

Cassia 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
Cassia County
Burley, Idaho 83318

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DISCLAIMER

North Wind, Inc. has prepared this Wildland Fire Hazard Mitigation Plan solely for Cassia 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 Cassia 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 Cassia 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.

Executive Summary

This report summarizes the existing wildland fire hazards within Cassia County, Idaho, and proposes specific mitigations to reduce the threat of wildfire. Mitigations include homeowner education, fire fighting training and equipment, and hazardous fuels treatments along roadways, railroad tracks, and heavy cheatgrass/brush areas within the seven Fire Protection Districts (FPDs) in the County and the three unprotected areas.

Public participation in prevention education courses, such as FIREWISE, are highly recommended throughout the County. Estimated costs are \$15,000 per course. Annual firefighter training and refresher courses are also recommended for all firefighters in the County at a cost of approximately \$1000 per participant per year.

Due to the rural nature of the majority of Cassia County, fuels treatment programs are one of the most effective wildfire preventive measures that can be undertaken. Because roadways naturally serve as fuelbreaks, fuels treatments (e.g., mowing) alongside roads are recommended throughout the County. A total of 283 miles have been identified alongside roads or property lines throughout the County; the specific locations are shown on the maps contained in this report. Total costs for this treatment is estimated at \$75 to \$100 per linear mile, and treatments should only be necessary once each year. Another 4468 acres of high fuel loads have been identified for fuels reduction activities (e.g., juniper removal, herbicide treatments, native plant seedings) near specific communities within the ACE, Albion, Oakley, and Raft River FPDs. Estimated costs for these one time treatments are around \$2,000,000. Dry hydrants, at a cost of \$750 to \$1000 apiece, and other water sources and refill sites should be developed in the ACE, Albion, and Oakley FPDs, and the well at the Malta fire station should be deepened. New fire stations should be built in the ACE, Oakley, and Rock Creek FPDs, and heated substations for storing equipment at remote locations should be developed in the Minidoka and Raft River FPDs. Each of these facilities is estimated to cost \$250,000. Upgrading the Malta landing field (\$140,000) should be considered to allow that site to be used as a fire fighting staging area. Fire fighting vehicles in much of the County are in need of upgrades or replacement. Light and heavy brush trucks and refill engines are recommended for ACE and Raft River FPDs. Depending on the age of equipment acquired and grants obtained, estimated costs range from \$235,000 to \$475,000 for these vehicles. A Type 4 and a Type 6 wildland engine and a 2000 gallon refill engine are recommended for the Albion FPD and are estimated to cost about \$340,000. A 2000 gallon refill engine and two Type 2 structural engines are recommended for the Oakley FPD at an estimated cost of \$370,000.

Finally, incorporation of portions of currently unprotected areas into existing FPDs, especially those around Raft River, should be considered.

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 and negative impacts to 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, the 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.

1.1 Purpose

The purpose of the mitigation plan presented in this report is to identify and mitigate wildfire risks and negative consequences in communities and Wildland Urban Interface areas of Cassia County, Idaho, in accordance with the *Idaho Statewide Implementation Strategy for the National Fire Plan*. The Wildland Urban Interface is defined as the residential and supporting commercial land uses intermingled with range commercial uses and wildlands.

Cassia County proposes to reduce the hazard of wildland fire within seven fire protection districts and three open (unprotected) areas (Figure 1). The benefit of the reduction of fuels, public education, and training the community on fire protection and prevention is a reduction in frequency of wildfires spreading from city or private property on to public lands and a reduction in wildfires spreading from public lands to municipal and private property.

2.0 General Description of Assessment Area

Cassia County is predominately made up of rural areas, although the northern part of the county around the County seat of Burley has experienced major development. Development in the County has mostly occurred along Highway 30, the Eastern Idaho Railroad (EIRR), the Snake River, and Interstate Highway 84. The primary industrial complex has developed along the EIRR from the Twin Falls County line and Declo west and east of Burley and south to 1000 South where the railroad presently ends. Most of the industries are related to

agriculture products, their production, harvest or shipping. The south end of the county provides commercial quarries of building stone. These quarries are currently outside the Fire Protection Districts within the county. Some of the quarries provide residential housing for their employees within the quarry property.

The main urban centers that have developed within Cassia County are Burley, Declo, Oakley, Albion, Malta, Elba, and Almo; while other early settlements, such as Connor, Jackson, Artesian City, Marion, Mouton, Strevell, Bridge, Naf, Idahome, Raft River, Heglar and Sublette have ceased to exist or are very small communities or clusters of homes.

The very rural aspect of the county has determined the way the county is presently developing. The irrigation systems used in agriculture areas have serviced to break-up the wildland and human created fuels, and has created a different fuel complex with its unique potential fire problems.

2.1 Landownership

Cassia County is Idaho’s eighth largest county (land mass) in Idaho and contains approximately 1.6 million acres divided among five landowners (Table 1 and Figure 1).

Table 1. Land Status of Cassia County, Idaho

Owner	Acres	Percent
USFS	394,282	24
USFWS	7,378	<1
BLM	472,936	29
State of Idaho	50,885	3
Private	715,457	44
Total	1,640,938	100

2.2 Population and Demographics

At the 2000 census, there were 21,416 people, 7,060 households, and 5,485 families residing in Cassia county. The population density is approximately eight persons per square mile. There are 7,862 housing units at an average density of three units per square mile. In general the population density is light throughout the county with the densest populations occurring in the towns and communities. Due to farming and ranching there are several individual home sites scattered across throughout the rural areas of the county.

Table 2. Populations of major cities in Cassia County, Idaho

Major Cities – Cassia County, Idaho	2000 Population Census
Albion	262
Burley	9,316
Declo	338
Malta	177
Oakley	668

Cassia County Land Ownership and County Roads

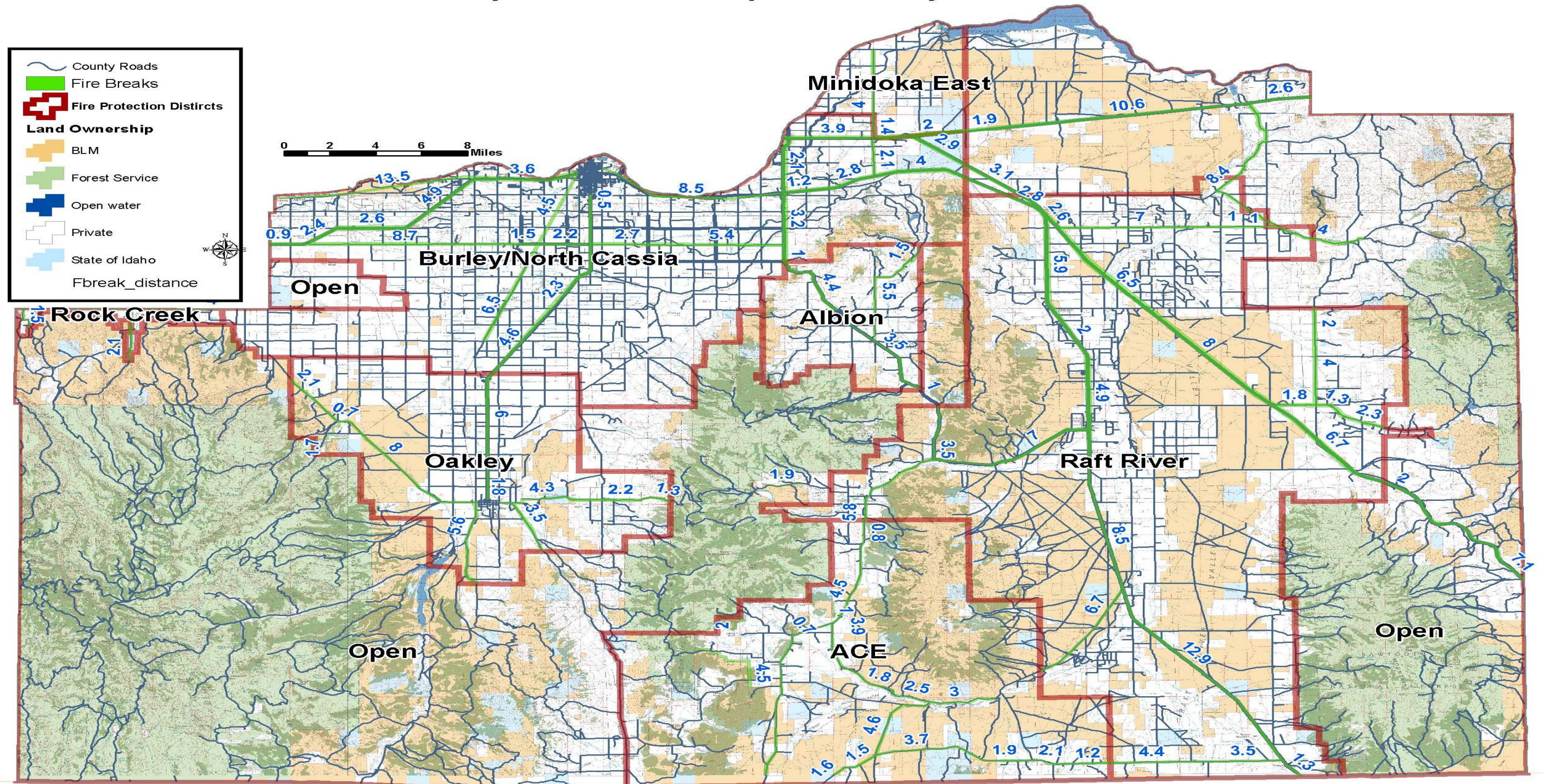


Figure 1. Cassia County land ownership and county roads.

Cassia County Vegetation Layer

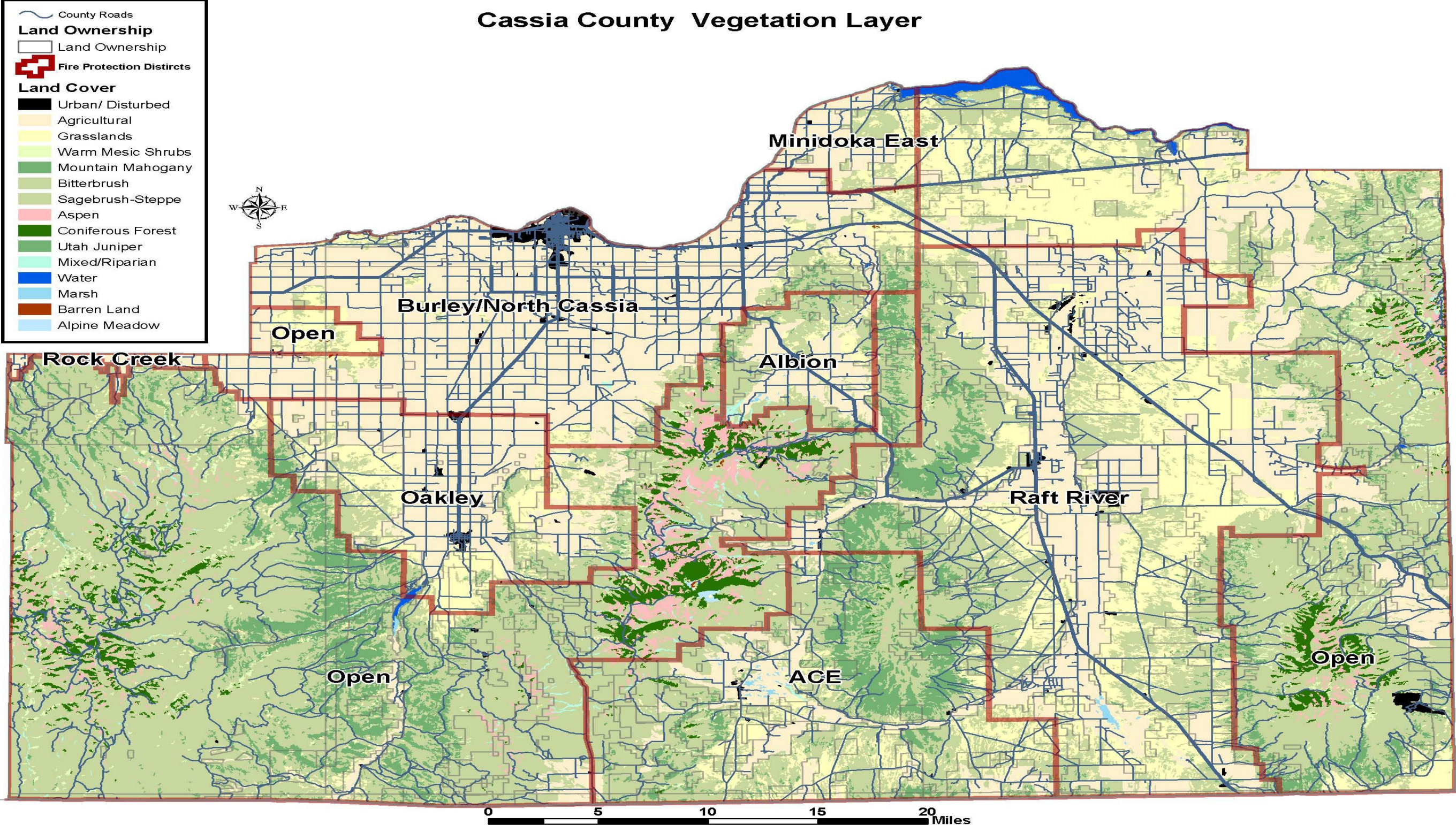


Figure 2. Cassia County vegetation map.

2.3 Topography and Vegetation

The topography of Cassia County is primarily high mountain desert with elevations ranging from 4,100 feet in the valley bottoms, where the topography is flat or gently rolling, to 8,048 feet in the mountainous areas, which are characterized by steep slopes and narrow canyons (Figure 2). Some of the more common plant species found in Cassia County include Wyoming big sagebrush (*Artemisia tridentata* spp. *wyomingensis*), green rabbitbrush (*Chrysothamnus viscidiflorus*), greasewood (*Sarcobatus vermiculatus*), bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber’s needlegrass (*Achnatherum thurberianum*), Sandberg bluegrass (*Poa secunda*), arrowleaf balsamroot (*Balsamorhiza sagittata*), Indian ricegrass (*Achnatherum hymenoides*), some pinyon pine (*Pinus cembroides*), and juniper (*Juniperus scopulorum*). Much of the rangeland is comprised of crested wheatgrass (*Agropyron cristatum*) seedings with halogeton (*Halogeton glomeratus*) and cheatgrass (*Bromus tectorum*) dispersed along roadways and disturbed sites. At the higher elevations, juniper is encroaching along with other conifers such as Douglas fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), subalpine fir (*Abies lasiocarpa*), and spruce (*Picea* spp.) on north aspects and along steeper canyon bottoms.

2.4 Climate

Climate in Cassia County is relatively mild compared with much of the surrounding counties. Summers may begin with a sudden change to warm and dry weather around the first of June during the day, but chilly nights may persist into July. Showers and thunderstorms are common producing localized precipitation. Afternoon temperatures occasionally rise into the low 90’s, but nighttime temperatures are usually in the 50’s. The fall brings cooler weather with daytime temperature rarely exceeding the 70’s and dipping into the 40’s by mid November, but remaining dry. The winter conditions usually arrive between late November and Christmas with the first cold wave. While cold temperatures may hover around zero or sub-zero during the winter, these severe temperatures seldom persist for long periods. Snowfall adds moisture to the higher elevations during winter months and may accumulate to depths of several feet on the lower benches and bottomlands.

Tables 3, 4 and 5 summarize long-term climatic data for Burley, Oakley, and Malta. Data from these weather stations provide a good cross-section of Cassia County weather patterns. Annually, the data compare favorably with the exception of Malta, which received nearly half the total snowfall compared to the other two stations. Monthly, the total precipitation is variable among stations with Burley receiving the least total precipitation during months July through October, which is considered the fire season for Idaho.

