Lake County Community Wildfire Prevention Plan (CWPP) Revision—2011

The Lake County CWPP was revisited in 2011 with basic goals in mind. These goals included reviewing the current role of the Lake County CWPP and its functionality now compared to when it was written in 2005 such as improving fire prevention and suppression, reducing hazardous forest fuels, restoring forest health, and promoting community involvement recommending measures to reduce structural ignitability and encourage economic development in the communities within Lake County. The group additionally wanted to review the current map and see if wildland urban interface (WUI) boundaries are still accurate with expanding communities in Lake County. The group also wanted to focus on public safety by identifying main evacuation corridors throughout the county that could be improved to help facilitate safe travels by the public during times of high wildfire activity. Finally, the group wanted to identify values at risk that are economically important to Lake County that were not identified with the original Lake County CWPP.

Representation of the group consisted of representatives from the following: Lake County Fire Chiefs, Lake County Commissioner, Lake County Resource Initiatives, Fremont-Winema N.F., Lakeview District BLM, Lake Unit of Oregon Dept. of Forestry, Hart-Sheldon National Refuge with the US Fish & Wildlife, and Oregon Dept. of Fish & Wildlife.

Many changes were made to the WUI map of Lake County's CWPP. These changes include:

- Relocating the WUI boundary from the previously designated .5 mile to 3 miles beyond community developments to further treat private and federal lands to provide additional fire protection by fuel reduction. This change is in recognition that given the fuels, weather, and topography of Lake County, a wildfire can easily burn several miles in one burn period and a .5 mile buffer would be insufficient in protecting the community.
- Identify additional industrial timber lands belonging to Collins Timber and JWTR and incorporating a 1 mile buffer around those lands that are economically important to slow wildfire from burning from federal land onto these industrial lands.
- Evacuation routes and developed campgrounds were identified throughout Lake County's public lands. A .5 mile buffer around the campgrounds and .5 mile on each side of the evacuation routes have been identified and mapped. The identified campgrounds are high use recreation sites during the summer months (fire season) and can become small communities at certain times.
- Communication sites throughout Lake County are identified on the map with a .5 mile perimeter around the sites. These sites are important to the emergency services that are within the County.

Values at Risk were identified and these include:

- Sage Grouse Habitat throughout much of Eastern Lake County and Winter Range Habitat for large animal wildlife. Both of these vital intact habitats are economically important to the people of Lake County. Many projects that come with federal funding to keep these two

habitats intact add jobs and money into businesses throughout Lake County and the deterioration of this habitat could impact the large ranching economy within the county thru further regulations.

With these changes to the CWPP for Lake County, more projects can potentially be funded on federal lands to protect not only communities, but also private industrial timber lands, sage grouse/winter range habitat for wildlife, and other important values that Lake County deems as necessary to sustain and protect from wildfire in order to maintain continued economic viability.

See attached map(s) labeled "Lake County CWPP 2011 Revision"

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Lake County Community Wildfire Protection Plan – Phase II

November 3, 2006
WALSH Project Number: 6216-020

Lake County Community Wildfire Protection Plan – Phase II

November 3, 2006

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Lake County Community Wildfire Protection Plan – Phase II Approval Page

Approved by Lake County Commissioners:

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LIST OF ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
CREP	Conservation Reserve Enhancement Program
CRP	Conservation Reserve Program
CWPP	Community Wildfire Protection Plans
EAP	Economic Action Program
EQUIP	Environmental Quality Incentives Program
F	Fahrenheit
FEMA	Federal Emergency Management Agency
FEPP	Federal Excess Personal Property
FLEP	Forest Land Enhancement Program
FPA	Fire Protection Association
FRCC	Fire Regime Condition Class
FRT	Forest Resource Trust
FSA	Farm Services Agency
FSP	Forest Stewardship Program
GIS	Geographic Information System
HFRA	Healthy Forests Restoration Act
IMT	Incident Management Team
IRS	Internal Revenue Service
IRP	Ignition Risk Potential
LCRI	Lake County Resource Initiative
LIFC	Lakeview Interagency Fire Center
NAPA	National Academy of Public Administration
NEPA	National Environmental Protection Act
NFPA	National Fire Protection Association
NRCS	National Resource Conservation Service
NWCC	Northwest Coordination Center
NWCG	National Wildfire Coordinating Group
ODF	Oregon Department of Forestry
ODFW	Oregon Division of Fish and Wildlife
OFM	Oregon Fire Marshal
OFPA	Oregon Forest Protection Act
ORS	Oregon Regulatory Statutes
OSB 360	Oregon Senate Bill 360 (Urban Interface Fire Protection Act of 1977)
OWEB	Watershed Improvement Grants
RFA	Rural Fire Assistance
RFPA	Rangeland Fire Protection Associations
RFPD	Rural Fire Protection District
SEAT	Small Engine Air Tanker
SWCD	Soil & Water Conservation District
USFWS	U.S Fish and Wildlife Service
USFS	U.S. Forest Service

LIST OF ACRONYMS AND ABBREVIATIONS, CON'T

VFA	Volunteer Fire Assistance
WALSH	Walsh Environmental Scientists and Engineers, LLC
WFU	Wildland Fire Use
WHIP	Wildlife Habitat Incentives Program
WUI	Wildland-Urban Interface

OREGON SENATE BILL 360 FINDINGS

Oregon forestland – urban interface lands are classified using weather, topography, and fuel hazards in compliance with Oregon Senate Bill 360 (OSB 360). Oregon Department of Forestry (ODF) classifies the weather hazard factor for the assessment area (all of Lake County) as high hazard or class 3. Class 1 and class 2 weather hazards are low and moderate, respectively. The weather hazard is based on the number of days per season that forest fuels are capable of producing a significant fire event. The topography hazard is classified as low (class 1) or high (class 2) for slopes <25 percent and >25 percent, respectively. The vegetation hazard is based on fuel attributes. For this assessment, the Fire Regime Condition Classes (FRCC) represents low- (class 1), moderate- (class 2), and high- (class 3) hazard fuels.

A total of 3,879,368 acres were classified according to the OSB 360 system. The FRCC classification does not include agricultural lands. All possible classes within the severe weather hazard category are found within the Phase II assessment area of Lake County. Eighty-two percent of the area is categorized as high- and 18 percent extreme-wildfire hazard.

Classification of Forest – Urban Interface Lands (OSB 360)

Natural Vegetative Fuel Hazard Factor Value	Wildfire Weather Hazard Factor Value					
	1		2		3	
	Topography Hazard Factor Value					
	1	2	1	2	1	2
1	Low	Moderate	Moderate	Moderate	High	High
2	Moderate	Moderate	Moderate	Moderate	High	Extreme
3	Moderate	Moderate	Moderate	High	Extreme	Extreme

Number of Acres (percent) that Occur in each Hazard Class for Non-Agricultural Land in South-Central Lake County

Natural Vegetative Fuel Hazard Factor Value	Wildfire Weather Hazard Factor Value					
	1		2		3	
	Topography Hazard Factor Value					
	1	2	1	2	1	2
1	0	0	0	0	111,416 (3)	22,993 (<1)
2	0	0	0	0	3,057,569 (79)	216,297 (6)
3	0	0	0	0	435,391 (11)	35,702 (<1)

EXECUTIVE SUMMARY

The Healthy Forests Restoration Act (HFRA) of 2003 and Oregon Forestland – Urban Interface Fire Protection Act of 1997 (Oregon Senate Bill 360) provide the impetus for wildfire risk assessment and planning at the county and community level in Oregon. HFRA refers to this level of planning as Community Wildfire Protection Plans (CWPP). The CWPP allows a community to evaluate its current situation with regards to wildfire risk and ways to reduce risk for protection of human welfare and other important economic or ecological values. The CWPP may address issues such as community wildfire risk, structure flammability, hazardous fuels/non-fuels mitigation, community preparedness, and emergency procedures. The Core Team is composed of representatives from local communities, fire authorities, and Oregon Department of Forestry (ODF). The Core Team provides oversight to the development and implementation of the Lake County CWPP.

The focus of this CWPP is on Lake County with emphasis on the communities of Adel, Alkali Lake, Anna Estates, Christmas Valley, Drews Reservoir, Fort Rock, Quartz Mountain/Drews Gap, Silver Lake, and Summer Lake. A CWPP was completed December 2005 for the area of south-central Lake County, which included the communities of New Pine Creek, Westside, Lakeview, Valley Falls, Paisley, and Collins Timber properties. The two CWPPs will provide planning for all of Lake County.

Human life and welfare are values at risk to wildfire loss in Lake County because of hazardous fuels buildup around communities and structures, poor emergency vehicle ingress and egress, the constant need for training firefighting personnel and/or upgrading equipment. Throughout the county, there are scattered small communities and ranches with houses and out-buildings without structural fire protection. Other economic values at risk include businesses, farmland, ranchland, grazing land, hunting and other recreational land, historic and cultural sites, and critical infrastructure.

Wildland fire is a common occurrence in Lake County. During the years of 1984–2004, there were 374 human-caused fires and 6,874 natural-caused fires. Approximately 5 percent of the fires were human caused. Approximately 60 percent of all wildfires burn less than 0.25 acres regardless of ignition source, while less than 1 percent burn over 5,000 acres.

Natural resource management policy and changing ecological conditions have interacted in ways that result in hazardous fuel situations throughout Lake County. These forces include historic fire suppression policy, juniper invasion into sagebrush and grasslands, overstocked forests and rangelands, invasive weeds, and changing climatic patterns. The accumulation of hazardous fuels may set the stage for

catastrophic wildfire occurrence in the assessment area resulting in the loss of important economic and ecological values.

There are various fuels in Lake County around communities, ranches, and structures that create problems for fire protection. Fuels include ponderosa pine forests, juniper woodlands, sagebrush habitat, grasslands, and weed fields. Many of these fuels, such as dried grass and weeds, are highly flammable, burn rapidly, and resist control. A coordinated effort among all fire authorities and private landowners in the County is needed to manage hazardous fuels and reduce the risk of wildfire.

Currently, fire suppression authorities in the assessment area include the Silver Lake Rural Fire Protection District (RFPD), Christmas Valley RFPD, Walker Range Fire Protection Association, and the Lakeview Interagency Fire Center (LIFC). The LIFC is the dispatch center for the U.S. Forest Service (USFS), Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), and ODF. Oregon Department of Fish and Wildlife has fire protection equipment and personal at the Summer Lake Wildlife area.

Field surveys, Core Team meetings, interviews, a questionnaire, and a public meeting were used to obtain various types of information to assess the risk of wildfire in south-central Lake County. All information was gathered, analyzed, and synthesized by Walsh Environmental Scientists and Engineers, LLC (WALSH).

Public meetings were convened on September 13 and 14, 2006 in the Adel and Silver Lake. Newspaper and radio releases announced the meetings. Telephone calls and mailings were made to key people inviting them to the meetings. Flyers announcing the meetings were posted in pubic locations throughout Lake County. The purpose of the meetings was to explain the wildfire risk assessment and mitigation planning process, present its findings, and provide an opportunity for the public to participate in a review of findings, and comment on proposed mitigation possibilities such as hazardous fuels management.

The National Fire Protection Association (NFPA) Form 1144, *Standard for Protection of Life and Property from Wildfire, 2002 Edition* was used to assess the level of risk and hazard to communities and individual houses. The evaluation consisted of rating attributes such as means of access, surrounding vegetation (fuels), presence of defensible space, topography, roofing and other construction materials, available fire protection, and placement of utilities. Scores were assigned to each element and then totaled to determine the level of risk. Low-, moderate-, and high-hazard risk were determined based on the total score. Field surveys were conducted during June 2006 to assess the level of risk and hazard to the 10 communities.

Eight of the 10 communities received a high hazard rating because of issues with hazardous fuels proximity, the use of flammable construction material, inadequate emergency ingress and egress, the lack of defensible space around structures, and

proximity to slopes greater than 31 percent. The development of defensible space around structures would lower fire hazard to moderate for many communities. The risk of fire starting on private lands and burning into public lands or the converse, public lands burning into private lands, is high.

