin in August shortly after the public involvement phase.

Public Meeting: The committee decided that it would be more efficient to do the public meeting on the same day as the Firewise Day. Tera will work on drafting a press release announcing the public meeting to be published in the community newsletter and the Spokesman Review. The committee was asked to be thinking about projects and educational materials that could be presented during the Firewise Day. This will be the focus of the next committee meeting. Both NMI and the DNR offered to set up educational booths. Another potential idea is to get new or additional lot # signs throughout the community. FPD #3 can help with this project.

Next Meeting: The next committee meeting will occur on July 11<sup>th</sup> at 2pm in the FPD #3, Station 35.

#### Task List:

1. Invite neighboring landowners to July 11<sup>th</sup> committee meeting – Jim Williams
2. Invite FPD #8 to next committee meeting – NMI
3. Mail documents to Brett Smith – Jim Williams
4. Assess the creek for potential treatment ability – Len Broderson
5. Check into Firewise in-kind match requirements – Steve Harris
6. Review draft document and send edits to Tera – Committee
7. Think about potential projects for Firewise Day – Committee
8. Be prepared to print news release in community newsletter on July 15<sup>th</sup> – Randy Chapman
9. Draft public meeting press release – NMI

### 2.3.2.1.3 July 11<sup>th</sup>, 2006

Attendance: Len Broderson, WADNR; Jim Curley, MHT; Steve Harris, WADNR; Larry Hogan, MHT; Bruce Holloway, Spokane FPD 3; Chuck Johnson, WADNR; Randy Chapman, MHT; Cherly Blake, MHT Neighbor; Brian Ward, MHT; Jim Williams, MHT Manager; Tera King, NMI

Tera King began the meeting by asking for introductions. Updates were then given on items from the last meeting's task list. These included:

- Tera did make contact with FPD #8, but so far no commitment to participate
- Jim was able to contact some of the neighboring landowners such as Cheryl Blake
- Len found out that the creek along the west side of the community is a fish bearing stream. This means that there is a 90 foot no commercial harvest zone and 75 foot shade requirement on each side of the stream. Non-commercial fuels reduction is okay as long as it still meets the shade requirement. Len also noted that the best time to do fuels modification work in that area would be either when the ground is frozen or very dry. Most likely, projects in this area would utilize hand crews rather than mechanical or chemical treatments because of the stream and to help reduce soil disturbance.

Draft Review: Tera is preparing the final draft to be presented at the Firewise Day, so any outstanding comments and questions should be sent to NMI right away. Larry noted that references to "homeowners" or "landowners" in the park should be changed to "lease holder".

Firewise Day: It was confirmed that the First Annual Firewise Day will occur on Saturday, July 29<sup>th</sup> from 9am to noon at the Playground in the Mobile Home Park. NMI and the DNR will set up booths. The NMI booth will focus on the CWPP materials and maps and the DNR booth will focus on education and fire prevention. Tera will mail 150 copies of the flyer to Jim to be put in mailboxes and 120 copies to Randy to go out with the newsletter. In addition, Tera will make up poster-sized signs to be placed along the inlet roads to the community. Jim will also deliver flyers to some of the neighboring landowners. Mullen Hill Terrace will provide cold drinks while Jim Curley and Randy Chapman are in charge of coffee and cookies.

Reflective Signs: Bruce agreed to do a mock up of the blue address signs for Jim to show Brett.

Next Meeting: Depending on the content of the public comments, the committee will decide on whether or not to hold an additional committee meeting before the adoption process after the Firewise Day.

## 2.3.3 Public Meeting

A public meeting was scheduled during the committee review phase of the planning process. This meeting was conducted at the FIREWISE Day to share information on the planning process, discuss details of the hazard assessments, and discuss potential mitigation treatments. Attendees at the FIREWISE Day were asked to give their impressions of the accuracy of the information generated and provide their opinions of potential treatments. The public meeting announcement is attached below in Figure 2.1. This flyer was also distributed to tenant's mailboxes and included in the Mullen Hill Terrace Tenant's Association newsletter, *The Terrace Times* along with a front page write up of the FIREWISE Day event.



Figure 2.1. Public meeting announcement for July 29<sup>th</sup>, 2006.

**Mullen Hill Terrace  
Mobile Home Park**  
*Community Wildfire Protection Plan*  
**FIREWISE DAY!**  
*Saturday, July 29th, 2006*  
*9 am to Noon at the Playground*

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The Mullen Hill Terrace Mobile Home Park has developed a draft Community Wildfire Protection Plan and is seeking public input. In conjunction with this process, the Mullen Hill Terrace community is conducting a Firewise Day to help promote wildfire awareness and address some of the potential wildfire risks within and surrounding the Mullen Hill Terrace Mobile Home Park.

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The Firewise Day will occur on Saturday, July 29th, 2006 at the Mullen Hill Terrace Mobile Home Park Playground from 9 am to 12pm. Representatives from the Mullen Hill Terrace community, the Department of Natural Resources, and the local fire districts have been working for over a year to develop the **Community Wildfire Protection Plan**. This planning document is intended to help the community and the surrounding landowners receive funding to do identified projects that will help reduce their wildfire risk. Please join us to learn about the **wildfire risk assessments** completed for the Mullen Hill Terrace area and **discuss YOUR priorities** for how to best mitigate these risks.

*Please attend and participate!*

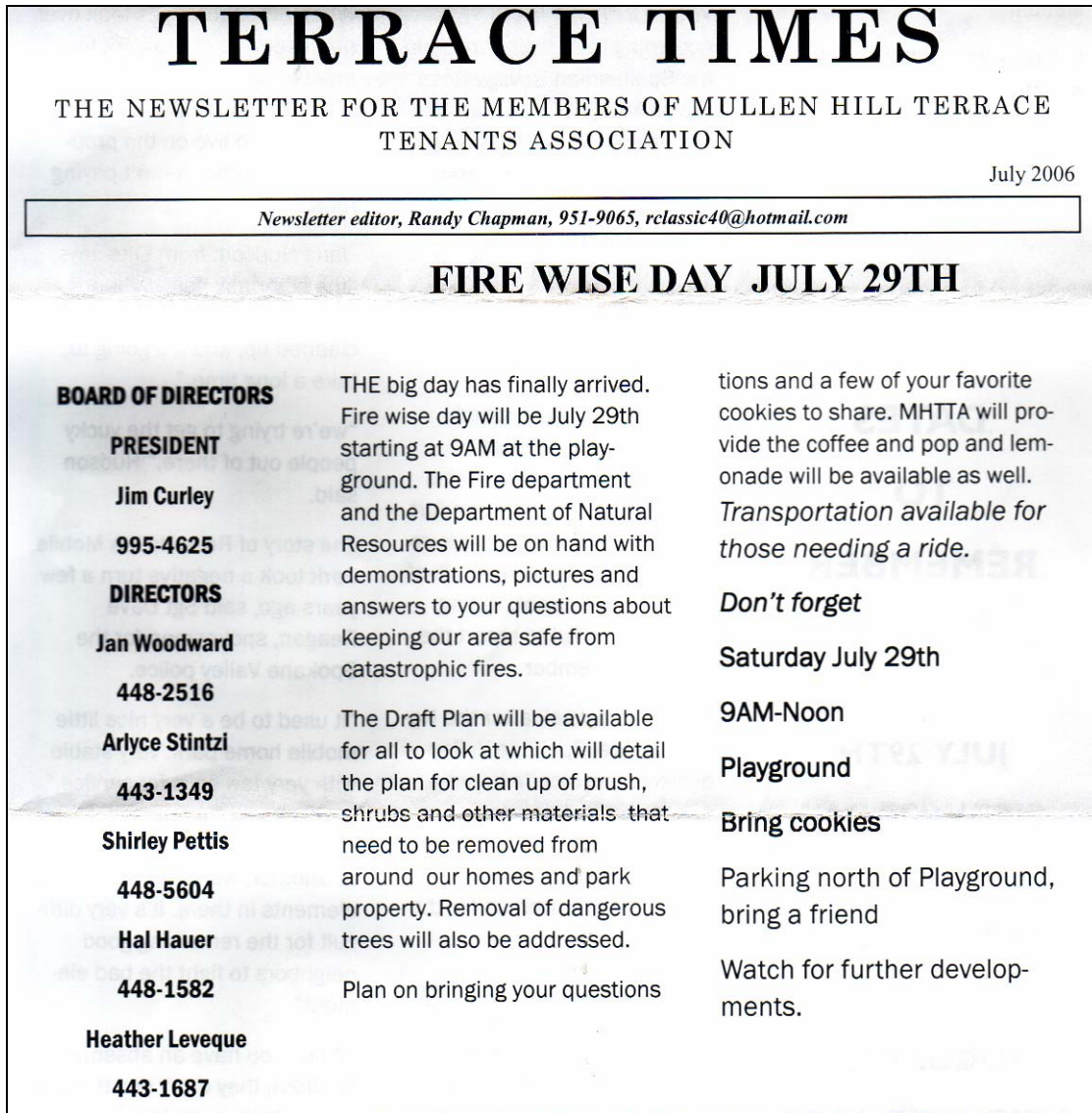


In addition, the Mullen Hill Terrace Mobile Home Park is seeking Firewise Communities USA status. The focus of the **First Annual Firewise Day** is "Wildfire Risk Awareness". There will be educational booths, demonstrations, and refreshments all taking place at the playground on the north end of the Mullen Hill Terrace Mobile Home Park. **Local experts** and members of the planning committee will be on hand to **answer questions** and listen to **your suggestions**.



For more information on the Community Wildfire Protection Plan and the Mullen Hill Terrace Firewise Day contact Park Manager, Jim Williams at (509) 448-3059 or Tera King at Northwest Management, Inc. (208) 883-4488.

Figure 2.2. *The Terrace Times* newsletter.



### 2.3.3.1 FIREWISE Day

During the development of the Community Wildfire Protection Plan, the planning committee decided that they would also like to seek FIREWISE Communities USA status. Since most of the requirements of the FIREWISE program were met by the CWPP planning process, the only thing left to do was hold the First Annual Mullen Hill Terrace FIREWISE Day. The focus of this year's FIREWISE Day was wildfire education in the Mullen Hill Terrace community. The entire Mullen Hill Terrace Mobile Home Park and its neighbors were invited to learn about preventing wildfires near their homes and around their community. This included landscaping and construction techniques as well as hazard tree removal and larger scale fuels reduction projects. The FIREWISE Day was hosted by the Mullen Hill Terrace Community Wildfire Protection Plan committee, the Washington State Department of Natural Resources, and Northwest Management, Inc. Education materials including several handouts and games were available at booths set up in the playground in the Mullen Hill Terrace Mobile Home Park. The draft Mullen Hill Terrace Community Wildfire Protection Plan was also available for review at the FIREWISE Day. This allowed interested residents and neighbors to ask several of the

committee members questions about the plan and the recommendations made herein. Approximately 40 Mullen Hill tenants attended the FIREWISE Day and Public Review of the Community Wildfire Protection Plan.

### **2.3.4 Documented Review Process**

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

During regularly scheduled committee meetings in 2006, the committee met to discuss findings, review mapping and analysis, and provide written comments on draft sections of the document. During the public meeting attendees observed map analyses, photographic collections, and discussed general findings within the Community Wildfire Protection Plan.

The first draft of the document was prepared presented to the committee on June 15<sup>th</sup>, 2006 for a full committee review. A revised draft document was presented to the public at the July 29<sup>th</sup>, 2006 FIREWISE Day. The public review period remained open until August 4<sup>th</sup>, 2006. Adoption of the plan by the Mullen Hill Terrace Mobile Home Park owner, the Mullen Hill Terrace Tenant's Association, Spokane County Fire Protection District #3, and the Washington Department of Natural Resources occurred in the following weeks. The adoption of the plan was advertised by the Spokane County Board of Commissioners for a formal public hearing on xx, 2006. The CWPP was formally adopted by the Board on that date.

### **2.3.5 Continued Public Involvement**

The Mullen Hill Terrace Mobile Home Park is dedicated to involving the public directly in review and updates of this Community Wildfire Protection Plan. The Mullen Hill Terrace Tenant's Association and the Mullen Hill Terrace Mobile Home Park owner, through the Community Wildfire Protection Plan committee are responsible for the annual review and update of the plan as recommended in Chapter 5 of this document.

The public will have the opportunity to provide feedback about the Plan annually on the anniversary of its adoption. Copies of the plan will be catalogued and kept at the Mullen Hill Terrace Mobile Home Park Office. The existence and location of these copies will be publicized.

A public meeting will also be held as part of each annual evaluation or when deemed necessary by the planning committee. The meetings will provide the public a forum for which they can express concerns, opinions, or ideas about the plan.

## **Chapter 3: Mullen Hill Terrace Characteristics**

### **3 Background and Area Description**

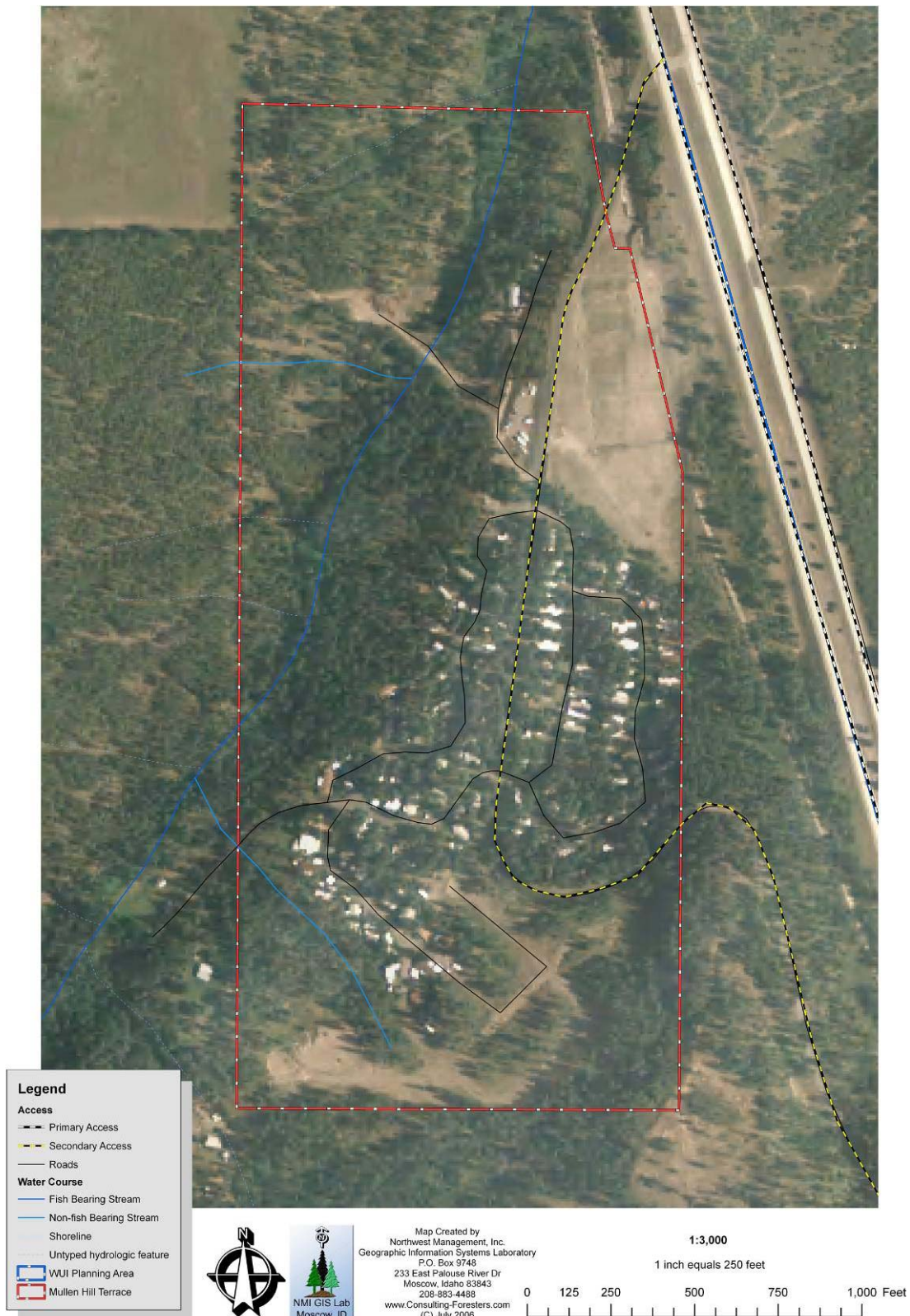
#### **3.1.1 Description of the Mullen Hill Terrace Mobile Home Park**

The Mullen Hill Terrace Mobile Home Park is located about 1 mile south of the Spokane City limits on west side of State Route 195 in Spokane County. It is an attractive community that is secluded in the middle of a ponderosa pine and Douglas-fir forest. The community currently consists of 120 small lots with mobile and modular homes. A 74-lot expansion is currently underway.

