

# CARBON COUNTY, MONTANA WILDFIRE PROTECTION PLAN



**AUGUST 2005**

**Chapter V. Carbon County Community Wildfire Protection Plan**

This plan is approved and adopted by:

  
\_\_\_\_\_  
Albert Brown, Commissioner-Chair

8-8-05  
Date

  
\_\_\_\_\_  
David Davidson, Commissioner

8-8-2005  
Date

  
\_\_\_\_\_  
John Prinkki, Commissioner

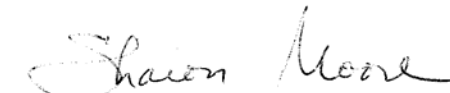
8-8-05  
Date

  
\_\_\_\_\_  
Darrell Krum, County Fire Warden

8-8-2005  
Date

  
\_\_\_\_\_  
Melvin Hoferer, Chair Carbon  
County Fire Council

8-11-05  
Date

  
\_\_\_\_\_  
Southern Land Office Area Manager  
Department of Natural Resources  
and Conservation

8-26-05  
Date

# **Wildland Urban Interface Community Assessment**

## **Executive Summary of Community Assessment**

The CWPP was developed simultaneously with the preparation of the county's Pre-disaster Mitigation Plan. The Steering Committee appointed by the county commission oversaw the preparation of both the fire and PDM aspects of the plan, but the specifics in the CWPP were developed by the members of the Carbon County Fire Council with research and writing assistance from the contractor, Beck Consulting.

Carbon County is located in south central Montana. The county encompasses 2,066 square miles of land ranging from 3,300 to 12,799 feet above sea level. Land is owned by private individuals, corporations, the state of Montana, and the federal government. Federal lands are managed by the Bureau of Land Management, the Carbon National Forest, the National Park Service, and the U.S. Fish and Wildlife Service. Five incorporated communities are located in the county, Bearcreek, Bridger, Fromberg, Joliet, and Red Lodge.

Three communities in the county were identified as Communities at Risk in the Federal Register (Volume 66, #160, August 17, 2001.) These communities were the unincorporated area of Belfry, the Town of Bridger, and the City of Red Lodge. A subsequent cooperative effort by the State Forester rated 14 "communities" in the county as medium (10) or high risk (4). The County Fire Council does not concur with the State Forester's rankings.

Fuel types vary from grasses, to sage brush, to scattered timber, to dense timber depending on aspect and elevation. There is tremendous variety in fuel types and fuel loading across the county. The most extreme situation with respect to fuel conditions and values at risk occurs south and west of Red Lodge where there are numerous high-value individual homes and subdivisions located in the wildland urban interface area in close proximity to the National Forest boundary.

Ignitions in the county are the result of both natural processes and human activity. Ignition sources include lightning, recreational activity, rural residences, vehicles, railroads, power lines, equipment, and escaped prescribed fire. The county has little history of arson activity. Climate and precipitation, terrain, winds, fuels, and access issues contribute to the wildland fire hazard in Carbon County.



## **Introduction**

This Community Wildfire Protection Plan was prepared as a part of Carbon County's pre-disaster mitigation plan to make the county more disaster-resistant. The CWPP sections of the overall plan address the intent of the National Fire Plan to have communities, in this case, the county, assess its current situation and based upon the assessment, develop and prioritize implementation actions to address risks and vulnerabilities. The plan simultaneously meets requirements for pre-disaster project funding and post-disaster assistance from the Federal Emergency Management Agency to assess risks and vulnerabilities, and identify locally-supported actions that can be taken to reduce the potential for loss and damage in the event of a natural disaster.

This plan is also consistent with national fire policy articulated in the National Fire Plan. The National Fire Plan (NFP) was developed in August 2000 "with the intent of actively responding to severe wildland fires and their impacts to communities while ensuring sufficient firefighting capacity for the future." ([www.fireplan.gov](http://www.fireplan.gov)) The NFP addresses five key areas: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. Federal agencies are directed in the plan to assist communities that have been or may be threatened by wildland fire. This assistance for Carbon County has been provided in the form of funding and assistance for education, planning, training, and equipping rural and volunteer firefighters.



Wildland Fire Awareness Billboard at Ft. Rockvale

The CWPP is the result of the participation of a wide variety of interests in the wildland fire issue at the local, county, state, and federal levels. The CWPP/PDM Steering Committee guided the development of the entire document, while the Carbon Fire Council guided the development of Chapter V containing the fire elements of the plan. Participants in the fire planning process included:

- Bearcreek Town Fire Department,
- Belfry RFD,
- Bridger Town and RFD,
- Edgar RFD,
- Fromberg RFD,
- Joliet Town and RFD,
- Red Lodge City and RFD,
- Roberts RFD,
- Roscoe RFD
- Whitehorse District (covered from Laurel),
- Carbon County Fire Warden
- Montana Department of Natural Resources and Conservation
- Bureau of Land Management
- Custer National Forest

A total of six meetings were held to prepare all aspects of the plan. Three meetings of the overall Steering Committee were held (in Red Lodge, Joliet, and Bridger), and three meetings of the Carbon Fire Council were held. The Fire Council meetings took place on October 21, 2004, in Bridger, on January 20, 2005, in Belfry, and on April 21, 2005, in Bearcreek.

In between the Fire Council meetings, the planning consultant conducted one-on-one interviews and had numerous conversations with participants to obtain input for both the assessment, and the mitigation goals and projects sections. Each meeting was noticed for the public, conducted according to an agenda, and documented through meeting notes and participant sign-in sheets. Copies of meeting outreach and documentation are found at the end of this chapter.

### **Area to be Evaluated**

The area evaluated in this assessment is Carbon County, Montana. The county has five incorporated communities and a number of unincorporated communities. The incorporated communities are the towns of Bear Creek, Bridger, Fromberg, and Joliet, and the City of Red Lodge. For more detailed information about the characteristics of Carbon County please refer to Chapter I of this plan.

## Historic Occurrences

The Montana Fire Warden's Office maintains records of fire responses by rural and municipal departments. Unfortunately reporting has been unreliable until the past 1-2 years and no information could be obtained from the state.

The newspaper account was located for the largest historic fire in recent memory. This fire occurred in 1948 in the main canyon of Rock Creek south of Red Lodge. The headline in the Carbon County News dated September 19, 1948 read "Disastrous Fire Burning in Red Lodge Canyon." The article went on to report that the fire started on September 13 and was caused by two careless fishermen. The fire was a reported 7,000 acres at press time. The majority of the upper canyon was burned including timber and cabins. The Richel Lodge and Lions Camp on the Lake Fork were endangered and smoke was drifting over the Beartooth Highway making driving difficult. On September 21, the News reported the fire was under control "after extensive damage."

The majority of the 275 federal fires contained in the Bureau of Land Management's data base for the years 1974-2002, were small fires. Most of the small fires were reported at .1-.2 acres each. The next most common fire size was 1-20 acres, with 61 fires. Fires between 21 and 100 acres numbered 11.

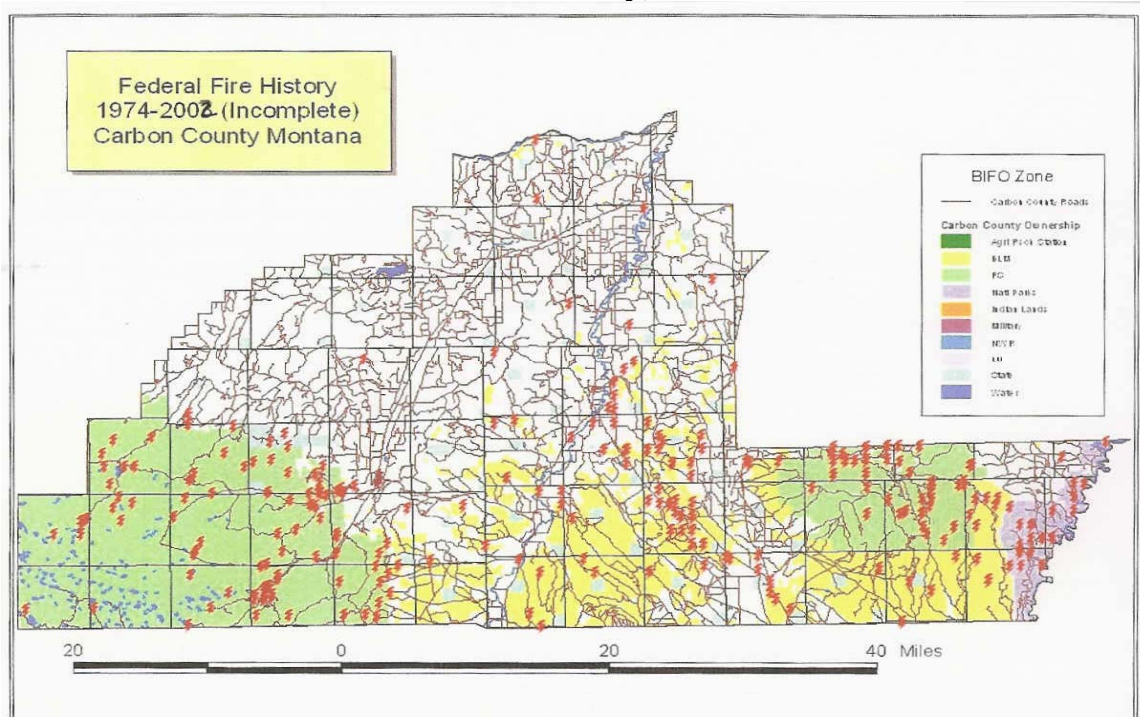
**Table 5.1. Fires on Federal Lands >100 Acres in Carbon County (1974-2004)**

<i>Name</i>	<i>Agency</i>	<i>Year</i>	<i>Size</i>	<i>Damage/Cost</i>
Red Waffle	BLM	2002	6,000 acres	
Sage	FS/BIA	2003	660 acres	
Cow Creek	Non-fed	2002		
Willie	FS	2000	1,503 acres	
Carbon County As.	BLM	1999	500 acres	
Gold Creek	BLM	1999	190 acres	
Parkside	FS	1998	133 acres	\$525,000(NCDC)
Shepherd Mountain	FS	1996	14,890 acres	
Hole in Rock	BIA	1996	200 acres	
Cabins	BIA	1996	430 acres	
Viaduct	BLM	1996	230 acres	
Crown Butte	BIA	1995	700 acres	
West Pryor	BLM	1995	1,800 acres	
Robertson Draw	BLM	1991	4,360 acres	
Bridger	BLM	1991	200 acres	
Unnamed	FS	1990	910 acres	
Again	BLM	1989	300 acres	
Clover/Mist	FS	1988	387,400 acres	
Log Creek	BLM	1988	220 acres	
Bowler	BLM	1983	650 acres	

Source: Custer National Forest, L. Osborne



## Federal Fire History, 1974-2002



Source: Eric Chapman, BLM

Fire regime condition class is a tool used to describe the departure of the current situation from the historic fire regime. There are three condition classes possible. The following table describes each class.