Table 3. Monthly Climate Summary for Burley, Idaho for years 1948 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	35.8	42.1	50.5	59.8	68.9	78.1	87.4	86.1	76.2	63.8	48.0	37.6	61.2
Average Min. Temperature (F)	18.2	22.6	27.7	33.6	41.4	48.2	54.1	51.8	43.3	34.0	26.2	19.7	35.1
Average Total Precipitation (in.)	1.18	0.78	0.92	0.95	1.22	0.87	0.34	0.46	0.57	0.61	0.95	1.05	9.91
Average Total SnowFall (in.)	6.9	3.8	2.5	1.2	0.2	0.0	0.0	0.0	0.0	0.2	2.4	5.8	23.0
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	0	1	0

Table 4. Monthly Climate Summary for Oakley, Idaho for years 1914 to 2003

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	37.8	43.0	50.6	59.5	68.4	77.2	86.2	85.1	75.7	64.4	49.1	39.8	61.4
Average Min. Temperature (F)	18.8	23.1	27.6	33.3	40.4	47.1	54.8	53.1	44.6	36.0	27.4	20.7	35.6
Average Total Precipitation (in.)	0.77	0.65	0.89	1.23	1.54	1.22	0.72	0.74	0.77	0.82	0.76	0.78	10.89
Average Total SnowFall (in.)	7.2	4.4	4.0	2.1	0.5	0.0	0.0	0.0	0.0	0.4	2.9	5.6	27.1
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Table 5. Monthly Climate Summary for Malta, Idaho for years 1963 to 2002

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	37.0	42.8	51.7	61.0	69.6	79.1	88.9	87.9	77.6	65.1	48.1	37.7	62.2
Average Min. Temperature (F)	16.8	20.7	26.2	31.5	37.9	43.7	49.8	48.1	40.0	31.5	24.1	16.5	32.2
Average Total Precipitation (in.)	0.72	0.58	0.86	1.09	1.64	1.23	0.93	0.89	0.84	0.72	0.76	0.74	11.01
Average Total SnowFall (in.)	4.1	1.7	1.6	0.7	0.4	0.0	0.0	0.0	0.0	0.1	1.5	3.1	13.1
Average Snow Depth (in.)	2	1	0	0	0	0	0	0	0	0	1	2	1

3.0 Existing Conditions and Resources

This section identifies important wildland fire-related issues and their relationship to existing conditions in Cassia County. Existing conditions in Cassia County were determined by: (1) interviewing local, state, and federal employees and county residents; (2) driving the main roads within each fire district; (3) inspecting fuel loads adjacent to roads and calculating the distance this fuel occurred along the road; (4) evaluating road surface conditions, bridge weight limits, and road classifications for accessibility by large firefighting equipment such as tenders and pump trucks; (5) photographing representative structures and visually checking these structures for fire hazard and safety, including defensible space, location of propane tanks, proximity of fire hydrants and/or water sources, ingress and egress, and type of siding and/or roofing material; and (6) completing a Wildland Fire Hazard Assessment, Structural Assessment, and Community Assessment Form at specific locations within each fire district. Structures were selected based on but not limited to: (a) proximity to a wildland-urban interface, and (b) exhibiting a fire hazard and safety concern such as adjacent to highly flammable sources (e.g., large fields, vacant lots) or flammable material within 10 feet of the structure. Structures were defined as homes and other buildings (e.g., barns, garages, or maintenance buildings) with economic value to the landowner, or historic buildings.

3.1 Risk of Fires and Fire Frequency

The risk of wildfires within or adjacent to Cassia County is generally moderate to high due to an accumulation of flammable fuels over the past decade. Cool wet springs have increased grass and shrub density within the sagebrush-steppe and persistent drought has led to a moderate to high fire danger. Figure 3 shows fuel loads and historical fire perimeters for years (1972-2002). The highest fire frequency occurred in the extreme northern edge of the county and almost entirely on BLM lands. This area is currently not in a Fire Protection District.

3.2 Slope Risk Model

Figure 4 shows the Slope Risk Model for Cassia County. Steep slopes cause fires to spread rapidly because of convection and radiant heat and the fact that the flames are closer to the fuels. The model was developed using 30-meter spatial resolution digital elevation model (DEM). Slope was calculated from the DEM by ArcInfo processing (Anderson 1982; Russell and Weber 2000).

3.3 Mutual Aid Agreements

Mutual aid agreements exist among the seven Fire Protection Districts described below. This allows for temporary equipment and personnel assignments to other districts on an as needed basis. The Districts also have mutual aid agreements with the U.S. Fish and Wildlife Service, U.S. Park Service, U.S. Forest Service, and the Bureau of Land Management.

3.4 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. The corner lands not covered by center pivot irrigation systems will most likely be developed for single homes under the regulations covering parcels.

3.5 Specific Description of Assessment Area

The Cassia County assessment area includes seven Fire Protection Districts (FPDs) covering an estimated 829,000 acres, and three open areas not located within any fire district at an estimated 812,000 acres. The FPDs are ACE, Albion, Burley/North Cassia, Minidoka East, Oakley, Raft River, and Rock Creek. Within these FPDs there are many towns that contain subdivisions and single home sites. Table 6 shows each FPD and the landownership within each district. Figure 1 shows the location of each FPD within Cassia County.

Table 6. Landownership within Cassia County Fire Protection Districts

	BLM	Private	State	USFS	Total
ACE	82,686	55,937	12,492	4,078	155,193
Albion	4,281	30,531	7	38	34,857
Burley/North Cassia	10,091	184,352	4,526	3	198,971
Minidoka East	5,589	13,553	2,236	0	21,379
Oakley	0	62,286	1,262	66	63,614
Raft River	154,811	187,314	7,638	147	349,911
Rock Creek	71	5,099	0	0	5,169
Total	257,531	539,071	28,163	4,332	829,094

Cassia County Fuel Loads and Historical Fire Perimeters for Years 1972-2002.

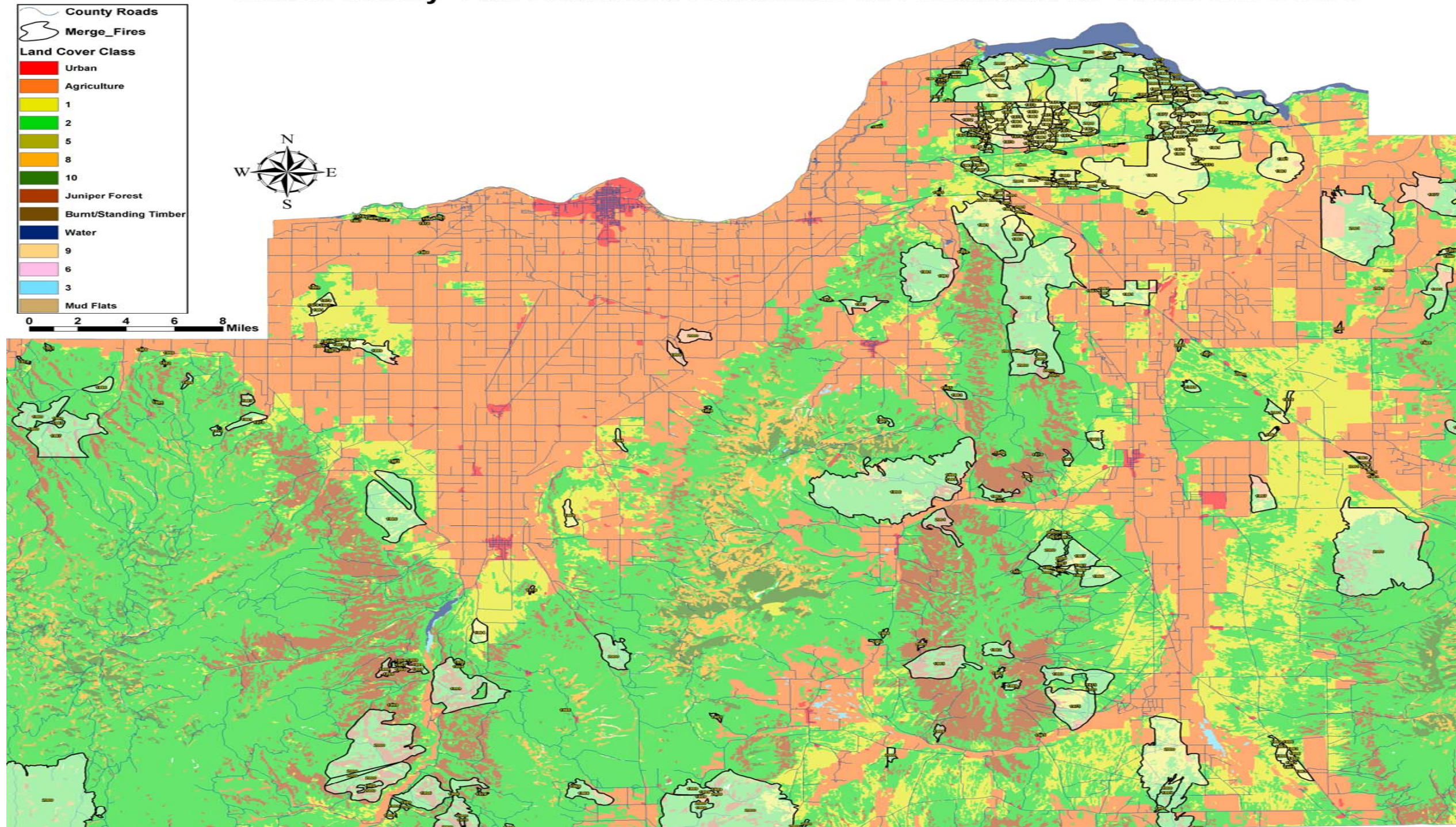


Figure 3. Fuel loads and historical fire perimeters for years 1972-2002.

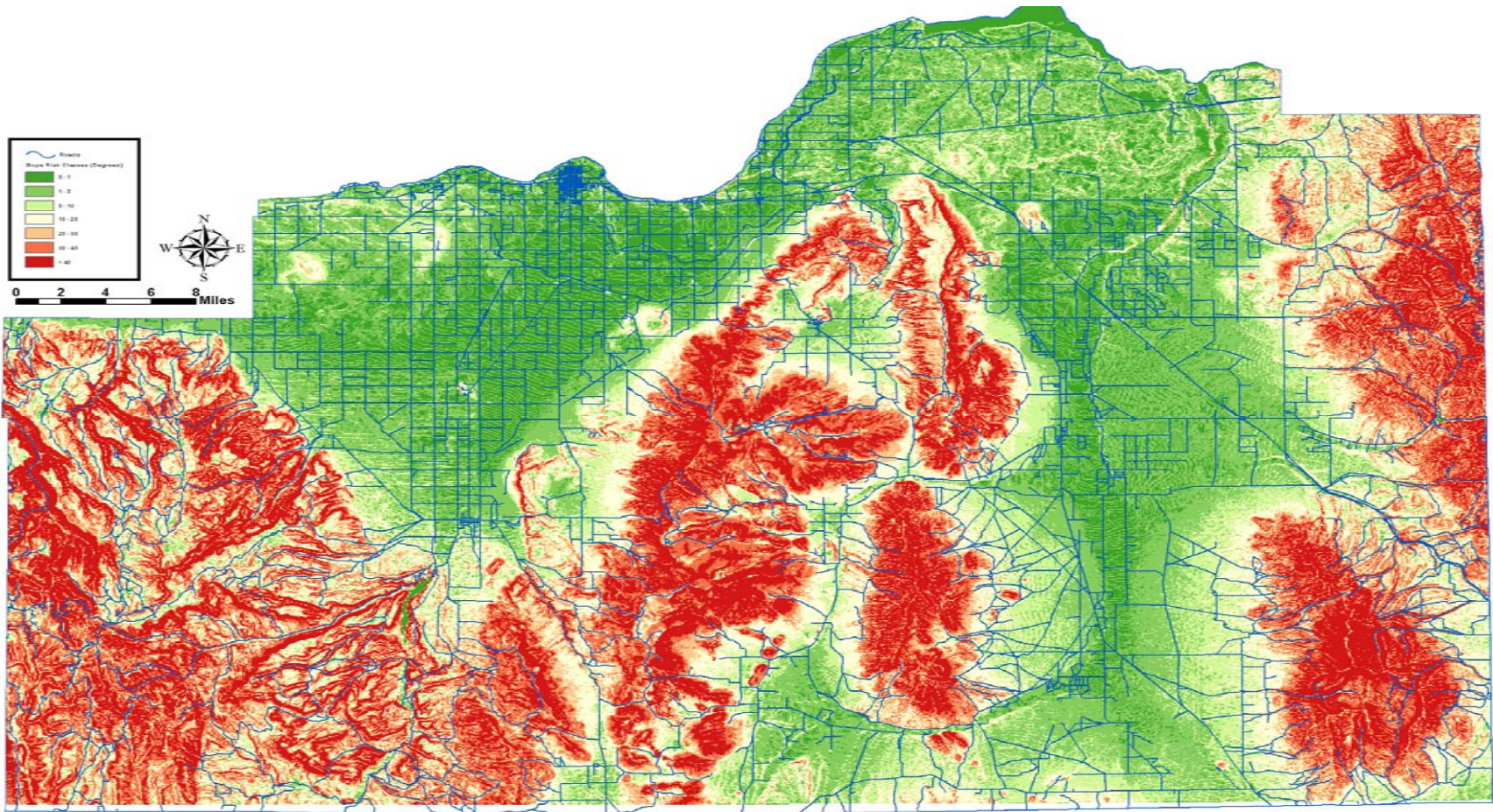


Figure 4. Slope risk model for Cassia County.

3.5.1 ACE Fire Protection District

The ACE FPD, which includes the communities of Almo, Connor and Elba, is west of the Raft River Fire Protection District and south of Elba, east of Junction Valley/Mouton road and north of the Idaho/Utah state line. Elba-Connor receives fire protection from both ACE and Raft River FPDs. The District responds to an average of 16 brush fires within and near the city limits of each community annually (R&S Enterprise 2002), and since 1975 has been involved with 12 interagency wildfires for a total of 21,000 acres burned. This is the only prescription district in Cassia County and is funded by annual assessments collected from those landowners desiring fire protection. Most of the private lands are used for both grazing and hay production, while the Federal lands are used as summer grazing.

The bottomlands are in a combination of grass and shrub while the slopes are covered with juniper and understory varying from bare soil to heavy grass and shrub combinations (Figure 5). In other areas, frequent fires have removed the juniper and heavier shrub stands producing vast stands of grass and forbs (Figure 6).

R&S Enterprise prepared a Mitigation Assessment for ACE FPD in 2002. The Mitigation Assessment identified the Raft River and ACE Fire Department infrastructure including: personnel, training, equipment, and facility. In addition, the assessment included a hazardous fuels reduction program, estimated costs, and treatment location maps identifying the need to install buffer strips, brush/juniper clearing and reseeding with fire resistant vegetation over a total of 2,999 acres east of Elba and 934 acres northeast of Connor. The recommended program would reduce the potential for a catastrophic wildfire to these communities, would decrease fire department response time, and would reduce the wildfire potential throughout the area. Section 4.0 of this document includes specific mitigations and associated costs specified for the ACE FPD.



Figure 5. Homes in heavy juniper stands with little clearing around structures.
South of Castle Rock at junction of Almo Road and Edwards Creek.



Figure 6. Sister Rock formation located within a recent juniper burn area.

