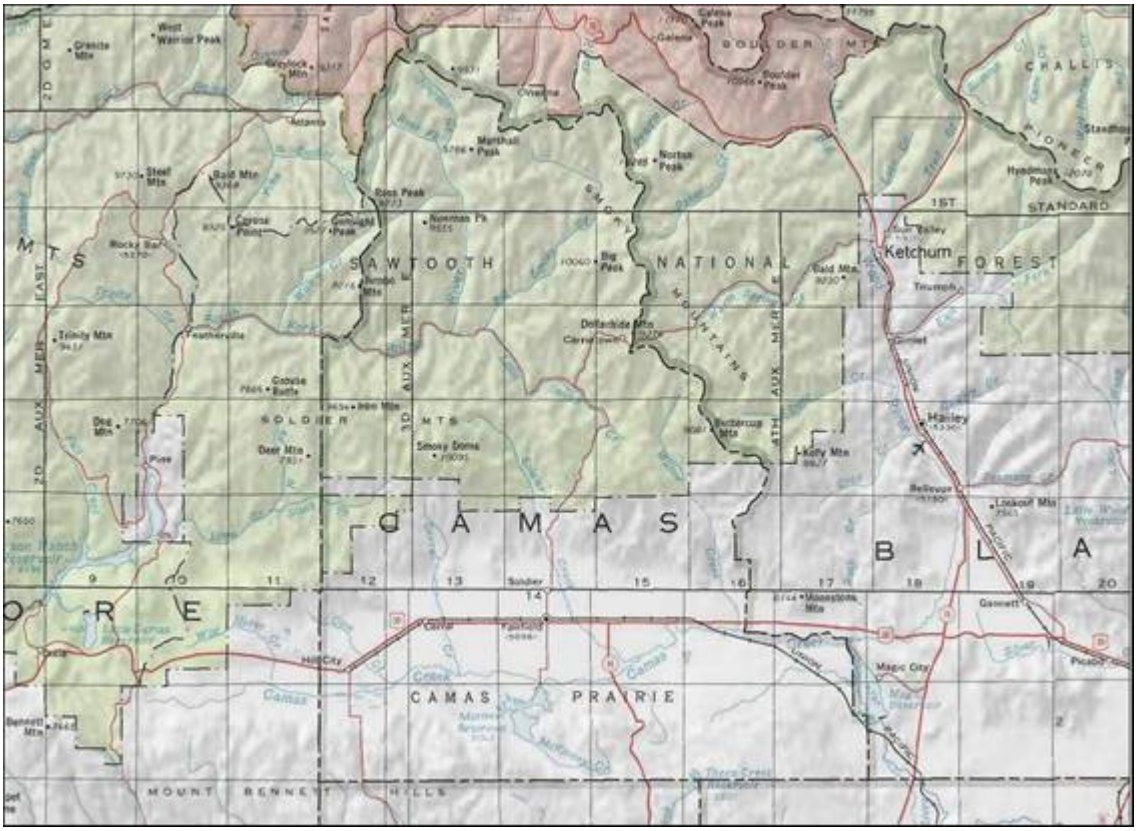
CAMAS COUNTY, IDAHO
Wildland Fire Hazard Mitigation Plan

Implementation of the National Fire Plan for Community Assistance
for Protection from Catastrophic Wildland Fires

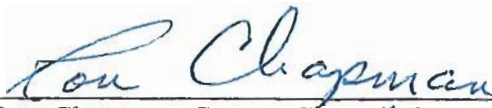


Prepared for the Board of Commissioners
Camas County
Fairfield, Idaho 83327

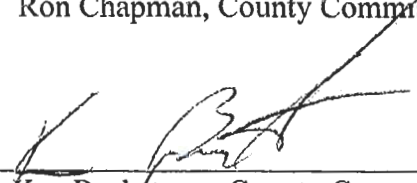
Prepared by

North Wind, Inc.
P.O. Box 51174
Idaho Falls, Idaho 83405
September 2004

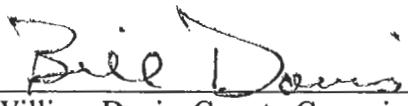
This plan has been reviewed and approved by the following individuals.



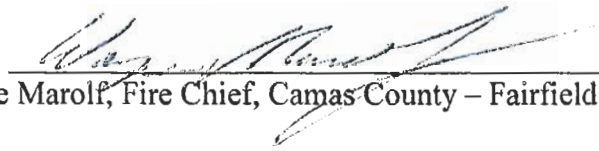
Ron Chapman, County Commissioner, Camas County



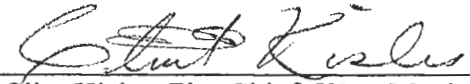
Ken Backstrom, County Commissioner, Camas County



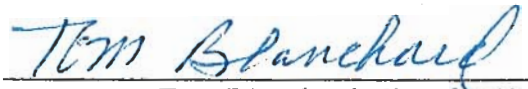
William Davis, County Commissioner, Camas County



Wayne Marolf, Fire Chief, Camas County – Fairfield City Fire Department



Clint Kisler, Fire Chief, West Magic Fire Department



Tom Blanchard, Fire Plan Facilitator

Chris Simonson, Fire Management Officer, BLM

TABLE OF CONTENTS

List of Tables

List of Figures

DISCLAIMER

North Wind, Inc. has prepared this Wildland Fire Hazard Mitigation Plan solely for Camas County, Idaho. The technical information contained herein should not be released without the written consent of the County Commissioners or other Authorized Officer. This document shall be used as a guide for county and local fire management agencies to mitigate the risk and hazard of wildfire.

This is not a final decision document and Camas County should not implement fire management recommendations contained herein without appropriate planning, analysis, and funding. This management plan is intended solely as guidance by which fire risk and mitigation analyses have been provided to Camas County, Idaho by North Wind, Inc. North Wind, Inc. shall not be held liable for problems or issues associated with implementing the actions contained in this report.

1.0 INTRODUCTION

After the record-breaking wildfire season of 2000, Congress approved funds for federal and state agencies and local communities to develop and implement a national strategy for preventing the loss of life, natural resources, private property and livelihoods. The result of that planning and preparation is commonly known as the "National Fire Plan" (NFP) (U.S. Department of Agriculture [USDA] 2002). This plan was approved in September 2000 and is fully titled *Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000*. The NFP includes five key points: firefighting preparedness, rehabilitation and restoration of burned areas, reduction of hazardous fuels, community assistance, and accountability. In 2001, Congress released another directive requiring the Departments of Agriculture and the Interior to engage Governors in the development of a National ten-year comprehensive strategy that would implement the NFP. For this effort, the *Idaho Statewide Implementation Strategy for the National Fire Plan* (Kempthorne et al. 2002) was developed. It was approved in May 2002 and involved cooperation and collaboration of the Secretary of Interior, Secretary of Agriculture, the Governors of Montana, Wyoming, Idaho, and Oregon, and the Director of the Council on Environmental Quality. The primary goals of the Idaho Plan are to improve prevention and suppression of wildfire, reduce hazardous fuels, restore fire-adapted ecosystems, and promote community assistance.

2.0 PURPOSE AND GOAL

The purpose of this mitigation plan is to identify and mitigate wildfire risks and negative consequences in communities and Wildland Urban Interface (WUI) areas within two Fire departments (Figure 1) of Camas County, Idaho. For the purpose of this plan a WUI is defined as "the geographical area where structures (subdivisions and additions) and other human development meets or intermingles with wildland or vegetative fuels." The mitigation plan addresses Federal Emergency Management Agency (FEMA) criteria contained in 44 CFR Part 201.6 and follows guidance from the *Idaho Statewide Implementation Strategy for the National Fire Plan* (Kempthorne et al. 2002) by:

- Identifying fire hazards that affect Camas County and its residents
- Providing sufficient information to make mitigation decisions
- Discussing existing resources that are most current and best available
- Describing the process used to develop the plan
    - How it was prepared, who was involved in the process, and how the public was involved
- Maintaining the plan
    - How it will be monitored, evaluated, and updated annually within a five-year cycle

The plan will be maintained by a group of Camas County residents or Wildland Fire Interagency Group. The group will be represented by agencies countywide with wildland fire suppression experience and responsibilities. County Commissioners will take the lead for monitoring the plan while the other group members evaluate the risks and vulnerabilities to wildland fire within their area of concern. The maintenance process will allow local governments, when appropriate, to incorporate the requirements of the

plan into other planning mechanisms such as comprehensive or capital improvement plans which will include public participation through scheduled hearings and meetings.

The overall goal of this plan is to reduce the frequency of wildfires spreading from city or private property to public lands and from spreading from public lands to municipal property. Fire fighter safely will always come first. This goal will be achieved by reducing fuels in high risk areas and conducting public education and training programs throughout the county.

3.0 GENERAL DESCRIPTION OF ASSESSMENT AREA

Camas County was established February 6, 1917 with its county seat at Fairfield. It encompasses 1,075 square miles. Camas County is predominately made up of rural and forested areas. The areas around Fairfield have experienced some growth and development. Development has mostly occurred within the low lands associated with Highway 20, which runs east to west through the southern extent of the county. Most of the industries within the county are related to agriculture products, their production, harvest or shipping. The only urban center in the county is the town of Fairfield. Smaller communities include Soldier, Corral, and Hill City located along Highway 20.

Landownership

Camas contains approximately 687,997 acres divided among four landowners (Table 1 and Figure 1).

Table 1. Land Status of Camas County, Idaho

Owner	Acres	Percent
BLM	118,715	17
USFS	317,744	45
Water	2,421	2.5
Private	227,456	33
State	22,258	2.5
Total	688,594	100

Population and Demographics

There are 991 people (Idaho's least populated county), 396 occupied households, and 287 families in Camas County (2000 Census). The population density is >1 persons per square mile. In general the population is light throughout the county with the densest populations occurring in the towns and communities. Due to farming, ranching, and recreation there are numerous individual home sites scattered throughout the rural areas of the county. The city of Fairfield has the largest population of 395 persons, with the remaining 596 persons being scattered throughout the communities of Soldier, Hill City, and Corral as well as farms and ranches located throughout the county.

Topography and Vegetation

The topography of Camas County is combination of high mountain desert with elevations from 5,055 feet in the valley bottoms where the topography is flat or gently rolling to mountainous areas with peaks rising above 10,000 feet. Steep slopes and narrow canyons characterize the mountainous areas. Some of the more common plant species found in the lower elevation mountain desert and prairies of Camas County include Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), alkali sagebrush (*Artemisia longiloba*), low sagebrush (*Artemisia arbuscula arbuscula*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), arrowleaf balsamroot (*Balsamorhiza sagittata*), and Thurber needlegrass (*Achnatherum thurberianum*) (Figure 2). The agricultural areas have been developed for seed crops such as alfalfa and summer and spring wheat crops. At the higher elevations areas are a mixed coniferous forest primarily on the north facing slopes and sagebrush and mountain shrub communities on the south facing aspects. The mixed conifer areas are comprised of species such as Ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), and subalpine fir (*Abies lasiocarpa*), on north aspects and along steeper canyon bottoms and the southern aspects are dominated by basin big sage (*Artemisia tridentata tridentata*), Wyoming big sagebrush (*Artemisia tridentata wyomingensis*) bitterbrush (*Purshia tridentata*), and pockets of snowberry (*Symphoricarpos albus*), and serviceberry (*Amelanchier alnifolia*). Many of the draws contain aspen and cottonwood communities (Figure 2).

Climate

Climate in Camas County is generally consistent with other counties located along the northern edge of the Snake River Plain. In winter the average temperature is 20°F and the average daily minimum is 9°F. In summer the average temperature is 63°F and the average daily maximum temperature is 82°F. In general the summer days are hot and the nights are fairly cool. Precipitation during the summer months is limited to isolated showers and thunderstorms that produce localized precipitation. Months of July through October represent the lowest average total precipitation recorded and coincide with the peak fire season when summer storms likely occur. Winter conditions usually arrive between late October and early November. Snowfall is the primary source of precipitation for the county making up approximately 90-95 % of the annual moisture. Mountainous area within the county receive greater than 95 inches of snow, and the lower elevation around Fairfield receive and average of 71 inches of snowfall annually.