Community Risks

Community	Fire Authority	Fire Hazard	Surrounding Fuels and Contributing Factors
Adel	No fire authority but Warner RFPD/RFA is under consideration	High	• Sagebrush, dried grass and weeds around and within town; agricultural land with dried herbaceous vegetation during late-summer and fall • Surrounding terrain • Lack of defensible space around structures • Combustible roof or siding on some structures • Presently no fire authority • Above-ground utilities
Alkali Lake	BLM provides wildfire protection but no structure fire protection	Low	• Terrain east of buildings • Combustible siding on structures • Above-ground utilities
Ana Estates	Silver Lake RFPD	High	• Juniper, sagebrush and dried grasses around and within community • Lack of defensible space around structures • Limited ingress/egress with non-surface, narrow road • Surrounding terrain • Proximity of water • Above-ground utilities
Christmas Valley	Christmas Valley RFPD	High	• Sagebrush, dried grass and weeds around and within community; agricultural land with dried herbaceous vegetation during late-summer and fall • Lack of defensible space around structures • Combustible roof and/or siding on some structures • Above-ground utilities
Drews Reservoir	ODF for wildfire; no structure protection	High	• Tress, sagebrush, grass, within and around community • Lack of structure defensible space • Continuous fuels between public and private boundaries • Above-ground utilities • Lack of street signs and house numbers • Steep, narrow, non-surfaced private roads and driveways • Lack of local fire protection authority
Fort Rock	Christmas Valley and Sliver Lake RFPDs will provide support but response times are lengthy	High	• Sagebrush and grass within and around community • Lack of defensible space around structures • Lack of non-combustible construction materials • Above-ground utilities • Lack of local fire protection authority
Plush	No fire authority but	High	• Juniper, sagebrush, dried grass and weeds in

Community	Fire Authority	Fire Hazard	Surrounding Fuels and Contributing Factors
	Warner RFPD/RFA is under consideration		proximity to structures; and, agricultural lands with dried herbaceous vegetation during late-summer and fall • Lack of structure defensible space • Structures with combustible roofs and siding materials • Presently no fire authority • Above ground utilities
Quartz Mountain/ Drews Gap	OFD provides wildfire protection but no structure protection	High	• Overstocked timber, ladder fuels, sagebrush and dried grass on adjoining public land and on property • Lack of defensible space around structures • Limited ingress/egress on narrow, steep roads • Surrounding terrain • Limited water availability • Above-ground utilities
Silver Lake	Silver Lake RFPD	Moderate	• Juniper, sagebrush and grass within and surrounding community • Agriculture fields with dry herbaceous vegetation during late-summer and fall • Structures within combustible roofs and siding materials • Surrounding terrain • Above-ground utilities
Summer Lake	Silver Lake RFPD under annex consideration	High	• Juniper, sagebrush and grass in proximity of community • Agricultural fields with dry herbaceous vegetation during late-summer and fall • Lack of defensible space around structures • Surrounding terrain • Structures within combustible roofs and siding materials • Above-ground utilities

A total of 3,879,368 acres were classified according to the OSB 360 system. All possible classes within the severe weather hazard category are found within the Phase II assessment area of Lake County. Eighty-two percent of the area is categorized as high- and 18 percent extreme-wildfire hazard. Although fire ignition-risk potential is generally low to moderate, the risk for wildfire is high in the assessment area due to its severe weather hazard rating. Development of fuelbreaks and defensible space is warranted for community and structure protection, respectively. Also, fuels management is needed to reduce FRCC 3 and FRCC 2 vegetation ratings to FRCC 1 in the areas within 1 to 3 miles of communities.

Based on the interviews with community officials and field observations, the following prioritized fuel-management actions should occur in the assessment area:

- Encourage the development of defensible spaces around homes and other important structures throughout the assessment area. Recent research has

demonstrated that dwellings with a non-flammable roof and defensible space have a significantly higher probability of surviving a wildfire than those lacking one or both defense mechanisms. Defensible space is a priority fuelbreak.

- Develop strategically located fuelbreaks around Adel, Anna Estates, Christmas Valley, Drews Reservoir, Fort Rock, Quartz Mountain/Drews Gap, Plush, Silver Lake, and Summer Lake communities as appropriate given terrain, fuels, and weather considerations.

- Develop shaded fuelbreaks between public and private lands near the communities of Adel (specifically the interface of the BLM Wilderness Study Area), Drews Reservoir, and Quartz Mountain/Drews Gap.

- Fuels classified as FRCC 3 and FRCC 2 should be managed to restore forest or rangeland vegetation to FRCC 1 within 1 to 3 miles of communities.

The following are the proposed non-fuels mitigation needs presented in order of priority:

- Continue the cooperation and communication among LIFC, the RFPDs, and private interests concerning wildfire issues. Collective action is needed to reduce the threat of wildfire through implementation of this plan.

- A cell tower is needed in Plush to facilitate cell telephone communication during wildfire incidents and for other emergencies.

- Continue community outreach with regards to ways private landowners may reduce the risk of wildfire on their properties.

- The RFPDs in the assessment area need to be strengthened and expanded to provide protection to all communities. Silver Lake and Christmas Valley are the only RFPDs in the assessment area. Plush and Adel will be protected by the anticipated formation of Warner Valley RFPD. Summer Lake should be annexed into the Silver Lake RFPD. A Fort Rock RFPD could be formed or this community should be annexed into the Silver Lake or Christmas Valley RFPDs.

- The residences of Warner Valley are negotiating a Rangeland Fire Protection Associations (RFPA) with ODF. RFPAs should also be considered for Silver Lake, Summer Lake, and Christmas Valley. RFPAs have demonstrated their value in Harney County.

- Create and maintain water sources for private forested areas and communities. Possibilities include irrigation system hookups and pump site at lakes and streams. Site should be mapped and maintained annually.

Implementing and sustaining the CWPP is key to success. This is the responsibility of the Core Team. Building partnerships among community-based organizations, fire protection authorities, local governments, public land management agencies, and private landowners is necessary in identifying and prioritizing measures to reduce wildfire risk. Maintaining this cooperation is a long-term effort that requires commitment of all partners involved. The CWPP encourages citizens to take an active role in identifying needs, developing strategies, and implementing solutions to address wildfire risk by assisting with the development of local community wildfire plans and participating in countywide fire prevention activities.

The Core Team will oversee the implementation and monitoring of the CWPP by working with fire authorities, community organizations, private landowners, and public agencies to coordinate hazardous fuels management and other mitigation projects.

LAKE COUNTY COMMUNITY WILDFIRE PROTECTION PLAN – PHASE II

1 INTRODUCTION

1.1 Community Wildfire Protection Plans (CWPP) Purpose and Process

The Healthy 2003 Forests Restoration Act (HFRA) and the 1997 Oregon Forestland-Urban Fire Protection Act (also known as Oregon Senate Bill 360 [OSB 360]) provide the impetus for wildfire risk assessment and planning at the community level. HFRA refers to this level of planning as CWPP. The purpose of the CWPP is for communities to take full responsibility and advantage of wildland fire and hazardous fuel management opportunities offered under HFRA legislation. The CWPP provides for the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) to give consideration to the priorities of local communities for forest and rangeland management and hazardous fuel reduction projects.

Oregon Senate Bill 360 (OSB 360) established policies regarding the protection of the wildland-urban interface (WUI) by:

- Defining WUI in Oregon and establishing a process and system for classifying the interface.
- Establishing standards for WUI property owners so they can manage or minimize fire hazards and risks.
- Providing the means for establishing adequate, integrated fire protection systems in WUI areas, including education and prevention efforts.

The CWPP allows communities and private landowners to evaluate their current situations with regards to wildfire risks and suggests ways in which to reduce risks for protection of human welfare and other important economic or ecological values. The CWPP may address issues such as community wildfire risk, structure flammability, hazardous fuels and non-fuels mitigation, community preparedness, and emergency procedures. The CWPP should be tailored to the needs of the community. The CWPP includes OSB 360 requirements. The CWPP process consists of the following steps:

1. Organize the CWPP Committee – The committee should consist of representatives from city and county government, local fire authority, and the state agency responsible for forest management.
2. Federal Agency Involvement – Representatives from the USFS and/or BLM should be engaged in the CWPP process as consultants.

3. Community Interested Parties – The CWPP committee must involve interested community members, private landowners, business, stakeholders, and interest groups in the planning process.

4. Community Base Map – A community base map needs to be developed that illustrates important features such as landownership, structures, roads, surface water, fire districts, or major utility corridors. The map's importance is that it illustrates community values from which recommendations concerning wildfire planning can occur.

5. Develop a Community Wildfire Risk Assessment – The risk assessment will provide critical information to the CWPP committee to inform in decision making. Community members should be actively involved in this step. Items that may be addressed include such things as risk of wildfire occurrence, structure hazard and risk, economic and ecological values at risk, local fire authority, preparedness and capability, and hazardous fuels.

6. Hazard Reduction Priorities and Recommendations to Reduce Structure Flammability – Mitigation projects will be identified and designed to reduce the risk of wildfire loss to the community and other values. Mitigation projects should be prioritized and may include such things as hazardous fuels management, improving the wildfire suppression capability of the local fire authority, developing a permanent water supply, reducing structure flammability, improved emergency procedures, and public education.

7. Develop an Action Plan and Assessment Strategy – The action plan should identify who will do what by when. Funds for hazard reduction projects through grants need to be obtained. The finished CWPP is essential for seeking grant money. Also, an assessment and monitoring strategy needs to be in place to ensure the CWPP remains current and relevant for future years.

8. Finalize the CWPP – The Core Team needs to approve the CWPP and implement the recommended actions in a timely manner.

A CWPP for south-central Lake County was submitted to Lake County Resource Initiative (LCRI) in December 2006. The south-central Lake County CWPP focused on the communities of Lakeview, Valley Falls, New Pine Creek, Westside, and Paisley; Collins Timber Company lands; and rural residences. This CWPP will provide hazard and risk assessments for Adel, Alkali Lake, Anna Estates, Christmas Valley, Drews Reservoir, Fort Rock, Plush, Quartz Mountain/Drews Gap, Silver Lake, and Summer Lake communities.

1.2 Lake County's need for CWPP

Wildland fire is a common occurrence in Lake County. Historic fire occurrence was a major ecological influence in shaping the natural vegetation of Lake County. The threat of wildfire continues today. However, wildfire risk to human welfare and economic and ecological values is more serious today than in the past because of hazardous fuels buildup and the construction of houses in proximity to forests and rangelands.

In 2001, the Federal Register (Vol. 66, No. 160, Friday, August 17, 2001) listed communities throughout the United States considered at risk to wildfire. The Phase II communities in Lake County that were listed are Adel, Christmas Valley, Plush, Silver Lake, and Summer Lake. These communities are at risk to wildfire because of the accumulation of hazardous fuels nearby and located within the community.

Lightning has been the dominant fire ignition source for hundreds of years and continues to be the main cause of fire in Lake County. However, human-caused fires have occurred and their frequency will likely increase as the County's population grows and outdoor recreation increases.

Natural resource management policy and changing ecological conditions have interacted in ways that have resulted in hazardous fuel situations throughout the County. These forces include historic fire suppression policy, juniper invasion into sagebrush and grasslands, overstocked forests and rangelands, invasive weeds, and changing climatic patterns. The accumulation of hazardous fuels may set the stage for continued catastrophic wildfire occurrence in the County resulting in the loss of important economic and ecological values.

Currently, wildland fire management authorities in the assessment area include the Silver Lake Rural Fire Protection District (RFPD), Christmas Valley RFPD, Walker Range Fire Protection Association, and the Lakeview Interagency Fire Center (LIFC). The LIFC is the dispatch center for the USFS, BLM, U.S. Fish and Wildlife Service (USFWS), and Oregon Department of Forestry (ODF). Oregon Department of Fish and Wildlife (ODFW) have fire protection equipment and personal at the Summer Lake Wildlife area, which is used for its own management purposes. Mutual Aid Agreements exist among the fire authorities (except ODFW) for mutual aid and support in the event of a wildfire incident. However, each fire authority operates under regulations that dictate their area of responsibility and specifies limitations. The CWPP provides the means to identify wildfire risk, prioritize mitigation projects, improve public awareness, and improve fire authority coordination to better manage wildland fire.

Warner Valley is in the process of organizing a RFPD and rangeland fire protection association (RFPA). These organizations will provide fire protection for the communities of Adel and Plush, and Warner Valley.

1.3 Wildland Fire Management Primer

Wildland fire is defined as any non-structure fire occurring in the wildland and includes prescribed fire, wildland fire use, and wildfire. Wildland fuels are living and dead plant material associated with forests, woodlands, shrublands, grasslands, wetlands, and riparian areas. Prescribed fires are planned fires ignited by land managers to accomplish resource objectives. Fires that occur from natural causes, such as lightning, and are then used to achieve management purposes under carefully controlled conditions with minimal suppression costs are known as wildland fire use (WFU). Wildfires are defined as unwanted and unplanned fires that result from natural ignition, unauthorized human-caused fire, escaped WFU, or escaped prescribed fire.

Prescribed fire is used to achieve management goals in Lake County such as reducing hazardous fuels, increasing plant species diversity, increasing livestock forage production, abating noxious and invasive weeds, and improving wildlife habitat. Multiple resource management objectives are often achieved concurrently. WFU is authorized in Lake County on a case-by-case basis as conditions warrant to achieve management objectives.

