Hood River County
2006
Community Wildfire Protection Plan

Prepared By

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West Side Fire District

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Much of the data collected to identify hazards and risks within the county will continue to be of great value to emergency services planners; whether it is utilized for fuels management or fire suppression purposes.

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The contents of this document have been agreed upon by the Hood River County, Board of Commissioners, the District Forester of the Central Oregon District for the Oregon Department of Forestry, and the Hood River County Fire Defense Board Chief. This plan is not legally binding as it does not create or place mandates or requirements on individual jurisdictions. It is intended to serve as a planning tool for the fire and land managers of Hood River County, Oregon, and to provide a framework for those local agencies associated with wildfire suppression and protection services to assess the hazards associated with wildland urban interface areas and to identify strategies for reducing those risks. This is a working document to be reviewed by the steering committee and updated as necessary.

_____ _____

Ron Rivers, Chair Hood River County Commissioners Date

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Hood River County 2006
Community Wildfire Protection Plan

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Disclaimer

Maps and tables that have been prepared for the Hood River Community Wildfire Protection Plan and are for informational purposes only. It may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Executive Summary

The Hood River County Community Wildfire Protection Plan (CWPP) identifies and assesses wildfire hazards within the county boundaries and shows other hazards that are contiguous to the county. The City of Cascade Locks has already completed a CWPP which will be included in this County-wide plan.

The impetus for the creation of CWPP's was created by the enactment of the "Healthy Forest Restoration Act (HRFA) in 2003. This legislation provided incentives for the US Forest service (USFS) and Bureau of Land Management (BLM) to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuels reduction projects. To take advantage of this opportunity a Community must prepare a Community Wildfire Protection Plan.

The format for a CWPP is somewhat flexible, giving Communities the ability to determine plan substance and detail, they may be as simple or complex as the community desires. The final document must meet minimum requirements to be in compliance with the HFRA. To enhance planning and interoperability this format will follow "Preparing a Community Wildfire Protection Plan"1 which will align with the Cascade Locks CWPP.

The CWPP will also address the Oregon Forestland-Urban Interface Fire Protection Act of 1997 (SB-360) this is the State of Oregon's response to several escalating wildland fire problems.

Oregon Department of Forestry (ODF) has identified areas of risk throughout the State and has designated fourteen communities as "At Risk" in Hood River County. These communities within the Wildland Urban Interface (WUI) are listed in the Federal Register.2 The I-84 corridor is also listed as an area of high fire risk.

Approximately 85% of the county lies outside of lands protected by a Rural Fire Protection District. Significant ownership lies with the United States of America; these areas are managed by the USFS and include Forested and Wilderness areas. County, State and private lands contribute to the remainder. Of the 15% of district lands there are an ever increasing number of dwellings intruding into the lands that are historically prone to wildfire.

Construction of these dwellings shows little regard to fuels, weather and topography. These three items are the major contributors and sustaining factors in a wildfire.

1 A Handbook for Wildland-Urban Interface Communities sponsored by: Communities Committee, National Association of Counties, National association of State Foresters, Society of American Foresters and Western Governors' Association.

2 Source: August 17, 2001, Federal Register, v.66, n.160.

1.00 Introduction

One of the primary benefits afforded to the County under the HFRA is the ability to establish a localized definition and boundary for the Wildland Urban Interface. In the absence of a CWPP, HFRA limits the WUI to within ½ mile of a community boundary or within 1 ½ miles when mitigating circumstances exist, such as sustained steep slopes or geographical features aiding in creating a fire break. The Columbia River Gorge and Hood River County provide many unique topographical features that will greatly affect placement of the WUI boundary. Additionally the HFRA gives priority to projects and treatment areas identified in a CWPP by directing federal agencies to give specific consideration to fuel reduction projects that implement those plans.

1.10 Goals

Enhance public wildfire awareness.
Identify and rate areas of HR County according to fire risk.
Assess structural ignitability.
Enhance emergency response capabilities.
Prioritize treatment areas from risk analysis.
Provide for natural resources management and planning.
Seek partners and support for implementation and continuation of recommended projects.

1.20 Background

Historically, wildfires burned Western forests creating and maintaining a variety of forest compositions and structures[3]. Prior to European settlement lightning along with Native Americans ignited fires routinely across many forested landscapes. After Euro-American settlement, fires continued to be quite common with fires ignited by settlers, railroads, and lightning[4]. In August 1910 came a pivotal change in how Westerners in particular, and policymakers in general, viewed fire. Starting early in that summer, fires were ignited and continued to burn throughout western Montana and northern Idaho. By mid August over 1,700 fires were burning throughout the region, but most forest managers figured the area could weather these fires if no dry strong winds developed. On August 20 and 21, the dry winds did blow, and by the time the flames subsided over 3.1 million acres of the northern Rocky Mountains burned. These fires killed 78 firefighters and seven civilians and burned several communities including one-third of Wallace, Idaho[5]. This event solidified the negative aspects of wildfires in the view of the public and policymakers and led to the strong firefighting ethic that prevails yet today[6]. Wildfires continue to be aggressively extinguished with smoke-jumpers, hot-shot crews, retardant bombers, and sophisticated firefighting organizations. Even with this aggressive approach, wildfires continue to burn throughout the West, and the total area burned in the United States decreased until the 1960s when the trend reversed with the number of acres burned each

3 (Agee 1993)

4 (Pyne 2001)

5 (Pyne 2001; USDA 1978)

6 (Pyne 2001)

year increasing[7]. This trend was exemplified by the fires that burned in and around Yellowstone Park in 1988 and once again brought under scrutiny the wildfire policies in the United States[8]. What appears to be different about the recent fires is the number of ignitions that contributed to burning large areas. More than 1,700 fire starts were responsible for burning the 3.1 million acres of the Northern Rocky Mountains in 1910, and 78 starts burned more than 350,000 acres in the Bitterroot Valley in western Montana in July 2000[9]. Contrast these fire events to the Rodeo-Chediski Fire where only two fire starts burned more than 450,000 acres in 2002 in Arizona. Similarly, on June 8, 2002, one start along the Colorado Front Range of the Rocky Mountains led to the Hayman Fire burning more than 138,000 acres in 20 days. The weather systems along the Colorado Front Range beginning in 1998 tended to bring below-normal precipitation and unseasonably dry air masses. These conditions occurred approximately the same time as the phenomenon known as La Nina began forming in the eastern Pacific Ocean. The winter of 2001 and 2002 saw a marked worsening of drought conditions. The predominantly ponderosa pine and Douglas-fir forests throughout the region became drier with each passing season, and by the spring of 2002 the fuel moisture conditions were among the driest seen in at least the past 30 years. The moisture contents of the large dead logs and stems along the Front Range were extremely low: most less than 10 percent and some less than 5 percent moisture content.

The above excerpt from the Hayman report shows that forest fire suppression practices, disruption of the natural fire cycle[10] and changing weather patterns can lead to an increased rise of catastrophic wildfire. This scenario can be applied across many regions of North America.

1.21 Results of suppression policy[11]

As a result of the all-out effort to suppress fires, the annual acreage consumed by wildfires in the lower 48 states dropped from 40 to 50 million acres a year in the early 1930s to about 5 million acres in the 1970s. During this time, firefighting budgets rose dramatically and firefighting tactics and equipment became increasingly more sophisticated and effective. While the policy of aggressive fire suppression appeared to be successful, it set the stage for the intense fires that we see today. Full suppression of all wildfires initially gave our forests and wildlands a chance to heal, creating a false sense of security. However, after many years of suppressing fires, thus disrupting normal ecological cycles, changes in the structure and make-up of forests began to occur. Species of trees that ordinarily would have been eliminated from forests by periodic, low-intensity fires began to become a dominant part of the forest canopy. Over time, these trees became susceptible to insects and disease. Standing dead and dying trees in

7 (Agee 1993)

8 (Carey and Carey 1989)

9 (USDA 1978, 2000)

10 Managing the Impact of Wildfires on Communities and the Environment
A Report to the President In Response to the Wildfires of 2000, September 8, 2000

11 Managing the Impact of Wildfires on Communities and the Environment
A Report to the President In Response to the Wildfires of 2000, September 8, 2000

conjunction with other brush and downed material began to fill the forest floor. The resulting accumulation of these materials, when dried by extended periods of drought, created the fuels that promote the type of wildfires that we saw in 2005. The problems of unnaturally heavy undergrowth have been exacerbated by the introduction in the 1800s of nonnative invasive weeds and grasses. These plants corrupt a region's ecological processes, robbing the soil and native plants of vital nutrients and water. Invasive species such as cheatgrass, which is pervasive on today's Western landscape, is one of the first plants to establish after a fire. It grows earlier, quicker, and higher than native grasses. Then it dies, dries, and becomes fuel. In short, decades of aggressive fire suppression have drastically changed the look and fire behavior of Western forests and rangelands. Forests a century ago were less dense and had larger, more fire-resistant trees. For example, in northern Arizona, some lower elevation stands of ponderosa pine that once held 50 trees per acre now contain 200 or more trees per acre. In addition, the composition of our forests has changed from more fire-resistant tree species to non-fire resistant species such as grand fir, Douglas-fir, and subalpine fir. As a result, studies show that today's wildfires typically burn hotter, faster, and higher than those of the past.

1.22 The Changing West[12]

In addition to the unnatural fuel buildup developing in our forests and rangelands, wildland firefighting has become more complex in the last two decades due to dramatic increases in the West's population. Of the 10 fastest-growing states in the U.S., eight are in the interior West. While the national average annual population growth is about one percent, the West has growth rates ranging from 2.5 to 13 percent. As a result, new development is occurring in fire-prone areas, often adjacent to Federal land, creating a "wildland-urban interface" -- an area where structures and other human development meet or intermingle with undeveloped wildland. This relatively new phenomenon means that more communities and structures are threatened by fire. Wildland firefighters today often spend a great deal more time and effort protecting structures than in earlier years. Consequently, firefighting has become more complicated, expensive, and dangerous.

While this report to the President serves to show the effects of differing management plans, it is important to note that this CWPP wishes to promote healthy and responsible forest practices.

1.30 The Problem of Fire Exclusion

These photos, all taken from the same point, show changes resulting from fire exclusion and removal of large pines. Fire scars, show that between 1600 and 1895, low-intensity fires burned through this forest every three to twenty years. Fires have been excluded from this area since 1895. About half of the large pines were harvested from this site before the 1909 photo was taken.

12 Managing the Impact of Wildfires on Communities and the Environment

A Report to the President In Response to the Wildfires of 2000, September 8, 2000

Figure 1: Stand Growth 1909 Photo The stand is open and park-like, and the few stumps and slash indicate recent light cutting. This would be the general appearance of the typical pine forest – less any human intervention that nineteenth century settlers saw in eastern Oregon.

Figure 2: Stand Growth 1948 Photo Considerable under-story has developed with small openings in the forest

Figure 3: Stand Growth 1979 Photo Now the under story has developed with dense thickets of Douglas Fir and Ponderosa Pine.

Figure 4: Stand Growth 1997 Photo Note how different the stand is from 1909. Patchy under burning in 1933 killed some conifers, and selective logging removed some of the larger trees. Snags indicate that a recent beetle infestation killed some trees.

2.00 Community Profile

The first white settlers in Hood River County filed a donation land claim in 1854. The first school was built in 1863 and a road from The Dalles was completed in 1867. By 1880 there were 17 families living in the valley. Hood River County was created in 1908 from Wasco County

"Agriculture, timber, lumber and recreation are the major sources of revenue and industry. Fruit grown in the fertile valley is of such exceptional quality the county leads the world in Anjou pear production. There are more than 14,000 acres of commercial orchards growing pears, apples, cherries and peaches. Hood River County also has two ports and two boat basins, with one serving local barge traffic, and Mid-Columbia yachting interests. Windsurfing on the Columbia River is a popular sport and attracts windsurfers from all over the world."[13]

While the above paragraph would amply describe the County ten years ago changes have seen a downturn in the fruit industry, secondary to increased foreign competition. Some orchards have turned their real-estate into housing subdivisions, others have sought alternative markets. The local steel boat manufacturing firm is no longer building boats, timber sales could no longer support the two Hanel Mills and the Dee Hardboard burned to the ground. Hood River County is listed as a "Distressed" County by the Oregon Economic & Community Development Department.

Both State and Federal agencies recognized the downturn in the lumber industry and provided for the displaced timber workers by offering assistance for training in other fields. Average unemployment rates over the last eight years peaked at 10.8% with the summer of 2003 reaching a maximum of 13.3%.

The population of Hood River continues to grow; an average rate of 222 persons each year between 1970 and 2003. This would put the 2005 population at approximately 21,000 persons.

The most significant addition to the County industrial base in many years is Cardinal's manufacturing plant in Odell. Currently 158 persons are employed, with expansion already slated. County population growth exceeds employment opportunities; unemployment rates have not changed significantly, (April 2004 7.9% - April 2005 7.3%). The assumption must be made that longer commutes are becoming an attractive option for many.

Wind in Hood River County is a constant variable; windsurfing and kiting continue to boost the economy from March through September. Hood River has also been named as a destination for winter sports due to its close proximity to the ski areas on Mt Hood.

13 Hood River Chamber of Commerce

Real estate continues to be very active with values appreciating sometimes more than 300% in a ten year period. Houses are built and many times are sold before completion as is evident by the speculation house starts in the City and Westside districts. House starts in the fringe areas of the County (Urban Interface) at this time are limited at this time by zoning regulations.

Table 1: Hood River County Census Data[14]

Hood River County	1997	1998	1999	2000	2001	2002
Population	19,200	19,500	19,700	20,411	20,600	20,450
Labor Force	11,030	11,190	10,950	11,190	11,281	11,662
Total Employment	9,840	10,170	9,970	10,320	10,249	10,562
Unemployment	1,190	1,020	980	870	1,032	1,100
Unemployment Rate (%)	10.8	9.1	8.9	7.8	9.2	9.4
Non-Farm Payroll Employment	8,390	8,600	8,670	8,880	8,640	8,680
Total Covered Employment	9,887	10,120	10,159	10,417	10,215	10,480
Covered Payroll ($ thousands)	194,593	205,686	209,715	223,889	229,427	236,846
Average Payroll Per Employee ($)	19,682	20,325	20,643	21,493	22,460	22,600
Number of Business Units	901	935	955	956	983	998
Net Real Market Value of Property ($ millions)	1,153	1,243	1,302	1,436	0	1,586

2.10 Employment

Listed below are the top twenty-one employers in Hood River County. Recent additions to the County, including Cardinal Glass and the proposed Casino*, may also assist in decreasing the County's 7.3% unemployment rate.

The Ports of Cascade Locks and Hood River continue to attract and promote small business opportunities as does the Columbia Gorge Economic development Association. With savings on labor costs, sometimes as much as 45%[15] compared to the Portland area, it is indeed attractive for relocation or start up businesses.

The proposed Casino may be located in either Cascade Locks or on Tribal land on the east side of Hood River off the Old Dalles Scenic Highway. Negotiations are studies are currently underway paving the way for legislative approval. There are potential benefits for the Hood River economy that will arise from the increased number of visitors and the casino would also offer some employment.

14 Economic & Community Development Department

15 Columbia Gorge Economic Development Association

Table 2: Top Hood River County Employers[16]

Employer	Employees	At Risk*
Hood River County School District	502	
Providence Hood River Hospital	350	X
Sprint	294	
Luhr Jensen & Sons	250	
Hood River Education Association	240	
Diamond Fruit Growers	224	
Hood River County	191	
Duckwall-Pooley Fruit Company	178	
Wal Mart	165	
Cardinal Glass IG	158	
Best Western Hood River Inn	125	
Hood River Care Center	115	
Rosauer's Store	110	
Mid-Columbia Children's Council	95	
Stadelman Fruit	80	
Columbia Gorge Center	76	
Columbia Gorge Hotel	75	X
Hood River Hotel	60	X
Mt Hood Meadows	60	X
City of Hood River	57	
Port of Cascade Locks	50	

* The "At Risk" column refers to businesses that are susceptible to the effects or would be indirectly impacted by wildfire.

The fruit growing industry utilizes the most amount of Employees County-wide. Employment numbers may vary according to the season and tasks at hand. Fruit growers may have year round employees but will supplement those numbers with temporary employees for tasks such as picking and pruning. The exact number of persons employed in the fruit growing industry fluctuates but those numbers would cumulatively represent the number one employer in Hood River County.

16 Hood River County Chamber of Commerce

3.00 Planning Process

The planning process followed eight steps as outlined in the handbook for "Preparing a Community Wildfire Protection Plan." The initial Geographical Information System (GIS) data collection was initiated on a four county regional basis by grant funding through the National Fire Plan. The data collection was administered by Washington State University and served Skamania, Klickitat, Wasco and Hood River Counties. Supplemental funding was secured through Title III grants from Hood River County to add additional survey crews for Hood River County. Data collection was initially focused on properties within the outer rim of the Hood River valley. Continuing survey efforts, in addition to collecting data using National Fire Protection Standards (NFPA) have focused on assigning a GPS coordinate to structures within each Tax Lot. This information will be integrated into the County 911 Dispatch center.

3.10 Step I: Convene Decision Makers

Formation of a group of participants that represent a "Core Team" HFRA requires that the Core entities must mutually agree on the final contents of a CWPP. Representation for the Core Team includes:

- Hood River County Planning
- Hood River County Public Works – GIS
- Hood River County Forestry
- Hood River City – Fire Marshal
- Hood River County Fire Chief's Association (County Fire Defense Board)
- Oregon Department of Forestry
- Hood River Private Resident
- Oregon State Fire Marshal's Office
- Hood River County Sheriff & OEM

Other participants were sought to provide input and to balance the planning process. (See Credits for other participants – preceding the narrative)

3.20 Step II: Involve Federal Agencies[17]

The Columbia Gorge National Scenic Area and the Mt Hood Ranger District are participating USFS representatives. Representation is primarily from Fire Management Officers (FMO's.) Hood River County has some unique regulatory agencies that are responsible managing the natural resources of the Columbia River Gorge area. There are also Wilderness areas within the federally managed lands with legislation pending for further expansion.

17 HFRA Sec. 103 (b)(2) of the act states that "the Federal Advisory Committee Act shall not apply to the planning process and recommendations concerning community wildfire protection plans."

3.30 Step III: Engage Interested Parties

In addition to the Core Team, other contact has been initiated within the county to involve other interested parties. Maintaining contacts and securing additional resources is viewed as an ongoing process to effectively manage implementation of action items arising from the CWPP.

- Hood River County Fire Chiefs Association
- Oregon Department of Transportation
- Hood River Soils and Water Conservation Group
- Cooper Spur Collaborative Working group
- Water & Irrigation Districts
- Hood River County Chamber of Commerce

3.40 Step IV: Establish a Community Base Map

A community base map was established using existing GIS data and resulting NFPA survey data. The county map shows individual structures surveyed as colored dots to represent the high, medium or low fire risk categories. In addition, each district Fire Chief was consulted and asked to show any areas that they considered high hazard.

Many maps can be developed from existing data that will provide enhanced information that can be made available to:

- County Planners.
- 911 Emergency Dispatch.
- Fire & EMS Personnel.
- Police
- County Office of Emergency Management
- State entities
    - Oregon Department of Forestry
    - Oregon State Fire Marshal
- Interested Community Leaders and Stakeholders

3.50 Step V: Wildfire Hazard Assessment

3.51 Community Hazards

The Federal Register / Vol. 66 / August 17 2001 listed areas in Hood River County as "Urban Interface Communities within the vicinity of Federal Lands that are at high risk from Wildfire." The following are the communities / districts / areas mentioned that are within or will directly impact Hood River County:

1. Bonneville
2. Cascade Locks
3. Coburg
4. Dee
5. Eagle Creek
6. Hood River
7. I-84 Corridor
8. Mosier / 7 Mile
9. Mt Hood
10. Parkdale
11. Pine Grove
12. Viento
13. Westside
14. Wyeth

The above listed areas come from an annotated list used to identify those communities that have on going hazardous fuel reduction treatment or plan to begin treatments. Supplemental to those areas, District fire chiefs have identified their main areas for concern.

Hood River County has some unique geographic features , weather characteristics, a history of unmanaged fuels and now an expanding Urban Interface; this unbalanced equation sets a scenario where a catastrophic fire or series of fires could engage one or more areas within the county with devastating effects on property, critical infrastructure and endangering residents and firefighters alike.

Critical infrastructure beyond the urban interface includes:

1. Watersheds - Municipal Water Supply
2. Watersheds – Irrigation Water Supply
3. County / State roads – Evacuation Routes
4. I-84 Corridor (National Defense Highway)
5. Union Pacific Railroad
6. Bonneville Power Administration – Hi-Tension Power Lines.
7. Electrical / Gas Distributors – PGE, NW Natural Gas
8. Sprint – Telephone Communications
9. Tourism River Traffic
10. Commercial River Traffic
11. Interstate Bridge

Other infrastructure significant to Hood River County:

1. Wildlife Habitat
2. Historical Buildings
3. Scenic Highways

3.60 Initiatives and Plans

3.61 National Fire Plan

The National Fire Plan (NFP) was established in 2001 as an interagency plan to address:

- Wildland Fire fighting
- Hazardous Fuels Reduction
- Rehabilitation
- Community Assistance
- Accountability

The NFP is part of a long term commitment to communities that also encourages and fosters interagency cooperation from federal agencies/entities down through the state to interested public citizens.

3.62 Healthy Forest Recreational Act (2003)

President Bush signed a Federal bill in 2003 that provides focus on enhancing forest health. The act promotes

- Development of Community Wildfire Protection Plans.
    - Identity and prioritize fuels reduction projects
    - Address structural ignitability
- Hazardous fuels reduction on public and private lands from areas that are at risk for wildfire.
- Restoration projects on lands that are "At Risk"
- Enhancement of natural resources:
    - Watersheds
    - Silvicultural research
    - Enhance monitoring for insect and disease outbreaks

3.63 Oregon Forestland-Urban Fire Protection Act of 1997 (Senate Bill 360)

The Oregon Forestland-Urban Interface Fire Protection Act of 1997 (SB-360) is the State of Oregon's response to several escalating wildland fire problems. Wildfires are burning homes in the interface and firefighters are working in increasingly hazardous situations. Fire suppression costs are increasing significantly in Oregon. Fire fighting resources are limited and in some cases emergency service agencies cannot provide equipment and personnel to all structures threatened by a wildfire. SB-360 addresses these concerns and enlists the aid of the only people who can make fuel reduction changes to residential property: the landowners themselves.

The vegetation treatment prescription found in the act is derived from research conducted at the Rocky Mountain Research Station in Missoula, Montana (Cohen and Saveland, 1996). The measures are simple and easy to apply and include:

- Removing pine needles and leaves from the roof.
- Pruning limbs from trees, keeping trees healthy.
- Removing shrubs near the home and close to trees.
- Mowing dead grass near the home.
- Storing firewood and other flammable material at least 20 feet from the home (during fire season).
- Removing tree limbs within 10 feet of a chimney opening.
- Maintaining a shaded fuel break near the house and in some cases around the property line.
- Maintaining driveways that are over 150 feet long clear of branches and trees that could prevent emergency vehicles from gaining access to the structure.

The act applies to lands protected by the Oregon Department of Forestry and does not apply to other properties outside of ODF protection. Each county will establish a classification committee that will identify the hazard class of each area affected by the act. Once classified, landowners are provided a certification package and given two years to certify that their lands meet the standards. The Central Oregon District of the Oregon Department of Forestry will work closely with local emergency management

personnel, conduct public meetings, hearings and community workshops along with providing onsite consultation for landowners affected by the act.

The Forestland-Urban Interface Fire Protection Act of 1997 is intended to be both voluntary and self certifying by the homeowner. By design the Oregon Department of Forestry developed a program that recruits the assistance of each homeowner, offers defensible space prescriptions and allows affected homeowners the option of certifying their property or not. The act contains no statutory provisions, homeowners will not be cited or required to appear in court if they choose not to participate. The act does contain a potential civil liability if the homeowner does not certify their property in two years after notification. If a fire originates on that property and spreads through the area that should be treated and the Oregon Department of Forestry must utilize extraordinary suppression efforts to contain that fire, a home owner could be liable for up to one hundred thousand dollars of suppression costs.

4.00 Methodology

The County assessment of existing hazards in the WUI was initiated by grant funding from the National Fire Plan in 2002. Washington State University through the Skamania County Extension Service embarked upon a regional plan to identify and rate the risk associated with houses in the WUI in Hood River, Klickitat, Skamania and Wasco Counties. The grant funding provided for use of GIS technology. Each participating county also provided Title III funding to add two man survey crews for timely collection of data.

Funding from the NFP in 2004 was limited to Klickitat and Skamania Counties, however continued momentum was maintained with Title III funding in Hood River for 2004 and 2005.

Fire Hazard is derived from existing digital (GIS) and analog maps coupled with aerial photographs. Taken into account with the maps and photographs is topography, weather and vegetation. Input from District Fire Chiefs was used to verify and sometimes add to the resulting fire hazard zones. The creation of zonal maps also takes into account potential conflagrations from across county lines.

Fire Risk was determined by the survey results conducted in the WUI. The risk assessment rating was derived from common survey criteria from a National Fire Protection Association standard 1411. (Previously NFPA 299) Structures are rated as either "Low Risk, Medium Risk or High Risk." NFPA 1411 reviews real property items such as access, type of building construction, topography, immediate flora and fauna, weather patterns, fire history and fire department resources[18]. There is an effort to correct certain anomalies such as a house that may be designated as a high fire risk but is surrounded by orchard; however the initial risk rating factors are still accounted for in the case of an isolated response such as a structure fire.

Survey data was collected using GIS technology. This allowed for an accurate GPS[19] location of each structure surveyed. The survey criteria were also loaded into the Trimble Geo Explorer XT. The survey crew would match tax lot with situs information prior to conducting each survey. The survey data collected would be identified by the Tax lot number. Data along with GPS coordinates would then be downloaded, thus becoming a part of the GIS fire infrastructure.

18 See 9.00 Fire Response for Fire Department Resources

19 Trimble Geo-XT Sub Meter accuracy

5.00 Hazard Assessment

5.10 Wildfire Risk

5.11 Interstate I - 84

Interstate 84 runs East – West paralleling the Columbia River from MP 35 to MP 69. This four lane highway is considered part of the "National Defense Highway System" and as such some federal entities are sensitive to highway closures that impede or stop the flow of traffic. Most frequently closures or restrictions are for motor vehicle accidents (MVC's); however closures can also be expected in the face of low of no visibility secondary to wildfire or inclement winter weather. Oregon Department of Transportation (ODOT) is responsible for monitoring and maintenance of the freeway. Maintenance districts for Hood River County are based in Cascade Locks, Hood River and Parkdale. District supervisor is located in Troutdale.

ODOT maintenance activities include an area that is 30 feet from the Fog Line (Shoulder). A fenced area delineates the right of way on either side of the freeway, but the 30 foot zone (Zone 2) is subject to mowing and tree limbing, this provides a safety zone should vehicles unexpectedly leave the paved road.

Current ODOT maintenance guidelines and memorandums of understanding allow for the removal of hazard trees (posing immediate danger to the motoring public). Also planned maintenance would include limbing and thinning to promote healthy stands of trees and also to reduce the risk of wildfire rapidly spreading from the ODOT right of way.

Sources of Ignition would include: discarded cigarettes, motor cars and trucks, mowing, acts of nature and fire emanating from adjoining land – Private or Railroad. Most fuels adjacent to the freeway start as fine grasses and then at times rapidly progress into conifers that line the safety zone for almost the entire breath of the county. It is fair to note that the northern boundary of the freeway is mostly shared with the Union Pacific right of way. Trees present within the safety zone are limbed up to assist with visibility and by default completely or partially remove ladder fuels. Trees beyond the 30 foot safety zone may have limbs brushing the ground. These ladder fuels warrant consideration and inclusion in thinning and limbing mitigation projects.