Tables 2 and 3 summarize long-term climatic data for Fairfield and Hill City. Data from these weather stations provide a good cross-section of the lower portions of Camas County's weather patterns.

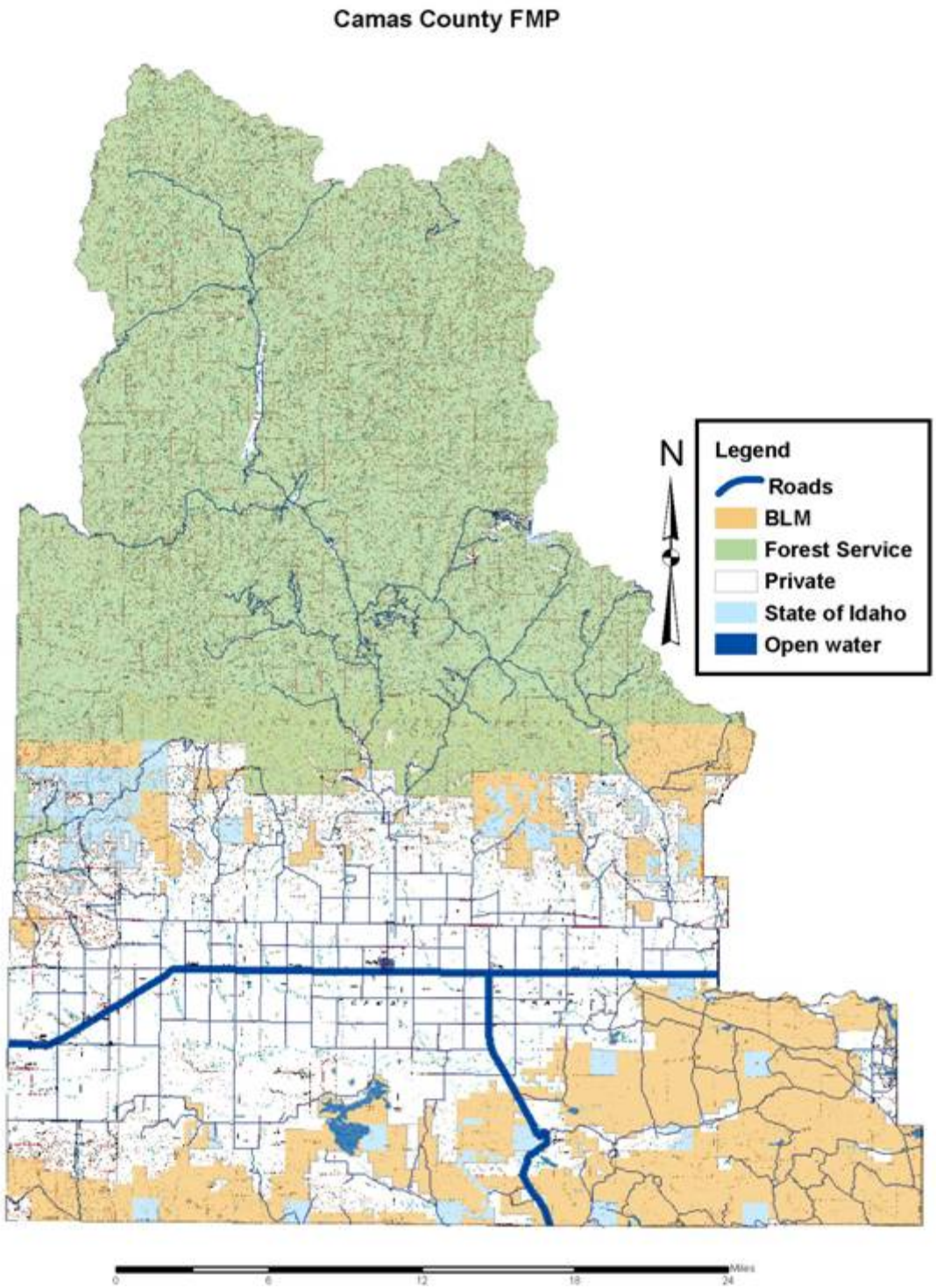


Figure 1. Camas County land ownership and county roads.

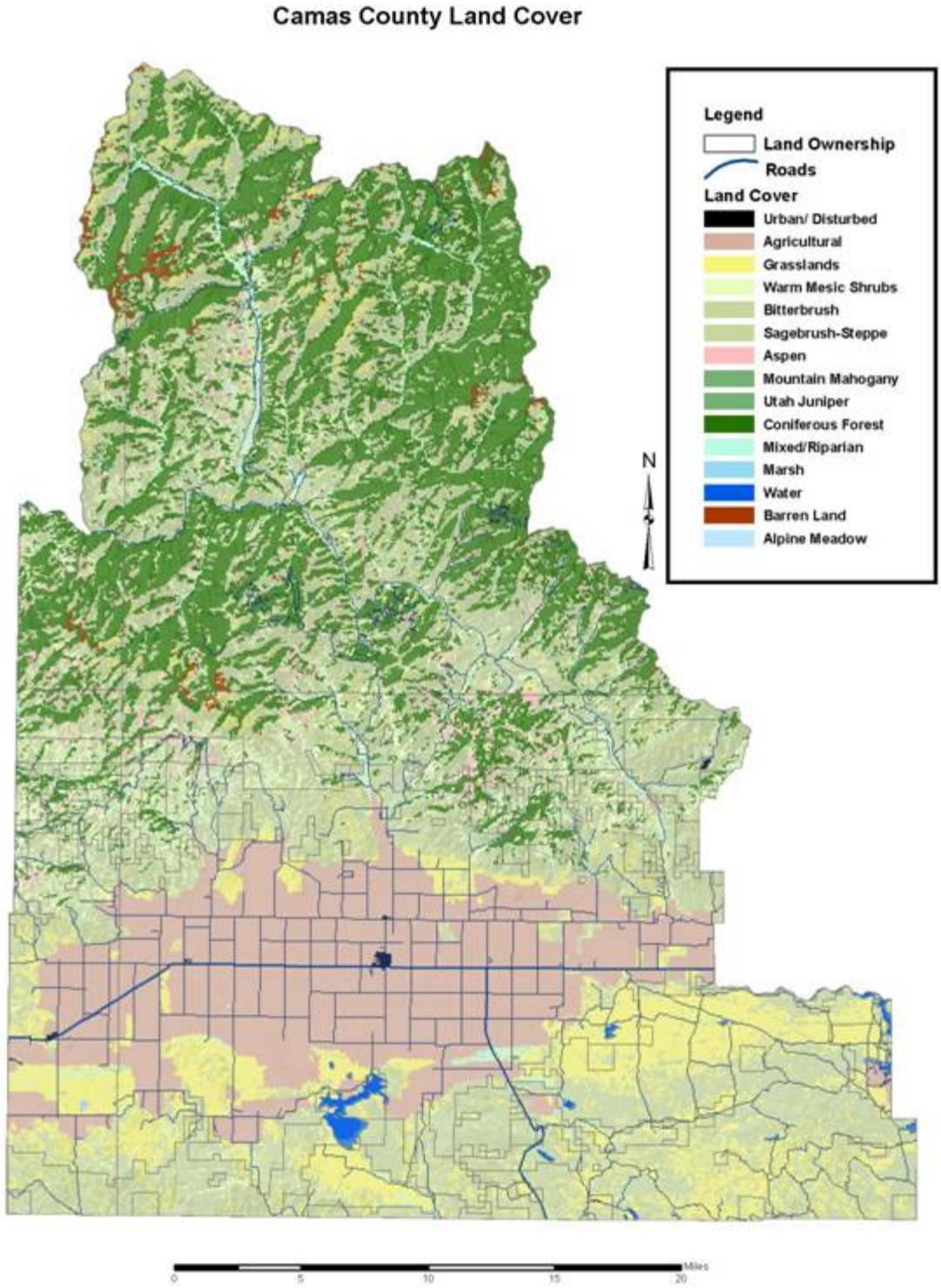


Figure 2. Camas County vegetation map.

Table 2. Monthly Climate Summary for Fairfield, Idaho for years 1948 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	29.1	34.6	42.1	55.0	66.6	75.5	85.4	84.2	74.9	63.1	43.8	32.0	57.2
Average Min. Temperature (°F)	5.2	8.1	16.6	27.4	34.8	40.4	45.9	43.8	35.3	26.9	17.8	8.2	25.9
Average Total Precipitation (in.)	2.35	1.72	1.30	1.05	1.22	0.96	0.46	0.43	0.66	0.77	1.85	2.30	15.08
Average Total Snowfall (in.)	21.5	12.3	6.9	2.0	0.5	0.0	0.0	0.0	0.2	0.7	7.7	19.5	71.4
Average Snow Depth (in.)	15	19	11	1	0	0	0	0	0	0	1	8	5

Table 3. Monthly Climate Summary for Hill City, Idaho for years 1931 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (°F)	28.7	33.2	40.3	53.8	65.4	73.7	85.4	84.7	74.8	61.8	42.9	31.7	56.4
Average Min. Temperature (°F)	5.9	8.9	16.9	27.7	34.9	39.9	45.3	43.3	35.2	27.0	18.8	9.5	26.1
Average Total Precipitation (in.)	2.29	1.59	1.27	1.00	1.16	0.96	0.36	0.36	0.57	0.94	1.71	2.20	14.42
Average Total Snowfall (in.)	22.0	14.3	7.5	1.4	0.3	0.0	0.0	0.0	0.1	0.5	7.0	20.8	73.8
Average Snow Depth (in.)	16	16	12	2	0	0	0	0	0	0	2	8	5

4.0 EXISTING CONDITIONS AND RESOURCES

This section focuses on wildland fire issues and how they impact current conditions in Camas County. Existing conditions and resources were determined by: (1) interviews with all local fire chiefs, as well as local, state, federal employees, and county residents. (2) surveying and photographing subdivisions within a WUI that were identified by fire chiefs as areas of concern, (3) documenting and photographing fuel loads within these subdivisions and along subdivision access roads, (4) recording all information on specific forms (see Field Assessment Forms and Ratings - Tables 8, 9, and 10) and in accordance with a Assessment Ignition Model (Cohen, 1995) and, (5) locating potential fire fighting water sources such as hydrants, ponds, live streams, and irrigation mainline access points (Figures 5 and 10).

Risk of Fires and Fire Frequency

Wildfire risk within and around Camas County is generally moderate due to the proximity of large areas of agricultural land. Areas adjacent to and south of the Sawtooth National Forest (SNF) are high risk due to fuel loads, lack of survivable space around structures, and higher population density during the fire season. Areas within SNF have experienced mostly natural fires of high frequency and low acreage (less than 10) along ridgelines. Figure 3 shows fuel loads and historical fire perimeters and Table 4 shows a number corresponding to the location of a particular fire seen on Figure 3; fire years; individual fires; and, acres burned (10 or more) for years 1995 to 2003. These data represent only wildland mutual aid fires on BLM and does not include grass and brush fires, structural or other types fires or SNF data. Contact fire department chiefs and/or SNF in Fairfield for additional fire history data. Overall, the highest fire frequency occurred on national forest coniferous and sagebrush-grassland vegetation types and will continue to be high in these types due to the accumulation of flammable fuels over the past decade combined with drought.

Table 4. Camas County fire history for years 1995 to 2003.

