

Gilliam County

Community Wildfire Protection Plan



December 20, 2007
Prepared By
Community Wildfire Protection Plan Steering Group &
James H. Hulbert

Table of Contents

I. Signature Page	3
II. Introduction.....	5
III. Planning Process.....	7
A. Step one: Convene Decision Makers	7
B. Step Two: Establish Planning Area Boundary and Planning Goals	7
C. Step Three: Establish a Community Base Map.....	8
E. Step Five: Establish Community Priorities and Recommendations.....	9
F. Step Six: Collaboration and Public Input	10
IV. County Profile	11
A. General Description	11
B. Wildfire Protection.....	13
C. Emergency Evacuation Routes.....	15
V. Wildfire Risk Assessment	15
A. Methodology	15
B. Assessment.....	16
VI. Structure Survivability.....	24
A. Structural Vulnerability.....	24
B. Structural Ignitability	25
VII. Wildfire Mitigation Projects	26
A. Wildfire Hazard Fuel Priorities.....	26
B. Wildfire Mitigation Projects.....	26
VIII. Appendix	32
Appendix A. Special Considerations	32
<i>Senate Bill - 360</i>	32
<i>Emergency Conflagration Act</i>	33
<i>Federal Emergency Management Act (FEMA) Eligibility</i>	33
<i>Healthy Forest Restoration Act (HFRA)</i>	34
<i>National Fire Plan (NFP)</i>	34
<i>Oregon Statewide Land Use Planning Goals</i>	35
<i>County Emergency Management</i>	35
<i>Fire Safety Standards</i>	36
Appendix C. Fire-Wise Plant Material	39
Appendix D. Firewise Practices to Reduce Wildfire Vulnerability/Ignitability.....	41

I. Signature Page

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

Frank Bettencourt, Gilliam County Commissioner Date

Mike Weimar, Gilliam County Commissioner Date

Pat Shaw, Gilliam County Judge Date

Travis Medema, Central Oregon District Forester Date
Oregon Department of Forestry

Aaron Fitzsimmons, S. Gilliam County & Condon Fire Chief Date

Joe Claughton, N. Gilliam County & Arlington Fire Chief Date

Jim Whelan, Fire Defense Board Chief Date

I. Executive Summary

This Community Wildfire Protection Plan (CWPP) for Gilliam County was initiated by the Gilliam County Court in the spring of 2007. Recent fires in Oregon and across the western United States have increased public awareness for the potential losses to life, property, and natural and cultural resources that fire can pose. Gilliam County has major ignition sources and wildfire hazards and is considered a high risk for the occurrence of large and destructive wildfires. In the past two years (2006 & 2007), major wildland fires have resulted in the loss of two residential homes and more than 1.5 million dollars in agricultural crops and facilities.

This plan is a result of a county-wide effort initiated to identify and prioritize wildfire hazards and to develop a strategy to reduce those hazards. The plan will assist the county, its communities and fire districts in securing National Fire Plan grants and other funding sources to treat hazardous fuel situations and to better prepare residents for wildfires that may occur. It includes a strategy with action projects which, when implemented, will decrease the potential for large wildfires in the county and reduce the potential loss of property values and threat to human life.

The planning process was designed to meet the guidance in the National Fire Plan and the Healthy Forest Restoration (HFRA) Act of 2003 (HR-1904). A Steering Committee with representatives from the various agencies and local jurisdictions responsible for wildfire suppression and protection worked together to guide the planning process. Numerous meetings were held during development of the draft and final plan to gain input from representative interest groups.

Goals for the planning process were:

- Involve local and state government representatives, in consultation with federal agencies and interested parties in the plan development process.
- Identify and evaluate wildfire hazards and risk factors.
- Improve wildfire response capability of fire districts and better prepare Gilliam County residents to survive and save their property during a wildfire situation.
- Make the county and their respective fire districts and communities eligible for funding assistance to reduce wildfire hazards and to prepare residents for wildfire situations (National Fire Plan, Healthy Forest Restoration Act, FEMA and other sources).
- Develop and prioritize recommended strategies for private, state, and federal lands to reduce hazardous fuel situations and reduce the risk for damage to lives and property from wildfires.
- Recommend measures that homeowners and communities can take to reduce the ignitability of structures in the county.
- Complete the plan by the end of 2007.

This plan describes the various agencies and local jurisdictions responsible for wildfire protection and explains the pertinent programs and laws associated with wildfire issues in the county. Section V gives an overall assessment of the wildfire risk in the county and considers and rates: ignition risk, wildfire hazards, values protected, protection capability, and structural

vulnerability. Wildland Urban Interface boundaries (WUIs) are established for the major population centers.

Section VI of the plan addresses structural vulnerability and ignitability and offers advice to homeowners on how to reduce the risk to their home and other property from the threat of a wildfire. Homeowners who follow the suggestions will reduce risk of property loss, personnel injury or death during a wildfire event.

Section VII describes action projects designed to reduce the wildfire risk for the county as a whole, and for specific zones and communities. Priorities for hazard fuel treatment are given. The development of defensible space around homes in WUI areas is considered one of the highest priorities for hazard fuel treatment. Within WUI areas, homes on the perimeter of the communities are very high priority for hazard fuel treatment. Other high priority fuel treatment projects are vacant lots within city limits.

While the Gilliam County Community Wildfire Protection Plan provides a foundation and resources for understanding wildland fire risk and opportunities to reduce potential losses from wildland fire, individual communities, fire districts and neighborhoods can take local action by developing community-specific fire plans or by participating in county-wide activities for prevention and protection. With formal adoption of this plan, Gilliam County is more competitive for funding that may assist with plan implementation. Furthermore, adoption of this plan highlights the importance of partnerships between fire districts, local government, community-based organizations and public agencies. The result of these partnerships brings direction to the federal agencies for which communities are a priority for fuel treatment.

II. Introduction

The primary purpose for the Gilliam County Community Wildfire Protection Plan is to identify and prioritize areas in the county with high levels of wildfire hazards and to develop a strategy to reduce these hazards. Completion of the plan will make the county and its communities and fire districts eligible for National Fire Plan grants and other funding sources to treat hazard fuel situations and to better prepare residents for wildfires that may occur. The plan describes projects which, when implemented, will reduce the potential for large wildfires in the county. It offers a strategy and methods designed to reduce the potential loss of property values and threat to human life from wildfires.

This Community Wildfire Protection Plan for Gilliam County was prepared with the assistance of a National Fire Plan Grant from the Oregon Department of Forestry. The planning process was designed to meet the guidance in the National Fire Plan and the Healthy Forest Restoration Act of 2003 (HR 1904).

Gilliam County contains a diverse set of wildfire hazard and risk situations. Conditions throughout the county are conducive to large and fast moving wildfires. Several Wildland Urban

Interface¹ (WUI) areas exist with the potential for property and human life loss during a wildfire event. Following are conditions and concerns found in portions of the county which contribute to the wildfire threat and potential for catastrophic losses:

- The John Day River/Canyon with numerous side canyons, all with very steep slopes.
- Large remote areas with no or limited vehicle access.
- Residential developments next to areas with heavy fuel loads. Some homes in these areas do not have adequate defensible space around them.
- Climatic and topographic conditions conducive for large wildfires. Hot and dry conditions exist during the fire season throughout the county. Some portions, especially in the Columbia River Gorge area, have frequent high winds which can contribute to fast moving fires that are difficult to control. Much of the county has moderate to steep slopes which add to the rate of wildfire spread and suppression difficulty.
- Large agricultural areas planted to mainly grain plus significant Conservation Reserve Program (CRP) fields. Both of these agricultural types have the potential for fast moving fires which can destroy valuable crops in short periods of time.
- Risk factors for starting wildfires. A major railroad and Interstate Highway along the Columbia River represent significant ignition sources for wildfires. Lightning has ignited frequent fires in the recent past. Power lines, debris burning and equipment use add to the risk. Most wildfires in the county are human caused.
- Unprotected areas and fire districts with limited resources. Portions of the county do not fall within an organized fire district.

Gilliam County has experienced serious wildfires in the past and there will continue to be fires in future years. In the summer of 2006 a wildfire started by equipment use (weed eater) ignited a fire in the City of Arlington and quickly overtook and destroyed two homes plus two vehicles and threatened several other residential structures. This year (2007) wildfires started by agricultural equipment use caused more than 20,000 acres to burn, including some standing grain crops. More than one and one-half million dollars in damages resulted from these fires. Additionally, more than 3,000 acres burned from lightning started fires. The outlook is for more and larger wildfires, unless an active and continuing program of hazard fuel reduction and public awareness is undertaken. Each year the existing vegetation continues to grow and it may just be a matter of time before the county experiences a catastrophic wildfire that will destroy homes and possibly, take human lives. The time to act is now and this plan will be the basis for needed action to reduce the growing threat.

The planning area for the purpose of this study includes the entire area within Gilliam County.

¹ "The urban-wildland interface community exists where humans and their development meet or intermix with wildland fuel." This definition is found in the Federal Register Vol. 66, Thursday, January 4, 2001, Notices; and in "Fire in the West, the Wildland/Urban Interface Fire Problem," A Report for the Western States Fire Managers, September 18, 2000. http://www.bianifc.org/fuels/fuels_pa.html.