Figure 3.1. Mullen Hill Terrace Mobile Home Park Planning Area.

# Mullen Hill Terrace Community Wildfire Protection Plan

Aerial Photography - 2005



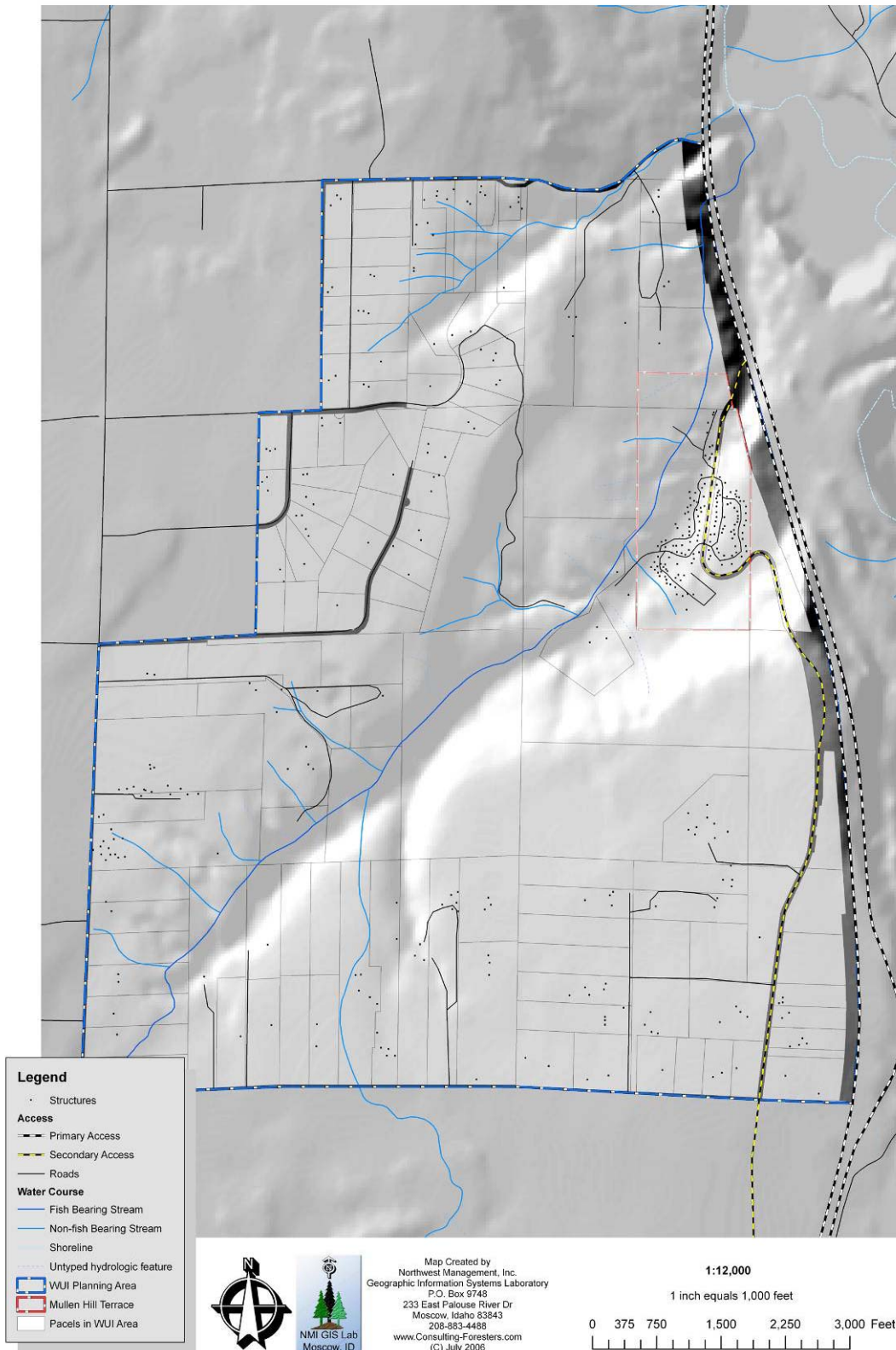
### **3.1.2 Transportation & Infrastructure**

The Mullen Hill Terrace Mobile Home Park is accessed from State Route 195 via Mullen Hill Road. This road travels south through the park before connecting to South Hatch Road which provides an additional entrance from Highway 195 via Excelsior Road. West Gibbs Road also connects to South Hatch Road from the west, which could provide an additional escape route.

Figure 3.2. Ownership Parcels in Mullen Hill Terrace Mobile Home Park WUI Area.

# Mullen Hill Terrace Community Wildfire Protection Plan

Ownership in WUI Area



### 3.1.3 Vegetation & Climate

Vegetation in Mullen Hill Terrace Wildland Urban Interface (WUI) area 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 3.1.

The vegetation within the Mullen Hill Terrace WUI area is almost a 50/50 mix of mixed forest with grass and shrubs and mixed forest with grasslands (disturbed).

<b>Table 3.1. Vegetative Cover Types in Mullen Hill Terrace WUI area.</b>	<b>Acres</b>	<b>Percent of Total Area</b>
Mixed forest, grass/shrubs, disturbance status uncertain, cover probably includes <i>Festuca idahoensis</i> , <i>Symphoricarpos</i>	875	50%
Mixed forest, grasslands, disturbed, probably dominated by <i>Bromus tectorum</i> , <i>Poa pratensis</i> , or other exotics.	874	50%
<b>Total</b>	<b>1,749</b>	

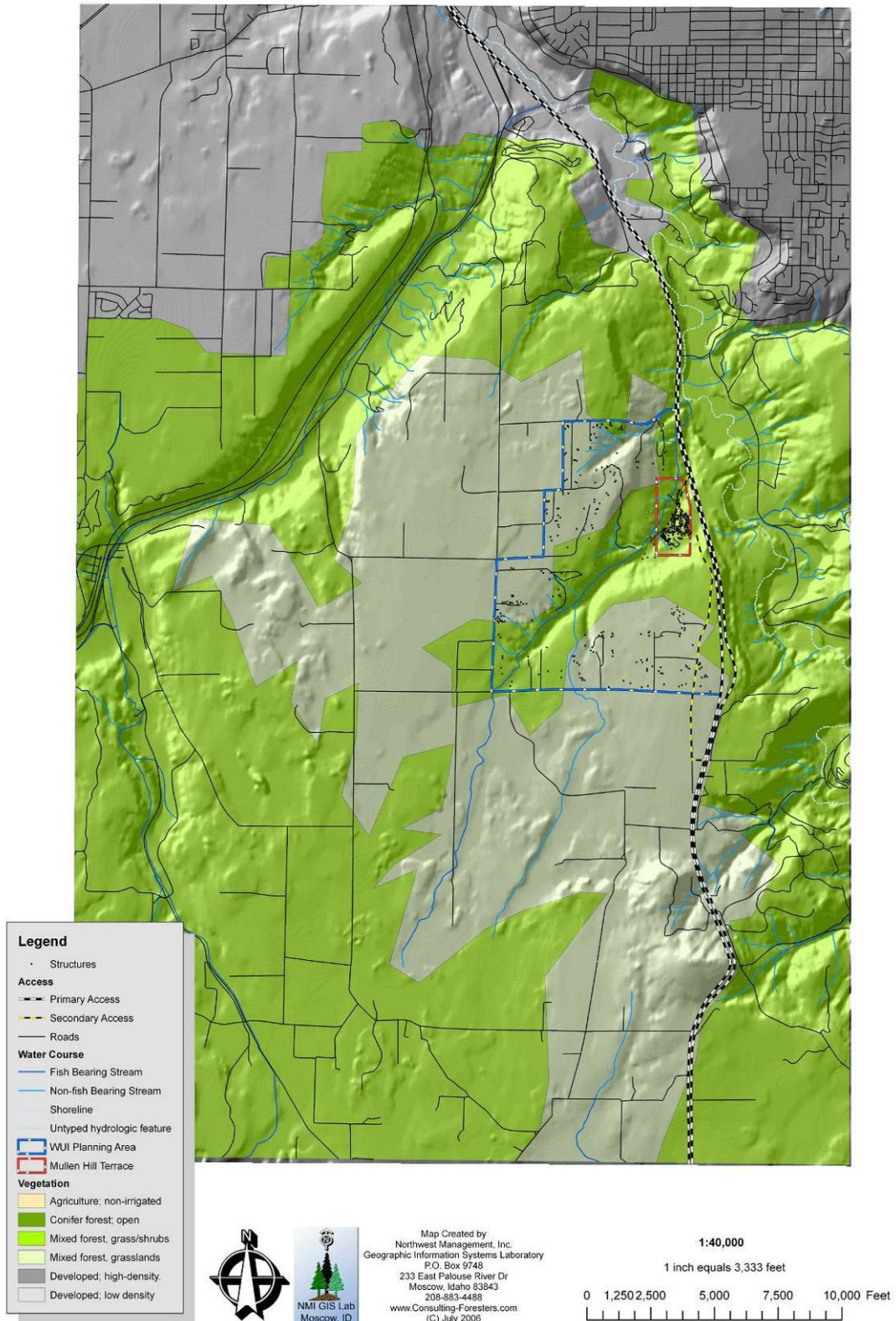
Vegetative communities within the Mullen Hill Terrace WUI area follow the strong moisture and temperature gradient related to the drainage. Limited precipitation results in a relatively arid environment, limiting vegetation to drought-tolerant plant communities of grass and shrublands, with scattered stands of ponderosa pine and Douglas-fir. As moisture availability increases, so does the abundance and variety of conifer and understory species.



Figure 3.3. Vegetation Cover Types in Mullen Hill Terrace Area.

# Mullen Hill Terrace Community Wildfire Protection Plan

Vegetation / Landcover



### 3.1.4 Monthly Climate Summary

#### 3.1.4.1 Spokane Airport, Spokane County, Washington

Period of Record Monthly Climate Summary

Period of Record : 1/ 1/1890 to 12/31/2005

**Table 3.10. Monthly Climate Summaries for the Spokane Airport, Spokane County, Washington.**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	33.0	39.1	48.3	58.2	67.0	74.3	83.9	82.7	72.4	59.2	42.9	34.7	58.0
Average Min. Temperature (F)	21.6	25.1	30.5	36.5	43.7	50.1	55.8	54.6	46.6	37.6	29.9	24.3	38.0
Average Total Precipitation (in.)	1.97	1.54	1.39	1.11	1.42	1.20	0.55	0.63	0.80	1.17	2.08	2.20	16.06
Average Total SnowFall (in.)	12.9	7.5	3.4	0.5	0.1	0.0	0.0	0.0	0.0	0.2	5.3	11.0	41.0
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.: 100% Min. Temp.: 100% Precipitation: 100% Snowfall: 95.3% Snow Depth: 95.3%

### 3.1.5 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).

The Clean Air Act, passed in 1963 and amended in 1977, is the primary legal authority governing air resource management. The Clean Air Act provides the principal framework for national, state, and local efforts to protect air quality. Under the Clean Air Act, 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).

Smoke emissions from fires potentially affect an area and the airsheds that surround it. Climatic conditions affecting air quality in Eastern Washington 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.

Air quality in the area 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. The Spokane County Air Pollution Control Authority (SCAPCA) is the local agency which administers state, federal and local laws and regulations regarding air pollution control. Of the six criteria pollutants, three are of particular concern in Spokane: carbon monoxide, particulate matter, and ozone pollution.

**Carbon Monoxide (CO)** is an odorless, colorless gas which is emitted from any form of combustion. When inhaled, CO deprives the body of oxygen by reducing the blood's capacity to carry oxygen. This can lead to headaches, dizziness, nausea, and at high levels can be lethal.

- Motor vehicles are the largest contributor to CO, and other sources include industrial and commercial operations, wood stoves and fireplaces, and outdoor burning.
- CO is generally considered a wintertime pollutant, with its highest levels occurring on cold, stagnant winter days. Spokane's CO levels have been on the decline thanks in part to a winter oxygenated fuel program.

**Particulate Matter (PM)** is composed of solid or liquid particles from smoke, dust, and condensing vapors. PM is suspended and carried in the air for long periods of time and over long distances. There are health-based standards for two sizes of particles (PM10 and PM2.5). These microscopic particles travel deep in the lungs, damaging lung tissue and affecting breathing.

- Spokane's PM pollution comes from a variety of sources, including dust stirred up from traveling on unpaved and paved roadways, construction activities, gas and diesel powered engines, wood burning, outdoor burning and industrial/commercial operations.

**Ozone (O3)** Unlike ozone that is present in the Earth's upper atmosphere, ozone at the Earth's surface is a harmful air pollutant that poses a risk to human, animal and plant life.

- **Ground-level ozone (a key ingredient of smog)** is formed as a result of chemical reactions between nitrogen oxides and volatile organic compounds in the presence of sunlight and heat. Most of the ozone-forming emissions come from many small sources, spread over a wide area.

Nearly two-thirds of these emissions come from motor vehicles. Other sources of smog-forming emissions include industrial solvents, gasoline refueling, dry cleaning, auto body paint shops, and consumer products such as charcoal lighter fluid, paints, etc.

Even at low concentrations, ozone causes respiratory problems and aggravates asthma in children, people with respiratory diseases, and even otherwise healthy adults who are working or exercising outside on smoggy days. Children are most at risk from exposure to ozone because they are often active outside during the summer and their lungs are not fully developed. Long-term exposure to ozone may lead to premature aging of the lungs and chronic respiratory illnesses.

Daily air quality reports can be viewed at their website at [http://www.scapca.org/air\\_quality.asp](http://www.scapca.org/air_quality.asp) .

### **3.1.5.1 Washington State Smoke Management Plan**

The Department of Natural Resources (DNR), Department of Ecology (DOE), U.S. Forest Service (USFS), National Park Service (NPS), Bureau of Land Management (BLM), participating Indian nations, military installations (DOD), and small and large forest landowners have worked together to deal with the effect of outdoor burning on air.