Number*	Year	Fire**	Acres
1	1995	Hill City	113
2	1995	Wolf Lane	10
3	1996	Davis Mountain	3,928
4	1998	McCan Gulch	523
5	2001	Willow Creek	13,011
6	2001	Beaver Creek	348
7	2003	Elk Creek	350
		Total	**18,283**

*See Figure 3, page 8
** BLM mutual aid fires only

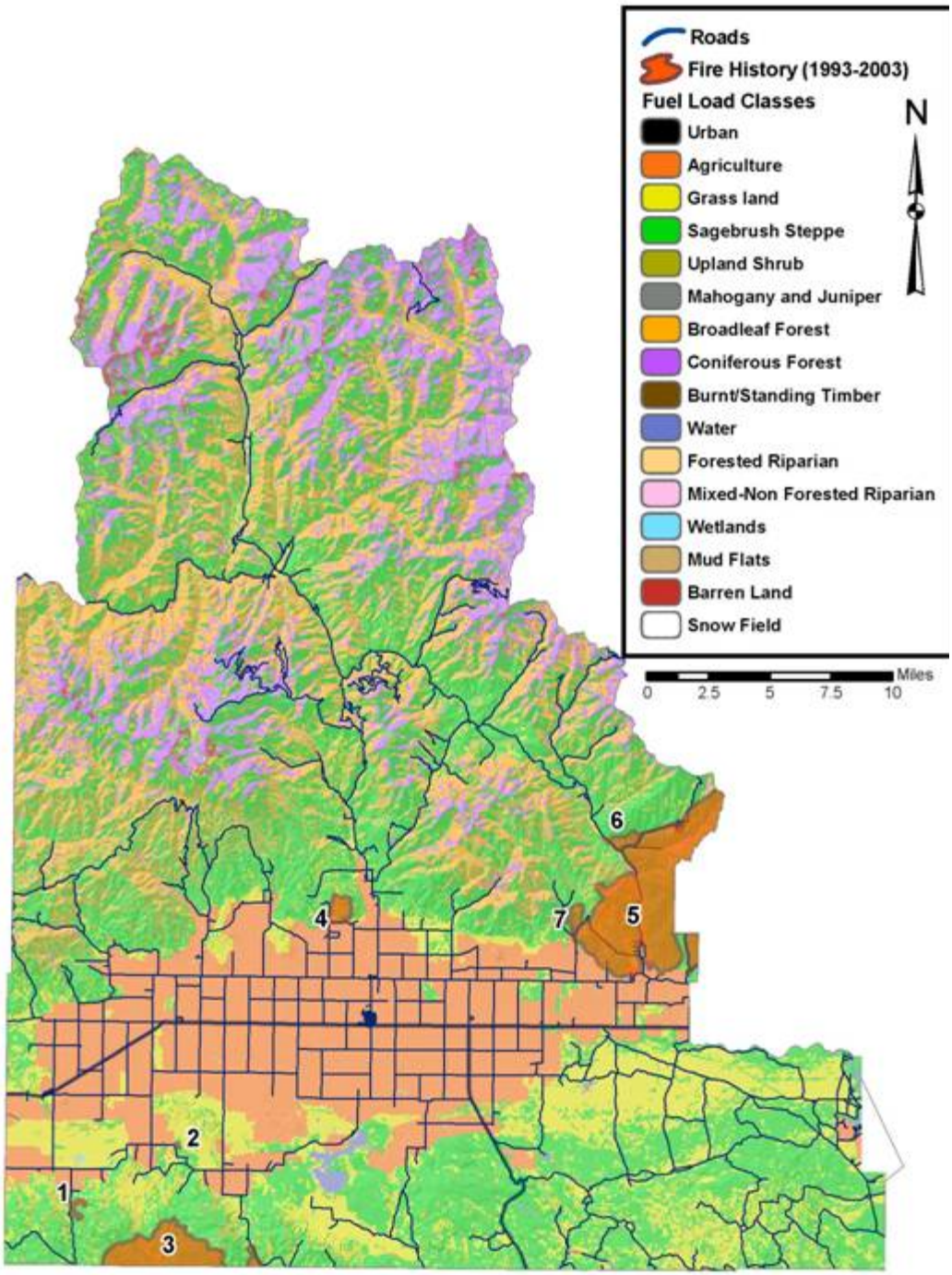


Figure 3. Fuel loads and historic fire perimeters within Camas County.

Slope Risk Model

Figure 4 shows the Slope Risk Model for Camas County. The steepest slopes are located in the northern portion of the county and extreme southwest and can cause fires to spread rapidly because of convection and radiant heat and the fact that the flames are closer to the fuels. There is a correlation between the high fire frequency and steep slopes on the Sawtooth National Forest (Figure 3).

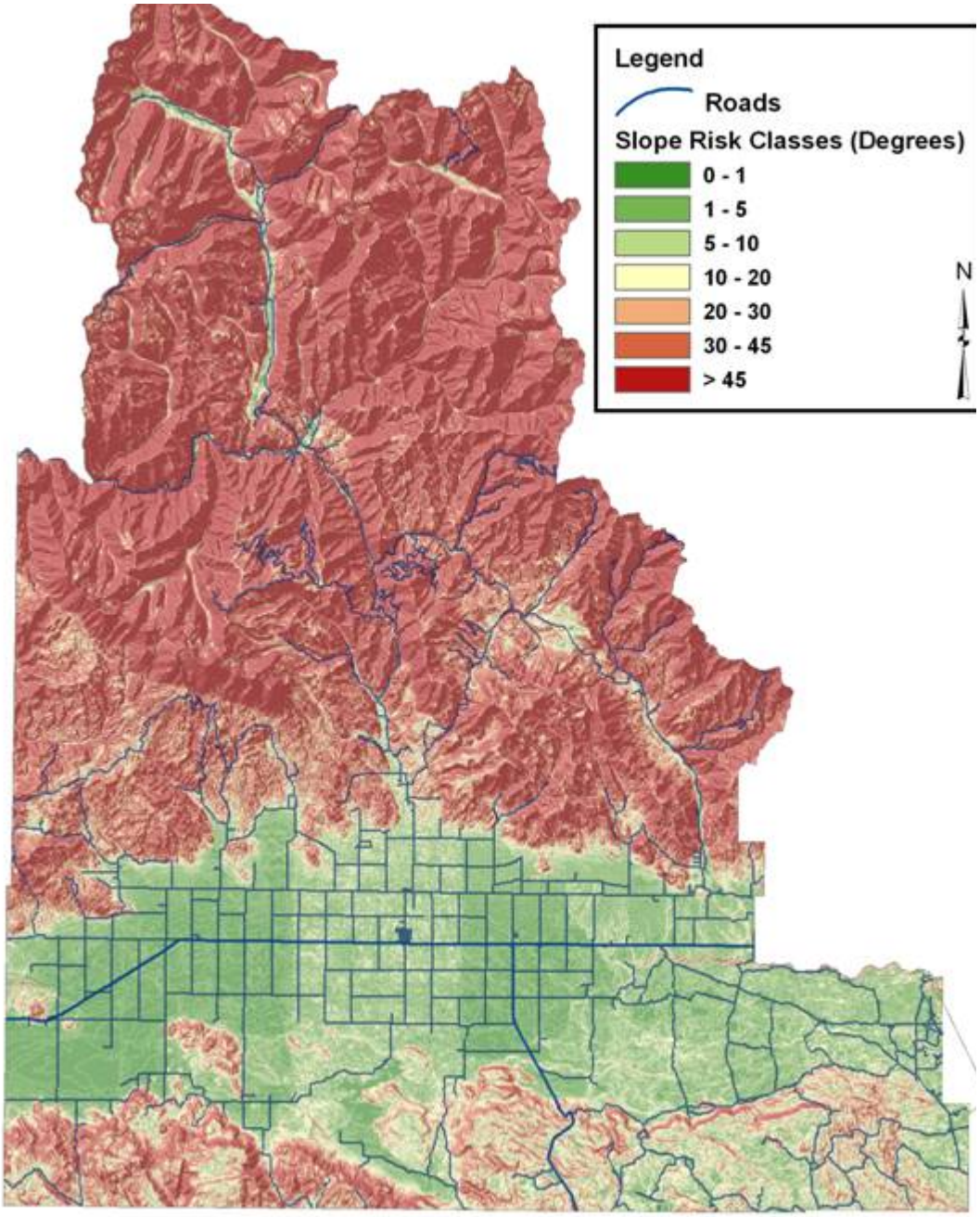


Figure 4. Slope risk model for Camas County.

Mutual Aid Agreements

Mutual aid agreements exist between the Gooding and Camas County Fire departments. This allows for temporary equipment and personnel assignments to other districts on an as needed basis. This agreement includes fire departments and fire agencies from surrounding counties. Both Districts also have mutual aid agreements with the Bureau of Land Management. Currently no mutual aid agreement exists between Camas County Fire department and the USFS.

Parcels vs. Subdivisions

The County and State subdivision regulations cover dividing of lands within the county, but there are many pieces of land or parcels that have homes on them that in some cases predate existing regulations. These parcels are not part of a legal subdivision and may have different regulations covering their future development.

Description of Assessment Areas

The Camas County assessment area includes two fire departments encompassing 688,618 acres (Table 5). The major population centers within the county are the communities of Fairfield, Corral, and West Magic. Figure 5 illustrates the boundaries of the fire departments within Camas County.

Table 5. Landownership within Camas County Fire Protection Districts

	BLM	Private	State	USFS	Water	Total
Camas –Fairfield Fire Department	117,929	225,228	22,257	317,778	2,395	685,587
W. Magic Fire Department	778	2,227		0	26	3,031
Total	118,707	227,455	22,257	317,778	2,421	688,618

Camas County – Fairfield Fire Department Current Resources and Assets

Fire chiefs completed the following assessment forms showing an overview of each fire department. These forms provide accuracy and consistency in the evaluation process.

Table 6. Summary of the Camas County Fire department Assessment.

Camas – Fairfield Fire Department Assessment Overview – Resources and Assets	
Facilities	The main fire station is located in Fairfield and is the only permanent fire facility in this Fire department. It houses all district and city fire fighting apparatus, offices and training facilities.
Response Area	The Fire department response is the entire county including the SNF.
Budget and Funding	The primary portion of the budget for this Fire department is derived from taxes and funds are derived from fund-raising efforts.
Grants	The department has received grants from Homeland Security, FEMA, and BLM

Records Management	This Fire department has no formal records keeping program in place at this time.
Hazardous Materials Program	ISP provides Hazmat response teams to this fire department.
EMS Program	EMS services are separate from fire department activities. Fire department personnel are not currently trained for EMS activities.
Training and Certification	Currently, there are no record training programs.
Communications	Fire dispatch is done through Camas County Sheriffs Department.
Prevention and Inspection	The Fire department does not currently have fire prevention, fire code enforcement programs in place. The State Fire Marshall's Office provides investigations.
Public Education	The Fire department does not currently have a public education program in place.

Table 7. Summary of the West Magic Fire Department Assessment.

West Magic Fire Department Assessment Overview – Resources and Assets	
Facilities	The main fire station, located in West Magic, ID is the only permanent fire facility in this fire department. It houses all district and city fire fighting apparatus, offices and training facilities.
Response Area	Response area includes residential areas and subdivisions around West Magic. The response area is located on the west shore of Magic Reservoir and lies in Both Camas and Blaine Counties
Budget and Funding	The primary portion of the budget for this Fire department is derived from taxes and funds are derived from fund-raising efforts.
Grants	The fire department has received one BLM grant.
Records Management	This Fire department has manually maintained personnel training records database, emergency call volume, fire fighting agreements and equipment maintenance records.
Hazardous Materials Program	ISP provides Hazmat response teams to this fire department.
EMS Program	EMS services are separate from Fire department activities.
Training and Certification	Training records for fire personnel are reside at the West Magic Fire Department.
Communications	Three handheld radios are available for the three apparatus within the fire department.
Prevention and Inspection	Prevention follows BLM programs.
Public Education	The BLM conducts public education programs for the fire department.

Fire Fighting Apparatus

The following equipment lists are by fire department and includes only serviceable, fully equipped apparatus. Both of the Fire departments have the basic fire fighting equipment required for structure and wildland fires. At this time all active fire/emergency personnel have pager and/or radio communication to respond to an emergency call. VHF radios are in wildland fire vehicles to communicate with BLM and other government emergency responders.