Prescribed fire is used either in a defined area or in localized burn piles. Area prescribed fires is used to burn vegetation in place and can vary in the number of acres burned. Burn piles are heaps of woody fuel that are accumulated after a mechanical treatment. Consistency with state fire and air pollution laws and BLM, USFS, ODF, and Lake County policy would be maintained during prescribed fires. Acceptable burn days would be determined in consultation with ODF and local agencies.

Fire risk is defined as the probability that wildfire will start from natural or human-caused ignitions. Fire hazard is defined as the presence of ignitable fuel coupled with the influences of terrain and weather. The nature of fuels, terrain, and weather conditions combine to dictate fire behavior—or its rate of spread and intensity. Wildland fuel attributes refer to both dead and live vegetation, and include such factors as ground cover, bed depth, continuity, loading, vertical arrangement, and moisture content. Structures are also considered a fuel source. Fire tends to burn more rapidly and intensely upslope than on level terrain. However, evening “sundowner” winds may rapidly drive wildfire downslope. Weather conditions such as high ambient temperatures, low relative humidity, and windy conditions favor fire ignition and may cause erratic fire behavior.

Natural and human-caused fire has long been an integral part of natural vegetation in Lake County. Lightning-ignited fire is a natural component of Lake County ecosystems and its occurrence is important to maintaining the health of forest and rangeland ecosystems. Native Americans used fire for activities such as hunting, improving wildlife habitat, land clearing, and warfare. As such, many of the plant species and communities have adapted to recurring fire through phenological, physiological, or anatomical attributes. Some plants, such as lodge pole pine and western wheatgrass, require reoccurring fire to thrive in their natural environment.

European settlers, land use policy, and changing ecosystems have altered fire behavior and fuels accumulation from their historic setting. European settlers into Lake County changed the natural fire regime in several interrelated ways. The alterations are directly in response to changes in human intervention. The nature of vegetation (i.e., fuel) changed due to land use practices such as homesteading, livestock grazing, agriculture, water development, and road construction. Livestock grazing reduced the amount of fine fuels such as grasses and forbs, which carried fire across the landscape. In addition, continuous stretches of forest and rangeland fuels were broken-up by land-clearing activities. The removal of the natural vegetation allowed weedy plants to colonize and occupy—in many instances—large expanses of land. The establishment of cheatgrass and other annual weeds are examples. Many of these weedy plants become flashy fuels as they age, causing fires to burn faster and hotter than with normal wildland fuels. The invasion of western juniper into big sagebrush stands and grasslands also increased fuel loads and changed the nature of fire in these ecosystems. In addition, more than a century of fire-suppression policy has resulted in an unusually large accumulation of hazardous woody fuels such as western juniper, big sagebrush, and bitterbrush in many forest and rangeland ecosystems. The presence of flashy fuels coupled with the large accumulation of naturally occurring fuels has created hazardous situations for public safety and fire management.

Modern-day land managers continue the use of fire in Lake County by using prescribed fire as a tool to improve livestock grazing, wildlife habitat, and to reduce weeds or hazardous fuels. In areas such as the WUI, where prescribed fire is not desirable, the wise implementation of silvicultural practices can mimic the effects of fire on the ecosystem. Proactive and vigilant fire and fuels management is necessary to protect human welfare, as well as economic and ecological values from fire.

1.4 Regulatory Framework

There are several Federal and State legislative acts that set policy and provide guidance for the development of the Lake County CWPP:

- Healthy Forest Restoration Act (2003) – Federal legislation to promote healthy forest and rangeland management, hazardous fuels reduction on federal land, community wildfire protection planning, and biomass energy production.

- National Fire Plan and 10-year Comprehensive Strategy (2001) – An interagency plan that focuses on firefighting coordination, firefighter safety, post-fire rehabilitation, hazardous fuels reduction, community assistance, and accountability.

- Oregon Statewide Land Use Planning Goal 7 – Directs local governments to adopt plans for minimizing risk from natural hazards.

- Federal Emergency Management Agency (FEMA) Disaster Mitigation Act (2000) – Provides criteria for state and local multiple-hazard and mitigation planning.

- Oregon Forestland – Urban Interface Fire Protection Act of 1997 (OSB 360) established policy for the WUI.

1.5 Lake County Wildfire Management Goals

The goals for the CWPP process are several and include:

- Identify fire risks and hazardous fuels
- Assess community risks to wildfire
- Strengthen coordination, communication, and fire suppression capabilities among the several fire authorities
- Develop strategies and priorities to reduce hazardous fuels
- Identify non-fuels mitigation projects to reduce the risk of wildfire
- Increase community/citizen awareness and responsibility to reduce the risk of wildfire

2 LAKE COUNTY PROFILE

2.1 County Setting

Lake County was established in 1874 with a land base of 8,360 square miles. The county population is estimated at 7,422 people. Lake County is in south-central Oregon and was named because of the many large lakes that are within its borders. The county seat was Linkville until the voters selected a permanent site at Lakeview. The landownership in the Phase II assessment area is 6,867 square miles includes BLM 3,608 sq. mi.), USFS (1,151 sq. mi.), U.S. Fish and Wildlife Service (USFWS) (397 sq. mi.), State of Oregon (109 sq. mi.), and private (1,602 sq. mi.) (Map 1).

Lake County industries include agriculture, livestock, wood products, mining, manufacturing, and recreation. Lake County is famous for both its hang gliding and for having Oregon's only geyser, Old Perpetual. Ecological resources such as Summer Lake, Silver Lake, Hart Mountain National Antelope Refuge, and Fremont National Forest draw hikers, hang gliders, geologists, bird watchers, hunters, and rock climbers from around the country. Large private timber companies that have forest holdings in the assessment area include Timber Resource Services, Goose Lake Timber, and Jeld-wen. Vegetation in the County is diverse and varies from ponderosa pine forest in the west to sagebrush and grasslands in the east, with wetlands interspersed throughout (Map 2).

2.2 Communities

The communities of Lakeview, New Pine Creek, Paisley, Valley Falls, and Westside and were included in the south-central Lake County CWPP, which was completed December 2005. The communities included in Phase II are Adel, Alkali Lake, Anna Estates, Christmas Valley, Drews Reservoir, Fort Rock, Plush, Quartz Mountain/Drews Gap, Silver Lake, and Summer Lake (Table 1). All are unincorporated communities. Silver Lake RFPD provides fire protection for Silver Lake, Summer Lake, and Anna Estates. Christmas Valley RFPD provides fire protection for Christmas Valley. Fort Rock does not have a formal RFPD. The communities of Drews Reservoir, Quartz Mountain/Drews Gap, Alkali Lake, Adel and Plush are not within RFPDs. Adel and Plush do not have a formalized RFPD, but they are in the process of forming one. Silver Lake and Christmas Valley RFPDs will provide protection to Fort Rock.

A summary of each community's fire authorities and fuel types is located in the following table.

Table 1 Community Information and Fuels Summary

Community	Location	Fire Authority	Surrounding Fuels
Adel	Junction of Highway 140 and Plush Highway	Warner RFPD and RFPA[1]	Sagebrush/grass on west, grease wood on south, and agriculture on west and north. Grass and weeds in community.
Alkali Lake	Highway 395	No authority	Greasewood and desert scrub around compound.
Anna Estates	Highway 31 two miles north of Summer Lake	Sliver Lake RFPD	Sagebrush and grass with a few junipers within and around structures.
Christmas Valley	County Road 510, east of Fort Rock	Christmas Valley RFPD	Sagebrush mixed with greasewood/grass/weeds is the dominate fuel around and within town; irrigated fields breakup sagebrush continuity.
Drews Reservoir	Proximity of Drew Reservoir Dam off of Dog Lake Lane	ODF but no structural protection	Ponderosa pine, western juniper, sagebrush in and around structures.
Fort Rock	County Road 510, East of Highway 31	Sliver Lake RFPD	Sagebrush on west and north; irrigated hayfields on south; blocks of hayfields and sagebrush on east.
Plush	Plush Highway, 18 miles north of Adel	Warner RFPD/RFA	Greasewood, sagebrush, cheatgrass on north, south and west; wetlands and meadows on east. Grass and weeds in community.
Quartz Mountain/Drews Gap	Highway 141 west of Lakeview	ODF but no structural protection	Ponderosa pine, aspen, and western juniper in and around structures.
Silver Lake	Highway 31	Silver Lake RFPD	Sagebrush, rabbitbrush, weeds, grass on south; agricultural fields occur on north and west; sagebrush, rabbitbrush, and irrigated fields on east. Grass and weeds within town.
Summer Lake	Highway 31	Silver Lake RFPD	Sagebrush, weeds, grass on south; agricultural fields occur on north and west; sagebrush, meadows, and irrigated fields on east; juniper and sagebrush on west. Grass and weeds within town.

[1]Warner RFPD and RFPA are not an authorized fire authority but their formation is anticipated.

2.3 Climate

Lake County climate is semi-arid with long, severe winters and short, dry summers (Table 2). With a typical high desert climate, the County experiences over 300 days of sunshine per year and receives an average of 15 inches of annual precipitation. Warm and sunny days of summer record highs in the 80s with cool nights. Winter temperatures are typically in the low 30s. In the open valleys, temperatures for Lakeview in January average 29° Fahrenheit (F). In July, it is 67° F with an annual average of 47° F. The frost-free period extends from the last day of spring (with a

minimum temperature of 32° F or below) to the first day of fall (with a minimum temperature of 32° F). The average annual precipitation for Lakeview is 15 inches. Data taken from remote automated weather stations show a significant increase in moisture as elevation increases. The low precipitation months are July, August, and September.

Table 2 Monthly Climate Summary for Lakeview, Oregon for the Years 1971–2000

Climate Attribute	Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Maximum Temperature (F °)	38.5	42.3	48.8	56	64.6	73.9	83.5	83	75	62.7	44.6	38.7	59.5
Average Minimum Temperature (F °)	20.3	23.5	27.4	31.1	37.3	43.9	49.8	48.1	41.4	33.2	25.1	20.5	33.6
Average Total Precipitation (inches)	1.91	1.8	1.68	1.33	1.44	0.97	0.51	0.47	0.69	1.05	1.86	1.94	15.63

2.4 Vegetation

The vegetation of the assessment area is diverse and varies from mixed conifer and ponderosa pine forest in the north and west to sagebrush, desert scrub, and grasslands in the east and south (Map 2). Wetlands are widespread. Cropland and hay fields are common throughout the assessment area.

2.5 Fire Protection Authorities

Lake County receives wildland fire management from LIFC and RFPDs (Map 3). LIFC is the dispatch center for BLM, USFS, ODF, and USFWS. The RFPDS include Silver Lake and Christmas Valley which have wildfire and structure fire authority in their respective districts. ODFW provide fire protection and fuels management for the Summer Lake Wildlife area. Walker Range Fire Protection Association provides contract wildfire protection in northwest Lake County. Mutual Aid Agreements exist among the various fire authorities for support and help as needed, except for ODFW. Each authority has its regulations and limitations, which dictates its fire management activity. Rural areas outside of the RFPDs do not have formal fire protection. Currently, if there is a fire within these areas, fire authorities that respond are to be reimbursed for their efforts. Response times for initial attack are lengthy. Warner Valley, which includes the communities of Adel and Plush, is in the process of forming Warner Rural Fire Protection District and Rangeland Fire Protection Association under the auspices of Oregon Fire Marshall (OFM) and ODF, respectively.

Lakeview Interagency Fire Center (LIFC) – The LIFC is comprised of the USFS Fremont/Winema National Forest, BLM Lakeview District, USFWS Hart Mountain National Antelope Refuge, and ODF Central Oregon and Klamath-Lake fire protection districts. The LIFC functions to manage wildland fire and fuels on public and some private lands within the County. These lands include federal land in the Fremont/Winema National Forests, BLM lands, and Oregon state lands. Firefighters are trained to National Wildfire Coordinating Group (NWCG) standards as appropriate. Fulltime and seasonal NWCG crews are available to operate equipment for initial wildfire attach. Extended attack would follow NWCG rules and guidelines. During the fire season, the following equipment is available to LIFC:

BLM Lakeview District equipment

- Four Type 4 engines
- Four Type 6 engines
- One Type III 2,000 gallon tactical water tender
- One Type II helicopter (15-person crew size)
- One small engine air tanker (SEAT) plane

USFS Fremont/Winema equipment

- Three Type 4 engines
- Eight Type 6 engines
- One air tanker based at Klamath Falls

USFWS

- Two Type 4 engines
- One bulldozer
- One 10,000 gallon water tender
- One 5,000 gallon tender (stationed at Sheldon, NV)
- Two Type 4 engines and one bulldozer (Stationed at Sheldon NV)

ODF

- Four Type 6 engines
- Two Type 5 engines
- One 1,200 gallon water tender

ODFW – ODFW has fire and fuels management responsibility at the Summer Lake Wildlife area. Prescribed fire is used extensively for wildlife habitat management. ODFW burns from 200 to 2,000 acres per year, depending on management need. They will respond to small wildfires on the refuge and private land in the surrounding area especially if it threatens the refuge. Fire equipment includes: a tractor, 150-gallon slip-in unit for pickup truck, 200-gallon pull tanker, hand tools, and small pumps for surface water extraction. The fire crew consists of three fulltime and seasonal staff trained to NWCG standards.