Protection of public health and preservation of the natural attractions of the state are high priorities and can be accomplished along with a limited, but necessary, outdoor burning program. Public health, public safety, and forest health can all be served through the application

of the provisions of Washington State law and this plan, and with the willingness of those who do outdoor burning on forest lands to further reduce the negative effects of their burning.

The Washington State Smoke Management Plan pertains to DNR-regulated silvicultural outdoor burning only and does not include agricultural outdoor burning or outdoor burning that occurs on improved property.

### **3.2 Wildland-Urban Interface**

The Wildland-Urban Interface (WUI) has gained attention through efforts targeted at wildfire mitigation, however, this analysis technique is also useful when considering other hazards because the concept looks at where people and structures are concentrated in any particular region. The WUI for the Mullen Hill Terrace Mobile Home Park shows the relative concentrations of structures within the Mullen Hill Terrace community and structures scattered across approximately 1,100 acres surrounding the Mobile Home Park.

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 firefighters a defensible area from which to suppress wildland fires or defend communities against other hazard risks. In addition, a wildland-urban interface that is properly 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, surface, 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);
- improving defensible space in the immediate areas for suppression efforts in the event of wildland fire.

The Healthy Forests Restoration Act makes a clear designation that the location of the WUI is at the determination of the Community, County, or Reservation when a formal and adopted Community Wildfire Protection Plan is in place. It further states that the Federal Agencies are obligated to use this WUI designation for all Healthy Forests Restoration Act purposes. The Mullen Hill Terrace Community Wildfire Protection Plan committee evaluated a variety of

different approaches to determining the WUI for the community and selected this approach and has adopted it for these purposes. In addition to a formal WUI map for use with the Federal Agencies, it is hoped that it will serve as a planning tool for the county and local fire districts.

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

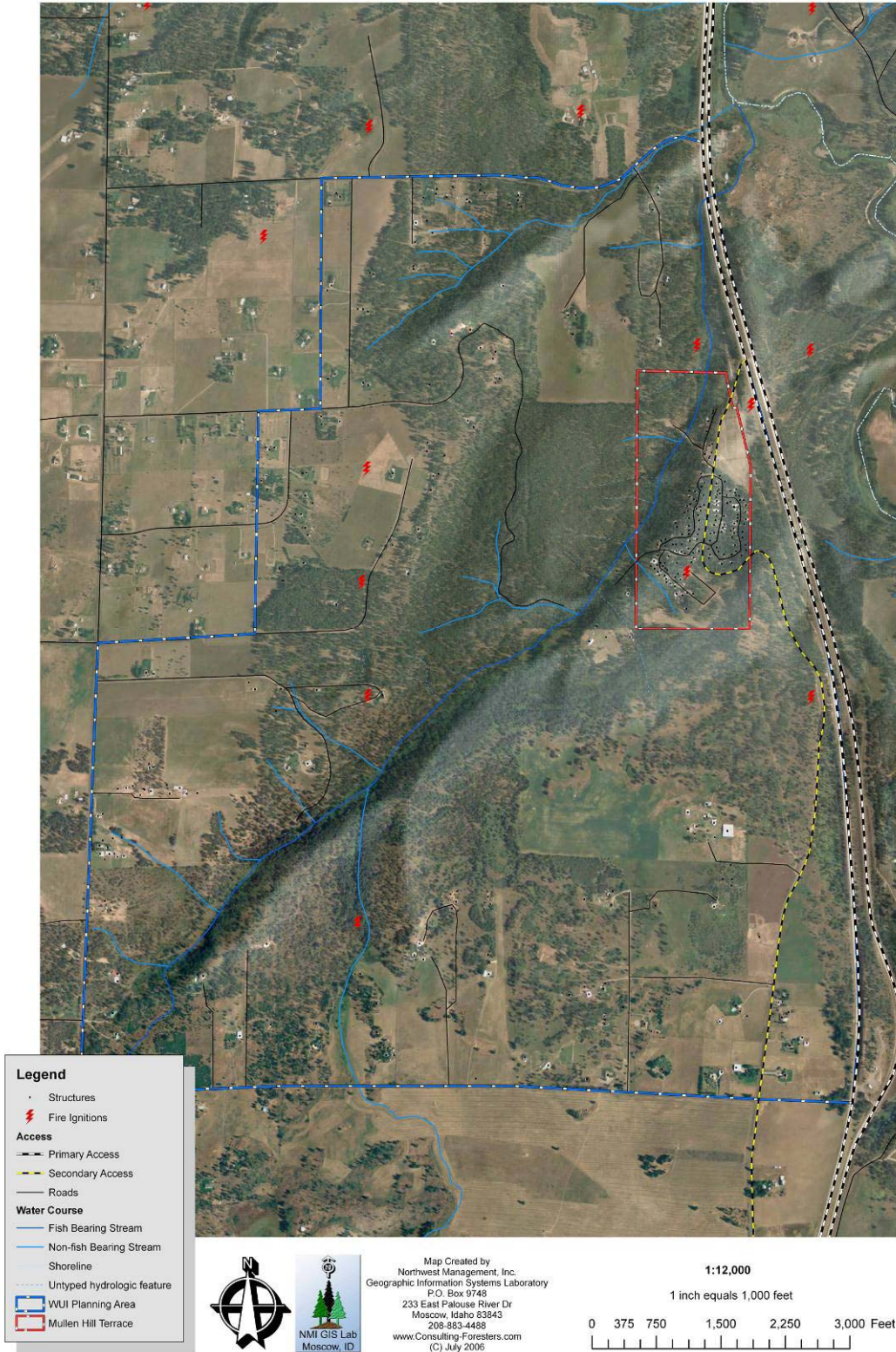
- **Interface Condition** – a situation where structures abut wildland fuels. There is a clear line of demarcation between the structures and the wildland fuels along roads or back fences. The development density for an interface condition is usually 3+ structures per acre;
- **Intermix Condition** – 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 entire Mullen Hill Terrace Mobile Home Park planning area is located within a population density consistent with an intermix condition. Homes are scattered in relatively high concentrations with wildland fuels. These fuels are capable of carrying surface fires and facilitating crowning through fuel ladders. There is little in the way of fuel breaks between homes and the intermix fuels, placing the Mullen Hill Terrace community at very high risk.

Figure 3.4. Mullen Hill Terrace Mobile Home Park WUI Area.

# Mullen Hill Terrace Community Wildfire Protection Plan

Aerial Photography - 2005



### **3.2.1 Potential WUI Treatments**

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

Most treatments may begin with the home evaluation, and the implicit factors of structural ignitability (roofing, siding, deck materials), and vegetation within the treatment area of the structure. However, treatments outside of the Mullen Hill Terrace community may look closely at access (two ways in and out), fuels treatments, and communications through means other than land based telephones.

## 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 can 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, 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 eastern Washington. 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 Washington Department of Natural Resources of fire ignitions dating from 1970 to 2003. Using this data on past fire extents and fire ignitions, the occurrence of wildland fires near the Mullen Hill Terrace Mobile Home Park and in the region of Spokane County has been evaluated. Table 4.1 depicts wildfires that have occurred within the Mullen Hill Terrace Mobile Home Park planning area between 1970 and 2003 as recorded by the Washington Department of Natural Resources. All

but one of the fires that have occurred in the planning area have been human caused. This could lead to the conclusion that there is a need for public education regarding the dangers of wildfire and how to avoid potential ignitions in the area.

Year	Cause	Acres Burned
1970	Lightning	0.1
1972	Smoker	0.1
1973	Incendiary	20.0
1974	Recreation	1.1
1979	Miscellaneous	0.2
1990	Debris Burning	0.5
1992	Debris Burning	2.0
1995	Debris Burning	0.1
1997	Debris Burning	2.0
1998	Miscellaneous	0.1
1999	Miscellaneous	2.0
2002	Recreation	2.0
	<b>Total</b>	<b>30.2</b>

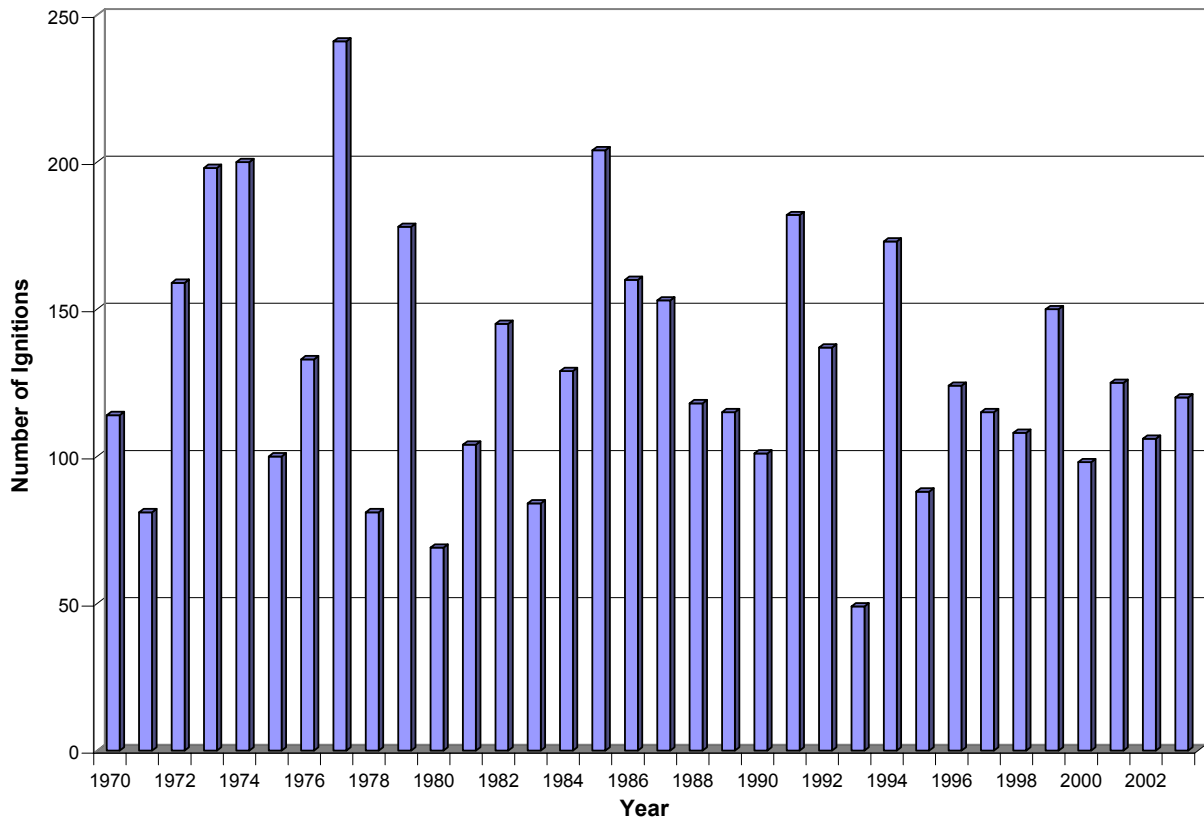
The Washington Department of Natural Resources database of wildfire ignitions for those areas where the Washington Department of Natural Resources provides primary wildfire suppression services includes data from 1970 through 2003. An analysis of the wildfire ignitions in Spokane County reveals that approximately 4,442 wildfires have been ignited during this period (Table 4.2).

Cause	Acres Burned	Percent	Number of Ignitions	Percent
Children	4,795	14%	734	17%
Debris Burning	7,363	22%	888	20%
Arson	-	0%	-	0%
Lightning	7,361	22%	448	10%
Logging	86	0%	20	0%
Miscellaneous	6,937	21%	1,021	23%
Railroad	356	1%	138	3%
Recreation	4,397	13%	567	13%
Smoker	1,227	4%	278	6%
Incendiary	791	2%	348	8%
<b>Total</b>	<b>33,314</b>		<b>4,442</b>	

The “Miscellaneous” category includes ignitions originating from structure fires, burning material from aircraft, burning material from auto (other than smoking), burning vehicle, electric fence, equipment crash, fireworks (other than children), hot ashes, power lines, sparks from auto exhaust, sparks from cutting torch or welder, sparks from farm tractors, spontaneous

combustion (other than sawdust piles), use of fire (other than logging), woodcutting, and an “other” category. Ignitions stemming from debris burning were the most significant of this category causing 888 ignitions and burning 7,363 acres. Also high on the list were lightning with 448 ignitions and 7,361 acres burned and the miscellaneous category, which caused 1,021 ignitions and burned 6,937 acres.

**Figure 4.1. Wildfire Ignitions within DNR Protection Area 1970-2003.**



**Table 4.3. Wildfire Ignition and Extent Summary by Year within the DNR Protection Area.**

Year	Acres Burned by Year	Number of Ignitions
1970	1,131	114
1971	256	81
1972	477	159
1973	1,877	198
1974	537	200
1975	347	100
1976	1,084	133
1977	761	241
1978	468	81
1979	269	178
1980	142	69

**Table 4.3. Wildfire Ignition and Extent Summary by Year within the DNR Protection Area.**

<b>Year</b>	<b>Acres Burned by Year</b>	<b>Number of Ignitions</b>
1981	1,094	104
1982	579	145
1983	973	84
1984	215	129
1985	367	204
1986	1,110	160
1987	4,968	153
1988	555	118
1989	203	115
1990	219	101
1991	1,833	182
1992	4,532	137
1993	516	49
1994	389	173
1995	66	88
1996	2,186	124
1997	1,312	115
1998	131	108
1999	2,043	150
2000	685	98
2001	149	125
2002	1,581	106
2003	261	120
<b>Total</b>	<b>33,314</b>	<b>4,442</b>

As can be seen from the above data, approximately 4,442 wildfire ignitions have been documented in Spokane County. Although the number of acres burned due to debris burning, miscellaneous, and lightning is similar, the number of ignitions caused by debris burning is nearly double that of lightning and miscellaneous has almost triple the amount of ignitions as lightning. This is not to say that lightning caused wildfires are less of an impact in the county, but instead to identify the increases in the additional wildland fires caused by humans.

In all analyses, Spokane County is heavily impacted by wildland fire.

#### **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 4.4). Data summaries for 2000 through 2004 are provided and demonstrate the variability of the frequency and extent of wildfires nationally (Table 4.4). 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 4.4. National Fire Season Summaries.**

<b>Statistical Highlights</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
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	<b>8,422,237</b>	<b>3,555,138</b>	<b>6,937,584</b>	<b>4,918,088</b>	<b>6,790,692</b>
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
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 4.5 and 4.6 summarize some of the relevant wildland fire data for the nation, and some trends that are likely to continue into the future unless targeted fire mitigation efforts are implemented and maintained.