Fire, Structural, and Community Assessments for ACE FPD

The following is a summary of the Fire Hazard Assessment for ACE-FPD. Table 7 shows the complete results. Overall, the single legal subdivision in this FPD received a Class B (medium) fire hazard assessment rating for 6 out of 6 elements (100%).

Vegetation Type – Sagebrush-grassland will be the primary carrier of any ignition to the juniper or to the wildland-urban interface.

Slope – Most slopes within the assessment area are 10-30%.

Aspect – The majority of the assessment area faces east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – Fuel types within the assessment area is medium fuel (brush, medium shrubs, and small trees).

Fuel Density – Fuel density within the assessment area is broken moderate fuels adjacent to federal land 31 to 60% cover.

Fuel Bed Depth – Fuel bed depth with the assessment area is moderate (1-3 feet).

Table 7. Fire Hazard Assessment for ACE FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Durfee	Sagebrush/grass & juniper	B	B	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for ACE FPD. Table 8 shows the complete results. Overall, the subdivision received a Class B (medium) for 3 out of 7 elements (43%), and a Class C (high) for 4 out of 7 elements (57%).

Structure Density – The structure density within the assessment area is at least one structure per 5-10 acres.

Proximity to Fuels – Structures within the assessment area and adjacent to the wildland-urban interface are less than 40 feet to flammable fuels.

Building Materials – Less than 10% of the structures within the assessment area have fire resistant roofs and/or siding.

Survivable Space – Less than 10% of the structures within the assessment area and adjacent to the wildland-urban interface have improved survivable space around the property.

Roads – Roads within the assessment area are maintained, some with narrow two lane roads with no shoulders.

Response Time – Response time to the assessment area is 20-40 minutes or moderate.

Access – Access to assessment area is narrow, dead-end roads or 1 way in, 1 way out and with steep grades.

Table 8. Structural Hazard Assessment for ACE FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Durfee	B	C	C	C	B	B	C

A=Class A low fire hazard assessment rating
 B=Class B medium fire hazard assessment rating
 C=Class C high fire hazard assessment rating

Table 9 summarizes the Community Assessment for ACE FPD.

Table 9. Community Assessment for ACE FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	B
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).	B
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	B
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.	C

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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	B
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.	B (Not complete)
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.	B
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.	B
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	C
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.	A
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.	A

3.5.2 Albion Fire Protection District

The Albion FPD covers a total of 34,857 acres including 4,281 acres of BLM land and 30,531 acres of private land (Table 6). Most of the private land is used for grazing and haying while the BLM lands provide alternate grazing sites. In the past, fire was frequent and may be again when favorable conditions occur. Stands of Pinyon pine and juniper (Figure 7) occur in isolated patches throughout the Albion FPD. Canopy cover ranges from 10% in open stands to 30% in dense stands with fuel loading and potential fire behavior increasing proportionally. The wildfire return interval has been shortened considerably due to early flammability and rapid rate of spread of cheatgrass and the steady encroachment of juniper (Figure 8). Because the area has experienced extreme drought over the past several years, this FPD has had several fires. During 1975-2001 the FPD responded to 13 wildfires on public land, with more than 22,000 acres burned.

R&S Enterprise (2003) prepared a Mitigation Assessment for the city of Albion and the Albion FPD in 2003. This assessment included a hazardous fuels reduction program, estimated costs, and project treatment maps identifying the need to install buffer strips for 22 landowners (476.5 acres), sites adjacent to BLM lands (160 acres), Sawtooth National Forest (264 acres), State highway 77 right-of-way (20 acres) and Albion Highway District right-of-way (20 acres). In addition, the Mitigation Assessment identified the Albion Fire Department infrastructure including: personnel, training, equipment, and facility. Section 4.0 of this document provides the specific mitigations and associated costs for Albion FPD.

A new fire station is presently under construction and will provide housing for fire equipment and meeting space.



Figure 7. Pinyon-juniper fuels along Goose Road and Trapper Creek road.



Figure 8. Heavy fuels south of Albion and adjacent to Highway 77.

Fire, Structural, and Community Assessments for Albion FPD

The following is a summary of the Fire Hazard Assessment for Albion FPD. Table 10. shows the complete results. Overall, the two legal subdivisions in this FPD received a Class A (low) fire hazard assessment rating for one out of 12 elements (8.3%) and a Class B (medium) fire hazard assessment rating for 11 out of 12 elements (92%).

Vegetation Type – Sagebrush-grassland will be the primary carrier of any ignition to the wildland-urban interface.

Slope – Most slopes within the assessment area are 10-30%.

Aspect – The majority of the structures within the assessment area face east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – Fuel types within the assessment area is medium fuel (brush, medium shrubs, and small trees).

Fuel Density – Fuel density within the assessment area is broken moderate fuels adjacent to federal land 31 to 60% cover.

Fuel Bed Depth – Fuel bed depth with the assessment area is moderate (1-3 feet).

Table 10. Fire Hazard Assessment for Albion FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Marsh Creek Ridge	Sagebrush/grass	B	B	B	B	B	B
Land Creek Heights	Sagebrush/grass	B	A	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Albion FPD. Table 11 shows the complete results. Overall, the subdivisions received a Class A (low) fire hazard assessment rating for 2 out of 14 elements (14%), a Class B (medium) for 5 out of 14 elements (36%), and a Class C (high) for 7 out of 14 elements (50%).

Structure Density – The structure density within the assessment area is at least one structure per 5-10 acres.

Proximity to Fuels – One subdivision within the assessment area and adjacent to the wildland-urban interface is less than 40 feet to flammable fuels and the other subdivision is between 40-100 feet to flammable fuels.

Building Materials – Less than 10% of the structures within the assessment area have fire resistant roofs and/or siding.

Survivable Space – 10-50% of the structures within the assessment area and adjacent to the wildland-urban interface have improved survivable space around the property.

Roads – Roads within the assessment area are narrow and/or single lane, minimally maintained, and contain no shoulders.

Response Time – Response time to the assessment area is 20 minutes or less.

Access – Access to assessment area is narrow, dead-end roads or 1 way in, 1 way out and with steep grades.

Table 11. Structural Hazard Assessment for Albion FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Marsh Creek Ridge	B	C	C	B	C	A	C
Land Creek Heights	B	B	C	B	C	A	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 12 summarizes the Community Assessment for Albion FPD.

Table 12. Community Assessment Summary for Albion FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	B
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).	A
Firefighting Capability	Adequate structural fire department. Sufficient	Inadequate fire department. Limited personnel, and or	Fire department non-existent or untrained and/or equipped to	B

	personnel, equipment, and wildland firefighting capability and experience.	equipment but with some wildland firefighting experience and training.	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.	Hydrants in town, C for rest of district
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.	B
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A in town, B for rest of district
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.	B
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.	B
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.	B
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	C, but do meet 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.	B
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.	B

3.5.3 Burley/North Cassia Fire Protection District

This northernmost FPD covers a total of 198,971 acres including 10,091 acres of BLM land, 184,352 acres of private land, and 4,526 acres of State land (Table 6). Much of the private land is presently agricultural land, but housing, agricultural related industries and produce shipping points have developed along the EIRR and Highway 30. The number of approved subdivisions in this FPD has increased rapidly during the last decade both east and west of Burley, however, farm based center pivot irrigation still control major portions of land. The present expansion of subdivisions appears to be moving more rapidly east and north along the Snake River than to the west of Burley. Over time the approved subdivisions have become so linked together that it is difficult to tell where one subdivision stops and another begins.

Heavy fuel loads exist throughout this FPD (Figure 9) and are a combination of native and exotic vegetation, namely cheatgrass brome. These fuels can readily carry fire once ignition occurs. Some housing has been built adjacent to or inside these fuel beds with minimum effort at developing defensive space (Figure 10). As a result of the expanses of these fuels, large fires are probable and facilities are going to be threatened during any incident. With the movement from rectangular to circular fields as a result of center pivot irrigation, corners and stretches along roads are not being managed and could provide a pathway for fire from patches of natural fuels on windy days. To compound the fuel problem further older homes and farm buildings are being abandoned and surrounding areas are returning to heavy stands of grass and shrubs that are curing out earlier in the fire season because of lower moisture.

There is little surface water in this FPD except in the Snake River and irrigation canals, which can be used when access has been developed. The departments do have the ability to hook into irrigation equipment to refill fire fighting equipment during the irrigation months, but outside of the irrigation system water must be hauled from the fire stations or community fire hydrant systems where present.



Figure 9. Fields along Highway 81 Bypass Road showing heavy fuel loads.



Figure 10. Heavy fuels adjacent to structure in Water Canyon Subdivision.

Fire, Structural, and Community Assessments for Burley/North Cassia FPD

The following is a summary of the Fire Hazard Assessment for Burley/North Cassia FPD. Table 13. shows the complete results. Overall, the subdivisions in this FPD received a Class A (low) fire hazard assessment rating for 169 out of 258 elements (66%), a Class B (medium) rating for 92 out of 258 elements (36%) and a Class C (high) rating (1%) for 2 out of 258 elements.

Vegetation Type – Lawns are the primary carrier of any ignition to the wildland-urban interface.

Slope – Most slopes within the assessment area are less than 10%.

Aspect – The majority of the structures within the assessment area face east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The majority of fuel types within the assessment area is small, light fuels (grass, weeds and shrubs).

Fuel Density – The majority of fuel density within the assessment area is non-continuous fuel bed with grass and/or sparse fuels adjacent to federal land less than 30% cover.

Fuel Bed Depth – The majority fuel bed depth with the assessment area averages less than 1 foot.

Table 13. Fire Hazard Assessment for Burley/North Cassia FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Verde Valley**	Lawns	A	B	B	A	B	B
Hernandez**	Lawns	A	B	B	B	C	B
Starr's Ferry**	Lawns	A	B	B	A	A	A
Star Park**	Lawns	A	B	B	A	A	A
Royal Star**	Lawns	A	B	B	A	A	A
Carefree Estates**	Lawns	A	B	B	A	A	A
Lemaire Estates**	Lawns	A	B	B	A	A	A
Harris**	Lawns	A	B	B	A	A	A
Macadam Ind. Park**	Lawns	A	B	B	A	B	A

Riverview**	Lawns	A	B	B	A	A	A
Sylvan Acres**	Lawns	A	B	B	A	A	A
Bielene Park**	Lawns	A	B	B	A	A	A
Sandy Glen**	Lawns	A	B	B	A	A	A
Starting Gates**	Lawns	A	B	B	A	A	A
Starting Gates # 2**	Lawns	A	B	B	A	A	A
Birch Acres**	Lawns	A	B	B	A	A	A
Watterson Estates**	Lawns	A	B	B	A	A	A
Country Hills**	Lawns	A	B	B	A	A	A
VIP Estates**	Lawns	A	B	B	A	A	A
Southern View Ranchettes**	Lawns	A	C	B	A	A	A
Paradise**	Lawns	A	B	B	A	A	A
E-Z Acres**	Lawns	A	B	B	A	A	A
Vista Village**	Lawns	A	A	B	A	A	A
Grandview**	Lawns	B	A	B	B	A	A
Bill Rehn**	Lawns	A	A	B	A	A	A
Del Rio**	Lawns	A	A	B	A	A	A
Unity Farms**	Lawns	A	A	B	B	A	A
Yulara Estates**	Lawns	A	A	B	A	A	A
View**	Lawns	A	B	B	A	A	A
Springdale Acres**	Lawns	A	A	B	A	A	A
Riverside**	Lawns	A	A	B	A	A	A
River Heights**	Lawns	B	A	B	A	A	A

Moan's Place**	Lawns	A	B	B	A	A	A
Kossman**	Lawns	A	B	B	A	A	A
Christiansen Acres**	Lawns	A	B	B	A	A	A
Spring Creek**	Lawns	A	B	B	A	A	A
Berlin Estates West**	Lawns	A	B	B	A	A	A
Kelsey**	Lawns	A	B	B	A	A	A
Water Canyon Heights	Sagebrush/grass	B	A	B	B	B	B
Village of Trees (KOA)**	Lawns	A	B	B	A	A	A
Turner River View Estates**	Lawns	A	B	B	A	A	A
Declo**	Lawns	A	B	B	A	A	A
Six S Ranch Rd.	Sagebrush/grass	B	A	B	A/B	B	B

A=Class A low fire hazard assessment rating
 B=Class B medium fire hazard assessment rating
 C=Class C high fire hazard assessment rating
 * No structures yet
 ** Not close to Federal lands

The following is a summary of the Structural Hazard Assessment for Burley/North Cassia FPD. Table 14 shows the complete results. Overall, the subdivisions received a Class A (low) fire hazard assessment rating for 170 out of 301 elements (56%), a Class B (medium) for 87 out of 301 elements (29%), and a Class C (high) for 44 out of 301 elements (15%).

Structure Density – The structure density within the assessment area is at least one structure per 0-5 acres.

Proximity to Fuels – Structures within the assessment area and adjacent to the wildland-urban interface are 40-100 feet to flammable fuels.

Building Materials – The majority of structures have fire resistant roofs and/or siding.

Survivable Space – The majority of structures within the assessment area have improved survivable space around the property.

Roads – Roads within the assessment area are maintained, with some narrow, two-lane roads with no shoulders.

Response Time – Response time to the assessment area is 20 minutes or less.

Access – Access to assessment area is narrow, dead-end roads or 1 way in, 1 way out and with steep grades.

Table 14. Structural Hazard Assessment for Burley/North Cassia FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
VerdeValley	A	B	A	A	B	A	C
Hernandez	A	B	A	A	B	A	C
Starr’s Ferry	A	B	A	A	B	A	C
Star Park	A	B	A	A	B	A	C
Royal Star	A	B	A	A	B	A	C
Carefree Estates	A	B	A	A	B	A	C
Lemaire Estates	A	B	A	A	B	A	C
Harris	A	B	A	A	B	A	C
Macadam Ind. Park	A	B	A	A	B	A	C
Riverview	A	B	A	A	B	A	C
Sylvan Acres	A	B	A	A	B	A	C
Bielene	A	B	A	A	B	A	C
Sandy Glen	A	B	A	A	B	A	C
Starting Gate	A	B	A	A	B	A	C
Starting Gate #2	A	B	A	A	B	A	C
Birch Acres	A	B	A	A	B	A	C
Watterson Estates	A	B	A	A	B	A	C
Country Hills	A	B	A	A	B	A	C

VIP Estates	A	B	A	A	B	A	C
Southern View Ranchettes	A	B	A	A	B	A	C
Paradise	A	B	A	A	B	A	C
E-Z Acres	A	B	A	A	B	A	C
Vista Village	A	B	A	A	B	A	C
Grandview	A	B	A	A	B	A	C
Bill Rehn	A	B	A	A	B	A	C
Del Rio	A	B	A	A	B	A	C
Unity Farms	A	B	A	A	B	A	C
Yulara Estates	A	B	A	A	B	A	C
View	A	B	A	A	B	A	C
Springdale Acres	A	B	A	A	B	A	C
Riverside	A	B	A	A	B	A	C
River Heights	A	B	A	A	B	A	C
Moan's Place	A	B	A	A	B	A	C
Kossmann	A	B	A	A	B	A	C
Christensen Acres	A	B	A	A	B	A	C
Spring Creek	A	B	A	A	B	A	C
Berlin EstatesWest	A	B	A	A	B	A	C
Kelsey	A	B	A	A	B	A	C
Water Canyon Heights	A	B	A	A	B	A	C
Village of Trees (KOA)	A	B	A	A	B	A	C
Turner Riverview Estates	A	B	A	A	B	A	C
Declo	A	B	A	A	B	A	B

Six S Ranch Rd.	A	B	A	B	C	B	C
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A=Class A low fire hazard assessment rating
B=Class B medium fire hazard assessment rating
C=Class C high fire hazard assessment rating

Table 15 summarizes the Community Assessment for Burley/North Cassia FPD.