Silver Lake RFPD – The Silver Lake RFPD has responsibility for structure, grass/weed, and vehicle fires within its district, which includes Anna Estates. It provides protection to Summer Lake, Fort Rock, and other areas outside of its district on a cost recovery basis. Effort is underway to annex Summer Lake. Silver Lake is an all voluntary RFPD. Its 16 members are trained at the Firefighter I level and have received NWCG wildland fire training. Available equipment includes two 500-gallon brush trucks, two structure engines, one 2,000-gallon tender/structure engine, one 5,000-gallon tender, and one 3,500-gallon tender. The RFPD covers 130 square miles and it is situated between Table Rock, Connell Mountains, Pitcher Range, and Rock Pass (Map 3).

Christmas Valley RFPD – Christmas Valley RFPD has authority for grass/weed, structure, and vehicle fires within the town limits (Map 3). Christmas Valley is a small RFPD with upwards of 23 volunteers. Some volunteers are trained at the Firefighter I level. Equipment includes: two pickup trucks with 200-gallon slip-in units, one 5,000-gallon tender, one 2,000-gallon structure engine, and one 1,200-gallon military style 6x6.

Warner RFPD and RFPA – The RFPD and RFPA have not been formalized, but efforts are underway with OFM and ODF to form these organizations. Current equipment includes one 1,000-gallon structure tanker, one 750-gallon structure tanker, 500-gallon pumper, and one 2,000-gallon truck. Many ranchers have 150 gallon slip-in units and tractors that are available for wildfire suppression. Training will be needed at the Firefighter I and appropriate NWCG level for all volunteers.

Walker Range Fire Protection Association – The headquarters of Walker Range Fire Protection Association (FPA) is in Crescent (Deschutes County), approximately 45 miles from its assigned area in Lake County. Walker Range provides contract wildfire and structure protection for private landowners in the northwest part of Lake County (Map 3). Walker is a private, non-profit organization that operates under contract with private landowners and holds mutual aid agreements with USFS, BLM, ODF, and RFPDs. Its equipment includes eight 200- to 1,000-gallon engines, three water tenders (2,100-, 3,000-, and 4,000-gallon tenders), and a D4 caterpillar. Its 20 crew members have training ranging from Fire Fighter 1 to NWCG Incident Command 2. The response time to its assigned protection area is lengthy.

2.6 Values at Risk

Human welfare, economical, and ecological values are at risk to wildfire in Lake County because of the buildup of hazardous fuels around communities and structures, poor emergency vehicle ingress and egress, and the on-going need for training and/or upgrading of fire suppression equipment. Economic values at risk include businesses, private forests, farmland, ranchland, grazing land, hunting and other recreational land, and critical infrastructure. Communities are at risk to wildfire for one or more of the following reasons:

- Presence of hazardous fuels such as juniper, sagebrush, annual weeds, or seasonal dry grasses
- No jurisdictional responsibility for structure protection
- Lengthy response by wildfire suppression authority
- Limited response time
- Limited access
- Limited trained volunteer staff
- Non-adherence to county approved fire-use procedures and restrictions

In addition, numerous structures throughout the assessment area are at risk to wildfire loss because of one or more of the following reasons:

- Hazardous fuels in vicinity of structures
- Poor emergency ingress or egress
- Lack of defensible space
- Lack of non-combustible building materials
- Lack of available water
- Lengthy emergency response times

Ecological values are important for continued economic growth and human welfare. The degree of loss will depend on wildfire severity and time needed for recovery. Wildfire is a natural part of the assessment area ecology and normally occurring fire is necessary to maintain many desirable attributes such as wildlife habitat and livestock forage. Under a normally occurring fire regime, many ecological values will recover within a few years. Air quality should recover within days after a fire, but wildlife habitat may take years. However, catastrophic wildfire may change wildlife habitat beyond its capacity to recover if the biophysical nature of the area is altered. In addition, wildfire may produce conditions conducive to the spread of noxious and invasive weeds, such as cheatgrass. Ecological values at risk to wildfire loss include such things as:

- Wildlife and aquatic habitat
- Rangeland and forests
- Wetlands
- Scenic areas
- Farmlands
- Water quality
- Air quality
- Natural vegetation communities

3 CWPP PROCESS

3.1 Lake County CWPP – Phase II Requirements

The steps to developing the Lake County CWPP are listed in Table 3. These steps are defined in the manual, *Preparing a Community Wildfire Protection Plan*.

Table 3 Eight Steps to Developing a CWPP for Lake County

Step	Task	Explanation
One	Convene Decision Makers	Form a core team made up of representatives from community RFPDs or government, LCRI, and ODF.
Two	Involve Federal Agencies	Engage local representatives from the BLM, USFS, and USFWS, as appropriate.
Three	Engage Interested Parties	Contact and encourage participation from a broad range of interested organizations and stakeholders.
Four	Establish Community Maps	Develop maps of the County that defines communities at risk, critical infrastructure, forest/rangeland at risk, and fuels management.
Five	Develop a Community Risk Assessment	Develop a county risk assessment that considers fuel hazards, risk of wildfire occurrence, homes, business, and at risk infrastructure and other values, and preparedness capability. Rate the level of risk and incorporate into the base map as appropriate.
Six	Establish Community Priorities and Recommendations	Use the risk assessment and maps to facilitate a collaborative public discussion that prioritizes fuel treatments and non-fuel mitigation practices to reduce fire risk and structural ignitability.
Seven	Develop An Action Plan and Assessment Strategy	Develop a detailed implementation strategy and a monitoring plan that will ensure long-term success.
Eight	Finalize the CWPP	Finalize the County CWPP and communicate the results to interested parties and stakeholders.

3.2 Lake County CWPP Core Team

The initial step in developing the Lake County CWPP is to organize a core decision-making team. The members of this team have the responsibility for CWPP implementation and oversight. The Lake County – Phase II team is composed of representatives from local government, local fire authorities, and the ODF representative (Table 4). Representatives from organizations such as communities,

utilities, Chamber of Commerce, hunting clubs, water districts, and homeowners associations may choose to participate as appropriate.

Table 4 Lake County CWPP Core Team Members

Team Member	Organization	Phone Number
Bill Duke	Lake County Resources Initiative	541-947-5461
Greg Pittman	Oregon Department of Forestry	541-947-3311
Gary Brain	Silver Lake RFPD (Summer Lake)	541-943-3960
Keith Little	Silver Lake RFPD	541- 576-2579
Chuck Messner	Warner RFPD/RFPA	541-219-0635
Vince Perez	Christmas Valley RFPD	541-576-2485

3.3 Federal Agency Collaboration

Local offices of the BLM, USFS, and USFWS in Lake County will participate in the CWPP planning process as advisors. Federal agencies have a major interest in the implementation and success of the Lake County CWPP because of their vested interest in wildfire fuels management and the protection of federal lands. Wildfire does not respect property boundaries, so all fire authority organizations must work together to reduce the risk of wildfire. Federal agency advisors to the Lake County CWPP include:

- Gary Warburton, USFS (541-219-1671)
- Bob Crumrine, BLM (541-947-2177)
- Andy Goheen, USFWS (541-947-3315)

4 WILDFIRE RISK ASSESSMENT

4.1 Approach to Wildfire Risk Assessment

Field surveys, Core Team meetings, interviews, public questionnaire, and public meetings were used to obtain various types of information to assess the risk of wildfire in the Lake County assessment area. All information was gathered and analyzed by Walsh Environmental Scientists and Engineers, LLC (WALSH).

The National Fire Protection Association (NFPA) Form 1144, *Standard for Protection of Life and Property from Wildfire, 2002 Edition* was used to assess the level of risk and hazard to communities (See Appendix B for NFPA Form 1144). The evaluation consisted of rating attributes such as means of access, surrounding vegetation (fuels), presence of defensible space, topography, roofing and other construction materials, available fire protection, and placement of utilities. Scores were assigned to each element and then totaled to determine the level of risk. Low, moderate, high, and extreme hazard were determined based on the total score.

Field surveys were conducted during June and July 2006 to assess the level of risk to wildfire loss in the 10 communities. Community evaluations consisted of scoring the entire community using NFPA Form 1144. In addition, notes were taken on the type of fuels and terrain surrounding the community. These observations were made up to 1 mile from the community. Hazardous fuel situations were recorded during the surveys.

One meeting with the Core Team was convened to discuss the approach and findings of the risk assessment, and to assess wildfire risk in the County. The meeting occurred in Lakeview on June 13, 2006 to initiate the project.

Specific interviewees were members of the Core Team and others involved with fire management in the assessment area. Information obtained during the interview included such things as level of preparedness, existing equipment, level of training for volunteer staff, equipment needs, training needs, concerns, hazardous fuels and situations, and mitigation opportunities. Interviews were conducted with the following people:

- Keith Little, Silver Lake RFPD Chief
- Gary Brain, Summer Lake member of Silver Lake RFPD
- Greg Pittman, Oregon Department of Forestry
- Bob Crumrine, BLM Lakeview District
- Marty St. Louis, Oregon Department of Fish and Wildlife
- Andy Goheen, USFWS
- Chuck Messner, Warner RFPD/RFPA Chief
- RD Ruell, Walker Range FPA

- Gary Warburton, USFS Fremont National Forest

Public meetings were held on September 13 and 14, 2006 in Adel and Silver Lake, respectively. The meetings were advertised through a newspaper release, flyers, and TV and radio announcements. The intentions of the meetings were to explain the purposes of the wildfire risk assessment, present the findings of the risk assessment, provide an opportunity for the public to participate in the process, review the risk assessment findings, and comment on proposed mitigation possibilities such as hazardous fuels management and non-fuel projects. A formal presentation and wall maps were used to present the findings of the CWPP and encourage discussion among the meeting participants. Firewise brochures were available to provide information to landowners on actions that they could choose to undertake to reduce wildfire risk on their property (e.g., Appendix C). The draft CWPP was posted on the LCRI website to encourage public review and comment for a two-week period. No public comments were received on the CWPP.

Several maps were produced to assist in the fire risk assessment and also to aid in visualizing fire risks in the assessment areas (see Appendix A). The maps were produced based on geographic information system (GIS) data obtained from BLM and ODF. The CWPP calls for a baseline map to be developed that conveys information such as communities-at-risk, critical infrastructure, water supplies, utilities, and mitigation opportunities. In order to present complex information in a readily understandable way, several maps were developed at the same scale and reference. The different maps are landownership, vegetation, fire protection authorities, historic fire regime, current fire regime condition class, fire history, fire ignition potential, and OSB 360 classification (see Appendix A).

4.2 Wildfire History

Wildfires have historically occurred in the assessment area from lightning and from Native American ignitions. A natural fire regime is the role fire would play (including Native American ignitions) on a landscape in the absence of modern human intervention. Natural (historical) fire regimes are classified based on the average number of years between fires (i.e., fire frequency) and its severity (i.e., degree of vegetation damage or destruction) on the overstory vegetation. There are five historical fire regime classes that occur in the assessment area (Map 4). Fire frequency and severity varied throughout the assessment area depending on vegetation type and elevation. The most common fire regime occurred with a return frequency of 35-100 plus years and with mixed stand replacement severity (less than 75 percent of the dominant overstory vegetation replaced).

The current fire regime condition is an estimate of the degree of departure from the historic fire regime. Three classes are used to describe the current fire regime condition (FRCC) as defined in Table 5. The FRCC in the assessment area is complex (Map 5). The FRCC 2 class is the most common at 85 percent; FRCC classes 1 and 3

occurred 4 and 12 percent, respectively. For the purposes of this CWPP, the FRCC classes 1, 2, and 3 represent low-, moderate-, and high-hazardous fuel situations.

