

# Okanogan County, Washington

## **Community Wildfire Protection Plan Appendices**

**2013  
UPDATE**



**Lightning caused fire near Okanogan, Washington 2008.**

# Acknowledgments

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



Okanogan County Commissioners  
and the employees of Okanogan County



WASHINGTON STATE DEPARTMENT OF  
**Natural Resources**

Washington State Department of Natural Resources



USDI Bureau of Land  
Management



USDA Forest Service



USDI Bureau of  
Indian Affairs



USDI Fish & Wildlife  
Service



**FEMA**

Federal Emergency Management Agency



City of Omak  
City of Okanogan  
City of Oroville  
City of Tonasket  
City of Brewster  
City of Pateros



Okanogan C. D. C.

Town of Conconully  
Town of Nespelem  
Town of Elmer City  
Town of Coulee Dam  
Town of Riverside  
Town of Twisp  
Town of Winthrop



Okanogan County Fire Districts #1 - 16  
City of Omak Fire Department  
City of Okanogan Fire Department  
City of Coulee Dam Fire Department  
Town of Conconully Fire Department  
Town of Winthrop Fire Department



Okanogan County Sheriff's Department  
Okanogan County Public Utilities District  
Okanogan Conservation District  
&

Local Businesses and Citizens of Okanogan County

To obtain copies of this plan contact:

Okanogan County Courthouse  
Sheriff's Office  
123 Fifth Avenue North  
Okanogan, Washington 98840

Phone: 509-422-7100  
Fax: 509-422-7106  
Website: [www.okanogancounty.org](http://www.okanogancounty.org)

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## Appendix 1

### Mapping Products

#### Northwest Management, Inc.

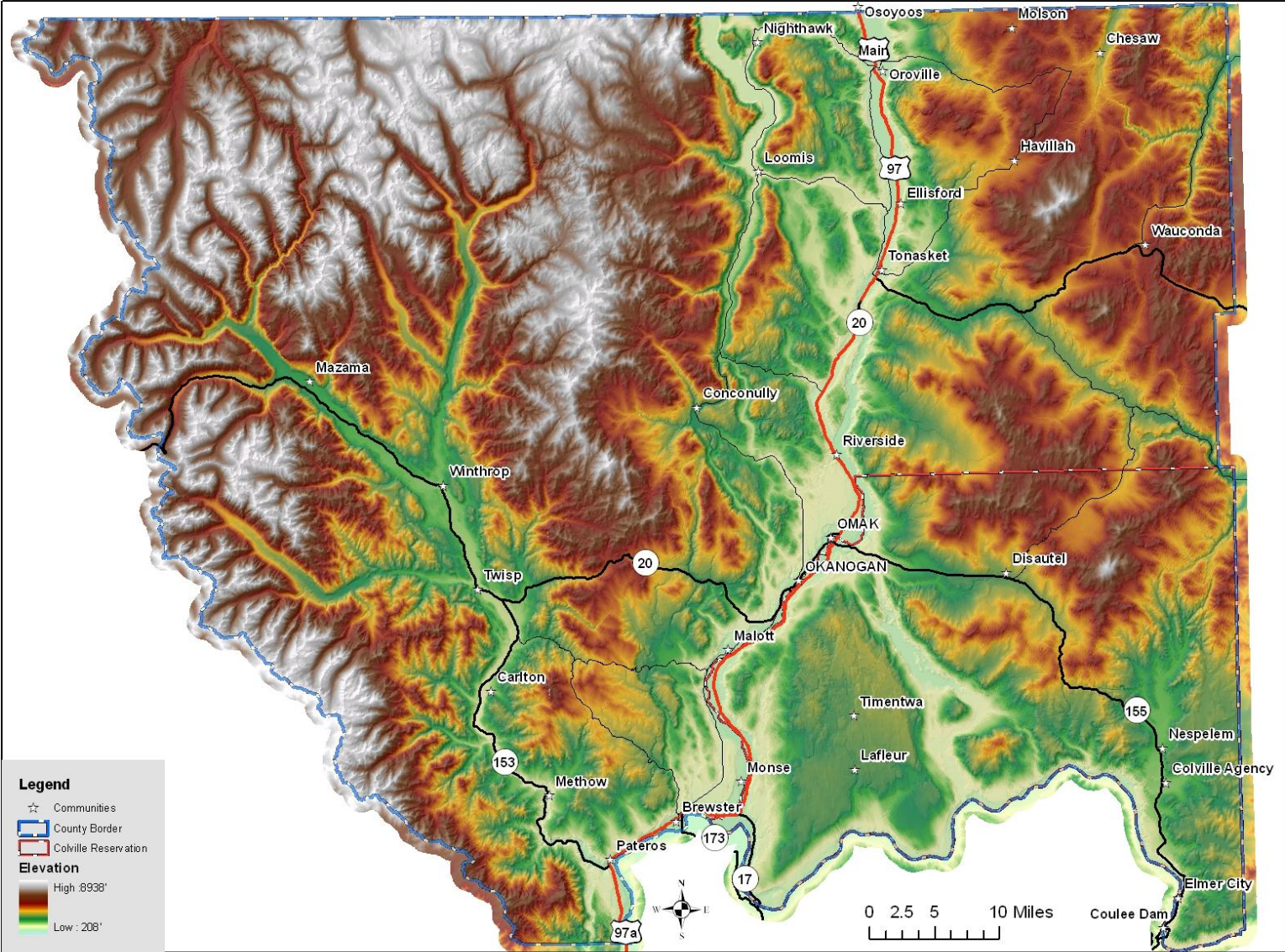
233 East Palouse River Dr.  
P.O. Box 9748  
Moscow, ID 83843  
208-883-4488  
[www.Consulting-Foresters.com](http://www.Consulting-Foresters.com)

The information on the following maps was derived from digital databases held by Northwest Management, Inc. Care was taken in the creation of these maps, but all maps are provided “as is” with no warranty or guarantees. Northwest Management, Inc. cannot accept any responsibility for errors, omissions, or positional accuracy, and therefore, there are no warranties accompanying this product. Although information from land surveys may have been used in the creation of this product, in no way does this product represent or constitute a land survey. Users are cautioned to field verify information on this product before making any decisions.

