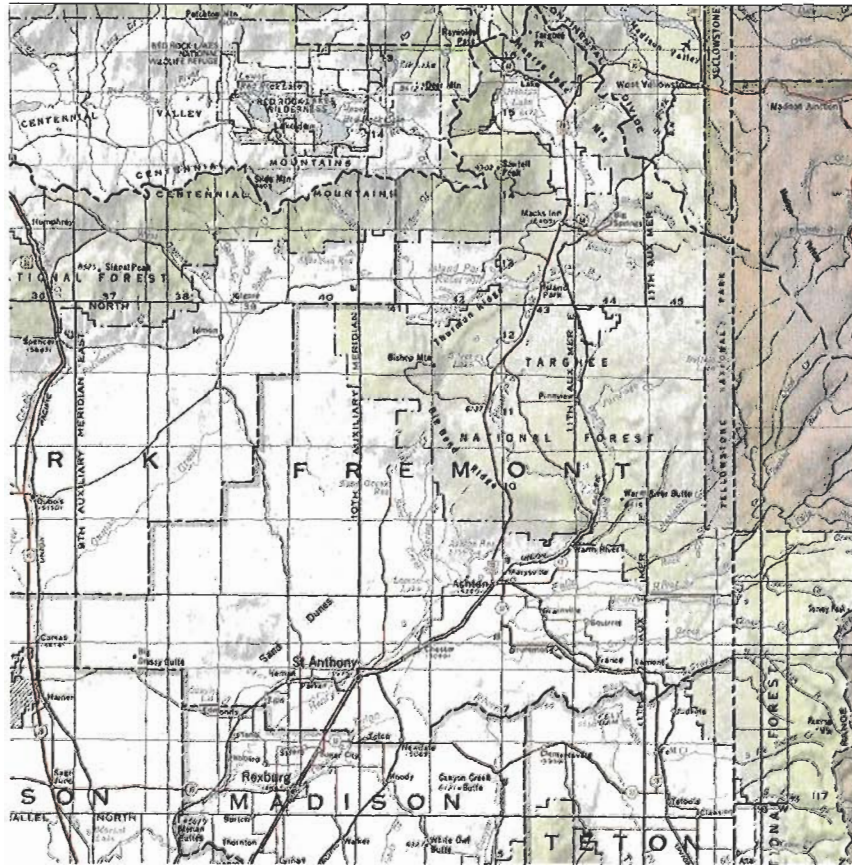


# FREMONT COUNTY, IDAHO

## Wildland Fire Hazard Mitigation Plan



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

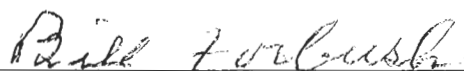
Prepared for the  
Board of Commissioners  
Fremont County  
St. Anthony, Idaho 83445

Prepared by  
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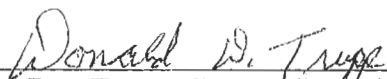


September 2004

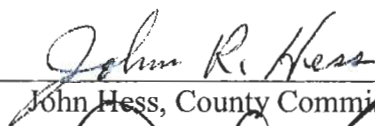
This plan has been reviewed and approved by the following individuals.



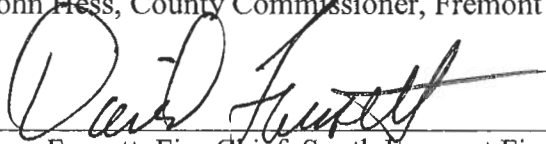
Bill Forbush, Chair, County Commissioner, Fremont County



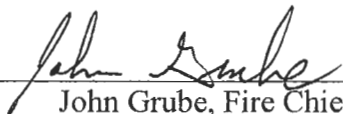
Don Trupp, County Commissioner, Fremont County



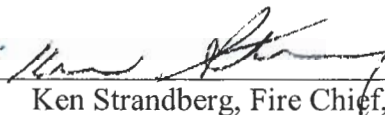
John Hess, County Commissioner, Fremont County



Dave Fausett, Fire Chief, South Fremont Fire District



John Grube, Fire Chief, North Fremont Fire District



Ken Strandberg, Fire Chief, Island Park Fire District



Adrienne K. Keller, District Ranger  
Ashton/Island Park Ranger District, Caribou/Targhee National Forest



Kevin Conran, Fire Mitigation and Education Specialist, BLM

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## DISCLAIMER

North Wind, Inc. has prepared this Wildland Fire Hazard Mitigation Plan solely for Fremont 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 Fremont 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 Fremont County, Idaho by North Wind, Inc. North Wind, Inc. shall not be held liable for problems or issues associated with implementing the actions contained in this report.

## 1.0 INTRODUCTION

After the record-breaking wildfire season of 2000, Congress approved funds for federal and state agencies and local communities to develop and implement a national strategy for preventing the loss of life, natural resources, private property and livelihoods. The result of that planning and preparation is commonly known as the “National Fire Plan” (NFP) (U.S. Department of Agriculture [USDA] 2002). This plan was approved in September 2000 and is fully titled *Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President in Response to the Wildfires of 2000*. The NFP includes five key points: firefighting preparedness, rehabilitation and restoration of burned areas, reduction of hazardous fuels, community assistance, and accountability. In 2001, Congress released another directive requiring the Departments of Agriculture and the Interior to engage Governors in the development of a National ten-year comprehensive strategy that would implement the NFP. For this effort, the *Idaho Statewide Implementation Strategy for the National Fire Plan* (Kempthorne et al. 2002) was developed. It was approved in May 2002 and involved cooperation and collaboration of the Secretary of Interior, Secretary of Agriculture, the Governors of Montana, Wyoming, Idaho, and Oregon, and the Director of the Council on Environmental Quality. The primary goals of the Idaho Plan are to improve prevention and suppression of wildfire, reduce hazardous fuels, restore fire-adapted ecosystems, and promote community assistance. In December 2003, Congress passed the Healthy Forests Restoration Act (HFRA). This act requires communities to develop Community Wildfire Protection Plans (CWPPs) and requires the county, local fire departments and the state entity responsible for forest management mutually agree to the final contents of the CWPP. CWPPs contain the following requirements: (1) Demonstrate collaboration among local and state government representatives, in consultation with federal agencies and other interested parties, (2) Identify and prioritize areas for hazardous fuel reduction treatments and recommend the types and methods of treatment that will protect one or more at-risk communities and essential infrastructure and, (3) Recommend measures that homeowners and communities can take to reduce the ignitability of structures throughout the area addressed by the plan.

The purpose of this mitigation plan is to identify and mitigate wildfire risks and negative consequences in communities and Wildland Urban Interface (WUI) areas of Fremont County, Idaho. For the purpose of this plan a WUI is defined as “an area where improved property and wildland fuels meet at a well defined boundary”(NFPA 2002). The mitigation plan addresses Federal Emergency Management Agency (FEMA) criteria contained in 44 CFR Part 201.6 and follows guidance from the *Idaho Statewide Implementation Strategy for the National Fire Plan* (Kempthorne et al. 2002) by: 1) identifying fire hazards that affect Fremont County and its residents, 2) providing sufficient information to make mitigation decisions, 3) discussing existing resources that are most current and best available and, 4) describing the process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved. The mitigation plan will be maintained, that is, monitored, evaluated, and updated annually within a five-year cycle, by a group of Fremont County residents or Wildland Fire Interagency Group (Table 1). The group will be represented by agencies countywide with wildland fire suppression experience and responsibilities. County Commissioners will take the lead for monitoring the plan while

the other group members evaluate the risks and vulnerabilities to wildland fire within their area of concern. The maintenance process will allow local governments, when appropriate, to incorporate the requirements of the plan into other planning mechanisms such as comprehensive or capital improvement plans which will include public participation through scheduled hearings and meetings.

Fremont County proposes to reduce the hazard of wildland fire within three Fire Districts (Figures 1, 2 and 3). 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 for wildfires spreading from public lands to municipal property.

**Table 1:** Fremont County Wildland Fire Interagency Group.

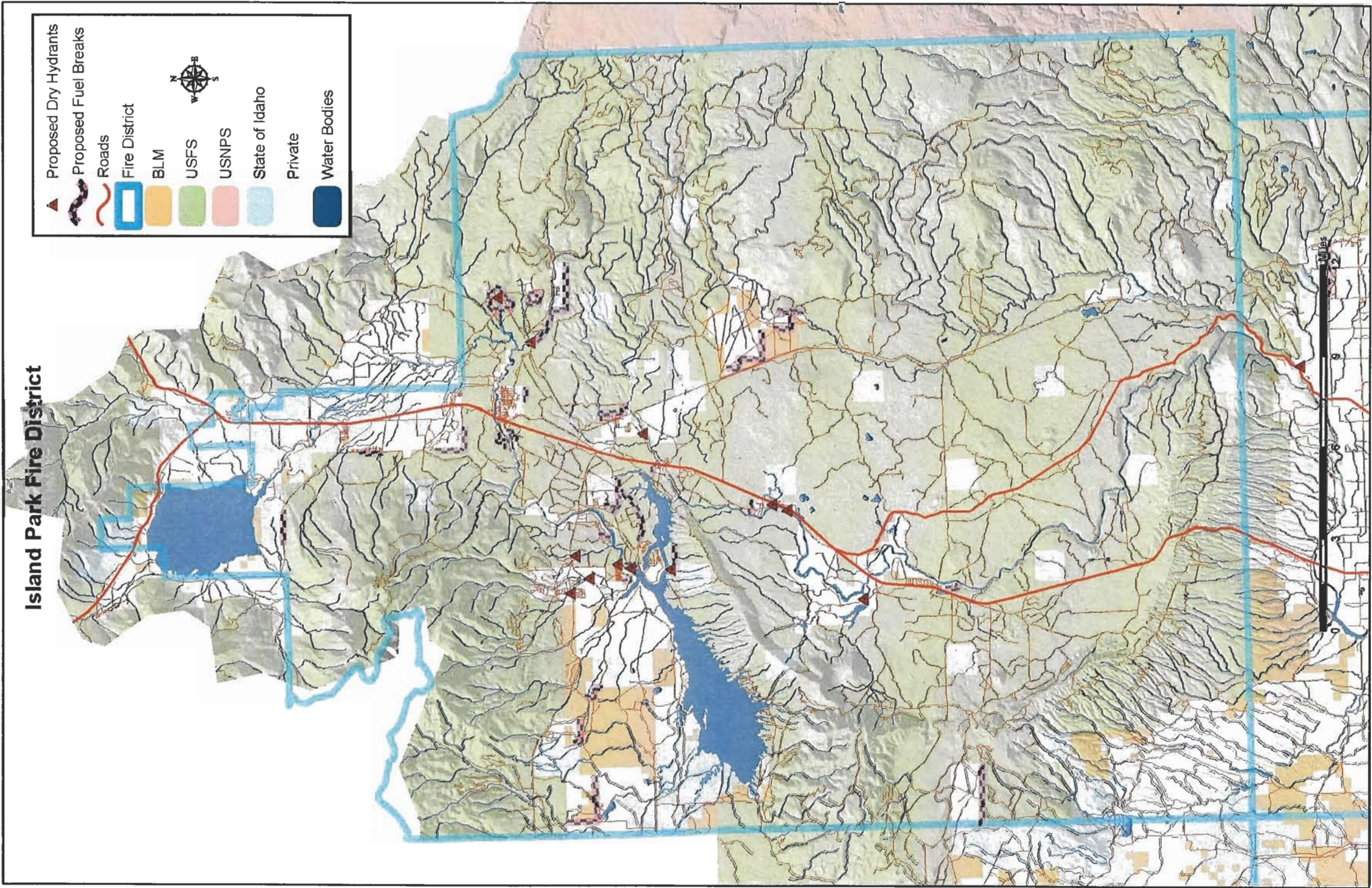
Name	Agency
Bill Forbush, Chairman Donald Trupp John Hess Gordon Smith (former Commissioner)	Fremont County Commissioners
Bill Wathrick	Fremont County Emergency and Disaster Coordinator
Tom Steglemeier	Fremont County Sheriff
Weldon Reynolds	Fremont County Road and Bridge
Martin Gallagher John Grube	North Fremont Fire District
Dave Fausett	South Fremont Fire District
Lenny Schoope Mike Shell	Island Park Fire District
Kevin Conran	Bureau of Land Management
Keith Birch	Idaho Department of Lands
Jim Cox	US Forest Service – Caribou-Targhee
Steve Smart	High Country RC&D Council
Mike Clements	Idaho Department of Homeland Security
Kathy Hammonds	Community Solutions
	Yellowstone National Park Service



## **2.0 GENERAL DESCRIPTION OF ASSESSMENT AREA**

Stretching over 1,867 square miles (1,194,752 acres), Fremont County is bordered by Teton, Madison and Jefferson counties to the south and Clark County to the west. Over 11,859 people populate Fremont County, which is up from the 1990 census (Table 2). Fremont County is the largest potato seed producing area in the nation. In addition to the agricultural aspect of the economy, tourism (especially in Island Park) plays a large part in supporting the economy of the area. Bordering Wyoming and Montana, Island Park is located in close proximity to both Yellowstone National Park and the Continental Divide. Island Park hosts 200 subdivisions consisting of at least 50 homes in each, and the city's population is only 213. The vast majority of these structures are vacation homes. Within Island Park, the team devoted a large proportion of the total time spent to the subdivisions of Buffalo River, Elk Creek, Pinehaven and Sawtell.

Figure 1: Island Park Fire District Ownership and County Roads and Proposed Actions.



**Figure 2:** North Fremont Fire District Ownership and County Roads and Proposed Actions.

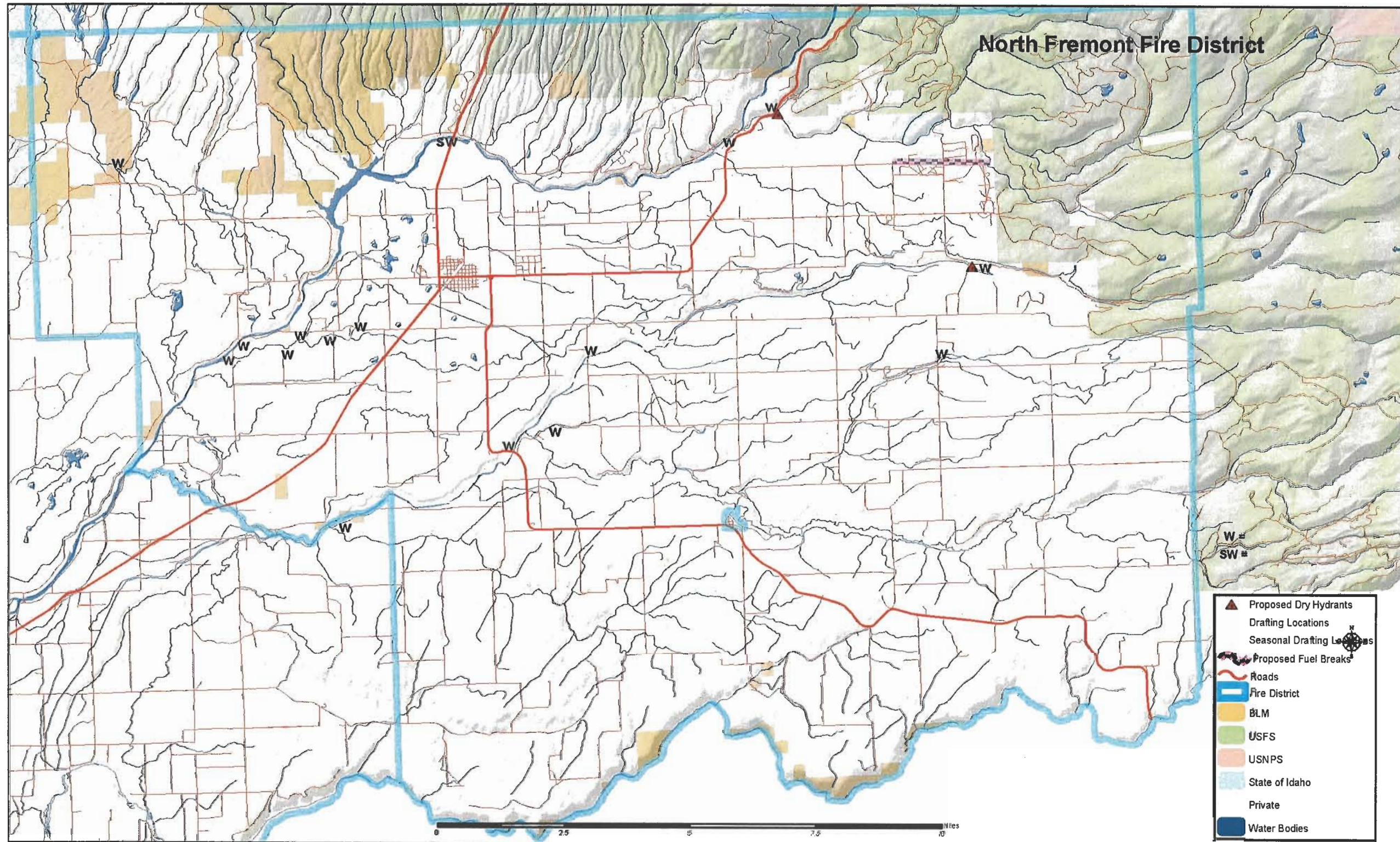
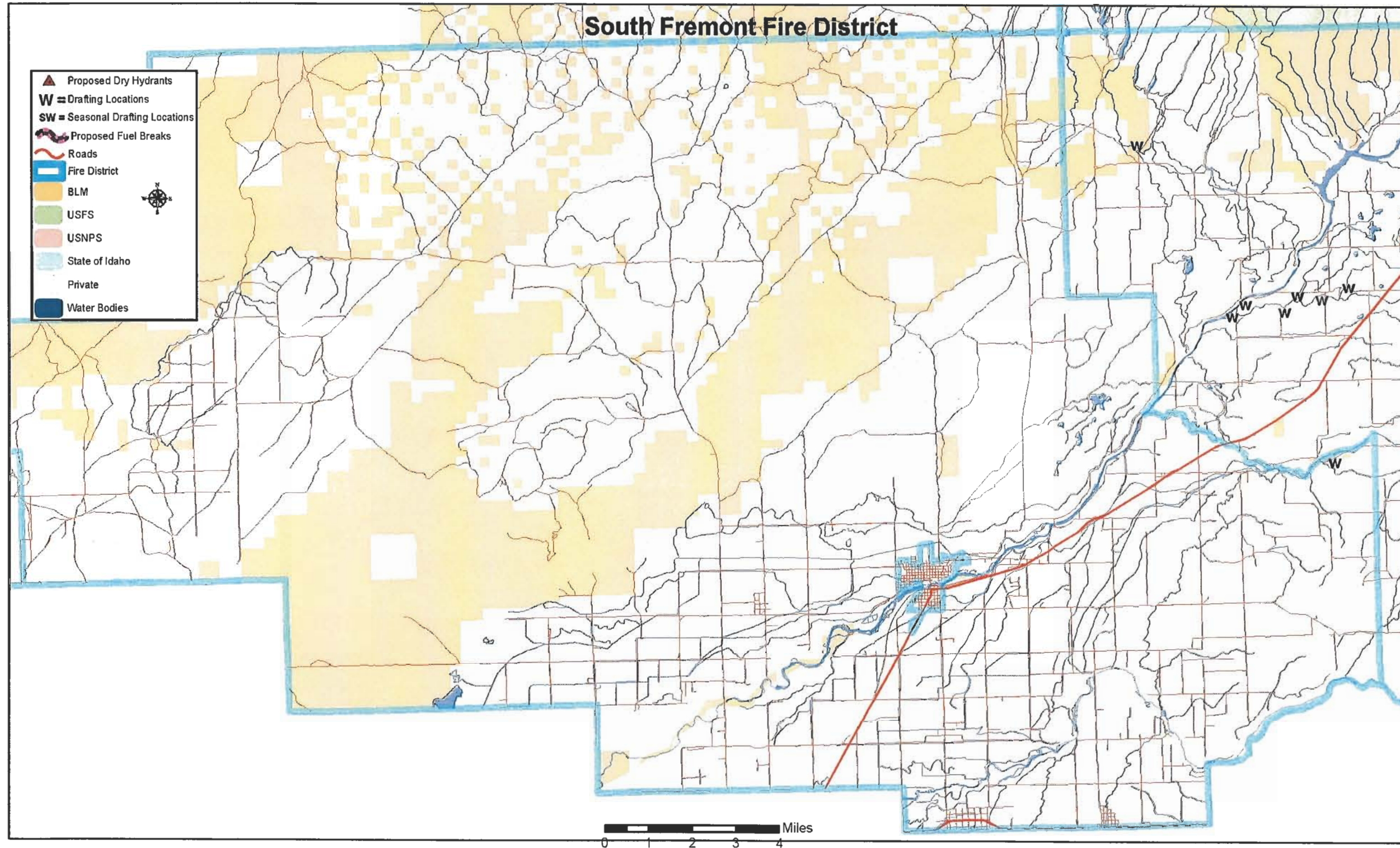