Camas County Fire Department Equipment

1. 1986 Chevy Type 6 Wildland Engine, 200 gallon
2. 1979 Dodge Type 6 Wildland Engine, 200 gallon
3. 1970 Ford Type 6 Wildland Engine, 200 gallon
4. 1997 Ford Type 1 Structure Engine, P-6
5. 1980 International Water Tender, 1500 gallon
6. 1988 International Type 4 Wildland Engine
7. 1990 International Type 4 Wildland Engine

West Magic Fire Department Equipment

1. 1978 Seagrave Structural Engine 750gal, 1000gpm
2. 1976 GMC Heavy 4X4 Wildland Fire Engine 350gal
3. 1976 GMC Heavy 4X4 Wildland Fire Engine 350gal
4. 1987 Diesel Military 6X6 Tender 1500gal

Field Assessment Forms and Ratings

Standardized Field Assessment Forms were used to assess subdivisions within each fire department. The assessment (Tables 8, 9, and 10) show the rating elements (Classes A-C) for each area of concern. Tables 11 and 12 show areas of concern, the corresponding rating element, and the overall assessment value (1-3) assigned to each subdivision. The higher the overall assessment value, the higher the fire risk for that subdivision. In addition, Table 11 shows an overall risk value assigned to each subdivision. These values were derived by soliciting the fire chiefs, county commissioners, homeowners, and forest service personnel during a public meeting. The higher the overall risk value, the higher the fire risk for that subdivision. Table 13 shows the overall results for all subdivisions.

Table 8. Fire Hazard Assessment Description

FIRE HAZARD ASSESSMENT DESCRIPTION FORM			
Rating Element	**Class A***	**Class B****	**Class C*****
Vegetation Type	S/G= Sagebrush/Grassland, L/P/G= Locust/Pine/Grassland, R/J/G= Russian Olive/Juniper/Grassland, S/G/A=Sage/Grassland/Aspen, F/S/G/A=Fir/Sage/Grassland/Aspen		
Slope	**Flat to little slope (< 10%**	**Moderate slopes (10-30%)**	**Steep Slopes (> 30%)**
Aspect	**North (N, NW, NE)**	**East or level**	**South and West (SE,S,SW,W)**

Elevation	**>5500 feet**	**3500-5500 feet**	**<3500 feet**
Fuel Type	**Small, light fuels (grass, weeds, shrubs)**	**Medium Fuels. (brush, medium shrubs, small trees)**	**Heavy Fuels. (timber, woodland, large brush or heavy planting of ornamentals)**
Fuel Density	**Non-continuous fuel bed. Grass and /or sparse fuels adjacent to federal land (<30% cover)**	**Broken Moderate fuels adjacent to federal land (31 to 60% cover**	**Continuous fuel bed. Composition conductive to crown fires or high intensity surface fires (> 60% cover)**
Fuel Bed Depth	**Low (average < 1 foot)**	**Moderate (average 1-3 feet)**	**High (average > 3 feet)**

*Class A (1) low fire risk
**Class B (2) = medium fire risk
***Class C (3) = high fire risk

Table 9. Structure Hazard Assessment Description

STRUCTURE HAZARD ASSESSMENT DESCRIPTION FORM			
Rating Element	**Class A***	**Class B****	**Class C****
Structure Density	**At least one structure per 0-5 acres**	**One structure per 5-10 acres**	**Less than one structure per 10 acres**
Proximity of flammable fuels to structures	**>100 feet**	**40-100 feet**	**Less than 40 feet**
Predominant Building Materials/ Flammability of structures	**Majority of homes have fire resistant roofs and/or siding**	**10-50% of homes have fire resistant roofs and/or siding**	**Less than 10% of homes have fire resistant roofs and/or siding**
Survivable Space Actions on Private Property	**Majority of homes have improved survivable space around property (> 50%)**	**10-50% of homes have improved survivable space around property**	**Less than 10% of homes have improved survivable space around property.**
Roads	**Wide loop Roads that are maintained, paved, or solid surface with shoulders.**	**Roads maintained. Some narrow two lane roads with no shoulders**	**Narrow and or single lane, minimally maintained, no shoulders**
Response Time	**Prompt response time to interface areas (20 min or less)**	**Moderate response time to interface areas (20-40 minutes)**	**Lengthy response to interface areas 40+ minutes**
Access	**Multiple entrances and exits that is well equipped for fire trucks with turnarounds.**	**Limited access routes. 2 ways in and 2 ways out. Moderate grades.**	**Narrow, dead end roads or 1 way in, 1 way out. Steep grades**

*Class A (1) low fire risk
**Class B (2) = medium fire risk
***Class C (3) = high fire risk

Table 10. Community Assessment Description

COMMUNITY ASSESSMENT DESCRIPTION FORM			
Rating Element	**Class A***	**Class B****	**Class C*****
Community Description	There is a clear line where residential business and public structures meet wildland fuels. Wildland fuels do not generally continue into the developed area.	There is no clear line of demarcation wildland fuels are continuous outside of and within the developed area.	The community generally exists where homes, ranches, and other structures are scattered by adjacent to wildland vegetation.
Response Time	Prompt response time to interface areas (20 min or less).	Moderate response time to interface area (20-40 minutes).	Lengthy response time to interface area (40+ minutes).
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	ome wildland firefighting	Fire department non-existent or untrained and/or equipped to fight wildland fire.
Water Supply	Adequate supply of fire hydrants and pressure, and/or open water sources (pools, lakes, reservoirs, rivers, etc.).	Inadequate supply of fire hydrants, or limited pressure. Limited water supply.	No pressure water system available near interface. No surface water available.
Local Emergency Operations Group (EOG)	Active EOG. Evacuation plan in place.	Limited participation in EOG. Have some form of evacuation process.	No EOG. No evacuation plan in place.
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.
Community Planning Practices	County/local laws and zoning ordinances require use of fire safe residential design and adequate ingress/egress of fire suppression resources. Fire Department actively participates in planning process.	Local officials have an understanding of appropriate community planning practices for wildfire loss mitigation. Fire department has limited input to fire safe development and planning efforts.	Community standards for fire safe development and protection are marginal or non-existent. Little or no effort has been made in assessing and applying measures to reduce wildfire impact.
Fire Mitigation Ordinances, Laws, or Regulations in Place	Have adopted local ordinances or codes requiring fire safe landscaping, building and planning. Fire Department actively participates in planning process.	Have voluntary ordinances or codes requiring fire safe landscaping and building practices. Fire Department practices in planning process.	No local codes, laws, or ordinances requiring fire safe building landscaping or planning processes.
Fire Department Equipment	Good supply of structure and wildland fire apparatus and miscellaneous specialty equipment.	Smaller supply of fire apparatus in fairly good repair with some specialty equipment.	Minimum amount of fire apparatus, which is old and in need of repair. None or little specialty equipment.
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training,	Small, all volunteer fire department. Limited training, experience, and budget with regular turnover of personnel. Do

	experienced in wildland fire, and have adequate equipment.	and equipment to fight wildland fire.	not meet NFPA or NWCG standards.
Community Fire Safe Efforts and programs already in place	Organized and active groups (Fire Dept.) providing educational materials and programs for their community.	Limited interest and participation in educational programs. Fire Department does some prevention and public education.	No interest of participation in educational programs. No prevention/education efforts by fire department.
Community support and attitudes	Actively supports urban interface plans and actions.	Some participation in urban interface plans and actions.	Opposes urban interface plans and efforts.

*Class A (1) low fire risk
**Class B (2) = medium fire risk
***Class C (3) = high fire risk

Table 11. Camas County Structural Assessment Forms

Subdivisions and Additions	Hill City	Homestead SD	Smokey Dome Ranch	M.L. Danielson SD	Soldier Mtn Ranch	Silver Brush SD	Sampson Creek Add	Willow Creek SD	Phillips SD	Strickland SD	South Fork Boise Cr.	West Shore SD (W. Magic)
Vegetation Type	S/G	S/G	L/P/G	L/P/G	S/G	R/J/G	S/G	S/G	S/G/A	S/G	F/S/G/A	S/G
Slope	A	A	A	A	A	B	A	B	B	A	C	A
Aspect	B	C	B	C	C	C	C	C	A	B	C	C
Elevation	B	B	B	A	B	A	B	B	B	B	A	C
Fuel Type	A	B	A	C	B	B	B	B	B	A	C	A
Fuel Density	A	B	A	C	B	B	B	B	B	A	C	A
Fuel Bed Depth	B	B	A	C	B	B	B	B	B	B	C	C
Structure Density	B	A	B	A	A	C	A	A	B	B	C	A
Proximity of Fuels	B	C	B	C	C	C	C	C	C	B	C	B
Building Materials	A	C	B	B	C	B	B	C	B	B	B	B

Survivable Space	**A**	**A**	**A**	**C**	**A**	**B**	**C**	**B**	**B**	**B**	**C**	**A**
Roads	**A**	**B**	**A**	**C**	**B**	**C**	**C**	**C**	**C**	**C**	**C**	**A**
Response Time	**B**	**C**	**B**	**B**	**C**	**C**	**B**	**C**	**B**	**B**	**C**	**A**
Access	**A**	**C**	**B**	**B**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**A**
Overall Assessment Value	**19**	**28**	**20**	**30**	**28**	**31**	**29**	**31**	**28**	**25**	**36**	**21**
Overall Risk Value*	**2**	**8**	**5**	**9**	**7**	**11**	**3**	**4**	**6**	**6**	**10**	**7**

*Numbers derived from fire and emergency personnel

Table 12. Camas County Community Assessment

Subdivisions and Additions	**Hill City**	**Homestead SD**	**Smokey Dome Ranch**	**M.L. Danielson SD**	**Soldier Mtn Ranch**	**Silver Brush SD**	**Sampson Creek Add**	**Willow Creek SD**	**Phillips SD**	**Strickland SD**	**S Fk Boise River**	**Westshore SD (W Magic)**
Community Description	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**B**	**C**	**B**	**C**	**B**
Firefighting Capability	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**C**	**B**
Water Supply	**B**	**A**	**C**	**B**	**A**	**B**	**B**	**B**	**B**	**B**	**C**	**B**
LEOG*	**C**	**B**	**C**	**C**	**B**	**C**	**C**	**C**	**C**	**C**	**C**	**C**
Community Planning Practices	**C**	**C**	**B**	**B**	**C**	**B**	**B**	**B**	**C**	**C**	**C**	**C**
Community Fire Safe Programs	**A**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**C**	**B**	**C**	**B**
Community Support	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**A**	**B**
Fire Mitigation Ordinances	**C**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**C**	**C**	**B**

Fire Department Equipment	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**B**	**A**	**B**
Fire Department Training/ Experience	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**C**	**A**	**C**
Overall Assessment Value	**24**	**22**	**24**	**23**	**22**	**23**	**23**	**22**	**25**	**24**	**24**	**23**

***LEOG=Local Emergency Operations Groups**

Table 13: Overall values for Fire/Structure and Community Assessments

Subdivisions and Additions	**Hill City**	**Homestead SD**	**Smokey Dome Ranch**	**M.L. Danielson SD**	**Soldier Mtn Ranch**	**Silver Brush SD**	**Sampson Creek Add**	**Willow Creek SD**	**Phillips SD**	**Strickland SD**	**S Fk Boise River**	**Westshore W Magic**
Fire/Structure Hazard Assessment												
Overall Value	**19**	**28**	**20**	**30**	**28**	**31**	**29**	**31**	**28**	**25**	**36**	**21**
Community Assessment												
Overall Value	**24**	**22**	**24**	**23**	**22**	**23**	**23**	**22**	**25**	**24**	**24**	**23**
Results from Fire and Emergency Personnel												
Overall Risk Value	**2**	**8**	**5**	**9**	**7**	**11**	**3**	**4**	**6**	**6**	**10**	**7**

Fire/Structure Hazard Assessment Summary

Fire Rating Scale	
Low	13-19
Low/medium	20-26
Medium	27-31
Medium/High	32-38
High	39 or greater

The overall values for Fire/Structure Assessment (Table 13) show subdivisions ranging from 19 to 36. The subdivision overall value is assigned a fire risk by comparing the value to the Fire Rating Scale.

Community Assessment Summary

Fire Rating Scale	
Low	10-14
Low/medium	15-19

Medium	20-24
Medium/High	25-29
High	30 or greater

The overall values for Community Assessment (Table 13) show subdivisions ranging from 22 to 25. The subdivision overall value is assigned a fire risk by comparing the value to the Fire Rating Scale.