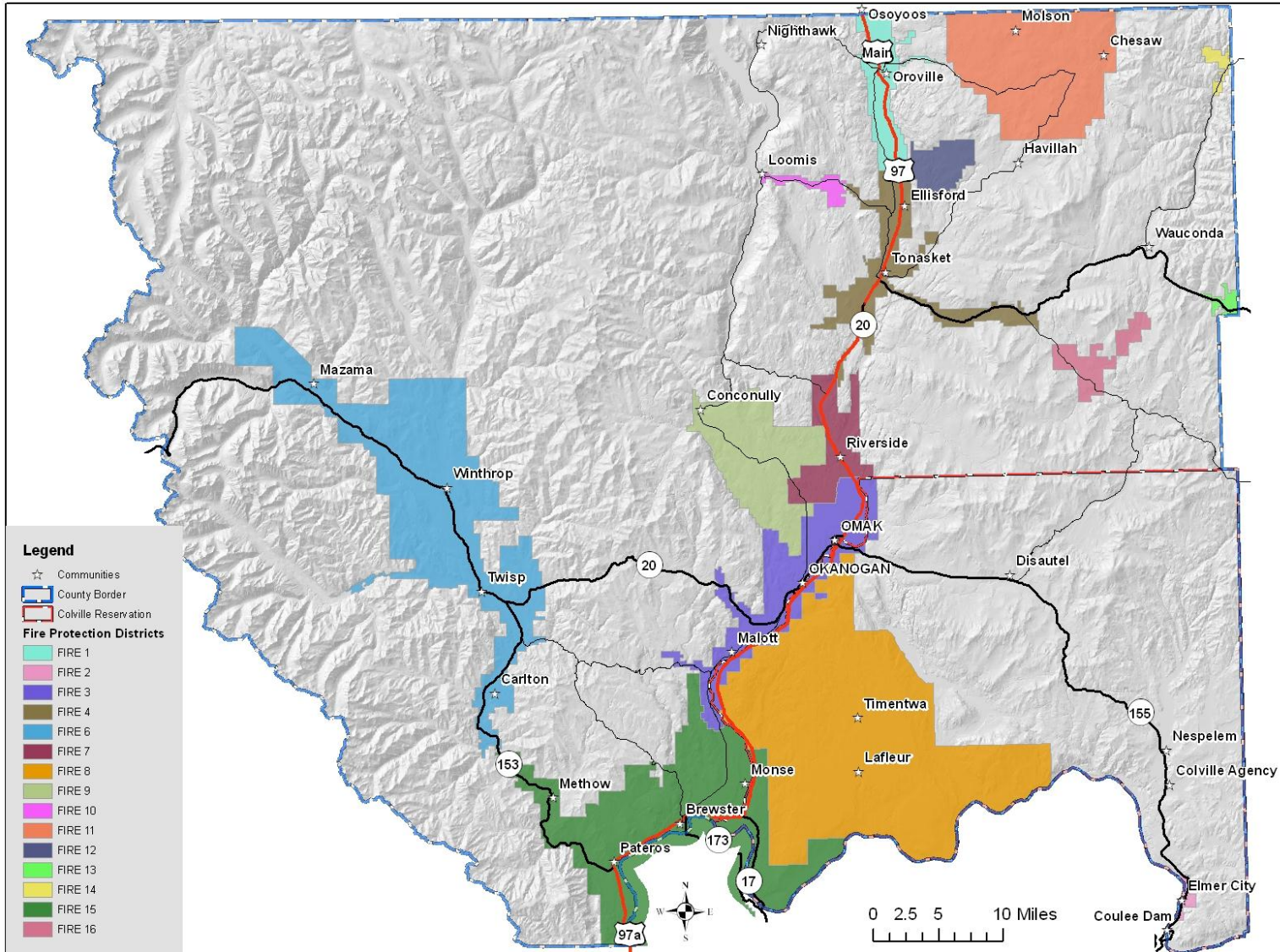
# Land Ownership Map



# Elevation Map

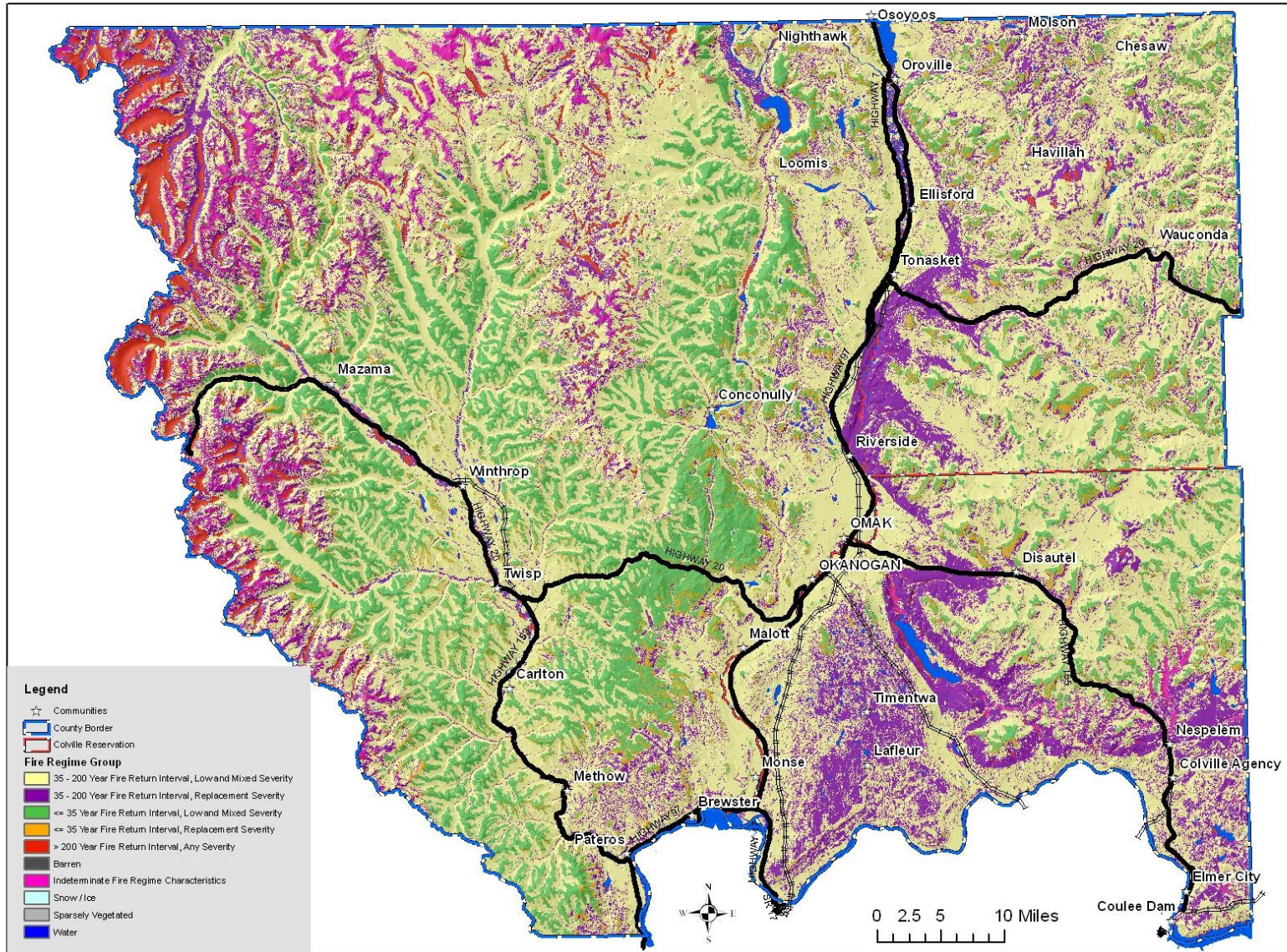


# City and Rural Fire Protection Boundary Map

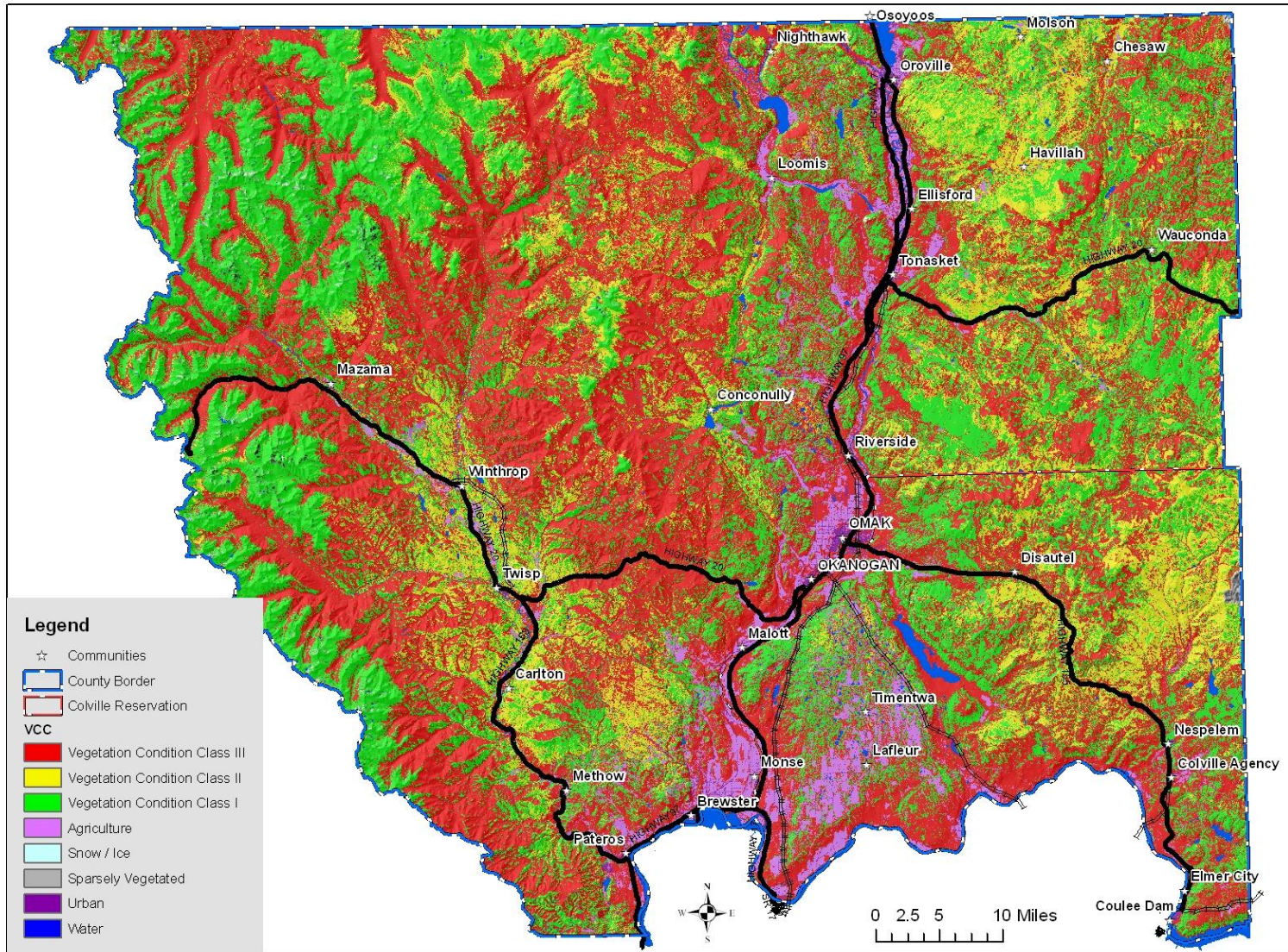




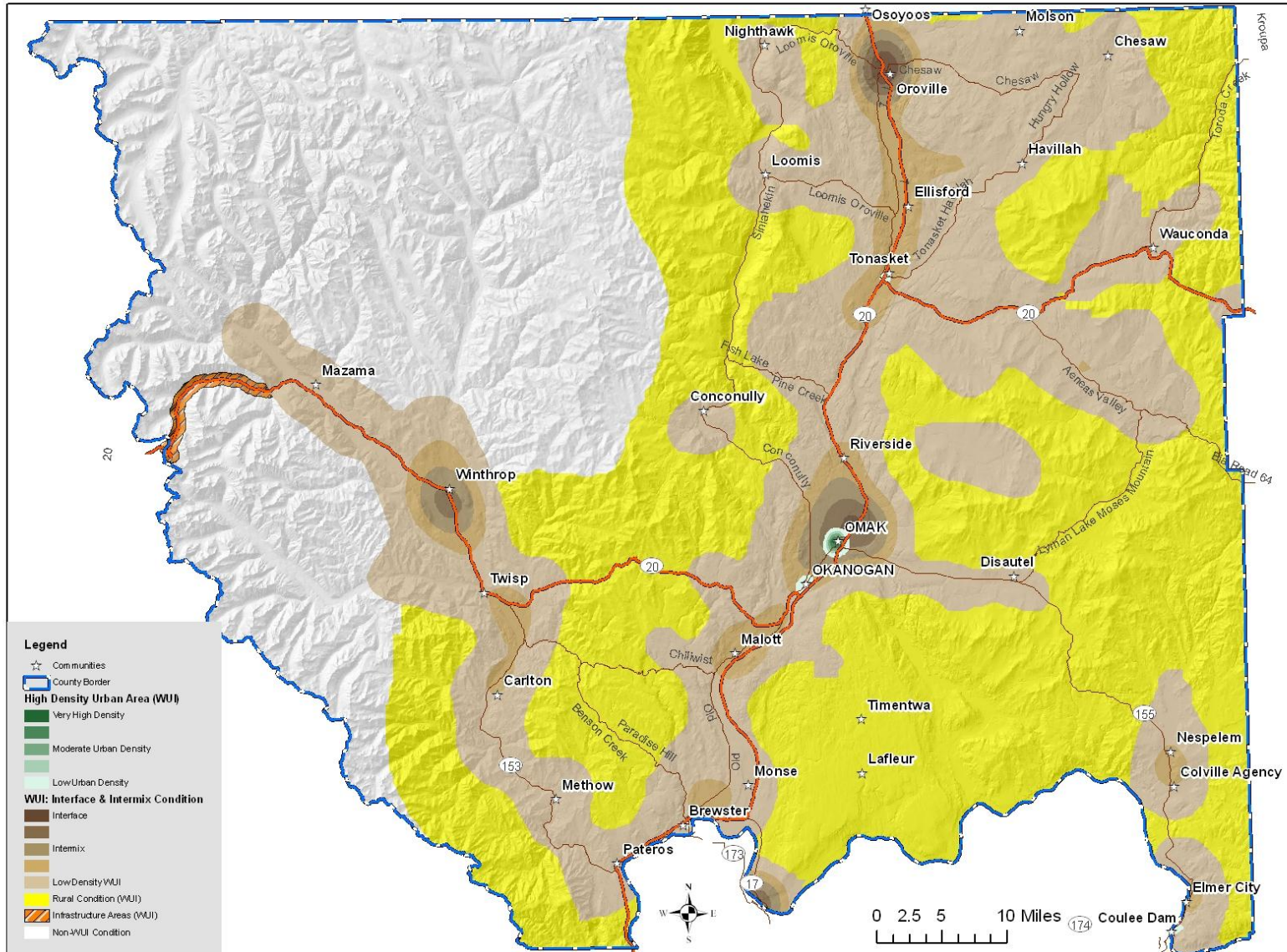
# Historic Fire Regime Map



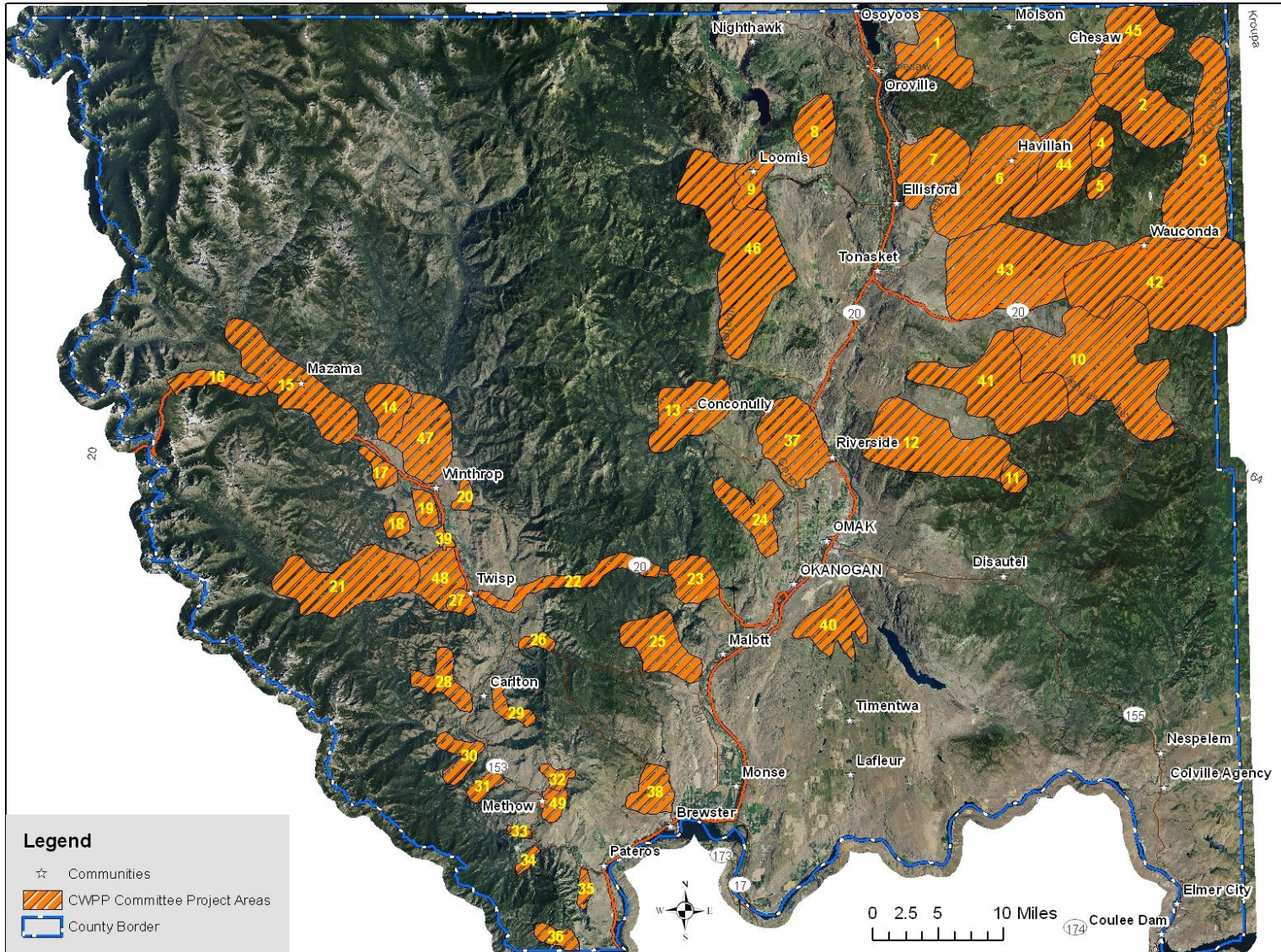
# Fire Regime Condition Class Map



# Wildland Urban Interface Map



# Proposed Treatment Area Map



## Appendix 2

### Documenting the Planning Process

Documentation of the planning process, including public involvement, is necessary to meet FEMA's DMA 2000 requirements (44CFR§201.4(c)(1) and §201.6(c)(1)). This appendix includes the minutes taken at planning committee meetings, a record of published articles regarding the CWPP, and the presentation given at local public meetings.

### Planning Committee Meeting Minutes

#### January 16<sup>th</sup>, 2013 – Okanogan County Sheriff's Office

##### Introductions:

Scott Miller, from the Okanogan County Department of Emergency Management, introduced the intention of the meeting and asked that everyone introduce themselves. Scott then handed the floor to Steve Harris of the Washington DNR.

##### Agenda Item #1 – Steve Harris:

Steve Miller updated the group on Hazardous Fuels Treatment projects recently completed. He also asked the group for some ideas for new project areas. The group made several recommendations for areas that need fuels mitigation work.

##### Agenda Item #2– Multi-Hazard Mitigation Plan & Community Wildfire Protection Plan:

Brad, from Northwest Management (NMI), talked briefly about the plan update process and what has been done so far. Brad passed out the first few chapters from each plan to the group. He stated that if anyone wants a copy electronically, email him at [tucker@nmi2.com](mailto:tucker@nmi2.com). The group was asked to review the maps for accuracy.