III. Planning Process

In the spring of 2007, the Gilliam County Court decided to develop a Community Wildfire Protection Plan for the county. The County hired a contractor to help guide the planning process. The planning process used was patterned after the handbook for Wildland-Urban Interface Communities titled, Preparing a Community Wildfire Protection Plan. The following steps were followed:

A. Step one: Convene Decision Makers

A Core Team designed to act as a steering committee was formed to help develop the plan. The team met several times during the planning process to review and critique planning documents. The Core Team consisted of representatives from the following entities:

- Fire Districts and Fire Departments
- Gilliam County
- Oregon Department of Forestry
- Oregon Fire Marshall's Office
- Gilliam County Sheriff's Office
- Farming/Ranching community
- Cities of Condon and Arlington
- Interested citizens

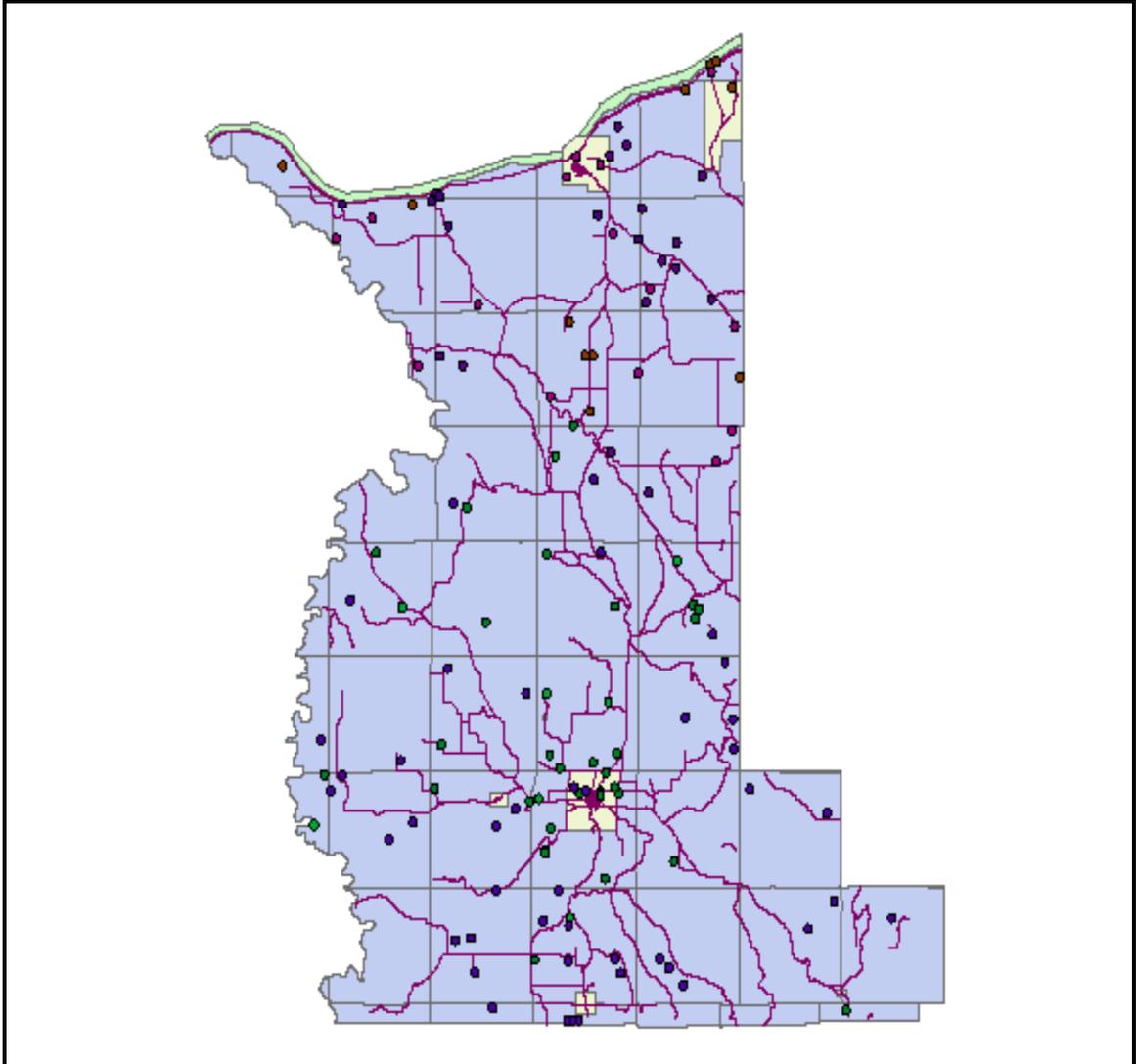
B. Step Two: Establish Planning Area Boundary and Planning Goals

The Core Team decided the planning area would include the entire county (1,223 square miles). The following goals for the Community Wildfire Protection Plan were agreed to by the Core Team:

- Identify and evaluate wildfire hazards and risk factors.
- Improve wildfire response capability of fire districts and better prepare Gilliam County residents to survive and save their property during a wildfire situation.
- Make the county and their respective fire districts and communities eligible for funding assistance to reduce wildfire hazards and to prepare residents for wildfire situations (National Fire Plan, Healthy Forest Restoration Act, FEMA and other sources).
- Develop recommended strategies for private, state, and federal lands to reduce hazardous fuel situations and reduce the risk for damage to lives and property from wildfires.

C. Step Three: Establish a Community Base Map

A series of county maps were developed using the Gilliam County GIS mapping system. A Base Map showing historic wildfire occurrence and Wildland Urban Interface (WUI) boundaries was developed and used during plan development.



Map #1. Gilliam County Base Map

Map key:

White Areas = WUI areas

Dots = All fires past ten years

Red lines = Roads

D. Step Four: Wildfire Risk Assessment

A wildfire risk assessment was completed for the county. Methodology for the Risk Assessment was developed by the Oregon Department of Forestry²; it involves five factors: Risk, Hazard, Values, Protection Capability and Structural Vulnerability. The methodology includes a scoring system for each factor. The scores are cumulative and the total score for individual communities or zones indicate a low, moderate, or high overall Wildfire Risk rating.

A survey of individual homes using the NFPA-1144 survey assessment program had not been completed at the time of the planning process. The criteria for using this assessment program are in Appendix A. Once the survey of individual homes is completed, the results of this will be added to this plan.

The following steps were taken in the wildfire risk assessment:

- Available maps were used to assess the hazardous fuel situation and wildfire risk in, and adjacent to, communities within the study area. Field trips to verify conditions on the ground were conducted. Ideas and input from community members, especially fire district representatives, were an important part of the assessment.
- Specific wildfire hazards were identified within the study area.
- A Wildland Urban Interface (WUI) zone was identified and mapped for the larger communities.
- Major risk factors which cause wildfires to start within the study area were identified.
- When available, information from the NFPA 1144 surveys completed by the county will be referred to with implications described.
- Wildfire occurrence history was mapped and described.
- Available resources and resource needs by fire district were identified.

E. Step Five: Establish Community Priorities and Recommendations

The Core Team considered the results of the wildfire risk assessment and then established a list of priority projects within the planning area. The type of projects considered includes:

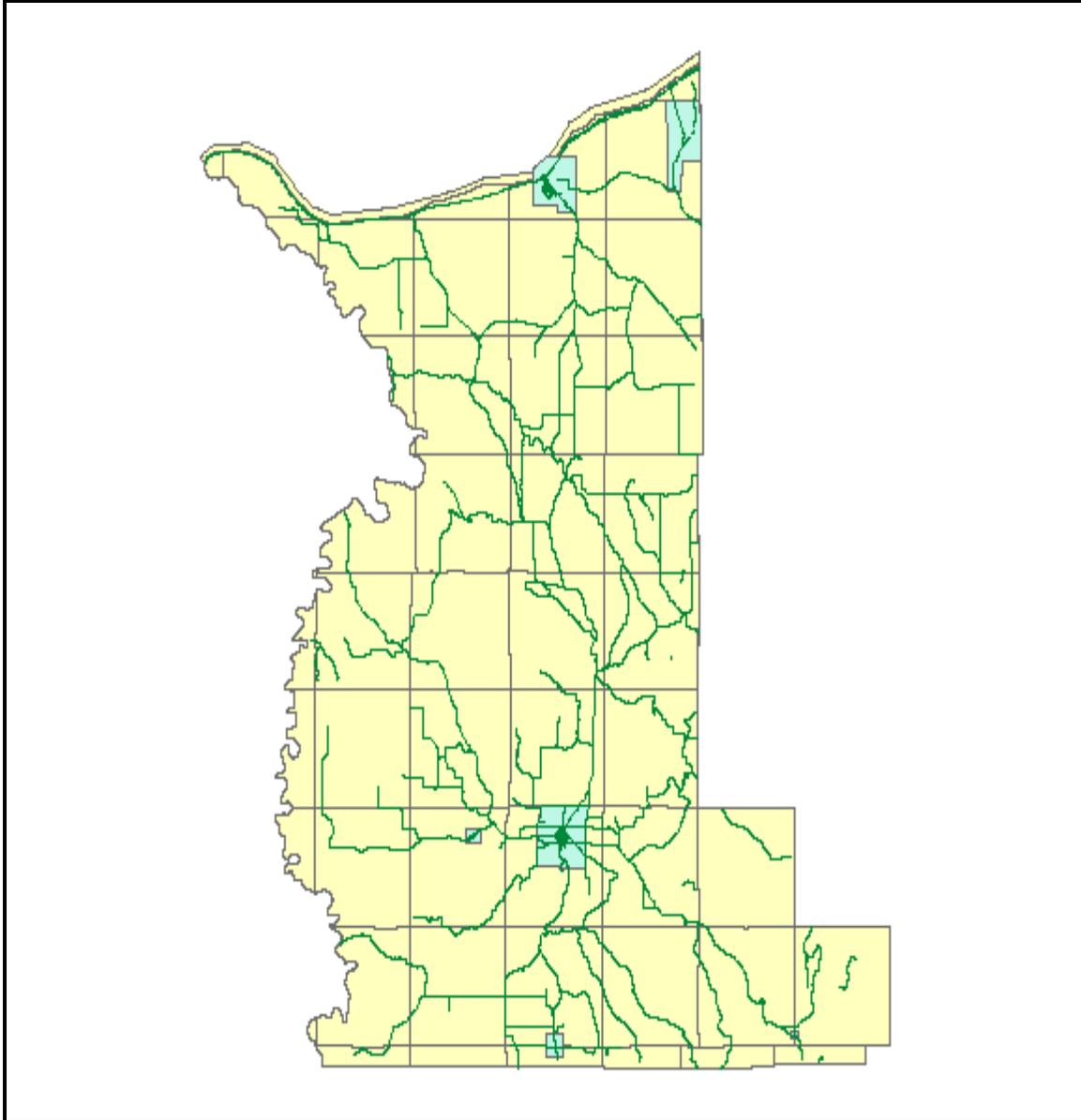
- Development of defensible space and fuel reduction around individual homes;
- Hazard fuel removal along access routes;
- Ingress and egress concerns;
- Structural material hazards.
- Fire district equipment needs;
- Methods to distribute wildfire protection information to homeowners;

Criteria used in selecting priority projects include:

- Likelihood for acceptance by property owners;
- The best chance for successful implementation;

² Identifying and Assessment of Communities at Risk in Oregon, draft prepared on October 18, 2004.