Table 15. Community Assessment Summary for Burley/North Cassia FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	A
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).	B
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	A
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.	B
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.	B
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A
Community Planning Practices	County/local laws and zoning ordinances require use of fire safe residential design and adequate ingress/egress of fire	Local officials have an understanding of appropriate community planning practices for wildfire loss mitigation. Fire	Community standards for fire safe development and protection are marginal or non-existent. Little or no effort has been made	A

	suppression resources. Fire Department actively participates in planning process.	department has limited input to fire safe development and planning efforts.	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.	A
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.	A
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	B
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.	A
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.	B

3.5.4 Minidoka East End Fire Protection District

This FPD covers a total of 21,379 acres including 5,589 acres of BLM land, 13,553 acres of private land, and 2,236 acres of State land. Most of the private land is farmed with irrigation using both surface water and water from deep wells. The BLM land primarily is used as grazing allotments. The Minidoka County FPD, located in Rupert, responds to all fires in the Minidoka East End FPD as well as some fires in the Open Area (Figure 3) north and south of Interstate 86, depending on the location of the fire relative to the district boundary (personal communication – Mike Brown, 2004). A cooperative agreement with the BLM allows Minidoka FPD to respond to fires outside of FPD boundaries with the first four hours free for their services. The BLM would reciprocate with 4 hours of their time in support of the Minidoka FPD (personal communication – Mike Brown, 2004).

Because of the volume of fine fuels present in this FPD, fires tend to be very large with rapid rates of spread. Fire tends to be frequent to this part of Cassia County and as a result cheatgrass is present on much of the rangeland, which tends to increase flammability of the grass and shrub lands (see Figure 3).

Fire, Structural, and Community Assessments for Minidoka East End FPD

The following is a summary of the Fire Hazard Assessment for Minidoka East End FPD. Table 16 shows the complete results. Overall, the three legal subdivisions in this FPD received a Class A (low) fire hazard assessment rating for 12 out of 15 elements (80%) and a Class B (medium) rating for 6 out of 18 elements (33%).

Vegetation Type – Grass is the primary carrier of any ignition to the wildland-urban interface.

Slope – Most slopes within the assessment area are less than 10%.

Aspect – The majority of the structures within the assessment area face east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The majority of fuel types within the assessment area is small, light fuels (grass, weeds and shrubs).

Fuel Density – The majority of fuel density within the assessment area is non-continuous fuel bed with grass and/or sparse fuels adjacent to federal land less than 30% cover.

Fuel Bed Depth – The majority fuel bed depth with the assessment area averages less than 1 foot.

Table 16. Fire Hazard Assessment for Minidoka East End FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
River Place**	Grass	A	B	B	A	A	A
Jackson Estates**	Grass	A	B	B	A	A	A
Nelson Estates**	Grass	A	B	B	A	A	A

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

** Not close to Federal lands

The following is a summary of the Structural Hazard Assessment for Minidoka East End FPD. Table 17 shows the complete results. Overall, the subdivisions received a Class A (low) fire hazard assessment rating for 12 out of 21 elements (57%), a Class B (medium) for 6 out of 21 elements (29%), and a Class C (high) for 3 out of 21 elements (14%).

Structure Density – The structure density within the assessment area is at least one structure per 0-5 acres.

Proximity to Fuels – Structures within the assessment area and adjacent to the wildland-urban interface are 40-100 feet to flammable fuels.

Building Materials – The majority of structures have fire resistant roofs and/or siding.

Survivable Space – The majority of structures within the assessment area have improved survivable space around the property.

Roads – Roads within the assessment area are maintained, with some narrow, two –lane roads with no shoulders.

Response Time – Response time to the assessment area is 20 minutes or less.

Access – Access to assessment area is narrow, dead-end roads or 1 way in, 1 way out and with steep grades.

Table 17. Structural Hazard Assessment for Minidoka East End FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
River Place **	A	B	A	A	B	A	C
Jackson Estates **	A	B	A	A	B	A	C
Nelson Estates **	A	B	A	A	B	A	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

** Not close to Federal lands

Table 18 summarizes the Community Assessment for the Minidoka East FPD.

Table 18. Community Assessment Summary for Minidoka East End FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	A

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).	B
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	A
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.	B
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.	B
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A
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.	B
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.	B
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.	A
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	B

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.	A
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.	A

3.5.5 Oakley Fire Protection District

This FPD covers a total of 63,614 acres including 62,286 acres of private land, 1,262 acres of State land, and 66 acres of U.S. Forest Service land (Table 6). Major land uses within the District include rangeland, recreation on Federal public lands, and agriculture on private lands producing alfalfa, wheat, sugar beets, potatoes and feedlots. There are few platted subdivisions within this FPD, however parcel development for homes and farm clusters are prevalent outside of the town of Oakley. Many of the newer homes are well landscaped and maintained and meet or exceed the Fire wise standards generally accepted in Idaho, however the older home sites and farm clusters tend to harbor heavy stands of grass and shrubs. These areas will present some problems for firefighters if ignitions occur during the normal fire season and well into a dry fall. Conversion of irrigation to center pivot systems from rectangular systems is increasing the amount of unmanaged grass and shrub land along field edges and corners where the pivot systems don't reach. In some case these leave corners are being developed into home sites.

Because the area has experienced extreme drought over the past several years, this FPD has had several fires. Over the past 10 years the FPD has responded to an average of 22 fires each year with 11 of these responses to wildland fires. Figures 11 and 12 are examples of heavy fuel loads adjacent to roads within the District. Figure 13 shows extremely heavy fuels south of Oakley FPD and within an open or unprotected area.

R&S Enterprise (2003a) prepared a Mitigation Assessment for the city of Oakley and the Oakley FPD in 2003. This assessment included a hazardous fuels reduction program, costs, and maps identifying the need to install buffer strips for 17 landowners (844 acres), sites adjacent to public and State Lands (844 acres), and for the Basin Interagency Project Area (770 acres). The program would reduce the wildfire potential a catastrophic wildfire, decrease the fire department response time, and reduce the wildfire potential for an estimated 120 structures throughout the area. In addition, the Mitigation Assessment identified the Oakley Fire Department infrastructure including: personnel, training, equipment, and facility. Section 4.0 of this document provides the specific mitigations and associated costs for this FPD.

At present, the City of Oakley has a good water system with excellent pressure to wet hydrants throughout the city. Free-flowing water is available within the FPD and includes perennial streams and their tributaries and numerous stock watering ponds.



Figure 11. Fuels along roadway near Basin, ID.



Figure 12. Fuels along roadway to Big Cottonwood Wildlife Management Area.



Figure 13. Heavy fuels south of Oakley and within an unprotected area.

Fire, Structural, and Community Assessments for Oakley FPD

The following is a summary of the Fire Hazard Assessment for Oakley FPD. Table 19 shows the complete results. Overall, the single legal subdivision in this FPD received a Class A (low) fire hazard assessment rating for 1 out of 6 elements (17%) and a Class B (medium) rating for 5 out of 6 elements (83%).

Vegetation Type – Sagebrush-grassland is the primary carrier of any ignition to the wildland-urban interface.

Slope – Most slopes within the assessment area are less than 10%.

Aspect – The majority of the structures within the assessment area face east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The fuel types within the assessment area is medium fuels (brush, medium shrubs, and small trees).

Fuel Density – The fuel density within the assessment area is broken moderate fuels adjacent to federal land (31 to 60% cover).

Fuel Bed Depth – The majority fuel bed depth with the assessment area averages less than 1 foot.

Table 19. Fire Hazard Assessment for Oakley FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Whittle	Sagebrush/grass	A	B	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Oakley FPD. Table 20 shows the complete results. Overall, the subdivision received a Class A (low) fire hazard assessment rating for 3 out of 7 elements (43%) and a Class B (medium) 4 out of 7 elements (57%).

Structure Density – The structure density within the assessment area is at least one structure per 0-5 acres.

Proximity to Fuels – Structures within the assessment area and adjacent to the wildland-urban interface are 40-100 feet to flammable fuels.

Building Materials – Ten to 50% of the structures have fire resistant roofs and/or siding.

Survivable Space – The majority of structures within the assessment area have improved survivable space around the property.

Roads – Roads within the assessment area are maintained, with some narrow, two –lane roads with no shoulders.

Response Time – Response time to the assessment area is 20 minutes or less.

Access – There is limited access routes to the assessment area. Two ways in, two ways out with moderate grades.

Table 20. Structural Hazard Assessment for Oakley FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Whittle	A	B	B	A	B	A	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 21 summarizes the Community Assessment for the Oakley FPD.

Table 21. Community Assessment Summary for Oakley FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	Varies, but usually B
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).	A
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	A
Water Supply	Adequate supply of fire hydrants and pressure, and/or open water	Inadequate supply of fire hydrants, or limited pressure.	No pressure water system available near interface. No	B

	sources (pools, lakes, reservoirs, rivers, etc.).	Limited water supply.	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.	A
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A
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.	B
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.	B
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.	B
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	C
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.	A
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.	B, Money/ Bonds

3.5.6 Raft River Fire Protection District

This is the easternmost FPD and covers a total of 349,911 acres including 154,811 acres of BLM land, 187,314 acres of private land, 7,638 acres of State land, and 147 acres of U.S. Forest Service land (Table 6). Discussions are underway to consider expanding this District to the north and east within the next couple of years, depending on landowner cooperation. Much of the FPD is experiencing juniper encroachment and an average of 20 fires in this fuel type has occurred annually (Figures 14 and 15). Since 1975 there have been 20 interagency wildfires resulting in a total of 23,600 acres burned. The FPD has been slow to develop and most of the subdivisions approved are adjacent to Malta. Parcel development has been a little more widespread resulting in additions to Elba, Elba Basin, Connor, Sublette and lower Heglar Creek.

The use of center pivot irrigation systems are present in this FPD as in all the other districts, but seems to be heaviest in the east part of the district. In the southern part of the district some of the drilled wells are producing heated water resulting in the development of the Raft River Geothermal Project.

Major portions of the Raft River bottomlands are used for grazing and covered by a mixture of grass and shrubs; slopes are mostly covered by juniper stands with an understory of grass or a mixture of grass and various shrub species. These dry sites are easily ignited during dry periods and carry fire well, normally resulting in extremely hot fires with high rates of spread.

R&S Enterprise (2002) prepared a Mitigation Assessment for Malta in 2002, which is covered by the Raft River FPD. This Mitigation Assessment identified the Fire Department infrastructure including: personnel, training, equipment, and facility. In addition, the assessment included a hazardous fuels reduction program, costs, and maps identifying the need to install 224 acres of buffer strips, up to 2500 feet wide, within the city of Malta. The program would reduce the wildfire potential a catastrophic wildfire, decrease the fire department response time, and reduce the wildfire potential for an estimated 69 private homes throughout the area. Section 4.0 of this document lists specific mitigations and associated costs for the Raft River FPD.



Figure 14. Sagebrush-grassland/juniper fuels along the Elba-Almo Road.



Figure 15. Burn area west of Connor along the Elba-Almo Road.

Fire, Structural, and Community Assessments for Raft River FPD

The following is a summary of the Fire Hazard Assessment for Raft River FPD. Table 22. shows the complete results. Overall, the single subdivision in this FPD received a Class A (low) fire hazard assessment rating for 2 out of 6 elements (33%) and a Class B (medium) rating for 4 out of 6 elements (67%).

Vegetation Type – Sagebrush-grassland is the primary carrier of any ignition to the wildland-urban interface.

Slope – Most slopes within the assessment area are less than 10%.

Aspect – The majority of the structures within the assessment area face east.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The fuel types within the assessment area is medium fuels (brush, medium shrubs, and small trees).

Fuel Density – The fuel density within the assessment area is a non-continuous fuel bed. Grass and/or sparse fuels adjacent to federal land are less than 30% cover.

Fuel Bed Depth – The majority fuel bed depth with the assessment area is 1-3 feet.

Table 22. Fire Hazard Assessment for Raft River FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Raft River**	Sagebrush/grass	A	B	B	B	A	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

** Not close to Federal lands

The following is a summary of the Structural Hazard Assessment for Raft River FPD. Table 23 shows the complete results. Overall, the subdivision received a Class A (low) fire hazard assessment rating for 2 out of 7 elements (29%), a Class B (medium) 4 out of 7 elements (57%) and a Class C (high) 1 out of 7 elements (14%).

Structure Density – The structure density within the assessment area is at least one structure per 0-5 acres.

Proximity to Fuels – Structures within the assessment area and adjacent to the wildland-urban interface are less than 40 feet to flammable fuels.

Building Materials – Ten to 50% of the structures have fire resistant roofs and/or siding.

Survivable Space – Ten to 50% of the structures have improved survivable space around property.

Roads – Roads within the assessment area are maintained, with some narrow, two –lane roads with no shoulders.

Response Time – Response time is 20 minutes or less to the assessment area.

Access – Multiple entrances and exits well equipped for fire trucks with turnarounds.

Table 23. Structural Hazard Assessment for Raft River FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Raft River**	A	C	B	B	B	A	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

** Not close to Federal lands

Table 24 summarizes the Community Assessment for the Raft River FPD.

Table 24. Community Assessment Summary for Raft River FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	A
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).	A
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	B

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.	C
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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A
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.	B
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.	B
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.	B
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	C
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.	A
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.	A

3.5.7 Rock Creek Fire Protection District

This FPD only covers 5,169 acres including 71 acres of BLM land and 5,099 acres of private land inside Cassia County. More than 95% of the District is in the neighboring Twin Falls County. Consequently, this District will be covered in more detail in the Wildfire Mitigation Plan being prepared for Twin Falls County.

The Rock Creek FPD has four fire stations – Kimberly, Murtaugh, Hansen, and Rock Creek, and responded to 151 incidents for calendar year 2003. The Rock Creek and Murtaugh stations are located within 2.5 and 5 miles, respectively, on paved two-lane roads, from the district lands in Cassia County. The overall response time to incidents in the district is typically under 10 minutes.

The Rock Creek FPD has the capability to respond 5 Class A structural apparatus to fires within the District based on the Chief and Incident Commanders discretion. Additionally, the District has tenders and tender/pump units with a capacity of 8,000 gallons. Two four-wheel drive units with an 800-gallon capacity each are available as quick attack units and to respond to wildland fires in the District.

A 42-member volunteer fire department force mans the FPD. The District has four drills per month and the volunteers are required to attend at least one of these each month. Most of the Rock Creek volunteers attend 50 to 75% of the sessions. The drills cover wildland, structural, hazardous material, and extrication topics.

Figure 16 shows heavy sagebrush-grassland fuels within a Cooperative Management Area.



Figure 16. Heavy fuels within a Cooperative Management Area.

Fire, Structural, and Community Assessments for Rock Creek FPD

The following is a summary of the Fire Hazard Assessment for Rock Creek FPD. Table 25 shows the complete results. Overall, the two subdivisions received a Class A (low) fire hazard assessment rating for 2 out of 12 elements (17%) and a Class B (medium) rating for 10 out of 12 elements (83%).

Vegetation Type – Sagebrush-grassland and some juniper is the primary carrier of any ignition to the wildland-urban interface.

Slope – Slopes within the assessment area are moderate (10-30 %).

Aspect – Structures within the assessment area have a northerly aspect..

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The fuel types within the assessment area is medium fuels (brush, medium shrubs, and small trees).

Fuel Density – The fuel density within the assessment area is moderate fuel adjacent to federal land (31 to 60% cover).

Fuel Bed Depth – The majority fuel bed depth with the assessment area is 1-3 feet.