The group decided that fire was the County's number one risk. The group was then split into two smaller groups to cover the action items for the MHMP and CWPP. The smaller groups updated the original action items and added a few new action items. Some of the MHMP group members had some ideas for action items but needed to run them by their jurisdiction's officials.

##### Agenda Item #3 – Reminders:

Fire District surveys need to be turned into Glenda (if you have not done so). NMI needs any shapefiles for finished or proposed projects. Review drafts and submit corrections to NMI.

##### Agenda Item #4 – Meeting Schedule:

Public meeting will be held in March or April the date will be announced once it has been decided. NMI hopes to have Final Drafts of both documents completed by the end of June for submission to Washington Military Department for review.

##### Adjournment:

The Okanogan County MHMP & CWPP update steering committee meeting was adjourned at 2 p.m.

## Record of Published Articles

The following articles were published in local newspapers and newsletters during the course of the CWPP planning process.

### **Figure 2.1. Article published in the Methow Valley News on November 14<sup>th</sup>, 2012.**

#### County to update risk plans

Okanogan County is updating its Multi-Hazard Mitigation Plan and Community Wildfire Protection Plan.

Local agencies and organizations have created a committee to complete the required five-year updates as part of the FEMA Pre-Disaster Mitigation program and National Fire Plan and Healthy Forests Restoration Act. The project is being funded through a federal grant.

Once completed, the updated draft plans will be available for public review and comment. For more information call Glenda Beauregard, Okanogan County Emergency Management, at (509) 422-7206 or [gbeauregard@co.okanogan.wa.us](mailto:gbeauregard@co.okanogan.wa.us).

The planning update will include risk analyses, vulnerability assessments, and mitigation recommendations for the hazards of flood, landslide, earthquake, severe weather, wildland fire and extended power outages.

*Nov. 14, 2012*

#### **Methow Valley News Online**

<http://www.methowvalleynews.com/story.php?id=8911>

### **Figure 2.2. Article published by North Cascades Broadcasting on November 14<sup>th</sup>, 2012.**

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

The planning update will include risk analyses, vulnerability assessments, and mitigation recommendations for the hazards of flood, landslide, earthquake, severe weather, wildland fire, and extended power outages.

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

One of the goals of the planning process will be to increase the participating jurisdictions' eligibility for additional grants that will help minimize the risk and potential impact of disaster events. The plan will be located on the main page of the Emergency Management website at [okanogandem.org](http://okanogandem.org). The planning team will be conducting a public meeting to discuss preliminary

findings and to seek public input on the Plans' recommendations. A notice of the dates and locations of this meeting will be posted in local newspapers. Once completed, the updated draft Plans will also be available for public review and comment. For more information on the Okanogan County Multi - Hazard Mitigation Plan and Community Wildfire Protection Plan updates, contact Glenda Beauregard, Okanogan County Emergency Management, at 509-422-7206 or [gbeauregard@co.okanogan.wa.us](mailto:gbeauregard@co.okanogan.wa.us).

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**North Cascades Broadcasting, Inc**

[http://www.komw.net/artman/publish/article\\_6133.shtml](http://www.komw.net/artman/publish/article_6133.shtml)

**Public Meeting Presentation**

The following slideshow was presented at each of the public meetings by Tera King of Northwest Management, Inc. In addition, where possible, a fire district or other planning committee representative opened the meeting with a brief introduction.

Slide  
1

*Okanogan County, Washington  
Multi-Hazards Mitigation Plan &  
Community Wildfire Protection Plan  
Updates*



**Northwest Management,  
Inc.**  
Brad Tucker, B.S.  
233 East Palouse River Drive  
Moscow, Idaho 83843  
208-883-4488 Telephone

Slide  
2

*Northwest Management, Inc.*

- Serving the Western U.S. since 1984
- Main Office in Moscow, Idaho
  - Deer Park, Washington
  - Helena, Montana
- Natural Resource Consultants



*Providing a balanced approach to natural  
resource management*

Slide  
3

**Purpose of the MHMP & CWPP**

- Recognize and Identify Risk Factors
- Reduce the Risk of Loss for Life, Property, Infrastructure, Natural Resources, and Economy
- Map and Prioritize Mitigation Projects
- Provide for Public Awareness
- Improve County's Eligibility for Funding Assistance

**All of this must happen BEFORE a  
disaster!!**

Slide  
4

**FEMA Multi-Hazard Mitigation  
Plan**

- Flooding
- Landslides
- Wildland Fire (from CWPP)
- Severe Weather
- Earthquake
- Terrorism/Civil Unrest



**MHMPs are required for all counties.**  
*As of November 1, 2004 by FEMA*

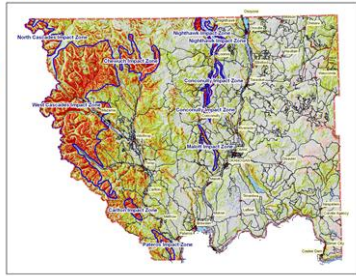




Slide 13

### Landslide Prone Landscapes

Landslide Impact Zones will be based on structures and/or infrastructure in high risk areas.



Slide 14

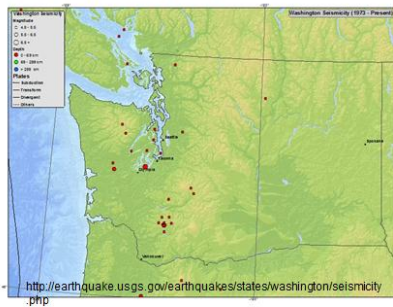
### Earthquake Shake Hazard

There is a 2% chance (2 chances in 100) that the ground acceleration values shown on the map will be exceeded in a 50 year time period



Slide 15

### Seismicity 1973-Present



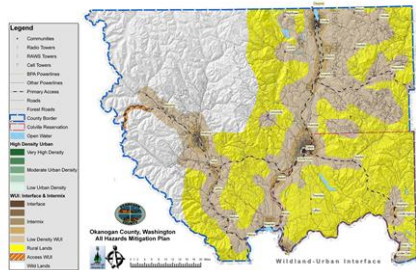
Slide 16

### Wildland Fire



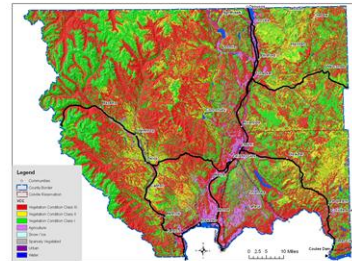
Slide 17

### Wildland Urban Interface



Slide 18

### Vegetation Condition Class



Slide 19

### Terrorism and Civil Unrest

- Potential Vulnerabilities
  - Railways – hazardous materials
  - Government Buildings
  - Infrastructure – Highways, water (dams), power, and sewer systems
  - Land Management Offices (Ecoterrorism?)
  - Commerce
- Refugees?