Table 5 Fire Regime Condition Class Descriptions[1]

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

[1] Source: www.frcc.gov

Wildfire occurrence in Lake County is common (Table 6, Map 6). Ignitions usually result from natural causes, although human-caused fires are common. An analysis of the fire occurrence history from 1984 to 2004 indicates a high number of fires. During the 20-year period studied, there were 375 human-caused fires and 6,874 natural-caused fires. This is an average of 362 fires per year. Approximately 5 percent of the fires were human ignited, while 95 percent were lightning-caused. Ninety-one percent of wildland fires originated on public lands. The human ignitions were caused in a variety of ways, including abandoned campfires or equipment. The most frequent cause was abandoned campfires (20 percent). Lightning fires occurred in June, July, and August, with most occurring during August. The 2002 fire season in Lake County is memorable because over 110,000 acres were burned by the Winter Ridge, Toolbox, Silver, and Grizzle Fires. These fires had a significant impact on the surrounding areas and illustrate the fact that wildfires are threats to local communities. Wildfires Lake County can be intense, but they tend to require strong winds and dry fuel conditions to burn. Fuel loading, weeds, terrain, flammable buildings, and lack of defensible spaces put communities at risk.

The following table summarizes the Lake County wildfire history from 1984 to 2004 with data obtained from the BLM Lakeview District.

Table 6 Lake County Wildfire History for the Years 1984–2004[1]

Fire Size Class (Acres)	Acres Burned	Number of Fires	Fire Ignition Source	
			Lightning	Human
A 0 – 0.25	628	5,689	5,498	191
B 0.25 – 9.9	1,867	1,389	1,234	155
C 9.9 – 99.9	7,717	118	105	13
D 100 – 299.9	3,481	19	13	6
E 300 – 999.9	2,387	5	3	2
F 1,000 – 4,999.9	32,077	20	16	4
G 5,000 – 9,999.9	141,316	9	5	4

[1] Statistics are county-wide and were obtained from the BLM Lakeview District

Even though the vast majority of wildfires in Lake County are suppressed before they burn areas larger than 10 acres, wildfire risk to communities and other values is still considerable given the number of annual fires and high level of hazardous fuels. Residents need to be vigilant with Firewise practices (Appendix C).

Ignition Risk Potential (IRP) is the potential for either lightning- or human-caused fire to start and is defined as the number of wildfires per 1,000 acres per 10 years (Map 7). The classes are low (0-0.1 fires per 1,000 acres per 10 years), moderate (0.1-1.1 fires per 1,000 acres per 10 years), and high (>1.1 fires per 1,000 acres per 10 years). The IRP varies throughout the assessment area. Sixty-nine percent of the assessment area is classified in the low IRP class, while 14 and 17 percent is classified as moderate and high IRP, respectively. The low-risk areas generally include the sagebrush and desert scrub vegetation. High- and moderate-risk areas appear to be associated with ridges and mountain tops because of lightening strikes.

4.3 Wildfire Risk to Communities

Ten communities within the assessment area were evaluated for potential wildfire risks and hazards (Table 7). Several factors in and around most communities contributed to an elevated risk for wildfire:

- No jurisdictional authority for structure protection
- Lengthy response time to communities
- Fuel loading in and around communities
- Inadequate ingress/egress
- Location of structures (i.e., in draw bottoms, south slope, etc.)
- Flammable structure building materials

The NFPA Form 1144 was used to evaluate community risks to wildfire and assign each a hazard class. The assessment focus was within the communities and the surrounding WUI. The CWPP definition of the WUI is 0.5 mile surrounding a community, unless the hazardous fuel and/or terrain situation requires an adjustment of this distance. For this NFPA 1144 assessment, the WUI was defined as 0.5 miles from the community. However, fuels were observed at least 1 mile from communities in all directions.

Silver Lake, Anna Estates, and Christmas Valley currently are the only communities in the assessment area with RFPD protection (Table 7). Summer Lake receives protection from Silver Lake RFPD on a cost reimbursable basis. An effort is underway to annex the Summer Lake into the Silver Lake RFPD. Adel and Plush are seeking to form Warner Valley RFPD and RFPA, which will provide structure and wildfire protection, respectively, for Warner Valley. The remaining communities do not have protection but may receive it on a cost reimbursement basis. Response times to communities not under RFPD protection are lengthy.

The RFPDs are in need of continued staff training and equipment upgrades to be fully effective. The RFPDs are volunteers and as such continued recruitment is necessary.

Table 7 Community Risks

Community	Fire Authority	Fire Hazard	Surrounding Fuels and Contributing Factors
Adel	No fire authority but Warner RFPD/RFA is under consideration; BLM provides wildfire protection	High	• Sagebrush, dried grass and weeds around and within town; agricultural land with dried herbaceous vegetation during late-summer and fall • Surrounding terrain • Lack of defensible space around structures • Combustible roof or siding on some structures • Presently no fire authority • Above-ground utilities
Alkali Lake	BLM provides wildfire protection but no structure fire protection	Low	• Terrain east of buildings • Combustible siding on structures • Above-ground utilities
Anna Estates	Silver Lake RFPD	High	• Juniper, sagebrush and dried grasses around and within community • Lack of defensible space around structures • Limited ingress/egress with non-surface, narrow road • Surrounding terrain • Proximity of water • Above-ground utilities
Christmas Valley	Christmas Valley RFPD	High	• Sagebrush, dried grass and weeds around and within community; agricultural land with dried herbaceous vegetation during late-summer and fall • Lack of defensible space around structures

Community	Fire Authority	Fire Hazard	Surrounding Fuels and Contributing Factors
			• Combustible roof and/or siding on many structures • Above-ground utilities
Drews Reservoir	ODF for wildfire; no structure protection	High	• Trees, sagebrush, grass, within and around community • Lack of structure defensible space • Continuous fuels between public and private lands • Above-ground utilities • Lack of street signs and house numbers • Steep, narrow, non-surfaced private roads and driveways • Lack of local fire protection authority
Fort Rock	Christmas Valley and Sliver Lake RFPDs will provide support but response times are lengthy	High	• Sagebrush and grass within and around community • Lack of defensible space around structures • Lack of non-combustible construction materials • Above-ground utilities • Lack of local fire protection authority
Plush	No fire authority but Warner RFPD/RFA is under consideration; BLM provides wildfire protection	High	• Juniper, sagebrush, dried grass and weeds in proximity to structures; and, agricultural lands with dried herbaceous vegetation during late-summer and fall • Lack of structure defensible space • Structures with combustible roofs and siding materials • Presently no fire authority • Above ground utilities
Quartz Mountain/ Drews Gap	OFD provides wildfire protection but no structure protection	High	• Overstocked timber, ladder fuels, sagebrush and dried grass on adjoining public land and on property • Lack of defensible space around structures • Continuous fuels between public and private lands • Limited ingress/egress on narrow, steep roads • Surrounding terrain • Limited water availability • Above-ground utilities
Silver Lake	Silver Lake RFPD	Moderate	• Juniper, sagebrush and grass within and surrounding community • Agriculture fields with dry herbaceous vegetation during late-summer and fall • Structures within combustible roofs and siding materials • Surrounding terrain • Above-ground utilities
Summer Lake	Silver Lake RFPD provides protection but under annex consideration	High	• Juniper, sagebrush and grass in proximity of community • Agricultural fields with dry herbaceous vegetation during late-summer and fall • Lack of defensible space around

Community	Fire Authority	Fire Hazard	Surrounding Fuels and Contributing Factors
			structures • Surrounding terrain • Structures within combustible roofs and siding materials • Above-ground utilities

Eight of the 10 communities received a high hazard rating because of issues with hazardous fuels proximity, the use of flammable construction material, inadequate emergency ingress and egress, the lack of defensible space around structures, and the proximity to slopes greater than 31 percent. The development of defensible space around structures would lower the fire-hazard rating to moderate for many communities. The risk of fire starting on private lands and burning onto public lands or public lands burning onto private lands is high for all communities except Alkali Lake.

Dried grass and weeds were prevalent in and around all communities. Dried grass and weeds are a serious fuel concern during the late-summer and fall months. These flashy fuels are highly flammable, cause fire to spread rapidly, and resist suppression. Grasses and weeds should be mowed or grazed in the late summer to reduce the risk of wildfire.

The nature of the wildland fuel (i.e., vegetation) around a community will influence its risk to wildfire. Priority fuels management must first occur within the WUI; however, fuels specialists must also consider hazardous fuels situations for several miles away from the community. Wildfire can spread rapidly given flammable fuels (e.g., juniper, dried grass, and sagebrush), windy conditions, and sloping terrain. The FRCC was used to assess hazardous fuel conditions (Map 5).

4.4 Oregon Senate Bill 360 Classification

Oregon forestland – urban interface lands are classified using weather, topography, and fuel hazards (Table 8). ODF classifies the weather factor for the assessment area (all of Lake County) as high hazard or class 3. Class 1 and class 2 weather hazards are low and moderate, respectively. The weather hazard is based on the number of days per season that forest fuels are capable of producing a significant fire event. The topography hazard is classified as low (class 1) or high (class 2) for slopes <25 percent or >25 percent, respectively. The vegetation hazard is based on fuel attributes. For this assessment, the FRCC classes represent low (class 1), moderate (class 2), and high (class 3) hazard.

Table 8 Classification of Forest – Urban Interface Lands (OSB 360)

Natural Vegetative Fuel Hazard Factor Value	Wildfire Weather Hazard Factor Value					
	1		2		3	
	Topography Hazard Factor Value					
	1	2	1	2	1	2

1	Low	Moderate	Moderate	Moderate	High	High
2	Moderate	Moderate	Moderate	Moderate	High	Extreme
3	Moderate	Moderate	Moderate	High	Extreme	Extreme

A total of 3,879,368 acres were classified according to the OSB 360 system (Table 9, Map 8). The FRCC classification does not include agricultural lands. All possible classes within the severe weather hazard category are found within the Phase II assessment area of Lake County. Eighty-two percent of the area is categorized as high-wildfire hazard and 18 percent of the area is categorized as extreme-wildfire hazard. Fire ignition-risk potential for the assessment area is generally low except on ridges and mountain tops, which are moderate to high. The Wildfire Weather Hazard Factor is high throughout the County. Therefore, the risk for wildfire is high and hazardous fuels mitigation and development of defensible spaces is warranted for communities and structures. Additionally, fuels management programs are needed to restore FRCC 3 vegetation to the lesser risk FRCC 1 within 1 to 3 miles from communities.

Table 9 Number of Acres and Percent that Occur in Each Hazard Class for Non-Agricultural Land

Natural Vegetative Fuel Hazard Factor Value (Fire Regime Condition Class)	Topography Hazard	
	1	2
1	111,416 (3)	22,993 (<1)
2	3,057,56 (79)	216,297 (6))
3	435,391 (11)	35,702 (<1)

5 WILDFIRE MITIGATION PLAN

5.1 Approach to Mitigation Planning

Wildfire mitigation means to reduce the chances of its occurrence or the loss of structures and other important community values. Hazardous fuels management, non-fuels mitigation projects, and public outreach are ways to mitigate the risk of wildfire. For maximum effectiveness, the three should be implemented together.

Hazardous fuels and non-fuels mitigation projects appropriate for the 10 communities in the assessment area were identified based on interviews with wildland fire and fuel experts and field surveys conducted when assessing community risk. Fuels mitigation projects were identified and prioritized based on proximity to community, hazardous fuel load and continuity, terrain, and professional experience.

This Lake County CWPP is a planning document—it is not a legal document. The wildfire mitigation recommendations are for planning purposes—implementation is not required. Actions on public lands will be subject to federal, state, and county policies and procedures such as adherence to HFRA, National Environmental Policy Act (NEPA), and Oregon Forest Practices Act (OFPA). Action on private land may be required to be in compliance with policy such as OFPA, OSB 360, county zoning laws, and building codes. However, to be most effective in reducing wildfire risk, cooperation among federal, state, county, and private landowners is essential. Wildfire does not respect land ownership boundaries. Any action taken will be limited in its effectiveness if either public land managers or private landowners choose not to take similar actions on their property.

5.2 Suggested Actions to Achieve Desired Results

The CWPP provides recommendations for Firewise defensible space and construction, hazardous fuels management, public education and outreach, infrastructure needs, water availability, and emergency-vehicle access. There is only so much a RFPD or other fire protection authority can do to protect individual life and property from wildfires. Private landowners must take responsibility for wildfire risk reduction on their properties. Therefore, the most effective form of mitigation is education and outreach. The purposes of a community-wide education program are to: 1) educate the public to the risks of wildfire to human welfare and property; 2) urge property owners to take responsibility in reducing the risk of wildfire and to create defensible space around their structures; 3) teach the benefits of different types of fire resistant building materials; and 4) increase awareness of the natural role of low-intensity fire in grassland and woodland ecosystems and the benefits from reducing hazardous fuel loads. Education to improve public awareness makes other mitigation programs possible.