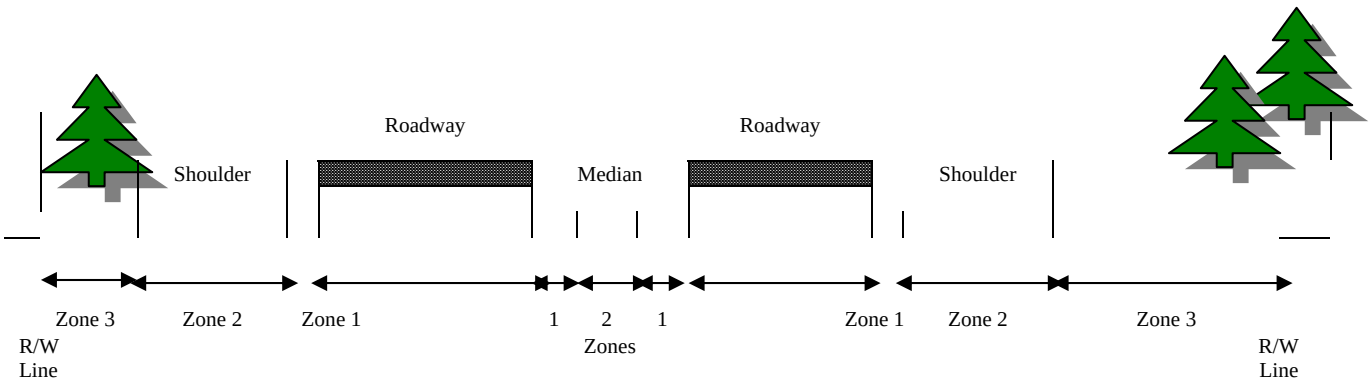

Figure 5: Cross Section Freeway Zone I-84 Cascade Locks Hwy I-84[20]

Typical R/W = 200 ft (61 meters)

Zone 1 = 6 ft (1.8 meters)

Zone 2 = 30 ft (9.1 meters)

Zone 2 can be extended on curves and in front of signs for sight distance

Zone 3 = From Zone 2 to edge of R/W

Figure 6: Roadside fuels I-84 Wyeth I-84 Eastbound at Wyeth – Limbed trees within 30 ft Safety Zone - Ladder fuels, early spring 2005.

20 Diagram from ODOT Region 2C Integrated Pest / Vegetation Management Plan July 1, 2005 – June 30, 2006

The above photograph shows current ODOT maintenance practices. The trees adjacent to the limbed trees in the safety zone could be thinned and limbed to reduce the chances of sustaining and promoting wildfire. This photograph is representative of many areas in the I-84 corridor.

The above picture is representative of many areas of I–84 from County line to County line.

Table 3: Principles of Fire Safe Forests[21]

Principle	Effect	Advantage	Concerns
Reduce surface fuels	Reduces potential flame length	Fire control is easier, less torching of individual trees	Surface disturbance: less with prescribed burning; more with other mechanical techniques
Increase height to live crown	Requires longer flame length to begin torching	Less torching of individual trees	Opens understory, may allow surface winds to increase
Decrease crown density	Makes tree-to-tree crown fire spread less probable	Reduces crown fire potential	Surface winds may increase, surface fuels may become drier
Favor fire-tolerant tree species	Reduces potential tree mortality	Improves vegetation tolerance of low- and mixed-severity fires	May be too broadly applied, resulting in overly simplified landscape patterns of composition and structure

5.20 Wildfire Hazard

Wildfire Hazard is defined by using three factors that influence wildland fire behavior; weather, topography and fuel. The interactions of these three variables influence fire behavior and severity.

Fine flashy fuels will burn at a faster rate than brush or heavy fuels. When fanned by wind on a low humidity day, fuels will be consumed more rapidly and significant preheating of fuels will occur in front of the flame front as the topography changes from flat to steep ground.

Torching refers to individual trees being consumed by fire, whereas crowning refers to fire in the overhead canopy (tree tops = crown).

21 Agee 2000, Hessburg and Agree, in press

5.21 Weather

Hood River County is subjected to weather patterns that can contribute significantly to extreme fire behavior. The Columbia River Gorge provides the path of least resistance through the Cascade mountain range for pressure systems to equalize. With a westerly gradient, Hood River can see 20 – 30 mph winds daily, sometimes with little or no nighttime relief. Peak gusts can exceed 40 mph. Humidity associated with the westerly flow is generally around 30 – 50 %; however these sustained winds coupled with high daytime temperatures account for overall lower fuel moisture content. With an Easterly gradient, the drier air from the desert pushes towards the coast in an attempt to equalize and significant drying occurs. Winds in the east end of the gorge tend to be minimal; however in the west portion of the gorge from Viento to the county line the winds can build and at times exceed 40 mph. Winds generally tend to die down at night as the desert cools off or the gradient may even reverse. Associated humidity can be in the teens or single digits. With humidity less than 28% embers and sparks may be expected to ignite fine fuels as they are carried ahead of a fire front by the wind. The weather patterns, while somewhat more extreme along the Columbia River Gorge, are also significant proceeding further south to Parkdale and to up Highway 35 to Mt Hood.

The Hood River County profile shows that the foothills of the Cascades on the Westside of the county receive more precipitation than the Eastside of the County, approximately a 2:1 ratio.

Extreme winds are experienced in all of Oregon's eight regions. The most persistent high winds occur along the Oregon Coast and the Columbia River Gorge.

The Columbia Gorge is the most significant east-west gap in the mountains between California and Canada. It serves as a funnel for east and west winds, where direction depends solely on the pressure gradient. Once set in motion, the winds can attain speeds of 80 mph, halt truck traffic, and damage a variety of structures and facilities. The average wind speed at Hood River is 13 mph.

Figure 7: Oregon Emergency Management Weather Statement[22]

[22] Oregon Emergency Management, Region 5: Mid-Columbia Region Hazards Assessment. OR-SNHMP (Region 5) Mid-Columbia.

Figure 8: Herman Creek Fire 2003 Photo Cascade Locks with 20 – 30 mph East winds (photo by WSU Ole Helgerson)

5.22 Topography

Hood River Valley on the Westside backs up into the heavily wooded hills and mountains of the Cascades; the Eastside is lined with hills that are also wooded but drier along with significantly more oak and grasses; the west end of the county while heavily wooded, the city of Cascade Locks is pinched between the Columbia River and the near vertical sides of the river gorge. The potential for extreme fire behavior is of concern for any valued property whether it be a structure or scenic vista that resides at the top of any bluff, hill or canyon that has enough fuels to sustain a fire. The more fuels on that bluff, hill or canyon, the more active the fire will become. As the percentage of slope increases more preheating of fuels preceding the fire front will occur. The fire front will proceed up the hill at a faster rate and the fire will burn more intensely. Coupled with a 25 mph wind and low humidity the gorge has the makings for a severe wildfire. Wildland firefighters are taught that the safest way to extinguish a fire is to attack from the area that has already burned. Structural firefighters are utilized in the wildland setting. There is an expectation that they will protect a house as a flame front moves directly to them.

Figure 9: Roadside fuels at Mitchell Point

5.23 Fuels

Fuels are divided into many different categories, all of which are interrelated to weather and topography. Hood River County climatic regions vary; to the East more grasses, oak and pine trees dominate the drier natural terrain as opposed to the Westside where fir trees are more normal for a climate that is a little wetter. Historically, the region consisted of pine forests. More recently, due to decay in forest health and changes in forest practices, fir species are now more prominent. To the South, at higher elevations, there is a mixture of conifers that make up the forested lands beyond the urban interface.

Fuels are rated according to the following table.

Table 4: Fuel Designations

Fuel Classification		Size - Inches	Type
1 Hour Fuel	Fine	0 – ¼	Grass- Pine Needles
10 Hour Fuel	Small	1 /4 – 1	Twigs – Branches
100 Hour Fuel	Large	1- 3	Small Trees – Branches
1,000 Hour Fuel	Large	3 – 8	Trees

The hour designation (such as 100), rates the time that a particular fuel will loose 2/3 of its moisture subject to drying conditions. Examples would include radiated heat from the sun, an approaching fire front or direct impingement by flames. Most commonly, natural drying occurs (i.e. a warm/hot day, lower humidity with wind present). The fine fuels have the ability to both lose and regain moisture very quickly, whereas the 1,000 hour fuels take much longer to complete the same cycle. Forest closure and burning regulations are established each year in part to evaluating fuel moisture.

5.24 Aspect and Slope

Aspect is defined as the direction a slope faces the sun. North facing slopes tend to be more heavily fueled and wetter. South facing slopes, while they may have the same fuel load, will shed fuel moisture at a faster rate through direct heating from the sun. Wind and low humidity will increase the rate at which fuels will shed moisture – many north facing slopes in the county will experience accelerated drying from these high wind events.

Slope is a measurement of the amount the terrain changes in relationship to flat ground. This measurement can either be described in degrees or as a percentage. The slope of a hill greatly affects fire spread: the greater the slope, the more preheating of fuels. Convection currents will move the heat and other products of combustion rapidly ahead of the flame front drying and heating unburned fuel. Fire intensity will increase many fold as the fire runs up a hill. In narrow canyons and draws the heat radiated by a fire making a run up the canyon wall in many cases is sufficient to ignite the opposing canyon wall.

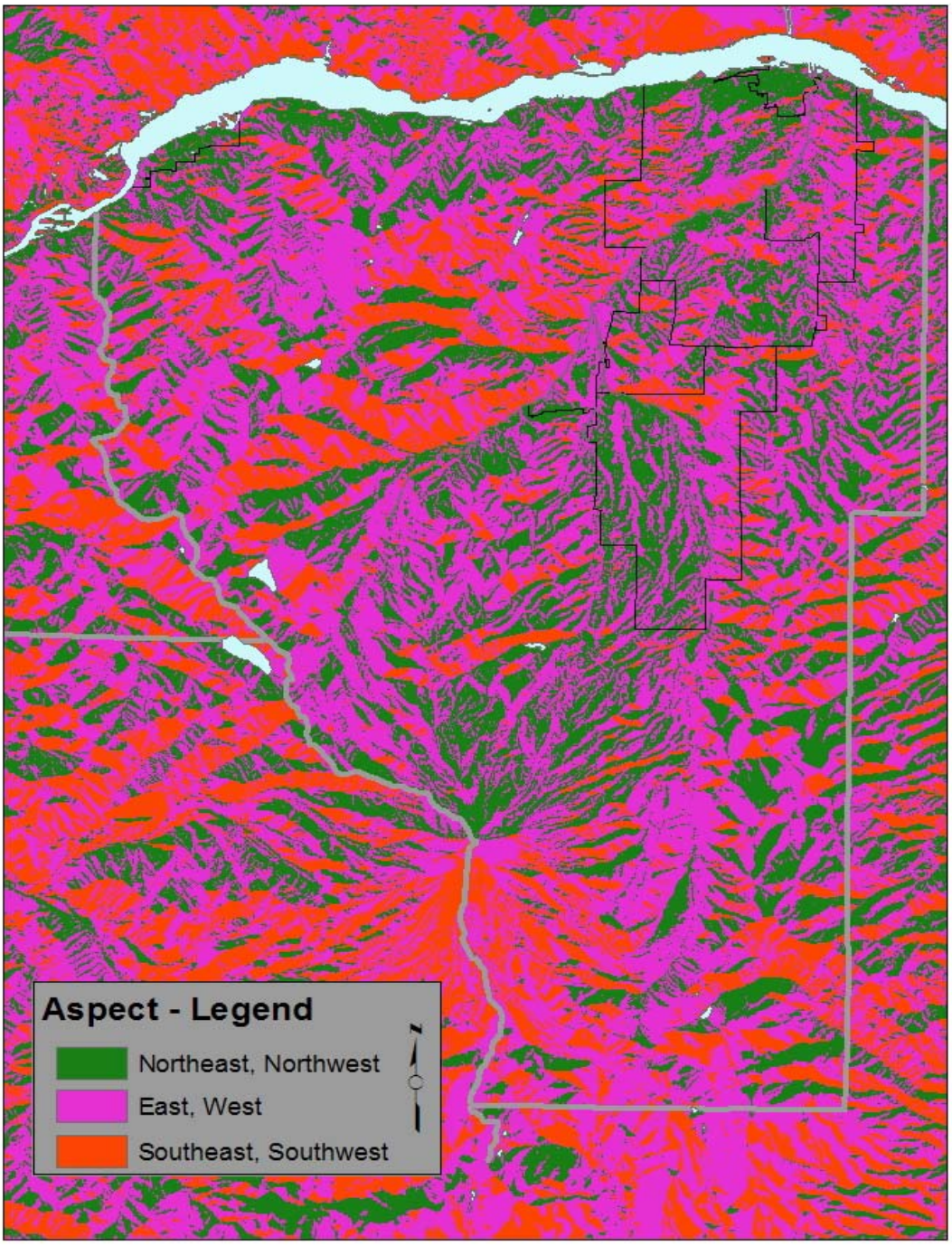

Figure 10: Hood River County Aspect Map[23]

23 Oregon Department of Forestry, Hood River County Aspect Map

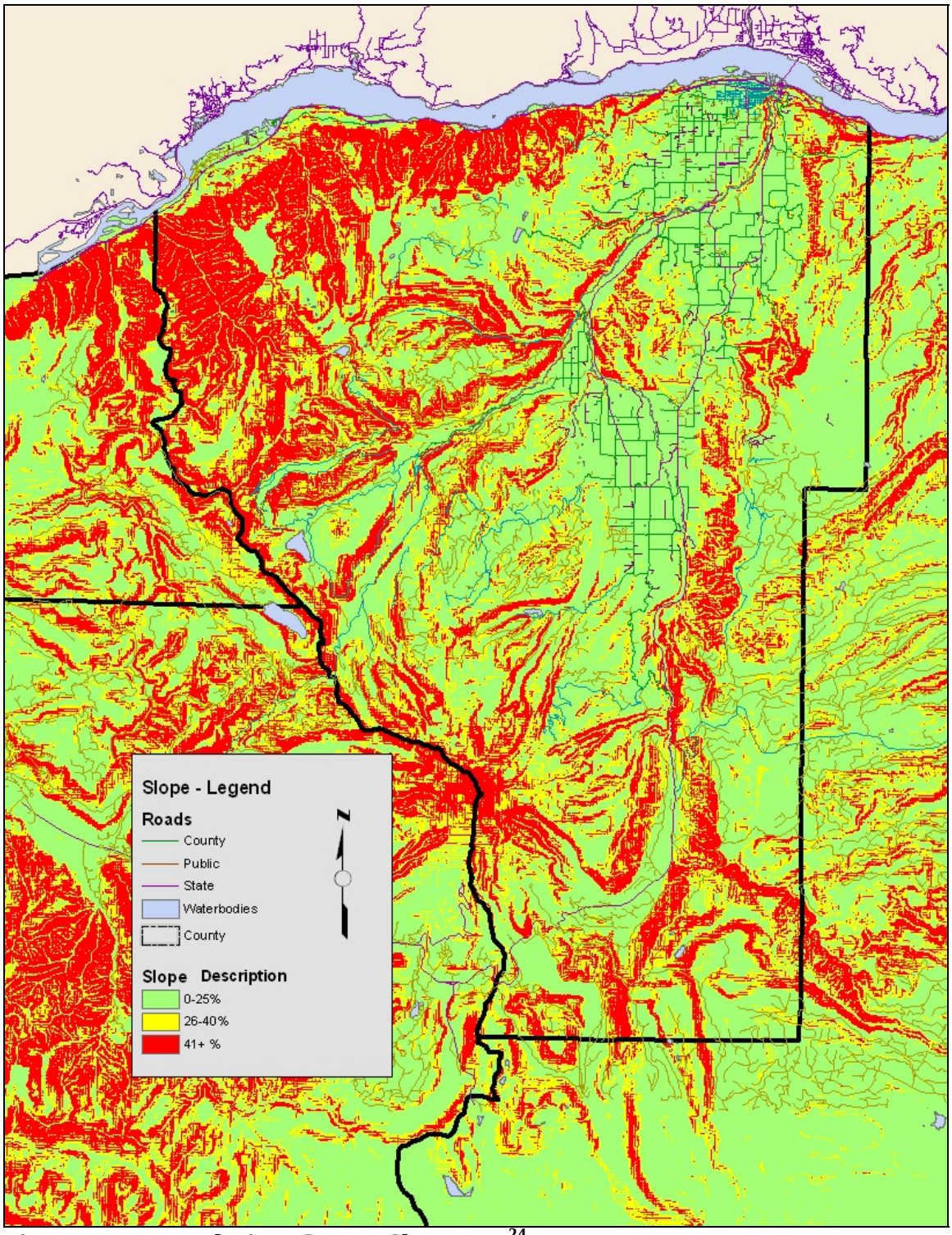

Figure 11: Hood River County Slope Map[24]

24 Oregon Department of Forestry, Hood River County Slope Map

5.30 Fire Regimes and Condition Class

A way to quantify fire on the landscape is to look at fire frequency and the severity of those fires in the absence of human mechanical intervention, but would include historic aboriginal burning.[25]

The five natural (historical) fire regimes are classified on the average number of years between fires (frequency) and are combined with the severity (amount of replacement) of the fire on the dominant over story vegetation.[26] The five regimes are a dominant base but may be split into finer classes.

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 fire regime condition class (FRCC) is a classification of the amount of departure from the natural regime.[27] 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 (See Appendix A)[28]. 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.[29]

[25] Agee1993, Brown 1995
[26] Hardy et al. (2001), Schmidt et al (2002)
[27] Hann and Bunnell 2001
[28] Hann and Bunnell 2001, Hardy et al. 2001, Schmidt et al. 2002
[29] www.frcc.gov www.frcc.gov/docs/FrccDefinitionsFinal.pdf

5.31 Condition Class 1

Fire Regime:

Fire regimes are within the natural (historical) range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition, structure, and pattern) are intact and functioning within the natural (historical) range.

Example Management Options:

Where appropriate, these areas can be maintained within the natural (historical) fire regime by treatments such as fire use.

5.32 Condition Class II

Fire Regime:

Fire regimes have been moderately altered from their natural (historical) range. Risk of losing key ecosystem components is moderate. Fire frequencies have departed from natural frequencies by one or more return intervals (either increased or decreased). This result in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation and fuel attributes have been moderately altered from their natural (historical) range.

Example Management Options:

Where appropriate, these areas may need moderate levels of restoration treatments, such as fire use and hand or mechanical treatments, to be restored to the natural fire regime.

5.33 Condition Class III

Fire Regime:

Fire regimes have been substantially altered from their natural (historical) range. The risk of losing key ecosystem components is high. Fire frequencies have departed from natural frequencies by multiple return intervals. Dramatic changes occur to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been substantially altered from their natural (historical) range.

Example Management Options:

Where appropriate, these areas may need high levels of Restoration treatments, such as hand or mechanical treatments, before fire can be used to restore the natural fire regime.

5.34 Examples of Key Ecosystem Component Susceptibility to Changing Fire Regime Condition Classes

Condition Class I:

Species composition and structure

Species composition and structure are functioning within their natural (historical) range at both patch and landscape scales.

Invasion by nonnative species

Non-native species are currently not present or present in limited extent. Through time or following disturbance sites are potential vulnerable to invasion by non-native species.

Smoke production hydrology, and Soils

Functioning within their natural (historical) range.

Insects and disease

Insect and disease populations functioning within their natural (historical) range.

Condition Class II:

Species composition and structure

Species composition and structure have been moderately altered from their historical range at patch and landscape scales. For example: Grasslands – Moderate encroachment of shrubs and trees and/or invasive exotic species. Shrublands – Moderate encroachment of trees, increased shrubs, or invasive exotic species. Forestland/Woodland – Moderate increases in density, encroachment of shade tolerant tree species, or moderate loss of shade intolerant tree species caused by fire exclusion, logging, or exotic insects or disease. Replacement of surface shrub/grass with woody fuels and litter.

Invasion by nonnative species

Populations of nonnative invasive species may have increased, thereby increasing the potential risk for these populations to expand following disturbances, such as wildfires.

Smoke production hydrology, and Soils

Have been moderately altered from their natural (historical) range. Water flow typically less. Smoke and soil erosion following fire typically greater.

Insects and disease

Insect and disease population have been moderately altered from their natural (historical) range.

Condition Class III:

Species composition and structure

Species composition and structure have been substantially altered from their historical range at patch and landscape scales. For example: Grasslands – High encroachment and establishment of shrubs, trees, or invasive exotic species. Shrublands – High encroachment and establishment of trees, increased shrubs, or invasive exotic species.

Forestland/Woodland – High increases in density, encroachment of shade tolerant tree species, or high loss of shade intolerant tree species caused by fire exclusion, logging, or exotic insects or disease.

Invasion by nonnative species

Invasive species may be common and in some cases the dominant species on the landscape. Any disturbance will likely increase both the dominance and geographic extent of these invasive species

Smoke production hydrology, and Soils

Have been substantially altered from their historical range.

Insects and disease

Insect and disease population have been substantially altered from their natural (historical) range. Typically higher mortality or defoliation.

Further information detailing the Fire Regimes and condition classes may be found at www.frcc.gov. The majority of the text above is credited to the personnel who created the website.

The following maps created from data from the USFS Mt Hood Ranger Station show both the fire regimes (FR) and condition classes (CC) for Hood River County. Unfortunately there is no way to show FRCC's for private lands outside of the fire districts. The condition class data shows that the northern end of the county is most at risk on both the west and east sides. This is the area that is most populous and is readily susceptible to the effects of the gorge winds. Federal lands to the east of Parkdale and Cooper Spur represent the largest amount of Class III lands. Fire progressing to or from these areas can have deleterious effects upon two major water sheds, Crystal Springs and The Dalles Watershed in the Barlow Ranger district.

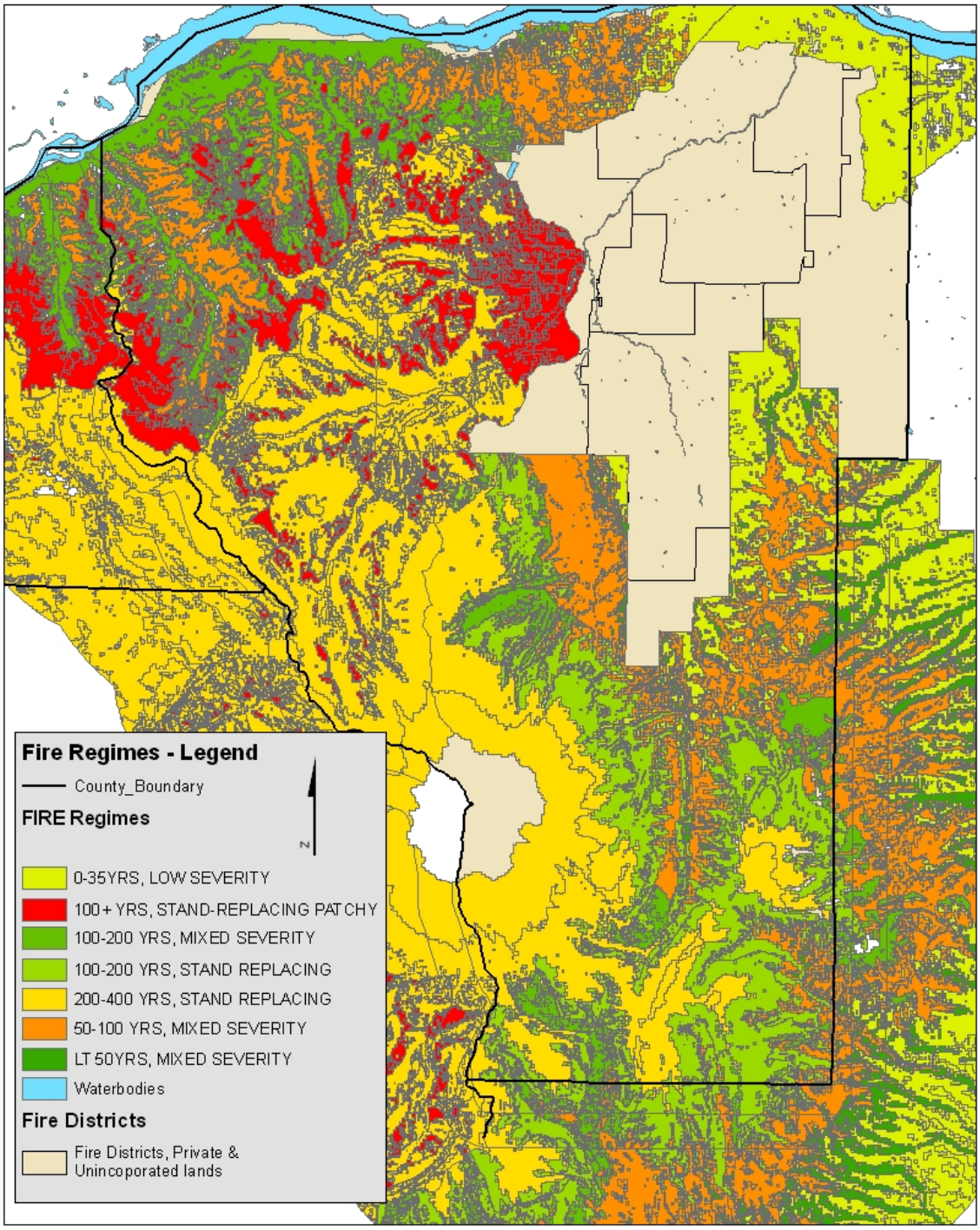

Figure 12: Fire Regimes[30]

30 US Forest Service, Fire Regimes Map

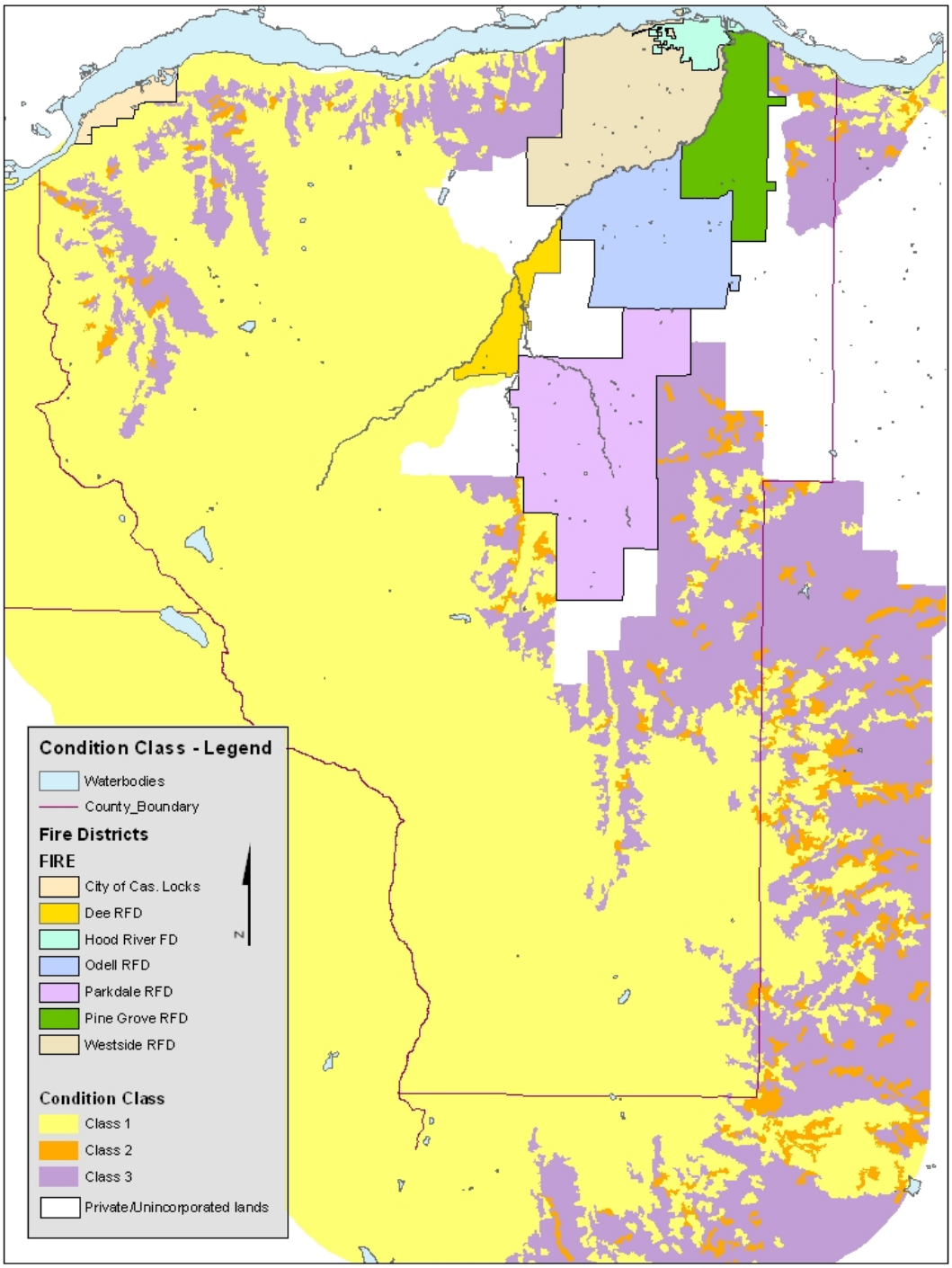

Figure 13: Condition Class[31]

5.40 Disease and Bug Kill

Insects and disease pathogens cause significant tree mortality, growth loss, and damage to large volumes of potential wood products each year. This can reduce management

31 US Forest Service, Condition Class Map

options for landowners, and contribute to hazardous forest fire conditions. However, these disturbance agents are a natural and necessary part of forest ecosystems. They contribute to decomposition and nutrient cycling, create openings which enhance vegetative diversity and create additional wildlife habitat. A healthy forest is never free of insects, disease, disturbances, and tree defects.[32]

The following map detailing tree kill is derived from US Forest service data from 2000 to 2005. The 2005 layer (yellow) is the bottom most with the 2000 layer on top. This is a mixed representation as tree mortality may have been affected by differing pathogens and agents.