- The best cost-benefit ratio;
- Likelihood of getting funding assistance for implementation.



Map #2. WUI Areas

F. Step Six: Collaboration and Public Input

A strategy to collaborate and communicate information for the plan was devised. The Core Team representing various interests involved with wildfire protection at the local, state and federal level met several times during the planning process to help form the plan. Public meetings designed for the general public were not held as it was felt the members of the steering committee, fire district personnel and those other group contacts would adequately represent the

views of the general public. Comments were considered and incorporated in the plan throughout the process.

Participants in the planning process include:

David Messenger, Gilliam County Assessor
Larry Eubanks, farming/ranching community
Gary Bettencourt, Gilliam County Sheriff
Betsy Pattee, City of Condon
Chris Fitzsimmons, Gilliam County Emergency Management
Aaron Fitzsimmons, South Gilliam County Fire Chief, City Of Condon Fire Chief
Joe Cloughton, North Gilliam County Fire Chief, City of Arlington Fire Chief
Shannon Coppock, Gilliam County Fire Services
Sarah Colvin, Office of State Fire Marshall
Julius Courtney, City of Arlington
Pat Shaw, Gilliam County Judge
Dustin Gustaveson, Oregon Department of Forestry
Ann Walker, Oregon Department of Forestry
Susie Anderson, Gilliam County Planner
Paul Odell, City of Lone Rock Mayor
Gary Grossmiller, City of Arlington
Jim Whelan, Fire Defense Board Chief
Brian Foster, Arlington Public Works

Importantly, agency representatives and fire district personnel will communicate the intent of the plan to homeowners during face-to-face contacts when the plan is complete. During these contacts, homeowners will learn specifics about what is needed to reduce wildfire hazards on their property, and what options are available to assist them.

IV. County Profile

A. General Description

Gilliam County is located in the north-central portion of Oregon with the Columbia River comprising its north boundary. Its western boundary is the John Day River which it shares with Sherman County. Morrow County on the east and Wheeler County to the south share the remainder of its borders. There are three incorporated cities, Arlington, Condon and Lonerock. Elevations range from less than 200 feet along the Columbia River to about 4,300 feet in the southeast part of the county, although most of the county is at less than 3,500 feet.

There are 1,223 square miles in the county. The majority of the county's population resides in the cities of Arlington and Condon with a combined population of 1,342. The total county population (1,915) is sparse with an overall average of 1.6 persons per square mile. Principle industries providing employment in the county are agriculture, two regional waste disposal landfills, and transportation. The major source of employment is county government, education and the two landfills.

In the year 2000 there were 1,043 housing units in the county (819 occupied), of which 712 were in Arlington and Condon. The number of housing units reported in the 2000 census had increased by 11.9 percent from 1990. The per-capita personal income in the county during 2000 was \$17,659, just 82 percent of the national average.

Condon, the County seat, is located about 150 miles east of Portland. Its population has increased from 635 in 1990 to the present level of 770. There were 422 housing units in the city in the year 2000, up from 356 in 1990. Condon's elevation is about 2,800 feet; it receives about 14 inches of precipitation per year.

Fuel types are generally similar throughout the county but there is considerable variation in elevation and percent slope. Most of the county is dominated by grass vegetation with scattered brush. About 12 percent of the county in any given year is in dry-land grain products. These fields present a significant wildfire hazard when in a mature stage. Nearly nine percent of county lands are enrolled in the Conservation Reserve Program (CRP). These lands contain perennial grasses which are not cut during the duration of the nine year program resulting in heavy fuel loads of dense, dry material. Only 1,583 acres in the county (two-tenths of one percent) are classed as timberlands with juniper and ponderosa pine being the principal tree species.

Farm and ranching lands on the upper elevations primarily produce grains and forage. The Farm Services Agency reports that the county has about 239,000 acres of crop land, about 31 percent of the county. Of this, about 97,000 acres are annually planted, 75,000 acres are fallow, and 67,000 acres are a part of the Conservation Reserve Program (CRP).



Interface with the City of Condon and adjacent agricultural fields

Cultivated farm lands generally have gentle slopes. A large portion of the remainder of the county contains moderate to steep slopes and usually has very limited access. Slopes in excess of 40 percent are common along the John Day River, and its side canyons.

The major transportation corridors are the I-84 Interstate Highway and the Union Pacific Santa Fe Railroad, both parallel the Columbia River. State Highway 19 is the major north-south route connecting Arlington with Condon, while State Highway 206 connects Condon with communities to the east and west.

The John Day River is a major recreation attraction for boaters, fishermen, and hunters. Summer time use is often heavy with users coming from a regional and national base. Both day use and overnight camping occurs. Access along the river route is very restricted. Much of the land within the John Day Canyon is publicly owned and managed by the Bureau of Land Management (BLM).

Most of the land (92 %) in the county is privately owned. A breakdown of land ownership follows:

Land Owner	#Acres
Private	851,577
Port of Arlington	51
State of Oregon	1,886
Gilliam County	133
Bureau Of Land Management	46,672
Bonneville Power Administration	82
Corps of Engineers	11,391
Confederated Tribes of the Warm Springs Res.	4,630
Other	34

B. Wildfire Protection

Gilliam County has two Rural Fire Protection Districts while the cities of Arlington and Condon each have their own Fire Departments. The districts and fire departments are all served by volunteers. The Arlington Fire Department and the North Gilliam County Rural Fire District operate essentially as one department and share the same fire chief and fire fighters. The Condon Fire Department and the South Gilliam County Rural Fire District have their own facilities but share the same chief and fire fighters, although it is their goal to eventually combine their equipment under one roof.

The North Gilliam County Rural Fire Protection District contains about 370 square miles (30.3 percent of the county) while the South District has 788 square miles (64.4 percent). About 5.3 percent or 65 square miles are in an unprotected status, although the North Gilliam County Fire Protection District plans to annex these lands soon. Slightly more than one percent, or 14 square miles, is included in an Oregon Department of Forestry Protection District. These lands are in the southeast part of the county and contain the City of Lonerock.

The North Gilliam County Rural Fire Protection District and the City of Arlington Fire Department have 12 volunteers and the following firefighting equipment:

- One type 4 brush vehicle
- Two type 5 brush vehicles
- One light brush vehicle
- Two type 2 water tenders
- Three type 2 structure engines

The South Gilliam County Rural Fire Protection District and the City of Condon Fire Department have 17 volunteers and the following equipment:

- Two type 1 engines
- One type 2 engine
- Three type 6 engines
- Two water tenders, (one 3,000 and one 4,000 gallon capacity)

A small portion of the county, 13,581 acres, is a part of an Oregon Department of Forestry Protection District. The ODF has seven engines and aerial resources available for this district.

Most of Gilliam County has an Insurance Service Organization (ISO) rating score of ten (Condon, Arlington and the Air Base has a score of six). The ISO collects information on community fire protection capability and assigns a rating score based on the effectiveness and quality of the protection provided. Rating scores range from one to ten with a score of one indicating exemplary public protection and a 10 signaling the program does not meet minimum standards. A lower rating for community members is important from the standpoint that fire insurance costs would be lower as compared with a community with a higher rating.

Several mutual aid agreements are in effect for Gilliam County:

Both Gilliam County Rural Fire Protection Districts have mutual aid agreements with fire agencies from Sherman County, Morrow County, Umatilla County and the City of Fossil Fire Department.

Gilliam, Umatilla and Morrow Counties are under one fire defense board. The fire defense board Chief is Jim Whelan from Stanfield. The Umatilla National Forest is a party to this Fire Defense Board. This gives Gilliam County agencies access to firefighters and equipment from all of the agencies in both Umatilla and Morrow Counties, and the Umatilla National Forest. A separate mutual aid agreement with the Sherman County agencies also exists.

Gilliam County has an old mutual aid agreement with the BLM. The county is in the process of updating this agreement.

South Gilliam County RFPD has a mutual aid agreement with the ODF Central Oregon District for their respective jurisdictional areas. There are 13,581 acres within the ODF protection area which is located in the very southeast portion of the county.

There are also verbal cooperative agreements with both the County Road Department and with Waste Management. These entities could supply road graders and cats for fire suppression activities.

C. Emergency Evacuation Routes

Evacuation routes during a wildfire emergency depend on the specific situation and would be determined by the State Police and County Sheriff personnel at the time of the emergency. For the City of Condon, State Highway 19 provides escape routes to the north and south while State Highway 206 offers escape to the east and west. The City of Arlington relies solely on State Highway 19 for escape routes to the north and I-84 and the south towards Condon while Rhea Road and Cedar Springs provide east/west escape routes. The City of Lonerock would rely on Lonerock Road, Buckhorn, and Buttermilk Roads.

V. Wildfire Risk Assessment

This chapter presents the methodology and results of the Wildfire Risk Assessment.