Table 25. Fire Hazard Assessment for Rock Creek FPD

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Parson	Sagebrush/Grass	B	A/B	B	B	B	B
Antelope Valley/Dry Creek	Sagebrush/Grass/Juniper	B	A	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Rock Creek FPD. Table 26 shows the complete results. Overall, the subdivisions received a Class B (medium) rating 4 out of 14 elements (29%) and a Class C (high) rating 4 out of 14 elements (29%).

Structure Density – The structure density within the assessment area is at least one structure per 10 acres.

Proximity to Fuels – The Structures within the assessment area and adjacent to the wildland urban interface range from less than 40 feet to 40-100 feet to flammable fuels.

Building Materials – Ten to 50% of the structures have fire resistant roofs and/or siding.

Survivable Space – Ten to 50% of the structures have improved survivable space around property.

Roads – Roads within the assessment area are narrow and or single lane, minimally maintained, with no shoulders.

Response Time – Response time is typically less than 10 minutes to the assessment area via paved two-lane roads.

Access – Narrow, dead end roads or 1 way in, 1 way out with steep grades.

Table 26. Structural Hazard Assessment for Rock Creek FPD

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Parson	N/A	C	N/A	N/A	N/A	N/A	N/A
Antelope Valley/Dry Creek	C	B	B	B	C	B	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 27 summarizes the Community Assessment for Rock Creek FPD.

Table 27. Community Assessment Summary for Rock Creek FPD

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	B
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).	A
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	B

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.	C
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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	C
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.	B
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.	B
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.	B
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	C
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.	B

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.	B
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3.5.8 Open Areas

Open areas not covered by any of the Fire Protection Districts include the communities of Heglar-Yale, Upper Goose Creek-West Mouton, and Mount Thompson. These areas cover a total of an estimated 812,000 acres within Cassia County. Figures 17-21 show unprotected areas with heavy fuel loads especially in the extreme northeastern edge of Cassia County near Heglar, Idaho. Landowners residing in the Haglar-Yale area have approached Raft River FPD requesting the extension of this FPD to cover the area south of Interstate 86 and northeast of Interstate 80. This would be an important consideration because Raft River FPD is the only district close enough to service the Haglar-Yale area in a timely manner, even though Minidoka County FPD would also respond, if needed.

As noted in Section 3.3, mutual aid agreements exist among the seven FPDs and allow for temporary equipment and personnel assignments to other districts as well as to the open areas within Cassia County. Cooperative and mutual aid agreements also exist among the FPDs and with BLM, Idaho Department of State Lands, U.S. Fish and Wildlife Service, U.S. Park Service, and U.S. Forest Service.



Figure 17. An isolated structure surrounded by heavy fuel loads.



Figure 18. Juniper-grassland fuels on BLM lands.



Figure 19. Rabbitbrush-grassland fuels near South Heglar Canyon Road.



Figure 20. Heavy sagebrush-grassland fuels north of the Raft River store.



Figure 21. Sagebrush-grassland fuels near the Raft River store.

3.6.8.1 Heglar-Yale

The following is a summary of the Fire Hazard Assessment for Heglar-Yale. Table 28 shows the complete results. Overall, the subdivisions received a Class A (low) fire hazard assessment rating for 2 out of 24 elements (8%). This is a result of a few structures with a north aspect. A Class B (medium) rating was assigned for 24 out of 24 elements (100%), and a Class C (high) rating for 2 out of 24 elements (8%).

Vegetation Type – Sagebrush-grassland and some juniper is the primary carrier of any ignition to the wildland-urban interface.

Slope – Slopes within the assessment area are moderate (10-30 %).

Aspect – Structures within the assessment area have a north, east and south and west aspects.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The fuel types within the assessment area is medium fuels (brush, medium shrubs, and small trees).

Fuel Density – The fuel density within the assessment area is moderate fuel adjacent to federal land (31 to 60% cover).

Fuel Bed Depth – The majority fuel bed depth with the assessment area is 1-3 feet.

Table 28. Fire Hazard Assessment for Heglar-Yale

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Raft River Interchange	Sagebrush/Grass	B	B	B	B	B	B
North Heglar	Sagebrush/Grass/Cedar	B	A/B/C	B	B	B	B
South Heglar	Sagebrush/Grass/Cedar	B	A/B/C	B	B	B	B
Yale	Sagebrush/Grass	B	B	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Heglar-Yale Open Area. Table 29 shows the complete results. Overall, the subdivisions received a Class B (medium) rating 10 out of 28 elements (36%) and a Class C (high) rating 14 out of 28 elements (50%). Four out of 28 elements (14%) were rated N/A.

Structure Density – The structure density within the assessment area is at least one structure per 10 acres.

Proximity to Fuels – The majority of structures within the assessment area are less than 40 feet to flammable fuels.

Building Materials – Ten to 50% of the structures have fire resistant roofs and/or siding.

Survivable Space – Ten to 50% of the structures have improved survivable space around property.

Roads – The majority of roads within the assessment area are narrow and or single lane, minimally maintained, with no shoulders.

Response Time – Response time is N/A.

Access – Narrow, dead end roads or 1 way in, 1 way out with steep grades.

Table 29. Structural Hazard Assessment for Heglar-Yale

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Raft River Interchange	C	C	B	B	C	N/A	C
North Heglar	C	C	B	B	C	N/A	C
South Heglar	C	C	B	B	C	N/A	C
Yale	C	B	B	B	B	N/A	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 30 summarizes the Community Assessment for Heglar-Yale area.

Table 30. Community Assessment Summary for Heglar-Yale

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	C
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).	C
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	C
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.	C
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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	C
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.	B
Fire Mitigation	Have adopted local ordinances	Have voluntary ordinances or	No local codes, laws or	B

Ordinances, Laws, or Regulations in Place	or codes requiring fire safe landscaping, building and planning. Fire Department actively participates in planning process.	codes requiring fire safe landscaping and building practices. Fire Department practices in planning process.	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.	N/A
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	N/A
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.	N/A
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.	N/A

3.6.8.2 Upper Goose Creek-West Mouton

The following is a summary of the Fire Hazard Assessment for Upper Goose Creek-West Mouton. Table 31 shows the complete results. Overall, the two subdivisions received a Class A (low) fire hazard assessment rating for 2 out of 12 elements (17%). This is a result of a few structures with a north aspect. A Class B (medium) rating was assigned for 12 out of 12 elements (100%), and a Class C (high) rating for 4 out of 12 elements (33%).

Vegetation Type – Sagebrush-grassland and some juniper is the primary carrier of any ignition to the wildland-urban interface.

Slope – Slopes within the assessment area are moderate (10-30 %) to steep (> than 30%).

Aspect – Structures within the assessment area have a north, east and south and west aspects.

Elevation – The elevation within the assessment area averages is between 3500-5500 feet.

Fuel Type – The fuel types within the assessment area is medium fuels (brush, medium shrubs, and small trees).

Fuel Density – The fuel density within the assessment area is moderate fuel adjacent to federal land (31 to 60% cover).

Fuel Bed Depth – The majority fuel bed depth with the assessment area is 1-3 feet.

Table 31. Fire Hazard Assessment for Upper Goose Creek-West Mouton

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Upper Goose Creek	Sagebrush/Grass/Cedar	B/C	A/B/C	B	B	B	B
Upper Birch/ Junction Valley	Sagebrush/Grass/Cedar	B/C	A/B/C	B	B	B	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Upper Goose Creek West Mouton Open Area. Table 32 shows the complete results. Overall, the subdivisions received a Class B (medium) rating 6 out of 14 elements (43%) and a Class C (high) rating 6 out of 14 elements (43%). Two out of 14 elements (14%) were rated N/A.

Structure Density – The structure density within the assessment area is at least one structure per 10 acres.

Proximity to Fuels – The structures within the assessment area are 40-100 feet to flammable fuels.

Building Materials – Ten to 50% of the structures have fire resistant roofs and/or siding.

Survivable Space – Ten to 50% of the structures have improved survivable space around property.

Roads – The majority of roads within the assessment area are narrow and or single lane, minimally maintained, with no shoulders.

Response Time – Response time is N/A.

Access – Narrow, dead end roads or 1 way in, 1 way out with steep grades.

Table 32. Structural Hazard Assessment for Upper Goose Creek-West Mouton

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Upper Goose Creek	C	B	B	B	C	N/A	C
Upper Birch/Junction Valley	C	B	B	B	C	N/A	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 33 summarizes the Community Assessment for Upper Goose Creek-West Mouton area.

Table 33. Community Assessment Summary for Upper Goose Creek-West Mouton

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	B
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).	C
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	C

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.	C
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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	C
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.	C
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.	B
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.	N/A
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	N/A
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.	N/A
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.	N/A

3.6.8.3 Mount Thompson

The following is a summary of the Fire Hazard Assessment for Mount Thompson. Table 34 shows the complete results. Overall, the subdivision received a Class A (low) fire hazard assessment rating for 2 out of 6 elements (33%), a Class B (medium) rating for 2 out of 6 elements (33%) and a Class C (high) rating for 2 out of 6 elements (33%).

Vegetation Type – SAF/Mountain Shrub is the primary carrier of any ignition to the wildland-urban interface.

Slope – Slopes within the assessment area are moderate (10-30 %).

Aspect – Structures within the assessment area have a north aspect.

Elevation – The elevation within the assessment area is greater than 5500 feet.

Fuel Type – The fuel type within the assessment area is heavy (timber, woodland, large brush or heavy planting of ornamentals).

Fuel Density – The fuel density within the assessment area is continuous fuel bed. Composition conducive to crown fires or high intensity surface fires (>60% cover).

Fuel Bed Depth – The majority fuel bed depth with the assessment area is 1-3 feet.

Table 34. Fire Hazard Assessment for Mount Thompson

Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Thompson Flats Summer Cabins	Subalpine fir/Mountain shrub	B	A	A	C	C	B

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

The following is a summary of the Structural Hazard Assessment for Mount Thompson. Table 35 shows the complete results. Overall, the subdivision received a Class A (low) rating 1 out of 7 elements (14%) and a Class C (high) rating 5 out of 7 elements (71%). One out of 7 elements (14%) was rated N/A.

Structure Density – The structure density within the assessment area is at least one structure per 0-5 acres.

Proximity to Fuels – The structures within the assessment area are less than 40 feet to flammable fuels.

Building Materials – Less than 10% of the structures have fire resistant roofs and/or siding.

Survivable Space – Less than 10% of the structures have improved survivable space around property.

Roads – The majority of roads within the assessment area are narrow and or single lane, minimally maintained, with no shoulders.

Response Time – Response time is N/A.

Access – Narrow, dead end roads or 1 way in, 1 way out with steep grades.

Table 35. Structural Hazard Assessment for Mount Thompson

Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Thompson Flats Summer Cabins	A	C	C	C	C	N/A	C

A=Class A low fire hazard assessment rating

B=Class B medium fire hazard assessment rating

C=Class C high fire hazard assessment rating

Table 36 summarizes the Community Assessment for Mount Thompson area.

Table 36. Community Assessment Summary for Mount Thompson

Rating Element	Class A	Class B	Class C	Rating (A, B, or 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 but adjacent to wildland vegetation.	C
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).	C
Firefighting Capability	Adequate structural fire department. Sufficient personnel, equipment, and wildland firefighting capability and experience.	Inadequate fire department. Limited personnel, and or equipment but with some wildland firefighting experience and training.	Fire department non-existent or untrained and/or equipped to fight wildland fire.	C

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.	C
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.	C
Structure Density	At least one structure per 0-5 acres.	On structure per 5-10 acres.	Less than one structure per 10 acres.	A
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.	C
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.	C
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.	N/A
Fire Department Training and Experience	Large, fully paid fire department with personnel that meet NFPA or NWCG training requirements, are experienced in wildland fire, and have adequate equipment.	Mixed fire department. Some paid and some volunteer personnel. Limited experience, training and equipment to fight wildland fire.	Small, all volunteer fire department. Limited training, experience and budget with regular turnover of personnel. Do not meet NFPA or NWCG standards.	N/A
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.	N/A
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.	N/A

4.0 General and Specific Mitigations – Environmental Effects

In developing the mitigations for Cassia County, fuel loads were inspected adjacent to all the roads within the County and, if flammable, the extent of these fuels along each road. Roads were evaluated for accessibility by large firefighting equipment such as tenders and pump trucks, surface conditions, bridge weight limits, road classifications, and proximity to structures.

Following are general mitigation plans and estimated costs that are applicable to all seven Fire Protection Districts and the three open areas where subdivisions and parcels have been evaluated. The next section discusses potential environmental effects to the physical, biological, and social resources identified for Cassia County as a result of project mitigation implementation. In the final section, specific mitigation plans are discussed that are tailored to the needs of each individual FPD and prioritized based on discussions with fire departments, BLM, and property owners.

General Mitigation Plans

These general mitigation recommendations should be implemented throughout the County wherever possible. The recommendations are a compilation of the observations, discussions and needs of the County related to fire protection opportunities within the Districts and the County. As the County needs and conditions change, these recommendations can change, be updated and adapted to the specific situations and surroundings of the area.

Community-wide outreach programs

Promote fire wise practices through the development and promotion of a community-wide outreach program such as FIREWISE and the “Red Zone Program. Red Zone is a copyrighted computer software program that provides fire fighters the information about access routes, construction materials, probable fire spread, occupants, and concerns for each existing home that has been assessed as part of the program. These programs are the basis of a community-wide education program, sponsored by the FPDs and BLM designed to 1) educate the public of the dangers of a wildfire in the area, 2) encourage residents to take responsibility in reducing the risk of a wildfire and to create defensible space around their residence, and 3) increase awareness of the natural role of low-intensity fire in woodland or grassland ecosystems 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.

Dry Hydrant Systems

Install a dry hydrant system and/or drafting areas for engines and tenders at locations such as irrigation canals, return flow ditches or any water sources known to flow or store water on a seasonal or permanent basis. The estimated cost is \$750 to \$1000 per hydrant including contractor labor and machine costs, 6-inch schedule 40 PVC pipe, a commercially made screen, and hydrant connector (Pohlman and White 2003)

Develop reciprocity agreements with Elko County, Nevada, and Box Elder County, Utah, which border the southern edge of Cassia County.

Cooperate with landowners to allow access to irrigation wells or pipes. This would require proper pipefittings on tenders and engines.

Contract with local water well users to provide water during fire activities.

Install large water storage tanks to be used where present water conditions are not adequate for large fires.

Coordinate and provide funding support to upgrade and improve upon inferior Community Service Infrastructure.

Upgrade communication systems to facilitate better communication between dispatcher, emergency, disaster, and fire personnel regardless of agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer. The FCC will be mandating narrow band digital radios in the near future. Therefore all communication equipment belonging to the fire stations, dispatch center, and other emergency personnel will need to be upgraded.

The movement to central pivot irrigation systems results in straight stretches and corners no longer managed by the landowners. The result is a buildup of fine fuels and/or shrubs in the long term, providing more active fire and pathways for fire between owners. Periodic mowing of these leave strips should be encouraged to create a series of fuel breaks.

Create Defensible Space

Defensible spaces are areas between improved property and a potential wildland fire where the combustible fuel has been removed or modified. One or more of the following can provide defensible space:

Homes and outbuildings -

- Water or “greenup” lawn areas
- Pave or gravel driveways
- Mow vegetation or disk/blade ground to bare, mineral soil out to a minimum of 50 feet
- Remove and/or reduce vegetation immediately around buildings

Homes and outbuildings adjacent to agriculture lands - 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 greenstrips, 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

Butte 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. The estimated cost is \$18 to \$35 per acre to prepare seedbed for planting and \$100 to \$120 per acre for seed mix, fertilizer and yearly maintenance.

The Bureau of Land Management is actively engaged in numerous fuels reduction activities throughout the county and has several additional fuels treatments planned.