**Table 5.2. Fire Regime Condition Class**

<i>Class</i>	<i>Description</i>	<i>Potential Risks</i>
Condition Class 1	Within the natural range of variability of vegetation characteristics--fuel composition, severity, fire frequency, pattern.	Fire behavior, effects and other associated disturbances are similar to those that occurred prior to fire exclusion. Vegetation composition and structure are similar to the natural regime. Risk of loss of key ecosystem components such as native species, large trees, and soil are low.
CC2	Moderate departure from the natural historical regime of vegetation characteristics.	Fire behavior, effects, and other associated disturbances are moderately departed. Composition and structure of vegetation and fuel are moderately altered. Risk of loss of key ecosystem components is moderate.
CC3	High departure from the natural (Historical) regime of vegetation characteristics.	Fire behavior, effects, and other associated disturbances are highly departed (more or less severe.) Composition and structure of vegetation and fuel are highly altered. Risk of loss of key ecosystem components is high.

Source: Firelogistics, Inc.





Willie Fire South of Red Lodge, August 2000

## **Individual Community Assessments**

Carbon County has five incorporated communities, Bear Creek, Bridger, Fromberg, Joliet, and Red Lodge. Other areas of the county are recognized as communities although they may not be formally incorporated. These areas are Belfry, Edgar, and Roberts. Descriptions of the current situation and future development for each community were provided by the local fire chief during individual phone interviews.

### **Bear Creek**

#### **Current Situation**

Bearcreek is located near the south end of the county on Highway 308 between Red Lodge and Belfry. The town is one of Montana's smallest incorporated towns and the fire department was only recently established. The population of Bearcreek in the 2000 census was 83. The assets protected by the department include, residences, two commercial establishments--both restaurants located on the highway, and a Post Office.

The town is situated among hills and in a canyon. High winds, steep north and south facing hills, and flashy fuels (grass and sagebrush) surround the town. Average annual precipitation for the town area is 20-30 inches. Water for the town is obtained from a spring and water supply for fire suppression is a major concern. In addition, revenues for the department are less than \$2000 annually due to the small tax base. Equipment is 31 years old and the town has no wildland fire fighting equipment. The department has a very small population from which to draw volunteers. The community is protected by a volunteer department located in Bear Creek. Ignition risk within the community is low. (Source: Chief, Tim Ryan, December 14, 2004)

### **Future Development**

There have been a small number of new residences within the town boundaries in the past several years. No development has occurred outside the town limits and none is proposed at this time.

## **Belfry**

### **Current Situation**

Belfry is an unincorporated area situated in the south end of the county along the Clarks Fork River and at the intersection of Highways 72 and 308. Much of the area surrounding the community is irrigated agricultural land. Fuels in the area outside of the community and out of the river valley bottom are grasses and sagebrush. The river bottom has scattered cottonwoods and brush. Average annual precipitation for the Belfry area ranges from less than 6 to 8 inches.

Belfry RFD #9, located in Belfry, protects the community of Belfry which is primarily residential, rural residences, and the Elk Basin industrial area located south and east of Belfry. Elk Basin is an oil producing area that contains an Exxon tank battery.

Ignition concerns for this area of the county include lightning strikes in late summer when vegetation is dry, escaped fires from ditch burning by landowners in the spring, and starts along the highway. The risk of Ignition within the community is low. However, in areas outside the community risk of ignition is medium. (Source: Chief, Greg Maddox, December 22, 2004)

### **Future Development**

A large parcel of land south and west of Belfry was subdivided in 1972. The Grove Creek Major Subdivision was divided into 480 20-acre lots. Only one lot has been built upon to date, but many of the lots have sold. The subdivision was approved prior to the current subdivision regulation requirements for access and water sources. Fire protection for this subdivision will be a challenge because

the road up Robertson Draw switchbacks and ends in a cul-de-sac. Because access to the lots crosses lands owned by the Bureau of Land Management, the BLM is currently preparing an Environmental Impact Statement. It is hoped that through this action, fire protection needs can be considered. No other development has been proposed in the area.

## **Bridger**

### **Current Situation**

The incorporated town of Bridger is situated in the Clarks Fork Valley along Highway 72. The population of Bridger in the 2000 census was 745. Much of the immediate surrounding area is irrigated and in agricultural production. Where the area is not farmed near the town, the fuels are limited to grasses. Drought and wind conditions can contribute to increased severity of wildland fire. Average annual precipitation for the area is between 10 and 14 inches.

The volunteer department, located in Bridger, protects both the town and surrounding area. Within town, there is a furniture factory, a bulk fuel plant, restaurants, a commercial area, and residences. In addition to the town, the Bridger Department protects the bean elevator east of town, the Eagle Nest Estates Subdivision, the state fish hatchery in Blue Water Creek, rural residences, farm and ranch residences, outbuildings, and the airport. Risk of ignition within and immediately surrounding the community is low.

East of the area covered by the Bridger Department are lands that are not included in the coverage responsibility of any department. According to Chief Adkins, his department will respond when a fire is reported in this uncovered area. He reports that because there are few fires in this area it does not represent a major concern for him. (Source: Chief, Vern Adkins, January 18, 2005)

### **Future Development**

No future development has been proposed in this area.

## **Edgar**

### **Current Situation**

The Edgar RFD, a volunteer department located in Edgar, has protection responsibility for the unincorporated town of Edgar, rural structures, a fertilizer plant east of Edgar, and the Express Pipeline and pumping station. Edgar is situated on the Clarks Fork River and State Highway 310. According to Chief Wetstein, the town itself is well-protected from wildland fire by farm ground. With the exception of cottonwoods along the river bottom, there is not much timber in the district. Fuels consist of grasses and brush. In many areas the fuels have

accumulated due to the fact that lands are enrolled in the Conservation Reserve Program (CRP.) Except under emergency conditions, lands enrolled in CRP are not grazed or hayed. Average annual precipitation in Edgar is 10-14 inches.

Providing fire protection in many locations in the district is a challenge owing to the difficulty of finding physical access across open land with broken terrain. The department has also had difficulty recruiting adequate numbers of personnel. Risk of ignition within and surrounding the community is low. (Source: Chief, Dave Wetstein, December 21, 2004)

### **Future Development**

Edgar Acres, a proposed 5-lot major subdivision has addressed fire protection concerns by agreeing to install a cistern. No other development is proposed.

## **Fromberg**

### **Current Situation**

The Fromberg RFD, a volunteer department located in Fromberg, provides protection for the town of Fromberg, a grain elevator, and along the BNSF railroad tracks. The population of Fromberg in the 2000 census was 486. The town is situated along the Clarks Fork River and Highway 310. The town itself is protected from wildland fire by farm ground. Average annual precipitation is 10-14 inches. Access across some farm land is difficult due to irrigation ditches, pipelines, and saturated soils. Lands to the east and west of town that are out of the river bottom are rough, difficult to access, and contain light flammable fuels. The severity is enhanced by the constantly-blowing winds.

Of particular concern in this area of the county is the ditch, weed, and stubble burning done annually by landowners. Not all landowners are attentive to their burns and some escape. The railroad also is a source of ignitions in this district. Risk of ignition in the town of Fromberg is low. (Source: Chief, Gary Hart, December 13, 2004)

### **Future Development**

No future development has been proposed in the area.

## **Joliet**

### **Current Situation**

The protection responsibilities of the Joliet RFD include the incorporated town of Joliet (population 575 in 2000); the communities of Boyd, Rockvale, and Silesia; the Grill, Bridal Trails, and Evergreen Major Subdivisions, Klammerts Railroad Tie Yard, agricultural chemical operation and airstrip; residences along Rock

Creek, residences in scattered pines on the western edge of the county on Ortiz Lane, and the railroad tracks along the Clarks Fork.

The fuel situation in the district is mixed. Most of the subdivisions and communities are near green, irrigated cropland in the bottoms. Average annual precipitation in the general area is 10-14 inches. Development in the Ortiz Lane area near the Stillwater County line is situated in hills with scattered pine and no water available on site.



Scattered pine along Highway 421

The Grille Subdivision just west of Joliet is grassy, rolling hills with a few scattered pine trees. Poor access exists in the Shane Ridge area along Highway 421 between Joliet and Columbus and response time can be as long as 45 minutes. Shane Ridge is prone to lightning strikes. There is also poor access from Cooney Reservoir north to the Yellowstone River due to terrain and vegetation. Southwesterly winds can contribute to severity of fire behavior. Risk of ignition in and immediately surrounding the community is low. Risk of ignition in more distant areas of the protection district is medium.

The volunteer department has stations in Joliet and Silesia. One staff covers both stations. The department experiences a shortage of available personnel during daytime working hours. (Source: Chief, Melvin Hoferer, December 13, 2004)



## **Future Development**

No additional major subdivisions are currently proposed. Several of the subdivisions listed above have not yet been fully built out. Construction activity outside of these subdivisions seems to be limited to a small number of individual rural residences on larger parcels of land. The major subdivisions listed above were approved by the county relatively recently and do have fire protection requirements.

## **Red Lodge**

### **Current Situation**

The protection responsibilities for the combined Red Lodge City and Rural Department include the city of Red Lodge, the unincorporated town of Luther, Red Lodge Mountain Ski Area, Red Lodge's municipal water and sewer infrastructure and watershed, an airport, agricultural lands, numerous individual residences and major subdivisions south and west of Red Lodge along the Beartooth Front, and residences and subdivisions north of Red Lodge. The population of the city of Red Lodge in the 2000 census was 2,177. The department is all-volunteer with the exception of the chief's position which is paid part-time. The fire station is located at the north end of Red Lodge. One fire truck is stationed in the Luther area west of Red Lodge.

A number of factors increase the severity of wildland fire behavior in this area of the county. Steep south, east, and west-facing slopes and canyons with light, flammable fuels down low and dense mature lodgepole pine above provide the opportunity for high intensity fire with extreme fire behavior. The area frequently experiences strong winds. Typical summer weather patterns produce extended periods of high winds, high temperatures, low humidity, and no precipitation. Average annual precipitation in the area ranges from 18 to 30 inches. Because of the pattern of the National Forest boundary, there is a long distance of forest frontage with fuels varying from grass to heavy timber. There are a significant number of residential assets, some worth several millions of dollars located in these wildland urban interface areas to which access can be difficult and time consuming, and for which there are no water sources located in close proximity. The risk of ignition in the community is low. The risk of ignition outside of the community is high. (Source: Chief, Tom Kuntz, January 14, 2005)



## **Future Development**

The areas surrounding Red Lodge and along the Beartooth Front continue to be subdivided and attractive for development. Some of the existing subdivisions in the wildland urban interface area such as Tipi Village and Wapiti Valley have been almost fully built out while others will be many years until build-out, but lots have sold and some homes are under construction (Canyon View, Remington Ranch, Mountainbrook.) The local elk's club recently sold its long-time golf course at the base of the West Fork drainage. Although no plans have been announced to date, it is highly likely this parcel will be subdivided in the future due to the land and aesthetic values.