These statistics (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 4.5. Total Fires and Acres 1960 - 2004 Nationally.**

<b>Year</b>	<b>Fires</b>	<b>Acres</b>	<b>Year</b>	<b>Fires</b>	<b>Acres</b>
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)

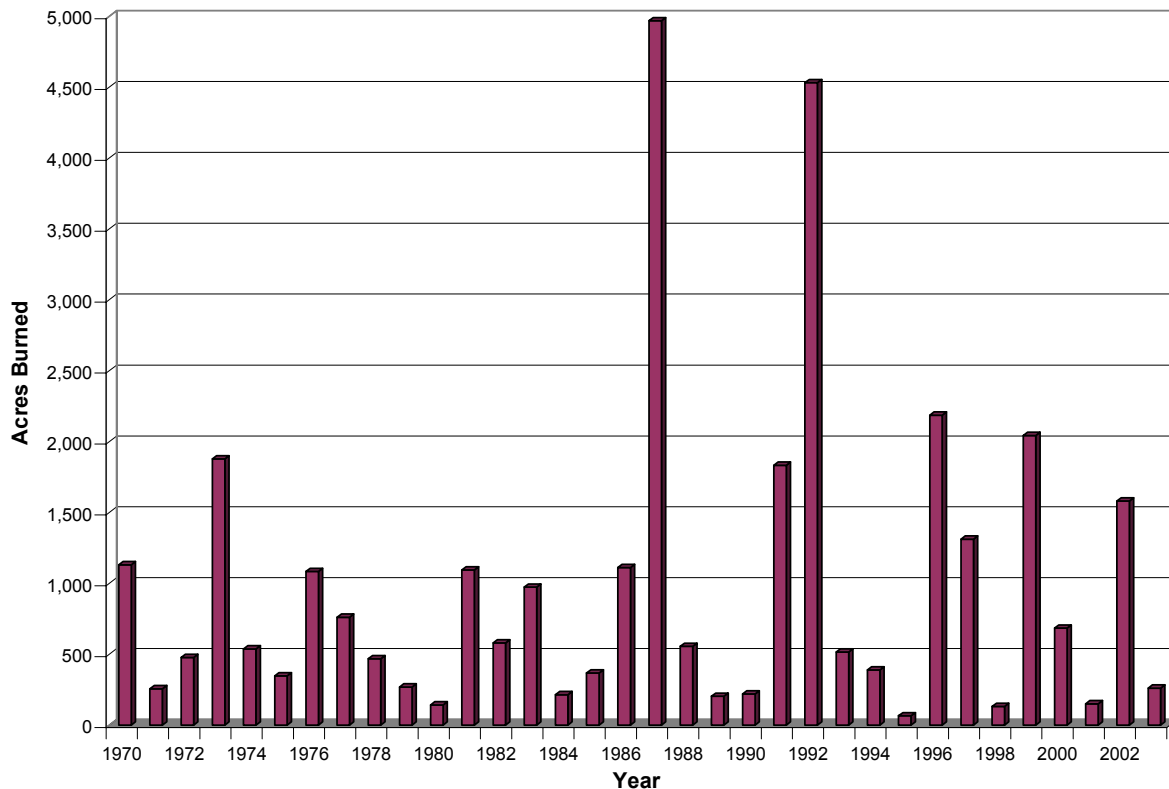
**Table 4.6. Suppression Costs for Federal Agencies Nationally.**

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	<b>\$890,233,000</b>
2003	\$151,894,000	\$ 96,633,000	\$ 9,554,000	\$ 44,557,000	\$ 1,023,500,000	<b>\$1,326,138,000</b>
2002	\$ 204,666,000	\$ 109,035,000	\$ 15,245,000	\$ 66,094,000	\$ 1,266,274,000	<b>\$1,661,314,000</b>
2001	\$ 192,115,00	\$ 63,200,000	\$ 7,160,000	\$ 48,092,000	\$ 607,233,000	<b>\$917,800,000</b>
2000	\$180,567,000	\$ 93,042,000	\$ 9,417,000	\$ 53,341,000	\$ 1,026,000,000	<b>\$1,362,367,000</b>
1999	\$ 85,724,000	\$ 42,183,000	\$ 4,500,000	\$ 30,061,000	\$ 361,000,000	<b>\$523,468,000</b>
1998	\$ 63,177,000	\$ 27,366,000	\$ 3,800,000	\$ 19,183,000	\$ 215,000,000	<b>\$328,526,000</b>
1997	\$ 62,470,000	\$ 30,916,000	\$ 2,000	\$ 6,844,000	\$ 155,768,000	<b>\$256,000,000</b>
1996	\$ 96,854,000	\$ 40,779,000	\$ 2,600	\$ 19,832,000	\$ 521,700,000	<b>\$679,167,600</b>
1995	\$ 56,600,000	\$ 36,219,000	\$ 1,675,000	\$ 21,256,000	\$ 224,300,000	<b>\$340,050,000</b>
1994	\$ 98,417,000	\$ 49,202,000	\$ 3,281,000	\$ 16,362,000	\$ 678,000,000	<b>\$845,262,000</b>

(National Interagency Fire Center 2005)

Although many very large fires, growing to over 100,000 acres have burned in eastern Washington and northern Idaho, actual fires in Spokane County have usually been controlled at much smaller extents. Figure 4.2 shows that large fires have occurred in and around Spokane County.

**Figure 4.2. Acres burned in DNR Protection Areas in Spokane County 1970-2003.**



## 4.3 Wildfire Hazard Assessment

### 4.3.1 Historic Fire Regime

In the fire-adapted ecosystems of Washington, 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 Washington. 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 Washington. 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.

#### 4.3.1.1 General Limitations

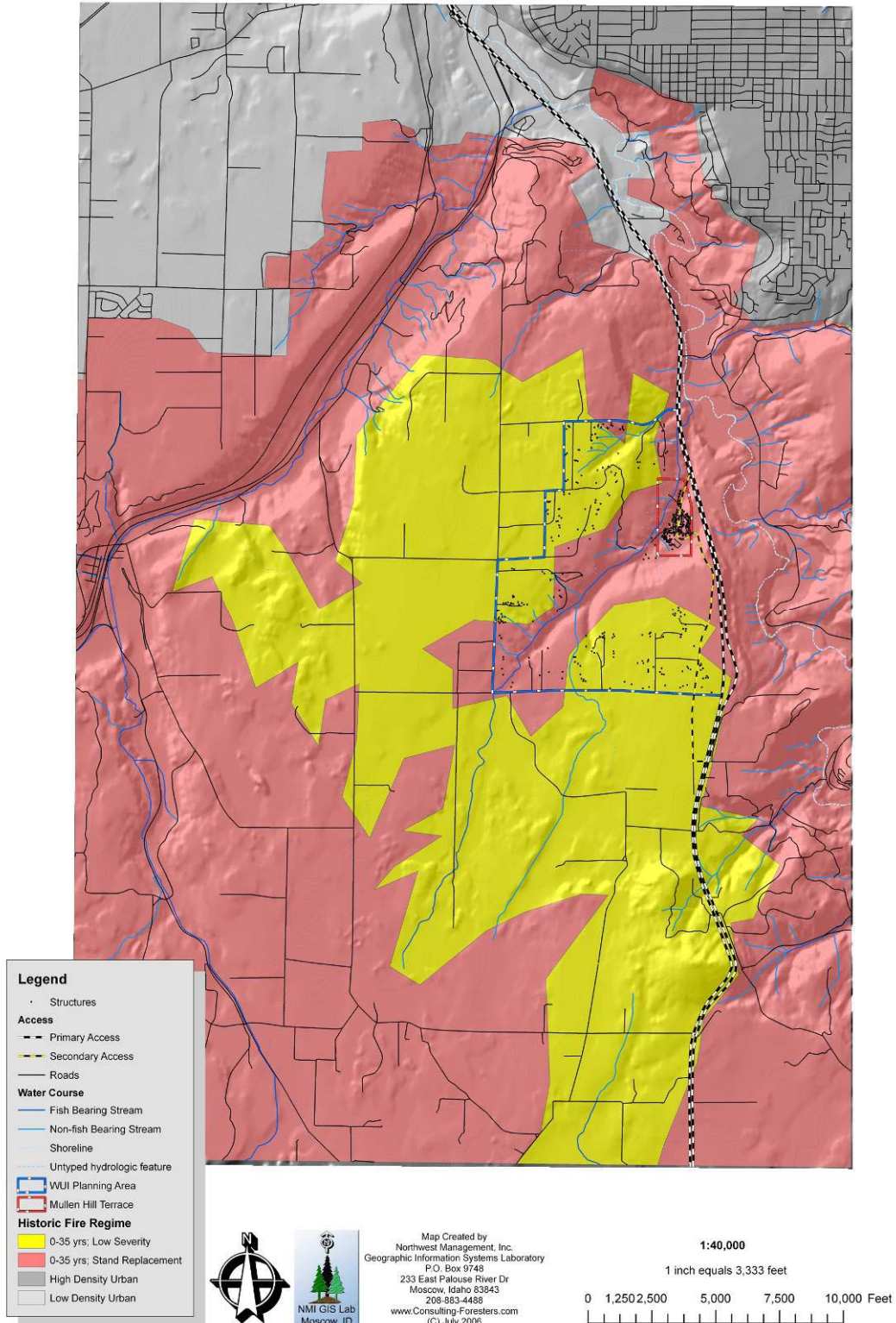
These data were derived using fire history data from a variety of different sources. These data were designed to characterize broad scale patterns of historical fire regimes for use in regional and subregional assessments. Any decisions based on these data should be supported with field verification, 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).

**Table 4.7. Natural Historic Fire Regimes in Mullen Hill Terrace WUI Area.**

Natural Historic Fire Regime	Acres	Percent of Area
0-35 yrs; Stand Replacement	875	50%
0-35 yrs; Low Severity	874	50%

Figure 4.3. Historic Fire Regime in Mullen Hill Terrace Mobile Home Park WUI Area.

Mullen Hill Terrace **Community Wildfire Protection Plan**  
 Historic Fire Regime





### 4.3.2 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 4.8.

**Table 4.8. Fire Regime Condition Class Definitions.**

<b>Fire Regime Condition Class</b>	<b>Description</b>	<b>Potential Risks</b>
<b>Condition Class 1</b>	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.
<b>Condition Class 2</b>	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.
<b>Condition Class 3</b>	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.

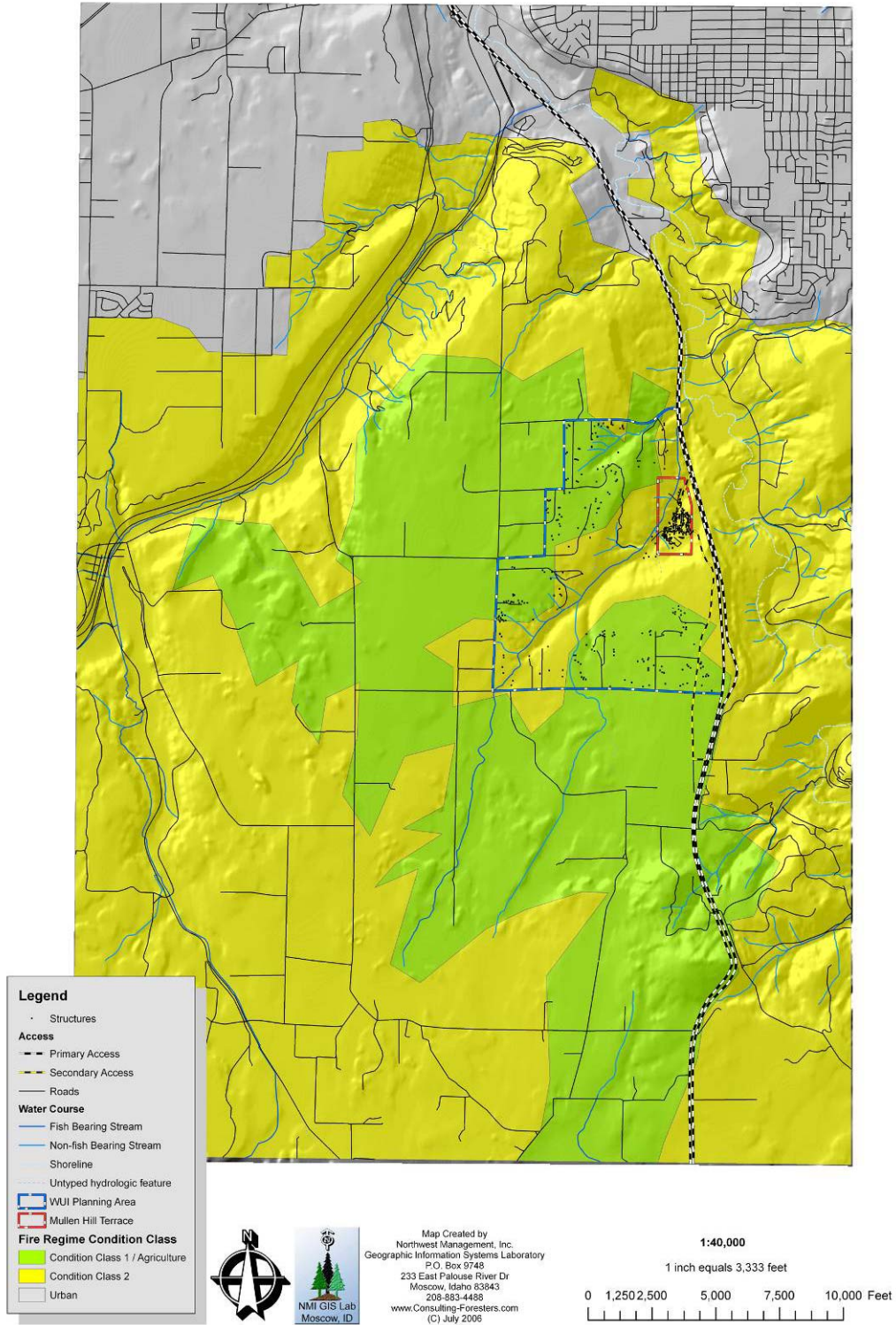
An analysis of Fire Regime Condition Class in the Mullen Hill Terrace Mobile Home Park WUI area shows that approximately 50% of the area is in Condition Class 1 (low departure) and approximately 50% is in Condition Class 2 (Table 4.9).

**Table 4.9. FRCC by area in Mullen Hill Terrace WUI Area.**

<b>Condition Class</b>	<b>Acres</b>	<b>Percent of Area</b>
Condition Class 2	875	50%
Condition Class 1 / Agriculture	874	50%

**Figure 4.4. Fire Regime Condition Class in Mullen Hill Terrace Mobile Home Park WUI Area.**

**Mullen Hill Terrace** Community Wildfire  
 Fire Regime Condition Class Protection Plan



#### **4.4 Risk Assessment**

The risk assessment was completed using the National Fire Protection Association (NFPA) form 299: Standard for Protection of Life and Property from Wildfire, 1997 Edition. The perimeter homes in the park scored an average of 80 points, which correlates to a High Risk designation. Perimeter home scores ranged from a low of 54 to a high of 108 points. The interior homes scored an average of 60 points, which is Moderate Risk. Interior home scores ranged from a low of 51 to a high of 80 points. The primary variable that affected the score was the amount of defensible space. Greater defensible space yielded to lower scores.

Figure 4.5. National Fire Plan Hazard Severity Form.