Figure 3: South Fremont Fire District Ownership and County Roads and Proposed Actions.



## Population and Demographics

**Table 2:** Populations of Major Cities in Fremont County, Idaho.

Major Cities – Fremont County, Idaho	2002 Population Census
Ashton	1,109
Drummond	15
Island Park	213
Newdale	358
Parker	317
St. Anthony	3,312
Teton	571
Warm River	10
Balance of Fremont County	5,954
Fremont County	11,859

## Landownership

Fremont County contains approximately 1,194,752 acres divided among six landowners (Table 3 and Figures 1, 2 and 3).

**Table 3: Land Status of Fremont County, Idaho.**

Owner	Acres	Percent
BLM	141,969	11.9
USFS	525,866	44.0
Other Federal	40,188	3.4
Private	370,316	31.0
State	115,827	9.7
City/County	586	0.05
TOTAL	1,194,752	100

**Table 4: Land Use in Fremont County, Idaho.**

Land Use	Acres	Percent
Urban Land	1,100	0.1%
Agricultural	210,200	17.2%
Rangeland	397,500	32.6%
Forest	547,900	44.9%
Water	19,200	1.6%
Barren Land	44,600	3.7%
TOTAL	1,220,500	100.0%

\*U.S.G.S. land use/cover classification system. The water category and the rounding and estimating of satellite-based data usually results in slightly higher totals for land use.

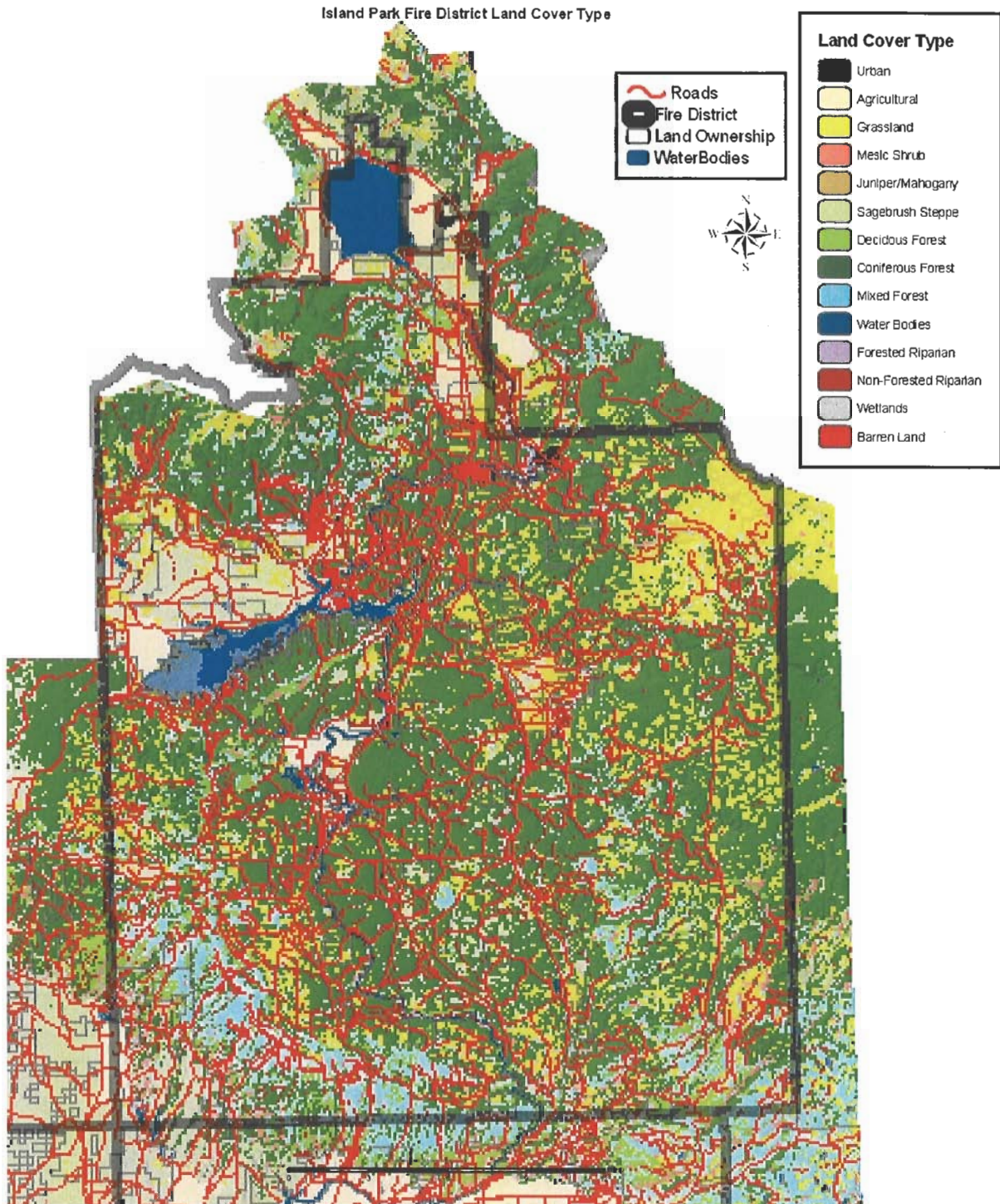
## Topography and Vegetation

Fremont County is located in southeastern Idaho. The majority of the private land (Table 3) has been developed for agricultural use (Table 4) where seed crops such as potatoes are produced. The public lands are primarily used for grazing and are undeveloped. The topography of Fremont County ranges in elevation from 4,849 feet below St. Anthony and along the Henry's Fork of the Snake River to 10,240 feet at the summit of Targhee Peak on the extreme north end of the county. Within this wide range of elevation are numerous plant species. The more common or dominant species of conifers, shrubs, grasses and forbs are listed below.

The dominant conifers are lodgepole pine (*Pinus contorta*), Engelmann's spruce (*Picea engelmannii*), subalpine fir (*Abies lasiocarpa*), Douglas-fir (*Arceuthobium douglasii*) and whitebark pine (*Pinus albicaulis*). Lodgepole pine is the most common conifer in the Yellowstone caldera and, during the late 1980s, the mountain pine beetle epidemic infiltrated this pine in Island Park, creating vast stands of dead trees. Although the mountain pine beetle is not currently an issue at the forefront of Targhee National Forest's concerns, it demonstrates that a forest dominated by one tree type is often more susceptible to stress and disease, leaving trees in optimal burning condition. Douglas-fir forests are mainly found in the Centennial and Henry's Lake mountain ranges. Seventy-nine percent of the Douglas-fir forested areas are mature forest; the Douglas-fir bark beetle is currently invading mature and stressed trees, producing more dead trees to serve as fuels. The dominant deciduous trees are quaking aspen (*Populus tremuloides*) intermixed with some of the conifers and willow (*Salix* spp.) and cottonwood (*Populus* spp.) observed along the watercourses. The dominant shrub species are Wyoming big sagebrush (*Artemisia tridentata wyomingensis*), basin big sagebrush (*Artemisia tridentata tridentata*), mountain big sagebrush (*Artemisia tridentata vaseyana*), silver sagebrush (*Artemisia cana*), antelope bitterbrush (*Purshia tridentata*), green rabbitbrush (*Ericameria teretifolia*), and shrubby cinquefoil (*Dasiphora* spp.).

The shrub understory consists of a variety of grasses and forbs. The most common native grasses include bluegrass (*Poa secunda*), thickspike wheatgrass (*Elymus macrourus*), western wheatgrass (*Pascopyrum smithii*), Indian rice grass (*Achnatherum hymenoides*), needle-and-thread grass (*Stipa comata*), and bluebunch wheatgrass (*Pseudoroegneria spicata*), Letterman's needlegrass (*Achnatherum lettermanii*), pinegrass (*Calamagrostis rubescens*), oniongrass (*Melica* spp.), Columbia needlegrass (*Achnatherum nelsonii*), prairie junegrass (*Koeleria macrantha*), sand dropseed (*Sporobolus cryptandrus*), mountain brome (*Bromus marginatus*), Nebraska sedge (*Carex nebrascensis*), Idaho fescue (*Festuca idahoensis*), tufted hairgrass (*Deschampsia caespitosa*), slender wheatgrass (*Elymus trachycaulus*), and yellow wildrye (*Leymus flavescens*). Some of the more common native forbs include arrowleaf balsamroot (*Balsamorhiza sagittata*), Oregon grape (*Mahonia repens*), western yarrow (*Achilles millefolium*), (*Hackelia* spp.), lupines (*Lupinus* spp.), milkvetches (*Astragalus* spp.), snowberry (*Symphoricarpos* spp.), sticky geranium (*Geranium viscosissimum*), common chokecherry (*Prunus virginiana*), lupine (*Lupinus* spp.), woods rose (*Rosa woodsii*), columbine (*Aquilegia* spp.), Bellflower (*Campanula* spp.), delphinium (*Delphinium* spp.), geranium (*Geranium* spp.), and penstemon (*Penstemon* spp.).

**Figure 4: Island Park Fire District Land Cover Types.**



**Figure 5:** North Fremont Fire District Land Cover Types.

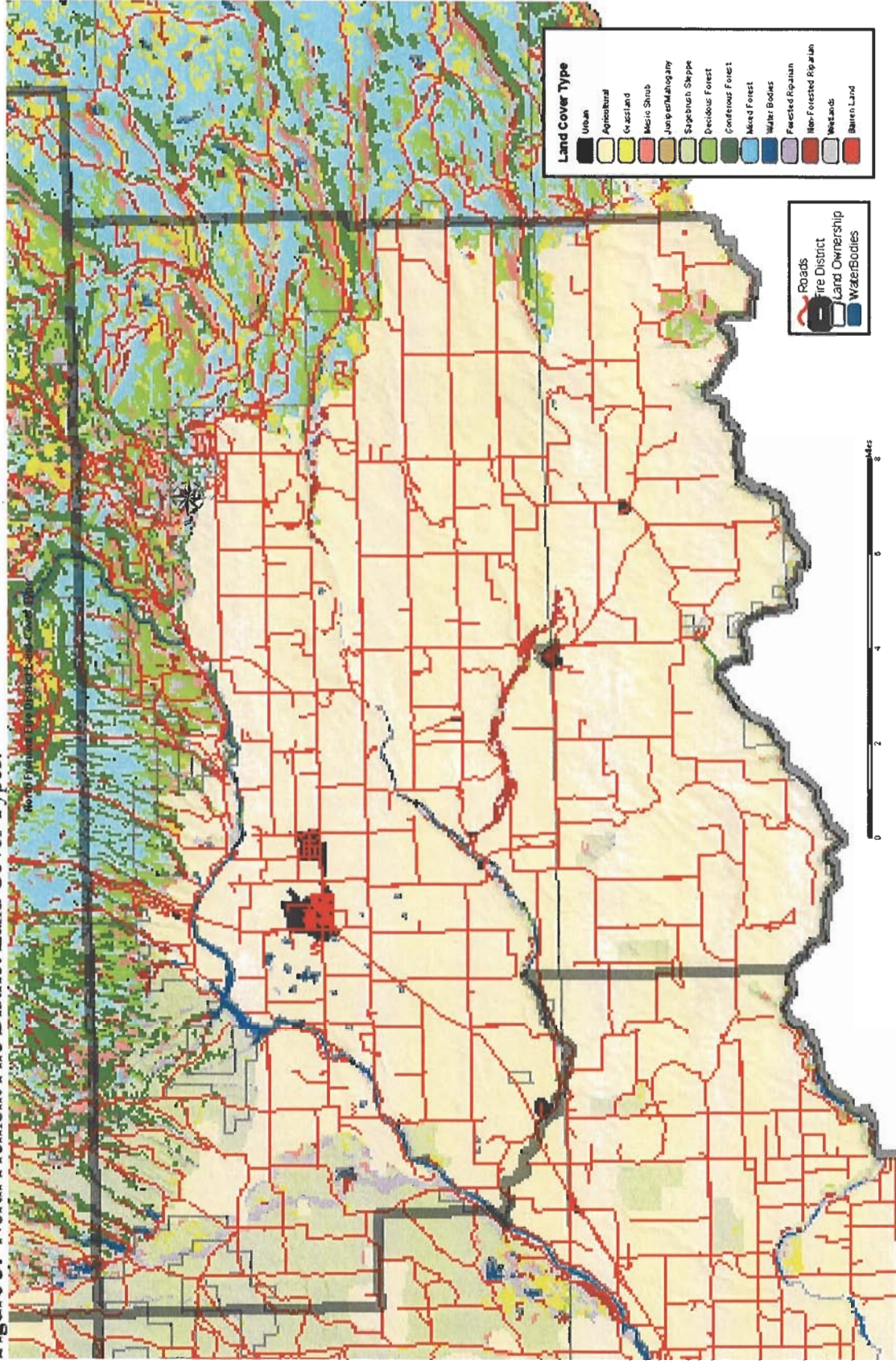
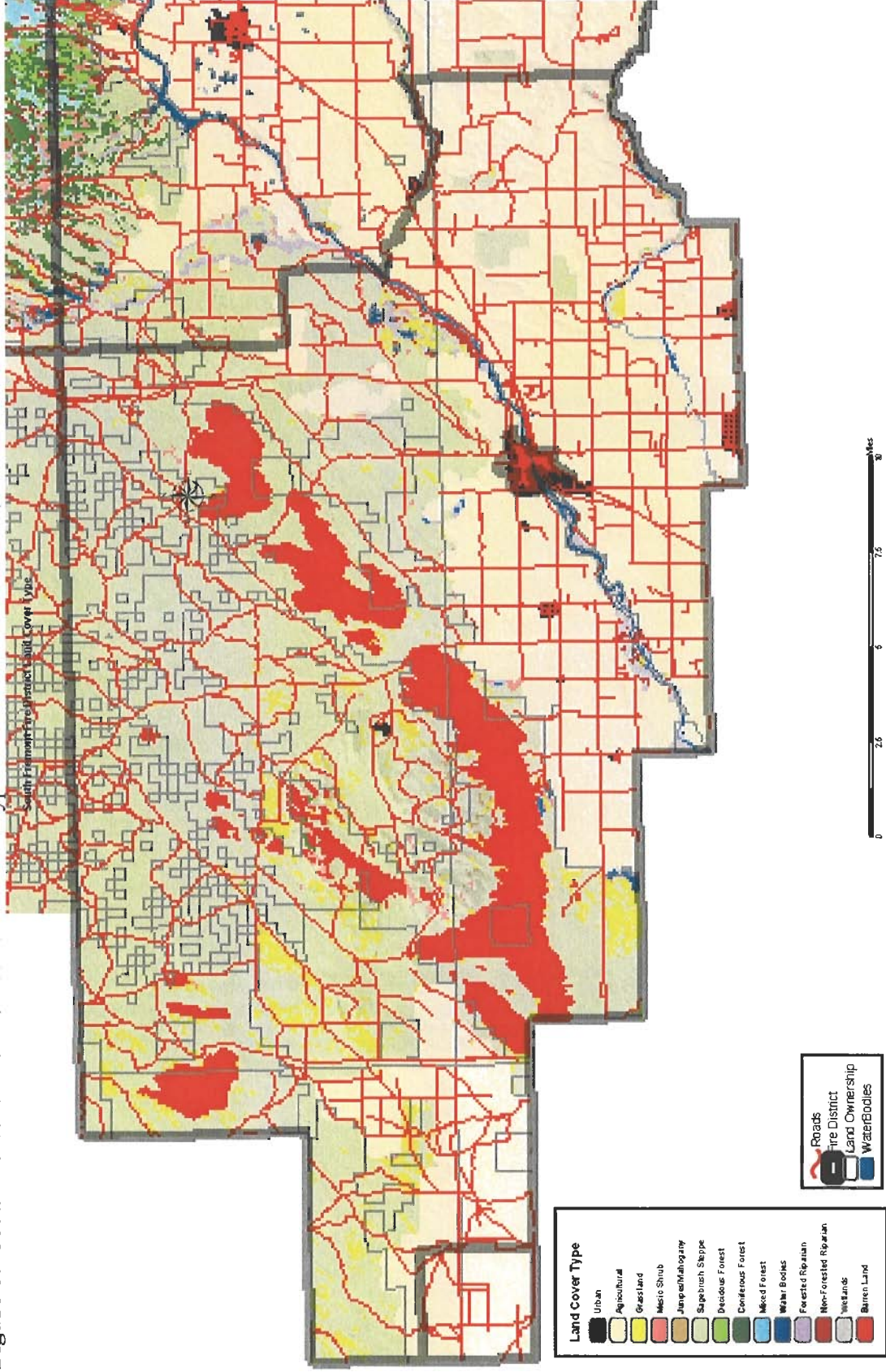




Figure 6: South Fremont Fire District Land Cover Types.