Looking east at rural residential development west of Red Lodge

Future subdivisions will be reviewed by the local fire chief and he/she will have the opportunity to provide recommendations to the county that can be incorporated into the requirements for plat approval. Past developers have been required to meet standards for access and make improvements such as ponds, underground tanks, and sprinkler systems, but the county has not routinely conducted post construction inspections to ensure that all of these conditions have been met. Furthermore, there is no requirement in place to maintain the improvements so that they are operational in the event of a structure or wildland fire or other disaster.

## **Roberts**

### **Current Situation**

The Roberts RFD, an all-volunteer force with a fire station located in Roberts, protects the unincorporated community of Roberts and surrounding agricultural

lands and rural residences. Roberts has residences, a small commercial district, a gas station, school, and fertilizer company. The district is responsible for providing fire protection for a total of 116 square miles. Additional developed areas and assets include Cooney State Park (recreational infrastructure and homes), the grain elevator at Fox, a gas pipeline, rural residences, agricultural lands, state sections, and BLM land (upon which the RFD assists the BLM.)

In general, fuels are light, fine and flashy in the district. On the east side of the district there is rocky, steep terrain along the Roberts-Bridger Road. Southeast of Roberts is the “big slide”, another steep area with broken terrain. A small amount of timber is scattered around the district. Scattered pine and sagebrush are found along Elbow Creek and at Cherry Springs. Wheat stubble is another fuel found in the district. Average annual precipitation in the area is 14 to 16 inches. Risk of ignition in the community is low. Risk of ignition in other areas of this district is medium.



Access across Rock Creek to Western Ranch Estates Subdivision

Some residences in the district take 20 minutes to reach and water supply is a problem in most areas of the district. Access is a severe problem with respect to two areas within the district. The bridges to reach Western Ranch Estates I and II are inadequate to hold the fire apparatus and access must be obtained across a pasture if physically possible. An additional residential area south of Roberts on the east side of Highway 212 also has access unable to accommodate fire apparatus. At this location, due to the terrain (against the base of the east

bench to the east and across Rock Creek to the west) there is no secondary means of access and the area is totally without fire protection.

Average real estate values are rising following a recent trend in the area towards larger, more expensive homes. The number of volunteers with the department is growing. The department actively recruits in the high school, is active during fire prevention week, and offers a scholarship. (Source: Department Secretary, Laurel Joki, Dec. 13, 2004)

## **Future Development**

A number of small major subdivisions have been proposed recently. These are located on the east bench and on the north shore of Cooney Reservoir, south of the Cooney store. Water availability and response times are issues associated with these proposed subdivisions. The department will have the opportunity to review the proposed developments and offer recommendations for fire protection to the county planning board. The county planning board has a strong record of requiring the developer to comply with the local fire chief's recommendations as a condition of plat approval.

## **Roscoe**

### **Current Situation**

Fire protection responsibility for the Roscoe Rural Fire District is contracted with the Absarokee Fire Department in Stillwater County. This area includes the unincorporated community of Roscoe, the Black Butte Subdivision, the private and state-owned lands north of the Forest Service boundary, and the upper end of Butcher Creek north of State Highway 307.

The East Rosebud drainage and the Alpine area within the Forest Service boundary, which includes homes around East Rosebud Lake, has no formal fire protection for structures. The Carbon National Forest has the primary wildland fire protection responsibility in this area under Affidavit Agreements with the various landowners. (Source: Darrell Kurk, DNRC)

Challenges in providing protection come from the steep terrain, poor access, and heavy fuels in the southern end of the district, the East Rosebud. There is only one road in and out and the road is rough. This district has wildland urban interface issues along the face of the Beartooth Front and National Forest boundary. According to the Chief, the homes in the interface are difficult to protect because they have difficult access and heavy fuels. By contrast, the Butcher Creek drainage fuels consist of grasses that are cropped by domestic livestock. Average annual precipitation in the area is 18 to 20 inches. Risk of ignition within Roscoe is low. Risk of ignition outside of the community is medium to high. (Source: Interview with Chief, John Noe, December 21, 2004)

## **Future Development**

The Black Butte subdivision is located along the East Rosebud Road and creek. The homes currently constructed in the subdivision are primarily seasonal. An additional nine lots have been proposed. The homes built on these lots are large structures located in the trees. They will be difficult to protect due to response time and siting issues. The developer has agreed to construct a pond which will hold 30,000 gallons of water to be available for fire protection. Many lots in the original subdivision have not yet been built upon.

## **Whitehorse**

### **Current Situation**

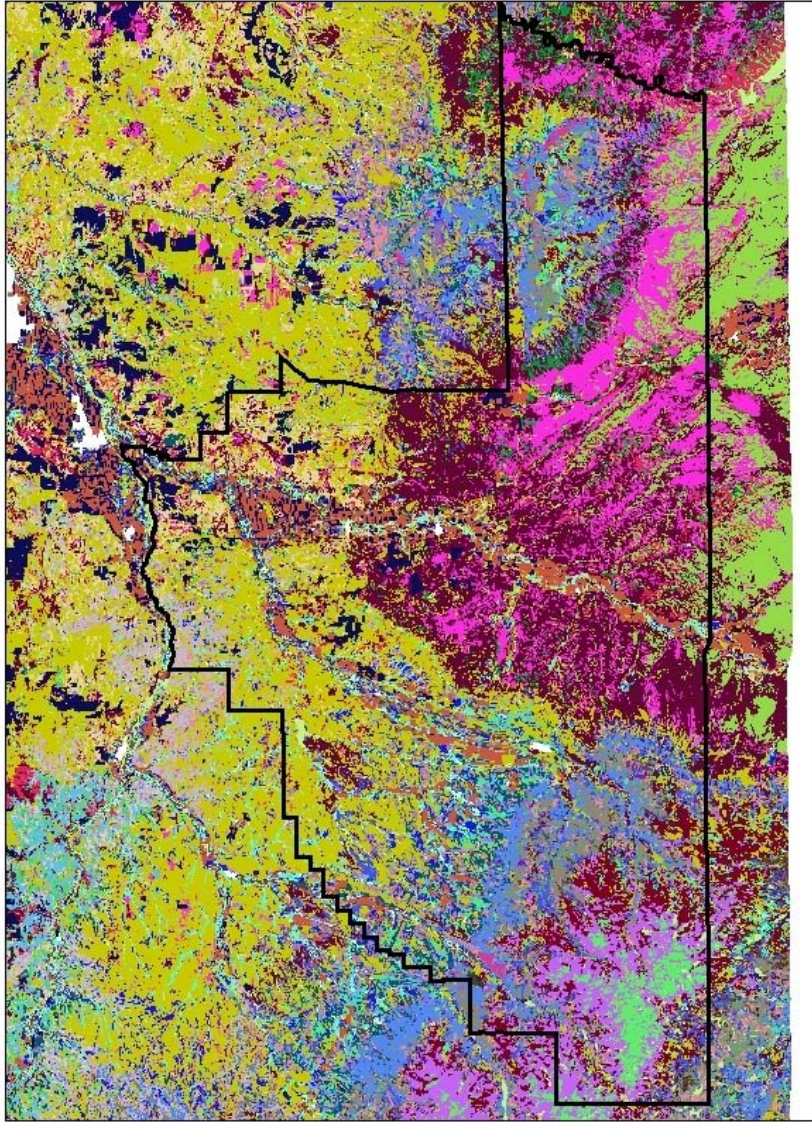
This district covers the extreme north end of the county and receives its protection by agreement from the City of Laurel. The department has 34 volunteers. The protection responsibility includes approximately 70-80 rural residences. Highway 212 carrying a large volume of traffic, and the BNSF railroad tracks pass through this protection district. The highway and railroad tracks are together responsible for a large number of fire department call outs. The district is bounded by the Clarks Fork River on the east and the Yellowstone River on the northwest.

The wildland fuels consist primarily of grasses and the terrain is relatively easy to access. Long-term drought conditions and high winds can increase the severity of wildland fire incidents in the district. Average annual precipitation in the area is 12-14 inches. Risk of ignition in this area is medium owing to the railroad and highway. (Source: Interview with Assistant Chief, Scott Wilm, Dec. 21, 2004)

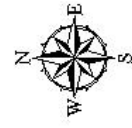
### **Future Development**

Two new major subdivisions have been proposed on Whitehorse Bench. Each of the developers has agreed to the installation of a 10,000 gallon tank. Because of the proximity of the area to Billings, the amount of undeveloped land, the general suitability of the land for development, and a proposed state highway improvement, more development can be anticipated in this area in the future. Major and minor subdivisions proposed in the future will be reviewed for compliance with the county subdivision regulations. The county subdivision regulations address the ability to provide fire protection.





- Legend**
- Urban or Reclaimed Lands
  - Agricultural Lands - Dry
  - Agricultural Lands - Irrigated
  - Alfalfa Herbaceous
  - Very Low Cover Grasslands
  - Low/Medium cover Grasslands
  - Medium/High Cover Grasslands
  - Moisture Parklands and Subalpine Meadows
  - Mixed Mesic Shrub
  - Mixed Xeric Shrub
  - Shrub Sage
  - Sagebrush
  - Sagebrush
  - Mesic Shrub-Grasslands Associations
  - Xeric Shrub-Grasslands Associations
  - Low Density Xeric Forest
  - Mixed Broadleaf Forests
  - Lodgepole Pine
  - Limber Pine
  - Ponderosa Pine
  - Douglas Fir
  - Rocky Mountain Juniper
  - Utah Juniper
  - Douglas Fir-Lodgepole Pine
  - Mixed Whitebark Pine Forests
  - Mixed Subalpine Pine Forests
  - Mixed Xeric Forests
  - Mixed Broadleaf and Conifer Forests
  - Barren/ Burn Forests
  - Water
  - Conifer Riparian
  - Broadleaf Riparian
  - Mixed Broadleaf and Conifer Riparian
  - Grassland and Forb Riparian
  - Shrub Riparian
  - Mixed Riparian
  - Rock
  - Mixed Open/Conifer Forest
  - Barren
  - Mixed Barren Sites
  - Alpine Meadows
  - Snowfields of Ice
  - Clouds
  - Cloud Shadows



# Carbon County

## Land Use Map

Stillwater County GIS  
 Land Use Info - NRIS\State Library  
 State Plane NAD 83, MT 2500  
 Not a survey-grade map

## Assessment of Fuel Hazard

### Vegetative Fuels

Carbon County reaches from 3,700 feet to nearly 13,000 feet in elevation. The variation produces significant diversity in vegetative cover, precipitation, topography, and land use.