**Wildfire Hazard Severity Form  
NFPA 299**

<b>Landowner / Community Name:</b>	<b>Qtr-Qtr / Sec / Town / Range</b>	<b>Prevention Officer</b>
<b>Address</b>	<b>Lat. / Long.</b>	<b>Date</b>
	<b>Waypoint ID</b>	

<b>A. Means of Access</b>		<b>2. Defensible space</b>		<b>2. Setback from slopes =30%</b>	
<b>1. Ingress and egress</b>		More than 100 ft.		More than 30 ft. to slope	
Two or more roads in/out	0	More than 71 – 100 ft.		Less than 30 ft. to slope	
One road in/out	7	30 – 70 ft.		Not applicable	
<b>2. Road width</b>		Less than 30 ft.		<b>G. Available Fire Protection</b>	
Greater than 24 feet	0	<b>C. Topography</b>		<b>1. Water source availability (on site)</b>	
Between 20 and 24 feet	2	<b>1. Slope</b>		500 gpm pressurized hydrants < 1000 ft. apart	
Less than 20 feet	4	Less than 9%		250 gpm pressurized hydrants < 1000 ft. apart	
<b>3. All-season road condition</b>		Between 10 – 20%		More than 250 gpm non-pressurized, 2 hrs	
Surfaced, grade <5%	0	Between 21 – 30%		Less than 250 gpm non-pressurized, 2 hrs	
Surfaced, grade >5%	2	Between 31 – 40%		No hydrants available	
Non-surfaced, grade < 5%	2	Greater than 41%		<b>2. Organized response resources</b>	
Non-surfaced, grade > 5%	5	<b>D. Additional Rating Factors</b>		Station within 5 miles of structure	
Other than all-season	7	<b>1. Topography that adversely affects wildland fire behavior</b>		Station greater than 5 miles	
<b>4. Fire service access</b>		<b>2. Area with history of higher fire occurrence</b>		<b>3. Fixed fire protection</b>	
<= 300 ft. with turnaround	0	<b>3. Areas of unusually severe fire weather and wind</b>		Sprinkler system (NFPA 13, 13R, 13D)	
>= 300 ft. with turnaround	2	<b>4. Separation of adjacent structures</b>		None	
<= 300 ft. no turnaround	4	<b>E. Roofing Material</b>		<b>H. Utilities (Gas and Electric)</b>	
>= 300 ft. no turnaround	5	<b>1. Construction material</b>		All underground utilities	
<b>5. Street signs</b>		Class A roof		One underground, one aboveground	
Present (4 in. in size and reflective)	0	Class B roof		All aboveground	
Not present	5	Class C roof			
<b>B. Vegetation (Fuel Models)</b>		Non-rated			
<b>1. Predominant vegetation</b>		<b>F. Existing Building Construction</b>		<b>Total Score</b>	
Light	5	<b>1. Materials</b>			
Medium	10	Noncombustible siding/deck			
Heavy	20	Noncombustible siding/wood deck			
Slash	25	Combustible siding and deck		<b>Risk Rating</b>	

**Low Hazard: <39 Points; Moderate Hazard: 40 – 69 Points; High Hazard: 70 – 112 Points; Extreme Hazard >113 Points**

**NOTES:**

Figure 4.6. Results of Hazard Severity Form on Perimeter Homes.

Results of Hazard Severity Form on Perimeter Homes																			Lot Score	Rating	Notes	
Lot #	A.					B.		C.	D.				E.	F.		G.						H.
	1.	2.	3.	4.	5.	1.	2.	1.	1.	2.	3.	4.	1.	1.	2.	1.	2.	3.	1.			
29	0	2	0	0	5	10	10	4	4	5	5	5	3	5	5	0	3	5	0			
30	0	2	0	0	5	20	25	7	4	5	5	5	3	0	1	0	3	5	0			
31	7	2	0	0	5	20	10	4	4	5	5	5	3	0	1	0	3	5	0			
32	7	2	0	0	5	20	25	4	4	5	5	5	3	10	5	0	3	5	0			
33	7	2	0	0	5	10	25	4	4	5	5	5	3	5	5	0	3	5	0			
37	7	2	0	0	5	10	10	4	5	5	5	5	3	0	1	0	3	5	0			
38	7	2	0	0	5	10	10	4	5	5	5	5	3	5	5	0	3	5	0			
39	0	2	0	0	5	10	25	4	4	5	5	5	3	10	5	0	3	5	0			
40	0	2	0	0	5	10	10	1	5	5	5	5	3	5	1	0	3	5	0			
41	7	2	0	0	5	10	10	4	5	5	5	5	3	10	5	0	3	5	0			
42	7	2	0	0	5	10	25	4	4	5	5	5	3	0	5	0	3	5	0			
43	0	2	0	0	5	10	25	4	4	5	5	5	3	5	1	0	3	5	0			
55	0	2	0	0	5	5	10	1	0	5	5	5	3	5	0	0	3	5	0			
56	0	2	0	0	5	5	10	1	1	5	5	5	3	5	0	0	3	5	0			
57	0	2	0	0	5	10	25	1	0	5	5	5	3	5	0	0	3	5	0			
58	0	2	0	0	5	10	10	1	0	5	5	5	3	5	0	0	3	5	0			
59	0	2	0	0	5	10	10	1	0	5	5	5	3	10	0	0	3	5	0			
60	0	2	0	0	5	20	25	1	1	5	5	5	0	0	0	0	3	5	0			
61	0	2	0	0	5	20	25	1	1	5	5	5	0	10	0	0	3	5	0			
62	0	2	0	0	5	20	25	1	0	5	5	5	3	0	0	0	3	5	0			
63	0	2	0	0	5	20	25	1	0	5	5	5	0	0	0	0	3	5	0			
64	0	2	0	0	5	20	25	1	0	5	5	5	0	0	0	0	3	5	0			
65	0	2	0	0	5	20	25	1	0	5	5	5	0	10	0	0	3	5	0			
66	0	2	0	0	5	10	25	1	0	5	5	4	0	10	0	0	3	5	0			
67	0	2	0	0	5	10	25	1	0	5	5	4	3	0	0	0	3	5	0			
68	0	2	0	0	5	20	25	1	0	5	5	5	3	0	0	0	3	5	0			
69	0	2	0	0	5	20	25	1	0	5	5	5	3	0	0	0	3	5	0			
70	0	2	0	0	5	10	25	4	2	5	5	5	3	5	1	0	3	5	0			
71	0	2	0	0	5	10	25	4	2	5	5	5	3	0	5	0	3	5	0			
72	0	2	0	0	5	20	25	4	1	5	5	5	0	10	5	0	3	5	0			
73	0	2	0	0	5	10	25	4	2	5	5	5	0	10	5	0	3	5	0			
76	0	2	0	0	5	10	25	4	1	5	5	5	3	10	5	0	3	5	0			
77	0	2	0	0	5	10	25	4	1	5	5	5	3	10	5	0	3	5	0			
78	0	2	0	0	5	10	25	4	1	5	5	5	3	10	5	0	3	5	0			
103	0	2	0	0	5	10	25	4	3	5	5	5	0	10	5	0	3	5	0			
104	7	2	0	0	5	10	25	4	3	5	5	4	0	5	1	0	3	5	0			
106	7	2	0	0	5	10	25	7	4	5	5	4	0	10	5	0	3	5	0			
108	7	2	0	0	5	10	25	7	4	5	5	4	0	10	5	0	3	5	0			
110	7	2	0	0	5	10	10	4	4	5	5	4	0	10	5	0	3	5	0			
112	7	2	0	0	5	10	25	4	4	5	5	4	0	10	5	0	3	5	0			
114	7	2	0	0	5	10	25	4	4	5	5	4	0	5	5	0	3	5	0			
115	7	2	0	0	5	10	10	1	1	5	5	5	3	10	0	0	3	5	0			
116	7	2	0	0	5	10	25	4	4	5	5	4	0	0	5	0	3	5	0			
117	7	2	0	0	5	10	25	1	1	5	5	4	0	5	0	0	3	5	0			
118	7	2	0	0	5	10	10	1	1	5	5	4	0	10	0	0	3	5	3			
119	7	2	0	0	5	10	25	1	1	5	5	4	0	0	0	0	3	5	0			
<b>Average</b>	<b>2.7</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>5.0</b>	<b>12.4</b>	<b>20.8</b>	<b>2.9</b>	<b>2.2</b>	<b>5.0</b>	<b>5.0</b>	<b>4.7</b>	<b>1.8</b>	<b>5.5</b>	<b>2.3</b>	<b>0.0</b>	<b>3.0</b>	<b>5.0</b>	<b>0.1</b>	<b>80.4</b>	<b>High</b>	

**Figure 4.7. Results of Hazard Severity Form on Interior Homes.**

Results of Hazard Severity Form on Interior Homes																				Lot	Score	Rating	Notes
Lot #	A.					B.		C.	D.				E.	F.		G.			H.				
	1.	2.	3.	4.	5.	1.	2.	1.	1.	2.	3.	4.	1.	1.	2.	1.	2.	3.	1.				
105,107,109,111,113	7	2	0	0	5	5	10	1	1	5	5	5	0	10	0	0	3	5	0	64	Moderate	Comp & metal, needles	
22-28	0	2	0	0	5	5	10	1	1	5	5	5	3	10	0	0	3	5	0	60	Moderate	Comp & metal, needles	
1-21	0	2	0	0	5	5	10	1	1	5	5	5	3	5	0	0	3	5	0	55	Moderate	Comp & metal, needles, wood piles	
44-54	0	2	0	0	5	5	10	1	0	5	5	5	3	5	0	0	3	5	0	54	Moderate	Comp & metal, needles, wood piles	
79-102	0	2	0	0	5	5	10	1	0	5	5	5	0	5	0	0	3	5	0	51	Moderate	Comp & metal, fairly clean	
74-75	0	2	0	0	5	5	10	1	0	5	5	5	3	5	0	0	3	5	0	54	Moderate	Comp, needles	
34-36	7	2	0	0	5	10	25	1	3	5	5	5	3	0	1	0	3	5	0	80	High	Shared HIZ's, firewood pile	
<b>Average</b>	2.0	2.0	0.0	0.0	5.0	5.7	12.1	1.0	0.9	5.0	5.0	5.0	2.1	5.7	0.1	0.0	3.0	5.0	0.0	59.7	Moderate		

Several observations and recommendations have been made as a result of the assessment. The perimeter homes are at more risk than the interior homes, but given the highly combustible landscaping and the small amount of home separation, all homes are at significant risk. One of the main observations is that home ignition zones are shared between multiple homes. If one home burns, it will threaten several others. The implication is that the wildfire hazard is a shared responsibility with all members of the community. Several of the hazards that make the community vulnerable to wildfire can be remedied.

#### **4.4.1 Fuels Assessment**

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

The natural vegetation in and around the community varies from open ponderosa pine with bunch grass understory to Douglas-fir with brush and regeneration in the understory. Minimal slash was found around the property. A few small slash piles containing tree and yard debris were identified. Risk assessment scores ranged from 5 to 20 and averaged 12.4 points. Dwarf mistletoe is present in some trees. This increases the torching fire potential in infested trees. Bark beetle activity is present, but not yet an epidemic. Crown fire potential is elevated around the community as a result of high tree densities. This is especially true on the western perimeter. Ladder fuels are significant around the community. Heavy brush and regeneration concentrations are the primary ladder fuel component.

The potential for a running crown fire in the forest surrounding the community is high given crown closure and ladder fuel concentrations. It is recommended that the surrounding forest be thinned to open up the forest canopy. This thinning should incorporate the removal of stressed and diseased trees. Spacing should vary based on the size and age of the trees. These actions will reduce the intensity of wildfires and significantly reduce the risk to the community. Grant assistance may be available and should be pursued. It is recommended that a professional forester assess the forest surrounding the community and write a management plan that identifies long term forest management objectives.

#### **4.4.2 Topography**

Wildfire risk assessment scores for adverse topography ranged from 0 to 5. Interior homes are located on flat or gentle slopes. The overall development is located on a north-facing slope. Northerly aspects are typically cooler and wetter. Unfortunately, the development is located adjacent to a southwest to northeast trending valley. This valley may channel prevailing southwest winds during frontal events. Several homes located along the western perimeter are located at the heads of smaller draws within the valley. This greatly increases their risk as fire often intensifies in these locations.

The slope around the Mullen Hill Terrace Mobile Home Park varies from 0 to about 30 percent. Risk assessment scores for slope range from 1 to 7 points. The greatest concern is when homes are located mid slope or near the hilltop because fires often make rapid runs upslope. Homes on the western and northeastern perimeter are at higher risk due to their proximity to steeper slopes. Homes at the base of slopes are at less risk.

Homes that are not adequately set back from slopes are subject to greater radiant, conductive and convective heating. Homes that are located on slopes in the Mullen Hill Terrace Mobile Home Park generally have less than thirty foot setbacks. Five risk assessment points are given to homes without sufficient setbacks.



Topography is difficult to change. Homes that are currently in a poor location relative to slope should mitigate the wildfire risk by increasing defensible space distance. Future development should consider slope location prior to home placement and avoid placing homes mid-slope and near hilltops as well as near draws and chutes. It is recommended that set-back requirements be specified in rental agreements.

### 4.4.3 Defensible Space

The term defensible space refers to that area between a house and an oncoming wildfire where the vegetation has been modified to reduce the wildfire threat and allow firefighters to safely operate. Thirty-three of the perimeter homes within the Mullen Hill Terrace Mobile Home Park have less than 30 feet of defensible space and scored 25 points. Thirteen perimeter homes have 30 to 70 feet of defensible space and scored 10 points. None of the homes have more than 70 feet of defensible space. Small lot size minimizes the potential for defensible space creation. The planting of highly combustible vegetation has compromised defensible space around many of the homes. Combustible vegetation identified includes juniper, spruce, and other volatile evergreen species. Defensible space is also diminished by other fuel sources such as firewood piles, pine needle accumulations, railroad ties, landscape timbers and beauty bark.



Typical Defensible Space



Risk Factors: Firewood Stack & Needle Pile

Increasing defensible space will lead to the most significant reduction in wildfire risk. Homes that increase their defensible space from less than 30 feet to more than 100 feet will reduce their risk by 24 points. To increase defensible space, residents need to reduce the overall amount of fuel around home including wood piles, slash piles, pine needle piles, non-fire resistant trees, shrubs and landscape materials. Block and rock landscape materials are preferred. Residents need to keep remaining vegetation lean, clean, and green with regular maintenance. Future landscaping schemes should focus on fire resistant plant material. This requirement could be incorporated into rental agreements. Since every home shares a home ignition zone with neighboring homes, residents will have to work together to improve defensible space.

#### 4.4.3.1 Construction Materials

Homes and outbuildings within the Mullen Hill Terrace Mobile Home Park either have wood or metal siding. The wood sided homes are typically T1-11 panels and not lap siding. No cedar sided homes were identified during the assessment. Decking materials identified within the community are generally wood and/or metal. Additionally, the majority of the homes have wood or metal skirting around the base. Metal skirting may prevent flying embers from reaching underneath homes.

The building materials utilized within the community are generally fire resistant. Continued use of fire resistant materials is recommended. Enclosing openings under homes and decks will also help reduce the potential for firebrand ignitions. Screening off vents and other openings with fire resistant materials will prevent firebrands from entering the home. Risk assessment scores range from 0 to 10 points for building materials.

#### **4.4.3.2 Roofing Material**

Roofing is one of the most important factors of home ignitability. Roofing materials are either metal or composition shingle within this community. Fortunately, there are no wooden roofs; however, many of the roofs are covered with a thick layer of pine needles. Needles have also filled many of the rain gutters, which increases the risk of home ignition. Some of the lease holders are diligent about cleaning off the needles.

It is important the residents continue to use non-combustible roofing material as well as keep roofs and gutters free of built up debris. Removing some of the overstocked pine trees throughout the community would reduce the amount of needles that are cast onto homes and into yards. Wildfire risk assessment scores range from 0 to 3 points for roofing material.