Representative of Insects and disease and other agents would be:

- Mountain/Western Pine Beetle
- Fir/Pine Engraver
- Flathead borer
- Sawfly
- Needle Miner
- Budmoth
- Bear Damage
- Blister Rust
- Needle Cast
- Root Disease
- Windthrow
- Land slide
- Fire

[32] http://www.fs.fed.us/r6/nr/fid/health/2004highlights-or.shtml#insects

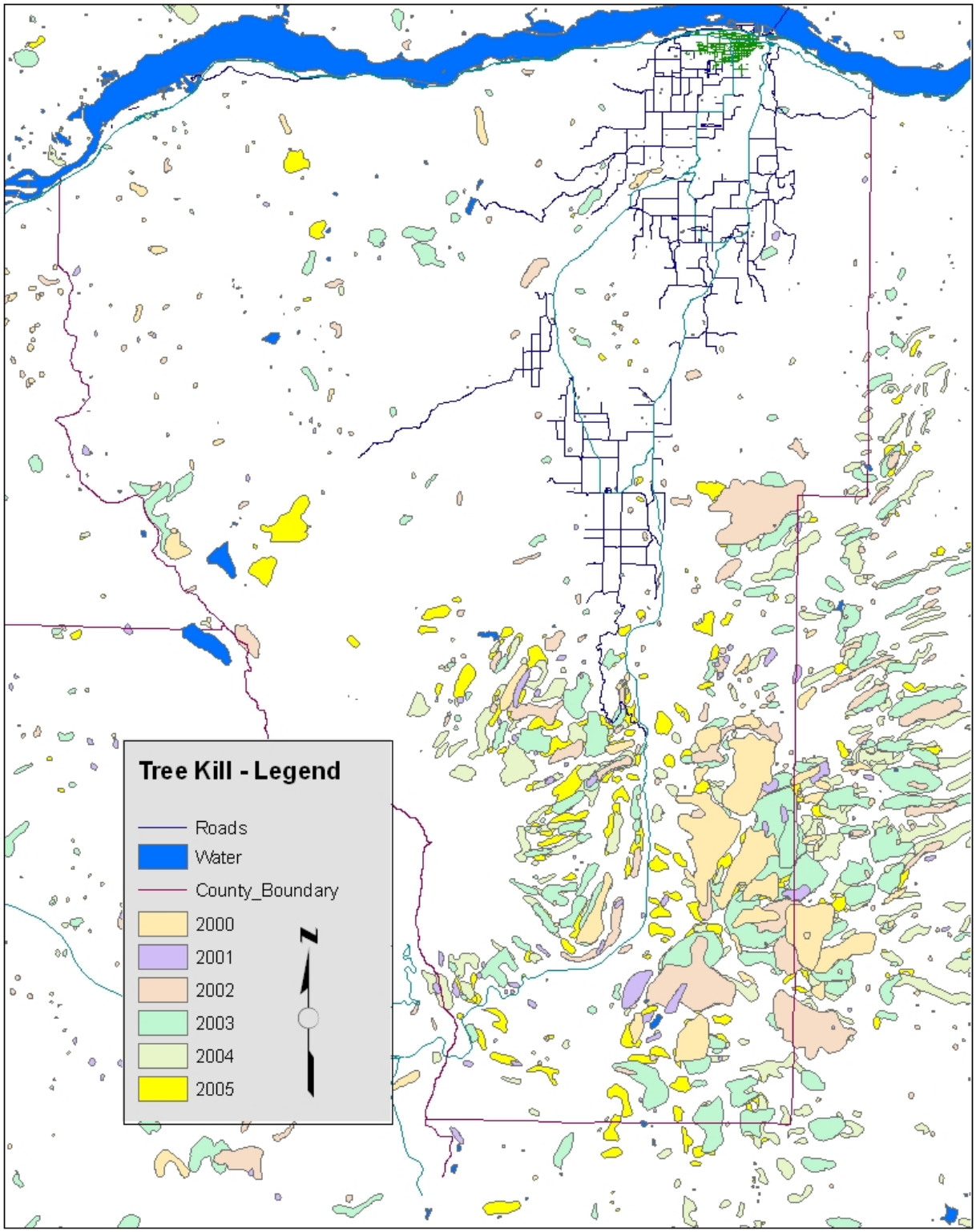

Figure 14: Tree Kill in Hood River County due to diseases and bugs[33]

33 US Forest Service, Tree kill due to diseases and bugs in Hood River County.

5.50 Energy Distribution Infrastructure

5.51 Electricity

The principle form of energy used within Hood River County is hydro electricity. Electricity is available countywide with most areas being supplied by conventional poles and wires. Newer areas may have underground services with ground-mounted transformers. The majority of the county is served by a series of redundant loops with branch lines accessing customers.

Large Bonneville Power Administration (BPA) transmission lines (100KV) cross the upper valley from The Dalles Dam towards Portland. Pacific Power operates a 500KV transmission line from Bonneville Dam that parallels the Columbia River to provide electricity to Hood River.

Right of ways for transmission lines are routinely maintained and inspected. Trees and brush are cleared to under and along side the lines for safety. Right of ways can serve as a fire break or can serve as part of a planning boundary.

Fire fighters are advised not to work in close proximity to these transmission lines as direct shorting to ground may occur in smoky conditions.

5.52 Natural Gas

The Lower portion of Hood River County is served with natural gas. There is an ever increasing customer base. Gas lines are all underground and should pose no significant threat unless ruptured by machinery. The main supply line for the county originates in Washington and crosses the Columbia River on the Hood River Bridge.

5.53 Propane

Another significant energy source is propane. This liquefied gas serves many households where natural gas may not be available. Orchards use significant quantities for frost protection. Residential storage tanks may be up to 500 gallons. Orchards may have tanks that hold many thousands of gallons.

Bulk supplies are brought in by rail car. These cars can hold up to 200,000 lbs of product. The rail car is dropped on a siding and then delivered by Mt. Hood Railroad to bulk storage facilities in Pine Grove for decanting into smaller pressure vessels for distribution to customers.

Figure 15: Propane Tanks in the Pine Grove District

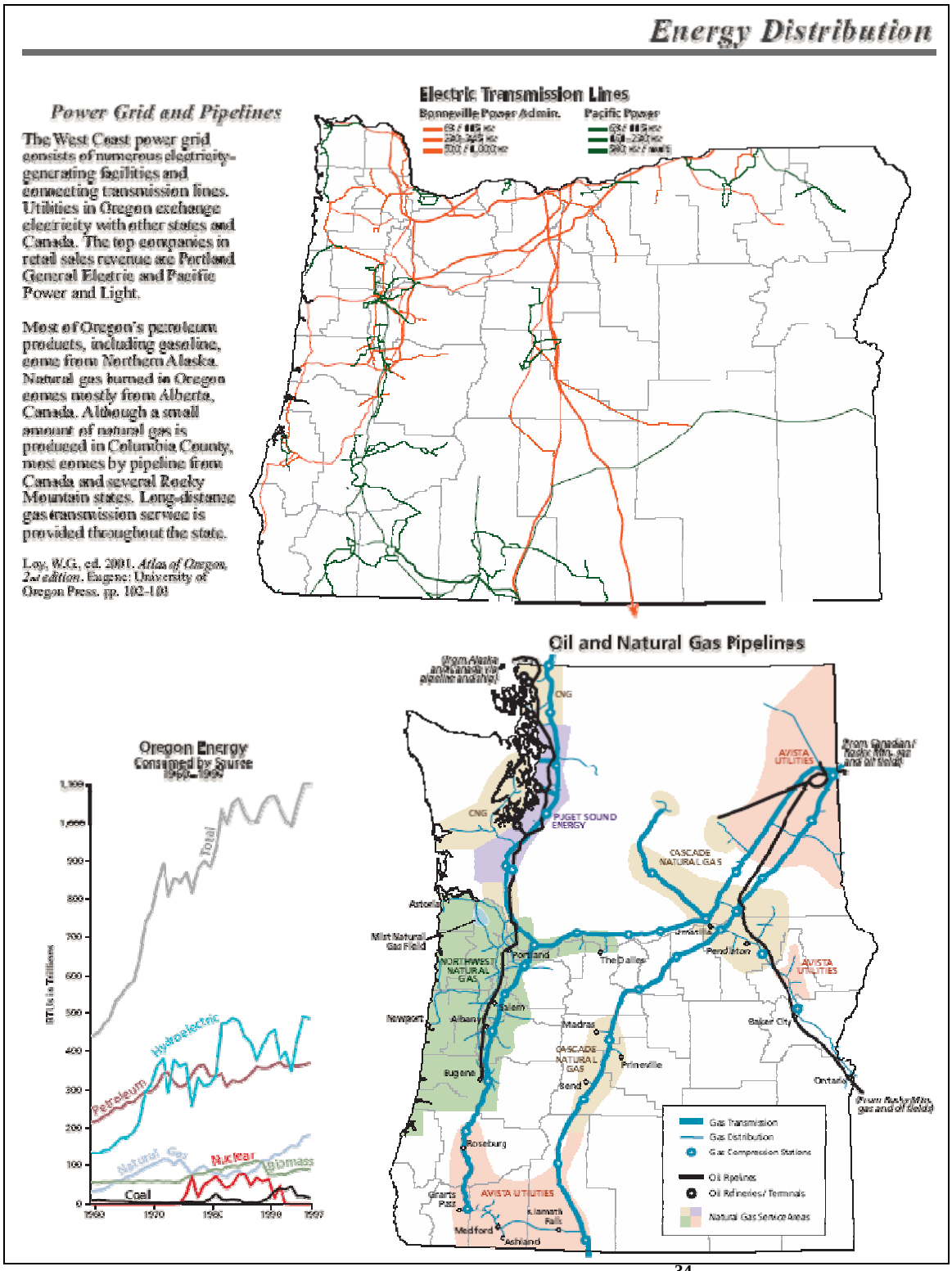

Figure 16: Energy Resources and Distribution in Oregon[34]

34 Atlas of Oregon, 2nd Edition, Copyright 2001 by the University of Oregon Press.

6.00 Risk Assessment

In the face of a wildfire, risk pertains to the potential loss of life, structures and property. Natural resources and vital infrastructure may also be affected. To evaluate the potential risk, criteria established in NFPA 1411 were adopted to rate houses in and around the Wildland Urban Interface within Hood River County. (See Appendix B)

There are sixteen factors that were evaluated; each of the factors was assigned a value from which a risk rating was derived. Locations receiving more points are classified as higher risk.

Assessment included the following:

6.01 Access and Egress.

A structure that has a driveway that provides two ways in/out is assigned fewer points than a structure that has one way in/out. A driveway less than 100ft was said to have good access.

6.02 Primary Road Width.

Driveways greater than 24 ft were rated with fewer points than driveways between 20 and 24 ft. Driveways less than 20 ft received the most points.

6.03 All Season Road Conditions.

The distinction in this category is between paved, (surfaced) non-surfaced, (gravel) and other than all season (dirt.) In addition to the surface condition, the slope of the driveway is considered. A driveway with a slope greater than 5% receives more points. A "surfaced" road < 5 % is favored over an "other than all season" with > 5 % slope.

6.04 Fire Service Access.

Structures located close to a road with a turnaround are given a lower point value than those positioned farther from the road without a turnaround. Turnaround area should be able to accommodate a Type 1 fire engine.

6.05 Street Signs.

Sites are scored according to the presence or absence of street signs. It is a simple "present" (4 inches with reflectors) or "not present" ranking.

6.06 Vegetation.

Distinction is made between:

a. Light, (grasses)
b. Medium, (small trees and light brush)
c. Heavy, (dense brush, timber and hardwoods)
d. Slash, (timber harvest residue)

6.07 Defensible Space.

Defensible space is defined as the treated area surrounding the structure. The four categories are described as:

a. > 100 ft = most defendable
b. 71 to 100 ft
c. 30 to 70 ft
d. < 30 ft

6.08 Topography.

Topography is the ranking of the slope characteristics around the structure. The five categories are:

a. < 9 % = most defendable
b. Between 10 and 20 %
c. Between 21 and 30 %
d. Between 31 and 40 %
e. > 41 %

6.09 Additional Rating Factors.

The following four items were assigned a value between 0 and 5:

a. Topography that adversely affects wildland fire behavior
b. Areas with history of high fire occurrence
c. Ares of unusually severe fire weather and winds
d. Separation of adjacent structures

6.10 Roofing.

Roofing construction material is classed as either A, B, C or not rated.

a. Class A Roof (metal or tile) = most fire resistant,
b. Class B Roof, (composite)
c. Class C, (wood shingles)
d. Not rated (i.e. tar paper) = least fire resistant.

6.11 Building Construction.

Structure siding and decking is assessed. Noncombustible siding/deck is the most fire resistant. Noncombustible siding /wood deck scores fewer points than combustible siding/deck.

6.12 Setback from Slope.

The setback from the slope is categorized as either:

a. “More than 30 ft” to slope = more favorable
b. “Less than 30 ft.”

6.13 Available Fire Protection (on site).

This category refers to whether or not a hydrant is within 1,000 ft proximity of the structure. Additional elements of this category are whether the flow from the hydrant is above or below 500 gpm (with a 250 gpm minimum), and whether or not the water

supply onsite can maintain a minimum of 250 gpm for a two hour period. If no hydrant is present at all, the site will be given the most points in this category.

6.14 Water Source Available (offsite)

The ranking in this category is determined by whether the water source is available by tender within a

a. 20 minute round trip,
b. 21 – 45 minute round trip,
c. greater than a 46 minute round trip

6.15 Utilities (gas and electric).

Utility service is ranked based on placement:

a. all below ground = most favorable
b. one above / one below ground
c. all above ground = least favorable

6.20 Risk Assessment Summary

While these findings establish a standard for rating a structure, there are other variables are of considerable value to responding emergency personnel. A few items that may temper a decision are:

a. Propane tank(s) size and proximity to structure
b. Wood storage
c. Adjoining structures
d. Barns, garages
e. Chemical storage
f. Flammable liquids

Structures such as ponds and year round water sources may be regarded as an enhancement to services.

In the face of a wildfire or structure fire, decisions are made very quickly; this includes the decision to commit resources and personnel to fight fire. The decision to protect any given structure in the WUI setting or not follows triage criteria from NFPA 1411. At times, house will be passed over for fire protection as the risk to personnel is too great or the houses will require too many resources to protect.

Structures are assigned one of the rankings below based on the points received:

- Green = Low Risk
- Yellow = Moderate Risk
- Red = High Risk

6.21 Roof Type

Of the factors considered in NFPA 1411 the most critical item determining survivability in the face of a wildfire is the roof type. Ignition invariably occurs from firebrands carried ahead of the fire rather than direct impingement from the fire front. Roofs may be ignited by direct contact from deposited fire brands or from trees that are close to or overhang the roof. These firebrands are lofted above the fire by thermal convection and

can settle back to earth as much as a mile away from the fire front or they can also be deposited from wind currents. A fire can spread very rapidly once on a roof able to sustain combustion,. Combustible siding and other features such as wood decks, or oily trees and shrubs also provide significant means for a fire to spread. Fire bosses with significant resources can have crews mitigate some of the hazards (i.e. clear trees/shrubs, wood piles away from a threatened structure); however, a large shake roof will still present a large risk.

6.22 Proximity of Structures

Structures within close proximity to each other are at greater risk due to generated radiant heat being transferred to adjacent structures. Although a less significant risk is associated with larger parcels of land that have significant buffer zones, long range spotting can take the conflagration to smaller parcels / subdivisions with disastrous effects.

7.00 Other Risks

Described in this section are other contributors for likely fire starts within Hood River County.

7.01 Neighboring Communities

Hood River County is susceptible to wildfire from neighboring Clackamas, Multnomah and Wasco Counties. Threat of human-caused fire affecting the Hood River County would come from Mosier in Wasco County. The Mosier area has a significant number of dwellings in the Urban Interface area. Potentially, fire can enter Hood River County when favorable East wind conditions prevail. Conversely, Hood River has the potential for spreading fire to Wasco County under West wind conditions. (Panorama fire 2004)

With favorable weather and fire conditions, fires in either Klickitat and/or Skamania counties have the potential to spread fire across the river from long range spotting.[35]

Clackamas and Multnomah County lands that adjoin the county are managed by the USFS, Mt. Hood and Columbia Gorge Scenic areas; some of this land is designated wilderness area.

7.02 Cigarettes

Cigarettes carelessly discarded are a potential for fire starts. Although less of a problem in the urban setting, the cigarette dropped from a vehicle into fine fuel has the opportunity to initiate fire activity.

7.03 Clandestine Activities

Components associated with illegal production of methamphetamine include both flammable and hazardous materials. These production materials can provide for accelerated fire behavior and will provide challenges for both structural and natural cover fire fighters. Laboratories closed down within the County have generally been located in less populated and remote areas.

7.04 Debris Burning

The City of Hood River currently does not allow open debris burning of house and yard waste. All other districts allow burning through a permitting process that is administered by each fire district. A similar oversight is provided by ODF for lands beyond the structural fire districts. Most residential burning is limited to a burn barrel or some such device that is covered by a mesh screen. Permittee is required to be present while burn is taking place and to also have a garden hose available for fire suppression if needed. Burning is further limited by seasonal fire danger and at times a total restriction. Orchardists can obtain special permits year round to burn diseased trees. Fires, at times do escape but are mostly contained by homeowners and local fire departments. Unattended fires, burning in windy conditions in defiance of regulated closures and/or regulations account for a large majority of escaped fires.

[35] Long range Spotting. Firebrands raised by thermal convection and deposited ahead of the fire front.

7.05 Fireworks

Fires are started each year by fireworks. The potential for a serious wildfire exists as the sale of fireworks coincides with some of the drier months of the year when wildfire risk is at its greatest.

Fireworks, by law, in Oregon are limited to varieties that do not explode or leave the ground (fly). Without similar laws in effect for some Washington State residents, it is common place for illegal fireworks to be purchased and brought into Oregon. Each year, fireworks are confiscated by police and fire officials.

7.06 Hazardous Materials.

Hazardous materials represent a secondary threat that can affect residents and firefighters. Quantities of hazardous materials are present through most all of the county. Hazardous material is present in the household and commercial operations, both legal and illegal. Hazardous material problems include illegal dumping of tires, furniture, refrigerators and more that are dumped off roadsides around the county.

Materials are listed as either reportable or non-reportable (see table 5) Current data from the OSFM shows 164 businesses or persons to have reportable quantities of hazardous materials in Hood River County. This is mostly representative of fixed facilities. Structural Fire Departments utilize this data to "preplan" responses in areas of specific concern. The most significant potential for hazardous materials impacting the county would come from the Union Pacific Railroad. Hood River County could also be impacted from a similar catastrophe from the Burlington Northern Railroad that parallels the Columbia River on Washington State. The second most significant threat from Hazardous Material comes from Interstate I-84. Intra and Interstate commerce accounts for many tons of hazardous materials that travel across and through Hood River County every day. Fuel Barges also travel the Columbia River taking Gasoline and Diesel upstream.

Table 5: Hazmat Reportable Quantities

Reportable Quantities	
Liquids	50 Gallons or more
Solids	500 lbs or more
Gasses	200 cu ft or more
Poisons or Explosives in Quantities of	
Liquids	5 Gallons or more
Solids	10 lbs or more
Gasses	20 cu ft or more

Minimum reporting requirements per OAR 837-085-0070 (2)

Bulk propane storage facilities are present in many orchards. These present little threat as most orchards are well irrigated and green and will not contribute to a significant fire spread. However, the bulk storage rail cars that are periodically staged at the siding

between the freeway and downtown Hood River have the potential to cause devastating damage to an area within a mile radius of downtown Hood River.

Exempt Activities:

- Farms and orchards are not required to report most hazardous materials used and stored on their property. The exception to this requirement is that if a processing /packaging facility is present, that facility must adhere to Oregon's reporting laws. The farm/orchard is still exempt.
- Intra/Interstate Trucking: Reporting requirements are not necessary unless the storage facility is present within the county. Only then would the storage facility be mandated to comply.
- Railroad Traffic: Not required to report.
- Barge Traffic: Not required to report.

The map above shows the blast zone from one railroad car carrying propane should it explode (BLEVE)[36]. Car plus product weighs approximately 194,000 lbs. Cars of this description are routinely left on the siding immediately West of the Second Street overpass by Union Pacific Railroad. The cars are then pulled up the valley by Mt Hood Railroad to the Amerigas property in Pine Grove district for bulk storage.

[36] BLEVE: Boiling Liquid Expanding Vapor Explosion. The term used to describe liquid propane converting to a gaseous state which then supports combustion most often with devastating consequences.

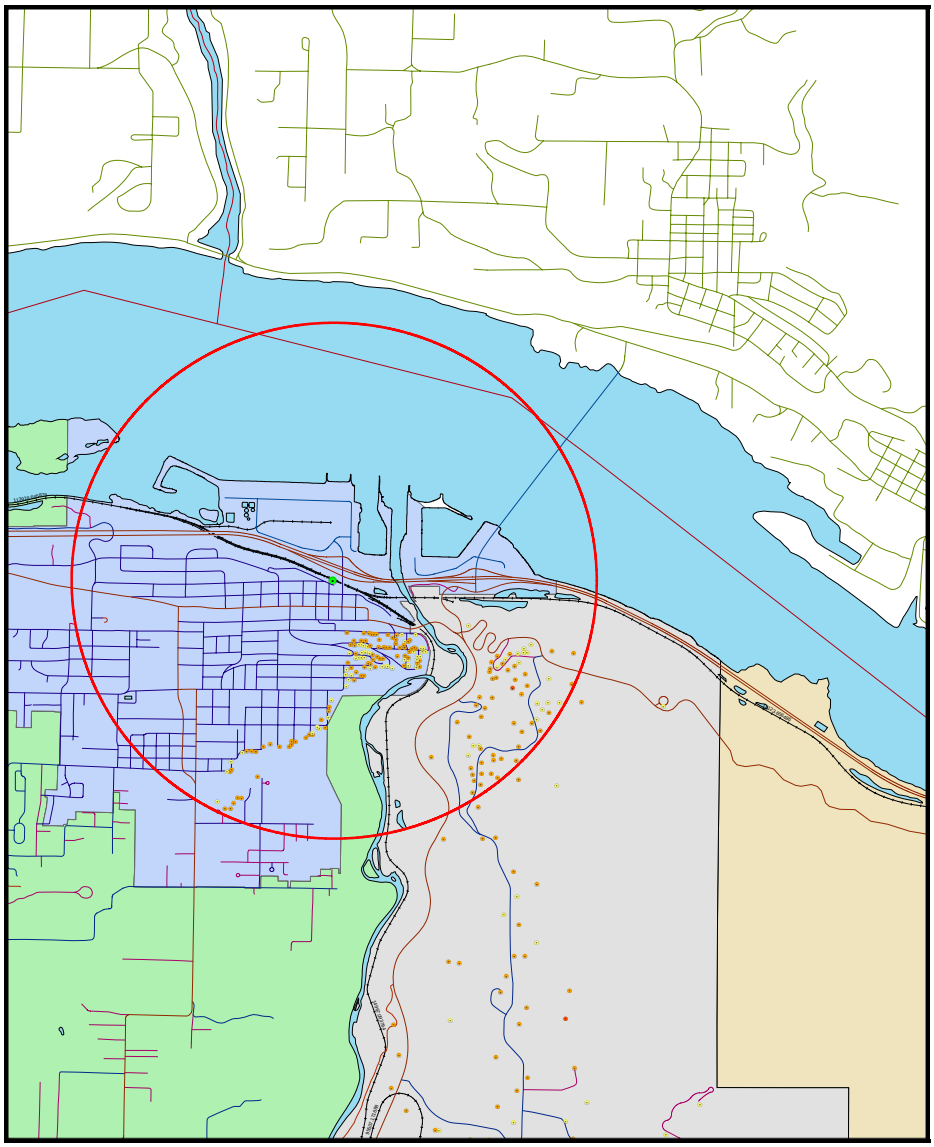

Figure 17: Estimated Propane Explosion Blast Radius - Hood River

The red circle represents a zone that would be critically affected in the event of an explosion (Zone = 1mile radius). Many tank cars are of his description travel via the railroad each week. Although the probability of derailment, explosion and fire is low, the possibility of a large fire developing quickly from an explosion is high.

7.07 Lightning

Lightning is a likely cause of fire in Hood River County. (Panorama fire 2004) Whether a lightning strike will result in an ignition, depends on many factors, including fuel moisture conditions, atmospheric moisture conditions, concurrent rainfall amounts and duration, and fire suppression efforts. In unusually dry years, fires may start despite significant rainfall because fuel moistures are extremely low. In addition, a simple definition of dry lightning is somewhat elusive.

Lightning can occur without significant precipitation, if a thunderstorm is high based, with rainfall evaporating before it reaches the ground; it can occur outside the rain shaft of a ‘‘wet’’ thunderstorm; or it can occur in conjunction with a fast-moving thunderstorm when significant rainfall amounts do not accumulate at any one location.[37]

There are three differing types of lightning action.[38]

1. “Cloud to Cloud” where the lightning strike remains airborne.
2. “Positive Strikes” are from the ground to cloud – General intensity can be in the 100,000 Kilo amp range.
3. “Negative Strikes” are from the cloud to ground.

Positive strikes are much more intense and are more likely to start fires; this does not mean that negative strikes do not start fires. The automated recording system that the BLM utilizes records both positive and negative strikes but does not record cloud to cloud strikes.

The following snapshot of BLM lightning strike data shows a storm passing through the Mt Hood forest in one day. This data is included to illustrate the amount of ground strikes that can be present during the passing of just one storm. The Panorama Fire of 2004 and Sheldon Ridge Fire of 2002 are two examples of recent fires caused by lightning.