The northern border of the county follows the Yellowstone River. These rough terrain breaks are difficult to access. Vegetation consists of grasses with scattered pine and brushy draws. Native vegetation is confined to the steep coulees. Moving to the south and away from the river, the topography becomes more moderate rolling hills that are more accessible, less timbered, and more likely to be in agricultural production.

The central area of the county is dominated by the Rock Creek and Clarks' Fork River Valley bottoms. Floodplain areas contain woody brush and cottonwoods. The major communities in the county are situated in these two valleys and largely insulated from catastrophic fire by surrounding agricultural lands. The grass fuels tend to be relatively sparse and short due to grazing so that fire spread would be limited unless significant winds were present. The combination of farming and stock grazing in the central portions of the county has led to a landscape that is generally low potential for wildfires.

Red Waffle Fire, Pryor Mountains, 2002



The Pryor Mountain Range comprises the eastern-most portion of the county. Elevations range from 4500 to 8800 feet above sea level. Vegetation varies with elevation and aspect but high elevation areas contain patches of dense Douglas fir and ponderosa pine with scattered pine and open meadows. Lower elevations are covered primarily with grass and sagebrush. Draws contain timber at higher elevations and brush down low. Many areas of the Pryor

Mountains are difficult to access. Much of the land is public (BLM and Park



Service) and therefore, does not have residences. The lands are used for domestic and wild horse pasture, recreation, minerals, and oil and gas production. The residences that do exist in the area on private land are mostly along the Sage Creek drainage. The potential for wildfires in the Pryor Range is significant although the values at risk are less than in other more densely-populated areas of the county.

The Beartooth Mountain Front lies in a band circling the southwest corner of the county. This area is covered in lodgepole pine stands that are 100-120 years old. This area is ripe for a wind-driven stand-replacing fire. A fire started in this area would be expected to produce large flame lengths that could loft fire brands a great distance. Numerous factors add to the complexity of the situation. First, there are many rural subdivisions and individual homes built against the front area, many of these without defensible space. Second, the area contains the Red Lodge Mountain Ski area (Carbon County's largest private employer.) Third, much of the area is not readily accessible, and there is only one road in and out of the West Fork drainage. Fourth, the West Fork is a steep-walled canyon creating conditions where rapid spread would be likely. Fifth, lightning activity can be high in the area. Sixth, evidence of the long-term drought is manifesting in the presence of stressed and dead trees. And, finally, there is a large amount of vehicle traffic, developed, and dispersed recreational activity during fire season. A stand-replacing fire in the West Fork of Rock Creek could have extremely disastrous consequences which could likely include loss of multiple human lives, not to mention large scale property and economic loss.

The extreme south central and south western portions of the county are comprised of higher elevation plateaus for the most part above timberline. The lands are publicly-owned and managed by the Forest Service. There are no residences in this area of the county. Fire starts in this area, however, could easily pose a threat to recreationists who happen to be in the area and down-canyon private and public assets such as residences, recreational developments, communications equipment on Grizzly Peak, and the Red Lodge Mountain ski area. The West Fork of Rock Creek provides one of three sources of water for the city of Red Lodge, and is the site of the municipal water treatment facility located in the creek bottom.

### **Structural Fuels**

With the exception of rural residences, for the most part, structural fuel hazards are located within or in close proximity to the various communities. The primary exceptions to this general rule include the structures at Red Lodge Mountain, the structures at the Timbercrest Girl Scout Camp west of Red Lodge, the structures at Westminster Spires Church Camp and Lions Camp south of Red Lodge, the Yellowstone Bighorn Research Association Camp, Klammerts Tie Yard south of Silesia, a large riding barn and arena east of Silesia, and the Blue Water State Fish Hatchery east of Bridger. None of these locations are involved in industrial

production. However, human activity at these sites whether it be recreation or commercial creates the potential for fire starts.

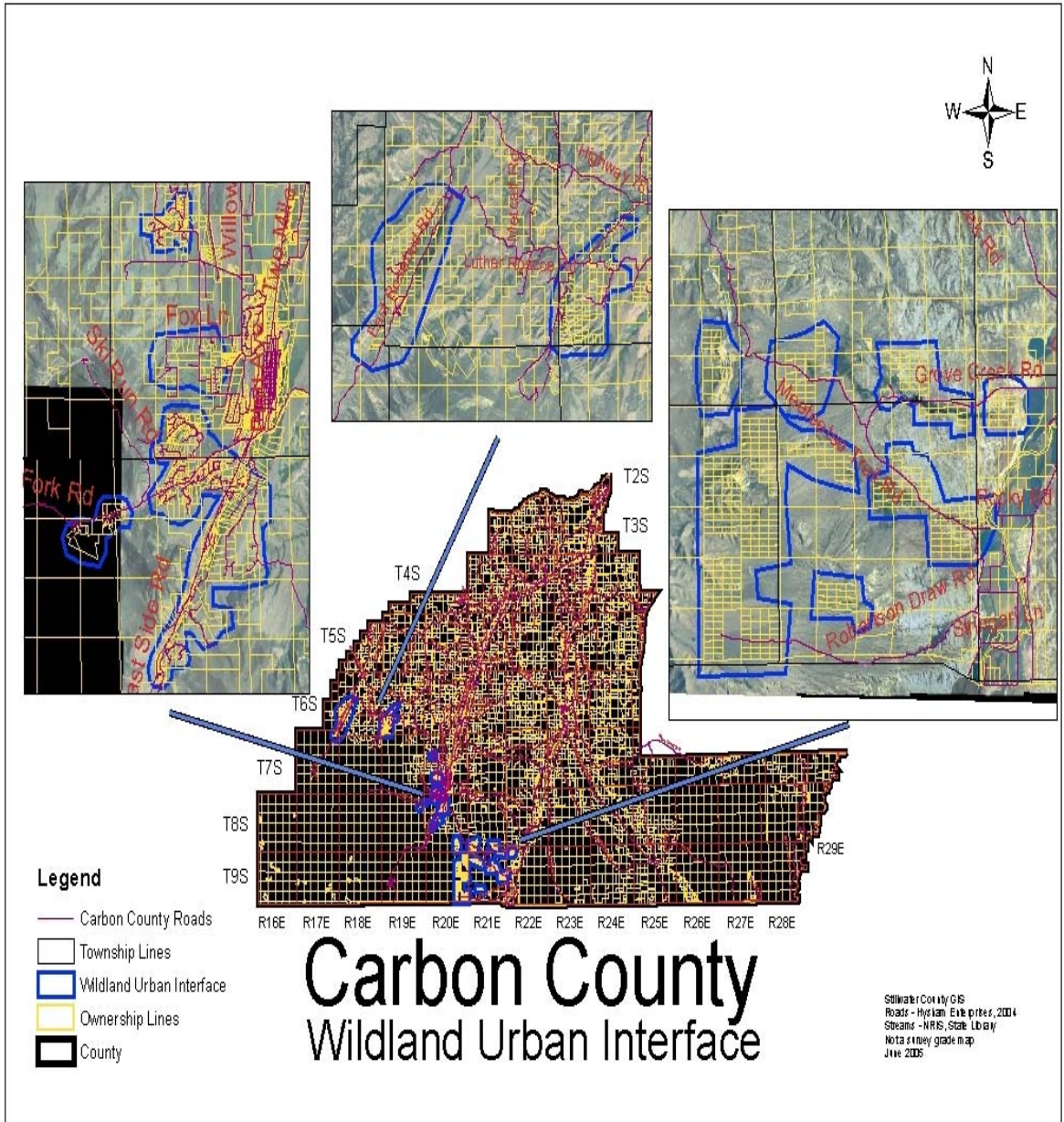
A large number of individual part-time and full-time residences and a number of major subdivisions south and west of Red Lodge are at significant risk from wildland fire. These properties are located along the Beartooth Front, in the West Fork of Rock Creek, and in the Main Canyon of Rock Creek.

Housing data from the Montana Department of Commerce found in the CAMAS (Computer Assisted Mass Appraisal System) data base is helpful for understanding the general housing situation in the county. As of February 2005, there were a total of 5,461 housing units in Carbon County. Of this total, 50 were categorized as condominiums, 921 as mobile homes, and 4,490 as single family dwellings. The largest number of housing units found in any condition category, 1,389, were classified as in "fair" condition. Much of the housing stock in the county is aged. Fully 2,437 of 5,461 units, or almost half of the housing units were built in 1959 or earlier. The majority of housing units have frame wall construction, 4,755. Ten types of exterior wall finish are documented with the largest number, 1,789 having wood siding or sheathing. Roof material is shown in the following table.

**Table 5.3. Roofing Material on Housing Units**

<i>Roof material</i>	<i>Condominium</i>	<i>Mobile</i>	<i>Single Family</i>	<i>Total</i>
Asbestos	0	5	20	25
Asphalt shingle	38	269	2,994	3,301
Composition roll	0	189	306	495
Copper	0	0	3	3
Metal	0	419	400	819
Slate	0	0	33	33
Built up travel and gravel	0	1	17	18
Tile	0	0	4	4
Unknown	0	21	4	25
Wood shake	12	4	354	370
Wood shingle	0	13	355	368
<b>Total</b>	<b>50</b>	<b>921</b>	<b>4,490</b>	<b>5,461</b>

Source: Montana Department of Commerce, Housing Condition Study, February 2005



**Table 5.4. Major Subdivisions Located in the Wildland Urban Interface**

<i>Name</i>	<i>Location</i>	<i># of Lots</i>
Bear Trap Estates	South of Red Lodge, West of Hwy 212	5
Black Butte Ranches	South of Roscoe, West of Luther	128
Canyon View Major	West Fork of Rock Creek	38
East Rosebud Lake Association	East Rosebud Lake	136
Grizzly Peak	West Fork of Rock Creek	130-150
Grove Creek	South of Belfry	480
Heritage Estates	South of Red Lodge, East of Hwy 212	9
Lamb Estates	West Fork of Rock Creek	5
Meadow	West of Red Lodge, S. of WF Road	7
Meteetsee Meadows	Main Canyon, South of Red Lodge	26
Moose Meadows	South of Red Lodge, East of Hwy 212	8
Mountainbrook	West Fork of Rock Creek	35
Mountain Shadows	South of Piney Dell, East of Hwy 212	5
Palisades Properties	North of West Fork Road	6
Palmer Minor	SW of Red Lodge, North of WF Road	8
Point of Rocks	South of Red Lodge, East and West of Hwy 212	33
Red Lodge Estates	South of Red Lodge, East of Hwy 212	13
Red Lodge South	Immediately South of Red Lodge	16
Remington Ranch- multiple subdivisions	NW of Red Lodge	125+
Rock Creek Mine	Piney Dell	35
Salo Homesites	S of Red Lodge, North of Rock Creek Resort, East of Hwy 212	16
Sheep Mountain	South of Luther	20
Sundance Estates	Main Canyon, South of Red Lodge	
Tipi Village	West Fork of Rock Creek	54
Wadsworth Cabins	S of Red Lodge, East of Town Point, East of Hwy 212, West of Rock Creek	16
Wapiti Valley	West of Red Lodge, S. of WF Road	19
Waples	South of Red Lodge, West of Hwy 212	9
Waples Cabins	South of Red Lodge, East of Hwy 212	30
West Fork Estates	West Fork of Rock Creek	8
400 Ranch	Main Canyon, South of Red Lodge	73

Notes: Subdivision lot information was obtained from the Carbon County Planning Office. Lot numbers are best estimates based upon certificates of survey that could be located. In some cases, lots may have been subsequently divided or are in the process of additional subdivision. The planning office does not track how many of the lots have constructed assets and not all lots have structures.