Firewise defensible space and construction: Defensible space is at minimum, a 30-foot fuelbreak around a structure (see Appendix C). The purpose of the defensible space is to reduce the rate of fire spread and intensity so that it may burnout or allow firefighters a chance at suppression. Defensible space also provides room for firefighters to maneuver safely around a structure. Firewise construction calls for the use of non-flammable building materials to the extent possible. The minimum is a non-flammable roof. The combination of a defensible space and non-flammable roof may significantly reduce the risk of structure loss during a wildfire.

Hazardous Fuel Management: Hazardous fuels occur on public and private lands throughout the assessment area. The chance that a wildfire will start on public lands and burn onto private lands and visa-versa is high. Therefore, federal, state, and private landowners must collaborate to effectively reduce the risk of wildfire. Proposed management actions include the development of strategically located fuelbreaks and the manipulation of FRCC 3 and FRCC 2 vegetation reduce its risk to a FRCC 1. The objective of fuels management is to breakup fuel continuity and reduce the buildup or flammability of hazardous fuels to alter fire behavior (i.e., rate of spread and burning intensity) and allow firefighters a chance at suppression. Long-term and project-specific planning is required to ecologically, economically, and effectively manage hazardous fuels. Specific fuels projects are described in Section 5.3.

There are a variety of tools available for hazardous fuel management including prescribed fire, mechanical removal, hand crews, herbicides, livestock grazing, or a combination. Specific planning is needed for each treatment area to determine the best ecological and economical approach. Treatments will depend on fuel attributes location, terrain, spatial extent, and proximity to values at risk. Hazardous fuels management will potentially result in large amounts of woody plant materials that will need disposal. Appropriate disposal practices will depend on the amount of woody material generated and they may include spreading the debris over a large area, burning, chipping and spreading, or burying in a landfill facility. Economical use of the woody debris such as small-diameter wood products or biomass energy production should be explored. Livestock grazing could be used to reduce herbaceous plant materials to the extent possible.

All hazardous-fuel treatments would be implemented following federal, state, and county policy. Post-treatment management may be necessary to ensure that a productive plant community will establish instead of weeds. Post-treatments may include seeding with desirable grasses and forbs and/or erosion control devices. Monitoring will determine the need for additional management.

Hazardous fuels management can be resource intensive. Coordination with the BLM, USFS, or ODF and project planning will allow resources to be used in the most efficient manner possible. This CWPP will position the County to apply for grant money for fuels reduction and other mitigation projects (see Section 7.4)

Water Storage Facilities: Within the assessment area, there are numerous streams, ponds, lakes, and irrigation systems available as water sources for wildfire suppression. All water-refilling sites should be identified, mapped, prepared, and maintained on an annual basis.

Access: Many of the routes to the structures in the assessment area are not adequate to provide easy access. There is typically a one-lane driveway in and out of the property and sometimes with a locked gate. In the areas where access is difficult, encourage property owners to have fire fighting equipment and water availability. Identify properties with access issues and work with owners on improving access for firefighting personnel. Fuel along egress/ingress routes need to be maintained in a similar manner as the defensible space around structures.

Response Time: Improving the infrastructure and training of RFPDs will improve response time to an incident. Expanding the jurisdictions of existing RFPDs and/or the creation of new ones as described in Section 5.4 will also improve response times. The quality of wildfire response is dependent on staff training, distance to fire, equipment, personnel, facilities, and current deployment.

5.3 Priority Hazardous Fuel Projects

Based on the interviews with community officials, and field observations, the following prioritized actions should occur in the assessment area:

- Encourage the development of defensible spaces around homes and other important structures throughout the assessment area. Recent research has demonstrated that dwellings with a non-flammable roof and defensible space have a significantly higher probability of surviving a wildfire than those lacking one or both defense mechanisms. Defensible space is a priority.

- Develop strategically located fuelbreaks around Adel, Anna Estates, Christmas Valley, Drews Reservoir, Fort Rock, Quartz Mountain/Drews Gap, Plush, Silver Lake, and Summer Lake communities as appropriate given terrain, fuels, and weather considerations.

- Develop shaded fuelbreaks between public and private lands near the communities of Adel (specifically the interface of the BLM Wilderness Study Area), Drews Reservoir, and Quartz Mountain/Drews Gap.

- Fuels classified as FRCC 3 and FRCC 2 should be managed to restore forest or rangeland vegetation to FRCC 1 within 1 to 3 miles of communities.

Hazardous fuel management has already occurred at numerous locations in Lake County. The following are examples: Tree thinning, ladder fuel removal, and tree limbing has occurred at Booth State Park in 2005 by ODF. Prescribed fire is planned for fall 2006. BLM conducted the Chewaucan fuels reduction project near Paisley as

WUI and watershed enhancement. BLM contracted vegetation mowing along roads in Warner Valley in 2006. ODFW conducts prescribed fire on up to 2,000 acres annually at Summer Lake Wildlife Refuge. BLM is active in using mechanical treatments and burn piles to create buffer zones around high use areas and to thin juniper stands in proximity to critical areas such as Coleman Rim. Additionally, farmers and ranchers conduct prescribed fire for agricultural purposes and this practice helps to break fuel continuity.

The proposed hazardous fuel projects are both general and specific because of locations and timing. General guidelines are those following catastrophic events such as wildfire, insect kill, and wind and resulting in a large accumulation of hazardous fuels. Appropriate fuel treatments such as prescribed fire, mechanical chipping or mastication, or a combination that would reduce the hazard to acceptable levels. The economical use of logs and small-diameter materials would be explored. Planning for these projects would occur on a case-by-case basis and in collaboration with interested stakeholders. However, the focus should be on the interface of private and federal lands.

The following are specific hazardous fuel projects proposed for the assessment area. The projects are associated with communities and are presented in priority based on wildfire risk, values at risk, structure flammability, and resources protected.

The first line of defense is grass and weed abatement, and defensible space around structures. Strategically placed fuelbreaks located within the WUI of the community would be constructed. Since winds are from the south-southwest during the fire season, fuelbreak establishment could extend out approximately 1–3 miles in this direction if community-specific reconnaissance justifies it. Given ideal fuel and weather conditions, wildfire can move rapidly through dry grass, weeds, and shrubs.

Critical terrain such as Winter Ridge should receive special consideration. Shaded fuelbreaks along the ridge and base of Winter Ridge would provide protection to Silver Lake and Summer Lake. The fuelbreaks would provide a chance for the fire to be controlled. However, firebrands may be carried by wind over the fuelbreaks and ignite spot fires in or near communities or structures—thus, the need for dried grass/weed abatement and defensible space installation.

The intent of strategically placed fuelbreaks is to breakup the continuity of fuel such as juniper, sagebrush, grass, and weeds to reduce wildfire rate of spread and severity to allow firefighters a chance at suppression. The general locations of the fuelbreaks are presented below. However, these locations are just suggestions and on the ground reconnaissance is necessary to identify specific locations. Terrain, wind direction, and fuels need consideration when establishing fuelbreaks. Fire behavior models such as BehavePlus2, FARSITE, and FlamMap can help predict fuelbreaks locations given historic weather patterns, terrain, fuels, and proposed fuels management. The software and user manuals for these fire behavior models are available at http://farsite.org.

Federal and state fire managers will have to work with private landowners through cooperative agreements in some areas to establish fuelbreaks.

Compliance with federal and state policy will be followed for fuelbreak construction and funding needs to be secured. These steps will take time. However, wildfire mitigation can occur immediately within all communities with the construction of defensible spaces around structures and mowing grasses and weeds as they dry in the late-summer. These actions alone will greatly reduce the risk of wildfire to communities.

Fuelbreaks would be constructed using hand crews, mowers, brush choppers, livestock grazing, prescribed fire, or hydro-axe depending on the vegetation type and terrain. Appropriate best management practices would be followed in fuelbreak implementation. The fuelbreaks would be at least 30–50 feet wide or wider on slopes with length varying according to placement and terrain. The intent of the fuel treatments is to reduce the kind and/or amount of vegetation and to minimize soil disturbance. Fuelbreaks would not restrict appropriate land uses such as livestock grazing. Fuelbreak development could enhance wildlife habitat by increasing edge effect and forage. Care is needed to ensure that vegetation removal does not disturb soils so fuelbreaks do not become potential habitat for annual weeds, such as cheatgrass and tumble-mustard. Annual weeds are flashy fuels that would exacerbate fire spread. For this reason, the use of heavy equipment should be minimal unless the seeding of perennial grasses occurs after treatment. Likewise, post-fire rehabilitation and monitoring will be necessary on-site where prescribed fire is used. All sites will require yearly monitoring by the appropriate agency to ensure that the fuelbreaks are functional. Fuelbreak maintenance would be achieved by mowing, livestock grazing, hand crews, or herbicide use as appropriate. The seeding of native grasses and forbs may be necessary to abate weed establishment and control erosion.

In areas where sagebrush or juniper ground cover is greater than 50 percent, efforts would be to reduce the cover to 15–25 percent. Hand crews or a shrub chopper could be used for this purpose. This level of sagebrush or juniper cover would still provide adequate wildlife habitat for sagebrush dependent wildlife such as sage grouse and provide soil protection. Established perennial grass stands should be mown or grazed annually to a height of not greater than 6 inches. Mowing or grazing during the late summer would allow the plants to set seed and maintain vigor. The seeding of native grasses and forbs may be necessary to abate weed establishment and control erosion.

All of the communities except Drews Reservoir, Quartz Mountain/Drews Gap, and Anna Estates are surrounded by parcels of irrigated and non-irrigated hayfields, and wetlands. The hayfields and wetlands may provide wildfire protection because they breakup the continuity of wildland fuels such as juniper, sagebrush, native grass, and weedy plants like cheatgrass. However, during late summer and fall, the hayfields and some wetlands may dry and become hazardous fuels. These fuels could be mowed or grazed to reduce their hazard depending on proximity to structures and other values.

The seeding of native grasses and forbs may be necessary to abate weed establishment and control erosion.

Adel – Reduce fuel loads on the sagebrush covered slopes south and east of Adel and Deep Creek. Deep Creek will serve as a natural firebreak but woody debris within the riparian vegetation may need to be removed. Defensible space and non-flammable roofs should be encouraged for all structures and houses. Dried grass and weed abatement by mowing or grazing is needed in and around the community. Tree limbs should be trimmed away from structures. Dead leaves and small branches should be cleared from roofs. Embers from wildfire could ignite dried vegetation and cause spot fires in town. Hayfields should be mowed in fall to breakup fuel continuity. A fuelbreak along the interface of the BLM Wilderness Study Area and private land is needed.

Alkali Lake – The need for fuels management around Alkali Lake is minimal. Weeds should be mowed in the compound.

Christmas Valley – West and south of the community strategically placed fuelbreaks should be considered to breakup sagebrush continuity within 1 mile of town. Defensible space and non-flammable roofs should be encouraged for all structures and houses. Dried grass, sagebrush, and weed abatement by mowing or grazing is needed in and around the community. Embers from wildfire could ignite dried vegetation and cause spot fires in town. Hayfields should be mowed in the fall to reduce this hazard.

Drew Reservoir – Defensible space around structures is critical to reduce fire risk. Shrubs and trees along many private roads/driveways need to be reduced to allow emergency vehicle access. The removal of ladder fuels and limbing larger trees to a height of at least 10 feet outside of defensible spaces would be beneficial. The strategic development of shaded fuelbreaks along the interface of private and public lands needs to occur.

Fort Rock – A 50 to 100-foot wide fuelbreak needs to be established around the historic Homestead Village. Sagebrush and rabbitbrush cover should be reduced to 15-25 percent. Grass cover should be mowed or grazed. Cheatgrass abatement is needed. This level of protection is necessary because the buildings are constructed of highly flammable wood siding and roofs. Strategic fuel management around the Fort Rock is needed. Large blocks of sagebrush occur north and south of town, but many are intermixed with irrigated hayfields which breakup its continuity. However, sagebrush stands in proximity of the town should be managed to maintain shrub cover between 15-25 percent and keep grasses mowed. Cheatgrass abatement needs to occur in these stands by the use of approved herbicides and/or grazing. Reseeding with native grasses and forbs would reduce the chances of cheatgrass re-establishment.

Anna Estates – To break up fuel load continuity, sagebrush stands with ground cover greater than 50 percent could be reduced to 15-25 percent cover. Cheatgrass

abatement by the use of approved herbicides and/or grazing is necessary to reduce fuel loads in the sagebrush under story and to inhibit its spread in the area. Reseeding with native grasses and forbs would reduce the chances of cheatgrass re-establishment.