#### **4.4.3.3 Adjacent Structures**

The homes within the Mullen Hill Terrace Mobile Home Park are located on small lots. There is little separation between homes so most homes scored a maximum of 5 points. The lack of separation increases risk because homes provide additional sources of fuel. If one home ignites, the radiant heat and embers from the home will threaten several adjacent homes. These homes, should they ignite, will threaten additional homes.

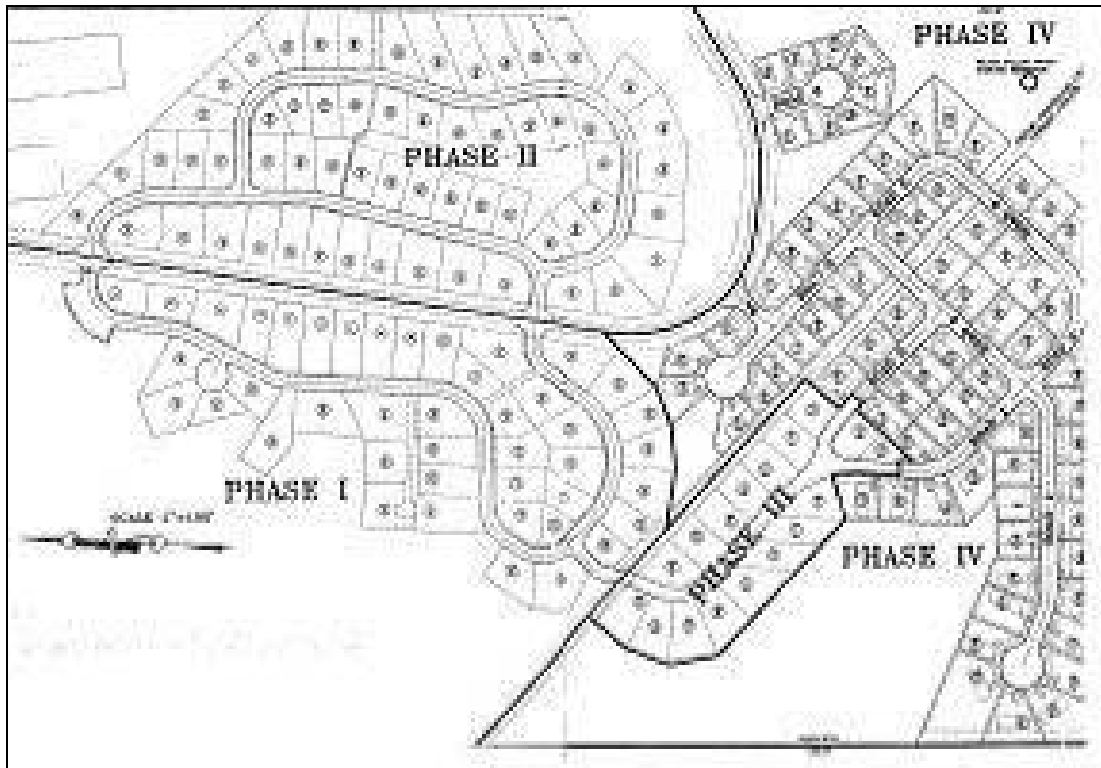
There is little that can be done to increase the spacing between existing homes given the small lot size. Future development can mitigate this problem with larger lots. As stated earlier, neighbors will have to work together to increase defensible space. Home ignition zones are shared between multiple homes.

### **4.4.4 Means of Access**

#### **4.4.4.1 Ingress and Egress**

The majority of the existing lots within the Mullen Hill Terrace Mobile Home Park can be accessed by more than one road. Loop roads have been incorporated into Phase I and Phase II. These lots all scored zero hazard points. Lots 31 through 35, in Phase I, are located on a dead end road and scored seven hazard points. Phase Three, lots 103 through 119, are currently accessed by only one road and the lots scored seven hazard points. The plans for Phase Four will remedy the one road access problem for Phase Three. Unfortunately, one dead end road and two short cul-de-sacs are planned with Phase Four.

**Figure 4.8. Community Lot Map Showing Development Phases.**



Having more than one road for access allows for better evacuation of residents and better ingress and egress of emergency vehicles. It is recommended that future development not include the use of cul-de-sacs and dead end roads.

#### **4.4.4.2 Road Width**

The Mullen Hill Road averages 27 feet in width from State Route 195 to the Mullen Hill Terrace Mobile Home Park. The access roads into the park are a little narrower and average about 22 feet in width. The access roads within the park scored two hazard points for road width on all lots. A couple of the turns are fairly sharp, especially in Phase One.

Narrow roads with sharp turns are difficult for large fire apparatus. Due to existing lot configuration, road widening in existing portions of the community is probably not practical. Future roads should be designed to be at least 24 feet in width and incorporate a larger turn radius for emergency vehicle access.

#### **4.4.4.3 All-Season Road Condition**

All of the roads within the Mullen Hill Terrace Mobile Home Park are paved and less than five percent in slope. A score of zero was assigned for all of the lots. The paved and low slope roads are excellent for emergency vehicle access. It is recommended that future roads be paved and have less than 5 percent slope as well. With Phase Four pushing up the hill this may be more of a challenge.

#### **4.4.4.4 Fire Service Access**

Fire service access evaluates driveway length and turnaround ability. Given the small lot size, all of the driveways are short and fire apparatus will be able to park near structures along the main access roads. A score of zero was assigned for all of the lots. No recommendation is

made for individual driveways. The primary access concern is the dead end roads and cul-de-sacs identified in Phase Four.

#### 4.4.4.5 Street Signs

A sign identifying Mullen Hill Road is located along Highway 195 a few hundred feet prior to the intersection. There is also a green street sign located at the actual intersection. There are no road signs that identify the roads within the development. Signs with lot numbers are located at the northern entrances of development. Several of the lots are labeled with similar number scheme. The numbers are white, but not reflective, about four inches in height, and carved into dark wooden post; therefore, they contrast fairly well. Five points were given to all homes due to a lack of street signs and consistent lot labeling.



Entrance Signs



Individual Lot Signs

#### 4.4.4.6 Lot Numbers

The community is not difficult to find for emergency vehicles since Mullen Hill Road is labeled well along Highway 195. Interior road labels would assist emergency response vehicles once they arrive at the community. The entrance sign numbers do assist in locating individual lots and the individual lot numbers are very helpful when present. To increase their effectiveness, the numbers should be reflective to be seen at night or in dense smoke. Homes without lot numbers should install new, four inch reflective numbers near the main road for better identification.

#### 4.4.5 Utilities

Electrical lines within the Mullen Hill Terrace Mobile Home Park are underground. Primary transmission lines in the vicinity of the community are above ground. Underground electrical lines reduce wildfire ignition potential immediately within the community. Electrical lines should be located underground with future development.

A large propane tank is located adjacent to a structure on Lot 118. There is no break between the forest fuels and the tank. Small propane tanks are located throughout the community. All propane tanks should be located at least 30 feet from structures and have fuel breaks around the tanks to prevent direct flame contact during a wildfire. Fire resistant wraps for propane tanks are available and could be used to help reduce this risk factor where present. Most homes scored 0 points, the lowest risk, for utilities.

## **4.4.6 Fire Protection**

The Mullen Hill Mobile Home Park is located within the protection boundary of Spokane County Fire Protection District Three. Fire District Three, Station 35, is located 3.6 miles southwest of the Mullen Hill Mobile Home Park. The station is staffed by volunteer firefighters and has no permanent staffing. Although the station is closer than 5 miles to the community, 5 risk assessment points are given due to the additional response times of volunteer firefighters. To improve fire district protection, it is recommended that the Mullen Hill Terrace Mobile Home Park support future fire district actions that increase staffing ability.

### **4.4.6.1 Onsite Water Availability**

Multiple pressurized hydrants are located throughout the community. The hydrants are currently free of vegetation and debris that may block fire personnel access. Continuing to keep the existing hydrants clear of obstructions will help keep this risk factor low. It is also important that these water sources are sufficient to meet the demands of the future homes and future hydrant placement and capacity meet current requirements. Mullen Hill Terrace residents should be reminded that a good water source doesn't guarantee homes will be safe from wildfire. As stated earlier, homes need to be survivable because fire protection resources may not be available. The community received the best possible score, 0 points, for water source availability.

### **4.4.6.2 Fixed Protection**

Fixed fire protection that meets NFPA 13, 13R, and 13D requirements refers to exterior fire sprinkler systems for structural protection from wildfire. No homes within the Mullen Hill Terrace Mobile Home Park were identified as having an exterior sprinkler system for structural protection; therefore, all homes received 5 risk assessment points

Exterior sprinkler systems for structures may reduce the risk to homes that were constructed using combustible roofing and/or siding materials or have combustible debris on the roofs. The system must operate correctly to be effective. For example, the system must turn on automatically when a fire is approaching. This type of system is not necessary when homes are composed of fire resistant exterior building materials. Having fire resistant construction materials is the preferred option because sprinklers and hoses may reduce the capacity of the water system to provide resources to firefighting suppression operations.

## **4.4.7 General Mitigation Activities**

### **4.4.7.1 Home Site Evaluations and Creation of Defensible Space**

Individual home site evaluations can increase tenants' 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 lease holders in techniques for protecting their homes is critical in this hot, dry environment.

### **4.4.7.2 Travel Corridor Fuel Breaks**

Ignition points are likely to continue to be concentrated along the roads and railway lines that run through Spokane County. These travel routes have historically served as the primary source

of human-caused ignitions, particularly along State Highway 195. In areas with high concentrations of resource values along these corridors, plow or disk lines may be considered in order to provide a fuel 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.

Along Highway 195, it is recommended that shoulders and ditches be mowed regularly to help reduce the probability of an ignition. Where forest type fuels abut this major travel route, thinning and pruning should be considered. Internal routes through the Mullen Hill Terrace Mobile Home Park can be made more fire safe by removing overhanging trees or branches and bushes or tall grasses along either edge. Pruning trees up to seventeen feet can also help provide a fire resistant escape route.

#### **4.4.7.3 Power Line Corridor Fuel Breaks**

The treatment opportunities specified for travel corridor fuel 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. Firefighters working near power lines can be at extreme risk if the lines are still active due to the possibility of arcing between lines; thus, in order to safely use power line corridors as fuel breaks, power lines should be inactive and wildlands extending from the cleared corridor must also be treated. Treating the wildlands adjacent to this type of fuel break will help reduce the intensity and usually the flame lengths of the fire front before it arrives. Fuel reduction projects under and extending from high tension power lines are strongly recommended.

#### **4.4.7.4 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, firefighting resources will not jeopardize lives to protect a structure. Thus, the fate of the home will largely be determined by lease holder actions prior to the event.

The majority of the undeveloped vegetation in Mullen Hill Terrace Mobile Home Park is comprised of grass and forestlands. These fuel types are very flammable and can support fast moving fires. In many cases, homes can easily be protected by following a few simple guidelines that reduce the ignitability of the home. There are multiple programs such as FIREWISE 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 and tenants with making the necessary improvements.

### ***4.5 Firefighting Resources and Capabilities***

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

#### **4.5.1 Spokane County Fire Protection District #3**

Bruce Holloway, Chief  
509-235-6645

bholloway@scfd3.org  
10 S. Presley  
Cheney, WA 99004

### **District Summary:**

Spokane County Fire District 3 is located in the Southwest part of Spokane County. There are 565 square miles in the district and a population of approximately 15,000 people. There are 120 paid call firefighters, 7 full time career staff, 5 full time career command staff, a fabricator and a secretary. There are 9 fire stations, 29 in service apparatus and 3 command units. The majority of the area protected is rural but there are significant areas of residential development consisting of lot sizes from 1 to 10 acres, most of it wildland urban interface. There is a growing area of commercial/industrial/high density residential development in the northeast part of the district with water and sewer provided by the City of Spokane.

Spokane County Fire District 3 is a full service fire department. We provide fire suppression for industrial/commercial, residential and wildfire risks. Emergency Medical Service is provided in a tiered response system with the district providing the initial BLS response, including the use of automatic external defibrillation (AED) for heart attack patients. EMS is provided out of seven stations; Station 31, Station 33, Station 34, Station 35, Station 36, Station 310 and Station 312. Personnel are trained to a minimum level of first responder/AED. Paramedic service is provided by the transport agencies. The district has a significant potential for wind driven wildfire events with wildland urban interface problems and we expend considerable effort preparing for this.

All district equipment is on a scheduled preventative maintenance program. The maintenance is performed in the district shop. District personnel construct and modify apparatus in our shop reducing the cost for labor, designing and constructing the apparatus to meet our needs. The district acts as its own contractor on new station construction projects and remodels. This results in considerable savings to the district in labor and other costs.

We have an annual goal setting workshop sponsored by our district commissioners. They have the insight to include the members of the district in the process that identifies our priorities for the coming year. This promotes a sense of belonging and ownership in the process. The members of the goal setting committee are the commissioners, the career staff, the battalion chiefs and station captains.

### **Priority Areas:**

#### ***Residential Growth:***

There is significant residential growth in the North East Corner of our district utilizing Spokane City water and sewer. This is increasing our population dramatically and we are seeing an increase in call volume as a result. There is also a dramatic increase in residential growth in the wildland urban interface areas in our pine forests. The new lot sizes are generally ten acres but there are numerous structures already built in these areas with smaller lots. All of these areas are prone to fast moving wind driven fires under the right conditions.

New development adheres to stringent requirements for defensible space and road access but there is large areas of older development that do not incorporate these measures.

#### ***Communications:***

We have an adequate communication system that enables us to utilize one repeated frequency all over the district. We can use more repeated frequencies on most of the district and we have a county wide plan in place to increase the repeated frequency capability on the part of the district that only has one fire frequency. We need to obtain a

funding source to accomplish this. We have a countywide communications center that dispatched all the fire agencies in Spokane County. We also have access to tactical channels to manage large incidents. Our communications plan is being developed in conjunction with the law enforcement agencies.

**Fire Fighting Vehicles:**

We recently completed a vehicle upgrade program that modernized our firefighting fleet. We passed a special levy that enabled us to build 7 new trucks. This effort modernized our fleet with newer used vehicles added additional pumper tenders to the fleet and also used to replace older attack engines. We plan to continue to replace at least a truck a year to maintain the fleet.

**Burn Permit Regulations:**

The State Department of Natural Resources and Spokane County Air Pollution Authority regulate debris burning. We have a few incidents regarding burning but they are usually not significant.

**Effective Mitigation Strategies:**

In addition to adding and modernizing our firefighting fleet we just finished rebuilding all of our fire stations. This happened over about a ten-year period. We provide a comprehensive training program for our firefighters to give them the skills they need to provide service to our community.

Spokane County adopted standards for development in the wildland urban interface areas, which has improved our risk to structures in that area.

**Education and Training:**

The fire district provides a comprehensive training program for all of our personnel. Ongoing training at the individual stations and district headquarters keep firefighters abreast of new information and keep them refreshed on other important aspects of their jobs. All district personnel receive ongoing fire and medical training through the department training program. A recruit-training program for new hires, trains them to a level of structural firefighter 1, wildfire firefighter 2 and first responder EMS. Specialized training is provided with outside courses from other departments, the region or the state.

We participate in community education by providing “Fire Safe” home videos to new tenants and interested persons and, on request, with on-site evaluations of property to assist property owners in making their homes more defensible in the event of a wildland fire. Additionally, we participate with the local schools in child fire safety education.