In addition to these subdivisions there are a number of recreational residences or summer homes located within the forest boundary, permitted by the Forest Service. These homes are situated in one of six areas, plus there are three organizational camps. The summer home areas are located in the Main Canyon and West Fork drainages of Rock Creek. The summer home areas in the West Fork drainage include 31 homes in Camp Senia and four homes in the West Fork area. The Timbercrest Girl Scout Camp has 34 structures. The camp is located at the lower or eastern end of the canyon.

In the West Fork drainage, homes other than the permitted summer homes are all located in or very close to the drainage bottom. And because the mid and upper canyon is exclusively public lands, all of the residences are located in the bottom or eastern end of the canyon.

The permitted summer home areas in the Main Canyon include Spring Creek with 22 structures, Corral Creek with 14 structures, Sheep Creek with four structures, the Westminster Spires Camp with 13 structures, and the Lions' Camp with three structures. Recreation Staff Officer for the Beartooth District, Jeff Gildehaus, estimates that approximately 30% of these structures have wooden shake roofs. The remaining 70% have roofs of either metal or composition shingle. The structures themselves are all built of wood. Some also have stone features such as chimneys. In all but a few cases, defensible space has not been created around these structures.

In addition to the summer homes and the homes located within subdivisions, there are a number of individual homes located in the Main Canyon and near the base of the West Fork of Rock Creek. In the Main Canyon most of the homes are situated either along the creek bottom or on the first terrace above the creek.



Home situated in the bottom of the West Fork drainage

Several homes in the Main Canyon, however, are located on the steep side slopes of the canyon. Access is difficult due to road grades and fuels are a mixture of grass and scattered pine. Upslope from these homes are heavier fuels and even steeper terrain with no vehicle access. There are no water sources at these homes for fire protection other than the domestic wells which in some cases yield very small amounts of water.

The Yellowstone Bighorn Research Association (YBRA) camp is situated high up on the east slope of the Main Canyon of Rock Creek approximately five miles south of Red Lodge. The camp has a large number of wooden structures, is located in the timber, and is difficult to access. The camp is occupied around the clock during the fire season with staff and students. One steep dead-end road serves the camp. The staff is active in practicing fire prevention and response and has some water for fire protection stored on site.

New home construction is occurring primarily in the Red Lodge vicinity. While many existing homes are wood frame with wood shake roofs, almost all of the new construction is utilizing roofs of metal or composite shingles. Walls are generally made of either wood siding or log. Trailers and modular homes are scattered throughout the county, found both in communities and on ranches.

**Table 5.5. Additional Major Subdivisions with Wildland Fire Concerns**

<i>Name</i>	<i>Location</i>	<i># Lots</i>
Grill	West of Joliet	30
Sam's Retreat and Mountain View	North and west of Cooney Reservoir	180

Source: Carbon County Planning Office

## **Assessment of Risk**

### **Ignition Profile**

In 2000, three communities at risk were identified and listed in the Federal Register. These communities were Belfry, Bridger, and Red Lodge. More recently the State Forester updated the list of communities at risk and listed 14 communities for Carbon County. The following ten communities were rated as having "medium" risk from wildland fire: Belfry, Boyd, Chance, Edgar, Joliet, Luther, Montaqu, Red Lodge, Roberts, and Warren. The following four communities were rated at "high" risk of wildland fire: Bearcreek, Bridger, Rockvale, and Silesia. Local chiefs have questioned these ratings. Two "communities" no longer have residents and/or constructed assets, Chance and Warren, while others appear to have ratings either too high (Bearcreek and Rockvale) or too low (Red Lodge.)





Nine ignition sources for wildland fire were identified by the members of the Carbon County Fire Council on October 21, 2004. These sources include: lightning; highways and roads; railroads; power lines; equipment and industrial activity, recreational activity, rural residents, escaped controlled burns, and other sources. Fire Council members mapped common ignition sources and locations based upon their experience during the Fire Council meeting held on January 20, 2005. Map locations were identified based upon the criteria of four or more starts at or near the location over a 10-year period.

In general, relatively higher numbers of lightning starts occurred in the Pryor Mountains and the higher mountainous country south and west of Red Lodge. Human-caused ignitions occurred along roadways and near rural residences. Power line ignitions occurred where the lines were exposed to high winds, for instance between Red Lodge and Belfry. Railroad ignitions occurred along the tracks in the northern and eastern portions of the county. The fire chiefs in the north, central, and eastern areas of the county reported that they respond to a significant number of escaped fires from land owners burning ditches, borrow pits, and farmland stubble. According to law enforcement, the majority of fire starts on public lands in the county are human rather than lightning caused. And although most of the past human caused fires have been accidental, this may not always be the case in the future. It is possible that the percent of arson ignitions in the future may grow.



Agricultural burning, north of Silesia, March 2005

Risks of accidental human-caused ignition are highest along roads and highways, power lines, railroad tracks, and around developed recreation sites. Risks of human-caused ignition are moderate in areas of dispersed recreation and rural residences. Risks of ignition to wild lands are lowest within the developed community areas, on agricultural lands, and in the river valley bottoms. Risk of ignition from lightning is highest at the topographical high points, including the Beartooth Plateau and mountain front, the Pryor Range, and on Shane Ridge in the northwest area of the county.

### **Behavior and Development Trends**

Behavior and development issues related to fire protection vary across the county. Growth and development are occurring in the north end of the county, along the Rock Creek valley, in the Red Lodge area, and along the mountain front. The challenges presented by development differ depending on the fuel types, terrain, access, and response times.

Generally, the development of most concern in the county from the standpoint of fire protection is occurring south and west of Red Lodge along the wildland urban interface area against the boundary of the National Forest. Previously subdivided lots continue to be built upon and new subdivisions continue to be proposed at a steady rate, creating up to as many as several hundred new lots per year. Although the number of new developments fluctuates somewhat from year to year, nothing indicates this trend will change in the near term and it may even become more pronounced as the baby boom demographic continues to look for retirement property in areas with access to recreational opportunities, wildlife, and scenery. Even without additional subdivision, a large number of lots are already available to be built upon.

New rural residences are typically wood frame construction or in the interface areas, log construction. Many of the subdivisions' covenants require rustic construction materials that fit in visually with the natural landscape. Fortunately, most new homes in interface areas are being constructed with metal or composition shingle, rather wooden shake roofs.





Typical new interface area construction--log with metal roof

Red Lodge Chief, Rom Kuntz is seeing that “There are a significant number of second home owners in the areas around Red Lodge. These less-than-fulltime residents are less interested in protecting their properties than fulltime residents. This can put adjacent properties at increased risk.” John Noe, Chief of the Roscoe RFD notes that “people are choosing to build in the interface area. This makes fire protection more complicated because access is difficult and fuels are heavy.” Roberts RFD Secretary, Laurel Joki, observed that “people are building in more areas without direct highway access, in more rural areas.” This can lengthen response times and present access challenges.

The good news if there is any is that when a fire does occur, property owners respond. According to Custer National Forest Fire Management Officer, Jeff Stockwell, “When a fire happens in someone’s “backyard” there is generally a flurry of activity related to creating defensible space. Examples of this were homeowners’ activities in the 400 Ranch and Main Canyon of Rock Creek following the Willie Fire in 2000.” After the Cow Creek Fire in the north end of the county, Chief Hoferer reported that a number of individuals replaced their wood shake roofs with metal roofs. Unfortunately actions to manage fuels are all too often relatively short-lived and property owners do less well at managing the fuel situation over the longer term than they do immediately following an incident.

Property owners in the Tipi Village subdivision west of Red Lodge are replacing roofs as well. Many of the homes in the subdivision are approximately 25 years old. As the original shake roofs reach the end of their useful life, materials chosen for replacement have been exclusively metal and composition shingle.

This trend may be related to the proximity of the Willie Fire in 2000 since residents of the Tipi Village Subdivision were evacuated during that fire.

One disturbing trend based upon the experience of reviewing many proposed major subdivisions and their subsequent development was noted by Chief Kuntz. Kuntz reports that there is a trend not to build out subdivisions in the way they were approved. There are no checks to ensure the development occurs as per the requirements of the county in their approval. There is no enforceable code for such things as maintenance of roads and fire protection systems. In some cases, the problems associated with lack of proper construction and maintenance of roads and fire protection systems may not become evident until the call comes in and responders are forced to do their best in a less than desirable situation. Losses could exceed those that would have occurred had the systems and roads been constructed to standard and properly maintained. In the worst case, firefighters' and residents' lives could be put at additional risk.

Highway 310 which passes through the Clarks Fork Valley carries a large amount of semi-truck traffic. The volume appears to be increasing. Greg Maddox, Chief of the Belfry RFD observed that semis are hauling a great deal of potentially hazardous material through the county. This can increase the potential of a hazardous material spill and/or ignition of a wildland fire along the highway.

Although not a trend in human behavior or development, the trend in climatic conditions in recent years has major implications for wildland fire severity. Carbon County has been experiencing a severe, long-lasting drought. The USDA has declared the county a drought disaster for the past several years. Many areas of the county, particularly the south and southeastern portions, receive only small amounts of precipitation even in average years. Lower levels of precipitation affect fuel moisture as well. Mortality due to the stress of continued drought is occurring in a number of timbered areas of the county.

Some, but not all of the departments in the county are challenged to maintain an adequate volunteer staff. Serving as a volunteer on a department requires a time commitment not only to respond to calls, but also to maintain currency in training. The departments have had differing experiences in utilizing individuals under the age of 21, some have been satisfactory and some unsatisfactory. The departments in the county have different policies on lower age limits as a result of their experiences. Many people in the county work more than one job, or work at jobs such as agriculture that have high demands on their time during certain seasons. Time spent with the fire department may be time away from family. In some areas of the county, Red Lodge for example, the economics have produced a demographic with a relatively small number of young families, a pool from which volunteers could logically come. In other areas of the county, the population is more aged and unable to serve.