[37] The 2000 Fire Season: Lightning-Caused Fires
MIRIAM L. RORIG AND SUE A. FERGUSON

[38] Bureau of Land Management (BLM) / USFS

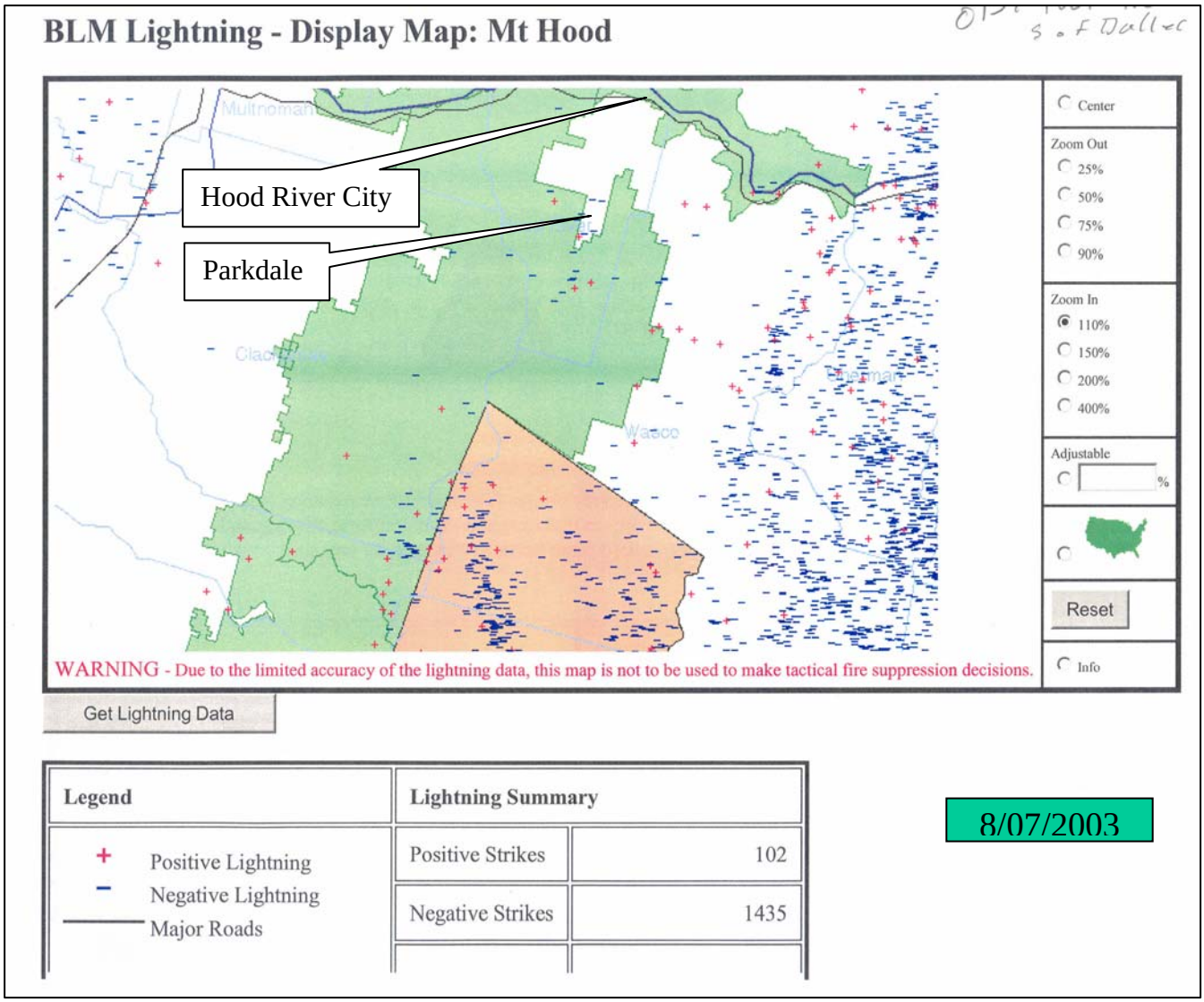

Figure 18: Lightening Strikes in Hood River County August 7, 2003

7.08 Power Lines

Above-ground wires and transformers are potential sources for fire starts. Windy, cold and hot and weather can contribute to infrastructure failure as can falling trees and overloaded circuits.

- Hot weather coupled with excessive power demands can contribute to overloading of transformers – showering sparks and fire.
- Wind can cause lines to contact one another causing sparks.
- Trees and branches can fall onto power lines (Herman Creek Fire 2003)
- Vehicles impacting power poles can bring lines down.

7.09 Rail Road

Union Pacific Railroad (UP) has a right of way that crosses the entire county East / West mostly bordering the Columbia River. The 150 ft wide easement is maintained by the railroad. This heavily traveled route is significant as it is one of the few routes that cross from western to eastern Oregon without climbing over the Cascade Mountain range. There is a wide range of commodities transported from grain to lumber to hazardous materials. Maintenance of the Hood River section is performed by the Cascade Locks crew with rail replacement and grinding being performed on a regional basis.

Oregon Department of Forestry sends out annual railroad cleanup orders in an effort to provide a zone free of combustible material. The clean zone is 20 ft from the centerline of the tracks. This applies to both Union Pacific and Mt. Hood railroads. The railroads are expected to comply with this order either chemically or manually prior to June 1st of each year.

There is the potential for large scale environmental damage to occur when trains and cargo are derailed. Aquatic areas could be significantly compromised with the release of locomotive diesel oil and / or hazardous materials. The freeway and forested lands adjoining the right of way could also suffer significant damage in the event of derailment and fire. One tank car carrying approximately 194,000 lbs of propane in the event of a BLEVE will cause death and heavy damage to anything within a mile radius. There are also other types of tank cars that carry a multitude of hazardous and non-hazardous materials. Engineers are required to keep a manifest in the engine showing all materials contained within the train and their location.

Creosoted[39] rail ties present a fuel that can smolder for many hours after a train has passed. Fire can be spread from the smoldering tie with wind – A majority of the right of way is open to the Columbia River and the wind. UP regularly treats grasses and foliage with herbicides and pre-emergent sprays. Brush and trees within the vicinity of the rail road track are cut.

UP has policies that are directly related to potential of wildfire. Crews are required to have certain firefighting tools and water available during maintenance operations. Supervisors have the ability to postpone certain operations in high hazard conditions. Rail grinding is not scheduled during times of high fire hazard.

The potential for fire in the UP right of way comes from:

- Maintenance Activities
- Track Grinding
- Track Welding / Heating
- Brush Cutting
- Rolling Stock Malfunction (Overheated Bearings)
- Poor Locomotive Performance

[39] Liquid Creosote is impregnated by pressure into wood railroad ties to act as a preservative to extend the ties useful life.

The greatest potential for fire comes from track grinding. UP recognizes the potential for fire and has large quantities of water available in a tank car. The last car is setup with firefighting equipment and has the ability to apply large quantities of water via two master stream nozzles.

When fires start within the confines of the right of way there is a potential for the fire to go un-noticed for a period of time. Access in some places is somewhat limited by terrain and bridges. Long hikes may be necessary to start fire suppression activities thus contributing to rapid fire spread.

To mitigate some of the access issues, fire departments should know the points of access to the track. Once all train traffic is stopped, brush rigs may be able to gain access. Four wheeled ATV's or even motorcycles may act as quick response apparatus taking in float pumps and hose to conduct initial suppression operations.

Mt. Hood Railroad travels through the upper Hood River valley with multiple exposures to wildland fuels in the Odell/Parkdale/Dee areas and along the forested zone immediately west of Middle Mountain.

7.10 Structure Fires

Structure fires have the potential for creating wildland fires especially if fires are unnoticed or perhaps the structure is a long way from fire suppression services. Firebrands can be carried beyond the involved structure, igniting other exposures or a ground fire emanating from the structure.

This issue is of primary importance for houses nestled in the wildland urban interface. Homeowners need to be able to help themselves by creating an environment that is not conducive to rapid fire spread. Voluntary compliance may come through education, neighbor helping neighbor and or fire department assistance. Standards for minimums are available from local fire departments, County and ODF offices. Senate Bill 360 implementation will seek to address many of these issues.

7.11 Vehicles

The potential for fire starts involving cars, trucks and off-road vehicles is present each and every day the year. Of particular concern is the off-road activity where vehicles may be driving or parking over fine fuels, igniting fires via a catalytic converter, as well as motorcycles and ATVs operating without spark arrestors. Some of this recreational activity occurs in defiance of regulated forest closures. Persons experiencing vehicle problems will generally pull off to the side of a road out of the traffic flow to investigate their dilemma, sometimes parking over fine fuels. Vehicle fires with ruptured fuel tanks provide a component for wildland fire ignition and spread.

In addition to I-84 being a National Defense Highway, the commercial truck traffic, (vehicles over 26,000 lbs) is significant in two ways.

- Transportation of goods supports the economy.
- Transportation of goods supports national security.

The volume of truck traffic may vary on a seasonal basis and can be directly tied to the economy. The volume of traffic itself poses a significant risk to Hood River County; if just one vehicle is involved in an accident or is or is deliberately turned into a tool to disrupt the economy, the results can be devastating.

Statistics for February 2006 show vehicles greater than 25,000lbs crossing Oregon West to East along Hood River's I-84 corridor at 51,560[40] trucks, with the majority of vehicles in the 70 -75,000 lb range. Current statistics also show that approximately 1.1 million vehicles greater than 25,000 lbs cross the Weigh in Motion (WIM) sensors at Cascade locks and Wyeth[41] annually

7.12 Other Risk Summary

Risk factors, with the exception of lightning, are all human related. Others not mentioned are arson and children playing with matches. Juveniles caught lighting fires are referred to counselors within the fire service as an initial step to address this risk. The Mid Columbia region has a fire investigation team that attempts to determine fire cause and can also use the Oregon State Police as an additional resource. OSP will be called for suspected arson cases including fires secondary to drug activities.

[40] Motor Carrier Transportation Division. ODOT
[41] Motor Carrier Transportation Division, ODOT

8.00 Emergency Preparedness

8.10 Emergency Management

The FEMA-mandated Hood River County Hazard Identification Analysis identifies hazards and the probability of events happening within the next 50 years. Risk is assigned from probability and vulnerability. The resulting analysis for wildfire results in a high risk rating. Many conclusions drawn from the analysis target items addressed by this plan:

- Ordinances for campfires, fireworks, debris burning etc.
- Fire-safe planning and wildfire, mitigation.
    - Home addresses visible for responders
    - Fire resistant roofing materials
    - Treat fuel areas around structures
    - Access and egress for responders
- Fire prevention and education
    - Mid-Columbia fire prevention Coop.
    - Fire Districts

Fire departments as first responders may initiate actions in time of conflagration that will shape evacuation of residents and designating evacuation routes that will benefit residents and fire personnel. Clear emergency communications and cooperation with the EOC will be of vital importance.

As a component of County planning the emphasis and funding opportunities available for many fire department projects now require a close working relationship with the Emergency services manager.

Projects for consideration:

- Radio interoperability equipment and standards
- Evacuation plans and standards.
- Mass care plans and supplies.
- Integration and development of a local overhead team.
- Interagency familiarization and drills.

The county “All Hazards Analysis” study will incorporate the finalized CWPP to address the wildfire component of the Analysis.

9.00 Fire Response

9.10 Fire Departments/Districts

Hood River County has six structural/wildland fire districts, two of which are municipalities (City of Cascade Locks and the City of Hood River). Other fire resources are Oregon Department of Forestry (ODF) and the US Forest Service (USFS.) ODF provides fire protection to all private and non-federal forest lands in Hood River County. The USFS provides suppression and protection services to federal lands.

The Columbia Gorge National Scenic Area is a separately administered area that in places adjoins the Mt Hood Ranger District. Both are under the USFS umbrella.

Hood River County structural fire and EMS services are mostly staffed with volunteer personnel that are on call 24hrs per day, seven days a week. Responses are initiated via the 911 center with alarms communicated to the volunteer crews via tone activated pagers that are issued to all personnel. Hood River City has full time personnel that staff a station to provide fire and EMS response to the city and to also provide Advanced Life Support care to other districts that do not have an ambulance service.

9.20 Automatic and Mutual Aid Agreements

Automatic, [42] mutual aid[43] and immediate need [44]agreements currently in place enhance timely responses of equipment and personnel either as initial or supplement resources. Each of the fire districts has predetermined agreements to supply to one another equipment and/or manpower to assist in mitigating emergency operations. Aid may be activated to overcome a shortfall in personnel during the day when some volunteers may not be able to respond from work or equipment may be out of service or in use at another emergency. Shortfalls of personnel may also be seasonal (i.e. elk/deer hunting season).

Automatic and mutual aid agreements allow for comprehensive coverage and quick initial attack on fire starts.

Hood River County Fire districts also place personnel and equipment at the Oregon State Fire Marshal's disposal to assist in the implementation of the State's Conflagration Act. The act is invoked when there is a fire in any one county that overwhelms the local and mutual aid resources of that county. The County Fire Defense Chief will request through the Governor that additional resources be assigned to fight fire and manage the

[42] Automatic Aid is an interdepartmental agreement where specific apparatus and personnel respond automatically into an adjoining district.

[43] Mutual Aid is an interdepartmental agreement where specific apparatus and personnel may be requested case by case to respond into an adjoining district.

[44] Immediate Need is an interdepartmental agreement where predetermined apparatus and personnel will respond from many departments to assist an adjoining district or county.

conflagration. Strike Teams and Task Forces will be assigned from other fire districts in neighboring counties to assist. The Conflagration Act was invoked for the Herman Creek Fire of 2003.

In past years, Hood River has provided resources to many conflagrations:

- Sheldon Ridge
- Umatilla
- Eyerly
- Warms Springs
- Boardman
- Grass Valley
- Multnomah Falls

9.30 Fire Department Capacity

Each fire department has resources and man power to provide fire protection to its residents every day of the year. Personnel available for response may vary considerably depending on the time of day, hence the need for mutual and automatic aid agreements. It is unlikely that there will be two or more structure fires burning at the same time across the county that would come close to depleting manpower resources. In the advent of a large wildland fire, the initial response crews may be under staffed and under equipped for a short period of time.

The following charts show fire department apparatus and personnel resources. Fire department personnel are divided into two categories:

1. IDLH approved
2. Non IDLH approved

IDLH refers to an environment that is not compatible with life. (Immediate Death and Life Hazard) Personnel training to this level are capable of entering burning structures while wearing protective equipment which also includes Self Contained Breathing Apparatus. (SCBA) SCBA can also be used in the wildland setting when working in excessively smoky conditions from a fixed position such as structure protection.

Table 6: County Fire Apparatus

Engines* (Minimum Requirements

Components	Structure Engines		Wildland Engines				
Type	1	2	3	4	5	6	7
Pump Rating							
- at Minimum flow (GPM)	1000 +	250+	150	50	50	30	10
- at Rated Pressure	150	150	250	100	100	100	100
Tank Capacity / Range	400+	400+	500+	750+	400-750	150-400	50-200
Hose, 2 ½" Feet	1200	1000	-	-	-	-	-
Hose, 1 ½" Feet	400	500	500	300	300	300	-
Hose, 1" Feet	-	-	500	300	300	300	200
Ladders, Feet	48	48	-	-	-	-	-
Master Stream (GPM)	500	-	-	-	-	-	-
Personnel (minimum)	4	3	3	2	2	2	2

Water Tenders (Minimum Requirements)

Type	1	2	3
Tank Capacity (Gallons)	5000+	2500+	1000+
Pump Capacity (GPM)	300+	200+	200+
Off Load Capacity (GPM)	300+	200+	200+
Max. Refill Time (Minutes)	30	20	15

*NWCG (National Wildfire Coordinating Group) Incident Operations Standards

Table 7: Fire Department Personnel

Department Capacity	Dee RFPD	Cascade Locks City	Hood River City	Odell RFPD	Parkdale RFPD	Pine Grove RFPD	Westside RFPD
PERSONNEL							
Full Time Paid Personnel		1	15	1	1		1
Fire Marshal / Chief	1	1	2	1	1	1	1
Volunteers (Total)	10	20	24	31	35	29	57
Volunteers IDLH Approved	4	20	21	23	28	21	25
Volunteers available Days	5	5	8	5	5	8	25
Volunteers available Days - IDLH	3	5	7	5	5	8	10
Volunteers Available Nights/Weekends	10	15	20	15	28	17	30
Volunteers Available Nights/Weekends IDLH	4	15	17	12	28	15	16
APPARATUS							
Ladder Truck			1				
Engine (Type 1)	1	1	2	1	2	1	2
Tender	1			1	1	1	1
Booster	1			1			1
Salvage			1				1
Command Vehicle			2	1			1
Brush Rig (Type 6)			2	1	2	1	2
Rescue Rig					1	1	

NOTES / Glossary	
RFPD	Rural Fire Protection District
IDLH Approved	Approved to enter areas with Immediate Death Life Hazard
Engine (Type 1)* see table below	Apparatus carrying 1000 gallons of water & capable of
	pumping 1000 gallons per minute (minimum)
Ladder Truck	Apparatus capable of raising a ladder 65 feet, also able
	to pump and operate an elevated hose stream
Tender	Vehicle capable of carrying water, 2500 gallons or more
Booster	Apparatus capable of
Salvage	Vehicle carrying misc. supplies for Salvage & Overhaul,
	generally for Structure Fires.
Brush Rig (Type 6)*see table below	Apparatus carrying 250 gallons of water, Primary use
	Wildland Fires
Command Rig	Chief's or Fire Marshal Vehicle

9.31 District Fire Danger

Chief Fire Officers were asked to identify the areas within their fire districts that represented the areas of high wildfire risk. Those areas identified in the following map are their concerns based on local knowledge of fuels, topography, weather and past fire occurrence.

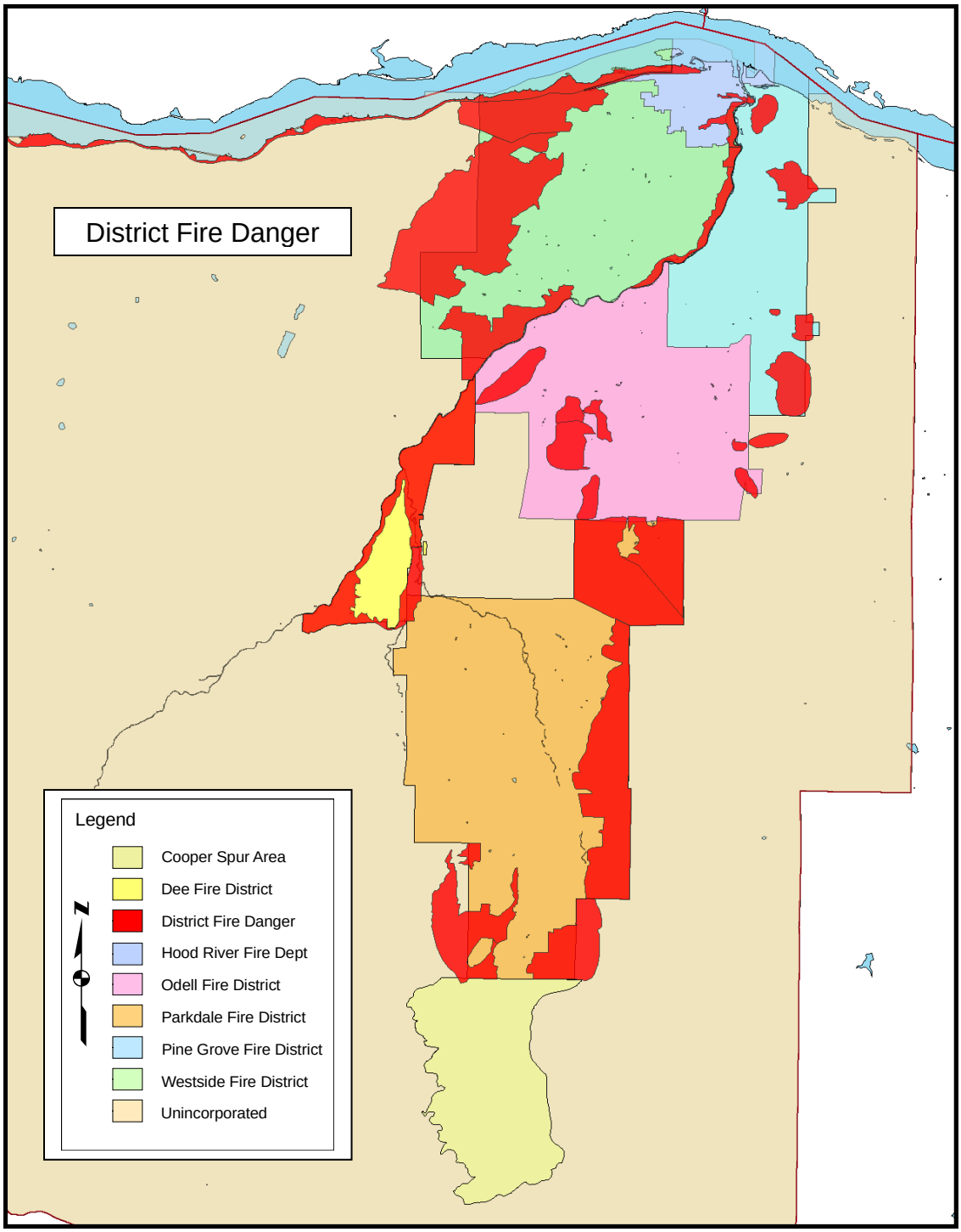

Figure 19: District Fire Danger as reported by Fire Chiefs

9.40 Road Systems

Critical to a functioning community is the ability to freely and safely navigate the roads and driveways. The road system starts where you park your car at your house. A large semi truck and trailer is not required to access all homes, but a Type 1 fire engine, eight and one half feet wide, weighing 35,000 lbs, should be able park at your front door and turn around with ease if you are more than 150 feet from a road. For new construction, this is addressed in current codes; however, for older dwellings, access may not accommodate fire engines. Access has many definitions in the WUI, driveways / private roads should be:

- a minimum of 20 ft wide
- able to support 65,000 lbs
- provide an adequate turnaround (if longer than 300 ft)
- bridges able to support 65,000 lbs
- street number attached to house
- street number plainly visible from roadway
- 13 ft 6 in vertical clearance

Driveways that do not meet current fire access standards pose a significant safety risk for fire fighters and residents whether it is access or egress. This can be compromised further by poorly maintained road surfaces and excessive overhanging / encroaching vegetation.

During times of emergency, it is the duty of law enforcement to maintain an orderly flow of traffic on the roads. Public works and fire department personnel may be called on to assist in traffic management. In times of conflagration, responding fire apparatus share the road with evacuating residents. During this time, it is preferable that a series of one way traffic routes be established with check valves to guide the motoring public.

Reference points such as address numbers should be visible at all driveways, at the road side and at junctions on shared driveways. While the local fire personnel may have a good idea of where residences are, out of district personnel may struggle without adequate street and address signs, especially if they are further hampered by smoke.

In times of conflagration, dead end roads will receive further consideration. Responding personnel may choose not to offer protection for houses at the end of theses dead end roads if responding will trap or compromise firefighter safety.

9.50 Water Supply

Water systems that supply an adequate volume and pressure for a sufficient duration of time are essential to sustain fire fighting efforts for both structural and wildland protection.

District water systems for the county originate well beyond the final delivery points. Reservoirs, pumping stations, water mains and hydrants along with the watershed are part of the county’s vital infrastructure.

Water will come in two basic ways for initial fire response either directly through hoses via a fire hydrant or delivered to the fire via fire apparatus such as tenders carrying thousands of gallons of water. The structures further into the WUI are more remote; consequently, tender operations are more prevalent.

Tender operations require more personnel to manage and will generally require more than one tender, sometimes up to four or more depending on the fire flow needed and the distance to the filling site. When minutes count, an additional engine may be used to fill tenders to help shorten the delivery turnaround time. To mitigate longer turnaround times, fire operations will utilize other sources of water, such as swimming pools, private ponds, creeks, rivers and irrigation canals.

The insurance industry is becoming more aware of the issues surrounding structures in the WUI. The Insurance Service Organization (ISO) already places an emphasis on fire protection at the fire district level by assigning a district rating dependent on water, personnel, apparatus availability and response times.

9.60 Fire Response Times

The 911 system can receive calls, collect pertinent addressing data along with type of call and "tone out" fire departments and personnel well within a three minute time frame. The City of Hood River has an advantage by having full time personnel that man the station and are able to initiate a response to their 4 sq mile area within two minutes. Other district personnel are able to respond to their respective stations to pick up apparatus as well as respond directly to the scene to help prepare for fire operations.

9.70 Fire Starts

Fire response in Hood River County can be divided into either a "Structural" or "Wildland" response. Fire districts are required to report all incidents in which the data becomes part of a national reporting system (NIFRS). Reporting is generally managed in Oregon by the Oregon State Fire Marshal's office (OSFM). Data collection has been somewhat sporadic with some departments not reporting consistently for both fire and EMS responses. FEMA, through the Assistance to Firefighters Grant Program, has mandated incident reporting through NIFRS. All districts in the county with the exception of Dee have received grant funding over the past four years.

Structural data comes from the OSFM and wildland data rests with the Oregon Department of Forestry, The Dalles Unit. The USFS also keeps data for federally managed lands. There may be a cross over of some data when the structural firefighters responded to ODF managed lands through mutual aid agreements.

Fire statistics are reported in acres for ODF and further broken down by cause, whereas statistics for the NIFRS reporting system for structural departments are primarily reported by cause.

ODF reported statistics for Hood River County are shown below for a ten year period ending in 2004. What is significant but not shown are fire starts that are outside the county boundaries that could have impacted Hood River with the right fire growth conditions such as the Sheldon Ridge Fire in 2002.

Table 8: ODF Fires in Hood River County 1994- 2004 Seasons

Size	Acres		Number of Fires	Total Acres
A	0	0.25	127	7.13
B	> 0.25	10	39	65.85
C	> 10	100	3	145.93
D	> 100	300	-	-
E	> 300	1000	1	375.14
F	> 1000	5000	-	-
G	> 5000		-	-
Total Fires / Acres			170	594.05

ODF relies heavily on seasonal employment for manning apparatus; generally the season is from July through September. The season is weather and fuel dependant. The ODF District Forester implements different fire precaution classes that restrict commercial and recreational activities when the fire danger is the greatest. He also has the ability to create forest closures. The structural departments also work in tandem with the ODF to monitor and restrict residential and farm burning. Permits are issued by ODF and structural departments alike that require the permitted person to adhere to certain prescribed conditions. The permit can be a one time only permit or an annual self renewing permit.

Until recently, structural department fire reporting was voluntary. Consequentially, the data represented only covers five years.