## Climate

The range of temperature and weather patterns varies widely in Fremont County. Summer high temperatures average between 68° and 82° Fahrenheit (F), June through August. Winter temperatures can fall quite low and average between 3° to 13° F, December through February. Average yearly precipitation is 20.65 inches. Temperature averages range from 2.6° F in January to 82.5° F in July. In general the summer days are hot and the nights are cool. Precipitation during the summer months is limited to isolated showers and thunderstorms that produce localized precipitation in the Island Park area. St. Anthony and Ashton received little or no measurable precipitation June through August. Winter conditions usually arrive in mid-October. Snowfall is the primary source of precipitation for the county. Snow levels in the county vary between communities due to elevation.

Tables 5, 6 and 7 summarize long-term climatic data for St. Anthony, Island Park and Ashton, ID. Data from these weather stations provide a good cross-section of Fremont County's weather patterns.

**Table 5: Monthly Climate Summary for St. Anthony, Idaho for years 1948 to 2003.**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	28.7	33.8	42.5	55.5	66.3	74.2	83.4	82.5	72.7	60.3	42.1	30.6	56.0
Average Min. Temperature (F)	8.3	11.3	18.6	27.6	35.5	42.0	46.8	45.1	37.1	28.4	19.6	9.7	27.5
Average Total Precipitation (in.)	1.39	1.00	1.09	1.18	1.80	1.59	0.78	0.77	0.91	0.97	1.27	1.45	14.19
Average Total Snow Fall (in.)	12.8	8.5	3.2	0.9	0.1	0.1	0.0	0.0	0.0	0.5	4.2	12.6	42.8
Average Snow Depth (in.)	10	10	4	0	0	0	0	0	0	0	1	5	2

Percent of possible observations for period of record.

Max. Temp.: 98.1% Min. Temp.: 98.1% Precipitation: 97.3% Snowfall: 82.9% Snow Depth: 82.4%

**Table 6: Monthly Climate Summary for Island Park, Idaho for years 1937 to 2003.**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	26.2	31.5	38.2	48.2	59.8	68.9	78.8	78.6	68.7	55.0	37.0	27.5	51.5
Average Min. Temperature (F)	2.6	4.6	9.8	21.4	31.1	37.7	42.8	40.7	32.8	25.0	14.8	5.3	22.4
Average Total Precipitation (in.)	3.78	3.00	2.52	1.99	2.48	2.72	1.32	1.45	1.57	1.83	2.59	3.47	28.71
Average Total Snow Fall (in.)	47.6	36.9	28.7	12.8	4.1	0.4	0.0	0.1	1.1	6.4	24.5	46.6	209.3
Average Snow Depth (in.)	38	48	48	29	3	0	0	0	0	1	8	24	17

Percent of possible observations for period of record.

Max. Temp.: 95.1% Min. Temp.: 94.9% Precipitation: 94% Snowfall: 93.8% Snow Depth: 76.4%

**Table 7: Monthly Climate Summary for Ashton, Idaho for years 1948 to 2003.**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	28.0	33.4	40.4	53.3	65.0	73.2	81.8	80.8	71.4	58.9	40.4	29.7	54.7
Average Min. Temperature (F)	9.6	13.0	18.8	28.5	36.4	42.2	46.9	44.9	37.5	29.1	20.3	11.1	28.2
Average Total Precipitation (in.)	2.10	1.69	1.50	1.38	2.09	1.77	0.87	1.04	1.16	1.35	1.93	2.16	19.05
Average Total Snow Fall (in.)	22.1	15.4	10.9	4.2	1.4	0.0	0.0	0.0	0.1	2.4	13.2	22.3	92.0
Average Snow Depth (in.)	19	23	17	2	0	0	0	0	0	0	2	11	6

Percent of possible observations for period of record.

Max. Temp.: 97.2% Min. Temp.: 97.1% Precipitation: 96.8% Snowfall: 97.1% Snow Depth: 96.4%

### **3.0 EXISTING CONDITIONS AND RESOURCES**

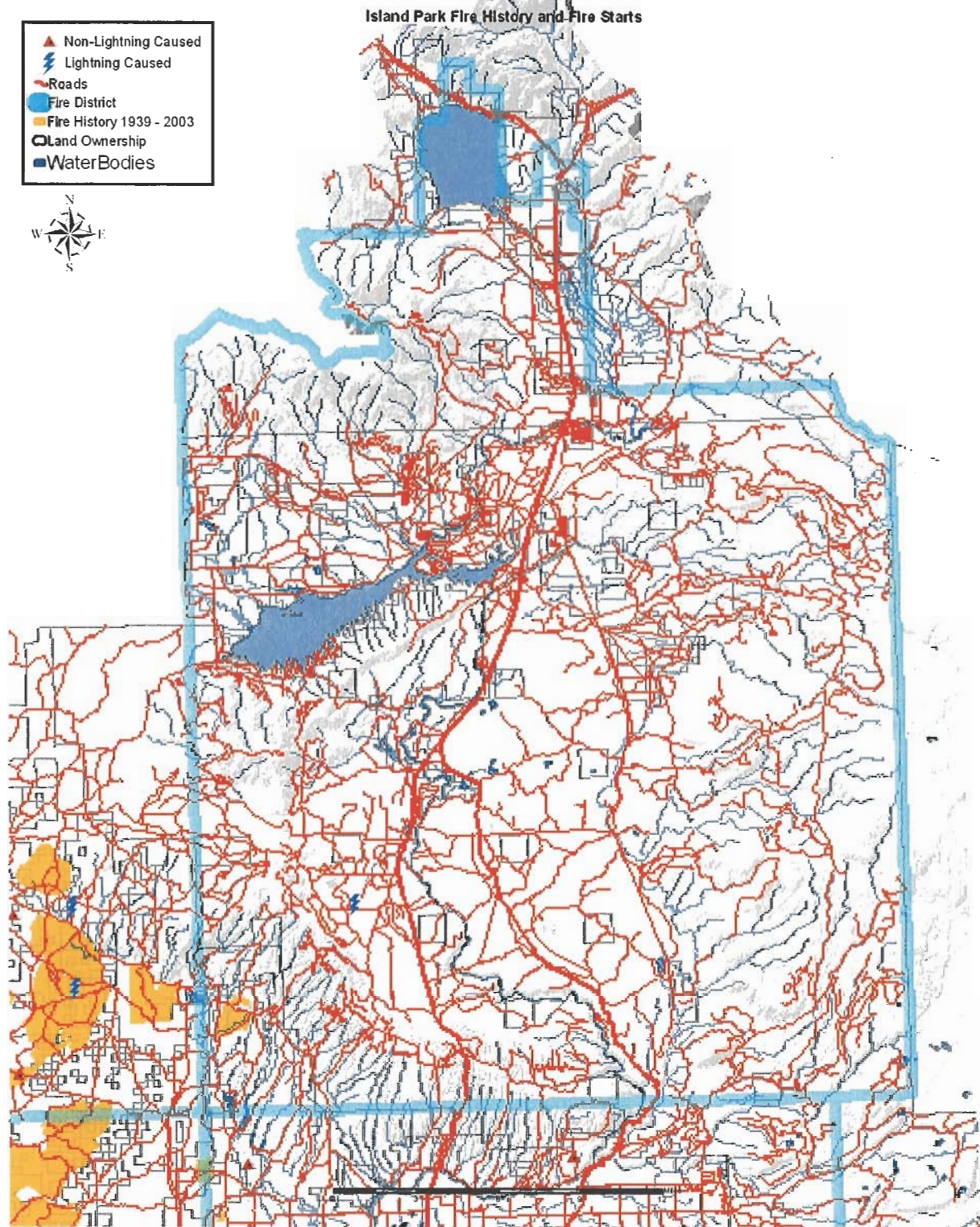
This section focuses on wildland fire issues and how they impact current conditions in Fremont County. Existing conditions were determined by: (1) meetings with all local fire chiefs, as well as local, state, federal employees, and county residents; (2) Inspectors drove major county roads within the county; (3) Fuel loads were assessed along roads and sub-division perimeters; (4) Road conditions and vehicle access to areas of concern were evaluated; (5) Photographs were taken of structures and areas of concern; (6) Structures were evaluated in accordance with a Structure Assessment Ignition Model (Jack D. Cohen, 1995) that takes into consideration structure type, construction materials, topography, and potential fire characteristics around the structure; (7) Wildland Fire Hazard Assessment and Community Assessment forms were completed for every area of concern; and (8) Fire fighting water sources such as hydrants, ponds, live streams, and irrigation mainline access points were defined. The fire history, frequency and danger indices for Fremont County along with energy release component and wildland fuels data are provided by Conran (2004).

#### **Fire History, Frequency and Danger Index**

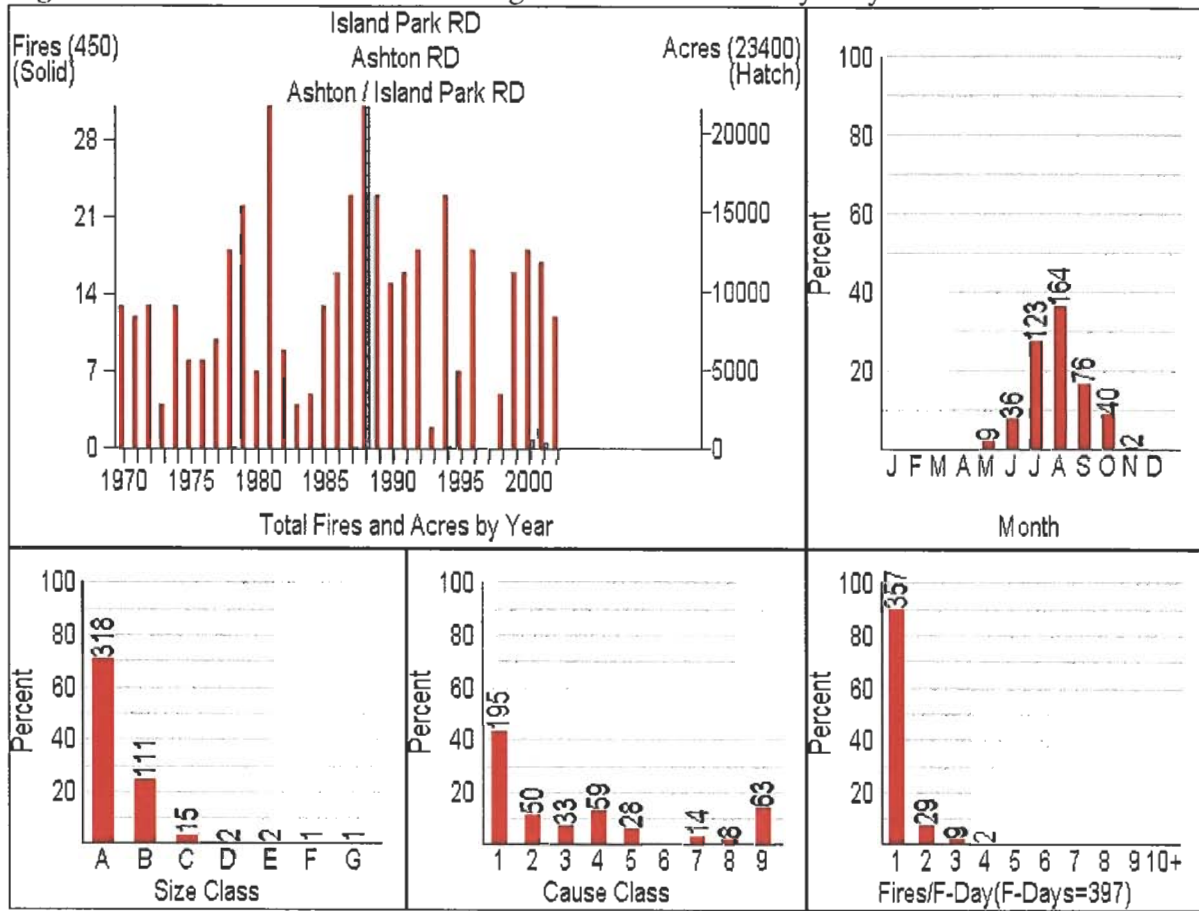
Wildfire risk within and around Fremont County is generally moderate due to the proximity of large areas of agricultural land, the relatively high precipitation zone, and the short burning season.

Fire history data show the Island Park and Ashton Ranger Districts on the Caribou-Targhee National Forest experience approximately 13-wildfire ignitions per year (Figure 7). These fires burn an average of 688 acres per year. One notable exception was the North Fork Fire, which occurred in 1988, which burned 427,680 acres both on the Targhee NF, and in Yellowstone National Park (17,700 of these acres occurred within Fremont County). The core of the fire season occurs during the months of July-September. These months account for approximately 81% of the fire ignitions, which have occurred from 1970-2003. The primary specific cause of wildfires in this area is lightning which accounts for approximately 43% of the fire ignitions with the remaining 57% of fire ignitions being caused by humans. Most of the fire ignitions, approximately 95%, have been successfully initial attacked and controlled at less than 10 acres. Figures 9 and 10 show the fire starts for North Fremont and South Fremont Fire Districts respectively.

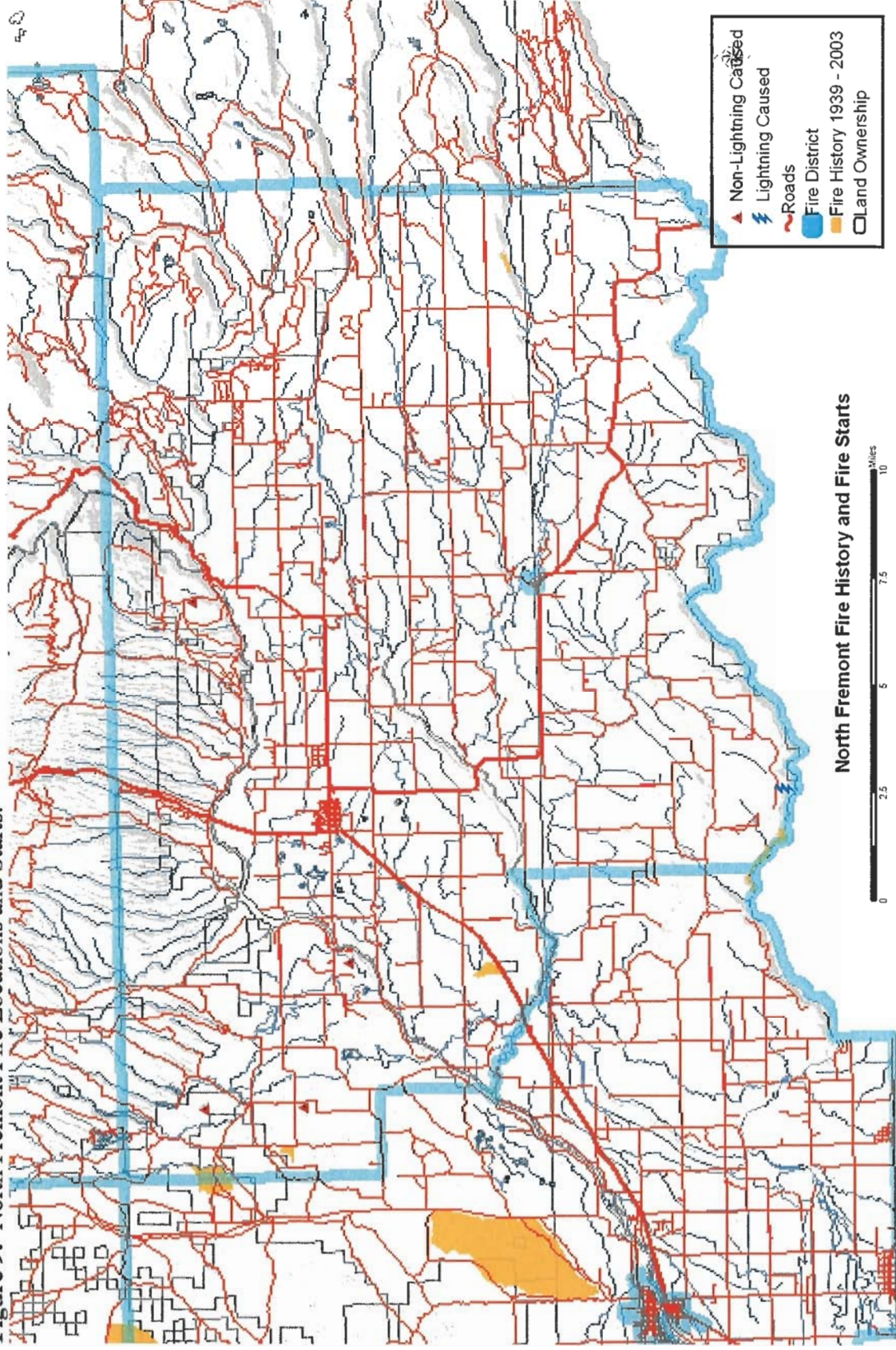
**Figure 7: Island Park Fire District Fire Locations and Starts.**