## **Unique Wildfire Severity Factors**

Increased probability of ignitions in the county occurs as a result of both natural and person-caused situations. Natural ignitions have and continue to occur due to topographical features such as ridges, high elevation plateaus, and high points.

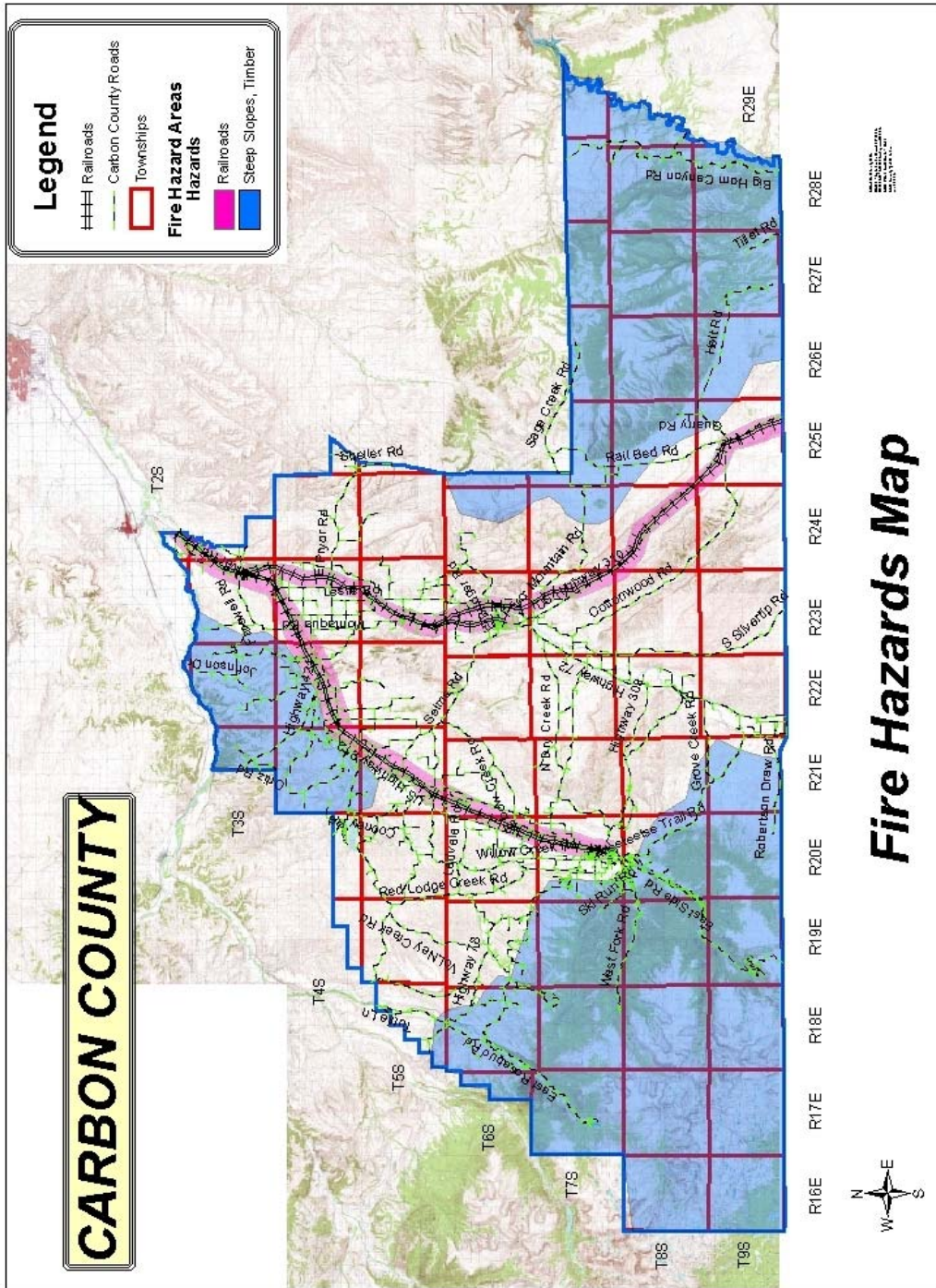
Many areas of the county are at risk from unintended person-caused ignitions. The situation is slightly different between the eastern and western halves of the county. The public lands in the Pryor Mountains experience grazing management and recreation activity year-round, much of the activity being associated with the use of motorized vehicles. Along the Clarks Fork Valley bottom, the railroad is responsible for numerous grass fires during the spring, summer, and fall. Travelers on Highway 310 are also responsible for fire starts both from vehicle accidents and discarding burning debris. Many landowners in the Clarks Fork and lower Rock Creek valleys burn off stubble and grasses in their fields and ditches in the spring. These landowner actions often result in escaped fires to which the departments must respond.

In the western half of the county, Highway 212 travels up the Rock Creek bottom. Travelers on the highway start fires as a result of vehicle accidents and the discard of burning materials. The public lands south and west of Red Lodge receive heavy recreational use during the driest times of the year. Some of these uses include hiking, camping, wildlife viewing, hunting and fishing, fire wood collection, and recreational vehicle operation. Vehicles can start fires along county and forest roads, and each year numbers of campfires are left unattended, some serving as ignition sources. In addition, there are 27 recreational residences in the West Fork drainage, and 69 recreational residences in the Main Canyon of Rock Creek that are permitted by the Custer National Forest within the forest boundary. These cabins are used primarily during the summer months when fire danger is highest. Three organizational camps are permitted within the forest boundary, Timbercrest in the West Fork, and Westminster Spires and the Lion's Camp in the Main Canyon of Rock Creek south of Red Lodge. The YBRA Camp is also located in the Main Canyon and is used during the fire season.

Extreme fire behavior can occur in the county due to:

- 1) prolonged drought conditions causing low fuel moisture, stressed vegetation, and mortality in some timbered areas such as Shane Ridge, the West Fork of Rock Creek, and the Main Canyon of Rock Creek,
- 2) high winds, and resulting blow down,
- 3) heavy, mature, fire-dependent fuels, especially in the West Fork and Main Canyons of Rock Creek,
- 4) rough breaks in the center and northern parts of the county, and steep terrain and canyons in the Pryor and Beartooth Mountains.





## **Values to be Protected**

### **Assessment of Economic Values**

Agriculture in Carbon County consists of both farming and ranching. Ranching assets at risk from wildfire include livestock (cattle, sheep, and horses), forage, and range improvements. According to the Department of Revenue, all horses, mules, bison, sheep, swine, goats, poultry, bees, domestic ungulates, and llamas in the county had a total market value of \$7,724,263 as of September 2004.

Farm assets that could be at risk include crops, storage facilities such as grain and bean elevators, equipment and machinery. Because much of the cropland in the county is irrigated, especially in the Clarks Fork Valley, risk of loss from wildland fire to farms is limited. The "important farmland" as designated by the U.S. Department of Agriculture follows the bottom of the Clarks Fork Valley and corresponds to areas of low risk for wildland fire because of vegetation and terrain factors. (USDA, Carbon County Important Farmlands map, 1976)

Commodities produced in the county are primarily the result of agricultural activity. In addition to agriculture, however, a small amount of commercial forest products such as post and poles, and firewood are harvested. There are no lumber mills in the county. Oil and gas is produced and stored in the Elk Basin Field in the southeastern portion of the county. Wildland fire in the area of oil production has the potential to interrupt production for short periods of time.

Critical community infrastructure was identified by the plan steering committee. The values for the critical infrastructure are provided in Chapter III of this plan. With the exception of the West Fork of Rock which serves to meet a portion of the municipal water needs for the city of Red Lodge, other critical community infrastructure is not at risk from wildland fire.

Tourism is an important sector in the economy of Carbon County. Both residents and visitors enjoy outdoor activities year-round in the county. Tourism occurs primarily in the summer season when Highway 212 between Red Lodge and Yellowstone Park is open, and during the winter months when Red Lodge Mountain is open for ski traffic. Summer tourist activities in the county include wildlife viewing, angling, hiking, cycling, floating, rock climbing, and horseback riding. In the fall, bear, big game, and bird hunting bring people to the county. And in winter, downhill and cross-country skiing occur in the Red Lodge area.

### **Assessment of Ecological Values**

As a result of the ranges in elevation, aspect, temperature, precipitation, vegetation, and terrain in the county, Carbon County provides diverse wildlife habitat. The county is home to a variety of big game species such as white-tailed and mule deer, elk, moose, big horn sheep, antelope, and mountain goats.

Other featured species include black bears and mountain lions. In addition, numerous small mammals, fur-bearers, game birds, and migratory and non-migratory songbirds reside in the county. Grizzly bears and grey wolves, both listed under the Endangered Species Act can be found in the southwestern areas of the county in the mountains.

Air quality in the county is generally excellent due to natural dispersal and lack of polluting activity. Short-duration impacts to air quality include smoke from wildland fire in the summer and fall, smoke from ditch burning in the spring, dust from travel on unpaved roads, and dust from agricultural practices primarily in the spring. Yellowstone National Park located to the south and west of the county has been designated a Class One airshed.

Soils in the county consist of five major associations. According to the Carbon County General Resource Assessment (NRCS, 1999) the most common soil types were formed in the sedimentary uplands and occur throughout the central part of the county from the Yellowstone River to the Wyoming line and in the southeast corner of the county. The other soil associations include deep, well-drained soils in mixed alluvium; well-drained sand and gravel soils along the Clarks Fork floodplain, mixed alluvium and glacial outwash soils along the mountain front, and limestone bedrock in the Pryor Mountains and foothills. Soils in the Clarks Fork Valley are highly productive for agricultural purposes.

According to the Carbon County Growth Policy (2001) just over 390,000 acres of the county are covered by forests. Most of this acreage, 368,000 acres is in evergreen forest, deciduous species cover only 9,000 acres, and mixed forest, covers the remaining 16,000 acres.

### **Assessment of Social Values**

The majority of lands located in Carbon County are undeveloped. According to the Carbon County Growth Policy, Inventory of Existing Conditions (2001), development covers only 1200 acres of the county. Approximately 55% of the population resides outside of the five incorporated communities. Most of these residences are found either along the valley bottoms or along the mountain front in the western portion of the county. As with many other areas in Montana and the west, people have chosen to settle in areas immediately adjacent to wildlands for reasons of solitude, aesthetics, and nearness to nature and wildlife.

Individuals who live in and visit Carbon County do so for a number of reasons. These include having grown up in the county or having family here, productive agricultural lands, outdoor recreation opportunities, wildlife viewing opportunities, desiring a scenic view, desiring a healthful environment, wanting to live in an area with a low crime rate, and/or finding land and property more affordable than in other locations.

To some extent the reasons for residing in the county vary by area of the county. The residents in the north end of the county are frequently commuters to jobs in Billings, many in the Clarks Fork Valley are longer-term residents engaged in agriculture, and those along the mountain front tend to be more recent residents concerned with wildlife, aesthetic values, and tourism. Many home owners along the mountain front in and to the west of Red Lodge are second home owners and seasonal residents who leave the county during the winter months.