Maintain survivable space at each residence

- Remove portions of any tree extending within 10 feet of the flue opening of any stove or chimney.
- Clean roof surfaces and gutters of pine needles, leaves, branches, etc, regularly to void accumulation of flammable materials.
- Maintain a screen constructed of non-flammable material over the flue opening of every chimney or stovepipe. Mesh openings of the screen should not exceed 1/2 inch.
- Landscape vegetation should be spaced so that fire cannot be carried to the structure or surrounding vegetation.
- Remove branches from trees to height of 15 feet.
- A fuel break should be maintained around all structures and especially if residence is near a flammable fuel source.
- Dispose of stove or fireplace ashes and charcoal briquettes only after soaking them in a metal pail of water.
- Store gasoline in an approved safety can away from occupied buildings.
- Propane tanks should be far enough away from buildings for valves to be shut off in case of fire. Keep area clear of flammable vegetation.
- All combustibles such as firewood, picnic tables, boats, etc. should be kept away from structures.
- Garden hose should be connected to outlet.
- Addressing should be indicated at all intersections and on structures.
- All roads and driveways should be at least 16 feet in width.
- Have fire tools handy such as: ladder long enough to reach the roof, shovel, rake and bucket for water.
- Each home should have at least two different entrance and exit routes.

Practice the “zone” approach (Simmernan and Fischer 1989) at each residence

- Clean zone – 0-3 feet from buildings, remove all combustibles (i.e. decorative bark or shrubs, stack firewood uphill or contour away from building).
- Short surface fuels – 3-30 feet from buildings, keep grass, and all other low plants short, < 3 inches high. Isolate trees so no branches overhang roofs.
- Tall surface fuels – 30-100 feet from buildings, uncut grasses, scattered patches of medium shrubs is acceptable, however, keep all plants less than 18 inches high.
- Tree and tall shrub thinning and pruning – For 100 feet around all buildings, thin (remove) trees and large shrubs so there is 10 feet of open space between all crowns

and tops of plants. Remove the lower branches of all trees to a minimum of 10 feet above the ground. Scattered, isolated trees may be left unpruned for landscape purposes.

- Recommend the use of noncombustible roofing materials.
- Replace wood shingles, or
- Apply SHINGLE SAFE Fire Retardant on Wood Shake Shingles.

Use fire-blocking gel (Bartlett 2003). Provides a level of protection against radiant heat, direct flame impingement, flying brands and burning embers. Can be applied to structures, vehicles, fuel tanks, propane cylinders or any object exposed to the effects of a fire. Can be applied by homeowners using a standard garden hose. The estimated cost is \$500 per 4000 square feet or for more information - (info@barricadegel.com).

Develop Minimum Impact Suppression Tactics (MIST) guidelines, which emphasizes suppressing wildland fires with the least environmental effect on the land.

Environmental Effects – Physical, Biological, and Social resources

The environmental effects to the physical, biological, and social resources resulting from a wildland fire include, but are not limited to: air and water quality, soil erosion and sediment delivery to streams and reservoirs, cultural resources, threatened and endangered plant, fish, and animal species, wildlife habitat, wetlands and riparian areas, Native American concerns, socioeconomic concerns such as BLM grazing allotments, subdivisions and parcels, rural communities, and wilderness or wilderness study areas.

Areas that generally burn hot are likely to have the greatest alterations in soil characteristics to the landscape (Graham 2003). In Cassia County these alterations include: (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:

- Inventory the burned area for fire and fire suppression impacts to resources addressed above
- 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.

In addition to the general mitigations, there are costs associated with ongoing training, prevention, and education efforts for areas within a Fire Protection District. The estimates below are provided for planning purposes and only represent estimated costs provided by R&S Enterprise (2002).

Training:

Officer and Crew Refresher Courses	
12 participant's @ 40 Hours @ \$12.00/hour	\$7,200
Instructor	\$2,000
Equipment and Materials	<u>\$2,000</u>
	\$11,000

Crew Level Training - New Recruits	
Ten (10) Participants @ 40 Hours @ \$12.00/hour	\$6,000
Instructor	\$2,000
Equipment and Materials	<u>\$2,000</u>
	\$10,000

Prevention:

Participation in: Local events	\$5,000
Equipment and Supplies:	\$5,000
Two 2) FIREWISE Programs	<u>\$20,000</u>
	\$30,000

Education:

Twenty-six (26) home inspections annually; fire prevention seminars, educating homeowners on defensible space and what they should do in case of a wildfire: (pre attack planning).	5,000
Equipment and Supplies	<u>\$5,000</u>
	\$10,000

Equipment & Supplies:

Suppression equipment and supply need:	\$6,000
Annual maintenance	\$1,500
Replacement through attrition	<u>\$7,500</u>
	\$15,000

4.1 Mitigation Plan for ACE FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 34.7 miles of existing roads. Develop fuel breaks adjacent to property lines for 9.0 miles and at least 200 feet in width (Figure 22). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding.

R&S Enterprise (2002) Mitigation Assessment described the need to install fuel breaks, brush/juniper clearing and reseeding with fire resistant vegetation over an estimated 400 acres northeast of Connor (Phase I) and 550 acres east of Elba (Phase II). The following is a breakdown of these costs (R&S Enterprise, 2002). Caution: Seed mixes will vary according to geographic location, soil types, precipitation, and vegetative communities present before fire.

Coordination/Administrative Costs:	\$50,000
Civil Survey Flag Project Areas	\$15,500
Fence Materials (3.0 miles@ \$5000/mile)	\$9,000
Fence Construction (3.0 miles@ \$5,000/mile)	\$15,000
Juniper/Brush Cutting	
Elba: (550 acres@ \$400/acre)	\$220,000
Connor: (400 acres@ \$400/acre)	\$160,000
Herbicide Purchase: (150 gals@ \$40/gallon)	\$6,000
Herbicide Application (950 acres@ \$15/acre)	\$14,250
Seed Cost** (950 acres@ \$13/acre)	\$12,350
Drill Seeding (950 acres@ \$16/acre)	\$14,250
Contingency (success/failure)	<u>\$50,000</u>
Subtotal: (project costs)	\$566,350

**Native Seed mix

<u>Species</u>	<u>Application Rate</u>
Bluebunch wheatgrass	4.0lbs/acre
Thickspike wheatgrass	2.0lbs/acre
Idaho fescue	2.0lbs/acre
Eski sainfold	1.0lbs/acre
Appar Lewis flax	<u>0.1lbs/acre</u>
Total	9.1lbs/acre

Equipment for brush removal would be a four-wheel drive heavy tractor with a 16-foot flail mower attachment (or comparable equipment) suitable for rough terrain and heavy use. Equipment for juniper removal would be a Cat Track-hoe with a 7000 lb shredder mounted on the boom instead of a bucket. Use of a D-8 Caterpillar tractor to remove juniper during winter months when the ground is frozen would be an alternative.

Develop water refill sites or dry hydrants that are available year round to reduce travel and refill time for tankers and engines. The estimated cost is \$750 to \$1000 per hydrant including contractor labor and machine costs, 6-inch schedule 40 PVC pipe, a commercially made screen, and hydrant connector (Pohlman and White 2003)

Update road and water system maps for fire department use. The update should be computer capable to improve dispatching.

Construct a heated fire station to house fire equipment, a meeting/training room, fire district office with communication systems and a rapid water refill system. Explore other methods than bonding to finance this needed construction. Upgrade and replace old fire equipment as needed to meet expanding fire suppression needs.

Estimated costs (R&S Enterprise, 2002):

Station/Facility	\$250,000
Refill Engine (4,000 gallon)	\$120,000
Light Brush Truck	\$105,000
Heavy Brush Truck	<u>\$250,000</u>
Total	\$725,000

Upgrade communication systems to facilitate better communication between dispatcher, emergency, disaster, and fire personnel regardless of agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer.

Develop and maintain evacuation plans for all subdivisions, farms, ranches, quarries, recreational areas and the town in cooperation with disaster, emergency, and police personnel.

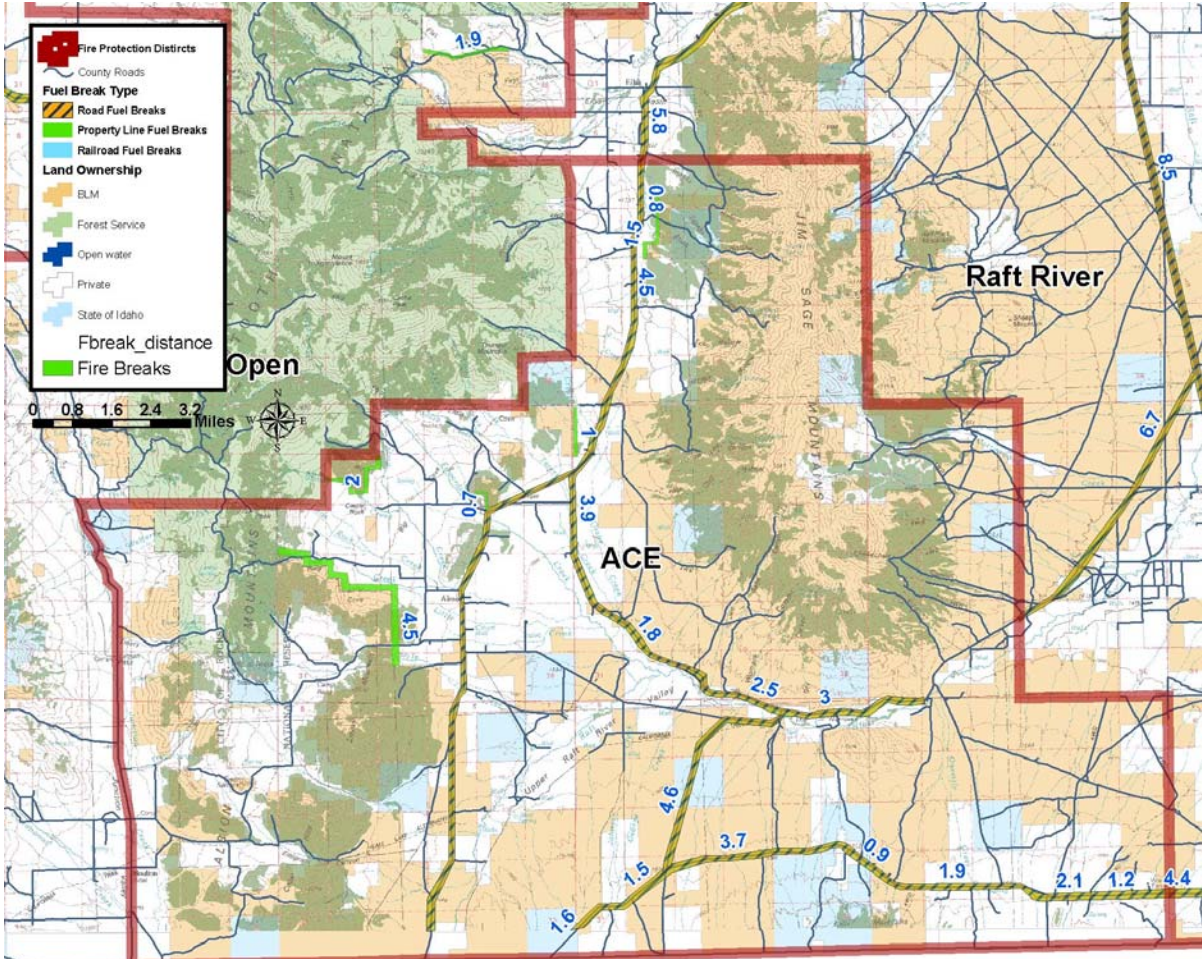


Figure 22. ACE Fire Protection District.

4.2 Mitigation Plan for Albion FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 16.0 miles of existing roads. Develop fuel breaks adjacent to property lines for 1.0 miles and at least 200 feet in width (Figure 23). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

R&S Enterprise (2003) Mitigation Assessment described the need to install fuel breaks for 22 landowners in and around the City of Albion (500 acres), BLM and State lands (160 acres) and Sawtooth National Forest (264 acres).

The following is a fuel break cost for an estimated 924 acres. These costs compare favorably with costs noted in ACE FPD Mitigation Plan discussed above. However, for a complete breakdown see R&S Enterprise (2003). Caution: Seed mixes will vary according to geographic location, soil types, precipitation, and vegetative communities present before fire.

Private lands (500 acres)	\$192,800
Interagency Project – Public lands (424 acres)	<u>\$203,360</u>
Total	\$396,160

Native Seed mix

<u>Species</u>	<u>Application Rate</u>
P-27 Siberian wheatgrass	3.0lbs/acre
Critana Thickspike wheatgrass	1.0lbs/acre
SecarSnake River wheatgrass	2.0lbs/acre
Eski sainfold	1.0lbs/acre
Alkar Tall wheatgrass	0.75lbs/acre
Ladak alfalfa	0.5lbs/acre
Forage kochia	0.5lbs/acre
Appar Lewis flax	<u>0.1lbs/acre</u>
Total	8.85lbs/acre

Equipment for brush removal would be a four-wheel drive heavy tractor with a 16-foot flail mower attachment (or comparable equipment) suitable for rough terrain and heavy use. Equipment for juniper removal would be a Cat Track-hoe with a 7000 lb shredder mounted on the boom instead of a bucket. Use of a D-8 Caterpillar tractor to remove juniper during winter months when the ground is frozen would be an alternative.

Update road and water system maps for fire department use. The update should be computer capable to improve dispatching.

Continue and expand existing firefighter training program so that all fire personnel are qualified in both wildland and structural fire suppression techniques.

Upgrade and replace old fire equipment as needed to meet expanding fire suppression needs.

Estimated costs (R&S Enterprise, 2003):

Type four Wildland Engine	\$150,000
Type six Wildland Engine	\$ 70,000
Refill Engine (2,000 gallon)	<u>\$120,000</u>
Total	\$340,000

Upgrade communication systems to facilitate better communication between dispatcher, emergency, disaster, and fire personnel regardless of agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer.

Develop and maintain evacuation plans for all subdivisions, farms, ranches, quarries, recreational areas and the town in cooperation with disaster, emergency, and police personnel.

Develop water refill sites that are available year round to reduce travel and refill time for tankers and engines.