Plush – Hart Mountain National Antelope Refuge occurs east of Plush. Lightening caused fires occur frequently on its western face, but these fires should not pose a risk to Plush. Defensible space around structures is critical to reduce fire risk from firebrands. Dried grass and weeds during late summer needs to be mowed or grazed within and surrounding the community. Cheatgrass, annual mustard and other weedy vegetation abatement is needed in greasewood and sagebrush stands, especially within 1 mile of town on the area to the north and west. Greasewood is not highly flammable but sagebrush is flammable. Even though greasewood is a low-flammable fuel, a weedy understory could carry fire through the stand. Strategically placed fuelbreaks on the north and west of town would breakup the natural fuel load. Hayfields could be mowed in the fall to also provide a break in fuel continuity. In addition, a cell tower is needed to facilitate cell telephone communication during wildfire incidents and fuel management projects.

Quartz Mountain/Drews Gap – Shrubs and trees along many private roads/driveways need to be thinned and limbed-up to allow emergency vehicle access. The removal of ladder fuels and the limbing of trees to at least 10 feet height outside of defensible spaces would be beneficial. Fuel reduction between public and private lands is also recommended to reduce the risk of fire spreading to and from public and private lands.

Silver Lake – This community is surrounded by flammable and low-flammable vegetation. Flammable fuels include sagebrush, juniper and dry grasses. Wetlands and willow are low-flammable fuels. Meadows may become flammable as they dry in the fall. Site specific planning is needed to strategically identify areas where juniper and sagebrush cover needs to be reduced within and up to one mile surrounding the community. Fuelbreaks should be evaluated for installation at the crest and base of Winter Ridge. Native grasses as they dry in late-summer should be mowed within the community and along roads. The construction of defensible space around structures is needed as firebrands from fires on the Ridge could blow onto the community.

Summer Lake – This community is surrounded by flammable and low-flammable vegetation. Flammable fuels include sagebrush, juniper and dry grasses. Wetlands and willow are low-flammable fuels. Site specific planning is needed to strategically identify areas where juniper and sagebrush cover needs to be reduced within the community and up to one mile surrounding it. Shaded fuelbreaks should be established on Winter Ridge to reduce the chance of fire running down slope with “sun downer” winds. Native grasses as they dry in late-summer should be mowed within the community and along roads. The construction of defensible space around structures is needed as firebrands from fires on the Ridge could blow onto the community.

5.4 Non-fuels Mitigation Needs

The proposed non-fuels mitigation needs are on-going and need to occur concurrently with hazardous fuels management. The following are the proposed non-fuels mitigation needs presented in order of priority:

Fire Protection Authority Communication and Coordination – Continue the cooperation and communication among LIFC, the RFPDs, and private interests concerning wildfire issues. Collective action is needed to reduce the threat of wildfire through implementation of this plan. This Lake County CWPP should be tiered to LIFC and agency specific fire management plans. Yearly meetings and/or newspaper releases are needed to inform the public of projects implemented in the last year and of proposed action for the near future. This type of teamwork and coalition building among federal, state, counties, and private interests is supported by the National Fire Plan and HFRA.

Cell Tower Installation for Plush – A cell tower is needed to facilitate cell telephone communication during wildfire incidents and for other emergencies.

Community Firewise Outreach – The purposes of the community Firewise program are to:

- Provide information on ways to reduce human-caused fires
- Urge landowners to take action to construct defensible space around their homes and structures (Appendix C)
- Encourage the use of non-flammable roofs and siding on new construction and the retrofit of existing houses
- Increase the awareness of the natural role of fire in ecosystems and the need for hazardous fuel management

An annual "Firewise Clean-Up Week" held in the spring and/or in October in association with National Fire Prevention Week is recommended to encourage residents to create defensible space around their residence. In conjunction with the Firewise Clean-Up Week, specific demonstration projects may be designed and utilized to educate residents about longer-term investments they could make to increase fire safety. The clean-up week could occur in conjunction with public demonstrations, education programs, and speakers on wildfire and Firewise practices.

Strengthen the Rural Fire Protection Districts – The RFPDs in the assessment area need to be strengthened and expanded to provide protection to all communities. Silver Lake and Christmas Valley are the only RFPDs in the assessment area. Plush and Adel will be protected by the anticipated formation of Warner Valley RFPD. Summer Lake should be annexed into the Silver Lake RFPD. A Fort Rock RFPD could be formed or this community should be annexed into the Silver Lake or Christmas Valley RFPDs. Federal and state fire management agencies have professional staffs and are equipped for wildfire and fuels management in their area of jurisdiction. However, the RFPDs

need support given that they are volunteer organizations. The same level of wildfire preparedness cannot be expected as with LIFC; however, the RFPDs provide a valuable service for residents. Efforts should be made to expand the RFPDs through public awareness, economic aid appreciation, proper equipment, and training. All members of the RFPDs should have basic training in wildfire fighting procedures, fiscal management, and wildfire preparedness. Support for the RFPDs should come from the County and LIFC. The RFPDs would be responsible for Firewise outreach in their respective areas. The RFPDs currently have sufficient vehicles needs as first responders. Improved communication among the volunteer firefighters and with the federal and state agencies is needed. Handheld, LIFC compatible radios would be appropriate for this need.

Creation of Rangeland Fire Protection Associations – Currently, the residence of Warner Valley are negotiating a RFPA with ODF. RFPAs should also be considered for Silver Lake, Summer Lake, and Christmas Valley. RFPAs have demonstrated their value in Harney County. RFPAs operate under ORS 477-305 to provide wildfire protection on private lands within their jurisdiction. The RFPAs are non-profit organizations with volunteer membership that provide wildfire protection, but do not provide structure protection. Dues and grants are sources for funding. Equipment consists of donated, loaned, or secured-by-grant tenders and brush trucks. Volunteers are trained at the Firefighter I level.

Water Sources – Create and maintain water sources for private forested areas and communities. Possibilities include irrigation system hookups and pump sites at lakes and streams. The water sources should be mapped and maintained annually.

5.5 Protection of Homes and Structures

The main principle concerning structure ignitability is that the structure is a source of fuel and may burn just as readily as juniper or sagebrush. Structure loss to wildfire can occur by conduction, convection, or firebrand. Conduction is fire flames coming in direct contact with the structure. Convection occurs when the structure becomes hot enough to combust without direct flame contact. Firebrands are embers or burning pieces of limbs, leaves, or twigs that are blown onto a structure. Firebrands may lodge in crevices of roofs, eaves, or side-paneling and smolder for several days before combustion. Firebrands ride on air currents resulting from the fire and may be carried over one mile from the fire front. Recent studies have shown that structure ignitability is the principle cause of structure loss during a wildland fire and not the character of the wildland fuel or fire intensity *per se*.

Fire spread occurs by a propagating process, not as a moving mass such as a flood. For fire to spread, material such as a tree or shrub in the flame front must meet the conditions of ignitability. The conditions are the presence of oxygen, flammable fuel, and heat. Oxygen in a wildland fire situation is almost never limiting. Heat is supplied by the flame front. Potential fuel in the path of the flame that meets the conditions of combustion will ignite. If fuel does not meet the conditions of combustion, it will not

ignite. This explains why some trees, patches of vegetation or structures may survive a wildland fire and others in the near vicinity are completely burned.

Structure ignitability, not the nature of wildland fuels, is the main cause of structure loss during wildfires. Critical factors that increase the chances of structure loss are flammable roofing materials (e.g., cedar shingles) and flammable vegetation (e.g., ornamental trees, shrubs, and debris/wood piles) near the structure. A wildland fire does not burn a structure unless it meets fuel and heat requirements sufficient for ignition and continued combustion. With this understanding of fire behavior, the flammability of the structure and its immediate surroundings can be managed to reduce the chances of ignition and loss during a fire incident. The primary and ultimate responsibility for structure protection during wildland fire lies with the structure owner. The following are two actions that home owners can take to greatly reduce the chances of wildfire burning their structures:

- Develop a defensible space around the structure that is at least 30-feet wide, use low-combustible plant material for landscaping, and remove wood piles next to structures (see Appendix C). If the structure occurs on a slope, the defensible space must be greater on the downslope side of the house corresponding to the steepness of the slope.

- Use non-combustible construction material to the extent possible. The minimum is use of non-combustible roofing material.

5.6 Need for Action

Wildfire occurrence in the assessment area is common. Ignition usually results from lightning, although human-caused fire potential is high. The hazard of wildland fire is high because of the ladder fuels and overstocked ponderosa pine stands, juniper invasion into sagebrush and grasslands, overstocked sagebrush stands, and the pervasiveness of invasive weeds. Fire risk is extreme during the late-summer and fall months when grasses and weeds are dry. These flashy fuels are ignited easily, burn rapidly, and resist suppression. Many structures are at risk because owners do not follow Firewise guidelines for protection (Appendix C).

Both general and specific actions are needed to mitigate wildfire risk, improve forest and rangeland health, and enhance vegetative diversity. General actions include the adherence to Firewise practices on a continual basis. Specific actions would be the establishment of fuelbreaks and restoring FRCC 3 vegetation to the historic norm of FRCC 1 by improving forest and rangeland health. Also, sagebrush, weeds, and grasses growing within and around communities, structures, and along roads should be maintained as appropriate.

6 EMERGENCY OPERATIONS

6.1 County Wildfire Preparedness and Outreach

Lake County should continue its efforts to strengthen the RFPDs and work closely with the federal and state agencies. The RFPDs will continue to need wildfire training, as well as updating of equipment. Emergency evacuation routes and evacuation centers need to be in place. Good communication and cooperation among all fire authorities are essential to reducing wildfire risk throughout the County. The Lake County CWPP should be tiered with LIFC and agency-specific fire management plans.

County preparedness occurs before a wildfire emergency through the use of appropriate Firewise building codes for new construction and encouragement of retrofits for existing structures. Briefly, these codes include the use of non-flammable building materials, the creation of access roads suitable for emergency vehicles, the preservation of available water for structure protection, and the development of a defensible space around structures.

The purpose of a community-wide education program is to: 1) educate the public to the risks of wildfire to property and life (during the summer months); 2) urge property owners to take responsibility in reducing the risk of wildfire and to create defensible space around their structures; 3) inform the public as to the benefits of different types of fire resistant building materials; and 4) increase awareness of the natural role of low-intensity fire in grassland and woodland ecosystems and the benefits of thinning fuel loaded areas. Citizen involvement in wildfire mitigation in and around communities is a necessary element for success. Public education and outreach is an effective means of engaging the public in the process of reducing risks to a community, can help identify problems and solutions for both federal and private landowners, and can offer opportunities for partnerships and agreements. Such education and outreach has been shown to motivate homeowners to take Firewise measurements around their individual properties, thereby contributing to the reduction of wildfire hazards in a community.

6.2 Emergency Procedures and Evacuations Routes

In the event that the County Sheriff orders a community to evacuate because of threatening wildfire, residents should leave in an orderly manner. The preferred evacuation routes would be proclaimed by the Sheriff.

Before residents leave, they should take every precaution to reduce the chance of structure loss as time allows. Human safety is the number one concern in an evacuation. Protective actions could include thoroughly irrigating the defensible space, watering down the roof, removing all debris from rain gutters, and removing all flammable materials 30 feet or more from the house such as wood piles, leaves, debris, and patio furniture. Windows and doors should be closed but not locked. Other

openings should be covered. A ladder should be placed for roof access by firefighters. A fully charged hose that reaches around the house should also be available for firefighter use.

Families should have in place pre-arranged meeting locations and phone numbers to call in case family members are separated. Families should take with them important papers, documents, pets, food, water, and other essential items. The house should be monitored for smoke for several days after return because embers may lodge in small cracks and crevices and smolder for a long time before flaming.

Evacuation routes for each community are listed in Table 10.

Table 10 Emergency Evacuation Routes

Community	Evacuation Route
Adel	State Highway 140
Alkali Lake	Federal Highway 395
Anna Estates	State Highway 31
Christmas Valley	County Road 510
Drew Reservoir	Dog Lake Lane
Quartz Mountain/Drews Gap	State Highway 140
Plush	Plush Highway
Fort Rock	County Road 510
Silver Lake	State Highway 31
Summer Lake	State Highway 31

6.3 Wildfire Suppression Operations

Normally all wildfires in Lake County are aggressively suppressed regardless of cause. However, WFU could be authorized on a case-by-case basis as conditions warrant, to achieve specific management goals. The first responders are the closest firefighting force. A Mutual Aid Agreement exists among the various County fire authorities to aid and support suppression activities as appropriate. Fire authorities responsible for wildfire suppression in the assessment area are:

- Lakeview Interagency Fire Center
- Silver Lake RFPD
- Christmas Valley RFPD

- Walker Range FPA
- Warner RFPD/RFPA is under consideration

Air and land are the two modes for initial wildfire attack. The location of fire dictates the mode of initial attack. An air attack would most likely occur in roadless or limited access areas. The BLM, USFS, and ODF have air attack resources at their disposal. Smoke jumpers are stationed at Roseburg and Redmond. A retardant base is located in Roseburg. Air tanker bases are located in Klamath Falls and Medford. All of these fire support facilities are fully capable of initial attack on fires that are not accessible by roads.