**Cooperative Agreements:**

Spokane County has a fire service mutual aid plan, which includes all of the fire departments in Spokane County. This plan enables us to access all of the resources in Spokane County. We also have mutual aid with the Turnbull Refuge for wildfire response and joint jurisdiction responsibility with the Washington State Department of Natural Resources. Washington State has a fire mobilization plan that gives us access to all of the local fire resources in our state. Spokane County has three type III teams available to help with major incidents. We provide initial attack for the Bureau of Land Management for fires in their protection areas in our district and in areas in Whitman and Lincoln Counties.

**Current Resources:**

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**Table 4.10. Spokane Fire Protection District #3 Equipment List.**

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<b>Unit#</b>	<b>Type</b>	<b>Year</b>	<b>Vehicle Size</b>	<b>Tank Size (gal)</b>	<b>Pump GPM</b>
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**Table 4.10. Spokane Fire Protection District #3 Equipment List.**

Unit#	Type	Year	Vehicle Size	Tank Size (gal)	Pump GPM
<b>Station 31</b>		<b>Cheney</b>			
C3	Command	2006	1 ton 4X4		
C3A	Command	2002	SUV 4X4		
SU31	Support	2003	1 ton 4X4		
E31	Pumper	1991	2 ton 4X4	875	750
A30	Attack Engine	1992	2 ton 4X4	875	500
R31	Rescue	1990	2 ton	400	175
PT31	Pumper/Tender		3 ton 6X4	2000	1750
P31	Plow	1986	SUV 4X4		
<b>Station 32</b>		<b>Medical Lake</b>			
A32	Attack Engine	1986	2 ton 4X4	875	275
PT32	Pumper/Tender	1979	3 ton 6X4	2000	1500
<b>Station 33</b>		<b>Four Lakes</b>			
A33	Attack Engine	1991	2 ton 4X4	875	500
PT 33	Pumper/Tender	1985	3 ton 6X4	1750	1500
M33	Medic	1999	1 ton 4X4		
<b>Station 34</b>		<b>Marshall</b>			
A34	Attack Engine	1983	2 ton 4X4	875	275
PL34	Pumper/Ladder	1980	2 ton	400	1500
M34	Medic	1996	3/4 ton 4X4		
<b>Station 35</b>		<b>Paradise</b>			
A35	Attack Engine	1990	2 ton 4X4	875	500
PT35	Pumper/Tender	1982	3 ton 6X4	2000	1000
M35	Medic	1991	3/4 ton 4X4		
<b>Station 36</b>		<b>Spangle</b>			
A36	Attack Engine	1986	2 ton 4X4	875	275
PT36	Pumper/Tender	1981	3 ton 6X4	2000	1250
R36	Rescue	1980	2 ton 4X4		
<b>Station 39</b>		<b>Chapman Lake</b>			
A39	Attack Engine	1981	2 ton 4X4	875	275
T39	Tender	1964	3 ton 6X4	2500	300
<b>Station 310</b>		<b>Amber/Badger/Williams Lakes</b>			
A310	Attack Engine	1993	2 ton 4X4	875	500

**Table 4.10. Spokane Fire Protection District #3 Equipment List.**

Unit#	Type	Year	Vehicle Size	Tank Size (gal)	Pump GPM
B310	Brush Engine	1975	2 ton 4X4	750	275
PT310	Pumper/Tender	1975	3 ton 6X4	2000	1000
M310	Medic	1986	3/4 Ton 4X4		
<b>Station 312</b>			<b>Tyler</b>		
A312	Attack Engine	1992	2 ton 4X4	875	500
B312	Brush Engine	1977	1 ton 4X4	400	200
PT312	Pumper/Tender	1981	3 ton 6X4	2000	1250
M312	Medic	2000	2 ton 4X4		

**Future Considerations:**

Spokane County Fire District 3 will continue to be actively engaged in upgrading and modernizing existing vehicles and equipment assets. Protecting our community and our firefighters is our paramount objective. The building of a new fire station in the Aspen Meadows area and in the area of the suburban development at Thomas Mallon and Hallet are in the planning stages at this time. These stations will provide coverage to the Aspen Meadows area, which is over five miles from any existing station and bolster the response in the developing area. These new stations will provide added space for apparatus necessary to provide better coverage and house specialized equipment for the commercial/industrial area of the district. In doing so we can continue to provide the level of service our community is used to.

**4.5.2 Washington Department of Natural Resources**

Department of Natural Resource  
Arcadia District Work Center, Deer Park, WA  
NE Region, Colville, WA  
(509) 684-7474

The Department of Natural Resources provides wildfire protection and suppression on privately owned forest land and state owned forest land in the state of Washington.

The Arcadia District of the DNR encompasses approximately 2.1 million acres of private and state lands in the counties of Spokane, Stevens, Lincoln and Pend Oreille in Northeast Washington State. Mutual Aid Agreements with 18 rural fire protection districts, the Colville National Forest, the Spokane Indian Agency, The Kalispel Indian Agency, US Fish and Wildlife Service, and the National Park Service provide for DNR assistance in fire protection assistance in and adjacent to the Arcadia District. The border of the Arcadia District includes all of Spokane County, the portion of Lincoln County north of US Hwy 2, the portion of Stevens County south of Deer Lake and east of the Hunters divide, and the portion of Pend Oreille County South of Tiger and Sullivan Lake.

Special features within the district include the Cities of Spokane and Spokane Valley, the Kalispel Indian Reservation, Spokane Indian Reservation, Turnbull National Wildlife Refuge, Mt. Spokane State Park, Riverside State Park, Lake Roosevelt National Recreation Area, and portions of the Colville National Forest.

The district's primary work station is located in Deer Park, north of Spokane. The DNR utilizes a "home guard" approach in that the seasonal engine drivers park their assigned engines at their residence within their assigned geographic portion of the district. The Arcadia District staffs 11 3-person brush engines within the district each season, with one engine in south Stevens

County, one engine in South Pend Oreille County, and the remainder spread through Spokane County. Engine staffing is on a varied schedule which provides seven day per week coverage June through September.

The Arcadia District is also is home to a PBY air tanker on contract by the state. The 1500 gallon scooper is based at the Deer Park Airport, and is available from mid-June until the fire season is declared over in the fall, usually late September.

The DNR maintains call when needed contracts for Dozers and operators trained and equipped for fire suppression throughout the district.

The Arcadia District is also the home to the Airway Heights Camp Program, which staffs 5- 10 person inmate hand crews trained in wildland fire suppression.

DNR crews are neither trained nor equipped for structure suppression. Primary protection responsibilities are on private and state forest land throughout Northeast Washington and the DNR also responds to fires off of DNR jurisdiction which threaten DNR protection.

The DNR does not provide formal EMT services. The crews are trained in first-aid, and some staff members have EMT and first-responder training, but this is not a service the DNR provides as part of their organization.

**Personnel:** The Arcadia District fire program staff totals 38-40 individuals, including 4 permanent employees, 5 career-seasonal employees who work up to nine months each year, and 30 seasonal employees on staff from roughly June to September. These are all paid staff members trained in wildland fire, but not in structure fire suppression. Within the District an additional 5-8 permanent employees work in other programs, but assist in the fire program during the summer as needed.

**Mutual Aid Agreements:** The DNR has individual mutual aid agreements with local fire protection districts. Through the “Master Agreement” and “Northwest Compact”, the DNR has mutual aid agreements with Federal Agencies, neighboring states and Canada.

Table 4.11 summarizes available equipment.

<b>Assigned Station</b>	<b>Make/ Model</b>	<b>Capacity (gallons)</b>	<b>Pump capacity (GPM)</b>	<b>Type</b>
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Ford	240	120 GPM	Wildland T6
Arcadia	Internat'l	600	120 GPM	Wildland T5

- The Arcadia District Contracts Dozers as needed
- The Arcadia District is home to the 5 – 10 person Airway Heights crews
- The Arcadia District is base to the PBY, Tanker 85.

- The Arcadia District staff includes: Type 3 Incident Commanders and Division Supervisors, and other various NWCG rated overhead staff.
- The Arcadia District maintains a supply cache and two mop-up support trailers with portable pumps, hose, and fittings.

**Additionally, suppression resources include:**

- **Helicopter:** The DNR has 5 type 2 helicopters based out of Ellensburg, and they are staged throughout the state as needed. In times of high fire danger there is often a helicopter staged at Colville and occasionally at Deer Park.
- **Fixed-Wing:** The DNR Northeast Region often partakes in contracting a fixed-wing platform for Air-Attack during peak fire periods.
- **Air Tankers:** In addition to Tanker 85, the Arcadia district has access to Federal Tankers, Cour d Alene Air Tanker Base is nearby and often has a tanker on base during high fire danger periods, although with reduced air craft available the availability has been decreased. In addition, the DNR is able to utilize Candadian Air-Tankers through agreements.

**Summary of Arcadia District Initial Attack Response to Wildland Incidents in the Spokane County Fire District #3 Area:**

On an average fire day during fire season, the DNR would respond the following resources for initial attack fire suppression, in coordination with fire district response:

- 3 Type 6 wild land engines with 3-person crews
- 1 Fire Warden / Fire Investigator
- 1 Overhead – Type 4 Incident Commander / Single Resource Boss or higher

Depending on potential of fire location on the particular day, or if the fire is rapidly building, or if initial forces request, any or all of the following additional resources would be typically dispatched:

- Tanker 85 Air Tanker
- Type 2 Rotor w/ bucket
- Air Attack fixed wing platform (if multiple suppression aircraft dispatched)
- (1-2) Type 2 Dozer and Single Resource Boss Dozer
- (1-5) 10 person inmate crews w/ supervisor
- (3-8) additional Type 6 wildland engines with 3-person crews
- Additional overhead as the incident needs, including but not limited to: Type 3 Incident Commander, Operations Section Chief, Division supervisors, Task force leaders, Resource Boss.

If the fire continues to escalate in complexity, the DNR will evaluate and deploy as necessary Type 2 Incident Management Teams with corresponding resources.

**The primary operational challenges facing the district include:**

- Continued development of wildland-urban interface areas across the district. All counties are experiencing rapid growth and development in previous rural areas.
- Nearly all fires are multi-jurisdictional within the district and require unified command with at least one additional agency, often two. This requires constant joint training and relationship building to overcome challenges with communication and jurisdiction during incident response. Currently the DNR has a positive relationship with local partners, however it requires constant maintenance.

- Meeting high standards for training, personnel, and equipment under increasingly restricted budgets.
- Internally, an operational challenge is to have sufficient and appropriate staff available throughout the year to foster partnerships with local departments and facilitate continued and improved coordination, training, communications, and other joint efforts with our partners across the district.

Our effectiveness in addressing these challenges will largely hinge on funding available for the fire program and its various elements.

## Chapter 5: Treatment Recommendations

### 5 Administration & Implementation Strategy

Critical to the implementation of this Community Wildfire Protection 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 of the Mullen Hill Terrace Mobile Home Park community.

The Washington State Department of Natural Resources is a participant in this planning process and has contributed to its development. By implementing plan activities through existing programs and resources, the cost of mitigation is often a small portion of the overall cost of a project's design or program.

All risk assessments were made based on the conditions existing during 2003 through 2006, thus, the recommendations in this section have been made in light of those conditions. However, the components of risk and the preparedness of community'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 the Mullen Hill Terrace Mobile Home Park in relation to this planning document, this entire **Community Wildfire Protection Plan** should be reviewed annually at a special meeting of the Community Wildfire Protection Plan committee, 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 Owner of the Mullen Hill Terrace Mobile Home Park, detailing plans for the year's activities, and made available to the general public ahead of the meeting. Amendments to the plan should be detailed at this meeting, documented, and attached to the formal plan as an amendment to the Community Wildfire Protection Plan. Re-evaluation of this plan should be made on the 5<sup>th</sup> anniversary of its acceptance, and every 5-year period following.

#### 5.1 Prioritization of Mitigation Activities

The prioritization of mitigation activities will include a special emphasis on cost-benefit analysis review. The process will reflect that a key component in a 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 the appropriate jurisdiction with overall coordination provided by the Mullen Hill Terrace Mobile Home Park Manager.

Often the types of projects that the Mullen Hill Terrace community can afford to do on their own may not meet the traditional project model, selection criteria, and benefit-cost model. 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 Mullen Hill Terrace Mobile Home Park will understand the basic state and federal grant program criteria which will drive the identification, selection, and funding of the most competitive and worthy mitigation projects.

The prioritization of projects will occur annually and be facilitated by the Mullen Hill Terrace Tenant's Association with final approval by Brett Smith, Mullen Hill Terrace Mobile Home Park owner. 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
- Ecosystems

## 5.2 Recommendations for the Mullen Hill Terrace Community Area

The Mullen Hill Terrace Community Wildfire Protection Plan committee and members of the public have recommended the following action items based on the risk assessment, past history, and local knowledge of the area. These action items are specific to the Mullen Hill Terrace community area.

**Table 5.1 Action Recommendations Specific to the Mullen Hill Terrace Community Area.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<b>5.1.a: Enact a community policy to design future roads allowing for at least a 24 foot road width and incorporate large turning radii pullouts and corners for emergency vehicle access.</b>	<b>Protection of people and structures by improving the ability of emergency responders to access the area safely and quickly.</b>	Mullen Hill Terrace Landowner	Year 1 (2006): Incorporate the recommended road widths and pullout designations into proposed and future expansion projects.
<b>5.1.b: Enact a policy to pave all future roads throughout the community and limit the slope of roads to less than 5%.</b>	Protection of people and structures by maintaining easy and dust free access throughout the community and limiting steeply sloped roads.	Mullen Hill Terrace Landowner	Year 1 (2006): Formally adopt a policy to pave all roads throughout the community and limit road grades to less than 5%.
<b>5.1.c: Install street signs within the community.</b>	Protection of people and structures by improving accessibility to the community.	Mullen Hill Terrace Landowner	Year 1 (2006): Identify need signs and obtain funding. Year 2 (2007): Obtain signs and equipment and install in appropriate locations. Estimate: \$500
<b>5.1.d: Replace numbers on lot identification signs with reflective numbers and install lot identification signs where they currently do not exist.</b>	Protection of people and structures by improving the ability of emergency responders and others to quickly and accurately access homes.	Mullen Hill Terrace Landowner and Spokane County Fire Protection District #3	Can be completed in Year 1 (2006) pending funding. Estimate \$500.
<b>5.1.e: Increase defensible space around homes by relocating wood piles and propane tanks, removing pine needles and slash piles, removing hazardous trees, and installing fire resistant landscaping.</b>	Protection of people and structures by improving the individual defensibility of each home; thereby, increasing the defensibility of the community overall.	Mullen Hill Terrace Landowner, Mullen Hill Terrace Tenant's Association, Washington Department of Natural Resources, Spokane County Fire Protection District #3, FIREWISE, and individual residents.	Year 1 (2006): Use assessments as well as community education to begin a targeted campaign to reduce the wildfire risk factors around individual homes.