Slide 20

### Preparedness

- Emergency Services
- Fire Protection
- Weather Impacts
- Flood Protection/Programs
- Earthquake, Landslide, & Storm Readiness
- Hospital Protection
- Public Works/Highway District Readiness
- Communications



Slide  
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### Types of Projects

- Defensible Space and Fuels Treatments
- Floodplain Management and Infrastructure Upgrades
- Slope Stabilization
- Studies (e.g. watershed) and Evaluations (e.g. culvert capacity)
- Access Improvements
- Emergency Response Needs
- Policy Issues
- Infrastructure Hardening and Communication Upgrades
- Public Education

Slide  
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### Public Involvement

- Press Releases about planning efforts
- Informational flyers
- Public Meeting
- Public Review of the DRAFT Plan will be facilitated once all sections have been completed and reviewed by the committee
- Open public adoption hearings

Slide  
23

### Your Input

- Maps on the walls – Mark them up!
  - Talk to one of the planning committee members.
  - Let us know your ideas and concerns.
  - Make this YOUR Plan!
- 
- Thank you for attending and participating!  
Please visit with us.

Slide  
24



## Appendix 3

### Risk Analysis Models

#### Historic Fire Regime

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.

A database of fire history studies in Washington 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 one of the dominant disturbance processes that manipulate 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.

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. Because 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).

#### Vegetation Condition Class

Vegetation Condition Class (VCC) is an interagency, standardized tool for determining the degree of departure from reference condition vegetation, fuels, and disturbance regimes. Assessing VCC can help guide management objectives and set priorities for treatments.

As scale of application becomes finer the five historic fire regimes 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. Coarse-scale VCC classes have been defined and mapped by

Hardy et al. (2001) and Schmidt et al. (2001). They include three condition classes for each historic 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 (VCC 1), moderate (VCC 2), and high (VCC 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 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 follow.

<b>Vegetation 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.	<p>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.</p> <p>Composition and structure of vegetation and fuels are similar to the natural (historical) regime.</p> <p>Risk of loss of key ecosystem components (e.g., native species, large trees, and soil) is low.</p>
<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.	<p>Fire behavior, effects, and other associated disturbances are moderately departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are moderately altered.</p> <p>Uncharacteristic conditions range from low to moderate.</p> <p>Risk of loss of key ecosystem components is moderate.</p>
<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.	<p>Fire behavior, effects, and other associated disturbances are highly departed (more or less severe).</p> <p>Composition and structure of vegetation and fuel are highly altered.</p> <p>Uncharacteristic conditions range from moderate to high.</p> <p>Risk of loss of key ecosystem components is high.</p>

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## Appendix 4

### Fire Services Information

**City of Okanogan Fire Department:**

Telephone: 509-422-5757  
Address: 1208 3<sup>rd</sup> Ave N, Okanogan, WA 98840

**City of Omak Fire Department:**

Telephone: 509-826-0760  
Address: 16 N Ash St, Omak, WA 98841

**Town of Coulee Dam Fire Department:**

Chief: Robert Jackson  
Telephone: 509-422-3830  
Address: 300 Lincoln Avenue, Coulee Dam, WA 98166

**Town of Conconully Fire Department:**

Chief: Sam Martin  
Telephone: 509-422-3830  
Address: PO Box 83, Conconully, WA 98812

**Okanogan County Fire District #1:**

Chief: Rod Noel  
Telephone: 509-476-2106  
Address: PO Box 2200, Oroville, WA 98844

**Okanogan County Fire District #2:**

Telephone: 509-633-0546  
Address: 206 Seaton Ave, Grand Coulee, WA 99133

**Okanogan County Fire District #3:**

Telephone: 509-422-5757  
Address: 235 Oak Street, Okanogan, WA 98840

**Okanogan County Fire District #4:**

Telephone: 509-486-2611  
Address: 21 E Fifth, Tonasket, WA 98855

**Okanogan County Fire District #6:**

Telephone: 509-996-2227  
Address: 223 Englas Street, Winthrop, WA 98862

**Okanogan County Fire District #7:**

Chief: Brad Armstrong  
Telephone: 509-826-4670  
Address: 101 First Street, Riverside, WA 98849

**Okanogan County Fire District #8:**

Chief: Ed Townsend  
Telephone: 509-322-2262  
Address: PO Box 1351, Okanogan, WA 98840

**Okanogan County Fire District #9:**

Chief: Tim Tugaw  
Telephone: 509-429-4153  
Address: 1165 Conconully Hwy, Okanogan, WA 98840

**Okanogan County Fire District #10:**

Telephone: 509-223-3402  
Address: 190 Palmer Ave, Loomis, WA 98827

**Okanogan County Fire District #11:**

Chief: Phil Dart  
Telephone: 509-485-3533  
Address: 238 Molson Road, Oroville, WA 98844

**Okanogan County Fire District #12:**

Telephone: 509-556-2911  
Address: 474 Swanson Mill Road, Tonasket, WA 98855

**Ferry/Okanogan County Fire District #13:**

Telephone: 509-775-2033  
Address: 17052 Highway 21 N Republic, WA 99166

**Ferry/Okanogan County Fire District #14:**

Telephone: 509-779-4262  
Address: 7 River Street Curlew, WA 99118

**Douglas/Okanogan County Fire District #15:**

Chief: Bill Vallance  
Telephone: 509-689-0216  
Address: 412 W. Indian Ave Brewster, WA 98812



**Okanogan County Fire District #16:**

Telephone: 509-486-4800  
Address: PO Box 645, Tonasket, WA 98855

**Bureau of Land Management:**

Spokane District Office  
Fire Management Officer: Dennis Strange  
Telephone: 509-536-1237  
Address: 1103 North Fancher Road  
Spokane, Washington 99212-1275

**Forest Service:**

Tonasket Fire Management Officer: Jen Croft  
Telephone: 509-486-2186 ext. 5152  
Address: 1 West Winesap, Tonasket, WA 98855

**Forest Service:**

Methow Valley Fire Management Officer: Matt Castle  
Telephone: 509-997-4015  
Address: 24 West Chewuch, Winthrop, WA 98862

**Washington State Department of Natural Resources**

Northeast Region, South Okanogan District  
Fire Unit Forester: Gregg Saltsman  
Telephone: 509-684-7474  
Address: 225 S. Silke Rd. Colville, WA 99114

**Washington State Department of Natural Resources**

Northeast Region, Highlands District  
Fire Unit Forester: Greg Roberts  
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Address: 225 S. Silke Road  
Colville, WA 99114

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## Appendix 5

### State and Federal CWPP Guidance

#### National Fire Plan

The National Fire Plan (NFP) was developed by the U.S. Departments of Interior and Agriculture and their land management agencies in August 2000, following a landmark wildland fire season, with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future. The NFP addresses five key points: Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability. The National Fire Plan continues to provide invaluable technical, financial, and resource guidance and support for wildland fire management across the United States. Together, the USDA Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the National Fire Plan.