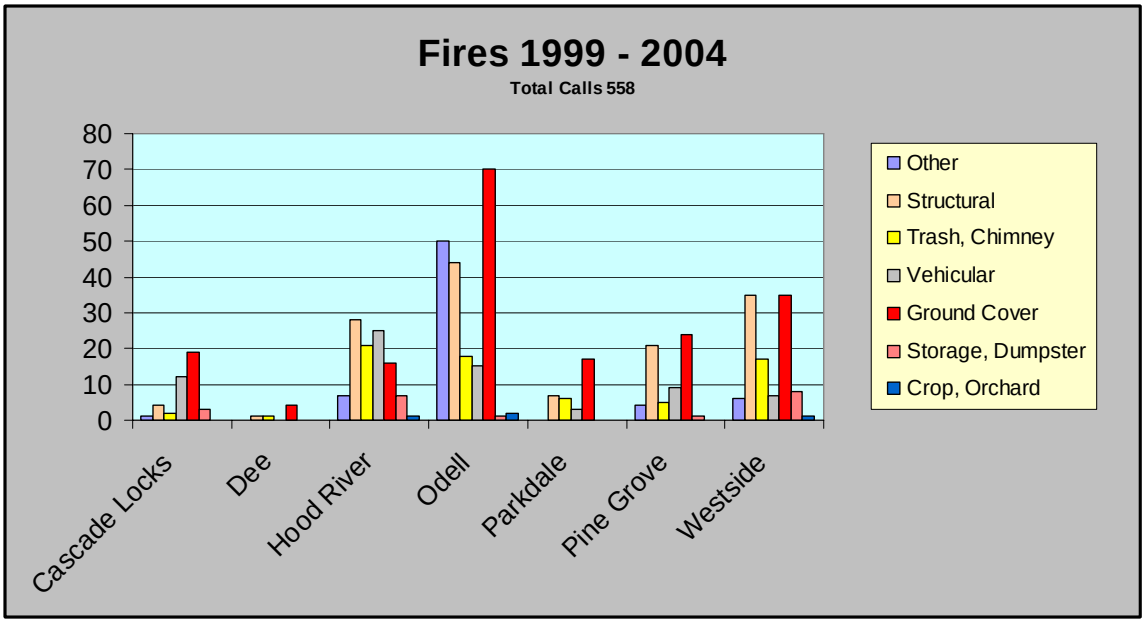

Figure 20: Fire Starts by District according to Oregon State Fire Marshall

9.80 Fires in Hood River County

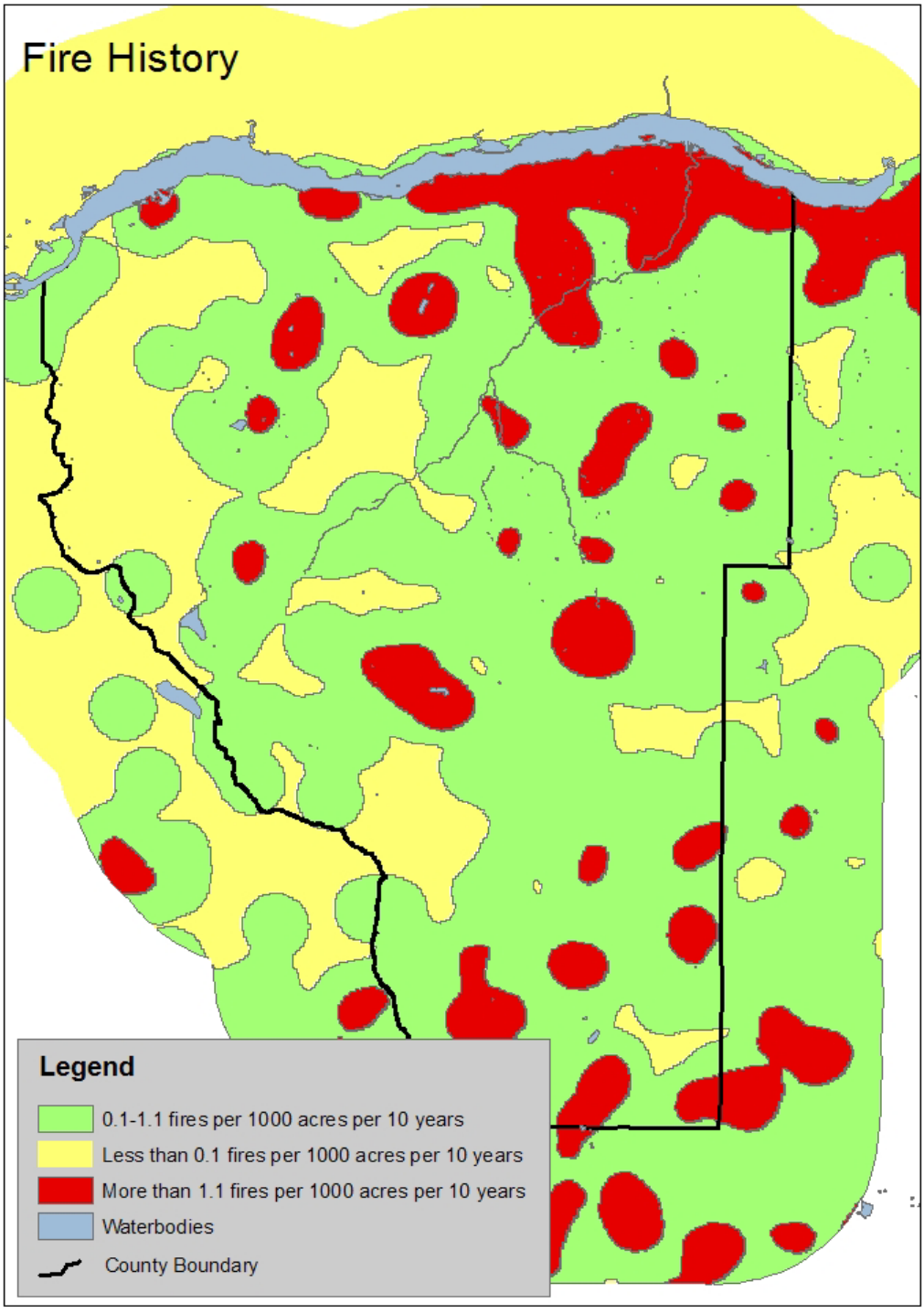

Figure 21: Hood River County Fire History

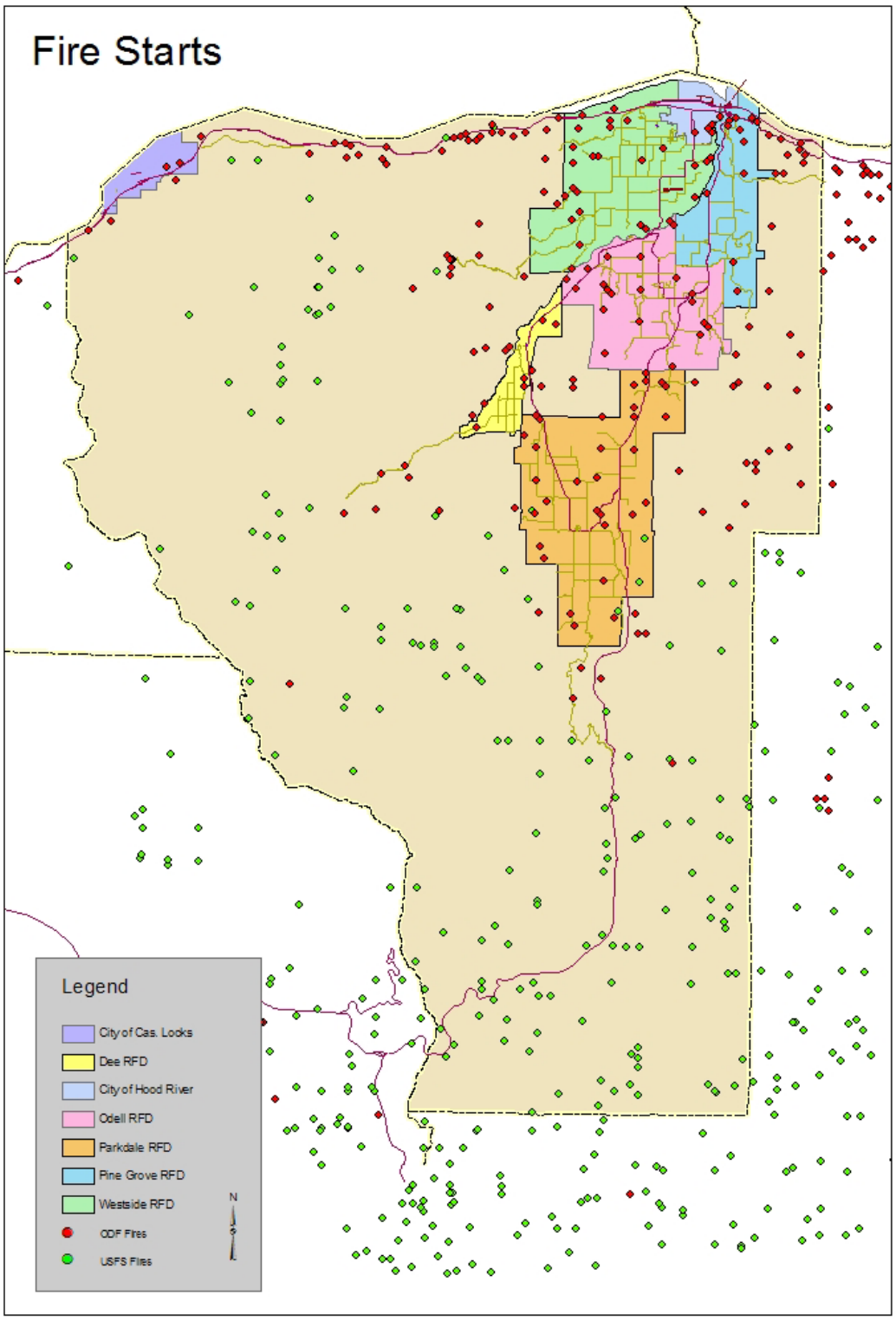

Figure 22: ODF and USFS Fire Starts From 1995-2005[45]

45 Oregon Department of Forestry. ODF & USFS Fire Starts in Hood River County. 1995-2005.

10.00 Values Threatened by Wildfire

Values threatened by wildfire are life, property and economic resources. Common goals shared by structural fire departments are:

1. Life Safety
2. Property Conservation
3. Incident Stabilization

These goals are invariably reflected in the department's mission statement. Life safety is of paramount importance and is not only applicable to homeowners/residents but to responding emergency personnel. Fire personnel will risk more to save a person, but will not apply the same risk to save an empty structure or vacant land.

The lives and property threatened by wildfire are of great importance; however, natural resources and economic values are also a significant concern that at times may be overlooked. Hood River County has the potential to loose biological, cultural and visual resources

10.10 Life

It is difficult to predict the possible loss of life in a wildfire; it is only possible to enhance features such as access and egress to permit the flow of traffic out of a danger zone. Fire uses fuel, topography and weather as its guide with no regard for animal and human life. The 1990 Oakland Hills Fire claimed the lives of 25 people, both emergency responders and residents alike while they were trying to evacuate. Many areas in the Hood River County Urban Interface have structures on or on top of significant slopes with moderate or heavy fuels around or below them. As our population increases in our high fire hazard zones so does the potential for loss of life.

10.20 Property

Of the structures surveyed, most data comes from the areas at greatest risk. The survey was initialized using the Wildland Urban Interface as a guide. Consequently many properties in the center of the valley are yet to be visited. There may be structures that will provide a small increase to the "high risk" category due to site specific landscaping. Areas closer to the center of the county are generally classified as "low risk," especially in areas surrounded by orchards. Historically orchards are well irrigated and green. Fire is not expected to encroach beyond the first five rows of trees into any specific orchard due to the high moisture content of available fuels.

Table 9: Assessed Home Values: NFPA 1411 Survey Data 2002-2004

Risk/Value	High Risk			Moderate Risk			Low Risk		
	Houses	%	Million	Houses	%	Million	Houses	%	Million
Dee	25	18%	$2.9	104	75%	$4.7	9	7%	$0.9
Cascade Locks	132	29%	$9.5	187	42%	$18.5	130	29%	$9.0
Hood River	80	63%	$15.2	48	38%	$8.4	-	-	-
Odell	232	39%	$30.1	240	40%	$32.3	127	21%	$21.4
Parkdale	245	23%	$26.3	708	67%	$80.3	110	10%	$16.7
Pine Grove	211	54%	$39.6	150	38%	$32.8	31	8%	$8.4
Westside	470	43%	$56.9	526	48%	$61.2	90	8%	$27.6
Unincorporated	42	54%	$5.9	35	45%	$6.3	1	1%	$0.1
Totals	1437	37%	$186.5	1998	51%	$244.6	498	13%	$84.1

Of the 3,933 structures surveyed to date, the total acreage for each category per tax lot is assigned as follows:

- High Risk = 10,265 acres
- Medium Risk = 12,404 acres
- Low Risk = 2,219 acres

Data provided for the CWPP to date, is primarily from areas of High and Medium risk. The areas surveyed in addition to all of Cascade Locks, are those on the rim of the Hood River valley. Data collection methodology assumes that areas in the center of the valley will present less risk. Survey crews for the 2005 period will attempt to document the remainder of Hood River tax lots that have dwellings.

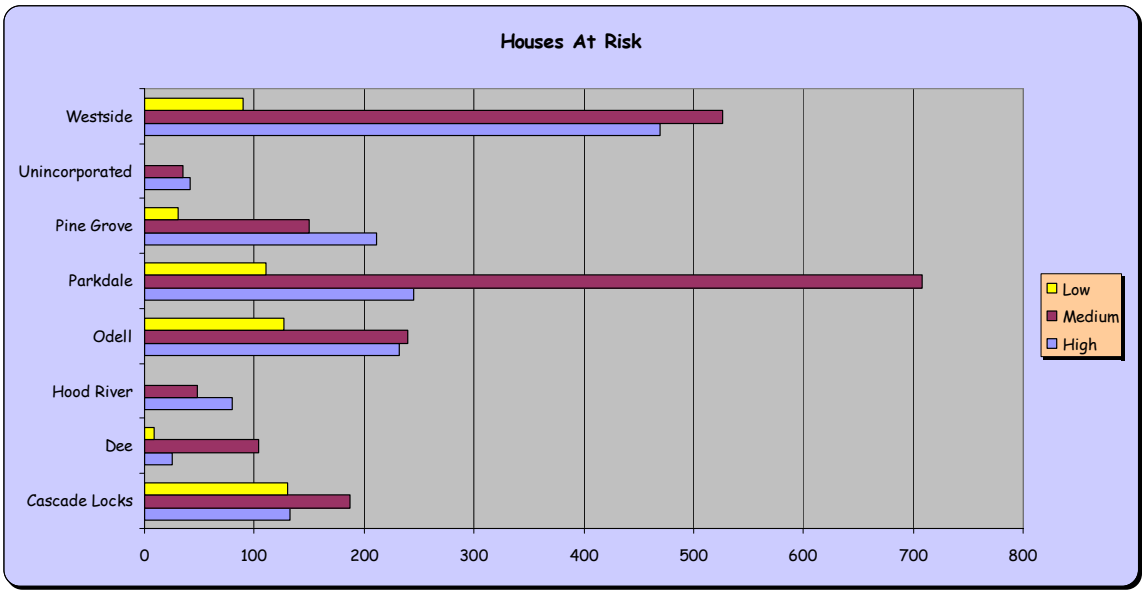

Figure 23: Surveyed Structures per Fire District: NFPA 1411 Survey Data 2002 – 2004

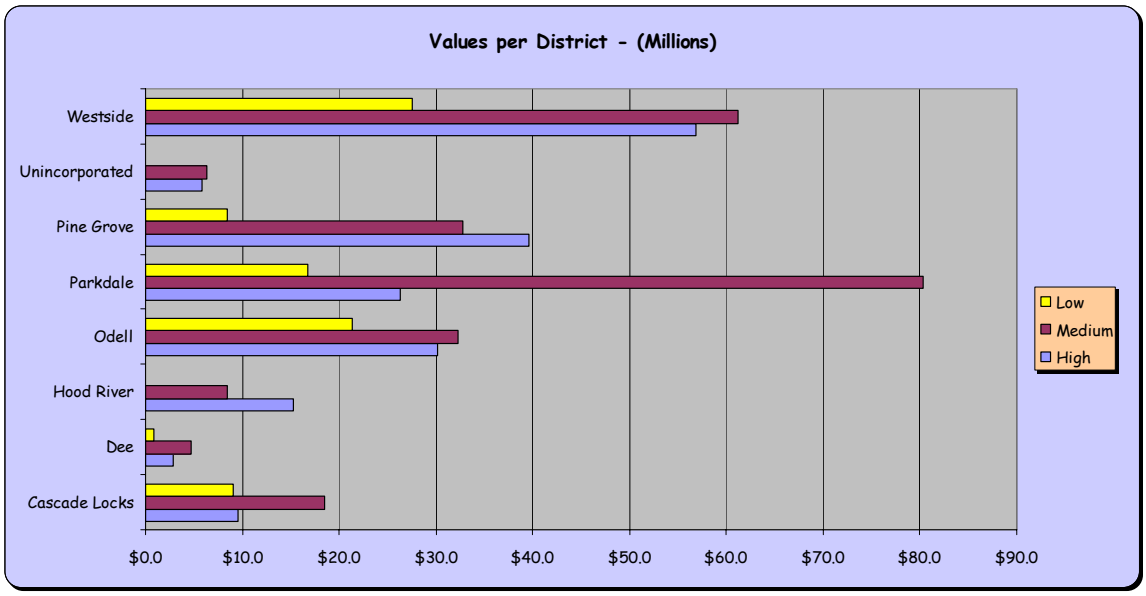

Figure 24: Property Values per Fire District: NFPA 1411 Survey Data 2002 – 2004

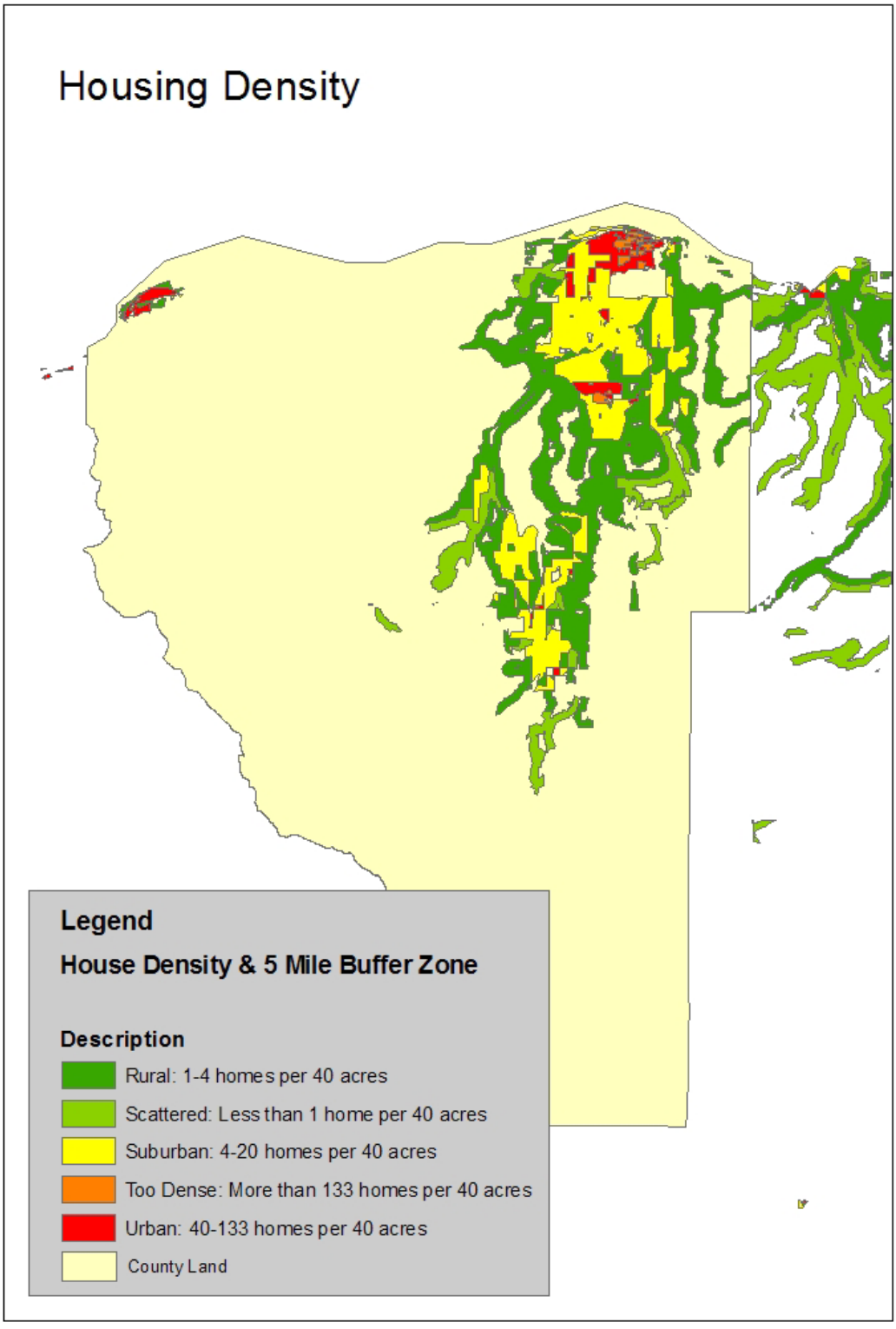

Figure 25: Housing Density Data 2005

11.00 Resources

11.10 Natural Resources

For the purposes of this document, natural resources refer to the biologic, historic, cultural, hydrologic and atmospheric resources affected by wildfire.

Hood River County prides itself in the extraordinary wealth of natural resources it has to offer its residents and visitors. From the remarkable Mt. Hood at the south end of the county to the breath-taking vistas of the Columbia River Gorge at its northern border, this county has a lot to be proud of throughout the year. Unfortunately, the most significant increase in county visitors coincides with the time of year when fire danger is at its highest.

With the ever-increasing tourist and urban developments in the county, the threat of wildfires affecting both natural and urban resources is on the rise. To reduce the potential for catastrophic impacts to resources while preserving natural areas, policies and actions must be developed to reduce the vulnerability to wildfire.

11.20 Historic Resources[46]

Native Americans maintained huckleberry fields and trails later used by non-Native settlers, and collected plants, hunted game, and fished in tributaries and main forks of the Hood River. Native houses were located at the Hood River mouth and vicinity. The area was included in the one million acres of land ceded to the U.S. in the 1855 Treaty with the Tribes of Middle Oregon by ancestors of the Confederated Tribes of the Warm Springs Reservation.

Sheep herding and cattle grazing were common on the upper slopes of the East Fork in meadow areas during early settlement prior to 1900. Around 1880, orchards and strawberry fields began to progress up the valley as the natural landscape pattern of coniferous forest and riparian habitat networks was transformed into pasture and fruit crops. Wet areas were drained for agriculture and other land uses throughout much of the valley. Many wetlands and stream channels were drained or diverted to reduce saturated soil conditions, and roads were constructed adjacent to and across streams. Possibly the biggest factor altering the vegetative pattern in the lower Hood River drainage was the growth of the fruit industry, where orchards have replaced coniferous forest and riparian habitat networks.

Water-powered sawmills, dams and mill ponds operated in Neal and Green Point Creeks and the lower East Fork and mainstream Hood River as early as 1861. Logs were

[46] Hood River Local Advisory Committee, *Hood River Agricultural Water Quality Management Area Plan,* Hood River, OR. November, 2004.

transported in rivers or by flumes, horse teams, and later railroads. Before 1900, streams were diverted into hand-dug canals and ditches for irrigation.

Historic timber practices have resulted in riparian corridors and stream channels lacking the large woody debris needed to build and maintain high quality fish habitat. Extensive use of splash dams occurred through the 1940s. During the 1960s and 1970s, stream cleanout was encouraged and believed to benefit fish passage. The present deficiency in instream large wood debris has reduced the amount and quality of pool habitat, side channels and slow water areas, hiding cover, and limits retention of spawning-size gravel within low water stream channels.

11.30 Ecological Resources

There are many diverse biological communities that make up the county's ecological resources. They provide important habitats for plant and animal species. A continuous cycle of growth and decay is paramount to a healthy ecosystem. Fire has for many millions of years been a vital component of maintaining this cycle.

Fire will periodically burn out the undergrowth of a forest, removing small trees, brush and grasses. These low intensity fires leave the larger downed trees and do not affect the large living trees. A few tree species, notably lodgepole pine and jack pine, are serotinous, meaning their cones will only open and spread their seeds when they have been exposed to the heat of a wildfire. Grasses and other plants are often benefited by wildfire, because fire quickly decomposes organic matter into its mineral components, and the flush of nutrients accelerates plant growth for a few growing seasons. Few animals are killed by these low intensity wildfires; rather, many animals seek out burned sites for the newly available minerals and for the flush of plant growth. And erosion is typically far worse along the fire control lines than from the broad burned areas. The recognition of these ecological benefits from fire was a major factor in the push for fuel management and prescribed fire (natural and otherwise).

However, because low-intensity wildfires have been suppressed for many years, the county's current forest conditions have the potential to produce a large, high-intensity fire. This type of wildfire could be devastating for the entire ecosystem. All ground cover may be eliminated, soil can be sterilized, and runoff and erosion could choke life in the waterways. Rare, endangered, threatened plants and animals (see salmonid listing below), essential to biodiversity, would also be at risk in the event of a wildfire. Recovery from this catastrophe would be very slow unless mitigation dollars are available.

Table 10: Distribution and Status of Salmonids in Hood River Drainage[47]

Distribution and status of salmonids in the Hood River drainage.		
SPECIES	**PRIMARY SPAWNING, HOLDING AND REARING AREAS**	**STATUS OF WILD POPULATION**
ANADROMOUS SALMONIDS		
Spring chinook salmon	Elk Creek McGee Creek West Fork Hood River Mainstem Hood River	Native stock extinct. Hatchery supplementation ongoing to reintroduce spring chinook using Deschutes stock. Current natural production limited.
Summer steelhead	West Fork and tributaries Mainstem Hood River	Threatened Species - listed by NOAA-Fisheries (formerly National Marine Fisheries Service) March 1998. Hatchery supplementation ongoing to strengthen wild run.
Winter steelhead	East Fork and tributaries Neal Creek Green Point Creek Middle Fork and tributaries Mainstem Hood River	Threatened Species - listed by NOAA-Fisheries March 1998. Hatchery supplementation ongoing to strengthen wild run.
Fall chinook salmon	Mainstem Hood River East Fork Hood River	Native stock presumed extinct. Limited natural spawning from hatchery strays or their progeny.
Coho salmon	East Fork and tributaries Middle Fork and tributaries Mainstem Hood River Neal Creek and tributaries	Native stock presumed extinct. Limited natural spawning from hatchery strays or their progeny.
Sea-run cutthroat trout	East Fork and tributaries Middle Fork and tributaries Mainstem Hood River Neal Creek and tributaries	State Sensitive species (ODFW). Proposed for Threatened Species listing by NOAA-Fisheries. Severely depressed (less than 100 spawners).
RESIDENT SALMONIDS		
Rainbow trout	Entire Hood River drainage	
Cutthroat trout	Entire Hood River drainage	
Bull trout	Middle Fork Clear Branch Coe Branch and tributaries Pinnacle Creek Compass Creek	"Sensitive species"(ODFW); classified as Threatened by USFWS

11.40 Threats to Water Supply Infrastructure

In a compromised watershed, essential community infrastructures (ie: municipal water and irrigation supplies) could be negatively affected. Drinking water sources are of primary importance to the county infrastructure. Water sources may not fall entirely (if at all) within the WUI boundary, but this does not alleviate the responsibility of the CWPP to identify such sources and direct attention and action to forest health in the zone of contribution.

47 Hood River Local Advisory Committee, Hood River Agricultural Water Quality Management Area Plan, Hood River, OR. November, 2004.

With the greater community support, the new wilderness proposal that has recently gained house approval allows for the entire Crystal Springs zone of contribution to be included in that legislation. Efforts put forward to protect this specific area may not help to alleviate the risk of catastrophic wildfire, especially where the wilderness areas are adjacent to and crossing privately owned lands, dedicated roads and highways.

12.00 Economic Resources

The economic stability of the Hood River County is dependant on a major east west interstate highway (I-84) and a north south state highway. (Hwy-35) Most all perishable goods are trucked in daily, with little local manufacturing an additional emphasis is placed upon the road networks. Conversely, most agricultural products grown in Hood River County utilize the road infrastructure to take their products to market.

The interstate travel of commercial goods while not a direct source of revenue; the proximity of the interstate allows for goods and materials to be delivered with minimal surface street mileage.

The Union Pacific railroad has sidings in Hood River that allow for the delivery and pick up of items critical to the Hood River economy. Wood, Propane, Alcohol are some of the products disseminated by the railroad.

Year round tourism continues to keep aspects of the Hood River economy growing. The numbers will continue to grow as is the housing. Many people now reside in Hood River and commute to Portland.

Since Hood River relies exclusively on the road and bridge network for its economic well being; what responsibilities do we as individuals need to assume. Fire, Flood, Landslide or other natural disaster will have serious consequences for the economy should Hood River become isolated for an extended period of time. As emergency personnel recommend, each house should have an emergency kit that will provide essential supplies, including food and water for at least three days.

13.00 Fire Districts

13.10 Overview

There are seven agencies that provide structural and wildland fire suppression duties in addition to protection services rendered by ODF and USFS. All of the seven agencies are maintained by assessed funds. Cascade Locks and Hood River fire departments are city based while Dee, Odell, Parkdale, Pine Grove and Westside are Rural Fire Protection Districts overseen by a board of directors. Please note that Dee and Parkdale fire districts are at this time in the process of merging. Voter approval has been secured; within the near future the merger will be complete.

Table 11: Hood River County Fire Districts

Fire Dept/District	% of County	Sq Miles	Population
Cascade Locks	0.42%	2	1200
Dee	0.78%	4	150
Hood River	0.55%	3	6500
Odell	3.14%	17	4800
Parkdale	5.28%	28	2800
Pine Grove	1.99%	11	1500
Westside	3.75%	20	4750

Hood River County firefighting personnel historically have been volunteers; today there is a small presence of paid staff. Hood River City, while providing suppression services, has funded positions that staff an engine and ambulance 24hrs/day. Odell funds the position of chief, Parkdale has a training officer, Westside has a fire marshal, Cascade Locks has a chief and a firefighter/paramedic. All these positions enhance a timely initial response and also provide for administrative duties to maintain industry standards. National Fire Protection Association (NFPA) publishes standards that guide all fire departments. While compliance is not mandated, existing case law shows that NFPA standards are accepted nationwide.