A. Methodology

A Wildfire Risk Assessment based on criteria and a rating process established by the Oregon Department of Forestry³ was completed. The assessment is designed to assign a rating of Low, Moderate, or High Overall Risk for the planning area. The rating is based on scores assigned to four risk factors. The four factors considered were: Ignition Risk, Wildfire Hazards, Values Protected, Protection Capability. Each factor has from two to five criteria designed to better describe it. These criteria were given weighted scores established by the ODF. Criteria scores were added giving a total score for the factor. The scores for the factors were then added and used to establish an overall rating of Low, Moderate, or High. In summary, the assessment used the following process:

- The area was assessed separately based on four factors;
- Each factor has from two to five criteria to better describe it;
- Each criterion was given a score based how important it was.
- A rating of Low, Moderate, or High was assigned to each factor based on the cumulative scores of the criteria involved;
- The cumulative scores of the four factors determined the Overall Risk rating of Low, Moderate, or High for the area.

A fifth factor, Structural Vulnerability, was not assessed because the county has not completed a survey of homes based on NFPA 1144 criteria at the time of this writing. The following describes the five factors and the scoring system used to rate the communities and zones:

³ Identifying and Assessment of Communities at Risk in Oregon, October 18, 2004

B. Assessment

Summary

The wildfire risk assessment was completed on a county-wide basis. While conditions do vary throughout the county, the differences are not significant enough to warrant breaking the planning area into zones. Vegetation throughout the county consists mainly of grass/sagebrush type with scattered cultivated fields. There are virtually no native trees with the exception of a few areas containing junipers and ponderosa pine in the southeast part of the county. Much of the farmland is in dry-land crops with a few irrigated fields along creek bottoms. Elevations range from a few hundred feet along the Columbia River to the north to around 4,300 feet maximum further south. The west boundary consists of the John Day River with steep slopes rising above. The drainage (aspect) is mainly to the west into the John Day River. There are several significant risk factors including the railroad and interstate highway along the Columbia River. Housing density is low with the exception of the incorporated cities of Arlington and Condon. Suppression response time to most areas in the county is more than 20 minutes. The overall wildfire risk for the county is considered high based on the following factors and ratings:

Ignition Risk – 20 points, moderate
Wildfire Hazard – 57 points, high
Values Protected – 22 points, moderate
Protection Capability – 32 points, high

Total Points – 131, high

It is important to note that while the overall risk rating for the county is considered high, the on-the-ground conditions vary considerably because of slope, aspect and elevation differences. There are steep hillsides along the John Day River and its side canyons which present conditions for extreme fire behavior and long flame lengths. Further, during windy conditions in the hot dry periods of summer, the risk is considered much higher than during the rest of the year. Importantly, cultivated fields of grain and CRP lands contain high fuel loads and are subject to fast moving and extreme fire behavior.

A more detailed discussion of each of the four risk factors follows:

Ignition Risk

Ignition risk is the likelihood of a wildfire beginning within a particular area. The assessment for Ignition Risk looks at three criteria; historic fire occurrence (number of fires per 1000 acres per 10 years), density of homes per 10 acres, and other risk factors. The rating scores for Ignition Risk criteria are:

Fire Occurrence – per 1,000 acres per 10 years

0-.1	5 points
.1-1.1	10 points
1.1+	20 points

Lightning fires have occurred throughout but have been more frequent around the city of Arlington and the southern one-third of the county (see map #3 on page 18). Reported man-made fires were most frequent around the City of Condon but have occurred throughout the county (see map#4, page 19). Debris burning and farming equipment have been among the most frequently reported man-made fires. Arson fires have been most frequent in the northern one-third of the county. The railroad and interstate highway, both along the Columbia River to the north, are significant risk factors for human-caused wildfires. There have been approximately .16 fires per 1,000 acres during the past 10 years. This number receives a rating of 10 points for the risk factor, Fire Occurrence. This rating is for the entire county and would be somewhat higher for areas within the WUI boundaries.

Home Density (homes per 10 acres)

- 0-.9 (rural) 0 points
- 1-5 (suburban) 5 points
- 5.1+ (urban) 10 points

With the exception of the cities of Arlington and Condon, home density in the county is very sparse. There are a few other small developments including Lonerock and Mayville. Overall, home density for the entire county is just .013 per ten acres resulting in a score of zero points.

Other Ignition Risk Factors Present in Vicinity (Examples - transmission power lines, power substations, equipment use, construction, debris burning, slash burning, mining, dispersed or developed camping, off road vehicle use, flammables present, fireworks, mowing grass, woodcutting, railroads, highways, lightning prone areas, arson, schools, business, ranch/farm, dump).

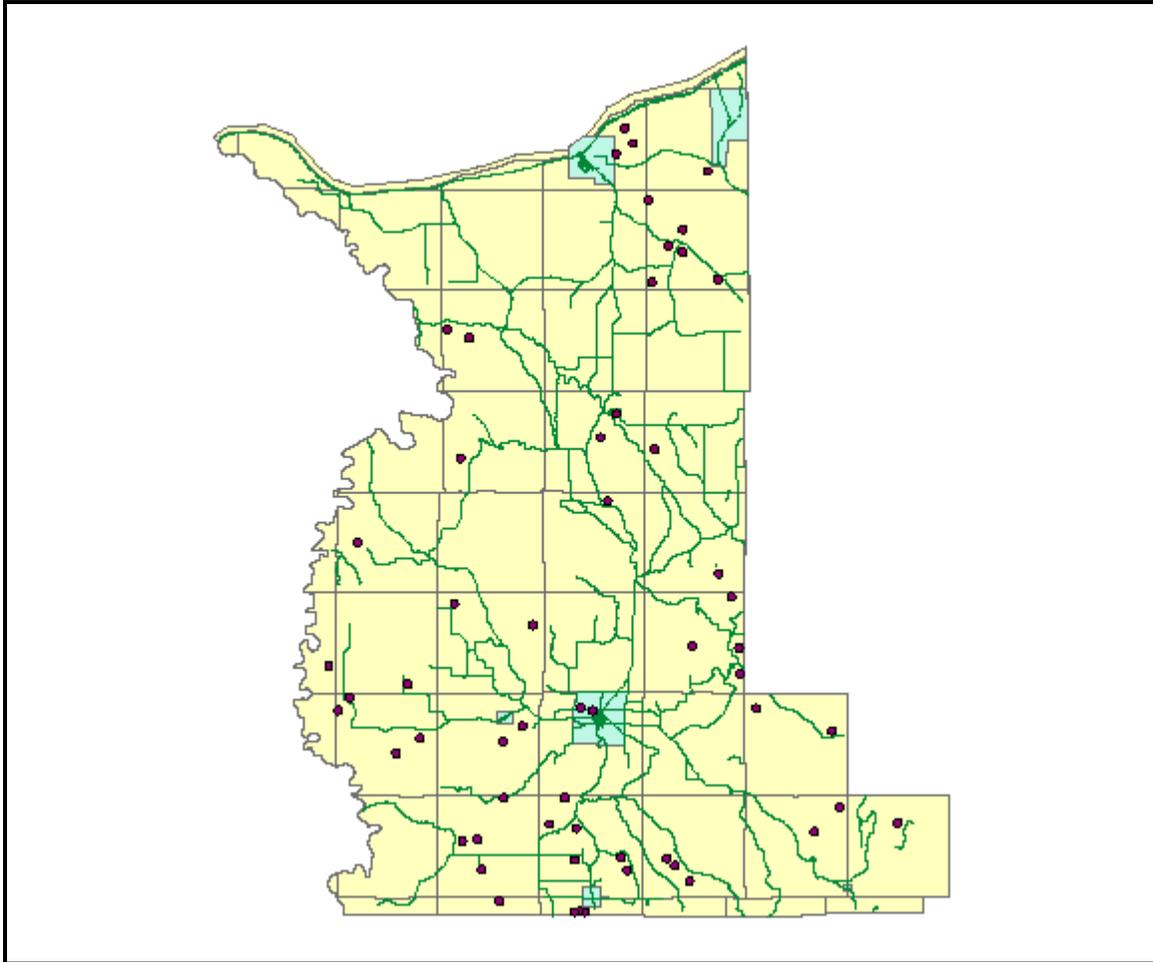
- <8 present 0 points
- 8-15 present 5 points
- >15 present 10 points.

Numerous risk factors are found throughout the county including: major railroad, interstate highway, power lines, equipment use, dispersed camping, off road vehicle use, flammables present, farm/ranching operations, lightning prone areas, landfills, grain fields, CRP (Conservation Reserve Program) lands. The grain fields and CRP lands are especially vulnerable to fast moving fires with high flame lengths. The CRP lands are grass fields which have not been cut, in many cases, for many years and as a result have built up a dense layer of dead vegetative material. Recreation use by fishermen and hunters are important risk factors during spring, summer and fall seasons. Much of the recreation use occurs along the John Day River and its side canyons. These areas have steep slopes and access is challenging. The rating score for “other factors” is 10, the highest possible score.

Ignition Risk Factor Rating(cumulative score of the three criteria)

0-13	Low
14-27	Moderate
28-40	High

The overall score for the factor, Ignition Risk, is $10+0+10=20$ which falls in the moderate category.