### Potential Loss Estimate

A catastrophic wildland fire scenario has been developed in order to estimate potential losses. Much of the land involved is under Forest Service ownership and management, however many of the assets (values at risk) are in private ownership. The loss estimate was developed with input from the Forest Service.

In this scenario, a stand-replacing wind-driven fire in the lodgepole stands in the West Fork of Rock Creek is started by a campfire in the drainage bottom during the late summer. The fire burns approximately 15,000 acres on both the National Forest and adjacent private lands. The drainage contains private residences, developed campgrounds, a municipal watershed, a communications site, and downhill ski area. In this fire, ten lives are lost. One family of six camped up the drainage is unable to get to safety, and is overrun by the fire. And, four individuals remain at their recreation residences in an effort to save the structures and are also overrun by the fire.

**Table 5.6. West Fork Fire Potential Loss Estimate in Direct Costs**

<i>Asset Description</i>	<i>Number</i>	<i>Cost per ea</i>	<i>Total Cost</i>
Seasonal Recreation Residences	27	\$ 100,000	\$ 2,700,000
Residences on private land (Lamb Estates, Wapiti Valley, Grizzly Peak)	40	\$ 300,000	\$12,000,000
Timbercrest Scout Camp (insured, not CRV)	31 structures	Various	\$ 303,696
FS-Wild Bill Lake Picnic ground Improvements	1	Various	\$ 150,495
FS-Trailhead Improvements-Camp Senia, Silver Run, Timber Crest, Basin, West Fork	1 (all)	Various	\$ 87,680
FS-West Fork Guard Station, stored contents	1	Various	\$ 500,000
FS-Basin Campground	1	\$147,237	\$ 147,237
FS-Cascade Campground	1	\$126,357	\$ 126,357
FS-Trail bridges	1	\$ 40,000	\$ 40,000
FS-Road bridges	4	Various	\$ 700,000

Ski Area Lifts and snowmaking equipment	7+	Various	\$ 7,187,000
Ski Area Structures	6	Various	\$4,857,500
Grizzly Peak Comm. Equipment (Cellular \$1.5m, Co \$100K, +other)	1 (all)	Estimated	\$ 2,500,000
Suppression Costs		Estimated	\$ 5,000,000
Rehabilitation Costs (Seeding, erosion control)	15,000ac	Estimated	\$ 1,500,000
Timber Value (Assume Fire Intensity Level 3, 50/50 burn intensity @ \$406 acre)	15,000ac	\$406/acre	\$ 6,090,000
Electric Lines 12 miles (replace 10 underground)	12 mi total	Total	\$ 400,000
		<b>Direct Cost</b>	<b>\$44,289,965</b>

Sources: Forest Service (Jeff Stockwell, Norma Scheidecker, Jeff Gildehaus, John Lane, Brenda Christianson), Carbon County (Darrel Krum), (Red Lodge Mountain) Rob Ringer, Treasure Trails Girl Scouts (Karen Walsh)

In addition to the direct costs, indirect costs could be expected as a result of a loss of recreation users in the drainage (and resulting loss of commerce for area businesses), and loss of commercial opportunity for firewood and post and pole products.

Loss of the economic viability of the ski area would have a major long-term impact on Carbon County's economy. Red Lodge Mountain ski area/golf course is consistently in the top two employers in the county and brings revenue into the county from outside. Several Main Street businesses in Red Lodge are solely dependent on traffic from the ski hill and others are greatly benefited and to a lesser extent dependent upon traffic associated with the ski hill. In addition, providing medical support to the ski area helps the Beartooth Hospital and Health Center remain economically viable.

A difficult-to-estimate additional indirect cost could result from the lack of communications infrastructure on Grizzly Peak. During the interim period it would take to re-establish communications on the peak, there could be injury, damage, or loss of life due to the inability to communicate during an emergency or search and rescue incident. Communications are not possible in many areas of the county at present, and the loss of this equipment would render even more areas unreachable.

Another difficult-to-estimate indirect cost is that of watershed health. This could have effects on the municipal watershed for Red Lodge, although Public Works Director, Boyer, reports that he can meet the water needs of the city through existing wells. This fire would also affect fisheries, wildlife and fish and wildlife habitat. Fire would have both detrimental and beneficial effects on habitat.



## **Assessment of Fire Protection Preparedness and Capability**

Each Department Chief and Fire Management Officer was asked to assess their departments with respect to ability to respond to grass and timber fires. Most of the departments in the county are able to respond competently and safely to both types of wildland fires meaning they have had training and experience in suppressing these wildland fires.

Maintaining adequate numbers of volunteers was an issue for several, but not all of the departments. Some departments are short-staffed during work-day hours when volunteers are working at out-of-area jobs and unavailable.

Insurance premiums are based on a rating system established by the Insurance Services Office (ISO.) The ISO considers the water system and fire protection capability of a community when issuing a rating. The rating system contains ten protection classifications. Class One is the best rating a community can receive, Class Ten is the lowest, meaning the ISO recognizes little if any ability to provide fire protection. The ratings in Carbon County range from 5 in Bridger, Roberts, and Red Lodge, to 10 in other locations. Rural areas are less well protected than communities.

### **Community Preparedness**

**Table 5.7. Fire Protection Response Capability**

<i>#</i>	<i>Department</i>	<i>Structural ISO Rating</i>	<i>Ability to Respond to Grass Fires</i>	<i>Ability to respond to Timber Fire</i>	<i>Number of Volunteers</i>
1	Joliet	9	4	4	20
2	Bridger	4 or 5	1	3	22
3	Fromberg RFD	9	2	2	10 active
4	Edgar RFD	9	1	2	12
5	Roscoe RFD	10	4	4	28
6	Roberts RFD	City 5 Rural 6	1	4	17
7	Red Lodge City/RFD	City 5 Rural (5 mi) 8 Rural 9	1	3	40
8	Whitehorse RFD	10	1	5	34
9	Belfry	6	1	4-5	13
	Bear Creek Municipal	None	5	5	5

Notes: Ratings for ability to respond to grass and timber fires were based upon a scale of 1-10 with 1 being very able to respond, and 10 being unable.

Carbon County has been successful in obtaining grant funds in past years and continues to pursue them as they are available. Rural Fire Assistance (RFA) grants in the following amounts were obtained by the county. In addition to the RFA assistance that originates with the Department of Interior, the county has received Volunteer Fire Assistance or VFA funding.

**Table 5.8. Rural Fire Assistance to Carbon County, 2000-2004**

<i>Year</i>	<i>Amount</i>	<i>Purpose</i>
2004	\$ 20,000	Engine, communications equipment
2003	\$ 14,225	Personal protective equipment (PPE), communications equipment
2002	\$ 18,146	PPE, communications equipment
2001	\$ 14,459	Communications equipment
2000	\$ 1,300	PPE

Source: Montana DNRC, Mike Wiederhold

### **Apparatus Stationed in the County**

In addition to the local departments which include DNRC apparatus, there are apparatus maintained by the Bureau of Land Management stationed at Bridger and in Billings, and apparatus maintained by the Custer National Forest stationed in Red Lodge.

**Table 5.9. Fire Apparatus in Carbon County**

<i>Department</i>	<i>Description</i>	<i>Capacities/Features</i>
Bear Creek	Engine 1	1250 gpm pump, 500 gal tank
Bear Creek	DSL 217	Type 6, 4X4, 250 gal tank, 125 gpm pump
Belfry	Engine 91	Type 3, 4X4, 160 gpm pump @100psi portable generator, 16,000 lb winch, foam
Belfry	Engine 92	1250 gpm pump, 750 tank, 600 ft of 5" hose, monitor, PPV fan, generator
Belfry	Tender 93	3000 gal tank, 500 gpm pump, 2800 gal port-a-tank, foam, hose, reel
Belfry	Engine 94	Grass truck, 4X4, 900 gal tank, 360 gpm pump
Bridger	City Pumper	94 International DT 466 Auto, 1000 gal tank, 1200 gpm pump, 7 airpacks, 350 ft 5 ½" and 600 ft 2 ½" hose, 2-1 ½ speed lays @ 150' each, generator and 2 portable lights, Pro Foam portable unit, 3 chemical extinguishers, ladders
Bridger	Engine 4	1987 L-8000 Ford, 3208 Cat 5 speed, 1200 gal tank, 1200 gpm, 1200 gpm monitor, 300 ft 5" supply line, 600 ft 2½" hose, 300 ft 2-1 ½ speed lays + 200 ft 1 ½ loose, 150 ft 1 ¼" on reel, 4 airpack, generator w/ 2 fixed 500-watt halogens, ladders, 1500 gal drop tank

<i>Department</i>	<i>Description</i>	<i>Capacities/Features</i>
Bridger	Engine 6	1997 F350, 4X4, 250 gal water, 158 HP Waterous pump 175 psi, 2 – 1” hose reels 150 ft each, Scotty Fire Fighter Foam Injector
Bridger	Engine 5	1971 GMC 6X6 diesel, 750 gal water, BB4 Wajax 31 gpm # 350 psi, 2- 1” hose reels, 500 gpm mid-ship pump, 150 ft 1 ¼ hose, 300 ft peanut line
Bridger	Engine 2	1983 F250 4X4, 260 gal water, 8 hp Marco 550 psi pump
Bridger	Engine 1	1980 One ton 4X4 Chevy extrication-pumper, 250 gal tank, 350 fpm mid-ship pump, Cribbing/Holmatro extrication tools, front-mounted electric winch 8-10,000 lbs, 2 airpacks, ladder, cribbing generator/portable lights, 1500-watt generator
Bridger	Tender	1987 Freightliner, 4000 gal capacity, gas transfer pump, 200 ft 1 ¼” hose, 3” Fill, 8” drop valves
Edgar	E41 Structure	1970 IH 2010, 500 gal tank, 1000 gpm pump
Edgar	DSL 483 Structure	1972 Jeep 6X6, 500 gal tank, 500 gpm pump
Edgar	E 42 Grass	2005 Ford F-450, 300 gal tank, 250 gpm pump, Hale 18 HP, foam
Edgar	E 44 Grass	1995 FL70 Freight, 650 gal, 250 gpm Hale 18 HP
Edgar	E 45 Grass-tender	1995 4900 IH, 750 gal tank, 10” Newton dump valve, 250 gpm Hale 18 HP
Edgar	T 41 Tender	3200 gal tank, 2500 gal drop tank, 2-10” Newton dump vale, Berkeley PTO High Volume Pump, 5HP trash pump
Fromberg	Tender 30	3700 gal tank, 200 gpm pump, 3000 gal port-a-tank
Fromberg	Engine 32	500 gal tank, 1000 gpm pump, monitor
Fromberg	Engine 33	73 Dodge 600, 800 gal tank, 200 gpm pump, 1200 gal port-a-tank, Type 3
Fromberg	Engine 34	Type 6, 4X4, 200 gal tank, 125 gpm pump, foam
Fromberg	Engine 35	89 Type 6, 4X4, 200 gal tank, 125 gpm pump, foam
Fromberg	36	94, Type 6, 4X4, 200 gal tank, 125 gpm pump, foam
Fromberg	QRU	Support equipment, cascade system and medical