Volunteers continue to provide most of the personnel for suppression and initial EMS duties. Each volunteer has a pager that through a series of tones broadcast by 911 personnel will alert them to respond. Tones will differ depending on the emergency at hand. Volunteer response will vary depending on time of day, season, recreational activities and family commitments.

All fire departments share fire and EMS duties within their respective districts and will also provide extended services through mutual aid agreements with the Oregon Department of Forestry (ODF).

The fire districts are structured in a command system consisting of chiefs, assistant chiefs, captains, lieutenants, engineers and firefighters or a combination of those listed. Some also have staffing that consists of support personnel.

Training and departmental duties occur weekly to address equipment readiness, business meeting and training. Much of the training is mandated such as first aid, CPR, blood borne pathogens, hazmat, fit testing (for SCBA - air packs) to name a few. Guidelines come from OSHA, NFPA and Oregon State Fire Marshal (OSFM.) Volunteers are asked to commit one night per week to the fire department. Training is recognized as a key component in the successful performance of a fire department.

Of the issues that face the Hood River County fire service, volunteer recruitment and retention is probably the most challenging. Many younger volunteers welcome the education and training that the fire service provides and will use that experience to seek out jobs in the fire service elsewhere. Historically, the volunteer base has relied on neighbor helping neighbor with personnel living and working within their respective districts, performing duties as firemen. Departments tended to be very close knit and social. Today there are a declining number of fire calls and a significant increase in mandatory training. The decline in structure fires is mostly related to improved building codes, better construction materials and public education.

Today the county fire service is learning the virtues of acquiring equipment that enhances interoperability. For example, six of the seven departments now have identical Self Contained Breathing Apparatus. (SCBA) With more automatic and mutual aid agreements in place, the value associated with interoperable equipment and training will is realized. To streamline this process, many districts and departments nation-wide have coordinated and consolidated training and administrative efforts to form unified districts.

13.20 Residential Fire Protection

Fire districts, through an Insurance Service Organization (ISO[48]) rating system are assigned a value that is dependant on the ability to provide water, equipment and personnel to protect residents and structures. The insurance industry looks at the rating system and will assign premiums accordingly. The system rates fire districts on according to class scale, where Class 10 equals no fire protection and Class 1 represents well developed protection and response capabilities.

Most people are familiar with the “are you within 1000 ft of a fire hydrant?” question. While this is a basic question for many insurance companies there are other mitigating solutions that offer the equivalent water resources. For example water tender shuttles that can maintain a 250 gallon per minute water supply for a 2 hour period of time that are available to supply an engine at 250 gpm at 125 psi within 5 minutes of the engine’s arrival.

[48] www.isomitigation.com

To receive an ISO rating, each district submits to regular inspections.

Table 12: Fire District ISO Ratings

District	Rating 1	Rating 2
Cascade Locks	5	
Dee	5	8
Hood River	3	
Odell	5	8
Parkdale	5	8
Pine Grove	4	8
Westside	5	9

13.30 Contiguous Lands

Hood River County fire districts account for approximately 15% of the total county area. Of the 85% of lands that are considered unincorporated, most significant ownership falls to federal agencies. The following chart shows land that is contiguous to each fire district as a representation in miles, along with the associated acreage.

Mileage shown as Columbia River frontage includes a 150 foot railroad easement that runs East / West on the northern county boundary.

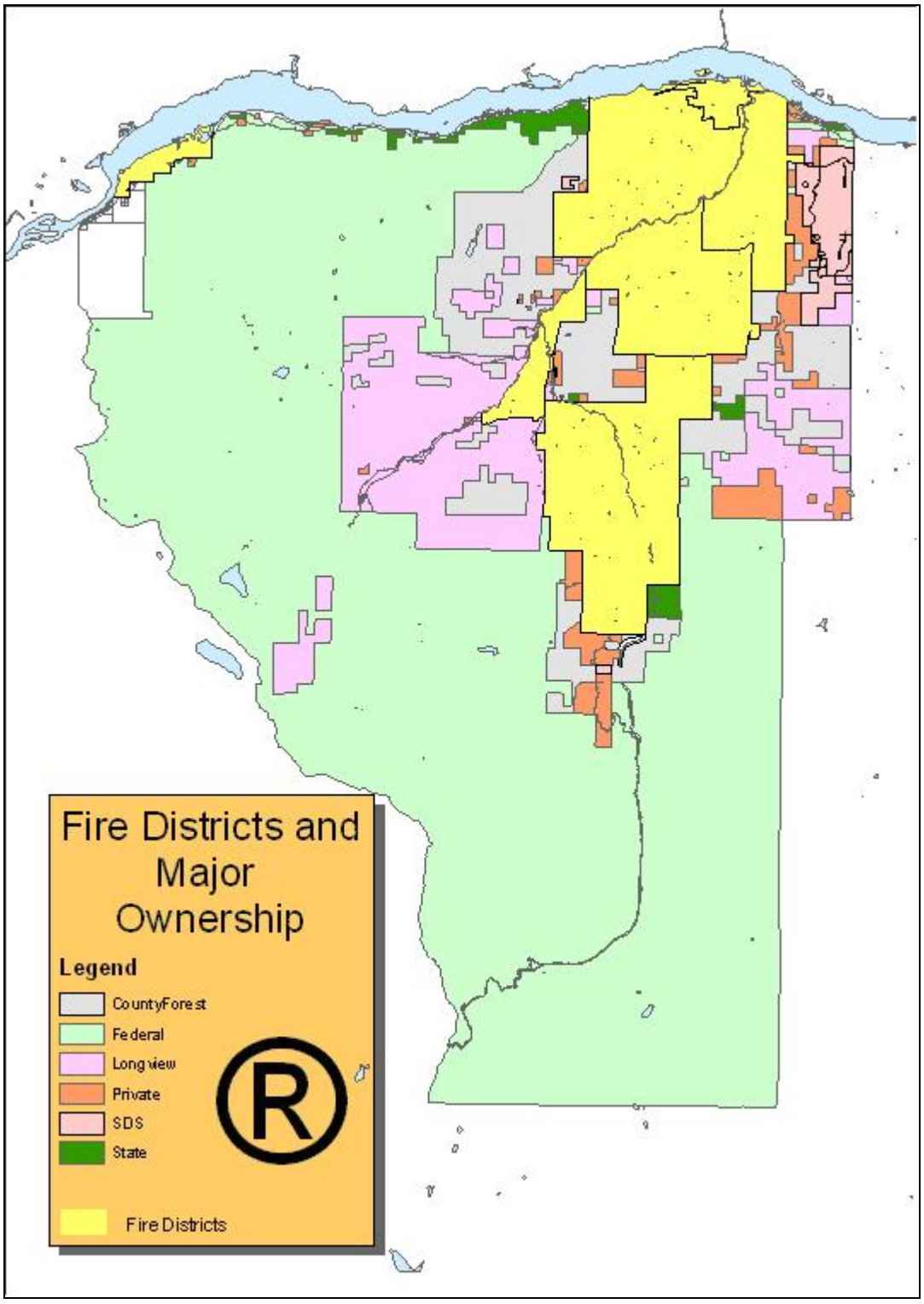

Figure 26: Fire Districts and Major Ownership

Table 13: Acres and Lineal Miles of Land Contiguous to Fire Districts [49]

FIRE DISTRICT	OWNER	Acres	Miles
CITY OF HOOD RIVER	HOOD RIVER COUNTY	9.9	NA
	STATE OF OREGON	4.4	NA
	UNITED STATES OF AMERICA	29.6	0.19
	PRIVATE	1814.0	9.46
	COLUMBIA RIVER	NA	3.66
		1857.9	
DEE RFD	HOOD RIVER COUNTY	337.7	3.12
	SDS/LONGVIEW	158.9	6.37
	STATE OF OREGON	4.5	NA
	UNITED STATES OF AMERICA	15.4	0.24
	PRIVATE	2138.8	5.44
		2655.3	
ODELL RFD	HOOD RIVER COUNTY	1265.0	6.30
	SDS/LONGVIEW	36.1	0.49
	STATE OF OREGON	0.5	NA
	PRIVATE	9338.0	13.30
		10639.6	
PARKDALE RFD	HOOD RIVER COUNTY	2590.7	9.05
	SDS/LONGVIEW	331.0	3.92
	STATE OF OREGON	44.6	2.55
	UNITED STATES OF AMERICA	360.1	5.59
	PRIVATE	14547.0	6.76
		17873.5	
PINE GROVE RFD	HOOD RIVER COUNTY	104.5	1.56
	SDS/LONGVIEW	81.7	1.02
	STATE OF OREGON	24.3	NA
	UNITED STATES OF AMERICA	55.6	0.50
	PRIVATE	6471.0	14.98
	COLUMBIA RIVER		1.86
		6737.0	
UNINCORPORATED	HOOD RIVER COUNTY	25883.3	21.11
	SDS/LONGVIEW	34746.4	5.48
	STATE OF OREGON	3058.3	0.94
	UNITED STATES OF AMERICA	208705.8	4.03
	PRIVATE	13196.6	36.74
	CLACKAMAS COUNTY	NA	19.10
	MULTNOMAH COUNTY	NA	17.55
	WASCO COUNTY	NA	42.49
	COLUMBIA RIVER	NA	17.48
		285590.5	
WESTSIDE	HOOD RIVER COUNTY	1036.4	5.01
	SDS/LONGVIEW	155.4	0.49
	STATE OF OREGON	350.0	0.74
	UNITED STATES OF AMERICA	181.4	0.45
	PRIVATE	10968.6	16.79
	COLUMBIA RIVER	NA	4.01
		12691.8	

[49] Hood River County GIS

14.00 Prioritizing Fire Risk

Houses surveyed fall into risk categories as do general areas that pose the greatest risk. Areas of high risk with high potential for personal property loss will score higher than less populated areas with a comparable risk rating.

14.10 Defining the Wildland Urban Interface (WUI)

Under definitions stated in the Federal Register, the WUI can extend up to 1 ½ miles from urban interface or intermix structures when mitigating circumstances exist. The interface/intermix zones have limited potential at this time to grow due to the fact that much of the private lands are surrounded by federal, state, county and private forest lands. Some WUI boundaries have been established well beyond the 1 ½ mile mark.

WUI boundary areas are shown by fire district, city, unincorporated and federal lands. The boundary represents a planning zone that is defined by topographical and man- made barriers that represent reasonable access areas for fire suppression activities/planning.

While the WUI is delineated by a line on a map, in the face of fire emanating or approaching that line, fire suppression efforts by practical necessity may show little or no regard for that boundary. Every effort in planning the boundary has been focused on natural barriers such as roads, and ridges (i.e. places that are commonly utilized in fire suppression activities). Fuel loading, Topography and weather patterns also effect the placement of the WUI boundary.

Two other areas of the WUI boundaries that are designated geographically are to the West and East side of the lower valley. Both these areas represent a significant fire hazard and threat to private lands. (See Fire regime & condition class maps)

Fuels reduction projects identified in this plan or added to the plan in the future on Federal lands are still required to be analyzed (NEPA process) but may result in a shortened document. Public comment is still an integral part of that process.
Within the WUI boundary along I-84 ownership lays almost entirely with State and Federal agencies. This sensitive area, administered by the Columbia Gorge National Scenic Area represents an area of heavily wooded, steep and inaccessible terrain. The challenge in placing a WUI boundary here is the fact that fire may scale the canyons and cliffs very quickly especially on days where the wind is blowing and also on days where there is low humidity and hot temperatures. The WUI boundary is located along the BPA power line access right of way (ROW). At times the ROW provides an area that could be a fire break and at other times where the power lines span gullies/canyons there is nothing available as a fire break. Actions, at this point should be aimed at reducing the chance of fire escaping the railroad and freeway ROW.

For a graphic representation of Federal lands (Mt Hood Ranger District and the Columbia Gorge Scenic Area) and how those lands interact with the WUI boundary see Figure 28. This is an important aspect to study as future grant funding will be tied to this relationship.

The Cooper Collaborative work group is currently formulating and discussing efforts for the unincorporated area south of Parkdale Rural Fire Protection District. As of this printing no clear consensus has been reached on the placement of a WUI boundary. Displayed on the WUI boundary map for the Cooper area is a "Planning Boundary" that may become the WUI boundary. By default, until such times as the Cooper collaborative group reaches a clear consensus it is the opinion of this group that the State designated WUI boundary be accepted.

A significant issue in this area is reaching a balance between man and the environment. As already identified; the significance of the watersheds rates very high in the county infrastructure. The Crystal springs zone of contribution lays within the greater Cooper planning area. This watershed will be more susceptible to the effects of catastrophic wildfire than other watersheds that draw their water from a source much deeper such as Ice Fountain.

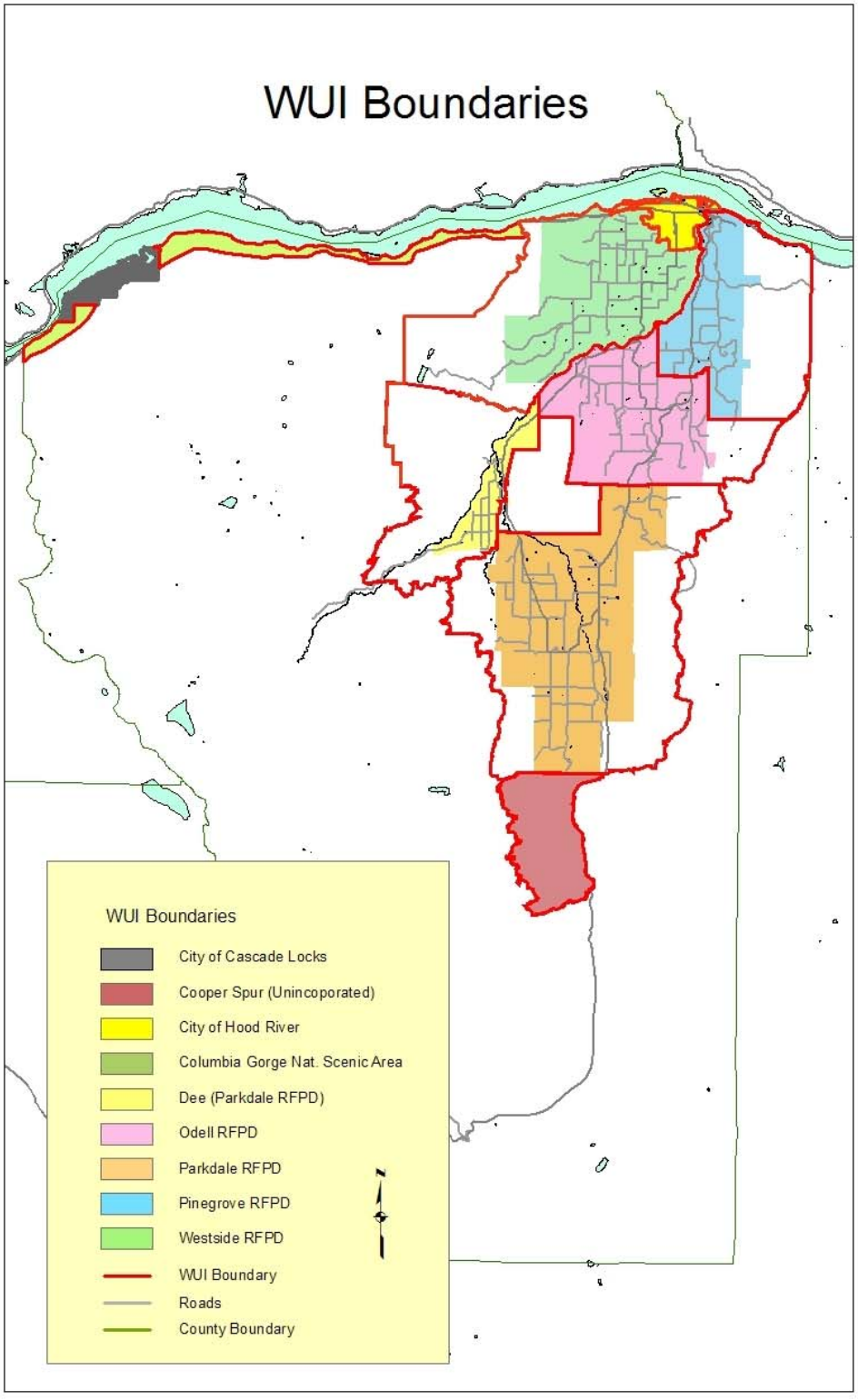

Figure 27: Hood River County WUI Boundary

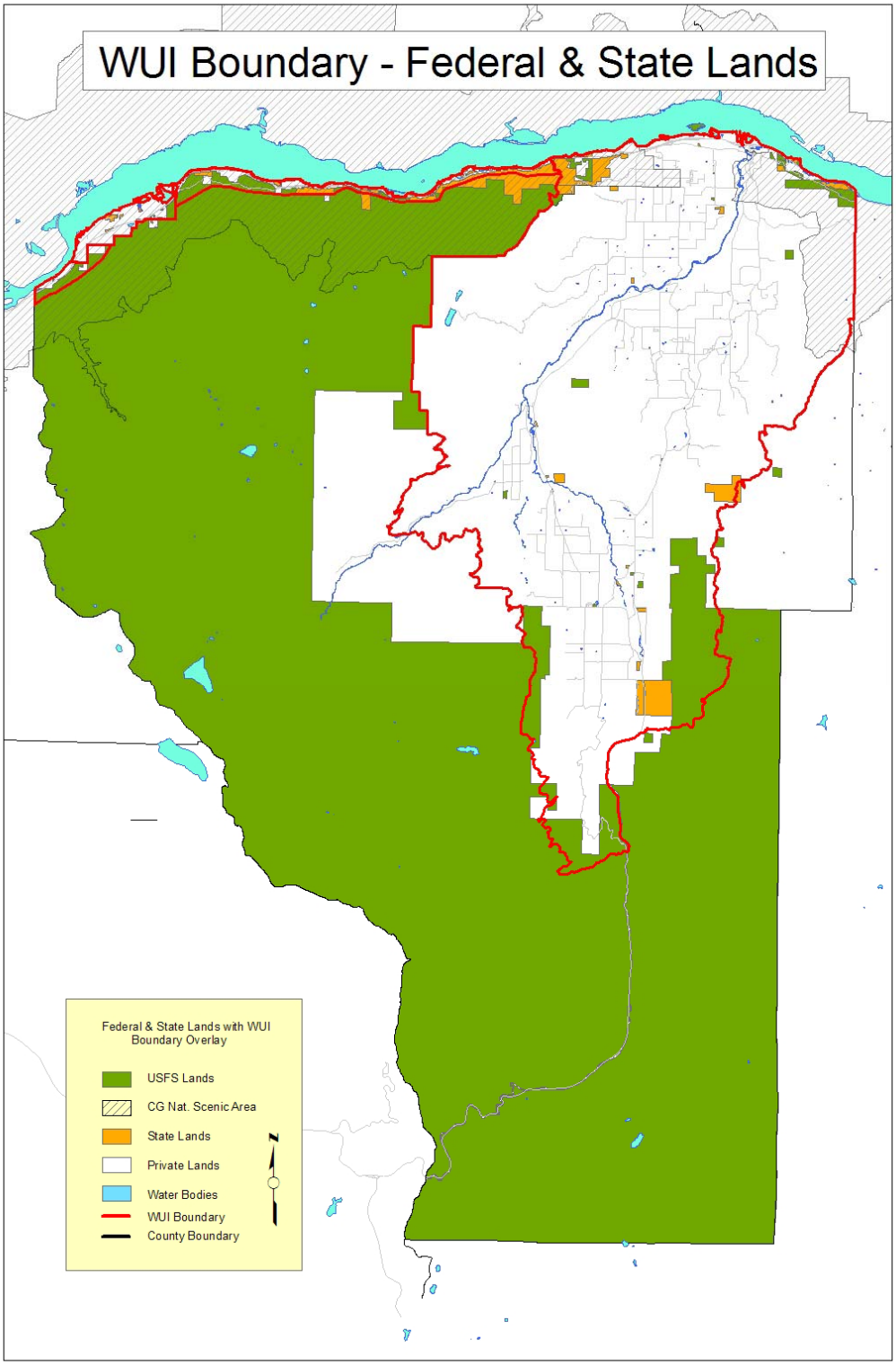

Figure 28: Federal lands with WUI Boundary.

14.11 Columbia Gorge National Scenic Area – 5 Year plan

The CGNSA has a detailed plan that addresses fuels management plans and strategy. This plan also encompasses adjoining counties as part of the greater Scenic Area. Management priorities have been assigned from that greater area.
Appendix C is the CGNSA 5 – year plan.

14.12 Mt Hood Ranger District – Planning

The Mt Hood Ranger District remains dedicated to planning for its natural resources, balancing timber and biological resources while managing forest recreation and access. Recently proposed timber sales have been subjected to lengthy and costly challenges in the court system. As a result, a shift in strategy has seen management practices angled towards a collaborative approach. Specifically, the Cooper Collaborative working group represents a cross section of the community that is working with the ranger district to prioritize fuels treatment. The focus of this group is in the Cooper Spur area which represents the southern most area of private lands that adjoin forest service lands. All of this private land is not within a rural fire protection district but is protected by Oregon Department of Forestry. Many of the structures in this area are cabins that may not be full time residences. Existing data points towards this area as being defined as an "Intermix Zone[50]."

A larger issue that is faced by the Ranger District is the proposed legislation that will include both forest service and private lands into "Wilderness" area. With this action forest management practices will become severely limited and will expose the southern populated region of the county to a significantly higher fire risk. Should this proposed legislation not come to fruition there still remains the issue of forest health – Disease and bug kill and management practices that have been challenged and consequently curtailed.
Appendix D details projects that the Mt Hood Ranger District has planned.

[50] "DEFINITION OF INTERMIX ZONE"

15.00 Community Input

Community input beyond the core group initially extended to the fire districts and the chiefs and members of those departments. Further data was gathered in casual conversations with community members.
A community meeting was advertised via radio public service announcements and the local newspaper for a week preceding the June 14th 2006 meeting. At that time members of the core group were invited to support the event. Members of Oregon Department of Forestry, US Forest Service, Hood River Soils and Water Conservation District, Hood River County and public were present.

An overview of the CWPP was presented allowing comments and questions on the draft plan. A survey (see table below) was taken to ascertain people's values regarding basic components of the CWPP. Emphasis was placed on values associated with personal housing and property as well as environmental concerns around watersheds. Opportunity was afforded for written public comment.

The CWPP can be accessed at:

- Hood River County Public Works Website:
  http://www.co.hood-river.or.us/HRCG_ViewDocument.asp?DocumentINDX=84

For comment and questions:

Wildfire
1185 Tucker Road
Hood River, OR 97031

Public comment period was from June 14th - July 31st 2006. Articles soliciting comments were placed in the Hood River News, further requests for input were sent out to e-mail groups. Copies were also provided to Hood River County Commissioners for review and input. Copies were placed for public viewing around the county.

Other items of concern from public comment from meeting include:

1. Develop incentives for public to be responsible for their own property and house(s).
2. Improve homeowner education.
3. Use SB 360 to cover costs & bill homeowner for non compliance
4. Economic study of catastrophic fire in the watersheds.
5. Provide a coordinated approach to planning.
6. Enhance fuel breaks along zones such as freeways, highways and power lines.
7. Implement better addressing standards.
8. More community involvement – Public information and Educational meetings.
9. Improve road access for equipment.
10. Access to funding for fuels reduction projects.

Table 14: Survey Results from CWPP Meeting July 14, 2006

Survey CWPP Community Meeting June 14th 2006			
		Average	%
1	Clearly identifying access to your house (Street, Driveway & house)	4.58	92
2	Access and Egress in times of emergency	4.42	88
3	Creating a defensible space around your house	4.36	80
4	Clearing or thinning of fuels back 10ft from each side of your driveway	4.18	77
5	Removal of ladder fuels and limbing trees	4.09	75
6	Would you replace a shake roof with metal or composite roofing	4.09	75
7	Would you change the look of your house to be more fire safe	3.91	72
8	Attend meetings for Fire Prevention and understanding wildfire	3.67	73
9	Promote healthy forest practices to protect watersheds (Drinking water)	3.67	73
10	Use fire resistant building materials	3.60	60
11	Create areas of fire resistant plants and trees around your house	3.18	58
12	Promote healthy forest practices to protect watersheds (Irrigation water)	3.08	62
13	Placing wood pile away from house	2.91	53
14	Protection and enhancement of fish habitat	2.75	55

Within the fire districts, Fire Marshal's and Chiefs are routinely fielding questions, conducting site surveys and offering advice based on "Firewise" practices and existing regulations and codes. Individuals and developers have sought out advice as a result of this article being made available.

Efforts made to solicit public input were provided, comments received were minimal.

16.00 Action Items

Items discussed below are those that are readily apparent and potentially pose problems for both homeowners and emergency personnel. While it would be advantageous to present solutions to these problems, the purpose at this time is to identify items that require action.

16.01 Establish County-wide Wildfire Protection Group

HIGH PRIORITY

County, city and fire districts will appoint a community based committee to oversee, plan and provide direction for implementation of Wildfire Protection Plan projects. This group should work in concert with the City of Cascade Locks to provide maximum coverage for the entire County. The committee should have representatives from the USFS, ODF, local government, ports, soil and water conservation district, fire districts and other interested citizens and groups. The group would be charged with initiating and sustaining fire prevention, education and mitigation projects. This group will closely mirror the goals and objectives set forth by SB 360 provisions.

- Establish county wide Wildfire Protection Group

16.02 Establish Demonstration Sites

HIGH PRIORITY

To assist in keeping momentum flowing until an oversight committee is established; demonstration sites around the county should be created to show homeowners how a defensible space can be created around their structures. These sites would be created with assistance from local fire districts. An additional demonstration site would be developed along I-84 to remove ladder fuels within the ODOT right of way.

16.03 Improve Residential Fire Protection Capacity.

HIGH PRIORITY

- Provide solutions for residents that live on roads that have only one means of access and egress. These residents may be beyond help in a fast moving fire when access may be too risky for fire apparatus or if the access becomes clogged. These residents need the education and assistance that will allow them to help themselves should they be cut off from help in the face of a wildfire. Consider demonstration projects in these areas.
- Create a route for residents to obtain Wildfire Firewise safety inspections for house and property.

16.04 Hazard Fuel Reduction

HIGH PRIORITY

<u>Westside District: Reed Road to Columbia River:</u>

- With seasonal drying and heavily forested lands, the potential for an intense fast moving fire on the Westside of the county exists when mixed with an unstable air mass and the high winds for which the Columbia River Gorge is known. Fire starts

are well documented along I-84 in the fine flashy fuels that line both the freeway and railroad right of ways.

- Wind driven fires moving from the fine fuels into ladder fuels along the freeway represent a scenario that responding fire apparatus and personnel may not be able to resolve in a timely manner. Under a west wind scenario, the relative humidity may be in the 40 – 50 % range; however significant changes in fuel moisture will occur. This coupled with wooded areas, at times attaining slopes of 85 to 100%, once a fire is established the rate of spread may well be beyond the initial responders capabilities. Many chutes and chimneys are present that would allow for rapid fire spread. Exposure to the freeway places terrain on the North aspect, although the forest is not as dense or as dry as the south facing lands, there is still significant fuel present to sustain a significant wildfire.

  ** USFS and County lands adjoining Westside Fire District are an example of this type of hazard**

  - Apply for grants to assist landowners in Westside District (Reed Road to the Columbia River) in fuels reduction and defensible space.

16.05 Hazard Fuel Reduction HIGH PRIORITY

I-84 Corridor:

- The heavy flow of vehicular and train traffic historically has started fires along the freeway and railroad right of way. Fires have started mostly in the fine fuels adjacent to the interstate and have the potential for rapid spread into heavily wooded areas. Many miles of roadside have conifers that are conducive to rapid fire spread mainly due to limbs extending to the ground. Treatment of ladder fuels and thinning would be beneficial for forest health and the I-84 corridor.

  ** Example - CGNSA adjoining lands**

  - Apply for grant funding; develop strategies to assist Oregon Department of transportation and the Columbia Gorge National Scenic Area.