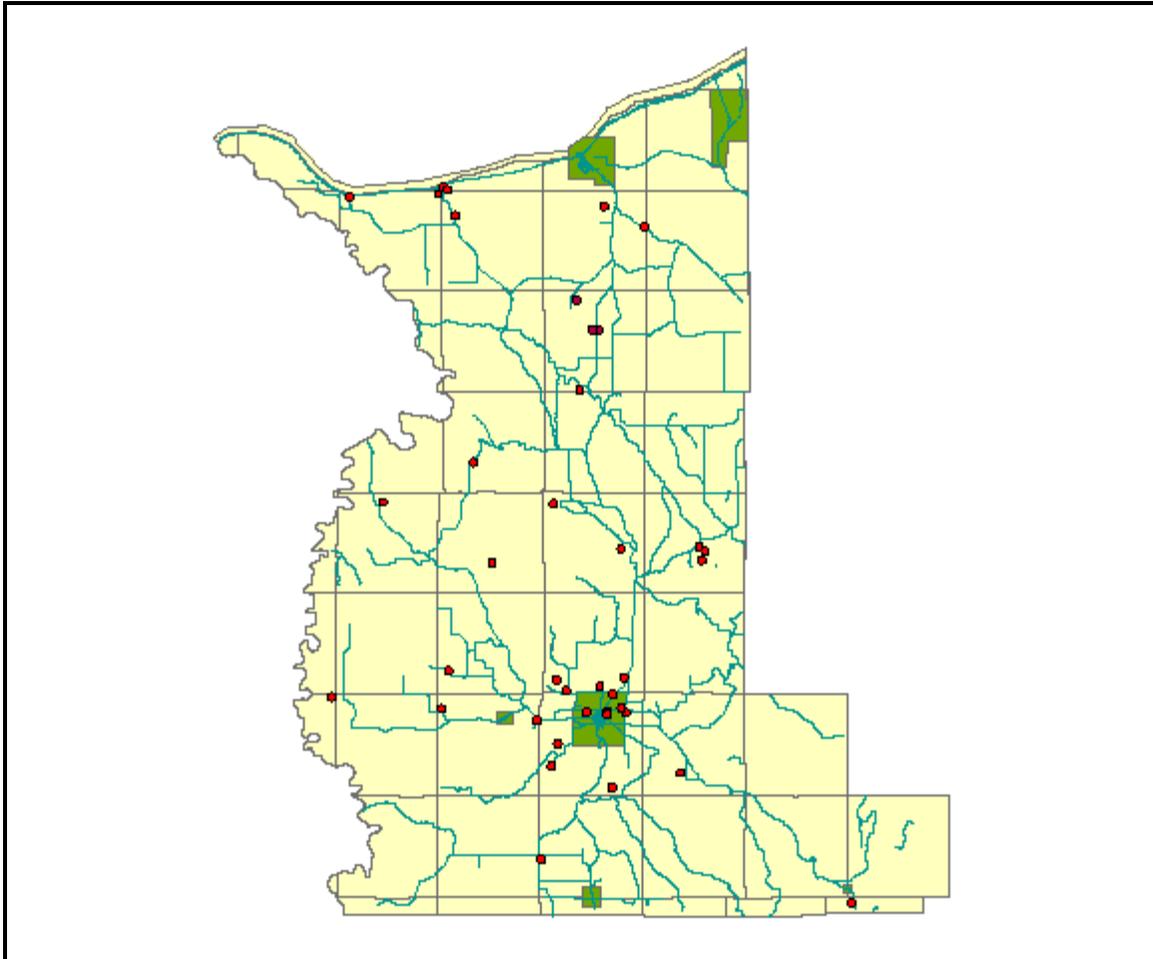


Map #3. Wildfire starts from lightning, past ten years.

Wildfire Hazard

Wildfire hazard is the resistance to control once a wildfire starts. It includes weather, topography, and fuels (vegetation) that adversely affects suppression efforts. In general, fires in Gilliam County are wind driven in plateau areas and slope driven in canyon country. The criteria and scoring for the factor Wildfire Hazard follows:

Weather (The number of days per season that forest fuels are capable of producing a significant fire event). The state assigns all communities and zones in eastern Oregon the maximum score of 40 points by default. It is important to note that the northern portions of the county and the



Map #4. Human-Caused fires 1997-2007

John Day Canyon generally experience warmer and dryer conditions for longer periods as compared with the higher elevation areas.

Slope

0-25%	0 points
26-40%	2 points
>40 %	3 points

Slopes vary considerably throughout the county. Much of the higher elevation farm lands have slopes less than 25 percent. However, the Columbia River and the John Day and its side canyons have steep slopes, often in excess of 40 percent. Steep slopes add to the rate of fire spread and

difficulty of control. Overall, the county received a rating of two points which is in the moderate range.

Aspect

N,NW,NE	0 points
W,E	3 points
S,SW, SE	5 points

Aspect affects fuel moisture conditions and rate of wildfire spread. Much of Gilliam County has a west facing aspect with drainages to the John Day River. The county received a rating of three points for aspect which is in the moderate category.

Elevation

5000 +	0 points
3,500-5,000	1 point
0-3,500	2 points

Lower elevations generally have warmer and dryer conditions and experience longer and more severe wildfire seasons. While elevations range from less than 200 feet to as much as 4,300 feet, most of Gilliam County has an elevation of less than 3,500 feet giving it the highest rating score possible of two points.

Surface Fuels (based on Fire Behavior Fuel Models). Hazard Value 1 or HV1 produces flame lengths up to five feet with little spotting, torching or crowning. HV2 has flame lengths from 5-8 feet with sporadic spotting, torching or crowning. HV3 has flame lengths of over 8 feet with frequent spotting, torching and crowning.

Non-forest	0 points
HV1	5 points
HV2	10 points
HV3	30 points

Fuels throughout Gilliam County are represented by Fire Behavior Fuel Models 1, 3, 5 & 6. In Fire Behavior Fuel Model 1 areas, grasslands and savanna are represented along with stubble, grass-tundra, and grass-shrub combinations. Annual and perennial grasses are included. Fire spread is governed by fine, very porous, and continuous herbaceous fuels that have cured or are nearly cured. Fires in this fuel model typically exhibit rapid rates of spread. Very little shrub or timber are present. Total fuel load of dead and live fuels is about .74 tons per acre.

Fire Behavior Fuel Model 3 areas are the CRP and grain fields. As these crops mature and during windy conditions, fires display high rates of spread with long flame lengths.

Areas represented by Fire Behavior Fuel Model 5 are made up of mainly brush species which are about two feet high. Fire is generally carried by the surface fuels made up of litter cast from

shrubs and the grasses or forbs in the under-story. Fuel loads are about 3.5 tons per acre of dead and live fuels. Fires are typically fast moving in areas with steep slopes and under windy conditions.

Fire Behavior Fuel Model 6 areas consist mainly of juniper and sagebrush with grass underneath. Total fuel loads can be as high as 7.5 tons per acre. With moderate to high wind speeds (greater than 8 mph), fire is fast moving and will carry through the shrub layer.

Fires in grain fields can be fast moving with high flame lengths. Each year the county has about 100,000 acres in crop land. Additionally, there is about 67,000 acres of CRP lands which contain tall grasses along with thick, dead material underneath. Fires on CRP land and grain fields can be difficult to suppress because of high flame lengths, they are fast moving, and the unavailability of water. On a positive note, annually there are about 75,000 acres which are fallow and offer fuel breaks between fields.

Average flame lengths for wildfires in the county would be from 5-8 feet resulting in a rating score of 10 points (HV2) for surface fuels. However, there will likely be fires with longer flame lengths, especially in the grain and CRP lands.

Aerial Fuels (Crown Fire Potential)

Passive – Low	0
Active-Moderate	5
Independent	10

Since there are few forested areas in the county, the rating score for aerial fuels is passive or low and is zero points.

Hazard Factor Rating (cumulative score of the six criteria)

Low	0-9
Moderate	10-40
High	41-60
Extreme	61-80

The overall rating score for wildfire hazard factor is 57 which is considered high (rating scores shown below):

weather – 40,
slope – 2,
aspect – 3
elevation – 2
surface fuels – 10
aerial fuels – 0

Total - 57

Values Protected

Values Protected is the human and economic value associated with communities or landscapes. Protection of life is the number one priority with all agencies and is measured by the density of homes. In addition, the presence of community infrastructure is another consideration.

Home density (homes per 10 acres)

.1-.9 (rural)	2 points
1.0-5.0 (suburban)	15 points
5.1+ (urban)	30 points

With the exception of the cities of Arlington and Condon, home density in the county is very sparse. There are a few other small developments including Lonerock, the residential areas for the airbase, and Mayville. Overall, home density for the entire county is just .013 per ten acres resulting in a score of two points.

Community infrastructure (power substations and corridors, communication sites and facilities, transportation corridors, major manufacturing and utilities facilities, municipal watersheds, fish habitat, watershed hydrology, water storage and distribution, fuel storage facilities, hospitals and health care facilities, landfills, schools, churches, community centers, and stores).

None present	0 points
One present	10 points
More than one	20 points

The county has major transportation corridors, landfills, fish habitat, utilities, schools, churches, stores etc. and would have the highest rating score of 20 points.

Values Protected Rating (cumulative score of the two criteria)

<u>Low</u>	0-15 points
<u>Moderate</u>	16-30 points
<u>High</u>	31-50 points

The Values Protected scores of 2 for Home Density and 20 for community infrastructure result in a total of 22 points, or a moderate rating.

Protection Capability

Protection capability includes the capacity and resources to undertake fire suppression and prevention activities. It involves a combination of the capacity of the fire protection agencies, local government and community organizations. A high score represents a high risk/low protection capability.

Fire Response

Organized structural response < 10 minutes	0 points
Inside fire district, but structural response > 10 minutes	8 points
No structural protection, wildland response < 20 minutes	15 points
No structural response & wildland protection > 20 minutes	30 points

With the exception of the City of Condon, response time for both wildfires and structural fires is considered more than 20 minutes throughout the county. The long response time in the rural areas is because of the long distances involved. In cities other than Condon, response time is still relatively long because the fire departments are all volunteers and the firemen often work out of town. Response time for the City of Condon is better than the rest of the county since many of the volunteers do live and work in the city. The rating score for this criterion is the highest, 30 points

Community Preparedness (proven mitigation efforts by the community that will make the fire response effective)

Organized stakeholders group, community fire plan, Phone tree, mitigation efforts	0 points
Primarily agency efforts	2 points
No effort	4 points

There are no stakeholders groups, CWPP, phone tree, or mitigation effort at the time of the planning process. Community Preparedness is mainly from agency efforts. Therefore, the rating score for this criterion is 2 points.