Overall Risk Value Summary

The overall risk values (Table 13) show a strong correlation between the three highest fire risk subdivisions (M.L. Danielson, South Fork Boise River, and Silver Brush) and the overall values for the Fire/Structure Hazard Assessment.

5.0 MITIGATION

This section discusses fuels mitigation and needs and associated costs for Camas County Fire department located at Fairfield and the West Magic Fire Department. The environmental effects, restoration guidelines, and public education programs are included under one section and apply to both fire departments within Camas County. Table 25 includes a Mitigation Summary for Camas County – Fairfield Fire Department. The Potential Problems – Risks and Recommended Mitigation are identified based on field assessments and personal interviews with fire chiefs, homeowners, BLM and Sawtooth National Forest Service personnel.

Fuels Mitigation – Hazardous fuel buildup resulting in wildland fires represent the primary risk to homeowners, businesses, and state and federal facilities located outside of city limits. Fuel break locations are identified in this section based on recommendations provided by each fire chief, input from county commissioners and BLM, assessments of subdivisions and additions determined to be of importance and, review of other Wildand Fire Hazard Mitigations Plans for Camas County. The size of fuel breaks required and associated costs to construct these fuel breaks will vary, depending on hazardous fuels present, distance to transport construction equipment, and actual dimensions of fuel break.

Needs and Associated Costs – This section includes tables using information obtained directly from each fire chief addressing needs and associated costs for their department or district. Costs for training and certification programs are forthcoming

Environmental Effects – This section includes the environmental effects resulting from fuel break construction, mowing, disking, or other land disturbance and from the installation of dry hydrant.

Fire Prevention Programs - Public Education – This section introduces Camas County residents to FIREWISE and Red Zone, both excellent fire prevention programs, offers

homeowners a checklist to avoid wildfire damage and, presents relevant public **e**ducation web sites. It is noteworthy to mention that the 2000 International Fire Code, Uniform Building Code, and International Building Code apply to Camas County residents. Subdivision review and building permit procedures should be sent to the responsible fire protection entities for review and comment. The Building Department, Zoning Administration, and the Fire departments should meet to discuss the current system of building permit review, identify any problems that exist and implement solutions.

Fuels Mitigation for Camas County Fire department

Fuel breaks are recommended for nearly all subdivisions and additions north of Fairfield (Figure 5). Figures 6, 7, 8, and 9 show homes within subdivisions assessed and considered high priority. These fuel breaks will be constructed along roads, in most cases, and generally within heavy sagebrush-grassland fuel types.

Helicopter Dip Sites

Sawtooth National Forest proposes two helicopter dip sites for the north and south ends of the South Fork of the Boise River area (Figure 5).

Dry Hydrants

Proposed for a site ~12 miles north of Fairfield along North Soldier Creek, at the inlet to Mormon Reservoir south of Fairfield and adjacent to West Shore Acres subdivision.

Upgrade Bridges and culverts

State of Idaho needs to inspect all bridges with a 20 foot span or greater to support the weight of the heaviest fire-fighting apparatus used within the fire district (Figure 13, page 28, Table 14, page 20 and Table 25, page 36).

Sawtooth National Forest (SNF)

The SNF, operating within the policies and guidelines of the SNF Forest Management Plan, the National Fire Plan, and the Healthy Forest Restoration Act, has completed fuels reduction projects in the Silver Brush and Round Valley Subdivision areas in the recent past. (personal communication, SNF, 2004). In 1997, ’98, and ’99 prescribed fire was used to reduce the heavy sagebrush fuel loads in both areas. Sagebrush mowing was also completed in areas within the Sampson, Williams, and Lawrence Creek drainages—above and around the subdivisions-- to help reduce the sagebrush fuel load. These treatments work for only short periods of time in the grass and sage habitat and any fuel breaks constructed in these areas will have to be regularly maintained to be effective. In addition, SNF proposes wildland hazardous fuels reduction projects in the following areas: (1) The Soldier Creek area located on federal lands and include the Soldier Mountain Ski area, and some federal lands generally west, south and east of this recreation facility, (2) Big Smoky Summer Homes (forest recreational site of 12 building lots on federal land with 10 private cabin structures), and (3) Upper South Fork Boise

River. These are federal lands adjacent to private lands generally north of Fleck Summit and south of Bear Creek trailhead. The SNF is open to consider suggested fuels reduction projects on forest.

Table 14. Fairfield Fire Department Existing Needs: Personnel and Capital Expenses

Needs	Costs
Full-time fire chief	$20-50,000.00 per year
Command vehicle	50,000.00
Firefighting Vehicle Acquisition Programs (**see Table 25, Mitigation Summary, p. 36**)	TBD
Modifications to Fire Stations and Facilities **(see Table 25, Mitigation Summary, p. 36)**	TBD
New Fire Stations (3) – Willow Creek, Corral, and Soldier Mountain	1,000,000
Class A Pumper Trucks (3)	500,000
Brush Trucks (3)	300,000
Rescue Truck	140,000
Tenders (3)	300,000
Exhaust Venting System	TBD
Turnouts (10 – Personal Protective Equipment)	15,000
SCBA (10)	40,000
Sprinkler Systems	TBD
Bridge inspections	TBD

Table 15. Fairfield Fire Department Existing Needs: Training and Certification

Needs	**Costs**
Operations and firefighter safety programs (**see Table 25, Mitigation Summary, p. 36**)	TBD
Distance Learning Opportunities	TBD
Certified Fire Fighter Training	TBD
Certified Instructor Training	TBD
Certified Arson/Fire Investigation Training	TBD
Certified EMS Training	TBD

Table 16. Fairfield Fire Department Existing Needs: Communication

Needs	Costs
New Radios	25,000
Additional Repeaters	TBD
Dispatch Fire Training	TBD
Established Mutual Aid Agreements with all parties	TBD

Table 17. Fairfield Fire Department Existing Needs: Prevention and Inspection

Needs	Costs
Computerized Records	TBD
Training Grants	TBD
Establish and Improve City Code Enforcement	TBD

Table 18. Fairfield Fire Department Existing Needs: Public Education

Needs	Costs
Complete FIREWISE Program	100,000
Code Enforcement and Inspector Certification	TBD
Details on Current Public Education and Awareness	TBD

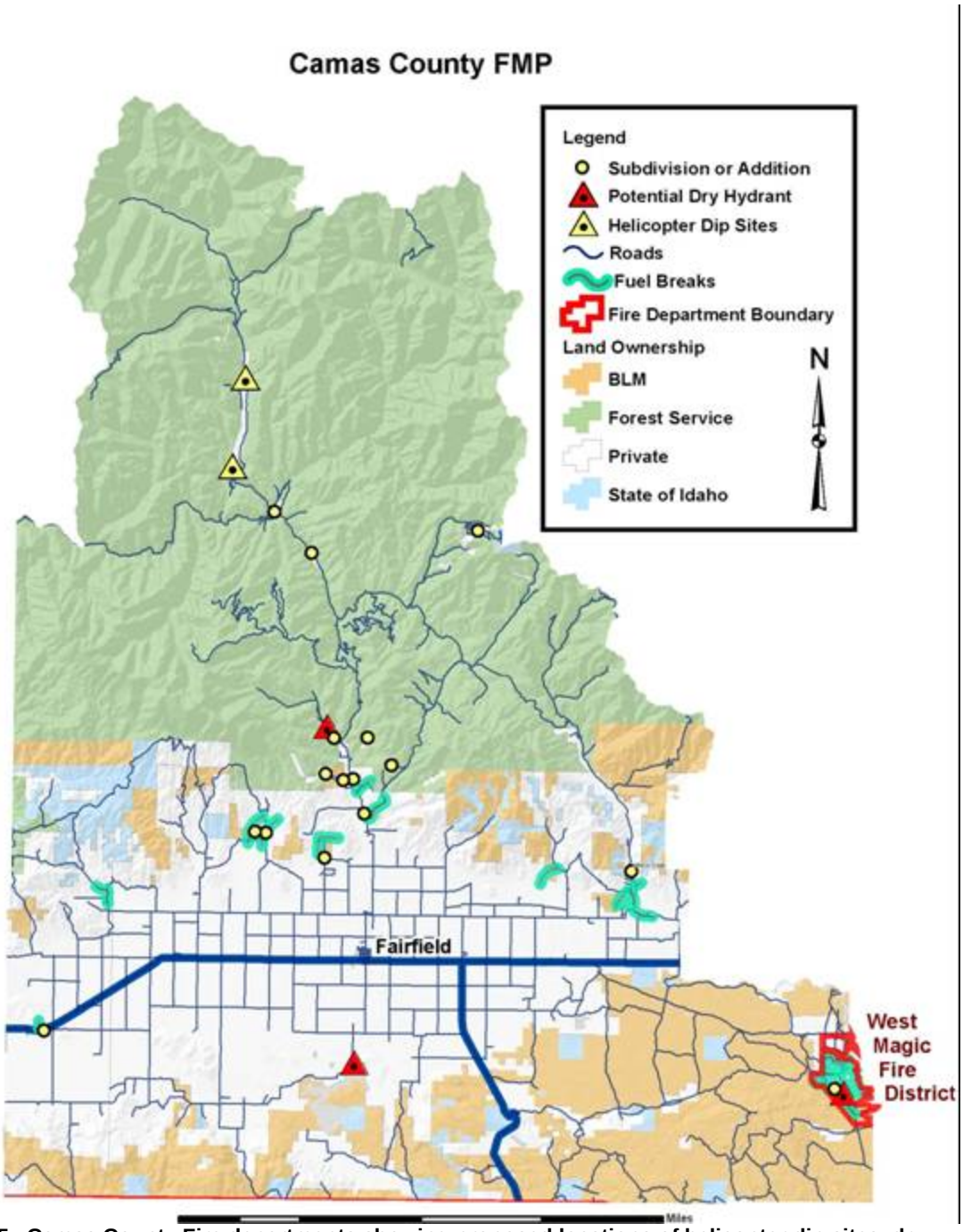


Figure 5. Camas County Fire departments showing proposed locations of helicopter dip sites, dry hydrants, and fuel breaks.

Figure 6. M. L. Danielson subdivision showing heavy sagebrush fuels and limited survivable space.

Figure 7. Willow Creek Subdivision showing heavy sagebrush fuels and no survivable space.

Figure 8. Soldier Mountain Ranch located on slope with heavy sagebrush fuel and limited survivable space.

Figure 9. Silver Brush Subdivision showing homes located on slopes and limited survivable space.

Fuels Mitigation for West Magic Fire Department

Numerous fuel breaks are recommended within West Magic Fire Department (Figure 10 – Magic City photos), Magic Resort, and adjacent areas. The areas recommended as high priority for fuel breaks are shown in Figures 11 and 12.

The construction of a dry hydrant is recommended west of Myrtle Point (Figure 10).