16.06 Hazard Fuel Reduction HIGH PRIORITY

Pine Grove District: Fir Mountain:

- Residents on the upper portion (beyond cemetery) of Fir Mountain Road and Fir Mountain Loop do have two means of access/egress but the potential for a fast moving fire moving up the chute in heavily wooded timber poses significant threat to most houses. With steeper terrain, significant preheating would occur. NFPA survey reveals that over 90% of houses in this area are “high risk”
  - Apply for grant funds to assist landowners in Pine Grove district (Fir Mountain area) in fuels reduction and defensible space.

16.07 Hazard Fuel Reduction HIGH PRIORITY

Pine Grove District: Highline / Panorama:

- Residents of this area face into the prevailing westerlies; with a large cluster of houses close together fire spread may be rapid and access for larger apparatus

would be an issue. Houses would be subject to fire originating on highway 35. Once beyond Highline the terrain opens up into fine fuel and oak and then back into wooded areas. Also at risk are the new developments that are planned and existing structures of the Old Dalles Highway. This area is also at risk from fireworks from the 4th of July activities.

- Apply for grant funds to assist landowners in Pine Grove district (Highline/Panorama area) in fuels reduction and defensible space.

16.08 Hazard Fuel Reduction – Watersheds HIGH PRIORITY

- Recognizing that there are many water districts serving the residents within the county, the water sources are of vital importance to protect from the all-consuming effects of a major wildfire.
- Recovery from a low-intensity wildfire may have little or no effect on the resources whereas a large, high-intensity fire may take years for the watershed to recover.

16.09 Wildfire Planning – County HIGH PRIORITY

Emergency Response - Road Continuity:

- Roads[51] that are physically separated by parks, schools or any other object preclude the possibility of a continuous road.
- The lack of continuity enhances the possibility of error and delaying responding Emergency Services.

Residential Numbering:

- All residences should be numbered to provide a sequential range that either increases or decreases depending on the direction of travel.
- All residences should have their number prominently displayed at the road side and at appropriate places along shared driveways to direct responding emergency services.
- All residences should have their number displayed on the side of the structure.
- The lack of continuity or the absence of numbering enhances the possibility of error for responding emergency service.

Road Naming Conventions:

- Residences that are physically off Road "A" at times have a Road "B" address.
- This serves to confuse both dispatchers and emergency responders alike.

Planning:

- Anticipate and enhance fire safety needs as zoning restrictions relax in the WUI.

16.10 Ordinances County - City HIGH PRIORITY

- Review ordinances to see if changes can be made to enhance wildfire planning and mitigation.

[51] Roads will be the one of the general descriptors to include Streets, Lanes, Avenues, Places or any surface that is used by the public for conveyance. (Driveways are not subject to this inclusion)

- Review and implement SB 360

16.11 GIS Infrastructure – County MEDIUM PRIORITY

- Maintain working relationship with fire districts
- Collection of points and polygons for
    - Structure Fires
    - Wildland Fires
- Produce/Update county map book for
    - Fire & EMS agencies
    - Regional mutual aid partners
- Assist planning/building and fire districts in collecting point data for new structures.
- Assist fire districts in maintaining NFPA standards

16.12 911 System - County MEDIUM PRIORITY

- Integrate GIS Data to enhance Emergency service response.
- Maintain data to support GIS planning and reporting

16.13 Fire Districts MEDIUM PRIORITY

- Promote interagency training and SOP's
- Expand Regional Mutual Aid Agreements
    1. Fire
    2. Medical

16.14 Fire Districts (Cities Included) HIGH PRIORITY

- Formation of Regional Overhead Team
- Creation of an Overhead Team is a step that the fire districts have slowly been working towards with continued use of the command system (ICS). The value the fire districts could contribute at this level would be realized when transitioning to a larger conflagration or natural disaster. (NIMS Compliant)
- Flow fire hydrants annually to identify maintenance issues
- Evaluate SB 360 provisions and collaborate with committee members to provide a uniform approach to wildfire preparedness/education within the county.

16.15 I – 84 ODOT Maintenance - Region 2C HIGH PRIORITY

- Expand regional maintenance program to include limbing and trimming within Zone 3 of the Right of Way (ROW)

Table 15: Fuels Reduction Projects and Action Items

Fuels Reduction Projects

Fire District	Project Location	Project Description	Owner	Vegetation	Economic Benefit	Partners	Funding Source	Risk	Rank
Pine Grove*	Fir Mountain	Fuels Reduction. Defensible Space, Fire Breaks, Ingress/egress, Clear roadsides	Private / County	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels	Private Residents, County	ODF, NFP, Title III	High	1
Pine Grove*	Highline / Panorama Point	Fuels Reduction. Defensible Space, Fire Breaks, Ingress/egress, Clear roadsides	Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels	Private Residents, County	ODF, NFP, Title III	High	2
Dee* (Parkdale), Odell*, Parkdale*	Middle Mountain	Defensible Space, Fire Breaks, Limbing	Private, County	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels	ODF, County, Fire District, Private Residents	ODF, NFP, Title III	High	3
Westside*	Phelps Creek Rd, Post Canyon, Windwood Dr	Fuels Reduction. Defensible Space, Fire Breaks, Ingress/egress, Clear roadsides	Private / County	Heavy Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels, Thinning	WSFD, County, Private Residents, State, Federal	ODF, NFP, Title III, CGNSA/USFS	High	4
Odell*	Neal Creek	Defensible Space, Fire Breaks, Limbing	Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels, Forest health	ODF, Fire District, Private Residents	ODF, NFP, Title III	High	5
Cooper Spur*	Perimeter around Cooper Spur	Defensible Space, Fire Breaks, Limbing	USFS	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Firewood for disabled, Forest Health	ODF, USFS	ODF, USFS	High	6
City of Hood River*	West of the Hood River	Defensible Space, Fire Breaks, Limbing	PPL / Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Firewood for disabled	Hood River, Westside, Pine Grove, ODOT, ODF	City of Hood River, ODOT, Title III, Private	High	7
Westside*	Binns Hill, Reed Road, York Hill, Westwind Dr	Fuels Reduction. Defensible Space, Fire Breaks, Ingress/egress, Clear roadsides	Private / County	Heavy Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels, Thinning	WSFD, County, Private Residents	Title III, NFP, ODF	High	8
City of Hood River*	Indian Creek / Hood River	Fuels Reduction, Defensible Space, Fire Breaks	Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels	Parks & Recreation, PPL, ODF	City of Hood River, ODOT, Title III, Private	High	9
Cascade Locks*	I-84 Corridor	Limbing and thinning	ODOT	Light to Heavy Timber, Brush	Grinding, Compost, Biomass Fuels	ODOT, CCL Fire, ODF/USFS	ODOT, Title III, CGNSA/USFS	High	10
City of Hood River*	Windswept Dr, Jaymar	Defensible Space, Fire Breaks, Limbing	Private	Light Timber, Brush	Grinding, Compost, Firewood for disabled	Private, City of Hood River	City of Hood River, Title III, NFP	High	11

Fire District	Project Location	Project Description	Owner	Vegetation	Economic Benefit	Partners	Funding Source	Risk	Rank
Westside*	I-84 Corridor	Limbing and thinning	ODOT	Light to Heavy Timber, Brush	Grinding, Compost, Biomass Fuels, Forest health	ODOT, WSFD, ODF/USFS	ODOT, Title III, CGNSA/USFS	High	12
Odell*, Pine Grove,* Parkdale* & Westside*	Hwy 281,282	Limbing and Thinning along Roadside	State of Oregon, ODOT	Light Timber, Brush	Grinding, Compost	ODOT, County, Fire Districts	ODOT, ODF, Title III	High	13
City of Hood River*, Odell*, Pine Grove*, Parkdale*	Hwy 35	Limbing and Thinning along Roadside	State of Oregon, ODOT	Light Timber, Brush	Grinding, Compost	ODOT, County	ODOT, ODF, Title III	High	14
City of Hood River*	I-84 Corridor	Limbing and thinning	ODOT	Light Timber, Brush	Grinding, Compost, Biomass Fuels	ODOT, HRFD, ODF/USFS	ODOT, Title III	Med	1
Pine Grove*	East of the Hood River	Defensible Space, Fire Breaks, Limbing	PPL / Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Firewood for disabled	Hood River, Pine Grove, ODOT, ODF	City of Hood River, Title III, NFP	Med	2
Westside*	West of the Hood River	Defensible Space, Fire Breaks, Limbing	PPL / Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Firewood for disabled	Hood River, Westside, ODOT, ODF	City of Hood River, Title III, NFP	Med	3
City of Hood River*	Wasco / Jaymar	Limbing and thinning, Burn surface fuels	Private	Light Timber, Brush	Grinding, Compost, Firewood for disabled	City of Hood River	City of Hood River, Title III, NFP	Med	4
Dee* (Parkdale)	South of Community	Defensible Space, Fire Breaks, Limbing	Private, County	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels, Forest health	County, Fire District, Private Residents	ODF, Title III, NFP	Med	5
Parkdale*	South of Community	Defensible Space, Fire Breaks, Limbing	Private	Mixed Timber, Decidious Trees, Brush	Grinding, Compost, Biomass Fuels, Forest Health	ODF, Fire District, Private Residents, USFS	ODF, Title III, NFP, USFS	Med	6

* Designates Communities that are "At Risk"[52].

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Table 16: Hood River County Action Items

County Projects

Scope	Project	Project Description	Funding	Benefit	Partners	Priority	Rank
County	CWPP	Provide For continuity of CWPP Goals and Objectives	Title III, County	County Preparedness	County, Fire Agencies, ODF, USFS	High	1
County	CWPP Coordinator	Fund position for project implementation, coordination of CWPP projects and goals, securing Grant Funding, updating and maintaining of the CWPP – Incorporate with implementation of SB 360 provisions.	Title III, NFP, County	County Preparedness	County, Fire Agencies, ODF, USFS	High	2
County / City	Planning	Provide for consistent road naming conventions. Rename roads that are physically separated. Readdress houses that have inconsistent road numbers and/or road names.	Title III, NFP, County	Enhance 911 response	County / City	High	3
County, Fire Districts	Ordinance review	Consider uniform application of SB 360 to address Wildland threat on non-ODF protected lands.	Title III, County	Uniformity	County, Fire Agencies, ODF	High	4
County, City	Public Works GIS	Maintain a joint relationship with Fire Districts, County/City Planning/Building departments to build and maintain a database that enables functions of the 911 system and EOC. Eliminate duplication of services.	Title III, NFP, State 911	County Preparedness	County, Fire / Police Agencies	High	5
Fire Departments / Districts	Interagency Preparedness	Promote interagency training and standardizing operational policies, review and expand regional mutual aid agreements	Fire Depts. & FEMA Grants	Operational effectiveness	County, Fire / Police Agencies	Med	1
County	County Emergency Preparedness	Compile and train a team that can uniformly manage overhead functions in time of emergency.	Fire Depts. & FEMA Grants	County Preparedness	County / Fire Districts / Qualified Citizens	Med	2
County	911 System	Provide continuity of data for GIS projections and future funding opportunities	Grants, County	Future funding / preparedness	County, Fire Agencies, ODF, USFS	Med	3
Fire Departments / Districts	Public Outreach	Review existing Public Education Opportunities, avoid duplication of efforts	Fire Depts.	Public awareness	County, Fire Agencies, ODF, USFS	Med	4
Fire Departments / Districts	Public Outreach	Create a route for residents to obtain Firewise safety inspections for house and property	Fire Prevention Coop. Fire Depts.	Community Service	County, Fire Agencies, ODF	Med	5
Fire Departments / Districts	Public Outreach	Outreach programs to assist the elderly and infirmed	Fire Depts.	Community Service	Fire Agencies	Med	6

16.20 Federal Projects Adjacent to Private Lands

Existing planned Federal projects are detailed in Appendices B & C. Those planned projects that directly impact communities at risk would include:

- Westside I-84 Corridor - CGNSA
- Cascade Locks I-83 Corridor - CGNSA
- Cooper Spur - Mt Hood Ranger District
- Parkdale - Mt Hood Ranger District

It should be noted that the Wasco County CWPP has identified High Risk / Hazard zones adjacent to Hood River County. When fuels reduction projects are planned for implementation consideration should be given to complement aspects of the Wasco County plan. For example, The Mt Hood Ranger District has projects slated that cross the county line. Areas highlighted in this plan are the eastside of the valley – Highline and Fir Mountain.

17.00 Closing Comments

The components of this plan provide a starting point of planning for reducing the risk of catastrophic wildfire. This responsibility for reducing the risk of wildfire should be shared by our adjoining counties; Hood River could well be at risk from fire spreading from Klickitat, Skamania or Wasco Counties. To this end the personnel that continue the work initiated in the CWPP should endeavor to maintain a collaborative working approach with private, County, State and Federal agencies. A working group under SB 360 and the local fire districts will be the key to interacting with the residents of this county.

For the greater benefit of county preparedness the coordinated inventorying of assets and laying of out of contingency plans should be a priority to secure the health and safety of the residents, property and surroundings.

Glossary

Apparatus:	A fire engine or other firefighting piece of equipment	
Aspect:	The direction a slope faces the sun.	
Available Fuel:	The portion of the total fuel that actually burns	
Brush:	Shrubs and stands of short scrubby trees that do not reach a merchantable size.	
Class of Fire (Kind):	Class A	Most solid fuels including wood and vegetation fires.
	Class B	Flammable Liquid fires
	Class C	Electrical Fires
	Class D	Burning Metals
Class of Fire (Size)	Class A	Wildland fire< ¼ Acre
	Class B	> ¼ but less than 10 Acres
	Class C	> 10 but less than 100 Acres
	Class D	> 100 but less than 300 Acres
	Class E	> 300 Acres
Creeping Fire:	Fire burning with a low flame and spreading slowly	
Crown Fire:	A fire that advances from top to top of trees or shrubs, more or less independent of the surface fire.	
Dry Lightning:	A lightning storm with negligible precipitation that reaches the ground.	
Duff:	The partly decomposed organic material of the forest floor beneath the litter of freshly fallen twigs, needles and leaves.	
EMT:	Emergency Medical Technician. A health care professional with special skills and knowledge in pre-hospital medicine.	
Engine:	Any ground vehicle providing specified levels of pumping, water, hose capacity and personnel.	
Exposure:	Property that may be endangered by fire in another structure or by a wildfire.	
Fine fuel moisture:	The probable moisture content of fast drying fuels which have a lag constant of one hour or less; such as grass, leaves and small twigs.	
Fire Behavior:	The manner in which a fire reacts to the variables of fuel, weather and topography.	
Firebreak:	A natural or constructed barrier utilized to stop or check fires, or to provide a control line from which to work.	
Fireline:	The part of a control line that is scraped or dug to mineral soil.	

Fire Season:	The period or periods of the year which fires are likely to occur, spread and do sufficient damage to warrant organized fire control.
Flash Fuels:	Fuels such as grass, leaves, dropped pine needles, fern, tree moss and some kinds of slash which ignite readily and are consumed rapidly when dry. Also called Fine Fuels.
Fuel Break:	A wide strip or block of land on which the native vegetation has been permanently modified so that fires burning into it can be more readily extinguished.
Ground Fire:	Fire that consumes the organic material beneath the surface ground litter, such as a peat fire.
Hazard:	A fuel complex defined by kind, arrangement, volume, condition and location that forms a special threat of ignition or suppression difficulty.
Hazard Reduction:	Any treatment of a hazard that reduces the threat of ignition and spread of fire.
Heavy Fuels:	Fuels of large diameter such as snags, logs and large limb wood, which ignite and are consumed more slowly than flash fuels. Also called coarse fuels.
ICS	Incident Command System: A standardized on scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents, without being hinder4ed by jurisdictional boundaries.
Litter:	The top layer of the forest floor composed of loose debris of dead sticks, branches or needles little altered by decomposition.
NFPA:	National Fire Protection Agency. Through collaborative planning the NFPA provides nationwide standards for structural agencies
Slash:	Debris left after logging, pruning, thinning or brush cutting. It includes logs, chunks, bark, branches, stumps and broken under story trees and brush.
Span of Control:	The supervisor ratio from three to seven individuals with five being established as an optimum.
Spot Fire:	Fire set outside the perimeter by flying sparks or embers.
Spotting:	Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

Torching	Behavior of a fire that consumes an entire tree.
Strike Team:	Specified combinations of the same kind of resources, with common communications and a leader.
Surface Fire:	Fire that burns surface litter, other loose debris on the forest floor, and small vegetation.
Task Force:	Any combination of single resources within a span of control, assembled for a particular tactical need, with common communications and a leader.
Wildland:	An area in which development is essentially nonexistent, except for roads, railroads, power lines and similar transportation facilities.
WUI:	Wildland Urban Interface

Appendix A: Fire Regime Condition Class Definitions

Fire Regime Condition Class Definition
6/20/2003- 3 -

Condition Class	Fire Regime	Example Management Options	Examples of Key Ecosystem Component Susceptibility to Changing Fire Regime Condition Classes			
			Species composition and structure	Invasion by non-native species	Smoke production hydrology, and Soils	Insects and disease
Condition Class 1	Fire regimes are within the natural (historical) range, and the risk of losing key ecosystem components is low. Vegetation attributes (species composition, structure, and pattern) are intact and functioning within the natural (historical) range.	Where appropriate, these areas can be maintained within the natural (historical) fire regime by treatments such as fire use.	Species composition and structure are functioning within their natural (historical) range at both patch and landscape scales.	Non-native species are currently not present or present in limited extent. Through time or following disturbance sites are potential vulnerable to invasion by non-native species.	Functioning within their natural (historical) range.	Insect and disease populations functioning within their natural (historical) range.
Condition Class 2	Fire regimes have been moderately altered from their natural (historical) range. Risk of losing key ecosystem components is moderate. Fire frequencies have departed from natural frequencies by one or more return intervals (either increased or decreased). This result in moderate changes to one or more of the following: fire size, intensity and severity, and landscape patterns. Vegetation and fuel attributes have been moderately altered from their natural (historical) range.	Where appropriate, these areas may need moderate levels of restoration treatments, such as fire use and hand or mechanical treatments, to be restored to the natural fire regime.	Species composition and structure have been moderately altered from their historical range at patch and landscape scales. For example: Grasslands – Moderate encroachment of shrubs and trees and/or invasive exotic species. Shrublands – Moderate encroachment of trees, increased shrubs, or invasive exotic species. Forestland/Woodland – Moderate increases in density, encroachment of shade tolerant tree species, or moderate loss of shade intolerant tree species caused by fire exclusion, logging, or exotic insects or disease. Replacement of surface shrub/grass with woody fuels and litter.	Populations of non-native invasive species may have increased, thereby increasing the potential risk for these populations to expand following disturbances, such as wildfires.	Have been moderately altered from their natural (historical) range. Water flow typically less. Smoke and soil erosion following fire typically greater.	Insect and disease population have been moderately altered from their natural (historical) range.
Condition Class 3	Fire regimes have been substantially altered from their natural (historical) range. The risk of losing key ecosystem components is high. Fire frequencies have departed from natural frequencies by multiple return intervals. Dramatic changes occur to one or more of the following: fire size, intensity, severity, and landscape patterns. Vegetation attributes have been substantially altered from their natural (historical) range.	Where appropriate, these areas may need high levels of restoration treatments, such as hand or mechanical treatments, before fire can be used to restore the natural fire regime.	Species composition and structure have been substantially altered from their historical range at patch and landscape scales. For example: Grasslands – High encroachment and establishment of shrubs, trees, or invasive exotic species. Shrublands – High encroachment and establishment of trees, increased shrubs, or invasive exotic species. Forestland/Woodland – High increases in density, encroachment of shade tolerant tree species, or high loss of shade intolerant tree species caused by fire exclusion, logging, or exotic insects or disease.	Invasive species may be common and in some cases the dominant species on the landscape. Any disturbance will likely increase both the dominance and geographic extent of these invasive species.	Have been substantially altered from their historical range.	Insect and disease population have been substantially altered from their natural (historical) range. Typically higher mortality or defoliation.

Appendix B: Hood River County WUI Survey Criteria

National Fire Protection Association Standard 1411 (NFPA 1411) (Formally NFPA 299)

A	**Subdivision Design**	Points
1	Ingress & Egress	
	Two or more in/out	0
	One way in / out	7
2	Primary Road Width	
	Greater than 24ft	0
	Between 20 and 24 feet	2
	Less then 20 feet	4
3	All Season Road Condition	
	Surfaced, grade < 5%	0
	Surfaced, grade > 5%	2
	Non-surfaced, grade < 5%	2
	Non-surfaced, grade > 5%	5
	Other than all-season	7
4	Fire Service Access	
	< = 300ft, with Turnaround	0
	> = 300ft, with Turnaround	2
	< = 300ft, No Turnaround	4
	> = 300ft, No Turnaround	5
5	Street Signs	
	Present [4in (10.2 cm) in size and reflectorized]	0
	Not present	5
B	**Vegetation (Fuel Models)**	
1	NFDRS fuel models	
	Light (Grasses, forbs, sawgrasses and tundra.)	5
	Medium (Light brush and small trees)	10
	Heavy (Dense brush, timber and hardwoods)	20
	Slash (Timber harvesting residue)	25
2	Defensible space	
	More than 100ft (30.48m) of treatment from buildings	1
	More than 71 - 100 ft of treatment from buildings	3
	30 - 70ft of treatment from buildings	10

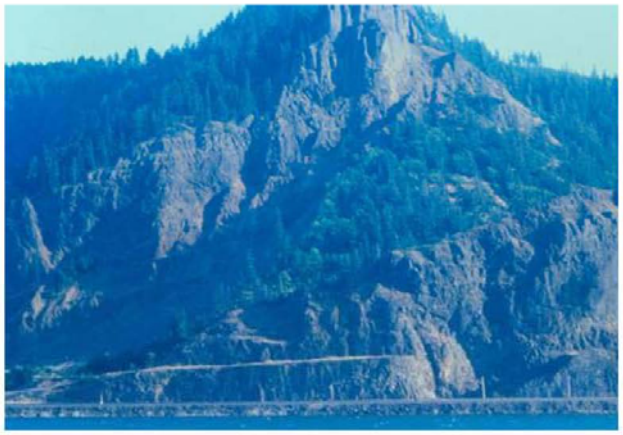
	Less than 30ft	25
C	**Topography**	
1	Slope	
	Less than 9%	1
	Between 10 and 20%	4
	Between 21 and 30%	7
	Between 31 and 40%	8
	Greater than 41%	10
D	**Additional Rating Factors**	
1	Topography that adversely effects wildland fire behavior	0 - 5
2	Areas with a history of higher fire occurrence	0 - 5
3	Areas of unusually severe fire weather and winds	0 - 5
4	Separation of adjacent structures	0 - 5
E	**Roofing**	
1	Construction Material	
	Class A roof [metal, tile]	1
	Class B roof [composite]	3
	Class C roof [wood shingles]	15
	Not rated	25
F	**Existing building construction**	
1	Materials (predominant)	
	Noncombustible siding/deck	0
	Noncombustible siding/wood deck	5
	Combustible siding and deck	10
2	Setback from Slopes > 30%	
	More than 30 ft to slope	1
	Less than 30 ft to slope	5
	Not Applicable	0
G	**Available Fire Protection**	
1	Water Source availability (on site)	
	500 gpm (1892.7 lpm) hydrants <1000ft (304.8m) apart	0
	250 gpm (1892.7 lpm) hydrants <1000ft (304.8m) apart	1
	More than 250 gpm non-pressurized, 2hrs	3
	Less than 250 gpm non-pressurized, 2hrs	5
	No hydrants	10
2	Water source availability (off site)	
	Sources within a 20 min round trip	1
	Sources within a 21 - 45 min round trip	5

	Sources > 46 min round trip	10
H	**Utilities (Gas and Electric)**	
1	All underground utilities	1
	One underground, one above ground	3
	All above ground	5
I	Totals for subdivision	
	Point totals	
	Low Hazard < 39 points	
	Moderate Hazard 40 - 69 points	
	High Hazard > 70 points	

Appendix C: Columbia Gorge National Scenic Area - 5 year Vegetation Plan

COLUMBIA RIVER GORGE NSA

5-YEAR ACTION PLAN
FOR IMPROVING FOREST RESILIENCY



Introduction

This document is in response to the April 19 request for our 5-year plan for accelerating vegetative treatments that change condition class. The Columbia River Gorge National Scenic Area (CRGNSA) is unique. Landownership within the CRGNSA is mixed with state, private, federal and tribal ownerships. National Forest is interwoven with these other ownerships. This document presents a preliminary plan for management of the forested 70 thousand acres of National Forest System lands within the CRGNSA.

Columbia Gorge National Scenic Area - 5 year Vegetation Plan

Table of Contents:

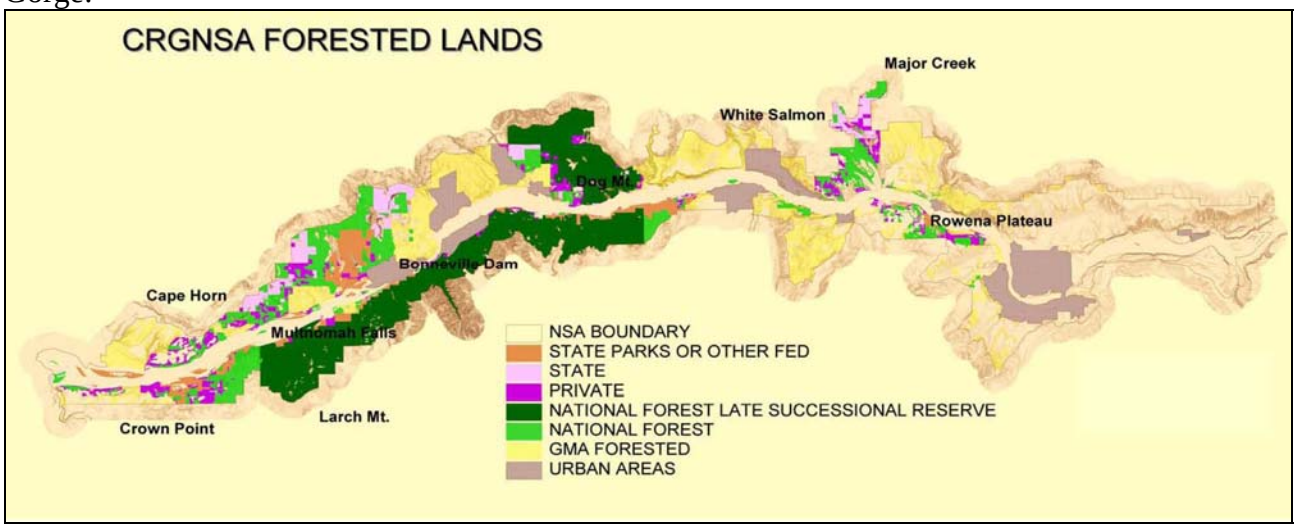
PART I ASSESSMENT

Introduction

The CRGNSA was assessed by an interdisciplinary team using a combination of field knowledge, existing databases, GIS layers, and previous assessments to develop a series of maps indicating the condition of the forest ecosystems with respect to the degree of resiliency to risk of catastrophic fire, drought, insect infestation, or stand conversion. The Gorge was chiseled by a dramatic series of floods, known as the Bretz floods, about 10,000 years ago. These floods created the dramatic basalt cliffs, waterfalls, and steep mountains sides of the Gorge as we see it today. The Gorge acts as a low elevation east-west corridor through the Cascade Mountain chain. On the west side, rain fall varies between 30 and over 100 inches/year, supporting vigorous conifer forest communities. On the east side of the Cascades, rain fall drops from over 100 inches to under 10 inches/year within 40 miles. The conifer communities transition to oak/pine communities and finally become grass-steppe near The Dalles. As a result of all of these factors, the Gorge contains a diverse set of vegetation communities underlain by a diverse topography together providing a diversity of habitats for a large variety of plants and wildlife.