Protection Capability Rating (cumulative score of the two criteria)

<u>Low</u>	0-9 points
<u>Moderate</u>	10-16 points
<u>High</u>	17-40 points

The overall rating for the factor Protection Capability is 30 points for Fire Response and two points for Community Preparedness for a total of 32 points which is in the high category.

Overall Wildfire Risk Rating

An overall Wildfire Risk rating for the county was assigned based on the cumulative scores of the four risk factors (Structural Vulnerability was not rated as the home surveys have not been completed at the time of this planning process). The break points for the overall rating are:

Low	0-46
Moderate	47-113
High	114-190

The following scores for the four risk factors are:

Ignition Risk – 20
Wildfire Hazard – 57
Values Protected – 22
Community Preparedness – 32
Total – 131

A total score of 131 results in an overall wildfire risk rating for Gilliam County of “High”.

VI. Structure Survivability

This chapter describes the factors which affect the survivability of a structure during a wildfire event. It addresses factors surrounding the structure and the building material used in the construction of it. Recommendations are given to make a structure more survivable during a wildfire.

A. Structural Vulnerability

Structural Vulnerability is the likelihood that a structure will be destroyed during a wildfire event. The decisions and practices by the landowner within the home ignition zone account for 90 percent of the likelihood of a wildfire threatening a structure. The three primary criteria involved are construction material, defensible space, and presence of suppression action (access). A rating score for Structural Vulnerability can be developed once a survey of homes using NFPA 1144 criteria is completed. The criteria used in a NFPA 1144 survey are listed in Appendix B. Important measures homeowners can and should take to reduce the threat to life and property if and when a wildfire event occurs include:

- Create a defensible space around the house. Defensible space is the area between a house and an oncoming wildfire where vegetation has been modified to reduce the amount of burnable material and to provide an opportunity for firefighters to effectively defend the structure. Methods for creating defensible space include the removal of some live trees or brush, removal of all dead material in the zone, pruning lower tree branches, and mowing grass. The amount of defensible space around a structure can vary from as little as 30 feet to more than 200 feet, depending on the type of vegetation involved and the slope of the land. Homeowners should seek advice from their local fire department members, or the Oregon Department of Forestry when deciding on how to create an effective defensible space to fit their property.
- Once a defensible space has been created, it must be maintained annually to be effective.
- Replace more flammable plants with more fire resistant ones. A list of fire resistant plants is in Appendix C.
- Maintain an emergency water supply when living in areas not served by a municipal water source with hydrants nearby. A minimum supply of 2,500 gallons is

recommended. Notify the local fire department as to the existence of the water source, clearly mark it, and provide easy access to it.

- Provide at least two exit opportunities by vehicle from your property.
- Design access routes to allow emergency equipment to reach the house. Consider road width, grade and curves. Provide adequate turnaround areas for large vehicles. If constructing bridges, be sure they can carry heavy equipment. Clear flammable material at least 10 feet from roads and driveways.
- Post home identification numbers which can be easily identified by emergency personnel.



Home with insufficient defensible space

B. Structural Ignitability

Structural Ignitability relates to the cause of a structure igniting during a wildfire event. The cause of a structure igniting is usually related to building material used during construction. The roof of a structure is often the most vulnerable part of a building during a wildfire. Wood shake roofs offer some of the best potential for a fire start, usually from flying embers. Following are some recommendations to help make a structure more resistive to ignition during a wildfire event:

- Replace wood shake roofs with a class C or better fire resistant material.
- Clean all dead leaves and needles from roofs and gutters.
- Cover chimney outlets and stovepipes with a non-flammable screen of one-half inch or smaller mesh. Check screens for creosote buildup.
- Enclose eaves, balconies, and above decks with fire resistant material.

- Use fire resistant siding material.
- Limit the size and number of windows that face areas of dense vegetation. Use double or triple paned windows.
- Consider sprinkler systems inside and outside the structure.
- Avoid storing flammable materials, including firewood piles, within 30 feet of living quarters.

An excellent pamphlet dealing with structural vulnerability and ignitability is the Living With Fire, A Guide for Homeowners. Copies of this can be obtained from the Oregon Department of Forestry. A more complete list of projects for reducing wildfire vulnerability and ignitability is in Appendix D.

VII. Wildfire Mitigation Projects

This section establishes a strategy designed to mitigate the wildfire risk concerns in Gilliam County. Part A discusses priorities for wildfire hazard fuel treatment while Part B presents some projects which should be implemented throughout the county and some which apply to specific areas. Priority levels of High, Moderate, or Low are assigned to mitigation projects along with a time frame in which they should be implemented (immediate, mid-term, and long-term) and the agency responsible for doing so. Some of the projects may require grant funding in order to be successfully implemented.

A. Wildfire Hazard Fuel Priorities

As described in Chapter V, fuel conditions throughout the county are fairly uniform consisting mainly of grass, brush and cultivated agricultural crops. A small amount of forest consisting of juniper and ponderosa pine exists in the southeast portion of the county. Federal lands are mainly those administered by the Bureau of Land Management along the John Day Canyon. Priorities for hazard fuel treatment follow:

- Creation of defensible space around homes. Homes which could benefit from this type of treatment can be found in the communities as well as in the undeveloped areas.
- Development of fuel breaks or green spaces on the edge of communities, especially along the west boundary of Arlington and the east side of Lonerock.
- Vacant lots and brushy areas found within developed communities.
- Management of juniper and pine stands near the City of Lonerock.
- Conservation Reserve Program (CRP) lands. There is a need to create fuel breaks or to periodically do prescribed burns to reduce fuel loads.

B. Wildfire Mitigation Projects

Project #1

Develop a cooperative agreement with the City of Arlington to enable the city to provide assistance to the Fire Department during a wildfire event. An example of this type of assistance

would be to provide slip-on water pumps for city vehicles and have them participate in the initial attack for wildfire suppression. Proper training of city employees to be on wildfire suppression efforts would be required.

Priority – High

Time Frame – short term

Responsibility – City of Arlington and the Fire Departments

Project #2

Bring county fire safety standards up to code, consistent with state standards. Categories of standards include construction materials, fuel breaks, setbacks from ridge-tops, access roads, water source, power source, chimney screens.

Priority – High

Timeframe – mid-term

Responsibility – Gilliam County Planning Department, Oregon State Fire Marshall Office

Project #3

Encourage land owners to develop a green space (defensible space) in areas between heavy fuel zones and homes. A high priority area is the west boundary of the City of Arlington but this would also apply to areas in Condon, Mayville and Lonerock. Consider fuel breaks, planting fire resistance plants (see Appendix C), an irrigation type water line, prescribed burns, and the use of animals such as goats for grazing.

Priority - High

Timeframe - short-term

Responsibility – homeowners, cities, fire departments/districts.



West boundary of the City of Arlington

Project #4

Complete a road, culvert, and stream crossing assessment to address existing situations which could result in problems for evacuation of residents and limit fire apparatus response during a wildfire situation.

Priority – Moderate
Time Frame – mid-term
Responsibility – Gilliam County

Project #5

Bring all unprotected lands in the county under some type of formal wildland fire protection coverage.

Priority – High
Time Frame – short-term.
Responsibility – Gilliam County, fire districts.

Project #6

Complete survey and evaluation of home-sites using NFPA 1144 evaluation criteria. Enhance the county wildfire data base and add more site specific information. Notify homeowners with high and extreme ratings and advise them of their situation and what they can do to lower their risk rating. Incorporate survey results into this plan. Make survey results available to fire districts.

Priority – Moderate
Time Frame – short/mid-term
Responsibility – Gilliam County Emergency Management

Project #7

Assist Rural Fire Protection Districts and City Fire Departments in upgrading their firefighting equipment, facilities and training as needed.

Priority – High
Time Frame – short-term and continuing
Responsibility – cities, Gilliam County, ODF.

Project #8

Conduct county-wide wildfire prevention efforts including:

- Distribution of fire prevention literature and material to home owners.
- Placement of fire prevention signs at strategic locations. Develop a county-wide fire prevention sign plan in cooperation with ODF and the BLM to identify type of signs, locations, maintenance schedule, etc.
- Place public service announcements about fire prevention on the local TV channel. Work with local media to produce public service announcements using local fire personnel and community members.
- Conduct fire prevention programs in schools
- Do one-on-one landowner contacts to discuss wildfire prevention, provide on site assessments, suggestions and assistance.
- Assist communities to become “Firewise Communities”.
- Help communities to get organized and form neighborhood-type associations. Work with them to help identify fire prevention programs for their areas of concern.
- Provide information about what type of fire resistive plants to use for landscaping.

Priority – High

Time Frame – short-term and continuing

Responsibility – ODF, fire chiefs, BLM, Gilliam County.

Project #9

Work with the railroad to limit rail maintenance work along the Columbia River to time periods outside of the fire season. Assure that the provisions in the railroad’s Fire Management Plan are complied with including vegetative management in their ROW and the presence of fire suppression apparatus during maintenance activities.

Priority – Moderate

Time Frame – short-term and continuing

Responsibility – ODF, Gilliam County, fire districts

Project# 10

Provide technical and financial assistance to homeowners to help them develop and maintain defensible space around their homes and out buildings. Cost-share the cost of chemicals for weed control.

Priority – High

Time Frame – Mid-Term

Responsibility – Gilliam County, cities, fire departments/districts

Project #11

Establish a work crew(s) to help homeowners develop and maintain defensible space. Consider the use of a NORCOR crew.

Priority – Moderate
Time Frame – short-term
Responsibility – Gilliam County, cities.

Project #12

Encourage the city governments to require homeowners to cut weeds/grass/brush in vacant lots and around homes. Notify homeowners of the requirement and enforce the regulation. Provide assistance for those who cannot afford to comply.