Table 19. West Magic Fire Department Existing Needs: Personnel and Capital Expenses

Needs	Costs
Full-time fire chief	$20-50,000.00 per year
Firefighting Vehicle Acquisition Programs (**see Table 25, Mitigation Summary, p. 36**)	70,000.00
Modifications to Fire Stations and Facilities **(see Table 25, Mitigation Summary, p. 36)**	100,000.00
Ten (10) 10,000 gallon cisterns instead of hydrants	100,000
Equipment for 1978 Pumper (hoses, ladders, nozzles and tools)	5,000
Three (3) 4000 gallon port-a-tank	18,000
3 bay 50 x 50 building	50,000

Table 20. West Magic Fire Department Existing Needs: Training and Certification

Needs	**Costs**
Operations and firefighter safety programs (**see Table 25, Mitigation Summary, p. 36**)	15,000.00
Firefighter training videos	3,800.00
Instructor training	1,810.00
EMS training	10,000.00
Inspection Training	10,000.00

Table 21. West Magic Fire Department Existing Needs: Communication

Needs	Costs
(10) Radios	25,000.00

Table 22. West Magic Fire Department Existing Needs: Prevention and Inspection

Needs	Costs
Computerized Records	4,500.00
Training Grants	5,000.00

Table 23. West Magic Fire Department Existing Needs: Pubic Education

Needs	Costs
Complete Firewise Programs	100,000

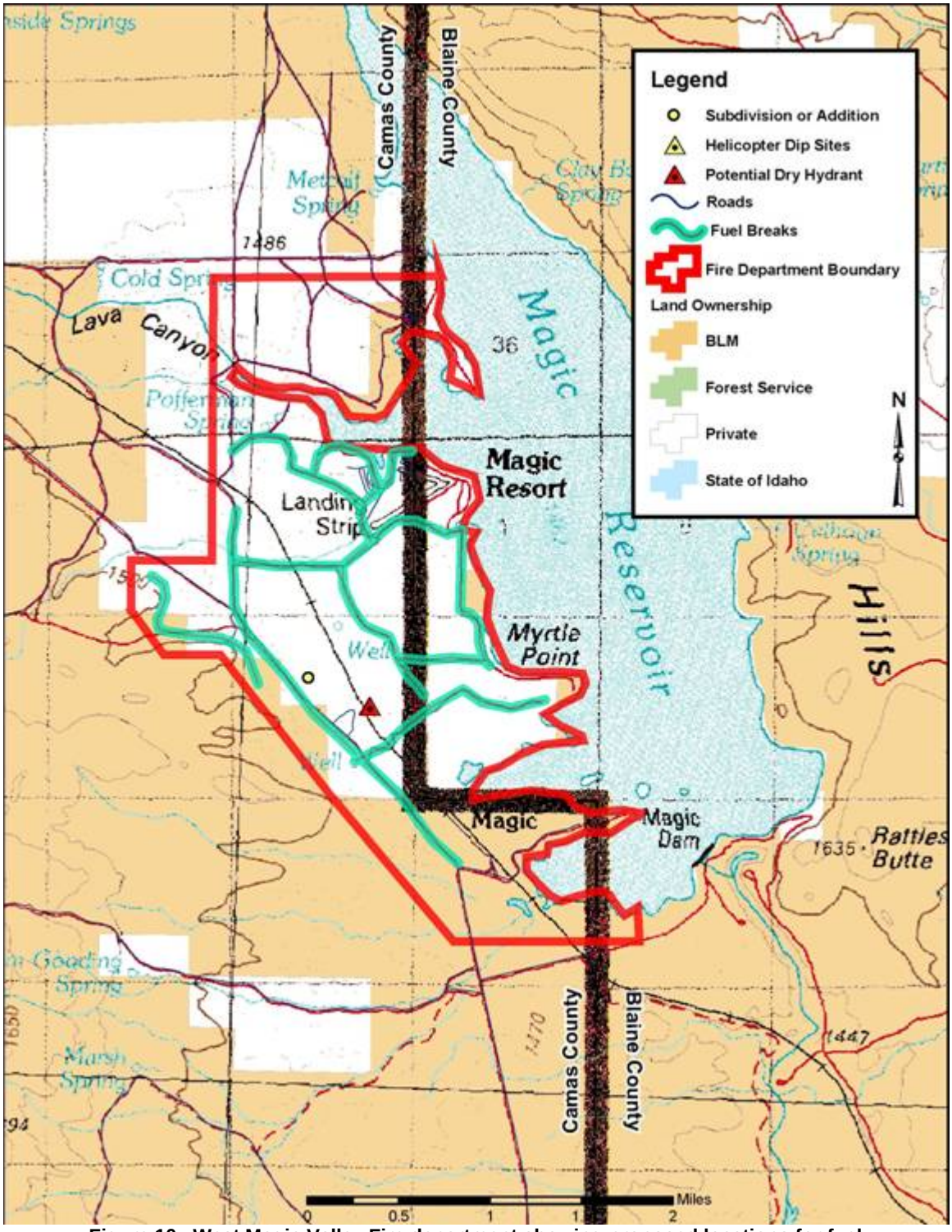


Figure 10. West Magic Valley Fire department showing proposed locations for fuel breaks and a dry hydrant.

Figure 11. Heavy fuel loads and no survivable space shown at homes near Magic City.

Figure 12. Heavy fuels shown are most common throughout the Magic City area.

Figure 13. Five ton weight limit "restricted" bridge over Camas Creek.

Environmental Effects

Weed Establishment

Mowing, disking, or other surface disturbance used to or resulting from the construction of fuel breaks could result in the additional spread of noxious weeds and/or invasive annual weeds or exotic grasses. Therefore; the following weed mitigation is recommended.

Confirmed sightings of the following noxious weeds have been identified in Camas County (Prather et al. 2002): Canada thistle (*Cirsium arvense*), diffuse knapweed (*Centaurea diffusa*), leafy spurge (*Euphorbia esula*), musk thistle (*Carduus nutans*) and spotted knapweed (*Centaurea maculosa*). Some species, such as halogeton (*Halogeton glomeratis*), and downy brome (cheatgrass) (*Bromus tectorum*), are not listed as noxious but do impact the environment. Cheatgrass has increased the extent and frequency of wildland fires in the Great Basin and Upper Columbia River Basin with significant impacts in natural and fiscal resources (Billings 1994).

Before Construction of Fuel Breaks, Mowing, Disking or Other Land Disturbance

Survey and map invasive and noxious weeds occurring on site scheduled for construction.

- Determine infestation size and control weeds with appropriate methods (Table XX). Use a State-certified pesticide applicator for specific recommendations and chemical treatment.
- Train equipment operator on weed issues prior to start date. This training should

include:
    - Consequences of disturbance.
    - Reasons for and methods of prevention including cleaning equipment.
    - Identification of problem plants in the immediate area.
    - What to do when an invasive or noxious weed is sighted.
- Decontaminate vehicles and equipment entering construction site to remove weed seeds and other propagules.
    - Inspect equipment before entering project area.
    - Wash equipment (if possible) to remove all plant parts including seeds and root.
    - Prevent equipment from leaving site until inspections have been preformed.
- Minimize soil disturbance.

During Construction of Fuel Breaks, Mowing, Disking or Other Land Disturbance

- Control all infestations on construction site (Table XX).
    - Consult State-certified pesticide applicator.
- Minimize and control vehicular traffic entering and exiting construction site, especially those within the decontamination boundaries.
    - Decontaminate vehicles, equipment, and personnel.
        - Wash (if possible) equipment to remove all plant parts.
        - Inspect vehicles, equipment, and clothing.
- Take precautions to prevent the spread of weeds.
    - Avoid entering areas infested with weeds.
- Minimize soil disturbance.
    - Restrict vehicles to specified pathways.
- Conduct surveys of project area every two weeks during the growing season (April - October) to confirm weed free status or identify new weed infestations.

After Construction of Fuel Breaks, Mowing, Disking or Other Land Disturbance

- Decontaminate all outgoing equipment before permitting them to leave.
- Survey all disturbed areas, adjacent areas, and destination areas for noxious weeds.
    - Map infestations, critical sites, and sensitive areas.
    - Treat weeds with appropriate method in a timely fashion (Table 19).
        - Use a State-certified pesticide applicator for specific recommendations.
- Establish native perennial vegetation in all disturbed areas and monitor for emergence of non-native species.
- Continue to monitor construction site and treat infestations until weeds no longer appear or are controlled equal to or better than before the commencement of the project.

Document all monitoring and treatment of noxious weeds.

Soil Erosion

To prevent soil erosion and establish permanent vegetation that is fire resistant Greenstripping is recommended. Greenstripping, or establishing strips of fire-resistant vegetation to reduce the spread of wildfire, is an established practice on BLM lands in Idaho (Pellant 1992). Greenstripping reduces wildfire spread by disrupting fuel continuity, reducing fuel accumulations and volatility and increasing the density of plants with higher moisture content. The reduction of the overall fuel load reduces the flame lengths and heat intensity produced on the green strips, but the increase in annual species composition and fine fuels produces increased rates of spread. Therefore, the following characteristics are important when selecting species for greenstripping on semiarid rangelands such as Camas County: 1) adaptability to the range sites, 2) competitiveness with annual weeds, 3) ease of establishment, 4) low flammability, 5) open canopy and spacing, 6) palatability by livestock and wildlife (for efficient removal and control of litter and fine fuel buildup), and 7) resilience and re-growth capabilities.

Construction of Dry Hydrants

Environmental Effects to be considered:

- Potential impact to riparian landowner.
  - How much water is needed?
  - Where is the available water and is there a land use agreement needed/required between the landowner and the Fire department?
  - Is a permit for a dry hydrant required by the state or a federal agency? If so, can the application for the permit be obtained at the county level?
  - Does the hydrant location require certain water depth, composition of streambed or lake bottom, ease of digging, protection of hydrant during winter?
  - Does this location pose a threat to terrestrial or aquatic wildlife species?
  - Will the location survive winter temperatures?

The National Interagency Fire Center (NIFC, 2004) discusses the process of planning to insure adequate water supplies and distribution in the fire department. This booklet covers the design features and installation of dry hydrants.

Restoration Guidelines Following a Wildland Fire

Areas that generally burn hot are likely to have the greatest alterations in soil characteristics to the landscape (Graham 2003). These alterations include but are not limited to: (1) loss of surface soil organic matter, (2) reduced ground cover resulting in decreased infiltration of water and increased surface runoff and peak flows, and (3) the formation of pedestals, rills, and gullies.

The NFP and the Idaho Plan address rehabilitation and restoration of burned areas and fire-adapted ecosystems. Consider the following site restoration guidelines:

- Fill in deep and wide fire containment lines

- Waterbar newly created roads or containment lines, as necessary, to prevent erosion
- Install sediment controls to prevent sedimentation of waterways
- Restore all fire staging areas with native seed mixes approved by BLM, NRCS, or other local experts
- Control all noxious weed invasions
- Evaluate the necessity to revegetate all or portions of the burn or areas impacted by fire suppression activities using native species by broadcast seeding, drilling, containerized stock or wildlings
- Encourage the use of plant stock from local collections of site-adapted stock
- Base decision to revegetate an area on inventories of affected areas for natural recovery that approaches pre-fire densities of native species
- Preclude off-road vehicle use in burned area for at least two growing seasons
- Continue monitoring until restoration is complete
- Conduct surveys of burned areas to assess damage to cultural resources.

Fire Prevention Programs – Public Education

Wildland Fire Education

The Fairfield Ranger District (personal communication – SNF) will begin implementation of a program called Redzone in the Camas County area of the Sawtooth National Forest during the summer of 2004. Redzone is a software program that incorporates digital photos, GPS locations, and Survivable Space surveys of homes into one easy to view document. The District fire prevention technician will be conducting a specialized survey of homes within the wildland urban interface area of Camas County. The survey will identify potential hazards the home may pose to firefighters that are trying to protect it from a wildland fire and it will suggest mitigation measures that can be taken by the home owner to reduce the risk of their home igniting in case of a wildfire in their area. The surveys will also contain information for firefighters to use in case of a wildland fire such as: water sources, access concerns (bridges/road width), and utility location information. The surveys will then be mailed to the homeowner for his review. We will also be including Firewise documents when we mail the survey that will aid the homeowner in creating Survivable Space around his home.

FIREWISE – A Community-wide Outreach Program

The National Wildfire Coordinating Group (NWCG) sponsors the FIREWISE Program. Members of the NWCG are responsible for wildland fire management in the United States and are represented by the USDA-Forest Service, the Department of Interior, the National Association of State Foresters, the U.S. Fire Administration and the National Fire Protection Association. FIREWISE promotes fire wise practices by 1) educating the public of the dangers of a wildfire in the area, 2) encouraging residents to take responsibility in reducing the risk of a wildfire and to create Survivable Space around

their residence, and 3) increasing awareness of the natural role of low-intensity fires and the benefits of prescribed burning or occasionally managing natural wildland fires to achieve ecological benefits while maintaining firefighter and public safety as top priority. The estimated cost is $10,000.00 per program.

A Checklist for Homeowners

Many Idaho residents desire to live in rural areas adjacent to or surrounded by hazardous fuels. The fuels have the potential to ignite a wildland fire and possibly a structural fire. In some cases homeowners have little to no understanding of the risks to themselves or to the emergency personnel who must respond to these fires. It is the homeowner's responsibility to protect their property.