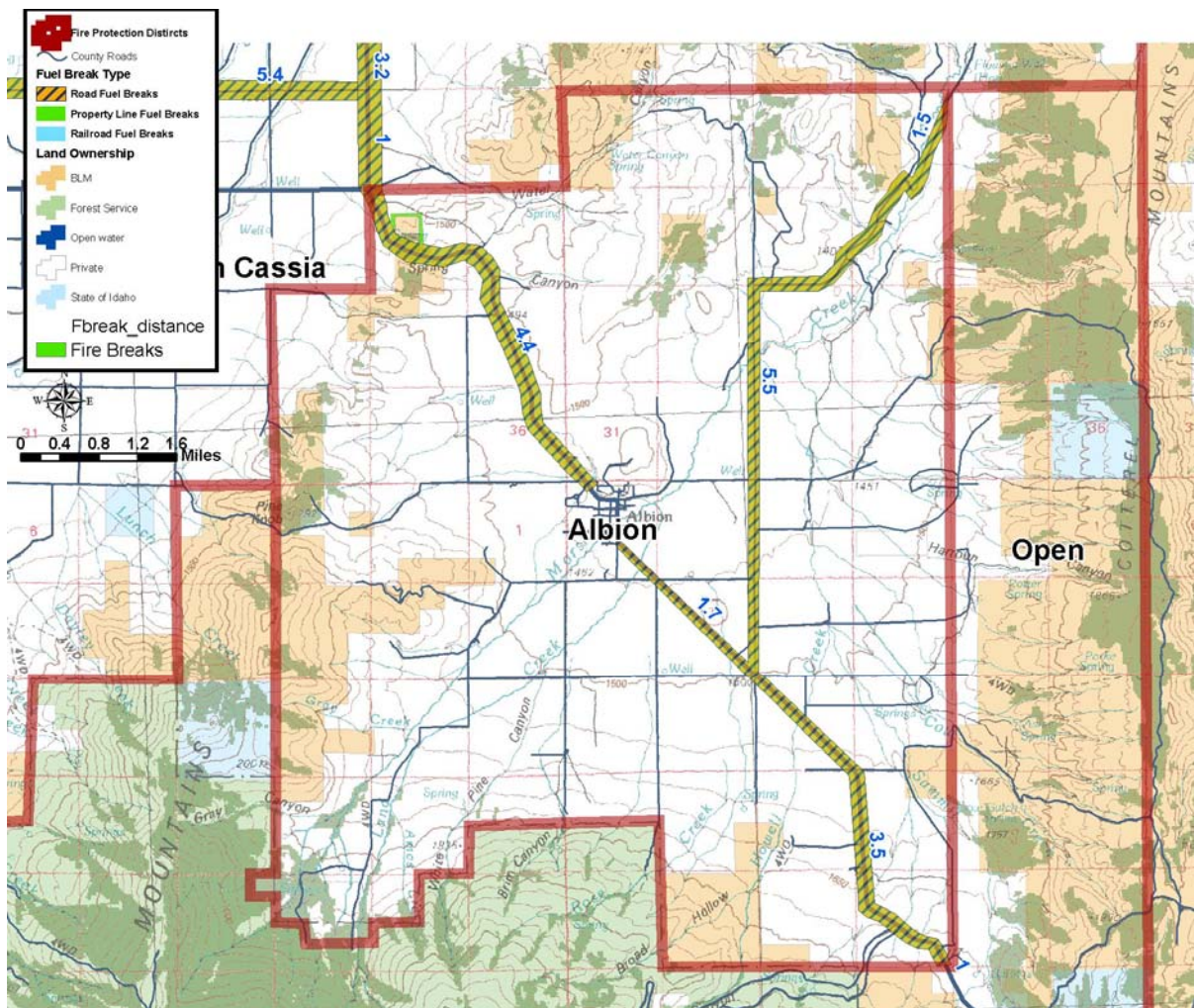


Figure 23. Albion Fire Protection District

4.3 Mitigation Plan for Burley/North Cassia FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 45 miles of existing roads. Fuel breaks would also be developed along 36.7 miles of railroad right-of-ways to a width not less than 50 feet from center of railroad tracks (Figure 24). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

Develop with EIRR, and companies using sidings, a program that will reduce heavy grass and shrubs building along the railroads right-of-way. Work with Department of Transportation to develop and maintain mowed rights-of-way along interstate highways in the County in an effort to reduce fire hazard along the interstate and risk of fire moving across the highway.

Upgrade and replace old equipment as needed to meet expanding fire suppression needs.

Updating road and water system maps for fire department and will be loaded into the computer system to improve dispatching.

Communication systems need to be improved and updated to facilitate better communications between dispatcher, emergency, disaster and fire personnel regardless of agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer.

Develop and maintain evacuation plans for all of the subdivisions, industrial areas and recreational areas in District.

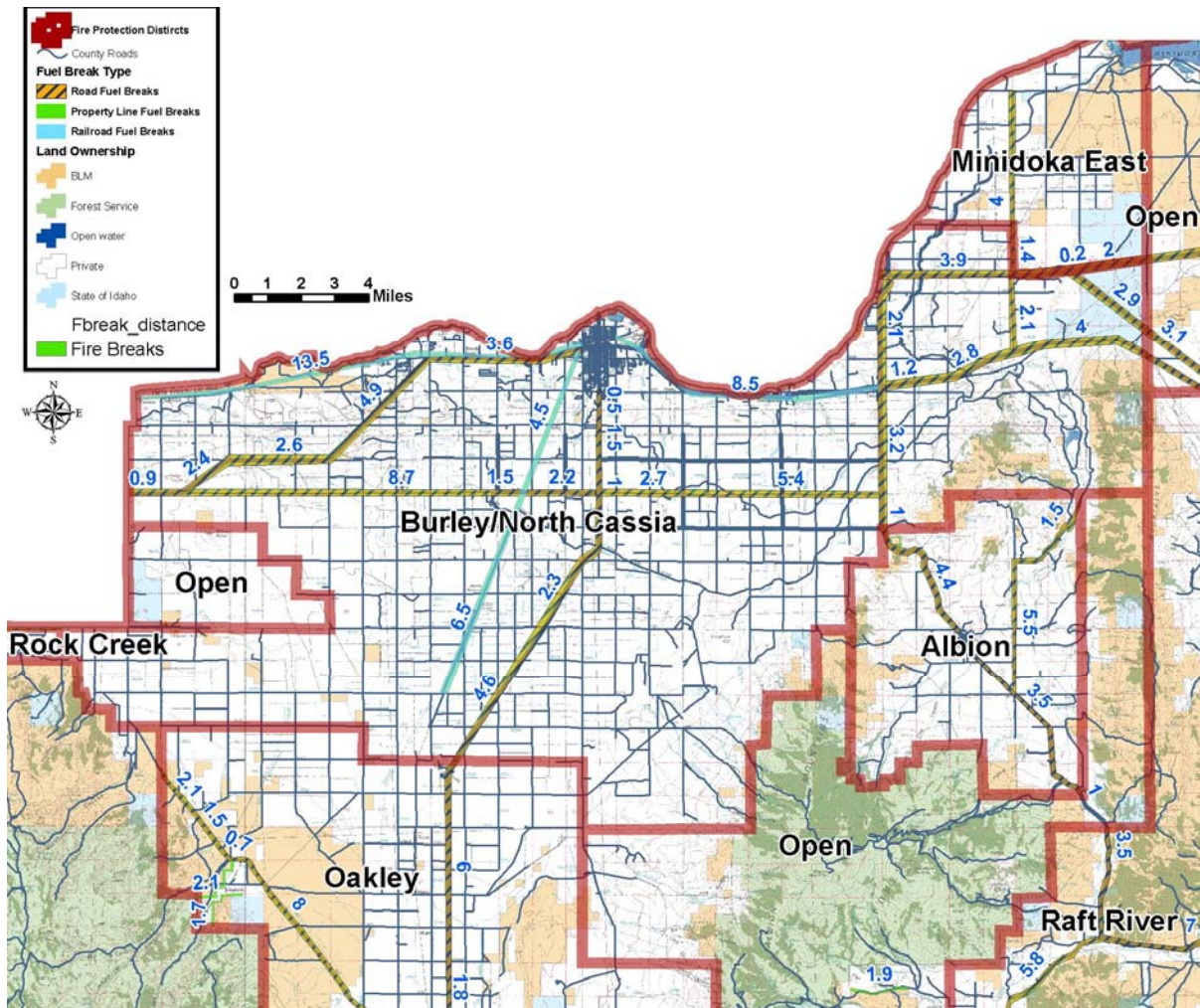


Figure 24. Burley/North Cassia Fire Protection District.

4.4 Mitigation Plan for Minidoka East End FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 9.1 miles of existing roads (Figure 25). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

Develop with EIRR, and companies using sidings, a program that will reduce heavy grass and shrubs building along the railroads right-of-way. Work with Department of Transportation to develop and maintain mowed rights-of-way along interstate highways in the County in an effort to reduce fire hazard along the interstate and risk of fire moving across the highway.

Upgrade and replace old equipment as needed to meet expanding fire suppression duties as well as additional needed equipment.

Develop heated sub fire stations for fire equipment in more remote sections of FPD to provide timely year round suppression.

Update road system and water location maps for use by fire personnel. Develop or have software developed for computer system to ease updating problems in the future.

Communication systems need to be improved to facilitate better communication between dispatchers, emergency, disaster and fire personnel regardless agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer.

Develop and maintain evacuation plans for all subdivisions, industrial sites and recreation areas in the FPD.

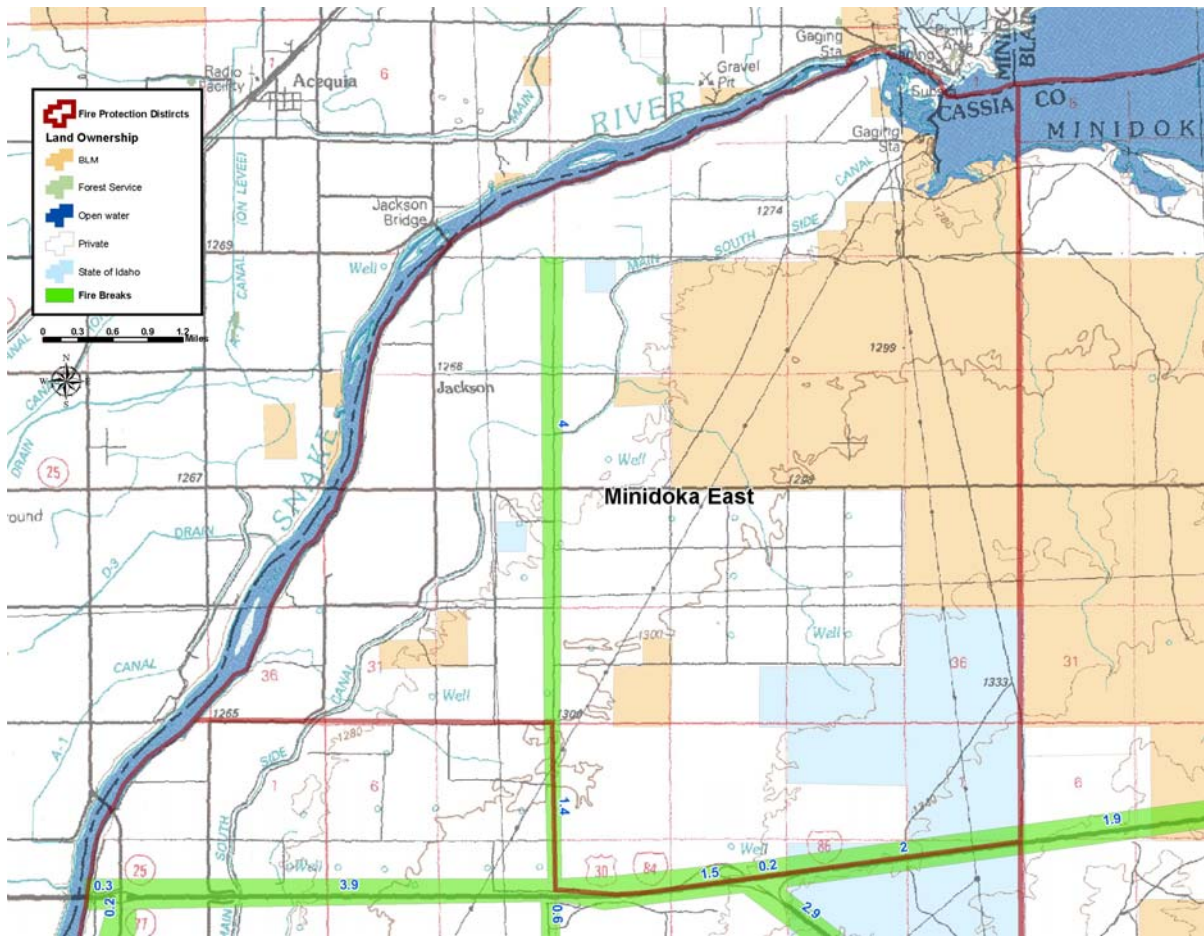


Figure 25. Minidoka East End Fire Protection District.

4.5 Mitigation Plan for Oakley FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 35.5 miles of existing roads. Develop fuel breaks adjacent to property lines for 1.7 miles and at least 200 feet in width (Figure 26). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

R&S Enterprise (2003) Mitigation Assessment described the need to install fuel breaks or buffer strips for 17 landowners (850 acres), sites adjacent to public and State Lands (850 acres) and for the Basin Interagency Project Area (770 acres).

The following is a fuel break cost for an estimated 2470 acres. These costs compare favorably with costs noted in ACE FPD Mitigation Plan discussed above. However, for a complete breakdown see R&S Enterprise (2003). Caution: Seed mixes will vary according to geographic location, soil types, precipitation, and vegetative communities present before fire.

Private land (850 acres)	\$327,550
State and Public land (850 acres)	\$277,850
Interagency Project (770 acres)	<u>\$313,700</u>
Total	<u>\$919,100</u>

Native Seed mix

<u>Species</u>	<u>Application Rate</u>
P-27 Siberian wheatgrass	3.0lbs/acre
Critana Thickspike wheatgrass	1.0lbs/acre
SecarSnake River wheatgrass	2.0lbs/acre
Eski sainfold	1.0lbs/acre
Alkar Tall wheatgrass	0.75lbs/acre
Ladak alfalfa	0.5lbs/acre
Forage kochia	0.5lbs/acre
Appar Lewis flax	<u>0.1lbs/acre</u>
Total	<u>8.85lbs/acre</u>

Equipment for brush removal would be a four-wheel drive heavy tractor with a 16-foot flail mower attachment (or comparable equipment) suitable for rough terrain and heavy use.

Equipment for juniper removal would be a Cat Track-hoe with a 7000 lb shredder mounted on the boom instead of a bucket. Use of a D-8 Caterpillar tractor to remove juniper during winter months when the ground is frozen would be an alternative.

Install a dry hydrant system and/or drafting areas for engines and tenders along 1600 South Road (Figure 26) and at other locations previous mentioned in Section 3.

Upgrade and replace old fire equipment as needed to meet expanding fire suppression needs.