Priority – Moderate
Time Frame – short-term and continuing.
Responsibility – cities

Project #13

Establish “cleanup days” with an emphasis on wildfire hazard reduction. Coordinate with the state program (Get in the Zone).

Priority – Moderate
Time Frame – short-term and continuing
Responsibility – cities, Gilliam County, fire districts and departments.

Project #14

Establish agreements/contracts with farmers and ranchers so they can provide equipment and assist in the suppression of wildfires in the county.

Priority – Moderate
Time Frame – short-term and continuing
Responsibility – Gilliam County, fire districts, ODF.

Project #15

Combine equipment and administrative services for the Condon Fire Department and the South Gilliam County Rural Fire Protection District into one facility.

Priority – High
Time Frame – short term

Responsibility – Gilliam County Fire Services, Condon Fire Department, South Gilliam County Rural Fire Protection District.

Project #16

Establish a satellite station at the industrial park as part of the North Gilliam Fire Protection District. Use district’s existing equipment for this facility.

Priority – High

Time Frame – short term

Responsibility – North Gilliam Fire Protection District, Gilliam County

Project # 17

Work with the NRCS (Natural Resources Conservation Services) to develop fuel breaks around CRP lands. Manage juniper stands and grass under-story to reduce fuel loads and rate of fire spread.

Priority – Moderate

Time frame – long term

Responsibility – Fire departments, county, NRCS.



Juniper removal project in vicinity of Lonerock

Project #18

Develop a wildfire emergency evacuation procedure. Consider the use of phone trees to notify residents of emergencies and specified evacuation routes.

Priority – High,
Time Frame – Short term,
Responsibility – Gilliam County

VIII. Appendix

Appendix A. Special Considerations

Senate Bill - 360

The Oregon Forestland-Urban Interface Fire Protection Act of 1997 (SB-360) is the State of Oregon's response to several escalating wildland fire problems. Wildfires are burning homes in the interface and firefighters are working in increasingly hazardous situations. Fire suppression costs are increasing significantly in Oregon. Fire fighting resources are limited and in some cases emergency service agencies cannot provide equipment and personnel to all structures threatened by a wildfire. SB-360 addresses these concerns and enlists the aid of the only people who can make fuel reduction changes to residential property: the landowners themselves. The vegetation treatment prescription found in the act is derived from research conducted at the Rocky Mountain Research Station in Missoula, Montana (Cohen and Saveland , 1996). The measures are simple and easy to apply and include:

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

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

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

Emergency Conflagration Act

Under circumstances when wildfires create a serious threat to life and property, the Governor may invoke the Emergency Conflagration Act. Once invoked, the Act authorizes the Governor to use the resources of any county, city, or district fire suppression organization to assist fire-fighting efforts anywhere in the state. The Act requires the state to reimburse the political subdivision for costs in providing such fire suppression assistance. The Governor can also declare a “state of emergency” authorizing the participation of all public agency personnel and equipment, including the Oregon National Guard, to assist in the battle against wildfires. During a Governor-declared “state of emergency,” the Oregon State Police coordinates National Guard resources through the Office of Emergency Management and structural fire fighting resources through the Office of the State Fire Marshal. The Oregon Military Department also provides both staff and equipment for emergency fire fighting needs.

Federal Emergency Management Act (FEMA) Eligibility

Federal fire management financial assistance is provided through the President’s Disaster Relief Fund and made available by FEMA. Only fires involving structures or homes can be declared eligible for FEMA reimbursement. Cost reimbursement can only occur if the Governor invokes the Emergency Conflagration Act and the Office of Emergency Management requests assistance and provides information on the estimated amount and severity of the threat to structures or homes through the FEMA Region 10 office. Each incident requires separate approval. After validating the nature and extent of the threat, the FEMA regional office requests approval by the FEMA director in Washington, D.C. Once approved, subsequent fire fighting costs on all FEMA approved fires are eligible for approximately 70% cost reimbursement under an approved grant for managing, mitigating, and controlling designated fires during the incident time period as established by FEMA.

The following fires (8 out of 10 in the 2002 fire season) were approved by FEMA and were eligible for cost reimbursement:

Cache Mountain Fire	Deschutes County
Biscuit (Florence) Fire	Josephine County
Timbered Rock Fire	Jackson County
Sheldon Ridge Fire	Wasco County
Flagtail Fire	Grant County
Squire Peak Fire	Jackson County

Winter Fire
Eyerly Fire
Foster Gulch
Eggley (07)

Lake County
Jefferson County
Baker County
Harney County

Healthy Forest Restoration Act (HFRA)

The November 2003, Healthy Forest Restoration Act (HFRA) offers new tools and additional authorities for treating more acres in a timely fashion to meet forest restoration goals. It provides new authorities to treat fuels on federal land that require NEPA at the EA or EIS level. HFRA strengthens public participation by providing incentives for the local communities to develop their own community wildfire protection plans. It limits the complexities of Environmental Analyses for hazard reduction projects. It provides a more effective appeal process and instructs the Courts to balance short-term affects of implementing projects against the harm caused by delay and long-term benefits of a restored forest.

HFRA Title I addresses vegetation treatments on National Forest System and Bureau of Land Management lands that are at risk of wildland fire or insect and disease epidemics (emphasis is on Fire Regime I, II, and III in Condition Class 2 & 3). Title II encourages each community to develop their own CWPP and to designate their own specific WUIs where restoration projects might occur. Half of all fuel reduction projects under the HFRA must occur in the community protection zone as defined by HFRA. It also encourages biomass energy production through grants and assistance to local communities to help create market incentives for the removal of otherwise valueless forest material.

National Fire Plan (NFP)

Following the explosive fire season of 2000, the National Fire Plan was established to respond to severe wildland fires and their impacts to communities. It is an umbrella term that covers a variety of government programs and ideas addressing wildland fire issues. The NFP is a long-term investment that will help protect human lives, communities, and natural resources, while fostering cooperation and communication among federal, state, and local governments, tribes, and interested publics. Federal fire agencies worked closely with these partners, and the Western Governor's Association to complete a 10-Year Comprehensive Strategy in August 2001.

The authors of the 10 Year Strategy established a Collaborative Framework through which the strategy is to be implemented. This framework reflects their understanding that, in order to successful, implementation must involve communication and collaboration across ownership boundaries, administrative jurisdictions, and areas of interest. Further the strategy 'should enhance collaboration among all levels and all parties for planning, decision making, implementation, monitoring and learning, without altering the responsibilities or statutory authorities of participating federal and state agencies.'

In 2002, the Implementation Plan for the 10-Year Strategy reiterated the importance of this framework for achieving the desired principles, goals, and objectives. The Implementation Plan identified the three levels of accountability on which the framework is built. A 2006 update of the Implementation Plan provides Characteristics of Successful Collaboration and identifies three

Implementation Tasks. These additions are intended to promote more effective implementation of the plan by participants at all levels.

The NFP is focused on firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The guiding principle for dealing with fire risk is the reduction of hazardous fuel loads threatening communities and wildland ecosystems. The NFP offers grant opportunities for hazard fuel reduction, wildfire planning, wildfire prevention, and fuel utilization. Most NFP funding in Oregon goes to wildfire preparedness and hazardous fuel treatment projects.

Oregon Statewide Land Use Planning Goals

Since 1973, Oregon has maintained a strong statewide program for land use planning. The foundation of that program is a set of nineteen statewide planning goals. The goals express the state's policies on land use and related topics. The program is administered through the Department of Land Conservation and Development (DLCD), and Oregon's cities and counties. Cities and counties implement the requirements of the statewide planning goals through state-approved local comprehensive land use programs.

Planning goals related to WUI fire hazards are Goal 4 – Forest Lands, Goal 7 – Natural Hazards, and Goal 14 – Urbanization. Goal 4 requires local governments to minimize risks associated with wildfire when new dwellings or other structures are allowed in forestlands. Goal 7 requires local governments to develop programs to reduce risks to people and property from a variety of natural hazards, including wildfire. Goal 14 mandates that cities have urban growth boundaries (UGBs) to provide for urban uses and limit urban-type development on rural resource lands outside of UGBs.

County Emergency Management

Gilliam County has recently completed a Natural Hazard Mitigation Plan. This plan addresses wildfire in its Risk Assessment section which has the following to say about the subject:

- Wildfire hazards exist throughout the county but are particularly notable in areas where wheat, other crops, and natural vegetation exist, which includes most of the county.
- There have been four notable wildfires in Gilliam County over the past 12 years.
- In 1994, 40,000 acres burned in Gilliam County.
- On July 10 & 11, 1998 there was a lightning caused range fire about ten miles north of Condon. This fire was extinguished and a second lightning caused fire started on the evening of July 11. There were no fatalities, injuries or property/crop damage.
- On July 12, 1998, a range fire near Blalock was caused by a bird causing an arc between two power lines. During the repair, a line sparked and caused a second fire which did burn a couple hundred acres of wheat, several outbuildings

and grain storage facilities.

- The Willow Creek Fire in 2000 destroyed 27,000 acres in Gilliam and Morrow Counties.
- The summer weather, terrain, crops and natural vegetation of Gilliam County lends itself to the ongoing problem of wildfires.
- The community self-completed wildfire hazard risk rating is high with a high probability of a future wildfire event.



Interface with the City of Lonerock and surrounding lands.

Fire Safety Standards

Gilliam County and the State Fire Marshal Office will begin development of safety standards which will apply to new home development in the county. The purpose of the standards is to protect home-owners and fire fighting personnel during a fire on their property, as well as surrounding lands. Categories of county standards include: construction material, fuel breaks, setbacks from ridge-tops, cliff and bluffs, access roads, water source, power supply, chimney screens.

State Fire Marshal Office standards address water source and access for properties with structures; they are basically the same throughout the county. Homes larger than 3,500 square feet require a water source for fire fighting purposes. For access, the State requires a way to get fire fighting vehicles to within 150 feet of the structure.