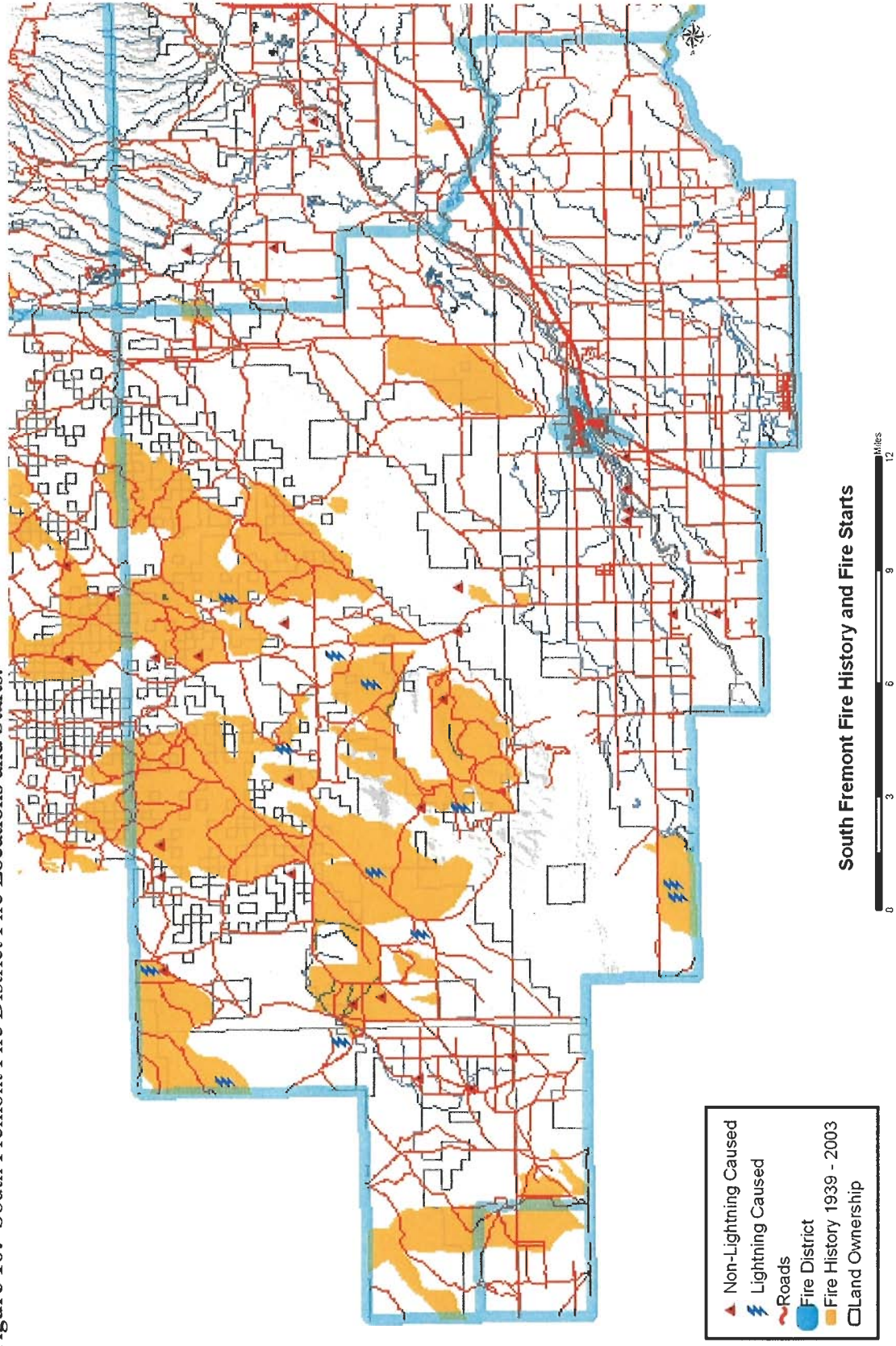
**Figure 8:** Island Park and Ashton Ranger Districts fire history for years 1970-2000.



**Figure 9: North Fremont Fire Locations and Starts.**



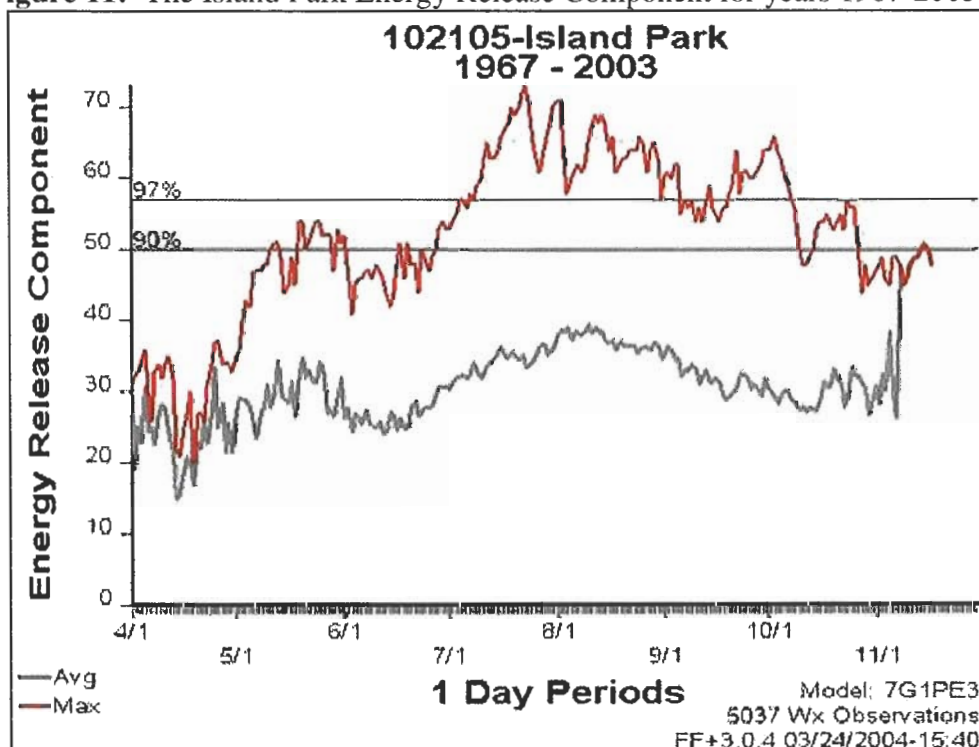
**Figure 10:** South Fremont Fire District Fire Locations and Starts.



Energy Release Component (ERC) is a fire danger index computer model utilizing weather data from a network of remote weather stations one of which is located in Island Park. ERC is heavily weighted in the model towards dead fuel moisture or “how hot could a fire burn.” The unit of measure is in BTU’s/sq foot at the head of the fire. Each unit of ERC is valued at approximately 25 BTUs. This is a measure that attempts to predict the amount of energy that is available for release during combustion. For example if the ERC is 20, that loosely means that 500 BTUs are available for release per square foot at the head of the fire.

ERC is calculated every day during the fire season and is compared to historic levels to gauge the severity of the fire danger. This indicator is used by the federal agencies as a good gauge of the fire danger over the course of a fire season. Figure 11 shows how ERC rises over the course of a fire season in Island Park for years 1967 through 2003 and hits its peak during the summer fire season.

**Figure 11:** The Island Park Energy Release Component for years 1967-2003.



## Fuels

Wildland fuels can be classified into four basic groups: Coniferous Timber, Other Timber (such as aspen), Grass, and Brush (which includes sagebrush, juniper and other shrubs). Each of these groups has different fire behavior characteristics, as described below.

**Grass (National Fire Danger Rating Fuel Models A and L):** Grass fuel types respond quickly to changes in fuel moisture so they will get wet quickly during periods of rain and dry out quickly during periods of warm and dry weather. Fire behavior in this model when



dry, can be characterized by rapid rates of spread, and due to the fact that these areas are oftentimes exposed directly to wind, rates of spread can be further increased due to wind effects. Because these areas don't usually have a large component of large fuels such as downed logs etc, fires in this fuel type generally don't produce a large amount of heat for long in a given area and go out quickly behind the fire front as fuel is rapidly consumed as the fires burns along. The majority of the heat and fire behavior is at the flaming front of these types of fires and on the flanks. Due to exposure to winds in this fuel type, these fires can change direction readily in response to changes in wind direction. Spot fires can occur readily in these fuel types as the wind blows burning embers ahead of the fire.

**Brush (National Fire Danger Rating Fuel Model T):** Brush fuels respond moderately to changes in fuel moisture so they will be slower to respond than grasses but quicker than in the timbered fuel types. Fire behavior in this fuel type when dry, can be characterized by rapid rates of spreads and because of the influences of wind, can change direction and produce spot fires. Individual or groups of the brush component torching and showering sparks and embers ahead of the fire often generate spot fires. Because the brush species have a heavier component of larger diameter woody material, fires in this fuel group tend to produce more heat in a given area than a fire in the grass fuel group would produce.

**Coniferous timber (National Fire Danger Rating Fuel Model G and H):** Coniferous timbered fuel types respond more slowly to changes in fuel moisture due to a heavier component of downed dead woody material and the sheltering effect from both wind and sun from the tree canopy. Fires will generally spread more slowly in this fuel type than in the grass and brush fuel groups but fires will burn hotter and with more intensity due to the amount of heavy fuel accumulations on the ground. Spot fires can be created by individual and groups of trees torching out and in extremely dry conditions fire can make runs through the tree crowns in conjunction with or independently of the ground fire. Many of the coniferous tree species have tree limbs, which can reach, from the ground all the way up to the top of tree, which can create "ladders" which can enable the fire to get from the ground into the crowns of the tree and the crowns of adjacent trees. From a firefighting perspective, fires in this fuel type even if small in size can create a great deal of work to combat due to the amount of fuel and resultant chainsaw work required. In Fremont County, this fuel group is predominated by lodgepole Pine in many areas along with stands of mixed conifers such as Douglas-fir, subalpine Fir, whitebark pine and spruce.

**Other timber (National Fire Danger Rating Fuel Model E):** This group includes deciduous trees such as aspen and cottonwood. This group generally is not a fire concern since they tend to grow in wetter and sometimes rocky areas. Also, this group tends not to have numerous low limbs to create ladders and an understory of fine fuels to carry a fire. Although thought of as a natural fuel break in most instances, this group will burn under extremely dry conditions. From a firefighting perspective, fires in these areas are extremely labor intensive to suppress and require large amounts of water to extinguish.

## Mutual Aid Agreements

The Districts also have written mutual aid agreements with the U.S. Forest Service and the Bureau of Land Management and Island Park has a written agreement with Idaho Department of State Lands and a gentleman's agreement with other surrounding fire departments. Island Park District has no written mutual aid agreements with the other Fremont County fire districts.

## 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, which have homes on them that in some cases predate existing regulations. These parcels are not part of a legal subdivision and may have different regulations covering their future development.

## Description of Assessment Areas

Fremont County assessment area includes three Fire Districts that encompass 1,388,800 acres of response area (High Country RC & D 2003). Table 8 is a breakdown of the land ownership within the fire districts. This differs from the RC & D total because the fire districts respond to fires outside of their district as a result of the mutual aid agreements. Some of these acres are counted in all the fire districts that respond to that area so some areas are counted at least twice. Included in this response area are rangelands, forest, WUIs, residential, business, a propane bulk plant (St. Anthony) and fertilizer plant. Fremont County Fire Districts are Island Park, North Fremont, and South Fremont. The major population centers are Ashton, Island Park, Newdale, Parker, St. Anthony, and Teton.

**Table 8:** Landownership (in acres) within each Fremont County Fire District.

	<b>BLM</b>	<b>USFS</b>	<b>NPS</b>	<b>State</b>	<b>Private</b>	<b>Total</b>
Island Park	12,581	381,798	529	27,506	41,643	464,057
North Fremont	9,646	23,703	0	1,074	152,315	186,738
South Fremont	80,995	6	0	34,453	146,702	262,156
Total						912,951

## Fire District Current Resources and Assets

The current resources and assets of each Fire District are shown in Tables 9, 10, and 11.

## Firefighter and Public Safety

It is important to keep in mind throughout this assessment that firefighter and public safety have to be the number one priority and consideration when assessing subdivisions or individual homes for protection. The Fire Chiefs will not put the firefighters at risk by sending them into areas with narrow roads with no turn-around space or turn-outs, dense vegetation, no defensible space and little or no water beyond what is on the truck.

Evacuation of the public from fire areas is always difficult but made doubly so by the narrow roads and one-way-in-one-way-out types of situation that exists in most of the subdivisions.

**Table 9:** Summary of the Island Park Fire District Assessment.

<b>Island Fire District Assessment Overview – Resources and Assets</b>	
<b>Facilities</b>	There are four fire stations, located in Shotgun Valley, Last Chance, Mack’s Inn (main station) and Henry’s Lake. They house all of the District and city fire fighting apparatus, offices and training facilities.
<b>Response Area</b>	The Island Park Fire District is a fire protection district located on Highway 20 at Mack’s Inn. It serves the Shotgun, Last Chance and Henry’s Lake areas of Island Park. It is in the boundaries of the Targhee National Forest with topography of high elevation, heavily forested areas with some rolling hills and mountainous areas. The area offers many diverse types of recreation from motorized activities like snow machining in winter, to fishing, hunting, camping, hiking and boating in summer. Several bodies of water are in the area including the Henry’s Fork of the Snake River, Island Park Reservoir and Henry’s Lake. It is a popular vacation area with an influx of people during recreational months and the year round population base of the area is experiencing some growth.
<b>Budget and Funding</b>	100% of this Fire Districts base funding is currently derived from taxes.
<b>Grants</b>	This Fire District has received grants from State IDS-excess property, BLM/FS, NFP, private foundations and State EMS (extrication equipment).
<b>Records Management</b>	This Fire District has in place a computerized RMS program, personnel training records database, and an inventory database program.
<b>Hazardous Materials Program</b>	This district does not have a Hazmat team. MVERT mutual aid agreement and ISP provide Hazmat response teams to this Fire District.
<b>EMS Program</b>	First responder training has been completed and is in use. Volunteers are trained in the use of the extrication equipment from State EMS.
<b>Training and Certification</b>	Training records for fire personnel are available at the Fire District headquarters. All active fire personnel are trained in emergency vehicle driving skills and eight have been trained in wildland fire fighting techniques.
<b>Communications</b>	All emergency fire-fighting vehicles have radio communications. Handheld radios are available when needed. Dispatch duties are handled through the Sheriff’s office.
<b>Prevention and Inspection</b>	Fire District personnel do not perform fire code enforcement or fire inspections.
<b>Public Education</b>	Fire personnel participate in annual events such as Fire Station open house and tours. They also present information to the Scouting program on fire safety and prevention.

**Table 10:** Summary of the North Fremont Fire District Assessment.

<b>North Fremont Fire District Assessment Overview – Resources and Assets</b>	
<b>Facilities</b>	The main fire station, located in Ashton, ID is the only permanent fire facility in this Fire District. It houses all district and city fire fighting apparatus, offices and training facilities.
<b>Response Area</b>	North Fremont Fire District is located in central Fremont County. It is comprised of agricultural lands interspersed with sagebrush/grasslands with some forested lands on the North and East. The main agricultural activities are potato farming and ranching. Two fertilizer plants in Ashton and Drummond have been identified as high risk areas.
<b>Budget and Funding</b>	Base Funding for this Fire District is derived 90% from taxes, and 5% each from EMS and Grants.
<b>Grants</b>	This Fire District has received grants from private foundations (Vasak Foundation) and the BLM/FS in the form of wildland fire equipment.
<b>Records Management</b>	This Fire District has a computerized personnel training records database, emergency call volume, fire fighting agreements and equipment maintenance.
<b>Hazardous Materials Program</b>	This district does not have a Hazmat team. MVERT mutual aid agreement and ISP provide Hazmat response teams to this Fire District.
<b>EMS Program</b>	EMS services are separate from Fire District activities and are managed by a separate board of directors.
<b>Training and Certification</b>	Training records for fire personnel are available at the Fire District headquarters. All active fire personnel are provided training that provides basic certifications in both firefighting and EMS activities. Fifteen fire fighters are trained in wildland fire techniques.
<b>Communications</b>	All emergency firefighting vehicles have radio communications. Handheld radios are available when needed. Dispatch duties are handled through the Fremont County St. Anthony 911 dispatch.
<b>Prevention and Inspection</b>	Trained fire personnel do not enforce fire codes in accordance with the International Fire Code this is done through the State Fire Marshal's office.
<b>Public Education</b>	Fire personnel conduct annual visits to the fire station for grade school children to promote fire prevention and home fire safety programs. They also present information to the Scouting program on fire safety and prevention

**Table 11:** Summary of the South Fremont Fire District Assessment.

<b>South Fremont Fire District Assessment Overview – Resources and Assets</b>	
<b>Facilities</b>	There is one fire station located at St. Anthony and it houses district and city fire fighting apparatus, offices and training facilities.
<b>Response Area</b>	South Fremont Fire District is located in the southern portion of Fremont County and services agricultural, rangelands, WUI, residential and business concerns. The Propane bulk plant and the District Fertilizer Plant were identified as high risk facilities.
<b>Budget and Funding</b>	100% of this Fire Districts base funding is currently derived from taxes.
<b>Grants</b>	This Fire District has received grants from BLM/FS Rural Assistance.
<b>Records Management</b>	This Fire District maintains a comprehensive records management system that is currently not computerized. They track training, incident reports, personnel, vehicle and building maintenance.
<b>Hazardous Materials Program</b>	This district does not have a Hazmat team.
<b>EMS Program</b>	EMS services are separate from Fire District activities.
<b>Training and Certification</b>	Training records for fire personnel are available at the Fire District headquarters. All active fire personnel are trained in essentials of fire, Hazmat awareness, Initial Attack (structures) Standards for Survival and 12 are trained in Wildland Fire Fighting Techniques.
<b>Communications</b>	All emergency firefighting vehicles have radio communications. Handheld radios are available when needed. Dispatch duties are handled through the Fremont County St. Anthony 911 dispatch. In addition, the fire district has a 24-7 dispatch on duty.
<b>Prevention and Inspection</b>	Fire personnel do not enforce Fire Code regulations.
<b>Public Education</b>	Fire personnel conduct annual visits to grade schools to promote fire prevention and home fire safety programs.