This Community Wildfire Protection Plan fulfills the National Fire Plan's 10-Year Comprehensive Strategy Implementation Plan (WFLC 2006). 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 and state agencies.

The NFP goals of this Community Wildfire Protection Plan include:

1. Improve Fire Prevention and Suppression
2. Reduce Hazardous Fuels
3. Restoration and Post-Fire Recovery of Fire-Adapted Ecosystems
4. Promote Community Assistance

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

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

- Management activities, both in the wildland-urban interface and in at-risk areas across the broader landscape.
- Active forestland management, including thinning that produces commercial or pre-commercial products, biomass removal and utilization, prescribed fire and other fuels reduction activities to simultaneously meet long-term ecological, economic, and community objectives.

The National Fire Plan identifies a three-tiered organizational 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, watershed councils, or other collaborative entities may serve to achieve coordination at this level. Local involvement, expected to be broadly represented, is a primary source of planning, project prioritization, and resource allocation and coordination. The role of the private citizen should not be underestimated as all phases of risk assessment, mitigation, and project implementation are greatly facilitated by their involvement.

## National Association of State Foresters

This plan is written with the intent to provide decision makers (elected and appointed officials) the information they need to prioritize projects across the entire county. These decisions may be made by the Board of Commissioners or other elected body or through the recommendations of ad hoc groups tasked with making prioritized lists of communities at risk as well as project areas. It is not necessary to rank communities or 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 and prioritizing of treatments between communities.

**Purpose:** To provide national, uniform guidance for implementing the provisions of the “Collaborative Fuels Treatment” Memorandum of Understanding (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)).

### **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 nationwide, 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 a 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 MOUs, “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, focusing on the zone of highest overall risk but considering 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, setting 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 local 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*.”

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 taking an active role.

## Healthy Forests Restoration Act

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

The Healthy Forests Restoration Act (HFRA) seeks to:

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

The Okanogan County Community Wildfire Protection Plan was developed to adhere to the principles of the HFRA while providing recommendations consistent with the policy document. This should assist the federal land management agencies with implementing wildfire mitigation

projects in Okanogan County that incorporate public involvement and the input from a wide spectrum of fire and emergency services providers in the region.

## **Federal Emergency Management Agency Philosophy**

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

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

FEMA only reviews a local hazard mitigation plan submitted through the appropriate State Hazard Mitigation Officer (SHMO). FEMA reviews the final version of a plan prior to local adoption to determine if the plan meets the criteria, but FEMA will not approve it prior to adoption.

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

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

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## Appendix 6

### Potential CWPP Project Funding Sources

#### **Assistance to Firefighters Grant**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44122](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44122)

*To provide direct assistance, on a competitive basis, to fire departments of a State or tribal nation for the purpose of protecting the health and safety of the public and firefighting personnel against fire and fire-related hazards.*

#### **Buffer Zone Protection Program (BZPP)**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=135490](http://www.rkb.mipt.org/contentdetail.cfm?content_id=135490)

*The FY 2006 BZPP provides funds to build capabilities at the state and local levels to prevent and protect against terrorist incidents primarily done through planning and equipment acquisition.*

#### **Chemical Sector Buffer Zone Protection Program (Chem-BZPP)**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=135466](http://www.rkb.mipt.org/contentdetail.cfm?content_id=135466)

*The Chem-BZPP, provides funds to build capabilities at the State and local levels through planning and equipment acquisition.*

#### **Citizen Corps**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=56829](http://www.rkb.mipt.org/contentdetail.cfm?content_id=56829)

*The purpose of the Citizen Corps Program is to supplement and assist State and local efforts to expand Citizen Corps. This includes Community Emergency Response Team (CERT) training, establishing Citizen Corps Councils, and supporting oversight and outreach..*

#### **Citizen Corps Support Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=135192](http://www.rkb.mipt.org/contentdetail.cfm?content_id=135192)

*Support the mission to engage everyone in America in hometown security through the establishment and sustainment of Citizen Corps Councils throughout the United States and territories.*

#### **Commercial Equipment Direct Assistance Program (CEDAP) FY2006 Description and Application**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=83219](http://www.rkb.mipt.org/contentdetail.cfm?content_id=83219)

*To ensure that law enforcement and emergency responder agencies, departments, and task forces can acquire, through direct assistance, the specialized equipment and training they require to meet their homeland security mission.*

#### **Community Disaster Loans**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44126](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44126)

*To provide loans subject to Congressional loan authority, to any local government that has suffered substantial loss of tax and other revenue in an area in which the President designates a major disaster exists. The funds can only be used to maintain ...*

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**Disposal of Federal Surplus Real Property**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=43990](http://www.rkb.mipt.org/contentdetail.cfm?content_id=43990)

*To dispose of surplus real property by lease, permits, sale, exchange, or donation.*

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**Emergency Management Institute (EMI) Independent Study Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44100](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44100)

*To enhance public and selected audience knowledge of emergency management practices among State, local and tribal government managers in response to emergencies and disasters. The program currently consists of 32 courses. They include IS-1, Emergency ....*

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**Emergency Management Institute (EMI) Resident Educational Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44102](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44102)

*To improve emergency management practices among State, local and tribal government managers, and Federal officials as well, in response to emergencies and disasters. Programs embody the Comprehensive Emergency Management System by unifying the ....*

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**Emergency Management Institute Training Assistance**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44098](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44098)

*To defray travel and per diem expenses of State, local and tribal emergency management personnel who attend training courses conducted by the Emergency Management Institute, at the Emmitsburg, Maryland facility; Bluemont, Virginia facility; and ....*

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**Fire Management Assistance Grant**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44124](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44124)

*To provide grants to states, Indian tribal governments and local governments for the mitigation, management and control of any fire burning on publicly (nonfederal) or privately owned forest or grassland that threatens such destruction as would ....*

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**Hazard Mitigation Grant Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44130](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44130)

*To provide states and local governments financial assistance to implement measures that will permanently reduce or eliminate future damages and losses from natural hazards through safer building practices and improving existing structures and ....*

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**Hazardous Materials Planning and Training**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=133349](http://www.rkb.mipt.org/contentdetail.cfm?content_id=133349)

*Hazmat Planning and Training grants to state, territory and native American Tribal grantees.*

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**Homeland Defense Equipment Reuse Program - HDER**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=83222](http://www.rkb.mipt.org/contentdetail.cfm?content_id=83222)