The following checklist was developed to aid Camas County homeowners residing within subdivisions and additions. The checklist contains standard questions used by FEMA (2004) and the FIREWISE Program. These questions have been modified, based on earlier assessments of subdivisions and additions and interviews with homeowners and fire chiefs.

Table 24: A Checklist for Homeowners

Do you know your wildfire risk?
Learn about the history of wildfire in your area, local fire laws and building codes and protection measures. This information is available from but no limited to: 1) Shoshone District BLM office, 2) Fire department office, 3) county offices and, Fire departments adjoining Camas County. Consider having a professional inspect your property and offer recommendations for reducing the wildfire risk. Determine your Fire department's ability to respond to a wildfire. • Are ingress and egress roads to your property clearly marked? • Are the roads wide enough to allow passage by firefighting equipment? • Can the Fire department find your house (house no., grid location)?
What should I do if a wildfire threatens my neighborhood?
• Contact the fire department or district fire warden immediately • Close all windows, doors and other openings to the outside to prevent sparks from blowing inside • Locate family members and pets • Wear non-flammable cotton or wool clothing • If you have time, wet down the roof and the area adjacent to the house
Do you have an evaluation plan for your family?
Plan several alternate routes for family members in the event wildland or a structural fire. • Establish where young family members will immediately go in the event of a fire and in the absence of adult supervision. • Establish "staging areas" for family members and/or community/subdivision members in the event normal evaluation routes become blocked, especially if the ingress and egress road is limited, that is, one road in, one road out • Prepare your vehicle for evacuation.
Should I create 'survivable space' around my home?

Create a 30-foot safety zone around the house.

- Keep volume of vegetation in this zone to a minimum. If you live on a hill, extend this zone on the downhill side. The steeper the slope, the more open space you will need to protect hour home.
- Remove vines from the walls of the house
- Move shrubs and other landscaping away from the sides of the house
- Prune branches and shrubs within 15 feet of chimneys and stove pipes
- Remove tree limbs within 15 feet of the ground
- Thin a 15-foot space between tree crowns
- Replace highly flammable vegetation (e.g., juniper, sagebrush, pine) with lower growing, less flammable species
- Replace vegetation that has living or dead branches from the ground level up (these act as ladder fuels for the approaching fire).
- Keep lawns mowed frequently
- Clear all areas of leaves, brush, dead limbs and fallen trees.

Create a second zone at least 100 feet around the house.
This zone should begin about 30 feet from the house and extend to at least 100 feet

- Reduce or replace as much of the most flammable vegetation as possible. If you live on a hill, you may need to extend the zone for several hundred feet to provide the desired level of safety.

When selecting landscaping materials, how do I make the right choices?

Choose plants that are acclimated to your area of the country. Avoid resinous varieties and look for those with a high amount of moisture in their leaves. Note that deciduous trees are generally less flammable than coniferous ones. Check with your State Foresters office, or with your extension agent because some areas of the country have regional plant lists available. A healthy, well-maintained landscape is very important, so:

- Space plants carefully
- Prune them regularly
- Remove dead leaves and other litter from around trees, shrubs and vines
- Provide the landscape with sufficient moisture.

Are combustible materials away from the house?

Stack firewood 100 feet away and uphill from the house. Keep gas grills and propane tanks at least 15 feet from the house.

Are porches enclosed underneath?

Any porch, balcony or overhang with exposed space underneath is fuel for an approaching fire. Overhangs ignite easily by flying embers and by the heat and fire that gets trapped underneath. If vegetation is allowed to grow underneath or if the space is used for storage, the hazard is increased significantly.

- Clear all flammable materials away from underneath sun decks and porches.
- Extend ½-inch mesh screen from all overhangs down to the ground.
- Enclose wooden stilts with non-combustible material such as concrete, brick, rock, stucco or metal.
- Use non-combustible or fire-resistant materials for new porch or sun deck construction. If possible, build the structure to the ground so that there is no space underneath.

Are eaves and overhangs enclosed?

Are house vents covered with wire mesh?

Is the roof constructed of non-flammable materials?

The roof is especially vulnerable in a wildfire because firebrands and flaming debris can travel great distances, land on your roof, and start a new fire.

- Avoid flammable roofing materials such as wood, shake and shingle.
- Use fire resistant materials such as single-ply membranes, fiberglass shingles, slate, metal, and clay and concrete tile.
- Keep gutters clean of debris.

My wood-shake roof was treated with fire retardant some years ago. How can I tell if retardant needs to be reapplied?

Chop a small piece of wood from the edge of one of the shakes and hold a lighted match under it. If the shake ignites, roof retardant needs to be reapplied.

Are chimneys and stovepipes covered with spark arrestors?

Install spark arrestors on all chimneys, stovepipes and vents for fuel-burning heaters. Check with the Fire department for spark arrestor specifications

- Use non-combustible or fire-resistant materials for new chimney construction and follow chimney-building specifications.

Is the house siding fire resistant?

Use fire-resistant materials in the siding of your home, such as stucco, metal, brick, cement shingles, concrete and rock. Existing wood siding can be treated with UL-approved fire retardant chemicals (not a permanent fix).

Have windows been treated to reduce the risk?

Windows allow radiant heat to pass through and ignite combustible materials inside. Dual-or triple-pane thermal glass, and fire resistant shutters or drapes, help reduce the wildfire risk.

- Close shutters or drapes while away from home to prevent the ignition of combustible materials and to keep home warmer in the winter and cooler in the summer.

Table 25: Mitigation Summary for Camas County.

Priority Rating	Potential Problems/Risks	Responsible Agency/Recommended Mitigation
H	Transition from wideband to narrowband with communications equipment and operations has the potential to adversely affect firefighter safety and performance, specifically in the initial and extended action environment (NIFC, 2004).	Federal, State, Fire departments • Accelerate local conversion to narrowband to match Federal schedule • Firefighters and aerial resources must withdraw from fire operations activities if positive communication with their forces, supervisor, or adjoining forces are compromised • Ensure local frequency management plans are in place and understood to support initial and extended action activities, and include contingencies for cooperator and aviation resources • If communication problems become an issue, the fall back position is to revert to wideband mode • Report problems with specific details through SAFENET or SAFECOM reporting systems
H	Lack of detailed training records for individual firefighters	Fire departments • Conduct instructor-led training that results in national or state certification in basic, operational level firefighting, operational level rescue, driver training or first responder training or officer training
H	Lack of detailed firefighting vehicle acquisition programs	Fire departments • Comply with NFPA 1901 or 1906 standards • Need total number of vehicles in fleet • Mileage or hours of engine operation and total number of vehicles in this category • Incident activities (call volume) • Vehicle equipment status and condition
H	Lack of detailed information for facility modification	Fire departments • Need information on sprinkler systems • Exhaust venting systems • Smoke and fire alarm systems and emergency facility generators • Details of occupancy and frequency of use of existing facilities
H	Lack of National Fire Protection Association (NFPA) standards for entire county. Lack of National Fire Protection Association (NFPA) standards for entire county. **Note:** The cost of enforcement is prohibitive for small rural communities (personal communication – Camas County fire chiefs).	• Adopt all or portions of, 2003 NFPA 1141 Standard for Fire Protection in Planned Building Groups (**See Appendix A**) • Adopt all or portions of, 2003 NFPA 1143 Standard for Wildland Fire Management (**See Appendix A**) • Adopt all or portions of 2002 NFPA 1144 Standard for Protection of Life and Property from Wildfire (**See Appendix A**) • Fire departments should meet and discuss the current system of building permit review and identify problems that exist and

		implement solutions
H	Hazardous fuels within subdivisions	County, Fire departments, Homeowners • Request grant funding to purchase an industrial chipper or make arrangements to use the Forest Service chipper • Identify areas where people can dump debris • Offer free dump passes • Create Survivable Space • Host cleanup days • Place evacuation plan map and map of readily available water sources for each subdivision within a lockable container and positioned at the entrance of subdivision • Place safety flags on standpipes used for drafting at each water source • Construct fuel breaks at designated locations (see map) • Maintain fuel breaks (periodic mowing, greenstripping, noxious and invasive weed removal (see Environmental Effects, p. 30)
H	Lack of Survivable Space around homes	Homeowners • **See Table 24: A Checklist for Homeowners**
H	No RedZone program within subdivisions	Fire departments, Homeowners • Expand the Sawtooth National Forest RedZone program to include subdivisions • Conduct surveys identifying potential hazards a home may pose to firefighters during a wildland fire • Conduct surveys identifying measures a home owner will take to reduce risks of their home igniting during a wildfire • Conduct surveys identifying water sources, access concerns (bridges/road width), and utility location information needed by firefighters • Mail surveys to homeowners for review. Include Firewise documents in the mailing to aid the homeowner in creating Survivable Space around the home
H	Inadequate permanent water supply and drafting locations	County, Fire departments • Pursue grant opportunities to purchase additional water tenders • Request grant funding to develop dry hydrant systems and drafting locations as delineated (see map) • Require storage tanks (cisterns) and/or hydrant systems in new subdivisions
	Reduce human-caused fires	County, Fire departments • Work with its federal cooperators to develop grass roots fire prevention efforts to reduce the occurrence of person caused fire ignitions through public education and

H		participation in community events. • Develop partnerships with local businesses to promote fire prevention. Some examples are Sporting goods dealers will display materials relating to campfires and outdoor activities, Landscaping companies will display information relating to Survivable Space and fire resistant plants, Agriculture related businesses will display information related to agricultural burning, Off road vehicle dealers will display information related to fire prevention as it relates to OHV.
M	No enforcement of State regulations regarding burning permits outside of city limits	Federal, State DEQ, County, Fire departments • Create county ordinance regarding burning • Educate public • Notify sheriff's office of controlled burns • Coordinate with state and federal agencies using fire restrictions
M	Lack of agreements with landowners to allow access to irrigation mainline values	BLM, Fire departments • Cooperate with landowners by obtaining a written agreement allowing access to irrigation wells or pipes. This would require proper pipefitting on tenders and engines.
L	Roads and Bridges	County • Inspect Camas Creek bridges, post weight ratings and, if necessary, upgrade bridges to handle fire department's heaviest apparatus • Widen roads for better ingress and egress.

Web Sites for Homeowners

FIREWISE programs
http://www.firewise.org/

Red Zone Software
http://www.redzonesoftware.com/index2.html

FireWars/NOVA
http://www.pbs.org/wgbh/nova/teachers/programs/2908_fire.html

Taking a Stand: Pros and Cons of Forest Fires
http://www.thirteen.org/wnetschool/origlessons/fire/index.html

FEMA for Kids
http://www.fema.gov/kids/wldfire.htm

Living with Fire
http://www.fs.fed.us/rm/fire_game/

Pikes Peak Wildfire Prevention Partners
http://www.ppwpp.org/

Smokey Bear
http://www.smokeybear.com/

Sparky's Home Page
http://www.sparky.org/

Woods on Fire
National Institute for Science Education and the National Science Foundation
http://whyfiles.news.wisc.edu/018forest_fire/index.html

REFERENCES

Billings, W.D. 1994. Ecological impacts of cheatgrass and resultant fire on ecosystems in The western Great Basin. In: Monsen, Stephen B. and Kitchen, Stanley G., comps. 1994. Proceedings—ecology and management of annual rangelands: 1992, May 18-22; Boise, ID, Gen. Tech. Rep. INT-GTR-313. Ogden, UT: U.S. Department of Agriculture, Forest Service, and Intermountain Research Station. 22-30.

Federal Emergency Management Agency, 2004. *Avoiding Wildfire Damage: A Checklist for Homeowners*. In: Department of Homeland Security's Program Guidance for the 2004 Assistance to Firefighters Grant Program.

Graham, R. T. 2003. *Hayman Fire Case Study: Summary*. Gen. Tech. Rep. RMRS-GTR-
115. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 32 p.

Kempthorne, D., D. Rittenhouse, W. Wiggins, M. Ferguson, B. Estes, J. Foard, J. Stires, and J.W. Twitchell. 2002. *Idaho Statewide Implementation Strategy for the National Fire Plan*.