## **Fire Fighting Apparatus**

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

### Island Park Fire District Equipment

- 2001 E-One Class A Pump truck, 2,500 gal. tank, 1,000 gpm pump.
- 1995 E-One Class A Pump truck, 1,000 gal. tank, 1,000 gpm pump.
- 1988 FMC Class A Pump truck, 1,000 gal. tank, 1,000 gpm pump.
- 1973 Ford Tanker, includes 3 Port-a-Pumps.
- 1993 Chevrolet 4x4, Brush/Rescue truck, 300 gal. tank, 200 gpm pump.

### North Fremont Fire District Equipment

- 1997 Freightliner Class A Pump truck, 1,500gal. tank, 1,000gpm pump.
- 1980 Chevrolet Class A Pump truck, 1,000gal. tank, 750gpm pump.
- 1970 Vanpelt Class A Pump truck, 1,500gal. tank, 400gpm pump.
- 1990 Ford 4x4, Brush truck, 250 gal. tank, 35 gpm pump.
- 1997 Ford, 300 gal. tank, 100 gpm pump.
- 1976 Ford, Tanker, 3,000 gal. tank, 200 gpm pump.

### South Fremont Fire District Equipment

- 1995 Ford Class A Pump truck, 1,000 gal. tank, 1,250 gpm pump (foam unit).
- 1975 Ford Class A Pump truck, 500 gal. tank, 750 gpm pump.
- 1980 Chevrolet Class A Pumper/tanker truck, 3,000 gal. tank, 1,250 gpm pump.
- 1990 GMC Class A Pump truck, 1,000 gal. tank, 1,250 gpm pump.
- 1995 Chevrolet Brush truck, 200 gal. tank, 100 gpm pump (foam unit).
- 2002 Ford Brush truck, 300 gal. tank, 100 gpm pump (foam unit).

## 4.0 FIELD ASSESSMENT FORMS AND RATINGS

Standardized Field Assessment Forms were implemented into the process to correctly assess zones of concern within each Fire District in Fremont County. Ratings of A, B, and C were used for each attribute of the Assessment Form. Criteria for these ratings are explained on the individual forms. Areas of concern were rated according to the criteria on the form for the specified attribute. The attributes for each area of concern were then averaged into one overall rating for that specific area. The following forms were used in assessing subdivisions and additions in Fremont County.

In 2002, The Student Conservation Association (SCA), Fire Education Corps conducted earlier assessments of subdivisions within both Fremont and Teton Counties. The assessment goals delineated by SCA members were:

- Create web-based geospatial maps that will not only enhance firefighters' response capabilities, but enable natural resource managers to monitor and act on changes in environmental conditions.
- Work with homeowner associations, neighborhood groups and local officials to remove potential fire fuels such as large quantities of dead or dry vegetation, or discarded flammables such as lumber.
- Cooperate with homeowners to inspect the perimeter of the home using nationally-recognized Firewise protocols to evaluate building materials, outside storage practices, and proximity to the natural environment.

**FORM 1. FIRE HAZARD ASSESSMENT DESCRIPTION**

<b>Rating Element</b>	<b>Class A</b>	<b>Class B</b>	<b>Class C</b>
<b>Vegetation Type</b>	General description of vegetation (e.g., sagebrush, grassland, aspen, spruce)		
<b>Slope</b>	Flat to little slope ( $< 10\%$ )	Moderate slopes ( $10-30\%$ )	Steep Slopes ( $> 30\%$ )
<b>Aspect</b>	North (N, NW, NE)	East or level	South and West (SE,S,SW,W)
<b>Elevation</b>	$>5500$ feet	3500-5500 feet	$<3500$ feet
<b>Fuel Type</b>	Small, light fuels (grass, weeds, shrubs)	Medium fuels (brush, medium shrubs, small trees)	Heavy fuels (timber, woodland, large brush or heavy planting of ornamentals)
<b>Fuel Density</b>	Non-continuous fuel bed. Grass and /or sparse fuels adjacent to federal land ( $<30\%$ cover)	Broken moderate fuels adjacent to federal land (31 to 60% cover)	Continuous fuel bed. Composition conductive to crown fires or high intensity surface fires ( $> 60\%$ cover)
<b>Fuel Bed Depth</b>	Low (average $< 1$ foot)	Moderate (average 1-3 feet)	High (average $> 3$ feet)



**FORM 2. STRUCTURE HAZARD ASSESSMENT DESCRIPTION**

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

**Form 3. COMMUNITY ASSESSMENT DESCRIPTION**

<b>Rating Element</b>	<b>Class A</b>	<b>Class B</b>	<b>Class C</b>
<b>Community Description</b>	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 where wildland fuels are continuous outside of and within the developed area.	The community generally exists where homes, ranches, and other structures are scattered by adjacent to wildland vegetation.
<b>Response Time</b>	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</b>	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</b>	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)</b>	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</b>	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</b>	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 department has	Community standards for fire safe development and protection are marginal or non-existent. Little or no effort has been made

	suppression resources. Fire Department actively participates in planning process.	limited input to fire safe development and planning efforts.	in assessing and applying measures to reduce wildfire impact.
<b>Fire Mitigation Ordinances, Laws, or Regulations in Place</b>	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</b>	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</b>	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</b>	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</b>	Actively supports urban interface plans and actions.	Some participation in urban interface plans and actions.	Opposes urban interface plans and efforts.

## Summary of Results

After the assessment forms were completed they were transcribed into a spreadsheet. The rankings were assigned a number, A=3, B=2 and C=1. This allowed an overall ranking to be obtained by averaging the values and then comparing that average to a table of ranges for A, B, and C rating. "A" rankings were from 3.0 to 2.5, "B" from 2.5 to 1.6, "B/C" ranking was 1.5 and "C" from 1.4 to 1. The overall summary of the findings is in Tables 12 through 17. These tables are presented in this report without the numerical rankings; however, they are available in the spreadsheets that have been included on the CD attached to this report. The original assessment sheets were also provided to the County Commissioners.

Within the Island Park Fire District the subdivision that had the lowest rating on the Form 1 Assessment was Shotgun Village (this included Yale Creek Cabin Sites). This was primarily due to the fuel type and the fuel density (see Figure 12). Of the subdivisions assessed this one had, by far, the heaviest fuel loadings.

The Form 2 Assessment for Island Park shows that Shotgun West #1 and #2 had the lowest rating (Shotgun Village was only slightly better for this assessment). Proximity of fuels, survivable space, roads and response times were the contributing factors. Buffalo Summer Home Area had the lowest ranking on Form 3 with Shotgun Village and Shotgun West #1 and #2 in a multiple tie for third. Water supply and proximity to wildland vegetation were the contributors here.

In the North Fremont Fire District, Potpourri and West Potpourri were the lowest ranked subdivisions on Forms 1 and 2 (see Figure 13). Narrow steep roads; proximity of fuels; fuel type and density; and, survivable space were the main areas of concern in these subdivisions. The North Fork Highlands and West Potpourri were the lowest for Form 3 in the North Fremont District.

In the South Fremont Fire District the subdivisions were assessed using the format of the assessment forms. All of the subdivisions rated as low risk from wildland fire (Figure 14). This was primarily due to the homes being surrounded by agricultural lands, good defensible space around the homes, fire resistant building materials, and excellent access for fire apparatus. There is also a low percentage of Federal land in the District and a corresponding low probability of wildland fire ignition.

**Table 12:** Island Park Summary Table of Hazard Assessment Forms.

ISLAND PARK	FORM 1						
Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Shotgun Village Total 293 Structures	Sagebrush, Spruce, Fir, Willow, Aspen. Associated shrubs and forbs. Climax approaching. Heavy fuels North end.	B	C	A	C	C	B
Old West Ranches Total 27 Structures	Aspen, Sagebrush. Shrub understory with forbs.	A	B	A	A	A	A
Shotgun West #1 and #2 Total 29 Structures	Aspen, Sagebrush. Shrub understory with forbs.	A	B	A	C	B	B
Shotgun South of Highway Total 140 Structures	Lodgepole and sagebrush	A	B	A	B	B	A
Centennial Shores Total 7 Structures	Sagebrush and grassland	A	C	A	A	B	A
Pine Haven #4 Total 122 Structures	Lodgepole and grass	A	B	A	B	B	A
Last Chance Total 37 structures	Aspen, mixed lodgepole	A	C	A	B	B	A
Box Canyon Total 27 structures	Lodgepole and grass	A	B	A	B	B	A
Box Canyon Estates Total 20 structures	Lodgepole and grass	A	B	A	B	B	A
Robbins Total 36 structures	Sagebrush, grass, limited tress	A	B	A	B	B	A
Centennial Subdivision Total 29 structures	Sagebrush, grass, limited tress	A	B	A	B	B	A
Buffalo Summer Home Area Total 46 Structures	Mature conifers, grass	A	B	A	C	C	A
Phillips Summer Home Area Total 26 structures	Lodgepole	B	B	A	B	A	A
Elk Run Estates Total 80 structures	Lodgepole, grass	B	C	A	B	B	A
Buffalo River Estates Total 58 structures	Lodgepole, grass	A	B	A	B	B	A
Big Springs Total 7 structures	Sagebrush	A	B	A	B	B	A
Moose Creek SHA Total 4 structures	Sagebrush, lodgepole	A	B	A	B	B	A
Fransenville SD Total 15 structures	Lodgepole, grass	C	B	A	B-	B	A

Henderson Estates Total 26 structures	Lodgepole, grass	A	B	A	B	B	A
Island Park Complex Total 300 structures	Lodgepole (dog hair stands)	A	B	A	B	B	A
North Fork Club Total 29 structures	Sagebrush, grass, Lodgepole	A	B	A	B	A	A
Buttermilk Loop Total 68 structures	Lodgepole, grass	A	B	A	B	B	A
McCrea SD Total 25 structures	Lodgepole, grass	A	B	A	B	B	A
Rancho McCrea Total 139 structures	Sagebrush, lodgepole	A	B	A	B	B	A
Cowan SHA Total 139 structures	Lodgepole	A	B	A	B	B	A
Lakeside Total 21 structures	Lodgepole	A	C	A	B	B	A
Henry's Lake Total 600 Structures	Heavy grass and sagebrush adjacent to moderate to dense lodgepole stands.	*	*	*	*	*	*
Summary Rating		A	B	A	B	B	B

\* Henry's Lake areas were assessed during 2003 for a separate report. Assessment forms were completed and the summary of those forms is reflected in the Summary Rating for the Island Park Area. Actual results are found in Wildland-Urban Interface Communities-At-Risk Mitigation Assessment, Upper Snake River District BLM, Henrys Lake, Fremont County, Idaho, NW-ID-2003-032, May 2003.

**Table 13:** Island Park Summary Table of Structure Hazard Assessment Description Forms.

ISLAND PARK	FORM 2						
Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Shotgun Village	A	C	A	C	C-	B	C
Old West Ranches	B	B	A	A	B	C	B
Shotgun West #1 and #2	A	C	A	C	C	C	C
Shotgun South of Highway	A	C	B	C	B	A	B
Centennial Shores	B	B	A	A	A	A	A
Pine Haven #4	A	C	B	C	C	B	B
Last Chance	A	C	A	C	C	A	C
Box Canyon	A	C	A	C	C	A	C
Box Canyon Estates	A	C	A	C	C	A	C
Robbins	A	C	A	A	B	A	C
Centennial Subdivision	A	C	A	A	V	A	C
Buffalo SHA	A	C	A	C	C	B	B
Phillips SHA	A	C	A	C	C	B	B-
Elk Run Estates	A	C	A	C	C	B	C
Buffalo River Estates	A	C	A	C	C	B	C
Big Springs	A	B	B	B	B	A	B
Moose Creek SHA	A	C	A	B	C	A	C
Fransenville SD	A	C	A	C	C	B	C
Henderson Estates	A	C	A	C	C	B	C
Island Park Complex	A	C	A	C	C	A	B
North Fork Club	A	C	A	B	B-	A	C
Buttermilk Loop	A	B	A	B	B	B	C
McCrea SD	A	C	A	C	B	B	B
Rancho McCrea	A	B	A	B	B	B	B
Cowan SHA	A	C	A	C	C	B	C
Lakeside	A	C	A	C	C	B	C
Henry's Lake	*	*	*	*	*	*	*
Summary Rating	B	C	A	C	C	B	C

\* Henry's Lake areas were assessed during 2003 for a separate report. Assessment forms were completed and the summary of those forms is reflected in the Summary Rating for the Island Park Area. Actual results are found in Wildland-Urban Interface Communities-At-Risk Mitigation Assessment, Upper Snake River District BLM, Henrys Lake, Fremont County, Idaho, NW-ID-2003-032, May 2003.

**Table 14:** Island Park Summary of Community Assessment Forms.

ISLAND PARK				FORM 3																												
				SUBDIVISION / PARCEL →																												
Rating Element	Class A	Class B	Class C	Shotgun Village	Old West Ranches	Shotgun West #1 and #2	Shotgun South of Highway	Centennial Shores	Pine Haven #4	Last Chance	Box Canyon	Box Canyon Estates	Robbins	Centennial SD	Buffalo SHA	Phillips SHA	Elk Run Estates	Buffalo River Estates	Big Springs	Moose Creek SHA	Fransenville SD	Henderson Estates	Island Park Complex	North Fork Club	Buttermilk Loop	McCrea SD	Rancho McCrea	Cowan SHA	Lakeside	Henry's Lake	Summary Rating	
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	B	B	B	C	B	B	B	B	B	B	C	B	B	B	B	B	C	C	B	A	B	B	B	B	B	B	*	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	C	C	A	A	B	A	A	A	A	A	B	B	B	B	A	A	B	B	A	A	B	B	B	B	B	B	*	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	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	B	A	A	A	A	A	*	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.	C	B	B	B	A	B	B	C	C	C	C	C	C	B	B	B	C	C	C	B	B	C	C	B	B	B	B	*	B-/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.	B-	B	B	B	B	C	C	C	C	C	C	B-	B-	B-	B-	B-	B-	B-	B-	B-	B-	B	B	B-	B-	B-	B-	*	B-/C+
Structure Density	At least one structure per 0-5 acres.	One structure per 5-10 acres.	Less than one structure per 10 acres.	A	B	A	A	C	A	A	A	A	A	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	*	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-	C	B-	B	B	B	B	B-	B-	B-	B-	C	C	B-	B-	B-	B-	B-	B-	B-	B-	B-	C	B	C	C	*	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	C	C	C	C	B-	B-	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	C	*	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	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	*	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.	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	*	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	B-	B-	B	B	C+	C+	B	B	B	B	B-	B-	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	*	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	B-	B-	B	B	B-	B-	C	C	C	C	B-	B-	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	*	B

\* Henry's Lake areas were assessed during 2003 for a separate report. Assessment forms were completed and the summary of those forms is reflected in the Summary Rating for the Island Park Area. Actual results are found in Wildland-Urban Interface Communities-At-Risk Mitigation Assessment, Upper Snake River District BLM, Henrys Lake, Fremont County, Idaho, NW-ID-2003-032, May 2003.

**Table 15:** North Fremont Fire District Summary of Assessment Forms.

NORTH FREMONT	FORM 1						
Subdivision/Parcels	Vegetation Type	Rating Elements					
		Slope	Aspect	Elevation	Fuel Type	Fuel Density	Fuel Bed Depth
Potpourri Total 32 Structures	Aspen, Spruce, Douglas-fir, Lodgepole, grassland, exotic pines	B	B	A	B	C	B
North Fork Highlands Total 9 Structures	Aspen, Lodgepole	B	C	A	A	B	A
Aspen Heights Total 14 Structures	Aspen, Chokecherry	B	C	A	B	B	A
Ashton Hills Estates Total 2 Structures	Silver Sage, other shrub species	B	B	A	B	B	A
West Potpourri	Lodgepole, heavy timber	A	B	A	C	C	B
Summary Rating		B	B	A	B	B	A

**Table 16. North Fremont Fire District Summary Table of Structure Hazard Assessment Description Forms.**

NORTH FREMONT	FORM 2						
Subdivision/Parcels	Rating Elements						
	Structure Density	Proximity of Fuels	Building Materials	Survivable Space	Roads	Response Time	Access
Potpourri	A	C	A	C	C	B	C
North Fork Highlands	A	B	A	A	B	B	B
Aspen Heights	A	C	A	C	B	A	B
Ashton Hills Estates	A	C	A	C	B	A	B
West Potpourri	B	C	A	C	C	B	B
Summary Rating	A	C	A	C	B	B	B

**Table 17: North Fremont Fire District Community Assessment Forms.**

<b>NORTH FREMONT</b>		<b>FORM 3</b>							
Rating Element	SUBDIVISION / PARCEL →						Summary Rating		
	Class A	Class B	Class C	Popourri	North Fork Highlands	Aspen Heights		Ashton Hills Estates	West Popourri
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	B	B	B	B	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	B	A	A	B	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	A	A	A	A	A
Water Supply	Adequate supply of fire hydrants and pressure, and/or open water sources.	Inadequate supply of fire hydrants, or limited pressure. Limited water supply.	No pressure water system available near interface. No surface water available.	C	C	C	C	B	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.	B	B	B	B	C	B
Structure Density	At least one structure per 0-5 acres.	One structure per 5-10 acres.	Less than one structure per 10 acres.	A	B	A	A	A	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	B	B	B	B	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-	B-	B	B-	B	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	A	A	A	A	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.	C	C	C	C	C	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	B	B	B	B	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	B	B	B	B	B

## 5.0 MITIGATION

This section discusses fuels mitigation and needs and associated costs for each Fire District. The environmental effects and public education programs are included under one section and apply to all Fire Districts within Fremont County.