Initial attack on land to suppress a wildfire would depend on its location in the assessment area. Usually the closest force is detailed to the fire. A RFPD could provide a first response to wildfire occurring in their jurisdiction, while LIFC fire crews would respond to wildfire on BLM, USFS, and private forestlands. If the wildfire escapes initial attack, then the other fire authorities may be called to action through the Mutual Aid Agreement. If conditions warrant, the federal and state agencies can call in more support from other areas. The LIFC has 28 engines stationed throughout Lake County. Also, ODF has additional engines stationed at Klamath Falls. Federal resources are available through the Northwest Coordination Center (NWCC) located in Portland. State resources are coordinated through the ODF-Salem Coordination Center. ODF has an agreement with Oregon Department of Corrections for the use of inmates to fight fires and support fire suppression activities. There is also a very large private work force that can be activated through contractual arrangements to support wildfire suppression. Contracting equipment consists of dozers, Lowboys, water tenders, engines and 20-person crews, and personnel with specialized talents.

Extended attack would be handled through an Incident Management Team (IMT). The IMT has the ability to activate all resources needed to suppress wildfire. The IMT would set up a small city type camp with the capabilities of feeding and housing all crews. The IMT supports the crews with equipment and supplies to safely suppress the fire. The important factor is that the IMT uses outside agency help and contractors, so local firefighting personnel can be released to their regular initial attack duties. The size of the IMT and suppression forces depends on many aspects such as fire size, location, management objectives, and values at risk. The Central Oregon IMT, Blue Mountain IMT, Oregon Department of Forestry IMT, and Pacific Northwest National IMT are available and partially staffed by local agency personnel.

Structure fires are handled much differently than wildfires because specialized training and equipment are needed. The Silver Lake and Christmas Valley RFPDs are trained and authorized for structure fire fighting. The federal agencies are not trained or equipped for structure fire suppression. Although federal and state agency personnel are not trained, equipped, or organized to fight structure fires, they will assist the fire

departments in protecting exposures and surrounding vegetation by cleaning around houses, setting up pumps, and locating and constructing fire lines.

In the event that numerous structures are threatened by wildfire, the County can request the Governor to declare an emergency and invoke the Conflagration Act. This will make available additional resources to protect structures; however, all local structural resources must first be depleted.

7 LAKE COUNTY CWPP – PHASE II MONITORING AND EVALUATIONS

7.1 CWPP Plan Adoption

Meetings were convened on September 13 and 14, 2006 at Adel and Silver Lake to present the Lake County CWPP – Phase II to the Core Team, fire authorities, stakeholders, and public. A 14-day public response period occurred before the CWPP was finalized and presented to the Core Team.

The Lake County CWPP – Phase II provides a foundation and resources for understanding wildfire risk and opportunities to reduce potential losses from wildfire. Individual communities, RFPAs, and private landowners can take action by developing specific fire plans or by participating in countywide activities for prevention and protection.

HFRA and FEMA Disaster – Mitigation Act of 2000 require adoption of this plan by the Core Team and Lake County commissioners. This plan will enable the County to be competitive for hazardous fuels and non-fuels mitigation funding that may assist with its implementation. Furthermore, adoption of this plan highlights the partnerships among fire districts, local government, community-based organizations, and public agencies.

7.2 Sustaining CWPP Efforts

Implementing and sustaining the CWPP is the key to success. This is the responsibility of the Core Team. Building partnerships among community-based organizations, fire protection authorities, local governments, public land management agencies, and private landowners is necessary in identifying and prioritizing measures to reduce wildfire risk. Maintaining this cooperation is a long-term effort that requires the commitment of all partners involved. The CWPP encourages citizens to take an active role in identifying needs, developing strategies, and implementing solutions to address wildfire risk by assisting in the development of local community wildfire plans and participating in countywide fire prevention activities.

Lake County is committed to supporting fire authority protection efforts, both short- and long-term. The County will continue to provide support in maintaining county-wide risk assessment information and emergency management coordination. The Core Team will work on implementing the fire plan by working with fire authorities, community organizations, private land owners, and public agencies to coordinate fuels reduction and other mitigation projects.

7.3 CWPP Oversight, Monitoring, and Evaluation

The Lake County Core Team will be responsible for CWPP monitoring and evaluation through regular meetings, public involvement, and coordination with all fire protection authorities (Table 11). Monitoring is the collection and analysis of information to assist with decision-making and accountability, and to provide the basis for change. Evaluation will include the effectiveness of past fuels reduction and non-fuels mitigation projects and recent wildfire suppression efforts. Over time, monitoring and evaluation measures will progress in a way that will determine if the CWPP goals and objectives are being obtained.

Table 11 Monitoring and Evaluation Tasks

Objective	Tasks	Timeline
Risk Assessment	• Use reliable data that is compatible among the partner agencies • Update the CWPP as new information becomes available • Continue to asses wildfire risk to communities and private landowners	Annual Annual Biennial
Fuels Reduction	• Identify and prioritize fuels treatment projects on public and private lands • Track fuels reduction and defensible space projects on private land • Monitor fuels reduction projects on evacuation routes • Track grants and other funding sources and make appropriate application	Annual Biennial Annual On-going
Emergency Management	• Review suitability and the need for fuels reduction along evacuation routes	Annual
Public Outreach	• Plan and hold Firewise education week • Provide Firewise pamphlets at public events • Evaluate techniques used to motivate and educate private landowners.	Annual Annual Annual

7.4 Funding and Technical Resources

Financial resources that provide support for various wildfire mitigation action items include various state and federal grants administered though ODF, BLM, the Natural Resource Conservation Service, and FEMA. Some funding sources are not targeted at fuel management, but often times multiple resource management objectives can still be achieved when the proposal's focus is on only one objective. Funding requests should be coordinated with ODF, BLM, and the USFS. Potential funding sources include, but are not limited to, the following:

- **Rural Fire Assistance:** Assistance is funded 90/10 by USFS grants to state foresters.

- **Federal Excess Property:** USFS equipment is loaned to state foresters. Recipients include state forestry programs and volunteer fire services.

- **Economic Action Programs (EAP):** A USFS, state, and private program that can assist in diversification for uses of forest products, including utilization of hazardous fuels byproducts; 80 percent federal funding, 20 percent nonfederal funding (http://www.fs.fed.us/r3/spf/community/).

- **Assistance to Fire Fighters:** The FEMA and US Fire Administration Program can improve fire fighting operations, services, and equipment; 90 percent federal funding, 10 percent nonfederal funding (www.usfa.fema.gov).

- **Pre-Disaster Mitigation Program:** A FEMA program delivered through the state's emergency management agency to be used for emergency management and assistance to local governments to develop all hazard mitigation plans.

- **Hazardous fuels reduction grants** for south-central Lake County can be combined from developments in the County and applied for though ODF. Grant administration costs should be included into countywide grant requests.

The following information was summarized from "Incentive Programs for Resource Management and Conservation" (OSU Extension Publication #EC1119) and other sources. This lists the major incentive programs available to assist communities and landowners with the management of their lands. These programs are not limited to the issues of Communities at Risk and are able to provide similar types of cost share opportunities on private lands in all areas of south-central Lake County. Landowners need to check with the participating agency for applicability to their property and needs:

- **Forest Stewardship Program (FSP):** Cost-shares consultant written/ODF approved stewardship plans—apply with your local ODF Stewardship Forester using Forest Land Enhancement Program (FLEP) application form.

- **Forest Resource Trust (FRT):** Loan/grant to cover costs (normally 100 percent of costs) to convert under producing forest land or marginal agricultural land into conifer forest. Apply by completing FRT application form at local ODF offices.

- **Forest Land Enhancement Program (FLEP):** Cost-shares a variety of upland forestry practices (site prep, tree planting, non-commercial thinning, release, etc.) Apply with local ODF Stewardship Forester using the FLEP application form. Projects are funded from one "pot" of funds in Salem. Funds are

allocated to applications that arrive in Salem on a first come, first served basis, by priority. Current funding available is $6,300. Unused funds continually recycle back into the "pot" as projects are completed or cancelled. In addition, we anticipate that "new" funds will be made available to Oregon in late 2005.

- **Oregon 50 Percent Under-producing Forest Land Conversion Tax Credit:** State tax credit on cost of converting under-producing forestland (brushland and low value /low volume forest) to well stocked forest. Apply by completing tax credit form and submitting it to the local ODF Stewardship Forester (The form is available on the ODF/Private & Community Forests web site or at the local ODF office). The state tax credit is available to qualified landowners and projects on a continuous basis. Proposed projects should be pre-qualified by the local ODF Stewardship Forester.

- **Afforestation Incentive (OAR 629-611 Forest Practices Rules):** Provides landowners an incentive to convert parcels of idle land or land in other uses to commercial forest use. It provides assurance that no state forest practices regulation will prohibit harvesting most of the planted timber established and grown as the first crop rotation. Contact the local ODF Stewardship Forester for more information.

- **Federal (10 Percent) Reforestation Tax Credit:** Federal tax credit on the cost of most afforestation or reforestation projects is available for project work completed before October 22, 2004. A certain amount of project expenses are deductible (Note: The 10 percent federal tax credit has been repealed but landowners will be able to deduct some reforestation/afforestation expenses in the future). Landowners need to consult with the Internal Revenue Service (IRS) or their tax professional for advice on their specific tax situation and to acquire the required forms to properly utilize this incentive. Additional information can be found at: www.timbertax.org

- **Environmental Quality Incentives Program (EQIP):** Cost-share programs provide funding to a wide variety of agricultural and forestry conservation practices. However, availability of funding for upland forestry practices depends on the number of woodland owners applying for EQIP funding and actively participating in a local EQIP working group. Apply for EQIP funds at the local NRCS (Natural Resource Conservation Service) office.

- **Watershed Improvement Grants (OWEB):** Cost-share riparian (usually near stream or in-stream) work. Check with local watershed counsel and/or Soil & Water Conservation District (SWCD). Grant applications are available on-line at OWEB or at the local SWCD office.

- **Wildlife Habitat Incentives Program (WHIP):** Cost shares a variety of wildlife enhancement practices which can include forest establishment and thinning for wildlife purposes. Apply with the local NRCS office.

- **Conservation Reserve Program (CRP):** Cost shares a variety of conservation practices on agricultural land, including forest establishment and thinning. Pays rental on acres enrolled for 10 to 15 years. Apply at local Farm Services Agency (FSA) office.

- **Conservation Reserve Enhancement Program (CREP):** Cost-shares primarily riparian and wetland improvement projects on agricultural land. Practices include riparian forest buffer establishment. Pays rental on acres enrolled for 10 to 15 years. Apply at local FSA office.

7.5 Community Fire Assistance

- **Volunteer Fire Assistance (VFA):** Assistance to volunteer fire departments for equipment and supplies. Contact the local ODF office.

- **Rural Fire Assistance (RFA):** Assistance to Rural Fire organizations for equipment and supplies. Contact the local ODF office.

- **Federal Excess Personal Property program (FEPP):** Provides federal excess equipment and supplies to city and rural fire departments for firefighting purposes. Contact the local ODF office.

- **Special Funding for Insect and Disease Control:** The cost-share amounts vary depending on the acreage owned. It varies from 33 percent to 50 percent, with the larger landowners being eligible for only 33 percent of the costs. Contact the local ODF office.

- **Title II:** Funding is available from the County commissioners for projects to enhance forest objectives. Contact the County commissioners.

Numerous technical resources are available for wildfire mitigation. Internet home pages of ODF, the USFS, the BLM, and NFPA can be accessed for additional information:

- Oregon Department of Forestry (ODF) provides an internet address for information about Oregon forests and lands; Website: www.odf.state.or.us

- Federal Wildland Fire Policy, Wildland /Urban Interface Protection Federal report describes areas that need improvement nationally. Website: www.fs.fed.us/land/wildfire

- National Academy of Public Administration (NAPA). *Wildfire Suppression: Strategies For Containing Costs*; Website: www.napawash.org

- Bureau of Land Management (BLM), *National Fire Plan*, and links. Website: www.blm.gov

- USFS Fire Sciences Laboratory provides structure protection information. Website: www.firelab.org

- Firewise, community wildfire planning and outreach tools and information, construction and landscaping practices. Website: www.firewise.org

- Federal Emergency Management Agency (FEMA) provides information on emergency planning, protection, and funding. Website: www.fema.gov

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APPENDIX A
MAPS

APPENDIX B
WILDLAND FIRE RISK AND HAZARD SEVERITY ASSESSMENT FORM

APPENDIX C
FIREWISE BROCHURE – FIREWISE COMMUNITY