Pellant, M. 1992. *History and applications of the Intermountain Greenstripping Program*, Symposium on Ecology, Management, and Restoration of Intermountain Annual Rangelands, Boise, Idaho, May 18-22.

Pohlman, J. and R. White. 2003. *A Guide to Planning and Installing Dry Fire Hydrants*. Wisconsin Department of Natural Resources, PUB-FR-044-2003, Ladysmith, WI.

Prather, T.S., S.S. Robins, D.W. Morishita, L.W. Lass, R.H. Callihan, and T.W. Miller. 2002. *Idaho's Noxious Weeds*. University of Idaho, Moscow, Idaho and Idaho Department of Agriculture, Boise, Idaho.

R&S Enterprise. 2002. Wildland Fire Hazard Mitigation Plan for Upper Snake River District, Burley and Shoshone Field Offices. Communities-At-Risk Wildland Urban Interface Program. Gooding Rural Fire department. Shoshone, ID.

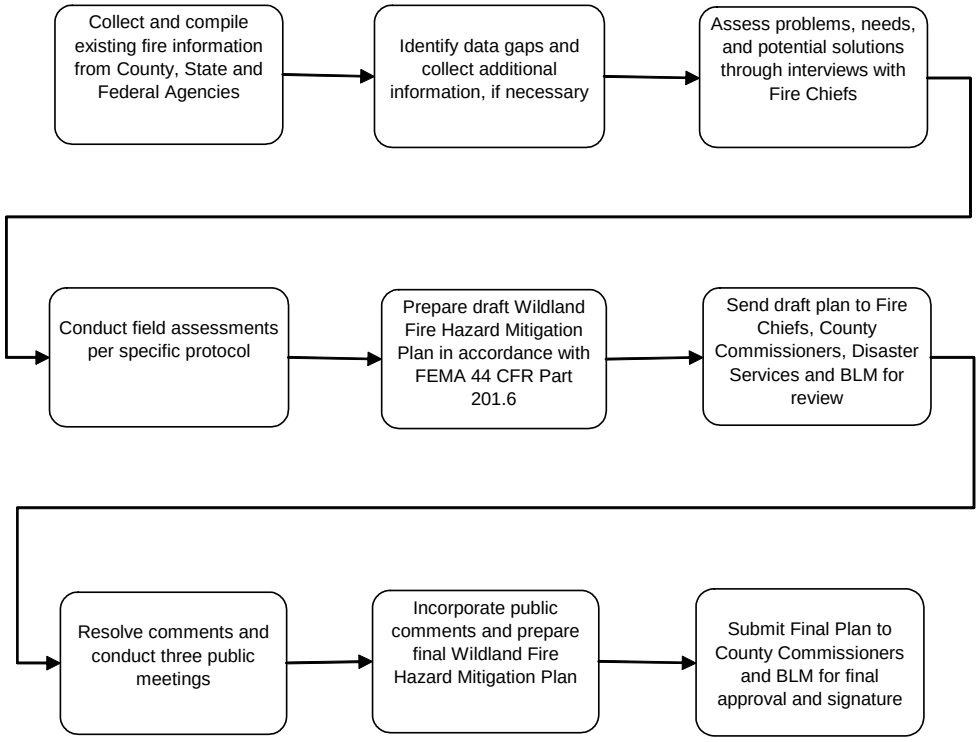
Russell, G. and K. Weber. 2000. *Using Supervised Classification of Landsat 7 ETM+ for Wildfire Fuel Load Model on Rangeland on the Upper Snake River Plain, Idaho*. Idaho State University GIS Training and Research Center.

PERSONNEL CONTACTED

Commissioners, Fire Chiefs and other attendees:

Ron Chapman	County Commissioner
Ken Backstrom	County Commissioner
William Davis	County Commissioner
Rollie Bennett	Camas County Clerk
Wayne Marolf	Chief, Fairfield Fire Department
Clint Kisler	Chief, West Magic Fire Department
Gary Sexton	U.S. Forest Service
Tom Blanchard	RC&D
Dave Sanders	Camas County Disaster Services
Curtis Jensen	BLM

PROCESS USED TO DEVELOP WILDLAND FIRE HAZARD MITIGATION PLAN



APPENDIX A – NATIONAL FIRE PROTECTION STANDARDS

NFPA 1144 Standard for Protection of Life and Property from Wildfire 2002 Edition

Definitions:

3.3.6 Survivable Space: An area defined by the Authority Having Jurisdiction (AHJ) (Typically a width of 30 feet or more) between an improved property and a potential wildfire where combustible materials and vegetation have been removed or modified to reduce the potential for fire on improved property spreading to wildland fuels or to provide a safe working area for firefighters protecting life and improved property from wildland fire.

3.3.7 Dry Hydrant: An arrangement of pipe permanently connected to a water source other than a piped, pressurized water supply system that provides a ready means of water supply for firefighting purposes and that utilizes the drafting (suction) capability of fire department pumpers.

3.3.10 Fire Hazard: A fuel complex, defined by kind, arrangement, volume, condition, and location that determines the ease of ignition and/or resistance to fire control.

3.3.12 Fire Resistant Construction: Construction designed to offer reasonable protection against fire.

3.3.13 Fuel Modification: Any manipulation or removal of fuels to reduce the likelihood of ignition or the resistance to fire control.

3.3.14 Fuels: All combustible materials within the wildland urban interface or intermix, including but not limited to vegetation and structures.

3.3.15 Ground fuels: All combustible materials such as grass, duff, loose surface litter, tree or shrub roots, rotting wood. Leaves, peat or sawdust that typically support combustion.

3.3.17 Mitigation: Action that moderates the severity of a fire hazard or risk.

3.3.18 Noncombustible: Any material that, in the form in which it is used and under the conditions anticipated will not ignite and burn nor will add appreciable heat to an ambient fire.

3.3.20 Risk: The chance of a fire starting from any cause.

3.3.21 Road: Any accessway, not including a driveway that gives access to more than one parcel and is primarily intended for vehicular access.

3.3.23 Structure: That which is built or constructed.

3.3.24 Turnaround: A portion of a roadway, unobstructed by parking, that allows for a safe reversal of direction for emergency equipment.

3.3.26 Water Supply: A source of water for firefighting activities.

3.3.27 Wildland Fire: An unplanned and uncontrolled fire spreading through vegetative fuels, at times involving structures.

3.3.28 Wildland Urban Interface: An area where improved property and wildland fuels meet at a well defined boundary.

3.3.29 Wildland Urban Intermix: An area where improved property and wildland fuels meet with no clearly defined boundary.

Pertinent Standards:

5.1.2 Roads shall be designed and constructed to allow evacuation simultaneously with emergency response operations.

5.1.5 Roads shall be designed, constructed, and maintained to accommodate the load and turning radius of the largest apparatus typically used to respond to that location.

5.1.7 Dead end roads in excess of 91.4 m (300 feet) in length shall be provided with turnouts and turnarounds as approved by the Authority Having Jurisdiction (AHJ).

5.3.1 Any bridge on a road or required driveway shall be designed to accommodate the load of the largest apparatus typically used to respond to that location.

5.3.2 The load limit shall be clearly posted at the approaches to the bridge.

5.6.1 Roads, fire service access, dwellings, and commercial structures shall be identified by a consistent identification system that provides for sequenced or patterned numbering and non-duplicated naming within each jurisdiction.

5.6.1.2 All letters, numbers and symbols shall be a minimum of 102 mm (4 in.) in height, with a 12.7 mm (1/2 in.) stroke, and shall be reflectorized and contrasting with the background color of the sign.

5.6.1.4 Street and road name signs and supporting structures shall be of noncombustible materials.

8.2.1 The requirements for roof covering assemblies shall be as follows:
1) Only roof covering assemblies rated class A, B, or C shall be used.

2) The specific class shall be consistent with the wildland fire risk and hazard severity assessment as determined by the AHJ.

8.2.2 Vents shall be screened with a corrosion-resistant, noncombustible wire mesh with the mesh opening not to exceed nominal 6.3 mm (1/4 in.) in size.

8.2.3 Eaves shall be boxed in with 15.8 mm (5/8 in.) nominal sheathing or noncombustible materials.

8.7.2 Clearance: Vegetation shall not be allowed within 3.038 m (10 ft.) of a chimney outlet.

10.1.1 The AHJ shall be responsible for the adoption and maintenance of a multi-agency operational plan for the protection of life and property during wildland fires.

10.1.2 The primary goal of the plan shall be to protect people in the fire area, including emergency personnel responding to the incident, form injury or loss of life.

10.1.3 A secondary objective shall be to minimize or eliminate property loss from wildland fire.

10.2.6.2 Mutual assistance agreements shall be reviewed annually.

NFPA 1143 Standard for Wildland Fire Management 2003 Edition

Definitions:

3.3.23 Prevention: Activities, including public education, law enforcement, personal contact, and reduction of fuel hazards, directed at reducing the incidence of fire.

3.3.25 Rural: Any area wherein residences and other developments are scattered and intermingled with forest, range, or farmlands and native vegetation or cultivated crops.

3.3.28 Values at Risk: Public and private values that the wildland fire protection system is created and funded to protect.

Pertinent Standards:

4.5.1.1 Based on the values, risk assessment, and hazard assessment, the AHJ shall develop a strategic plan identifying the required mitigation activities, responsible party, priorities, and implantation schedule.

4.5.3.1 The AHJ shall identify activities necessary to mitigate fire behavior characteristics through fuel modification.

5.1.1 The AHJ shall develop a written preparedness plan(s) for wildland fire control consistent with firefighter and public safety.

6.4.1.1 Entities involved in fire suppression: The AHJ shall prepare a written coordination and cooperative agreement plan that includes entities affected by or involved in wildland fire protection and related cooperative procedures.

NFPA 1141 Standard for Fire Protection in Planned Building Groups 2003 Edition
Definitions:

3.3.13 Fire Department: The governmental or other organization that is responsible for providing fire protection services to an area.

3.3.18 Fire Protection: All measures taken to reduce the burden of fire on quality of life. Fire protection includes measures such as fire prevention, fire suppression, built-in fire protection systems, and planning and building codes.

3.3.20 Fire Resistant: Construction designed to offer reasonable protection against fire.

3.3.24 Jurisdiction: Any governmental unit or political division or subdivision including, but not limited to, township, village, borough, parish, city, county, state, commonwealth, province, freehold, district, or territory over which the governmental unit exercises power and authority.

Pertinent Mitigation Standards:

4.1 Plans. As a minimum, the Authority Having Jurisdiction (AHJ) shall require anyone proposing to develop a planned building group to submit preliminary, working and as-built plans.

4.1.1 All preliminary plans: When submitted, shall contain, as a minimum, a site plan showing proposed water supply, roadway access, fire department access, and other items pertinent to the specific project.

4.1.2 Working Plans: Working plans, drawn to scale and signed by a licensed architect or engineer, shall be accurate and shall illustrate the final design of items required by this standard.

4.1.3 As-Built Plans. Drawings showing items listed in 4.1.1, building floor plans, and fire protection systems, as-built, shall be submitted to the fire department upon completion of the project.

5.1.2 Access to the property of the planned building group shall be provided by a minimum of two distinctly separate routes, each located as remotely from the other as possible.

5.2.1 Roadways shall be constructed of a hard, all weather surface designed to support the heaviest piece of fire apparatus likely to be operated on the roadway.

5.2.2 Every dead end roadway more than 91.5 m (300 feet) in length shall be provided at the closed end with a turnaround having not less than 36.5 m (120 feet) outside diameter of traveled way.

6.2.1 Structure Separation: Any structure of a planned building group shall be separated from another structure by at least 9.1 m (30 feet) and shall be set back at least 9.1 m (30 feet) from the property line.

7.1.3 A wildland fire risk hazard severity assessment shall be performed for all structures and groups of structures adjacent to wildland fuels.

7.3.1 Only roof covering assemblies rated class A or B shall be used. The specific class shall be consistent with the wildland fire risk and severity assessment as determined by the Authority Having Jurisdiction (AHJ).

9.1.1 Water supply systems