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

Needs and Associated Costs – Tables of Fire District needs and associated costs (High Country RC &D Area, Inc., 2003).

Environmental Effect – Environmental effects (weed establishment, soil and surface water disturbance) resulting from fuel break construction and other land surface disturbances and the installation of dry hydrants.

Fire Prevention Programs – Public Education – Introduces Fremont County residents to the FIREWISE public education program, offers homeowners a checklist to avoid wildfire damage and, presents relevant public education web sites. The 2000 International Residential Fire Code, Uniform Building Code and International Building Code apply to Fremont County residents.

Red Zone Fire Program mitigation standard procedures should be implemented by the County and BLM to ensure the completion and long-term maintenance of fuel hazard reduction work on all new developments within the county. Fuel mitigation practices that would be involved include, but are not limited to: sagebrush thinning, fuel-breaks, and additional management measures around individual home-sites.

Subdivision review and building permit procedures should be sent to the responsible fire protection entities for review and comment. The Building Department, Zoning Administration, and the Fire Districts should meet to discuss the current system of building permit review, identify any problems that exist and implement solutions.

**Table 18: Mitigation Summary for Island Park, North Fremont, and South Fremont Fire Districts.**

Fremont County Commissioner Priority rating	Potential Problems/Risks	Responsible Agency/Recommended Mitigation
High	Transition from wideband to narrowband with communications equipment and operations has the potential to adversely affect firefighter safety and performance, specifically in the initial and extended action environment (NIFC, 2004).	Federal, State, Fire Districts <ul style="list-style-type: none"> <li>• Firefighters and aerial resources must withdraw from fire operations activities if positive communication with their forces, supervisor, or adjoining forces is compromised.</li> <li>• Ensure local frequency management plans are in place and understood to support initial and extended action activities, and include contingencies for cooperators and aviation resources.</li> <li>• If communication problems become an issue, the fall back position is to revert to wideband mode.</li> <li>• Report problems with specific details through SAFENET or SAFECOM reporting systems.</li> </ul>
High	Lack of National Fire Protection Association (NFPA) standards for new subdivisions	County, Fire Districts <p>Adopt, as needed, portions of NFPA 1141 Standard for Fire Protection in Planned Building Groups (2003.)</p> <ul style="list-style-type: none"> <li>• Adopt, as needed, portions of NFPA 1143 Standard for Wildland Fire Management (2003).</li> <li>• Adopt, as needed, portions of NFPA 1144 Standard for Protection of Life and Property from Wildfire (2002).</li> <li>• Fire Districts should meet and discuss the current system of building permit review and identify problems that exist and implement solutions.</li> </ul>
High	No RedZone program	Federal, Fire Districts, Homeowners <ul style="list-style-type: none"> <li>• Conduct surveys identifying potential hazards a home may pose to firefighters during a wildland fire.</li> <li>• Conduct surveys identifying measures a home owner will take to reduce risks of their home igniting during a wildfire.</li> <li>• Conduct surveys identifying water sources, access concerns (bridges/road width), and utility location information needed by firefighters.</li> <li>• Mail surveys to homeowners for review. Include Firewise documents in the mailing to aid the homeowner in creating defensible space around the home.</li> </ul>
High	Outdated Island Park Urban/Interface Evacuation Plan	Federal, Fire District, Homeowners <ul style="list-style-type: none"> <li>• Update current evacuation plan.</li> </ul>
High	Hazardous fuels on public land	Caribou-Targhee National Forest, County, Fire Districts <ul style="list-style-type: none"> <li>• Hazardous fuels reduction project involving the area around Island Park. Commenced last year and is expected to continue through 2005. Activities include but are not limited to: 1) thinning of small diameter noncommercial size trees, 2) hand piling of thinned trees and other slash followed by burning, 3) public</li> </ul>

		<p>firewood gathering, 4) removal of fuels by private contractors, 5) commercial timber sales, and 6) prescribed burning where safe and at minimal risk to private property.</p> <ul style="list-style-type: none"> <li>• County and local fire cooperators will help the Forest Service identify other areas of concern and promote the need for doing this type of work.</li> <li>• Idaho Department of Lands will assess the state owned sections for opportunities to do fuel reduction projects on their lands.</li> <li>• County will require either a 30 or 50' "setback" for all new construction adjacent to public lands.</li> </ul>
High	Excess debris created by the fuels reduction project	<p>County</p> <ul style="list-style-type: none"> <li>• Request grant funding to purchase an industrial chipper or make arrangements to use the Forest Service chipper.</li> <li>• Provide chips to the general public and local entities for heating and power generating operations.</li> <li>• Identify areas where people can dump debris.</li> <li>• Offer free dump passes.</li> </ul>
High	Inadequate fire fighting apparatus	<p>County (upgrade or purchase new)</p> <ul style="list-style-type: none"> <li>• Personal Protective Equipment – Turnout Gear.</li> </ul>
High	Inadequate communication system	<p>County, State, Federal, Fire Districts</p> <ul style="list-style-type: none"> <li>• Require compatible communication system for all parties involved in fire protection.</li> </ul>
High	Lack of GIS standards on fire district maps	<p>County, Fire Districts</p> <ul style="list-style-type: none"> <li>• Develop color-coded standards for fire district maps showing water sources, grain elevators, gas depots, chemical and hazardous materials, sewer lagoons, and natural gas lines, to name a few.</li> </ul>
High/Medium	Reduce human-caused fires	<p>County, Fire Districts</p> <ul style="list-style-type: none"> <li>• Work with its federal cooperators to develop grass roots fire prevention efforts to reduce the occurrence of person caused fire ignitions through public education and participation in community events.</li> <li>• Develop partnerships with local businesses to promote fire prevention. Some examples are Sporting goods dealers will display materials relating to campfires and outdoor activities, Landscaping companies will display information relating to defensible space and fire resistant plants, Agriculture related businesses will display information related to agricultural burning, Off road vehicle dealers will display information related to fire prevention as it relates to OHV.</li> </ul>
Medium	Inadequate fire fighting apparatus	<p>County (upgrade or purchase new)</p> <ul style="list-style-type: none"> <li>• Two-medium or heavy engines to BLM specifications.</li> <li>• 4000 gallon tender.</li> <li>• CAFS units for two engines.</li> </ul>
Medium	Hazardous fuels between improved property and defined boundary (WUI) and within improved property	<p>County, Homeowners, State and Federal Agencies</p> <ul style="list-style-type: none"> <li>• Construct fuel breaks at designated locations (see map).</li> <li>• Maintain fuel breaks (periodic mowing,</li> </ul>

		<ul style="list-style-type: none"> <li>greenstripping, noxious and invasive weed removal).</li> <li>Widen roads for better ingress and egress.</li> <li>Public Education Programs.</li> </ul>
Medium	Hazardous fuels on private land	<p>County, Homeowners</p> <ul style="list-style-type: none"> <li>Participate in educational programs funded by grants to reduce fuels by creating defensible space.</li> <li>Enact NFPA 1144 Standards for Protection of Life and Property from Wildfire.</li> <li>Host cleanup days and offer incentives for removal of hazardous fuels (chipping services, free dump days at the landfill).</li> <li>Place evacuation plan map and map of readily available water sources for each subdivision within a lockable container and positioned at the entrance of subdivision.</li> <li>Place safety flags on standpipes used for drafting at each water source.</li> <li>Construct fuel breaks at designated locations (see map).</li> <li>Maintain fuel breaks (periodic mowing, greenstripping, noxious and invasive weed removal).</li> <li>Widen roads for better ingress and egress.</li> </ul>
Medium	Inadequate access for Firefighting apparatus Vulnerable areas identified by North Fremont Fire District as high risk because of limited access only by brush and/or pumper truck	<p>County, Fire Districts</p> <ul style="list-style-type: none"> <li>Hire a full time Fire Marshall to inspect and enforce fire related codes.</li> <li>Pass an ordinance that all new construction will meet county road standards.</li> <li>Inspect bridges and post weight ratings.</li> <li>Adopt a county wildland fire code-identifying road and construction standards. This should include provisions for requiring more than one access route into subdivisions.</li> <li>Require that all roads be clearly marked with road name signs on metal poles.</li> <li>Ensure adequate access in winter time months.</li> <li>Provide turnarounds within each subdivision to accommodate the largest fire district apparatus.</li> </ul>
Medium	Inadequate winter water supply and drafting locations	<p>County, Fire Districts</p> <ul style="list-style-type: none"> <li>Pursue grant opportunities to purchase additional water tenders.</li> <li>Request grant funding to develop dry hydrant systems as delineated (see map).</li> <li>Require storage tanks (cisterns) and/or hydrant systems in new subdivisions.</li> </ul>
Medium	No regulation regarding burning permits	<p>Federal, State DEQ, County, Fire Districts</p> <ul style="list-style-type: none"> <li>Create county ordinance regarding burning.</li> <li>Educate public.</li> <li>Notify sheriff's office of controlled burns.</li> <li>Coordinate with state and federal agencies using fire restrictions.</li> </ul>
Low	Conservation Reserve Program (CRP) land (approximately 30,000 acres) with approximately 7,300	<p>CRP members</p> <ul style="list-style-type: none"> <li>Explore the need for educational pamphlets distributed to each CRP member clarifying the program.</li> <li>Conduct fuel treatment within older stands of grass</li> </ul>



	acres designated as State Priority area or occupied habitat for sharptailed grouse	and shrubs to reduce hazardous fuels and to improve sharptailed grouse habitat. • Create fuel breaks around newly seeded acreage.
Low	Inadequate bridges and culverts	County, Fire Districts • Designate Fun Farm Road bridge inadequate for emergency vehicles over 5 ton GVW. • Designate alternate routes for emergency vehicles. • Provide turnarounds to accommodate the largest fire district apparatus.
Low	Open areas with no fire protection	County Fire Commissioners, State Tax Commission, Fire Districts • Create new fire protection district for open areas.
Low	No power pole protection	County • Install fireproof sleeves around power poles at designated locations. This will require cooperation and coordination with Utah Power and Electric and/or Rural Electric Association.
Low	Lack of water source at Fertilizer plants for fire suppression on adjacent lands	County, North and South Fire Districts • Install water tanks at fertilizer plants in readily accessible areas.

Figures 12, 13 and 14 show the WUI risk areas and the proposed fuel breaks for the Island Park, North Fremont and South Fremont Fire Districts respectively. These risk areas are considered to be the areas where 1) there is the greatest risk of loss due to wildland fire and 2) there is potential to mitigate the risk. Figure 13 also shows the high fire danger areas associated with Conservation Reserve Program lands within the fire district as determined by the North Fremont Fire District personnel interviewed for this plan.

Figure 12: WUI Risk Areas, Island Park Fire District.

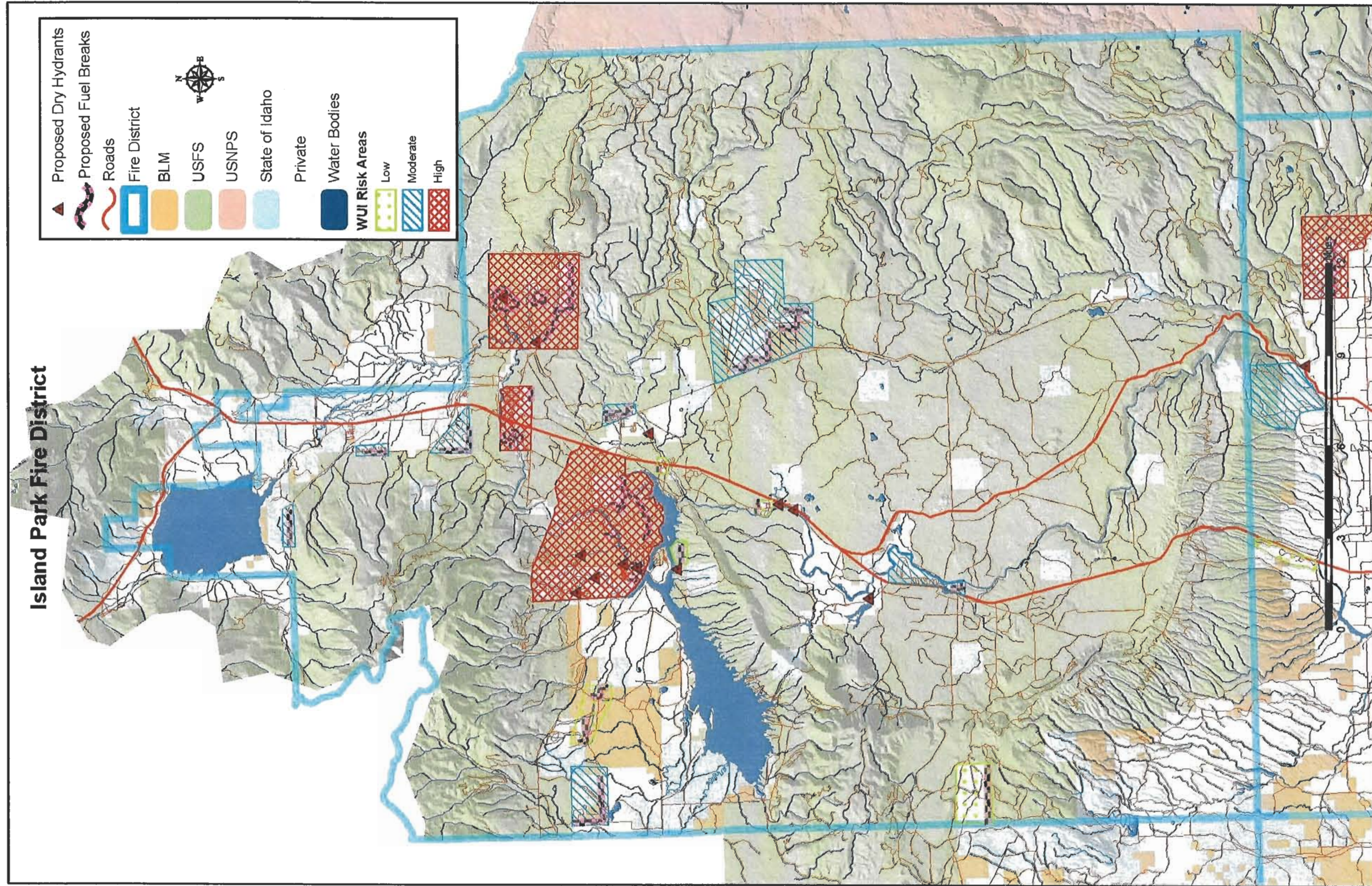


Figure 13: WUI Risk Areas, North Fremont Fire District.