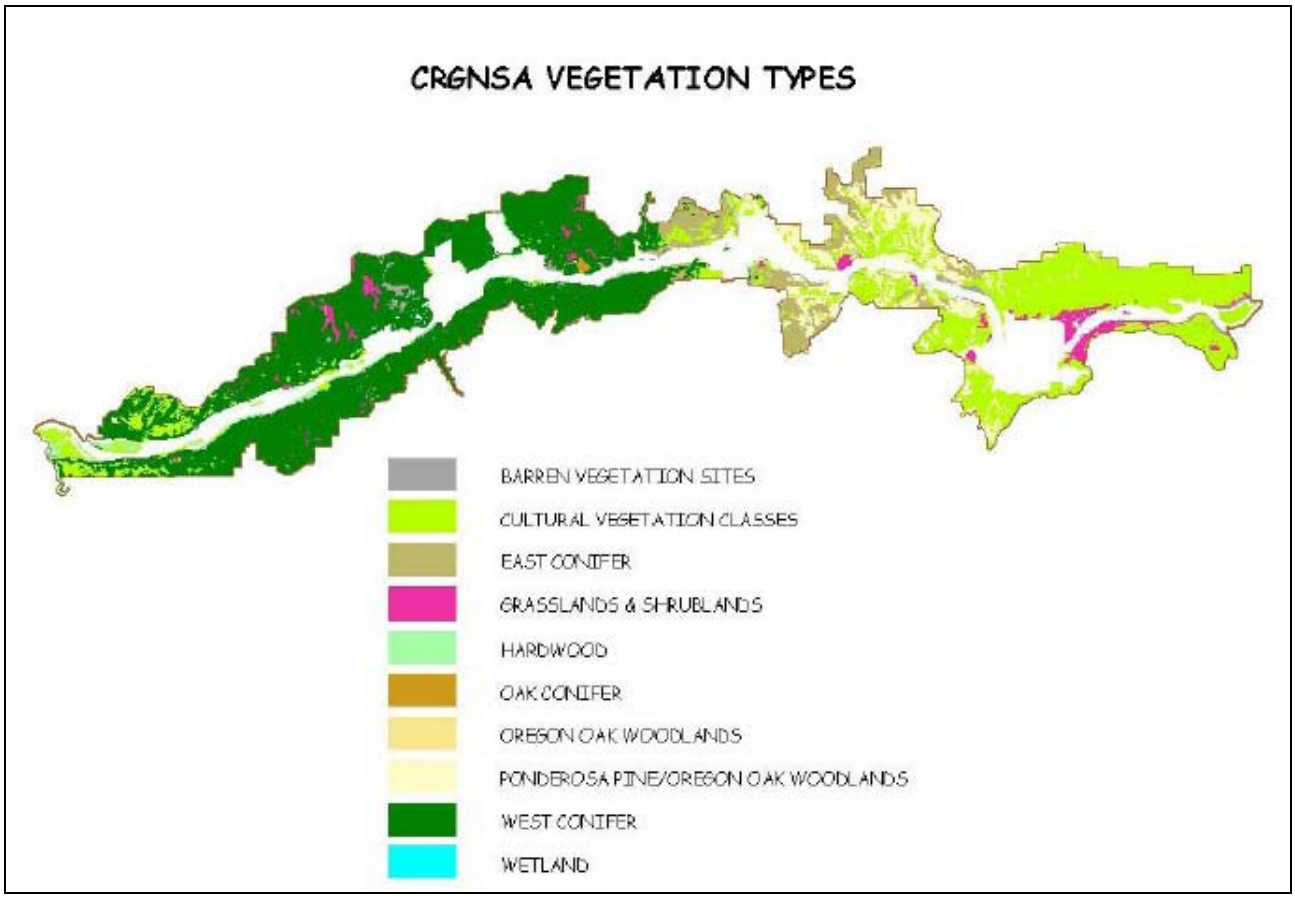
The north-facing Oregon side of the Gorge tends to be shaded, cooler, and wetter, while the southern aspects of the Washington side are warmer and drier. Fire was the most important disturbance process which means that fire suppression has changed the disturbance regimes and the mixed ownership pattern means that these changes affect both people and wildlife.

The map shown below depicts the basic land ownership of the CRGNSA. The large blocks of National Forest System lands are primarily in Oregon on the western end of the Gorge:



Vegetation Types

The map below depicts the major vegetation types of the Scenic Area. Western coniferous forests with patchy stand replacement fire regimes transition to under-burning forests of large trees and few disturbance-caused openings. The transition zone begins near Wind and Shellrock mountains:



Fire Regimes

The following table summarizes the possible natural fire regimes used by the interdisciplinary team to determine which fire regimes were represented in the CRGNSA. The map depicts the subset of natural fire regimes represented:

Fire Regime	Frequency	Severity
I	0-35 years	Low severity (underburn)
II	0-35 years	High severity (stand-replacing)
III A	< 50 years	Mixed severity
III B	50-100 years	Mixed severity
III C	100-200 years	Mixed severity
IV B	100+ years	High severity (stand-replacing), patchy arrangement
IV C	100-200 years	High severity (stand-replacement)
V A	200-400 years	High severity (stand-replacing)
V B	400+ years	High severity (stand-replacing)

Condition Class

The table below summarizes each fire regime, its condition class, and whether or not it is located in the wildland-urban interface: Wildland-Urban interface defined as 1.5 miles from an at-risk community as per HFRA.

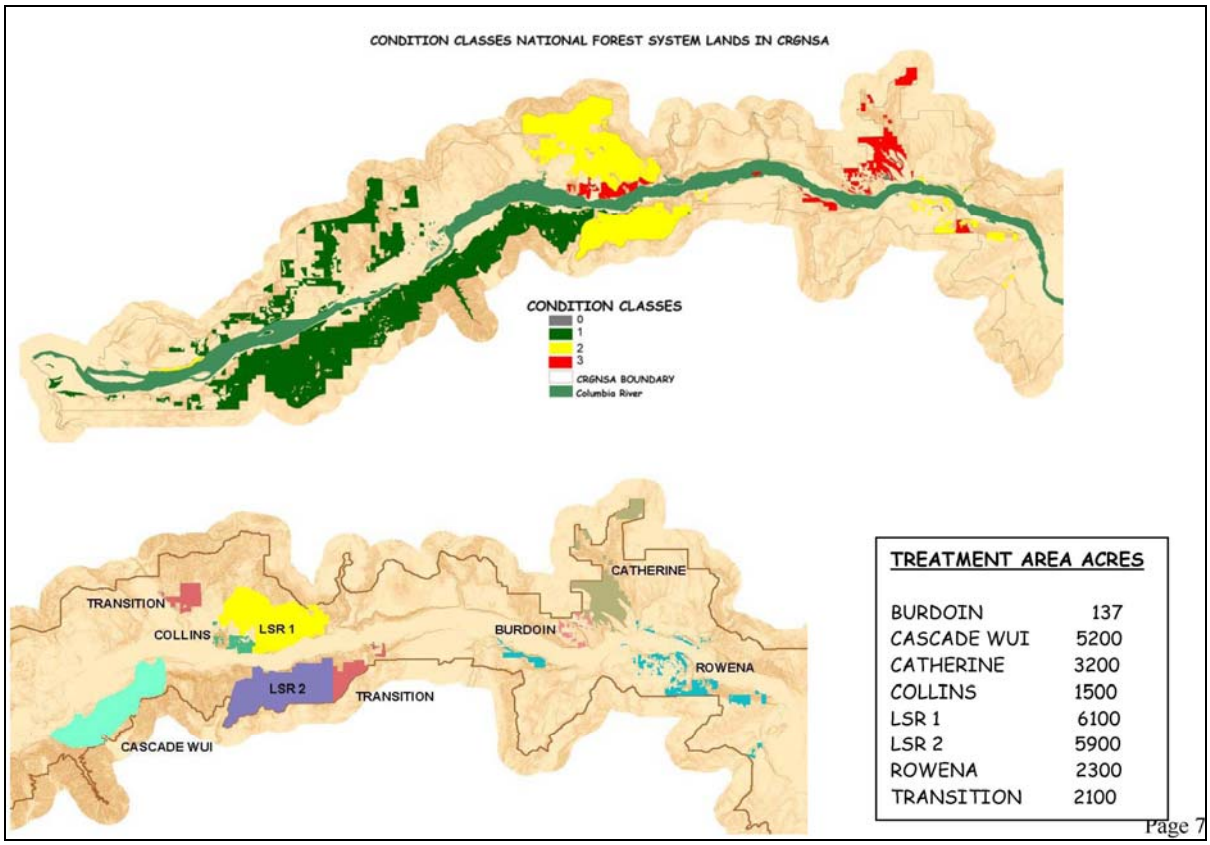
CRGNSA NATIONAL FOREST SYSTEM LANDS AT RISK			
FIRE REGIME	**CONDITION CLASS***	**WUI**	**ACRES at Risk**
I	**2**	**Y**	**1,572**
I	**3**	**N**	**660**
I	**3**	**Y**	**4,387**
IIIC	**2**	**N**	**9,636**
IIIC	**2**	**Y**	**4,061**
IVB	**1**	**Y**	**5,268**
(TOTAL FORESTED ACRES:70,000) TOTAL AT RISK:			**25,584**

***** Condition Class 1-**Minimally altered fire regime, moderate risk for losing key ecosystem components, little change to pattern, size, frequency, or severity of fires.** Condition Class 2-**Moderately altered fire regime, moderate risk for losing key ecosystem components, moderate change to pattern, size, frequency, or severity of fires.** Condition Class 3-**Significantly altered fire regime, high risk for losing key ecosystem components, dramatic change to pattern, size, frequency, or severity of fires.**

Conclusion

There are approximately 25,000 acres of National forest in the CRGNSA at risk for losing key ecosystem components or located within a wildland-urban interface. These areas were divided into treatment areas from 2,000 to 6,000 acres in size for purposes of prioritization, planning, collaboration, and development of a variety of implementation options. The maps below depict the condition of the NFS lands and the proposed treatment areas:

PART II - MAP OF TREATMENT AREAS PART III- COLLABORATION, COOPERATION, AND COMMUNICATION



Project Planning

The project priority and schedule table on page 12 lists each treatment area and the planned data collection, planning, implementation, and prescribed fire maintenance years. The project planning size was modeled after the successful Medford District BLM projects presented at the Creating Fire Resilient Landscapes conference. Planning a larger area allows more flexibility and variety of implementation methods. It also means that most of our environmental documents will most likely be EAs. This is probably the best course in the CRGNSA as the interested public will be more comfortable with using the conventional processes. Each project will be formally monitored and the monitoring results will be applied to the next treatment unit.

Implementation Tools

Planning larger areas will allow the use of long term Stewardship contracting. We anticipate each planning area will contain a combination of force account work, volunteer work, conventional contracting and Stewardship contracting. The treatment units are planned for maintenance of desired conditions using prescribed fire, rather than repeating mechanical treatments.

Cooperation
The following table lists each treatment area along with the potential partners and interested parties. Please refer to that chart to align a treatment area with potential partners and for a more complete list of potential partners. Described below are current relationships the Forest Service developed in the CRGNSA regarding fire prevention and vegetation treatment needs and priorities:

City of Cascade Locks and City of White Salmon: CRGNSA staff is currently contributing to meetings concerning fire prevention (including fuels management) organized by city planners in addition the regular meetings of the Columbia Gorge Local Coordinating Group.

Burdoin Mt. Residents: The Burdoin Mt. project was coordinated with the efforts of local residents on Burdoin Mt. to reduce fuel loading around their homes. The upper half of this treatment area is scheduled in this document to be completed in 2005.

Oregon Department of Transportation: CRGNSA staff is currently offering technical assistance to ODOT's forester in order to facilitate their efforts to treat and control vegetation when necessary to protect safety along the Interstate 84. The establishment of this relationship will contribute a new line of communication concerning treatment needs on National Forest System Lands.

Rowena Dell Homeowners Association: CRGNSA NF System lands border the housing development in Rowena Dell. We are working with the neighborhood association on the establishment of a permit to allow them to keep fuels down on NF lands surrounding the development. We are planning fuels reduction on NF at a larger landscape level surrounding the area.

Gifford Pinchot and Mt. Hood National Forest: The CRGNSA Vegetation team includes employees from the Gifford Pinchot NF in order to share skills. In addition, the CRGNSA fire staff assists both the Mt. Hood NF and the GPNF on meeting their prescribed burning targets. We have agreed to move people and money where the work is needed as the basis of our contingency planning.

WADNR and ODF Firewise Landscaping and Defensible Space and National Fire Plan Grants: Our staff is cooperating with these agencies in order to help them navigate the complex planning regulations in the CRGNSA. We are also planning our treatment units to coincide with the efforts of communities actively taking advantage of this program.

WDFW: We have developed a relationship with Washington State Fish and Wildlife regarding prescriptions for restoring oak woodlands.

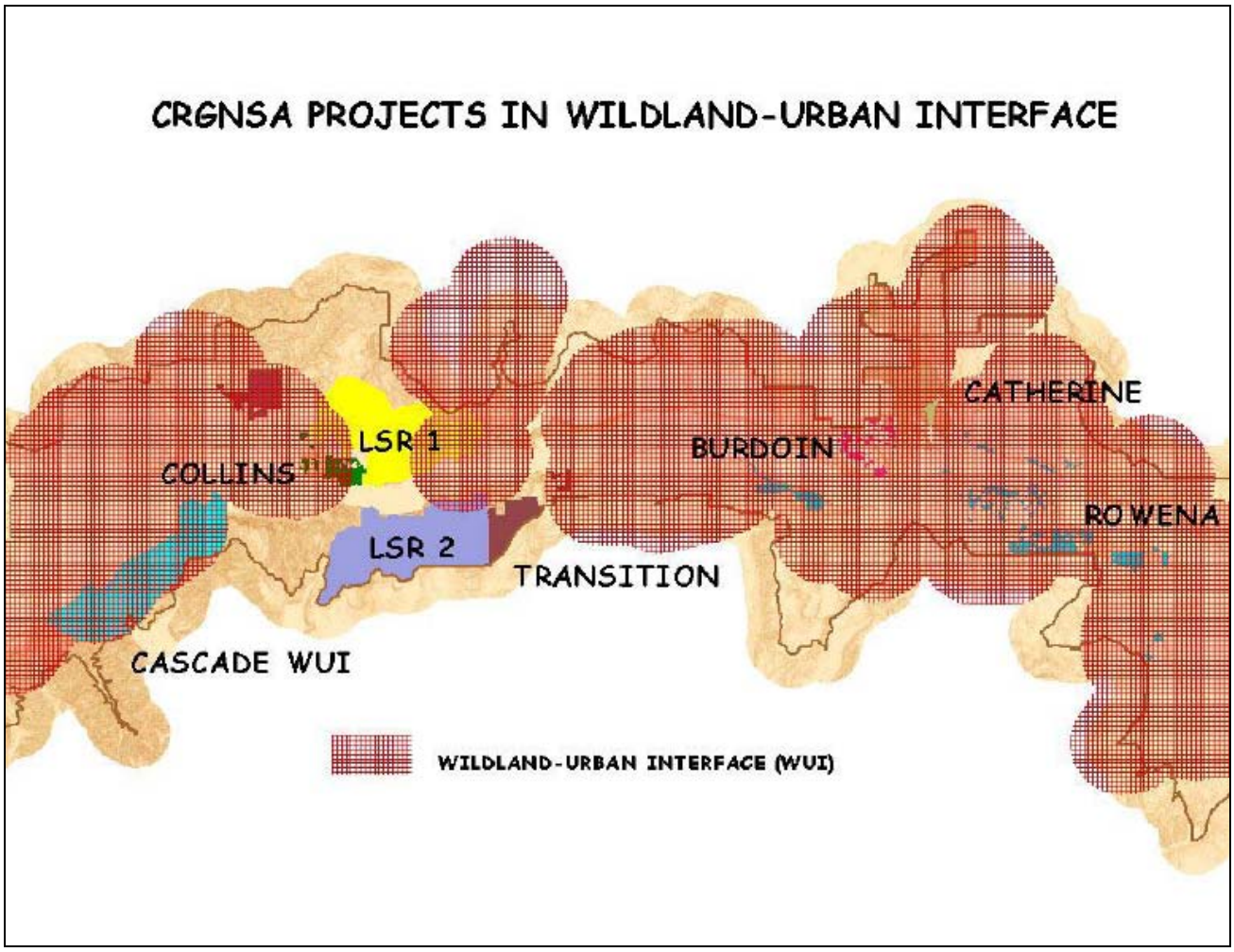
Communication Plan
The primary communication and education plan objective is to identify and involve key internal and external audiences who are crucial in successful program implementation in a collaborative manner. A public involvement and education plan will be developed to

inform, involve, and educate communities, special interests groups, local, state and federal agency partners, tribal governments, adjacent forests, elected officials, and the residents within the Columbia River Gorge National Scenic Area.

An important part of this plan will be the development of demonstration plots for each treatment area and monitoring trips with the public after each project is complete. A variety of additional methods may be utilized depending on the desired outcome and the level of involvement identified. These actions may include: newsletters; news releases; public workshops; field trips with adjacent landowners, elected officials and others; volunteer work parties; media field trips; quarterly proposed project newsletter notification; and information posted to unit website.

It is essential to communicate broadly with all affected interests within and outside of the CRGNSA to attain support and acceptance of activities that will produce a positive change to the vegetative landscape of the Columbia River Gorge.

TREATMENT AREA	TOOLS	COMMERCIAL COMPONENT	PARTNERS AND COLLABORATION
BURDOIN	MECH	FIREWOOD	Gifford Pinchot NF, Neighbors participating in fire-wise projects with Washington State Department of Natural Resources (DNR), Washington State Department of Fish and Wildlife (WDFW), Friends of the Columbia River Gorge (Friends), City of White Salmon, Bingen, other interested public.
ROWENA	MECH/UNDERBURN	FIREWOOD	Gifford Pinchot NF, Oregon State Parks, Oregon Department of Forestry (ODF), Rowena Dell Neighborhood Association, City of the Dalles, Hood River, Mosier, Friends, other interested public.
CATHERINE	MECH	YES	Gifford Pinchot NF, Neighbors participating in fire-wise projects with DNR, WDFW, Friends, City of White Salmon and Bingen, other interested public.
COLLINS	MECH	YES	Gifford Pinchot NF, Neighbors participating in fire-wise projects with DNR, WDFW, Friends, Home Valley, other interested public.
CASCADE WUI	MECH	YES	Gifford Pinchot NF, Mt. Hood NF, City of Cascade Locks, ODF, Oregon State Parks, Oregon Dept of Transportation (ODOT), Friends, other interested public.
TRANSITION	MECH	YES	Gifford Pinchot NF, Mt. Hood NF, City of Cascade Locks, ODF, Oregon State Parks, Oregon Department of Transportation (ODOT), Friends, Home Valley, other interested public.
LSR 1	MECH	YES	Gifford Pinchot NF, Neighbors participating in fire-wise projects with DNR, WDFW, Friends, Home Valley, other interested public.
LSR 2	MECH	YES	Gifford Pinchot NF, Mt. Hood NF, City of Cascade Locks, ODF, Oregon State Parks, Oregon Dept of Transportation (ODOT), Friends, other interested public.



PART IV-PROJECT PRIORITY AND SCHEDULE

The table below lists the treatment areas and priority as depicted by implementation year. Prioritization was based on fire regime, condition class, location within a WUI, and known contingencies such as community involvement in concurrent projects. Priorities may change due to flexibility in contingency planning. Each treatment area except Burdoin will require survey data collection and planning beginning in 2005. Planning is complete for the Burdoin project:

FR	CC	TREATMENT AREA	TOOLS	COMMERCIAL COMPONENT	ACRES	YEAR DATA	YEAR PLAN	YEAR IMPLEMENT	YEAR MAINT BURN
I	3	BURDOIN	MECH	FIREWOOD	137	2001	2002	2005	2010
I	2	ROWENA	MECH / UNDERBURN	FIREWOOD	1572	2005	2006	2007	2012
I	3	ROWENA	MECH / UNDERBURN	FIREWOOD	711	2005	2006	2007	2012
I	3	CATHERINE	MECH	YES	2800	2007	2008	2009	2014
I	3	COLLINS	MECH	YES	468	2009	2010	2011	2016
IIIC	2	COLLINS	MECH	YES	847	2009	2010	2011	2016
IVB	1	CASCADE WUI	MECH	YES	5265	2011	2012	2013	2018
I	3	TRANSITION	MECH	YES	2	2013	2014	2015	2020
IIIC	2	TRANSITION	MECH	YES	2120	2013	2014	2015	2020
I	3	LSR 1	MECH	YES	931	2015	2016	2017	2024
IIIC	2	LSR 1	MECH	YES	4970	2015	2016	2017	2024
IIIC	2	LSR 2	MECH	YES	5761	2017	2018	2019	2026
				TOTAL ACRES **25,584**					

PART V-SMOKE MANAGEMENT AND SAFETY ISSUES

Smoke Management

Activities that create smoke emissions will follow Oregon and Washington Smoke Management and Implementation Plans. Generally this will require registering the planned burn, inputting the planned acreage amounts and locations, and reporting actual activity accomplishments. Currently the program used to track and transmit this information is FASTRACS.

1. Location of Class I Air Sheds: The Mt. Adams Wilderness on the Gifford Pinchot National Forest and the Mark O. Hatfield and the Mt Hood Wilderness on the Mt. Hood National Forest are the only Class I Air Sheds in the vicinity of the Columbia River Gorge National Scenic Area.
2. Visibility Plan for Class 1 Areas (OAR 340-20-047, Section 5.2) The Mt. Hood and Gifford Pinchot National Forests maintain Visibility Plans for these Class 1 Areas.
3. The entire Columbia River Gorge National Scenic Area is considered a smoke sensitive area.
4. Smoke Emission Reduction and Management. The Environmental Protection Agency (EPA) has identified seven items to be addressed in NEPA documents if prescribed fire is planned for fuel treatment (Regional guidance letter June, 1992, Appendix VII, A, 3). Consistent with this guidance the Columbia River Gorge National Scenic Area addresses the following in its NEPA documents:

a. Describe alternative fuel treatments considered and reasons why they were not selected over prescribed fire.
b. Quantify fuels to be burned (acres, tons, types).
c. Describe types of burns (broadcast, piles, understory, etc.)
d. Describe measures taken to reduce emissions (fuels moisture content, site preparation, removal of some debris (PUM,YUM, whole tree yarding, etc).
e. Quantify the amount of PM10 and PM2.5 emissions to be released (Fastracs, consume).
f. Describe the regulatory/permit requirements for burning.
g. Provide a qualitative description of air quality impacts of burning activities, focusing on new or increased impacts on down wind communities, visibility impacts in Class I Wilderness, etc.

Reporting Processes

FASTRACS

The software program FASTRACS will be used to meet our requirement to report prescribed fire smoke management information to the States of Oregon and Washington. Registering, planning and reporting accomplishment of prescribed fire activities will be accomplished using FASTRACS. Information in the database is shared at regional and national levels and therefore must be accurate and up to date. The database will be updated with accomplishment information within 2 weeks of completing an activity.

Smoke from all management-ignited burning will be reported. Coordination with surrounding units and Forests is essential for the successful management of emissions that occur during peak periods of activity.

The Prescribed Fire Manager is responsible for ensuring that the data is properly entered into the database, prior to the burn, the day of the burn, and following completion. This work may be delegated to the assigned Burn Boss or other knowledgeable personnel.

FASTRACS program and required updates are currently available on the RO Fire and aviation page: http://fsweb1.r6.fs.fed.us/fastracs/ The FASTRACS handbook and detailed instructions are also available at this site.

Operational Requirements

Models

Dispersion models exits to help plan and project smoke dispersion. NFSPuff3 is currently the best model when used with metrological information obtained from the MM5 Model. Others exist and more are in the design phase. To download a copy of NFSP log on to http://www.atmos.washington.edu/~harrison/nfspuff3/
To obtain MMF log on to http://www.atmos.washington.edu/~harrison/nfspuff3/mm5/
This will provide the necessary modeled wind vectors to run the model.

Forecasts
Smoke dispersal forecasts are provided by ODF and are available via the Internet. For multiple day burns or on marginal days it is recommended that they be contacted for additional guidance and consultation concerning the burn.

Safety and Risk Assessment
The Columbia River Gorge National Scenic Area adheres to current safety regulations and guidelines regarding prescribed fire field operations and work/rest. References include; 5100 Manuals, Health and Safety Code Handbook, Interagency Standards for Fire and Aviation Operations, and the latest National and Regional supplements regarding prescribed fire safety and standards.

Scheduling priorities between fuels projects and wildland fire suppression needs is not anticipated to be problem in the gorge as burn windows typically close near the end of June and remain closed through mid October.

Appendix D: Forest Health Projects on the Mt. Hood National Forest

Outyear Planning for Projects in Hood River County 2006-2010

The Dalles Municipal Watershed Fuelbreak

Project Description:
Fuelbreak around the perimeter and on major interior roads of the City of The Dalles Municipal Watershed as an added defensible location for fire suppression operations. The fuelbreak would reduce the likelihood that a wildfire ignited along travel routes would spread into the watershed and be a risk to water quality. The proposal is a result of a collaborative effort.

Project Size: 1,400 Acres (in Wasco and Hood River Counties)

Location:
Perimeter roads are proposed for the fuelbreak treatment and include portions of Forest Service Roads 1700, 1700-150, 1700-151, 1700-160, 1700-161, 1700-662, 1720, and 1720-193. There are three interior roads included: 1721, 1721-013, 1720-190, and 1720-192. The legal land description for the project area is primarily T1S and T2S, R10E and R11E, Willamette Meridian.

Estimated Timeline:
This project is in the planning stage. After further public involvement, a decision is expected in April 2007. Implementation could begin as early as Fall 2008.

North Fork Mill Watershed Thin and Prescribed Burn

Project Description:
The project will be a collaborative approach to fuels reduction and restoration in the North Fork Mill, Mosier, and West Fork Neal watersheds. It may include fuels reduction (thinning, brush removal, pruning), road closures, stream and wildlife restoration, and/or prescribed burning.

Project Size: 800-1,000 Acres

Location:
The Mill Creek planning area includes the North Fork of Mill Creek and small portions of Mosier and Neal Creeks. It is located approximately 5 miles southeast of the community of Mt. Hood. The legal land description is T1S-T2S, R10E-R11E, Willamette Meridian.

Estimated Timeline:
This project is in the early planning stage. After project development and public involvement, a decision is expected in September 2007. Implementation could begin as early as Spring 2008.

Cooper Fuels Reduction

Project Description:
This project is a collaborative effort to identify possible fuels reduction activities on the area in and around the wildland-urban interface around Cooper Spur. Activities could include thinning, fuel breaks, and/or prescribed burning.

Project Size: 800-1,000 Acres

Location:
The project is at the base of the northeast side of Mt. Hood. It is in the East Fork Hood
River watershed, about 2 miles east from Oregon State Highway 35, near the Cooper Spur Inn. The legal land description is T1S & T2S, R9E & R10E, Willamette Meridian.

Estimated Timeline:
This project is being developed with a community collaborative group and in the early planning stage. Further project development and general public involvement is expected during 2007. Implementation could begin as early as Spring 2008.

Lake Branch Riparian Thinning

Project Description:
This project includes additional thinning and wood removal on Lake Branch Creek. The objective of thinning in this area is to increase the size of riparian trees to improve habitat for aquatic species. It will also serve as fuels reduction. Any removed trees will be used for fish logs in other riparian restoration projects. Some thinned trees would remain on site to meet soil, wildlife and fuel standards.

Project Size: 500 Acres

Location:
The project is located on Lake Branch above Raker Pit. It is near the back entrance to Lost Lake. The legal land description is T1N., R8E., Sections 32 and 33.

Estimated Timeline:
Implementation of this project has begun and is expected to be completed in 2008.

Eastside Plantation Thinning

Project Description:
There are several areas that are being considered for plantation thinning on the Hood River Ranger District. The objective of plantation thinning is to thin young, overstocked stands to improve forest health and reduce fuels.

Project Size: 1,000-2,000 Acres

Location:
Three areas being considered are areas near Lake Branch and Lost Lake, areas along Red Hill, and areas along Blueridge, all east of Oregon State Highway 35 and the town of Mt. Hood.

Estimated Timeline:
These projects are in the very early planning stages and could be expected to be implemented in 2009-2012.

Appendix E: Cascade Locks Community Wildfire Protection Plan

The Cascade locks CWPP was completed by Jim Hulbert and was accepted in 3/17/05. It is appended to this document to provide contiguous County coverage.