Appendix B: Home-Site Survey Rating Criteria

National Fire Protection Association Standard 1144 (NFPA 1144)
(Formally NFPA 299)

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

	Less than 9%	1
	Between 10 and 20%	4
	Between 21 and 30%	7
	Between 31 and 40%	8
	Greater than 41%	10
D	Additional Rating Factors	
1	Topography that adversely effects wildland fire behavior	0 - 5
2	Areas with a history of higher fire occurrence	0 - 5
3	Areas of unusually severe fire weather and winds	0 - 5
4	Separation of adjacent structures	0 - 5
E	Roofing	
1	Construction Material	
	Class A roof [metal, tile]	1
	Class B roof [composite]	3
	Class C roof [wood shingles]	15
	Not rated	25
F	Existing building construction	
1	Materials (predominant)	
	Noncombustible siding/deck	0
	Noncombustible siding/wood deck	5
	Combustible siding and deck	10
2	Setback from Slopes > 30%	
	More than 30 ft to slope	1
	Less than 30 ft to slope	5
	Not Applicable	0
G	Available Fire Protection	
1	Water Source availability (on site)	
	500 gpm (1892.7 lpm) hydrants <1000ft (304.8m) apart	0
	250 gpm (1892.7 lpm) hydrants <1000ft (304.8m) apart	1
	More than 250 gpm non-pressurized, 2hrs	3
	Less than 250 gpm non-pressurized, 2hrs	5
	No hydrants	10
2	Water source availability (off site)	
	Sources within a 20 min round trip	1
	Sources within a 21 - 45 min round trip	5
	Sources > 46 min round trip	10
H	Utilities (Gas and Electric)	
1	All underground utilities	1
	One underground, one above ground	3

	All above ground	5
I	Totals for subdivision	
	Point totals	
	Low Hazard < 39 points	
	Moderate Hazard 40 - 69 points	
	High Hazard > 70 points	

Appendix C. Fire-Wise Plant Material

Fire-Wise Plant Material for the Pacific Northwest

(Adopted from “Living With Fire – A Guide for the Homeowner”)

Although there are no fire-proof plant materials, the following is a list of some firewise plants that can be used in landscaping for fire prevention. Landscape maintenance is far more important to fire prevention than the selection of plant materials. When planning your landscape, use the characteristics of Firewise plants along with site characteristics such as slope, aspect, hardiness zone and amount of precipitation to choose plant material suitable for your site.

TREES

Common Name

Conifers;

- Calocedrus decurrens Incense cedar
- Thuja plicata Western red cedar

Deciduous:

- Acer spp. Maple
- Alnus spp. Alder
- Betula Birch
- Catalpa speciosa Northern catalpa
- Celtis occidentalis Hackberry
- Cornus florida Flowering dogwood
- Fagus spp. Beech
- Fraxinus spp. Ash
- Gleditsia tricanthos Honeylocust
- Liquidambar styraciflua Sweetgum
- Malus spp. Apple
- Populus spp. Aspen, cottonwood, poplar
- Prunus spp. Cherry
- Quercus spp. Oak (white, burr or red)
- Robinia pseudoacacia Black locust
- Salix spp. Willow

SHRUBS common name

- Amelanchier spp. Serviceberry

Atriplex canescens
Berberis spp.
Buddelia davidi
Caryopteris x clandonensis
Cornus sericea
Cotoneaster spp.
Gaultheria shallon
Holodiscus discolor
Liqustrum spp.
Mahonia spp.
Pachistima canbyi
Philadelphus spp.
Rhamnus fragula
Rhododendron spp.
Rhus spp.
Ribes spp.
Sheperdia argentea
Symphoricarpos albus
Viburnum trilobum
Yucca spp.

PERENNIALS

Achillea spp.
Allium schoenoprasum
Bergenia spp.
Brodiaea spp.
Coreopsis spp.
Erysimum linifolium
Eschscholzia spp.
Fragaria spp.
Geranium spp.
Hemerocallis hybrids
Heuchera spp.
Hosta spp.
Iris spp.
Kniphofia uvaria
Lupinus spp.
Oenothera spp.
Penstemon spp.
Solidago spp.
Strachys byzantina

GROUNDCOVERS

Succulents:

Delosperma nubigenum
Echeveria spp.
Sedum spp.

Four wing saltbrush
Oregon Grape
Butterfly bush
Blue-mist spirea
Red osier dogwood
Cotoneaster
Salal
Oceanspray
Privet
Creeping grape holly
Dwarf mountain lover
Mock orange; syringa
Buckthorn
Azaleas, rhododendrons
Sumac
Currant
Silver buffaloberry
Snowberry
Cranberry bush
Yucca

Yarrow
Chives
Bergenia
Lillies
Coreopsis
Wall flower
California poppy
Wild strawberries
Geranium
Daylillies
Coral bells
Hosta
Iris
Red hot poker
Lupine
Evening primrose
Beard tongue
Goldenrod
Lamb's ear

Hardest ice plant
Hens & chicks
Stone crops

Non-succulents:

Achillea tomentosa	Wolly yarrow
Ajuga reptans	Carpet bugle
Arctostaphylos uva-ursi	Kinnikinnick
Armeria maritima	Sea pink; thrift
Cerastium tomentosum	Snow in summer
Cotoneaster dammeri	Bearberry cotoneaster
Euonymus fortunei	Winter creeper
Hypericum calycinum	St. Johnswort
Potentilla tabernaemontanii	Spring cinquefoil
Senecio cineraria	Dusty miller
Thymus praecox arcticus	Mother of thyme
Verbenia bipinnatifida	Verbenia
Vinca minor	Periwinkle

Appendix D. Firewise Practices to Reduce Wildfire Vulnerability/Ignitability

No cost, just a little time projects

- Move your firewood pile out of your home's defensible space.
- Perform a FIREWISE assessment of your home.
- Clean your roof and gutters of leaves and pine needles (best done in October).
- Clear the view of your house number so it can be easily seen from the street.
- Put a hose (at least 100' long) on a rack and attach it to an outside faucet.
- Trim all tree branches if they overhang your house.
- Trim all tree branches from within 20' of all chimneys.
- Remove trees along the driveway to make it 12' wide.
- Prune branches overhanging the driveway to have 14' overhead clearance.
- Maintain a green lawn for 30' around your home.
- If new homes are still being built in your area, talk to the developer and local zoning officials about building standards.
- Plan and discuss an escape plan with your family. Have a practice drill. Include your pets.
- Get involved with your community's disaster mitigation plans.
- Check your fire extinguishers. Are they still charged? Are they easy to get to in an emergency? Does everyone in the family know where they are and how to use them?
- Clear deadwood and dense flammable vegetation from your home's defensible space.
- Remove conifer shrubs from your home's defensible space especially if your home is in a high-risk area.
- Review your homeowner's insurance policy for adequate coverage. Consult your insurance agent about costs of rebuilding and repairs in your area.
- Talk to you children about not starting fires or playing with matches.
- If you have a burn barrel that you use for burning trash, remove it!
- Compost leaves in the fall, don't burn them.
- If you burn your brush piles or grass in the spring, get a burning permit.
- Always have a shovel on hand and hook up the garden hose BEFORE you start the fire.
- Never burn if the smoke and flames are blowing towards your home (or your neighbor's home).

- Be a Firewise advocate.

Minimal cost actions - (\$10 - \$25 and a little time)

- Install highly visible house numbers (at least 4" tall) on your home.
- Install big, highly visible house numbers (at least 4" tall) at the entrance of the driveway onto the street. Use non-flammable materials and posts.
- Install metal screens on all attic, foundation, other openings on your home to prevent accumulation of leaves and needles.
- Hold a neighborhood meeting to talk about fire safety. Invite your local fire chief. Have coffee and donuts for neighbors.
- Install a fire extinguisher in the kitchen AND the garage. Install a metal shield between your home and an attached wood fence.
- Replace conifer and evergreen shrubs with low-flammable plants in your home's defensible space.
- Thin and prune conifer trees for 30' to 100' around your home.
- Purchase and use a NOAA weather alert radio. Many types of emergencies are announced through this service.
- Replace vinyl gutters and downspouts with non-flammable, metal gutters and downspouts.
- Install a spark arrestor or heavy wire screen with opening less than 1/2" on wood burning fireplaces and chimneys.

Moderate cost actions - (\$50 - \$250 and a little more work)

- Build a gravel turn around area near your house big enough to allow a fire truck to turn around.
- Join your neighbors in having an additional access road into your neighborhood. Share the costs.
- Treat flammable materials like wood roofs, decks, and siding with fire retardant chemicals
- Modify driveway gates to accommodate fire trucks. They should be at least 10' wide and set back at least 30' from the road. If locked, use a key box approved by your local fire department or use a chain loop with the lock that can be cut in an emergency.
- Enclose decks to prevent accumulation of leaves, needles, and debris. Include a metal screen with a 1/8" mesh opening to prevent sparks from getting under the deck.

High cost actions - (more than \$500)

- Replace your roof with fire-resistant materials such as Class A shingles.
- Install a roof irrigation system to protect your home's roof.
- Install an independent water supply for a sprinkler system with a non-electric (e.g., propane) powered pump capable of running unattended for 24 hours.
- Replace wood or vinyl siding with non-flammable material.
- Replace single-pane glass windows and plastic skylights with tempered, double-pane glass.

- Box in eaves, fascias, and soffits with aluminum or steel materials with metal screens to prevent entry of sparks.
- Improve driveway culverts and bridges to accommodate the weight of a fire truck.
- Relocate propane tanks inside the defensible space but at least 10' from the house.
- Have non-flammable ground cover such as gravel around them for 10'.
- Have electric service lines to your house placed underground.
- Improve your driveway by straightening sharp curves and filling in sharp dips that would hinder a fire truck.