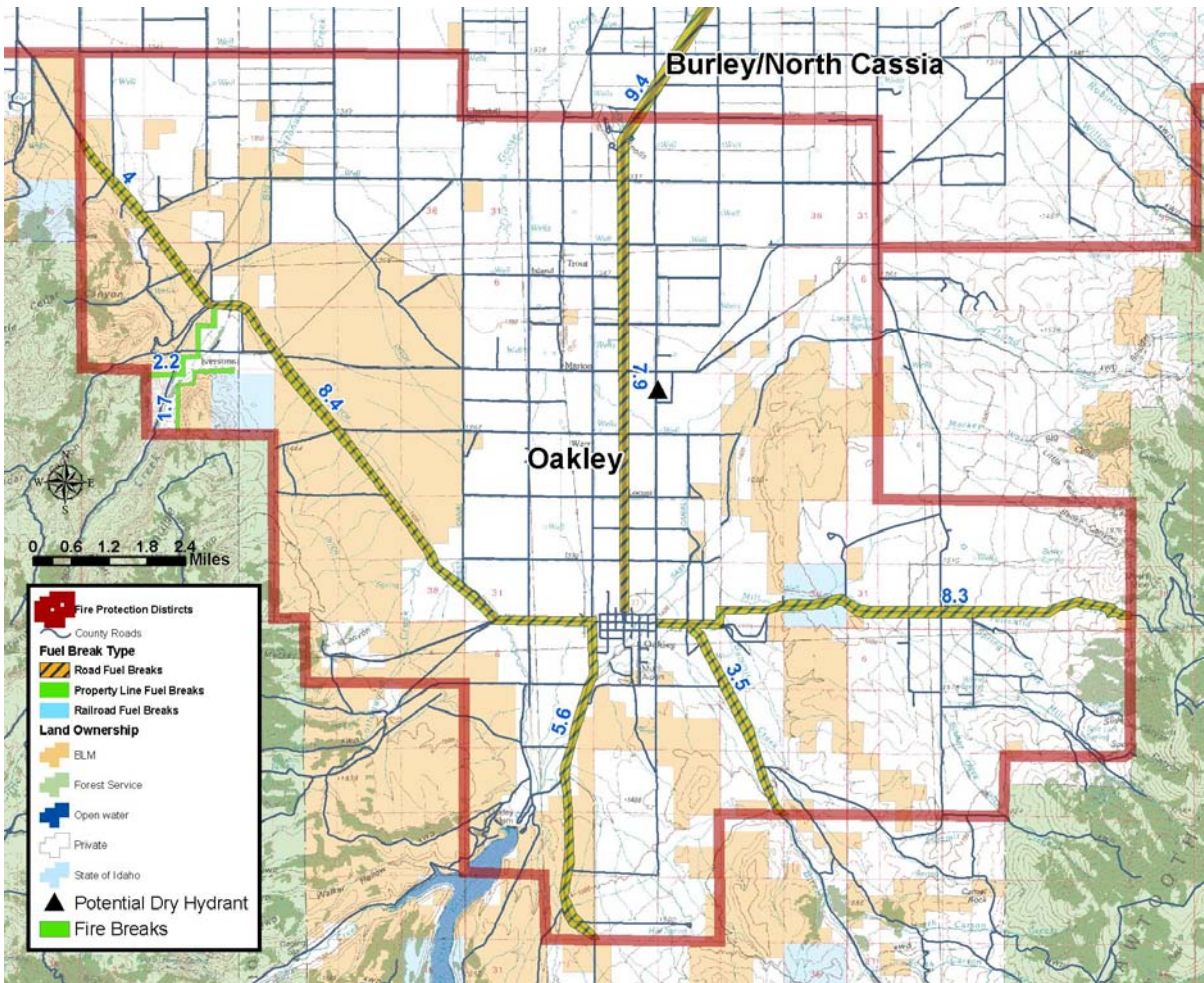
Upgrade and replace old fire equipment as needed to meet expanding fire suppression needs. Estimated costs (R&S Enterprise, 2003):

Station/Facility	\$250,000
Refill Engine (2,000 gallon)	\$120,000
Type Two Structural Engines (two each)	<u>\$250,000</u>
Total	\$620,000

Update road and water system maps for fire department use. The update should be computer capable to improve dispatching.

Construct a heated fire station to house fire equipment, a meeting/training room, fire district office with communication systems and a rapid water refill system. Explore other methods than bonding to finance this needed construction.

Develop and maintain evacuation plans for all subdivisions, farms, ranches, quarries, recreational areas and the town in cooperation with disaster, emergency, and police personnel.



4.6 Mitigation Plan for Raft River FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 77.7 miles of existing roads (Figure 27). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

R&S Enterprise (2001) described the need to install 224 acres of fuel breaks, up to 2500 feet wide, within the city of Malta. However, costs were not identified in that report.

Develop heated sub fire stations for fire equipment in more remote sections of FPD to provide timely year round suppression. Estimated cost is \$260,000 (R&S Enterprise, 2001).

Update road system and water location maps for use by fire personnel. Develop or have software developed for computer system to ease updating problems in the future.

Communication systems need to be improved to facilitate better communication between dispatchers, emergency, disaster and fire personnel regardless agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer. The estimated cost is \$5,000 (R&S Enterprise, 2001).

Consider the use of the local airfield as an alternate SEAT base. Alternate sources of funding could be explored. Estimated cost (R&S Enterprise, 2001):

Well and Standpipe	\$ 15,000
Slurry Plant	\$250,000
Drain Field	\$120,000
Storage Facility	<u>\$ 20,000</u>
Total	\$405,000

Upgrade and replace old fire equipment as needed to meet expanding fire suppression needs. Estimated costs (R&S Enterprise, 2001):

Light Brush Truck	\$ 60,000
Heavy Brush Truck	\$ 85,000
Refill Engine	<u>\$ 90,000</u>
Total	\$235,000

Upgrade Malta landing field with taxi-way and parking ramp. Estimated cost is \$140,000 (R&S Enterprise, 2001).

Deepen well at Malta Fire Station.

Conduct a juniper cutting through the heavy juniper encroachment areas. The estimated cost is \$400 per acre (R&S Enterprise 2001).

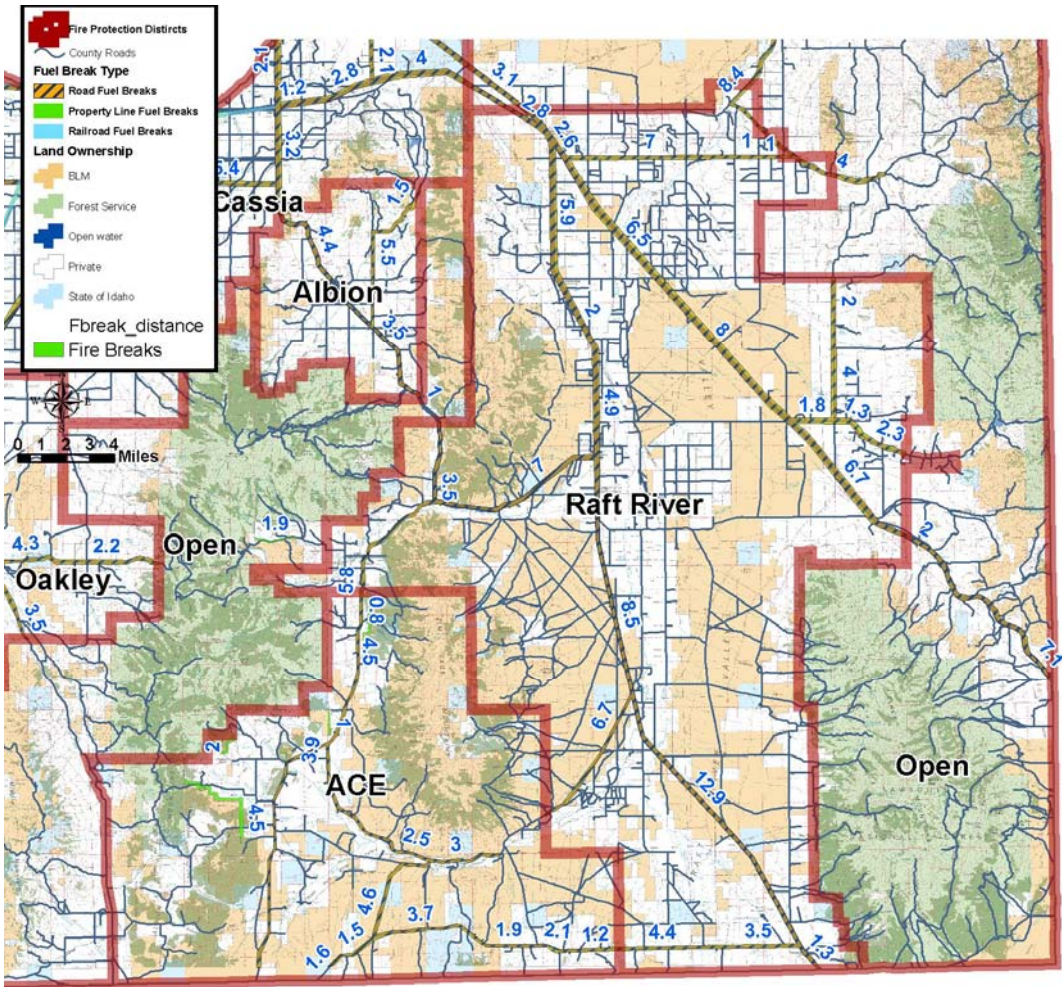


Figure 27. Raft River Fire Protection District.

4.7 Mitigation Plan for Rock Creek FPD

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 14.4 miles of existing roads (Figure 28). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

Upgrade and replace aging fire equipment as needed to meet expanding fire suppression needs.

Update road and water system maps for fire department use. The update should be computer capable to improve dispatching.

Construct a heated fire station to house fire equipment, a meeting/training room, fire district office with communication systems and a rapid water refill system. Explore other methods than bonding to finance this needed construction.

Upgrade communication systems to facilitate better communication between dispatcher, emergency, disaster, and fire personnel regardless of agencies involved. Computer systems as well as radio and phone systems need to be linked to facilitate voice and data transfer.

Develop and maintain evacuation plans for all subdivisions, farms, ranches, quarries, recreational areas and the town in cooperation with disaster, emergency, and police personnel.

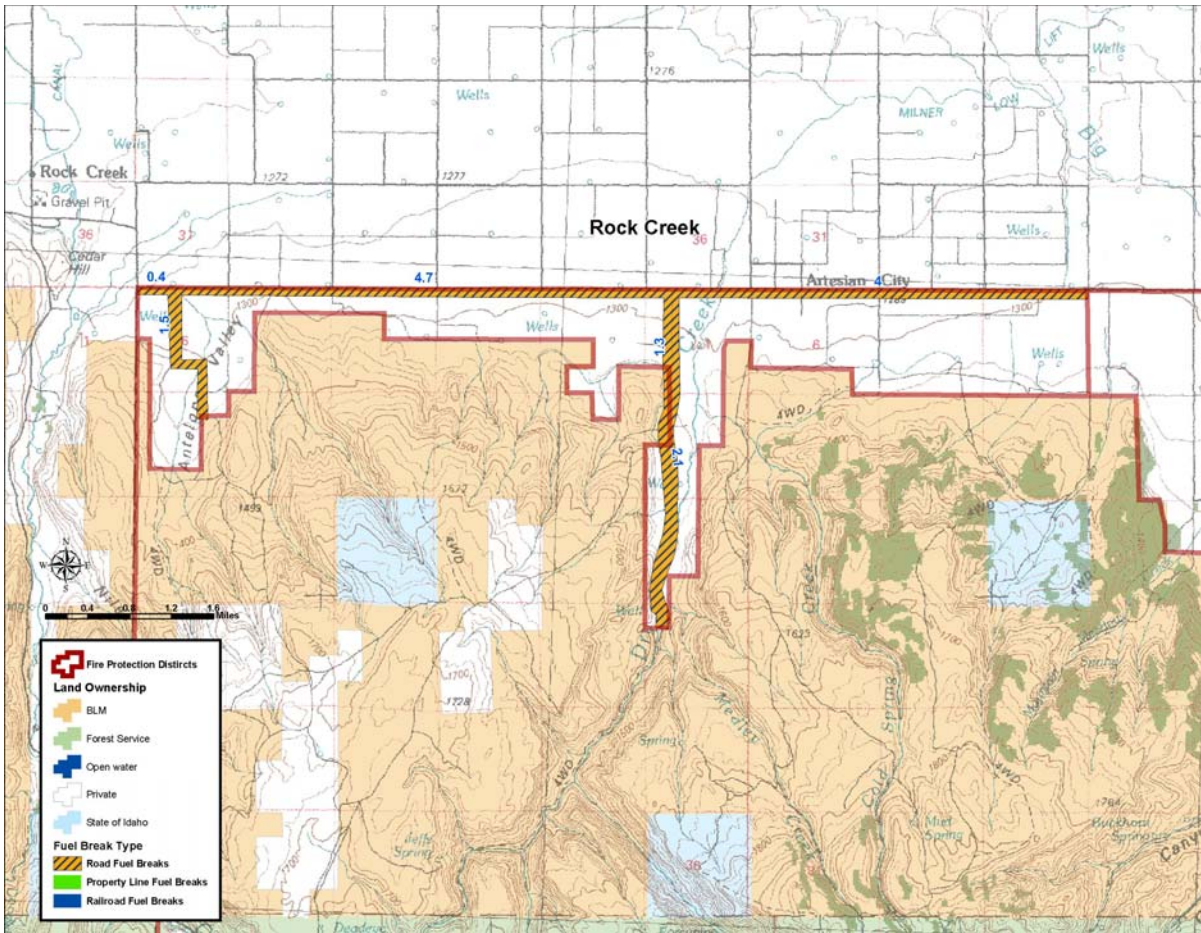


Figure 28. Rock Creek Fire Protection District.

4.8 Mitigation Plans for Open Areas

Develop fuel breaks at least 200 feet in width from edge of road to fence line, property boundary or highway right-of-way, along an estimated 38.7 miles of existing roads in the northeast and southeast corners of the county (Figure 1). Flammable fuels would be removed through prescribed burning, mowing, mulching, disking, and/or herbicide application and seeding. The estimated cost is \$75 to \$100 per linear mile including tractor/mower/brush hog and operator.

Landowners and FPDs need to develop cooperative and mutual aid agreements.

Develop with EIRR and companies using sidings a program that will reduce heavy grass and shrubs building along the railroads right-of-way. Work with Department of Transportation to develop and maintain mowed rights-of-way along interstate highways in the County in an effort to reduce fire hazard along the interstate and risk of fire moving across the highway.

5.0 References

- Anderson. 1982. *Aids to determining fuel models for estimating fire behavior. General Technical Report INT-122.* Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 22 p.
- Bartlett, J. B. 2003. *Fire Gels- breakthrough technology for structure protection in the WUI.* Barricade International, Inc., Hobe Sound, FL. Presented at the 2nd International Wildland Fire Ecology and Fire Management Congress.
- Brown, M. 2004. Fire Chief-Fire Marshall, Minidoka County Fire Protection District, Heyburn, ID.
- 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.
- Kemphorne, 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.
- R&S Enterprise. 2003. *Wildland-Urban Interface Communities-At-Risk Mitigation Assessment for Albion Assessment Area.* Shoshone, ID.
- R&S Enterprise. 2003a. *Wildland-Urban Interface Communities-At-Risk Mitigation Assessment for Oakley Assessment Area.* Shoshone, ID.
- R&S Enterprise. 2002. *Wildland-Urban Interface Communities-At-Risk Mitigation Assessment for ACE Fire Protection Assessment Area.* Shoshone, ID.
- R&S Enterprise. 2001. *Wildland-Urban Interface Communities-At-Risk Mitigation Assessment for City of Malta.* 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.
- Simmerman, D.G. and W.C. Fischer. 1989. *Wildland Home Fire Risk Meter.* Intermountain Research Station, US Forest Service, US Department of Agriculture.
- USDA. 2002. *The National Fire Plan, Managing the Impact of Wildfires and Communities and the Environment,* Miscellaneous Publication, Mp-1584, Department of Agriculture, Washington D.C., March.

6.0 Personnel Contacted

Final drafts of this plan were presented to the Cassia County Commissioners, Fire Department personnel, BLM representatives, and other personnel on 12 April 2004 and 5 May 2004. The general public was invited to attend the 5 May hearing through newspaper advertisements and fliers posted at each of the fire stations. Additionally, a final hearing was held with the Commissioners on 19 July 2004 to incorporate any final comments. The individuals listed below provided invaluable information while preparing this report.

Kelly Adams, Cassia County Public Lands
Bruce Alcott, Burley Fire Department
Jerry Bankhead, Raft River FPD
Mike Brown, Minidoka County Fire Protection District
Glen Burkhardt, BLM
Paul Christensen, Cassia County Commissioner
Harlow Clark, Oakley FPD
Dennis Crane, Cassia County Commissioner
Burl Duncan, Rock Creek Fire Protection District
Tom Geary, Albion Road Committee
Pete Gilbert, Malta Fire Department
Don Gunderson, Albion FPD Commissioner
Clay Handy, Cassia County Commissioner
Curtis Jensen, BLM
Kerry McMurray, Cassia County Administrator
Ray Mitchell, Albion FPD
Bill Parsons, Raft River FPD
Dick Randeklev, Burley and North Cassia FPD
C.W. Bill Robison, Rock Creek Fire Department
John Sabala, BLM
Mike Santini, ACE FPD
Dennis Smith, BLM
Student Conservation Association
Randy Sutton, West End Minidoka FPD