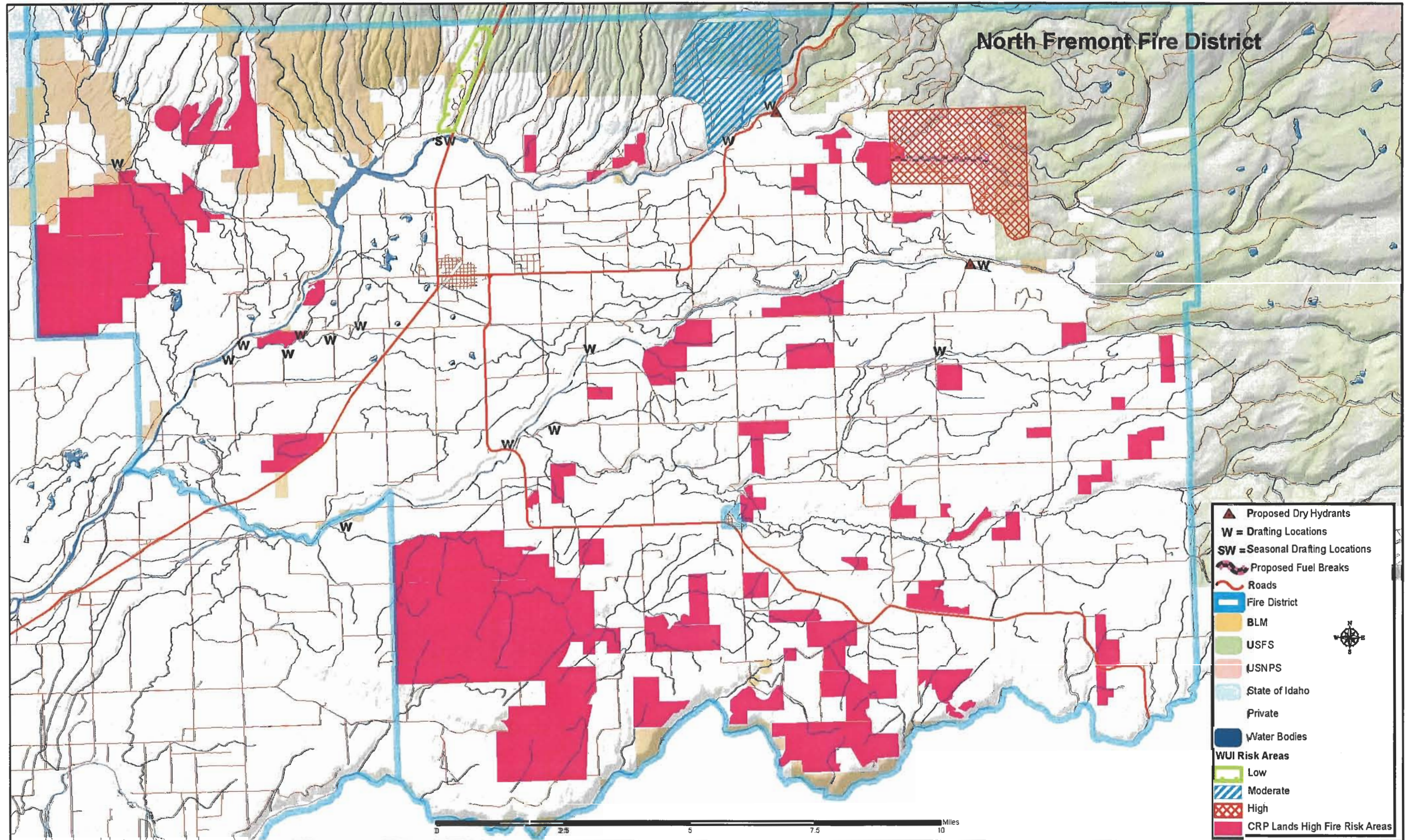
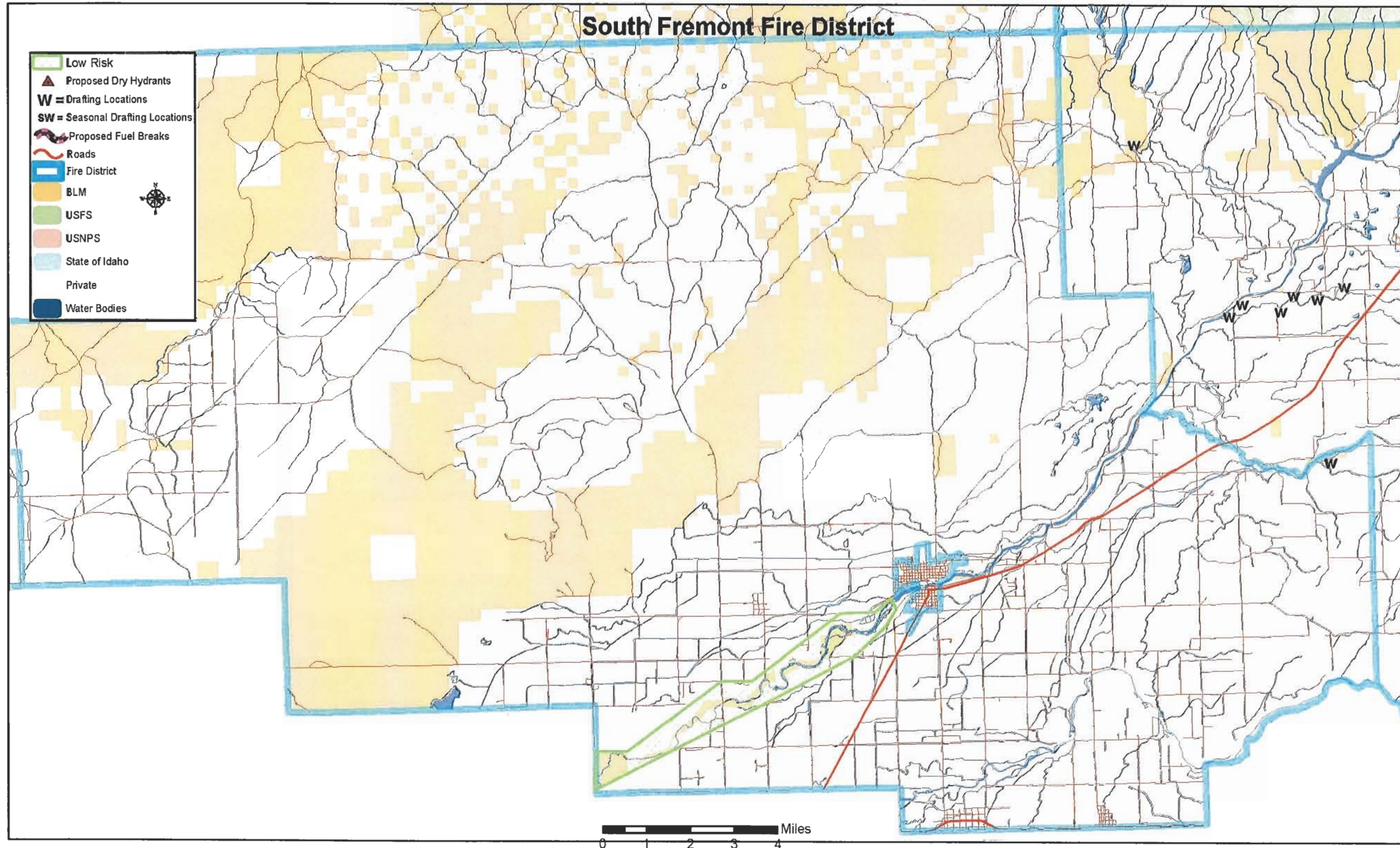


Figure 14: WUI Risk Areas, South Fremont Fire District



## Henry's Lake

A Wildland-Urban Interface Communities-at-Risk Hazard and Mitigation Assessments for Henry's Lake area was completed earlier (North Wind, Inc., 2003) addressing 38 specific subdivisions and parcel clusters. The areas were assessed in late summer early fall 2003 during high wildland fire potential. Figure 12 compares two general areas within Henry's Lake over different seasons and years.

The mitigation assessment identified over 2,000 permitted lots within the 38 subdivisions. Of these, approximately 600 are developed. Nearly all the structures present were constructed of wood and, with only a few exceptions, had metal roofs. A-frame type structures that have shake roofs were reported to be in areas of heaviest fuels with no defensible space. Subdivision roads were maintained to some degree, however many were narrow with dead ends, no turnouts for large fire fighting apparatus or passing lanes for evacuation during suppression actions. There are ongoing efforts on the Caribou-Targhee Forest to implement fuels treatments on federal lands adjacent to subdivisions within the Henry's Lake and Island Park assessment areas.



**Figure 15: Henry's Lake area in late Summer 2003 and Spring 2004.**

### Fuel Modification – Island Park

Twenty-six subdivisions representing 1,750 structures were assessed during June 2004. The majority of the subdivisions are in areas of heavy grass and sagebrush adjacent to moderate to dense conifer stands of various ages. Nearly all of the subdivisions in the Island Park area will benefit from firebreaks and fuel treatments. Some bridges (Figure 16) do not meet weight limits for fire fighting apparatus. Many subdivision roads are narrow (Figure 17), steep and not maintained (Figure 18), with no turnouts for large fire fighting apparatus or passing lanes for evacuation during suppression actions. Winter water availability for fighting structural fires is limited.

### Private Land – Fuel Breaks

On private land, the simplest and least expensive method of controlling fuels involves creating fuel breaks along or adjacent to an existing road (Figure 1) and defensible space (Table 18 – Mitigation Summary; Environmental Effects; and, Table 35 – Homeowners checklist). The size of fuel breaks required and associated costs to construct these fuel breaks will vary, depending on hazardous fuels present, distance to transport construction equipment, and actual dimensions of fuel break. Fuel breaks usually require mowing of herbaceous cover or using a brush hog or similar implement to remove shrubs and small trees. Mowing grasses along or adjacent to roads and within the right-of-way should be planned in spring or early summer before the grass cures. Tree and brush removal can be done year-round although there is limited access to many areas during the winter.

Because of limited experience and limited finances at the County level, fuel breaks would be most effective if actions are undertaken in cooperation with State and Federal agencies. In addition, as much of the proposed fuel break would be on State or Federal lands the respective agencies will likely determine the method used for fuels reduction.

### **Public Land – Fuel Breaks**

The Ashton/Island Park Ranger District of the Caribou-Targhee National Forest has implemented a hazardous fuels reduction project that is expected to continue through 2005. The project includes but is not limited to: 1) thinning of small diameter noncommercial size trees out 200 feet from the edge of a subdivision boundary, 2) hand piling of these trees and other slash followed by burning, 3) thinning an additional 300 feet with no slash piles, 3) public firewood gathering, 4) removal of fuels by private contractors, 5) commercial timber sales, and 6) prescribed burning where safe and at minimal risk to private property.

### **Dry Hydrant and Drafting Locations**

There is a need to install dry hydrants and/or drafting areas for engines and tenders designated sites (Table 18, no. 8 – Mitigation summary, and Environmental Effects). For additional information see *Planning for Water Supply and Distribution in the Wildland/Urban Interface* (2004).

### **Upgrade Bridges and culverts**

Bridges and culverts need to be upgraded to support the weight of the heaviest fire-fighting apparatus used within the fire district (Table 18 – Mitigation Summary).

### **Fire Extinguishers**

Fire extinguishers (Figure 20) and portable pumps are provided at the North Fork Summer Home as well as individual fire extinguishers in every house and other outbuildings. This is a positive mitigation effort.

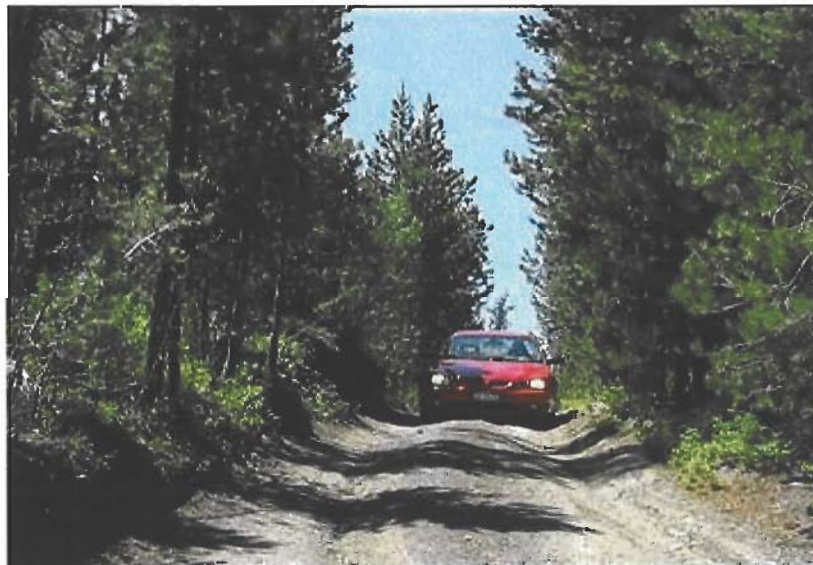
### **Defensible Space**

Figures 21 and 22 show homes within Shotgun Village, that have no defensible space, exposed propane tanks and wooden roofs located in an old growth forest (see Table 18. Mitigation Summary, #2).

**Figure 16: A Moose Creek bridge between Henderson Estates and Moose Creek SHA.**



**Figure 17: Narrow road in Elk Run Estates.**



**Figure 18: Steep and not maintained road within the Island Park Complex.**

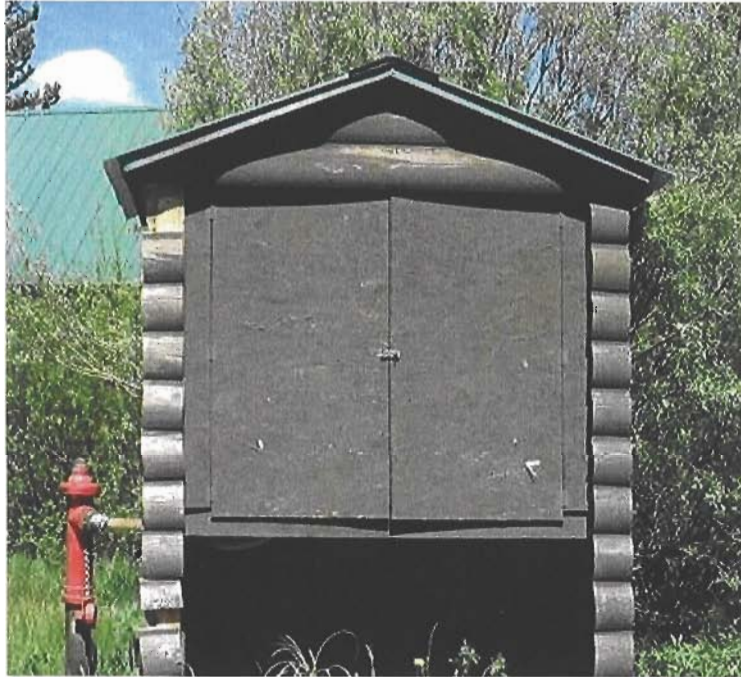


**Figure 19: Suitable fuel break between improved property and WUI (south border of Silverhawk SD).**

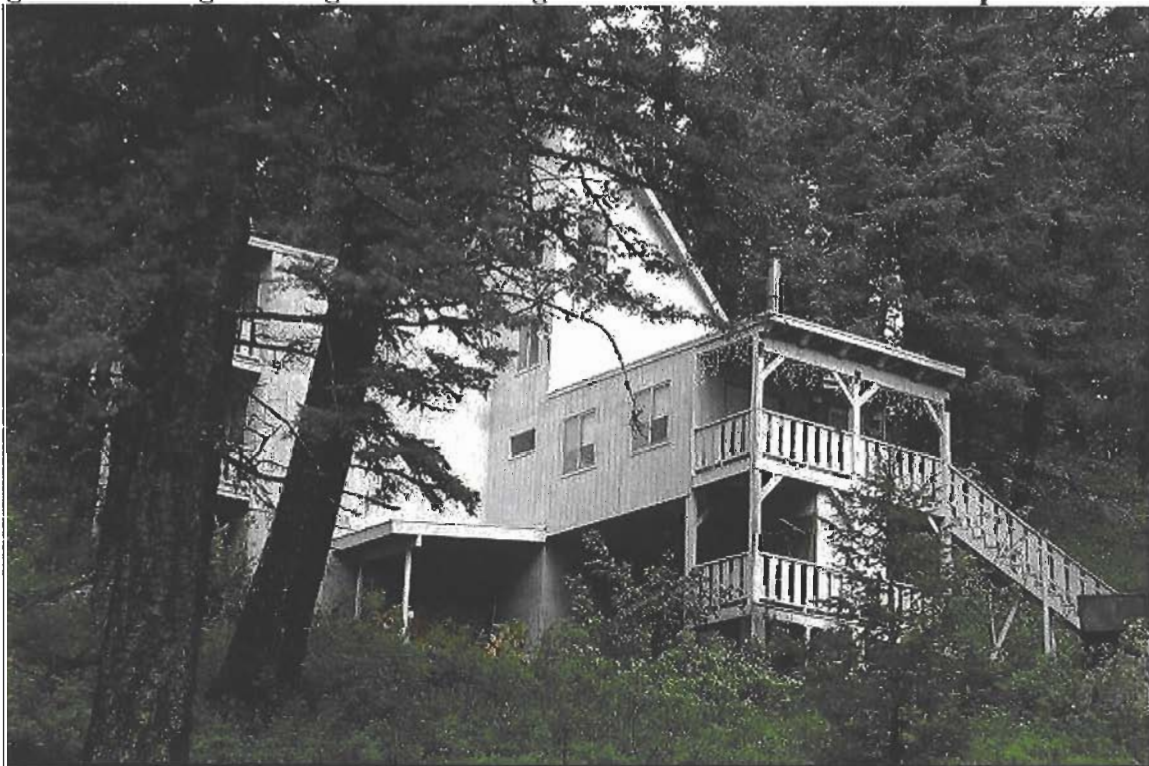




**Figure 20: Fire extinguisher and hydrant near North Fork Clubhouse.**



**Figure 21: Shotgun Village home in old growth forest and no defensible space.**



**Figure 22: Shotgun Village showing A-frame home with wooden shingles, exposed propane tank and no defensible space.**



**Fuels Mitigation for Island Fire District**

**ISLAND PARK FIRE DISTRICT EXISTING NEEDS AND COSTS**

**Table 19:** Island Park Fire District Existing Needs: Capital Expenses.

<b>Needs</b>	<b>Costs</b>
1,000 gallon replacement tank on pumper	\$20,000
Wildland Light Rapid Attack pumper	\$250,000
Rescue/Extradition Truck	\$200,000
SCBA (10 each @\$5,000 each)	\$50,000

**Table 20:** Island Park Fire District Existing Needs: Training and Certification.

<b>Needs</b>	<b>Costs</b>
Projector and screen for Power Point Presentations	\$2,500
Power Point Software	\$500

**Table 21:** Island Park Fire District Existing Needs: Communication.

<b>Needs</b>	<b>Costs</b>
Upgrade Hand-held Radios (25 radios @ \$900 each)	\$22,500

**Table 22:** Island Park Fire District Existing Needs: Prevention and Inspection.

<b>Needs</b>	<b>Costs</b>
Prevention hand out materials	\$1,500

**Table 23:** Island Park Fire District Existing Needs: Public Education.

<b>Needs</b>	<b>Costs</b>
FireWise Program	\$10,000
Fire Danger Rating Signs along Highways at: <ul style="list-style-type: none"><li>• Reynolds Pass</li><li>• Targhee Pass</li><li>• Ashton Hill</li></ul>	\$7,500

### **Fuels Mitigation for North Fremont Fire District**

#### **Private Land – Fuel Breaks**

There is a need to create a fuel break adjacent to the Potpourii Subdivision (Figure 2) as well as defensible space within this subdivision. (Table 18 – Mitigation summary, Environmental Effects, and Table 35 – Homeowners checklist).

#### **Conservation Reserve Program (CRP)**

There is an estimated 30,000 acres of CRP land within this fire district with an estimated 7,300 of these acres designated as State Priority area or occupied habitat for sharptailed grouse (personal communication, Dennis Aslett, IDFG, 2004). Fuel treatments are recommended for the State Priority area and are identified in Table 18 – Mitigation Summary, no. 3.

#### **Dry Hydrant and Drafting Locations**

Dry hydrant locations and seasonal/permanent drafting areas are shown in n Figure 2 and Table 17, no. 8 – Mitigation summary, and Environmental Effects. For additional information see *Planning for Water Supply and Distribution in the Wildland/Urban Interface* (2004).