**Table 5.1 Action Recommendations Specific to the Mullen Hill Terrace Community Area.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<b>5.1.f: Promote the continued use of non-combustible roofing materials throughout the community.</b>	Protection of people and structures by improving the defensibility of individual homes.	Mullen Hill Terrace Landowner, Mullen Hill Terrace Tenant's Association, and individual lease holders.	Ongoing: Make a point in all educational activities and interactions with residents to promote the use of non-combustible roofing materials.
<b>5.1.g: Promote cleaning and removal of pine needles and other debris from roofs and gutters.</b>	Protection of people and structures by improving the defensibility of individual homes.	Mullen Hill Terrace Landowner, Mullen Hill Terrace Tenant's Association, and individual lease holders.	Ongoing: Make a point in all educational activities and interactions with residents to promote the cleaning and removal of debris from roofs and gutters. This may be facilitated by a community clean up day or a FIREWISE Day.
<b>5.1.h: Promote the continued use of fire resistant building materials and enclosing openings under homes.</b>	Protection of people and structures by improving the defensibility of individual homes.	Mullen Hill Terrace Landowner, Mullen Hill Terrace Tenant's Association, and individual lease holders.	Ongoing: Make a point in all educational activities and interactions with residents to promote the use of fire resistant building materials and enclosing openings under homes.
<b>5.1.i: Continue to keep hydrants clear of obstructions and make certain future hydrant placement and capacity meets the needs of the growing community.</b>	Protection of people and structures by insuring water availability for fire suppression resources.	Mullen Hill Terrace Landowner and Spokane County Fire Protection District #3.	Ongoing: Continue current policy of keeping hydrants clear of obstructions. Future expansions of the park should include assessments of the current water capacity and effective placement of fire hydrants.
<b>5.1.j: Plan for underground electrical lines in future community developments.</b>	Protection of people and structures by reducing the fire ignition risk throughout the community.	Mullen Hill Terrace Landowner	Year 1 (2006): Implement community policy to require new utility lines to be buried underground. Ongoing: Collaborate with local utility companies to implement this policy.
<b>5.1.k: Plan additional road outlets and avoid constructing cul-de-sacs and dead ends in the Phase IV expansion and all future developments.</b>	Protection of people and structures by providing better and safer ingress and egress.	Mullen Hill Terrace Landowner	Year 1 (2006): Layout Phase IV expansion to provide for an additional escape route. Ongoing: Plan future developments with more than one point of access and avoid using cul-de-sacs and/or deadends.



**Table 5.1 Action Recommendations Specific to the Mullen Hill Terrace Community Area.**

<b>Action Item</b>	<b>Goals and Objectives</b>	<b>Responsible Organization</b>	<b>Action Items &amp; Planning Horizon</b>
<b>5.2.l: Conduct home site defensible space treatments.</b>	Protection of people, structures, and emergency responders by reducing the risk factors surrounding homes.	Mullen Hill Terrace Landowner , Mullen Hill Terrace Tenant's Association, Washington Department of Natural Resources, Spokane County Fire Protection District #3, individual tenants, and private contractors.	Estimate that treatments will cost approximately \$600 per home site. Approximately 75 homes will require treatments for an estimated cost of \$45,000.  Home site treatments can begin with the securing of funding.
<b>5.2.m: Develop a community evacuation plan.</b>	Protection of people, structures, and emergency responders by directly increasing the safety of residents during a wildfire evacuation situation.	Mullen Hill Terrace Landowner and Mullen Hill Terrace Tenant's Association.	Year 1 (2006): Develop safe evacuation plan for the entire community including alternate routes and safety zones. Send information to residents and/or hold a public meeting.
<b>5.1.n: Conduct defensible space treatments around critical infrastructure elements and community buildings.</b>	Protection of people, structures, and emergency responders by reducing the risk factors.	Mullen Hill Terrace Landowner , Washington Department of Natural Resources, Spokane County Fire Protection District #3, individual tenants, and private contractors.	Estimate that treatments will cost approximately \$600 per structure. Approximately 4 sites will require treatments for an estimated cost of \$2,400.  Home site treatments can begin with the securing of funding and can be done concurrently with item 5.1.i.
<b>5.1.o: Include slope set back requirements in lot rental agreements.</b>	Protection of people and structures by reducing the fire risk of individual lots.	Mullen Hill Terrace Landowner	Year 1 (2006): Formally amend rental agreements for the Mullen Hill Terrace Mobile Home Park to include a slope set back requirement for tenants.
<b>5.1.p: Promote the use of fire resistant propane tank wraps throughout the community.</b>	Protection of people and structures by reducing the fire risk of individual lots.	Mullen Hill Terrace Landowner and Mullen Hill Terrace Tenant's Association.	Ongoing: Make a point in all educational activities and interactions with residents to promote the use of fire resistant propane tank wraps.

### **5.3 Recommendations for the Mullen Hill Terrace Wildland-Urban Interface Area**

The following action items were recommended by the Mullen Hill Terrace Community Wildfire Protection Plan committee and members of the public. These specific mitigation activities apply to the designated Wildland Urban Interface planning area which includes not only the Mullen Hill Terrace Mobile Home Park community area, but also extends to the surrounding landscape and subsequently a larger base of landowners.

**Table 5.2. Action Items Specific to Mullen Hill Terrace WUI Area.**

<b>Action Item</b>	<b>Goals and Objectives</b>	<b>Responsible Organization</b>	<b>Action Items &amp; Planning Horizon</b>
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**Table 5.2. Action Items Specific to Mullen Hill Terrace WUI Area.**

Action Item	Goals and Objectives	Responsible Organization	Action Items & Planning Horizon
<b>5.2.a: Organize annual wildfire education programs. This activity can be correlated with annual “FIREWISE Day”.</b>	Protect people and structures by increasing awareness of WUI risks, how to recognize risk factors, and how to modify those factors to reduce risk.	Mullen Hill Terrace Landowner, Mullen Hill Terrace Tenant’s Association, Washington Department of Natural Resources, Spokane County Fire Protection District #3, and individual tenants.	To start immediately using existing educational program materials and staffing (e.g. WSU Extension, FIREWISE). Posting signs in community areas and on bulletin boards may be one avenue of getting the message out to residents.
<b>5.2.b: Thin trees and remove brush underneath and nearby transmission lines along west side of the community to serve as a potential fuel break.</b>	Protection of people and structures by reducing the risk of an ignition, decreasing the risk of failure and arcing during a wildfire, and protecting the community against an advancing fire front.	Mullen Hill Terrace Community Wildfire Protection Plan committee, Washington Department of Natural Resources, utility owners, and adjacent landowners.	Year 1 (2006): Conduct necessary landowner meetings, feasibility studies, and environmental surveys to determine viability of project and options. Year 2 (2007): Develop forest plan for thinning and widening of corridors and hire necessary contractors. Year 3 – 6 (2008-11): Implement project plan.
<b>5.2.c: Access improvements through road side fuels management throughout the community and the WUI area.</b>	Protection of people, structures, and infrastructure by reducing the risk of access being cut off by wildfire.	Mullen Hill Terrace Landowner, Spokane County Roads Department, Washington Department of Natural Resources, and private contractors.	Target 100’ on downhill side of roads and 75’ on uphill side for an estimated cost of \$15,000 per mile of road treated. Year 2 - 4 (2007- 09): Secure funding and implement projects to reduce road side fuels.
<b>5.2.d: Increased training and capabilities of firefighters.</b>	Protection of people and structures by direct firefighting enhancements.	Spokane County Fire Protection District #3 and Washington Department of Natural Resources.	Year 1 (2006): Identify funding and resources needed to carry out training opportunities. Year 2 (2007): Begin implementing training opportunities for all firefighters.
<b>5.2.e: Conduct community defensible zone treatments targeting home site treatment linkages and adjacent forest stands. Treatments may include thinning forest to open up the canopy, removal of hazard trees, reduction of ladder fuels, and disposal of slash.</b>	Protection of people, structures, and infrastructure by reducing the risk of a crown fire and improving forest health.	Mullen Hill Terrace Landowner, Washington Department of Natural Resources, adjacent landowners, and a professional forester.	Treat high risk fuels from home site defensible space to an area extending at least to the Mullen Hill Terrace Mobile Home Park boundary. Treatment should link home site treatment areas and infrastructure. Approximate average cost is \$700 per acre.

## Chapter 6: Supporting Information

### 6

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### 6.3 List of Preparers

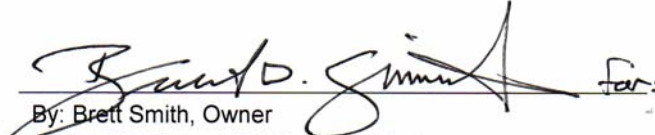
The following personnel participated in the formulation, compilation, editing, and analysis of alternatives for this assessment.

**Table 6.1. List of Preparers**


<b>Name</b>	<b>Affiliation</b>	<b>Role</b>
Tera R. King, B.S	Northwest Management, Inc.	Project Manager, Natural Resource Manager
William E. Schlosser	Northwest Management, Inc.	Project Co-Manager, GIS Analyst, Natural Resource Economist, Hazard Mitigation Specialist, Regional Planner
Vincent P. Corrao, B.S.	Northwest Management, Inc.	Resource Management Specialist, Auditor
Jim Williams	Mullen Hill Terrace Mobile Home Park	Park Manager, Project Coordinator
Dennis S. Thomas	Northwest Management, Inc.	Fire & Fuels Specialist, Prescribed Burning Manager
Vaiden E. Bloch, M.S.	Northwest Management, Inc.	GIS Analyst
Brian Vrablick, B.S.	Northwest Management, Inc.	Natural Resource Manager, Implementation Specialist
Steve Harris	Washington Department of Natural Resources	Coordinator, Project Leader

## 6.4 Signature Pages

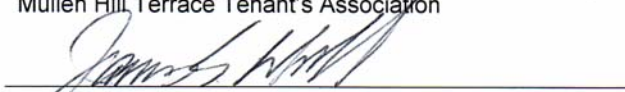
This Mullen Hill Terrace Mobile Home Park **Community Wildfire Protection Plan** has been developed in cooperation and collaboration with the representatives of the following organizations, agencies, and individuals.

  
By: Brett Smith, Owner  
Mullen Hill Terrace Mobile Home Park, LLC

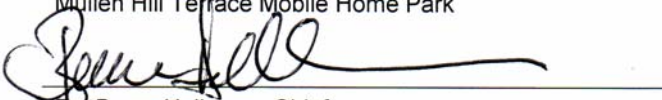
Sept. 7, 2006  
Date

  
By: Jim Curley, President  
Mullen Hill Terrace Tenant's Association

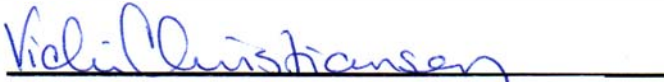
July 29, 2006  
Date

  
By: Jim Williams, Manager  
Mullen Hill Terrace Mobile Home Park


Aug 5, 2006  
Date

  
By: Bruce Holloway, Chief  
Spokane County Fire Protection District #3

Aug. 8, 2006  
Date

  
By: Vicki Christiansen, State Forester  
Washington Department of Natural Resources

Nov. 22, 2006  
Date

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

August 1, 2006  
Date

# 6.4.1 Resolution of Adoption by the Spokane County Board of Commissioners

BEFORE THE BOARD OF COUNTY COMMISSIONERS  
OF SPOKANE COUNTY, WASHINGTON

IN THE MATTER OF )  
ACKNOWLEDGING THE MULLEN )  
HILL TERRACE MOBILE HOME PARK, ) **RESOLUTION**  
SPOKANE COUNTY, WASHINGTON, )  
COMMUNITY WILDFIRE PROTECTION )  
PLAN [AUGUST 4, 2006] )

**WHEREAS**, pursuant to the provisions of RCW 36.32.120(6), the Board of County Commissioners of Spokane County (hereinafter sometimes referred to as the "Board") has the care of County property and the management of County funds and business; and

**WHEREAS**, on December 3, 2003, the President signed the Healthy Forest Restoration Act of 2003 ("HFRA"). This federal legislation contains a variety of provisions aimed at expediting the preparation and implementation of hazardous fuels reduction projects on federal land and assisting rural communities, states and land owners in restoring healthy forest conditions on state and private lands; and

**WHEREAS**, the Mullen Hill Terrace Mobile Home Park ("Park") is located approximately one mile south of the City of Spokane boundaries on the west side of State Route 195 in Spokane County. It is in the middle of a Ponderosa Pine and Douglas-Fir forest. The community currently consists of 120 small lots with mobile and modular homes. A 74-lot expansion is underway; and

**WHEREAS**, the Mullen Hill Terrace Mobile Home Park, consistent with the HFRA, has prepared a Community Wildfire Protection Plan. The purpose of the Plan is to (1) improve fire prevention and suppression; (2) reduce hazardous fuels; (3) restore fire-adapted eco systems; and (4) promote community assistance; and

**WHEREAS**, the Mullen Hill Terrace Mobile Home Park has requested that the Board of County Commissioners acknowledge their Community Wildfire Protection Plan ("CWPP"). Such acknowledgment may facilitate Mullen Hill Terrace Mobile Home Park obtaining grant assistance to implement the "Action Items" outlined in the Plan.

**NOW, THEREFORE, BE IT HEREBY RESOLVED** by the Board of County Commissioners of Spokane County, that Board does hereby acknowledge the Community Wildfire Protection Plan (August 4, 2006) prepared for the Mullen Hill Terrace Mobile Home Park, located in Spokane County, Washington, and congratulates the Mullen Hill Terrace Mobile Home Park as well as other agencies in the collaborative effort in bring about the Plan. In acknowledging the Plan, the Board notes that action item 5.2.c may require Spokane County, through the Engineering Department, to make access improvements through roadside fuels management throughout the community and the WUI area. In acknowledging the Plan, the

Board is not determining to take any action at this time with respect to this recommended "Action Item." Instead, any request by the Mullen Hill Terrace Mobile Home Park to address this "Action Item" will be considered along with other funding priorities at the time of request. Moreover, in acknowledging the Plan, the Board of County Commissioners does so for the general benefit of the public health, safety and welfare of the inhabitants of Spokane County. The acknowledgement of such Plan by the Board of County Commissioners is not intended to create a third-party right of action against the County with respect to the Plan.

**PASSED AND ADOPTED** this 3rd day of October 2006.



ATTEST:

*Daniela Erickson*  
Daniela Erickson  
Clerk of the Board

BOARD OF COUNTY COMMISSIONERS  
OF SPOKANE COUNTY, WASHINGTON

**ABSENT**

TODD MIELKE, Chair

*Mark Richard*  
MARK RICHARD, Vice Chair

*Phillip D. Harris*  
PHILLIP D. HARRIS, Commissioner

## 6.5 Glossary of Terms

**Anadromous** - Fish species that hatch in fresh water, migrate to the ocean, mature there, and return to fresh water to reproduce (Salmon & Steelhead).

**Appropriate Management Response** - Specific actions taken in response to a wildland fire to implement protection and fire use objectives.

**Biological Assessment** - Information document prepared by or under the direction of the Federal agency in compliance with U.S. Fish and Wildlife standards. The document analyzes potential effects of the proposed action on listed and proposed threatened and endangered species and proposed critical habitat that may be present in the action area.

**Backfiring** - When attack is indirect, intentionally setting fire to fuels inside the control line to contain a 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 firefighters under the leadership of a crew boss or other designated official.

**Crown Fire** - A fire that advances from top to top of trees or shrubs more or less independently of the surface fire. Sometimes crown fires are classed as either running or dependent, to distinguish the degree of independence from the surface fire.

**Disturbance** - An event which affects the successional development of a plant community (examples: fire, insects, windthrow, timber harvest).

**Disturbed Grassland** - Grassland dominated by noxious weeds and other exotic species. Greater than 30% exotic cover.

**Diversity** - The relative distribution and abundance of different plant and animal communities and species within an area.

**Drainage Order** - Systematic ordering of the 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 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 Washington 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 pre-commercial 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 non-structure 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 pre-stated 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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