*The goal of the HDER Program is to provide excess radiological detection instrumentation and other equipment, as well as training and long-term technical support, at no cost to emergency Responder agencies nationwide.*

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### **Homeland Security Grant Program (HSGP)**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=118605](http://www.rkb.mipt.org/contentdetail.cfm?content_id=118605)

*Through the DHS National Preparedness Directorate, State and local organizations will receive approximately \$2.5 billion in grant funding to build capabilities that enhance homeland security.*

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### **Interagency National Fire Plan Community Assistance**

[www.nwfireplan.gov](http://www.nwfireplan.gov)

*This grant provides a collaborative process for awarding funds to hazardous fuels reduction projects on non-federal land in the Wildland-Urban Interface. Eligible projects must be adjacent to Federal Land and identified in a Community Wildfire Protection Plan (CWPP) completed by February 6, 2009. Collaborated CWPP projects must implement fuels treatments in the wildland-urban interface.*

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### **National Fire Academy Educational Program/Harvard Fellowship Grant**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=133343](http://www.rkb.mipt.org/contentdetail.cfm?content_id=133343)

*Each fellowship enables a senior fire executive to attend and participate in the three-week "Senior Executives in State & Local Government Program" course that is held twice each year at Harvard University.*

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### **National Fire Academy Training Assistance**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=44104](http://www.rkb.mipt.org/contentdetail.cfm?content_id=44104)

*To provide travel stipends to students attending Academy courses.*

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### **Pre-Disaster Mitigation Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=102626](http://www.rkb.mipt.org/contentdetail.cfm?content_id=102626)

*The PDM program will provide funds to states, territories, Indian tribal governments, and communities for hazard mitigation planning and the implementation of mitigation projects prior to a disaster event.*

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### **Rural Fire Assistance (RFA)**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=97736](http://www.rkb.mipt.org/contentdetail.cfm?content_id=97736)

*The RFA program provides cost-share grants for equipment, training, and fire prevention and mitigation activities for those rural/Volunteer fire departments (RFDs) that protect rural communities.*

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### **Staffing of Adequate Fire and Emergency Response (SAFER) Grant Program**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=133340](http://www.rkb.mipt.org/contentdetail.cfm?content_id=133340)

*The purpose of the Staffing for Adequate Fire and Emergency Response (SAFER) grants is to help fire departments increase their cadre of firefighters.*

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### **State Fire Assistance Wildland Urban Interface Hazard Mitigation Grants**

<http://egov.oregon.gov/ODF/FIRE/grantopps.shtml>

*Funds are provided to reduce the threat of fire in the wildland urban interface including hazard mitigation, fuels and risk reduction, and information and education programs for homeowners and communities. This is a competitive grant process among the 17 western states and Pacific Island Territories.*

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**Volunteer Fire Department Assistance**

<http://egov.oregon.gov/ODF/FIRE/grantopps.shtml>

*Provides financial assistance to volunteer fire departments for organizing, training, and equipping rural fire districts.*

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**Western States Fire Managers Wildland Urban Interface Grant Program**

<http://www.oregon.gov/ODF/FIRE/docs/PREV/CriteriaandInstructions.pdf>

*The focus of much of this funding is mitigating risk in Wildland Urban Interface (WUI) areas. In the West, the State Fire Assistance (SFA) funding is available and awarded through a competitive process with emphasis on hazard fuel reduction, information and education, and community and homeowner action. This portion of the National Fire Plan was developed to assist interface communities manage the unique hazards they find around them. Long-term solutions to interface challenges require informing and educating people who live in these areas about what they and their local organizations can do to mitigate these hazards.*

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**Wildland-Urban Interface Community and Rural Fire Assistance**

[http://www.rkb.mipt.org/contentdetail.cfm?content\\_id=43914](http://www.rkb.mipt.org/contentdetail.cfm?content_id=43914)

*To implement the National Fire Plan and assist communities at risk from catastrophic wildland fires by providing assistance in the following areas: Provide community programs that develop local capability including; assessment and planning.*

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## Appendix 7

### Glossary of Terms

**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 of a wildfire is indirect, intentionally setting fire to fuels inside the control line to contain a spreading fire. Backfiring provides a wider defensible 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 burnable fuels.

**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.

**British Thermal Unit (Btu)** - A unit of energy used globally in the power, steam generation, and heating and air conditioning industries. In North America, Btu is used to describe the heat value (energy content) of fuels, and also to describe the power of heating and cooling systems, such as furnaces, stoves, barbecue grills, and air conditioners.

**Contingency Plans** - Provide 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 tree top to tree top 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, and timber harvest).

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

**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.

**Environmental Impact Statement (EIS)** - According to the National Environmental Policy Act, whenever the US Federal Government takes a “major Federal action significantly affecting

the quality of the human environment” it must first consider the environmental impact in a document called an Environmental Impact Statement.

**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 analyst to meet planning needs of the 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 behavior. 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.

**Fire Use** - The management of naturally ignited fires to accomplish specific prestated resource management objectives in predefined geographic areas.

**Flashy Fuel** - Quick drying twigs, needles, and grasses that are easily ignited and burn rapidly.

**Forb** - Any broad-leaved herbaceous plant that is not a grass, especially one that grows in a prairie or meadow

**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 and live 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.

**Habitat Type** - A group of habitats that have strongly marked and readily defined similarities that when defined by its predominant or indicator species incites a general description of the area; *e.g. a ponderosa pine habitat type*.

**Heavy Fuels** - Fuels of a large diameter, such as snags, logs, and large limbwood, which ignite and are consumed more slowly than flashy fuels.

**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, equipment, debris burning, 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 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.

**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.

**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)** - An act establishing 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 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 state forest practice standards relating to the protection/enhancement of adjacent forest or other resource values.

**Notice of Availability** - A notice 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 published in the Federal Register stating that an Environmental Impact Statement (EIS) will be prepared and considered. This notice will describe the proposed action and possible alternatives and the proposed scoping process. It will also provide contact information for 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 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 fuels that ignites when burning conditions are more favorable.

**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.

**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 (e.g., 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 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.

**Wildland-Urban Interface (WUI)** - For purposes of this plan, the wildland-urban interface is located defined in Section 4.5. In general, it is the area where structures and other human development meet or intermingle with undeveloped wildland.

This plan was developed by Northwest Management, Inc. under contract with Okanogan County and the Washington Department of Natural Resources. Funding for the project was provided by the Bureau of Land Management.

**Citation of this work:**

Tucker, Brad and V. Bloch. *Lead Authors*. 2013. Okanogan County, Washington, Community Wildfire Protection Plan. Northwest Management, Inc., Moscow, Idaho. Pp 123.

Tucker, Brad and V. Bloch. *Lead Authors*. 2013. Okanogan County, Washington, Community Wildfire Protection Plan Appendices. Northwest Management, Inc., Moscow, Idaho. Pp 39.



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