**Figure 23: Narrow road in Potpourri SD with no turn outs for fire fighting apparatus.**



**Figure 24: Road with potential for fuel break on south boundary of Potpourri subdivision.**



**Figure 25: Home in Potpourri Subdivision showing no defensible space.**



## NORTH FREMONT FIRE DISTRICT EXISTING NEEDS AND COSTS

**Table 24:** North Fremont Fire District Existing Needs: Capital Expenses.

Needs	Costs
Tender Truck	\$200,000
Light or Rapid Attack Pumper	\$250,000

**Table 25:** North Fremont Fire District Existing Needs: Training and Certification.

Needs	Costs
Videos, Computer-based Training Modules	\$5,000
New Editions of IFSTA Training Materials, Manuals and Workbooks, Videos (\$40 each). Need 24.	\$960
Improved Training Resources: Department computer and Projection System for Power Point Presentations	\$7,000
Complete and Review Current S.O.G.s	\$2,000

**Table 26:** North Fremont Fire District Existing Needs: Communication.

Needs	Costs
Update Hand-held Radios	\$900 each

**Table 27:** North Fremont Fire District Existing Needs: Prevention and Inspection.

Needs	Costs
Fire Code Enforcement Training	\$2,000
Grants for Training	\$2,000
Materials for Training and Enforcement	\$5,000
County Adoption of Codes	

**Table 28:** North Fremont Fire District Existing Needs: Public Education.

Needs	Costs
Large Media Program for Local Areas on Safety and Prevention before the Fire Season Commences (FireWise Program).	\$50,000

### Fuels Mitigation for South Fremont Fire District

There are no hazardous fuels between improved property and defined boundary (Wildland-Urban Interface). The Henrys Fork and associated canals provide natural fuel breaks for most subdivisions. In addition, productive agriculture lands buffer subdivisions in this fire district. In some cases, weed infested, stubble and fallow fields occur near subdivisions presenting the greatest fuel hazard to structures.

It is recommended that homeowners remove fuels between the edge of roads and fence lines parallel to their subdivisions and implement additional mitigation shown in Table 18 – Mitigation Summary, no. 2.

**SOUTH FREMONT FIRE DISTRICT EXISTING NEEDS AND COSTS**

**Table 29: South Fremont Fire District Existing Needs: Capital Expenses.**

Needs	Costs
None identified.	

**Table 30: South Fremont Fire District Existing Needs: Training and Certification.**

Needs	Costs
Videos and Computer-based Training Modules	\$7,500
Current IFSTA Student Manuals and Workbooks (\$40.00 each, 25 needed)	\$1,000
Certified Local Courses	
Subsidized Training	

**Table 31: South Fremont Fire District Existing Needs: Communication.**

Needs	Costs
New Repeater	\$5,500
Upgrade Radios to Current System (\$900.00 each, 25 needed)	\$22,500

**Table 32: South Fremont Fire District Existing Needs: Prevention and Inspection.**

Needs	Costs
Fire Code Regulation Enforcement Capacity	
Fire Cause and Origin Investigations	

**Table 33: South Fremont Fire District Existing Needs: Public Education.**

Needs	Costs
Complete FIREWISE Program	\$50,000
Prepackaged Presentations	
Grants for Handout Materials	
Training on Public Speaking for District Members	

## 6.0 ENVIRONMENTAL EFFECTS

### Weed Establishment

Idaho has hundreds of weed species, however, only 36 are designated noxious by Idaho law (Prather et al. 2002). The word “noxious” simply means deleterious, and all listed weeds are deleterious by definition. The following mitigation pertains to all of Fremont County.

Confirmed sitings of the following noxious weeds have been identified in Fremont County (Prather et al. 2002): Black henbane (*Hyoscyamus niger*), Canada thistle (*Cirsium arvense*), musk thistle (*Carduus nutans*), leafy spurge (*Euphorbia esula*), purple loosestrife (*Lythrum salicaria*) and yellow toadflax (*Linaria vulgaris*). Some species, such as downy brome (cheatgrass) (*Bromus tectorum*), are not listed as noxious but do impact the environment. Cheatgrass has increased the extent and frequency of wildland fires in the Great Basin and Upper Columbia River Basin with significant impacts in natural and fiscal resources (Billings 1994).

### BEFORE CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Survey and map invasive and noxious weeds occurring on site scheduled for construction. Determine infestation size and control weeds with appropriate methods (Table 34). Use a State-certified pesticide applicator for specific recommendations and chemical treatment. Train equipment operator on weed issues prior to start date. This training should include:

- Consequences of disturbance.
- Methods of prevention including cleaning equipment.
- Identification of problem plants in the immediate area.
- What to do when an invasive or noxious weed is sighted.

Decontaminate vehicles and equipment entering construction site to remove weed seeds and other propagules.

- Inspect equipment before entering project area.
- Wash equipment (if possible) to remove all plant parts including seeds and root.
- Prevent equipment from leaving site until inspections have been preformed.

Minimize soil disturbance.

### DURING CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Control all infestations on construction site (Table 34).

- Consult State-certified pesticide applicator.

Minimize and control vehicular traffic entering and exiting construction site, especially those within the decontamination boundaries.

- Decontaminate vehicles, equipment, and personnel.
  - Wash (if possible) equipment to remove all plant parts.
  - Inspect vehicles, equipment, and clothing.



Take precautions to prevent the spread of weeds.

- Avoid entering areas infested with weeds.

Minimize soil disturbance.

- Restrict vehicles to specified pathways.

Conduct surveys of project area every two weeks during the growing season (April - October) to confirm weed free status or identify new weed infestations.

#### AFTER CONSTRUCTION OF FUEL BREAKS, MOWING, DISKING OR OTHER DISTURBANCE

Decontaminate all outgoing equipment before permitting them to leave.

Survey all disturbed areas, adjacent areas, and destination areas for noxious weeds.

- Map infestations, critical sites, and sensitive areas.
- Treat weeds with appropriate method in a timely fashion (Table 34).
  - Use a State-certified pesticide applicator for specific recommendations.

Establish native perennial vegetation in all disturbed areas and monitor for emergence of non-native species.

Continue to monitor construction site and treat infestations until weeds no longer appear or are controlled equal to or better than before the commencement of the project.

Document all monitoring and treatment of noxious weeds.

**Table 34:** Simplified Weed Treatments.

<b>Weed Species</b>	<b>Infestation Size</b>	<b>Likely Treatment</b>
Black Henbane (Hyoscyamus niger)	Single Plant *Patch (Or multiple plants) *Large Infestation	Pull/Grub Chemical Chemical
Canada Thistle (Cirsium arvense)	Single Plant Patch (Or multiple plants) Large Infestation	Chop/Mow Chemical Chemical, Combo
Musk Thistle (Carduus nutans)	Single Plant Patch (Or multiple plants) Large Infestation	Pull/Grub Chemical Biological, Chemical
Leafy Spurge (Euphorbia esula)	Single Plant Patch (Or multiple plants) Large Infestation	Chemical Graze, Chemical Graze, Combo
Purple Loosestrife (Lythrum salicaria)	Single Plant Patch (Or multiple plants) Large Infestation	Pull/Grub Chemical Biological, Chemical
Yellow Toadflax (Linaria vulgaris)	Single Plant Patch (Or multiple plants) Large Infestation	Chemical Chemical Biological, Chemical
Cheat Grass (Bromus tectorum)	Single Plant Patch (Or multiple plants) Large Infestation	Does not apply Chemical, Graze Chemical, Graze, Combo

\*Patch is denoted as a monoculture up to ¼ acre or irregular distribution up to an acre.

A large infestation is a monoculture over ¼ acre or irregular distribution over an acre or more.

## Soil Erosion

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

## Construction of Dry Hydrants

Environmental Effects to be considered: (1) Potential impact to riparian landowner. Is a land use agreement between the landowner and the Fire District required? Is a permit for a dry hydrant required by the state or a federal agency? If so, can the application for the permit be obtained at the county level? (2) Suitable hydrant location requiring certain water depth, composition of streambed or lake bottom, ease of digging, protection of hydrant during winter. Does this location pose a threat to terrestrial or aquatic wildlife species? Will the location survive winter temperatures?

Dry hydrant installation cost is estimated at \$750 to \$1,000 per hydrant including contractor labor and machine costs, 6-inch schedule 40 PVC pipe, a commercially made screen, and hydrant connector (Pohlman et al. 2003).

## Restoration Guidelines Following a Wildland Fire

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

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

- Fill in deep and wide fire containment lines
- Waterbar newly created roads or containment lines, as necessary, to prevent erosion
- Install sediment controls to prevent sedimentation of waterways
- Restore all fire staging areas with native seed mixes approved by BLM, NRCS, or other local experts

- Control all noxious weed invasions
- Evaluate the necessity to revegetate all or portions of the burn or areas impacted by fire suppression activities using native species by broadcast seeding, drilling, containerized stock or wildlings
- Encourage the use of plant stock from local collections of site-adapted stock
- Base decision to revegetate an area on inventories of affected areas for natural recovery that approaches pre-fire densities of native species
- Preclude off-road vehicle use in burned area for at least two growing seasons
- Continue monitoring until restoration is complete
- Conduct surveys of burned areas to assess damage to cultural resources.

## **7.0 FIRE PREVENTION PROGRAMS – PUBLIC EDUCATION**

### FIREWISE – A Community-wide Outreach Program

The National Wildfire Coordinating Group (NWCG) sponsors the FIREWISE Program. Members of the NWCG are responsible for wildland fire management in the United States and are represented by the USDA-Forest Service, the Department of Interior, the National Association of State Foresters, the U.S. Fire Administration and the National Fire Protection Association. FIREWISE promotes fire wise practices by 1) educating the public of the dangers of a wildfire in the area, 2) encouraging residents to take responsibility in reducing the risk of a wildfire and to create defensible space around their residence, and 3) increasing awareness of the natural role of low-intensity fires and the benefits of prescribed burning or occasionally managing natural wildland fires to achieve ecological benefits while maintaining firefighter and public safety as top priority. The estimated cost is \$10,000.00 per program.

### A Checklist for Homeowners

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

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

**Table 35: A Checklist for Homeowners.**

<b>Fremont County Homeowners</b>
<b>Do you know your wildfire risk?</b>
<p>Learn about the history of wildfire in your area, local fire laws and building codes and protection measures. This information is available from but no limited to: 1) Shoshone District BLM office, 2) Fire District office , 3) county offices and, Fire Districts adjoining Fremont County.</p> <p>Consider having a professional inspect your property and offer recommendations for reducing the wildfire risk.</p> <p>Determine your Fire District's ability to respond to a wildfire.</p> <ul style="list-style-type: none"> <li>• Are ingress and egress roads to your property clearly marked?</li> <li>• Are the roads wide enough to allow passage by firefighting equipment?</li> <li>• Can the Fire District find your house (house no., grid location)?</li> </ul>
<b>What should I do if a wildfire threatens my neighborhood?</b>
<ul style="list-style-type: none"> <li>• Contact the fire department or district fire warden immediately</li> <li>• Close all windows, doors and other openings to the outside to prevent sparks from blowing inside</li> <li>• Locate family members and pets</li> <li>• Wear non-flammable cotton or wool clothing</li> <li>• If you have time, wet down the roof and the area adjacent to the house</li> </ul>
<b>Do you have an evaluation plan for your family?</b>
<p>Plan several alternate routes for family members in the event wildland or a structural fire.</p> <ul style="list-style-type: none"> <li>• Establish where young family members will immediately go in the event of a fire and in the absence of adult supervision.</li> <li>• Establish "staging areas" for family members and/or community/subdivision members in the event normal evaluation routes become blocked, especially if the ingress and egress road is limited, that is, one road in, one road out</li> <li>• Prepare your vehicle for evacuation.</li> </ul>
<b>Should I create 'survivable space' around my home?</b>
<p>Create a 30-foot safety zone around the house.</p> <ul style="list-style-type: none"> <li>• Keep volume of vegetation in this zone to a minimum. If you live on a hill, extend this zone on the downhill side. The steeper the slope, the more open space you will need to protect your home.</li> <li>• Remove vines from the walls of the house</li> <li>• Move shrubs and other landscaping away from the sides of the house</li> <li>• Prune branches and shrubs within 15 feet of chimneys and stove pipes</li> <li>• Remove tree limbs within 15 feet of the ground</li> <li>• Thin a 15-foot space between tree crowns</li> <li>• Replace highly flammable vegetation (e.g., juniper, sagebrush, pine) with lower growing, less flammable species</li> <li>• Replace vegetation that has living or dead branches from the ground-level up (these act as ladder fuels for the approaching fire).</li> <li>• Keep lawns mowed frequently</li> <li>• Clear all areas of leaves, brush, dead limbs and fallen trees.</li> </ul> <p>Create a second zone at least 100 feet around the house.</p> <p>This zone should begin about 30 feet from the house and extend to at least 100 feet</p> <ul style="list-style-type: none"> <li>• Reduce or replace as much of the most flammable vegetation as possible. If you live on a hill, you may need to extend the zone for several hundred feet to provide the desired level of safety.</li> </ul>
<b>When selecting landscaping materials, how do I make the right choices?</b>
<p>Choose plants that are acclimated to your area of the country. Avoid resinous varieties and look for those with a high amount of moisture in their leaves. Note that deciduous trees are generally less flammable than coniferous ones. Check with your State Foresters office, or with your extension agent because some areas of the country have regional plant lists available. A healthy, well-maintained landscape is very important, so:</p> <ul style="list-style-type: none"> <li>• Space plants carefully</li> <li>• Prune them regularly</li> <li>• Remove dead leaves and other litter from around trees, shrubs and vines</li> <li>• Provide the landscape with sufficient moisture.</li> </ul>
<b>Are combustible materials away from the house?</b>
<p>Stack firewood 100 feet away and uphill from the house. Keep gas grills and propane tanks at least 15 feet from the house.</p>
<b>Are porches enclosed underneath?</b>
<p>Any porch, balcony or overhang with exposed space underneath is fuel for an approaching fire. Overhangs ignite easily by flying embers and by the heat and fire that gets trapped underneath. If vegetation is allowed to grow underneath or if the space is used for storage, the hazard is increased significantly.</p> <ul style="list-style-type: none"> <li>• Clear all flammable materials away from underneath sun decks and porches.</li> <li>• Extend ½-inch mesh screen from all overhangs down to the ground.</li> <li>• Enclose wooden stilts with non-combustible material such as concrete, brick, rock, stucco or metal.</li> <li>• Use non-combustible or fire-resistant materials for new porch or sun deck construction. If possible, build the structure to the ground so that there is no space underneath.</li> </ul>
<b>Are eaves and overhangs enclosed?</b>

Are house vents covered with wire mesh?
Is the roof constructed of non-flammable materials?
The roof is especially vulnerable in a wildfire because firebrands and flaming debris can travel great distances, land on your roof, and start a new fire. <ul style="list-style-type: none"> <li>• Avoid flammable roofing materials such as wood, shake and shingle.</li> <li>• Use fire resistant materials such as single-ply membranes, fiberglass shingles, slate, metal, and clay and concrete tile.</li> <li>• Keep gutters clean of debris.</li> </ul>
My wood-shake roof was treated with fire retardant some years ago. How can I tell if retardant needs to be reapplied?
Chop a small piece of wood from the edge of one of the shakes and hold a lighted match under it. If the shake ignites, roof retardant needs to be reapplied.
Are chimneys and stovepipes covered with spark arrestors?
Install spark arrestors on all chimneys, stovepipes and vents for fuel-burning heaters. Check with the Fire District for spark arrestor specifications <ul style="list-style-type: none"> <li>• Use non-combustible or fire-resistant materials for new chimney construction and follow chimney-building specifications.</li> </ul>
Is the house siding fire resistant?
Use fire-resistant materials in the siding of your home, such as stucco, metal, brick, cement shingles, concrete and rock. Existing wood siding can be treated with UL-approved fire retardant chemicals (not a permanent fix).
Have windows been treated to reduce the risk?
Windows allow radiant heat to pass through and ignite combustible materials inside. Dual-or triple-pane thermal glass, and fire resistant shutters or drapes, help reduce the wildfire risk. <ul style="list-style-type: none"> <li>• Close shutters or drapes while away from home to prevent the ignition of combustible materials and to keep home warmer in the winter and cooler in the summer.</li> </ul>

### Web Sites for Homeowners

FIREWISE programs - <http://www.firewise.org/>

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

FireWars/NOVA - [http://www.pbs.org/wgbh/nova/teachers/programs/2908\\_fire.html](http://www.pbs.org/wgbh/nova/teachers/programs/2908_fire.html)

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

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

Living with Fire - [http://www.fs.fed.us/rm/fire\\_game/](http://www.fs.fed.us/rm/fire_game/)

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

Smokey Bear - <http://www.smokeybear.com/>

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

Woods on Fire - National Institute for Science Education and the National Science Foundation - [http://whyfiles.news.wisc.edu/018forest\\_fire/index.html](http://whyfiles.news.wisc.edu/018forest_fire/index.html)

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### **Personnel Contacted**

Bill Forbush	Chairman, Fremont County Commissioners
Donald Trupp	Fremont County Commissioner
John Hess	Fremont County Commissioner
Gordon Smith	Former Fremont County Commissioner
Abbie Mace	Fremont County Clerk
Karen Lords	Fremont County Planning and Building
Jim Cox	US Forest Service, Caribou-Targhee
Ken Strandberg	Fire Chief, Island Park Fire District
Mike Shell	Assistant Fire Chief, Island Park Fire District
John Grube	Fire Chief, North Fremont Fire District
Dave Fausett	Fire Chief, South Fremont Fire District
Kevin Conran	Fire Mitigation and Education Specialist, BLM
Steve Smart	High Country RC&D Council
Kathy Hammonds	Community Solutions



## **Process Used to Develop the Wildland Fire Hazard Mitigation Plan**

An Agreement was made between Fremont County and North Wind, Inc. to provide a Wildland Fire Hazard Mitigation Plan for Fremont County. This plan involved the County Commissioners, Fire District Chiefs, and other local officials.

The scope of work included:

- Collecting and compiling existing fire information from County, State, and/or Federal land management agencies.
- Identify any data gaps and collect field information.
- Assess problems, needs, and potential solutions through interview with Fire District personnel as well as elected county officials.
- Assess problems, needs, and potential solutions by 1) receiving input from the general public through a minimum of three (3) public meetings.
- Create an individual Wildland Fire Hazard Mitigation Plan for Fremont County by completing the following:
  - Evaluate the data and information from the Hazard Assessment
  - Meet with Fire District personnel and elected officials
  - Hold (3) public meetings to discuss findings from the Hazard Assessment and receive input related to mitigation planning
  - The Wildland Fire Hazard Mitigation Plan will include the following items:
    - Recommended action or actions
    - Location of mitigation projects
    - Discussion of physical, biological, and social resources that may be affected
    - Alternatives that were considered
    - Time frame for implementation and priority of mitigation projects
    - Funding anticipated and potential sources
    - Implementation of the specific mitigation projects