<i>Department</i>	<i>Description</i>	<i>Capacities/Features</i>
Joliet	Engine 11	1250 gpm pump, 1000 gal tank, 6 airpacks, extrication equipment, PPV fan and all 1901 equipment
Joliet	Engine 12	1500 gpm pump, 750 gal tank, 6 airpacks, PPV fan and all 1901 equipment, 1000 ft 4" hose
Joliet	Engine 14	1000 gpm pump, 1500 gal tank, 4 airpacks, esxtrication equipment, PPV fan and all 1901 equipment
Joliet	Engine 15	Type 6, 4X4, 200 gal tank, 125 gpm pump
Joliet	Engine 16	Type 6, 6X6, heavy, 500 gal tank, 250 gpm pump
Joliet	Engine 17	Type 6, 4X4, heavy, 500 gal tank, 250 gpm pump
Joliet	Tender 11	1200 gal tank, 250 gpm pump, 2100 drop tank, large volume portable pump
Joliet	Tender 12	1200 gal tank, 250 gpm pump, 2100 drop tank
Joliet	Command 11	
Joliet	DSL 273	Type 6, heavy, 2-wheel drive, 500 gal tank, 250 gpm pump
Joliet	DSL 629	Type 6, 4X4, heavy, 750 gal tank, 250 gpm pump
Red Lodge	Engine 71	2004 Pierce, 1250 gpm pump, 1000 gal tank, compressed foam system, 80 kw hydraulic generator, structure fire engine
Red Lodge	Engine 72	2000 F-550, 4X4, Compressed foam system, WUI engine
Red Lodge	Engine 73	1971 Ford 9000, 1000 gpm pump, 500 gal tank, structure fire engine
Red Lodge	Engine 74	1986 GMC, 1000 gpm pump, 700 gal tank, separate engine for pump (454), Structure/Wildland engine
Red Lodge	Engine 76	1980 International 4X4, 300 gpm pump, 600 gal tank, compressed foam, wildland engine
Red Lodge	Engine 77	1982 GMC 4X4, crew cab, 250 gpm pump, 250 gal tank, wildland engine
Red Lodge	Engine 78	2001 Ford F-550 4X4, 250 gpm pump, 500 gal tank, foam system, wildland engine
Red Lodge	Engine 79	2002 Ford F-550 4X4, 250 gpm pump, 500 gal tank, foam system, wildland engine
Red Lodge	Engine 710	1991 F-350 4X4, 250 gpm pump, 250 gal tank, wildland engine
Red Lodge	Tender 71	1992 GMC, 300 gpm pump, 1500 gal tank, portable tank and pump

<i>Department</i>	<i>Description</i>	<i>Capacities/Features</i>
Red Lodge	Tender 72	1979 International 4X4, 300 gpm pump. 1200 gal tank, portable tank and pump
Red Lodge	Ladder 71	1989 3D, 1500 gpm pump, 300 gal tank, 75' plumbed ladder, 8.5 kw generator
Roberts	C-61	Command, Chevy Blazer 4X4
Roberts	E-61	1978 Detroit/Seagraves, Type 1, structure, 500 gal, 1250 gpm pump, 100 gpm pump foam, draft compatible
Roberts	T-61	Type II-Tender, 3500 gal, 500 gpm pump, 1981 Ford 9000
Roberts	E-62	1970 Load Star, 1600 International, Type 6, Type II-structure, 500 gal, 150/500 gpm pump, 4X4 draft compatible
Roberts	E-63	1994 Dodge 3500, Type 6, 4X4, 200 gal, 250 gpm pump, draft compatible
Roberts	E-64	1970 Kaiser M 3582, Type 6, heavy, 6X6, 1000 gal, 250 gpm pump, draft compatible
Roberts	DSL-31	1984 GMC Custom Deluxe, Type 6, 4X4, 250 gal, 250 gpm pump, foam, draft compatible
BLM	264	Type 5, 500 gal
BLM	263	Type 6, 300 gal
USFS	8295	Type 6, 300 gal
USFS	8178	Type 6, 300 gal

Source: Carbon Fire Council President, Melvin Hoferer, January 2005



## **Mitigation Goals, Objectives and Projects**

The following goals, objectives, and projects were developed by the Carbon County Fire Council and the contractor with additional suggestions from the Pre-Disaster Mitigation Steering Committee.

### **Goal 1) Protect the public from loss of life and injury due to wildland fire.**

#### **Objective 1. Raise awareness about fire danger.**

- 1.1.a. Raise awareness of fire danger through an advertising campaign including a series of articles, mailings, and billboards.
- 1.1.b. Better communicate with the local media about Red Flag warnings.
- 1.1.c. Develop maps of the wildland urban interface areas with safety zones and escape routes.

#### **Objective 2. Ensure residents are prepared to evacuate.**

- 1.2.a. Develop or purchase evacuation pamphlets and distribute to rural residents.

### **Goal 2) Protect firefighters from loss of life and injury due to wildland fire.**

#### **Objective 1. Ensure firefighters are adequately equipped and supported.**

- 2.1.a. Work with commercial providers to improve cellular communications in the Clarks Fork Valley.
- 2.1.b. Pursue grants for PPE and communications equipment upgrades.

#### **Objective 2. Monitor and address specific risk factors.**

- 2.2.a. Monitor drought stress and mortality in timbered areas.
- 2.2.b. Monitor amount of contracted acreage in CRP.
- 2.2.c. Invite the BNSF to conduct annual briefings and training sessions on response to hazmat carried by the railroad.
- 2.2.d. Work with the State of Montana and the Custer National Forest to develop a safe area in the West Fork drainage.
- 2.2.e. Demolish the grain elevator at Edgar.



Ron Kotar, Assistant Fire Chief, Red Lodge

Objective 3. Learn from each incident how to better protect fire fighters.

2.3.a. Conduct after action analyses for all major incidents or at least one annually by the Fire Council.

### **Goal 3) Maximize protection of communities and property from wildland fire.**

Objective 1. Ensure adequate response capability to protect existing assets.

3.1.a. Continue to pursue grant opportunities for equipment and training.

### **Goal 4) Maximize protection of property from wildland fire that is not located in a community.**

Objective 1. Provide technical expertise and staff resources to reduce fire danger in wildland urban interface areas.

4.1.a. Pursue WUI fuel reduction projects in high risk areas around the county including the Forest Service and the Red Lodge West BLM-private cooperative project.

4.1.b. Jointly develop a fuels reduction project for the Grove Creek major subdivision area south of Belfry. (BLM, FS, RFD, private landowners)

- 4.1.c. Continue work to implement to assist the 400 Ranch in fuel reduction.
- 4.1.d. Continue Forest Service project to offer fuels reduction around recreation residences in the Main Canyon and the West Fork of Rock Creek.
- 4.1.e. Develop an evacuation plan for each interface subdivision/area.
- 4.1.f. Attend a board meeting of the YBRA, the Girl Scouts, the Westminster Spires, and the Lion's Camp at the beginning of each summer to discuss fire prevention, fire protection, and evacuation plans.
- 4.1.g. Meet with Klammerts Tie Yard to discuss fire prevention and encourage development of a prevention and response plan.

Objective 2. Emphasize personal responsibility for protection of property.

- 4.2.a. Host a Firewise workshop for rural subdivisions in the Red Lodge area.
- 4.2.b. Target rural property owners and second home owners by including a fire prevention message with property tax notices.
- 4.2.c. Assist Red Lodge Mountain in replacing wood roofs with metal roofs on four base area buildings, creating defensible space on the south side of the Administration building, and thinning to protect the Palisades quad lift.

Objective 3. Eliminate major known hazards.

- 4.3.a. Bury 12 miles of electrical lines in the West Fork of Rock Creek drainage.

Objective 4. Enhance effectiveness of response.

- 4.4.a. Create a map of the county showing water sources for fire fighting.
- 4.4.b. Determine locations for additional water supplies and pursue funding to develop new water sources available for fire protection.
- 4.4.c. Identify those areas of the county with constructed assets at risk and no physical access. Meet with property owners or subdivision associations to pursue remedies. (e.g. Bridges at Western Ranch Estates and WRE II)

**Goal 5) Ensure new developments are designed for adequate fire protection.**

Objective 1. Provide high quality technical review and input on all proposed development in the county.

- 5.1.a. Have county attorney provide a training session for chiefs on providing input to subdivision review process.

Objective 2. Guarantee subdivisions are constructed as approved.

- 5.2.a. Develop regulatory mechanism to ensure that subdivisions are built as approved and fire protection systems are initially and periodically certified.

Objective 3. Educate locals who advise new residents and developers.

5.3.a. Develop and provide a workshop that would qualify for continuing education credits for architects, engineers, and realtors on defensible space and fire wise principles.

5.3.b. Develop and provide a workshop on defensible space and Firewise principles for the county planning staff and planning board.

**Goal 6) Ensure an effective, coordinated response to wildland fire incidents that covers the entire county.**

Objective 1. Assist residents in areas currently not covered who are willing to meet legal requirements to obtain fire protection coverage.

6.1.a. Explore residents' willingness in the two uncovered areas (Piney Creek County District 16-2, and private parcel 141-A) to obtain formal coverage.

Objective 2. Utilize available technology to assist in response.

6.2.a. Implement the E-911 system.

Objective 3. Ensure cooperative agreements in place meet current needs.

6.3.a. Review existing MOU's.

6.3.b. Develop new or update existing MOU's as needed.

Objective 4. Maintain adequate numbers of qualified volunteers.

6.4.a. Develop and/or purchase volunteer firefighter recruitment materials.

6.4.b. Work with the Carbon County News to feature one volunteer firefighter in the newspaper each month.

Objective 5. Document response activities to support grant requests.

6.5.a. Report all responses to the state as requested.

6.5.b. Set up "call-out" data base in cooperation with dispatch center to document the number of responses.

**Goal 7) Recognize fire as a natural process in ecosystem maintenance on lands where appropriate.**

Objective 1. Determine those areas where return to natural regimes is desirable. Complete mapping of condition class for the county.

7.1.a. Develop desired condition maps, identifying condition class.

7.1.b. Develop goals and projects to return those areas determined desirable to their natural fire regime and manage other lands appropriately.

7.1.c. Identify criteria for fire use allowing natural ignitions to continue burning within parameters.

## Priority Ranking of Mitigation Projects

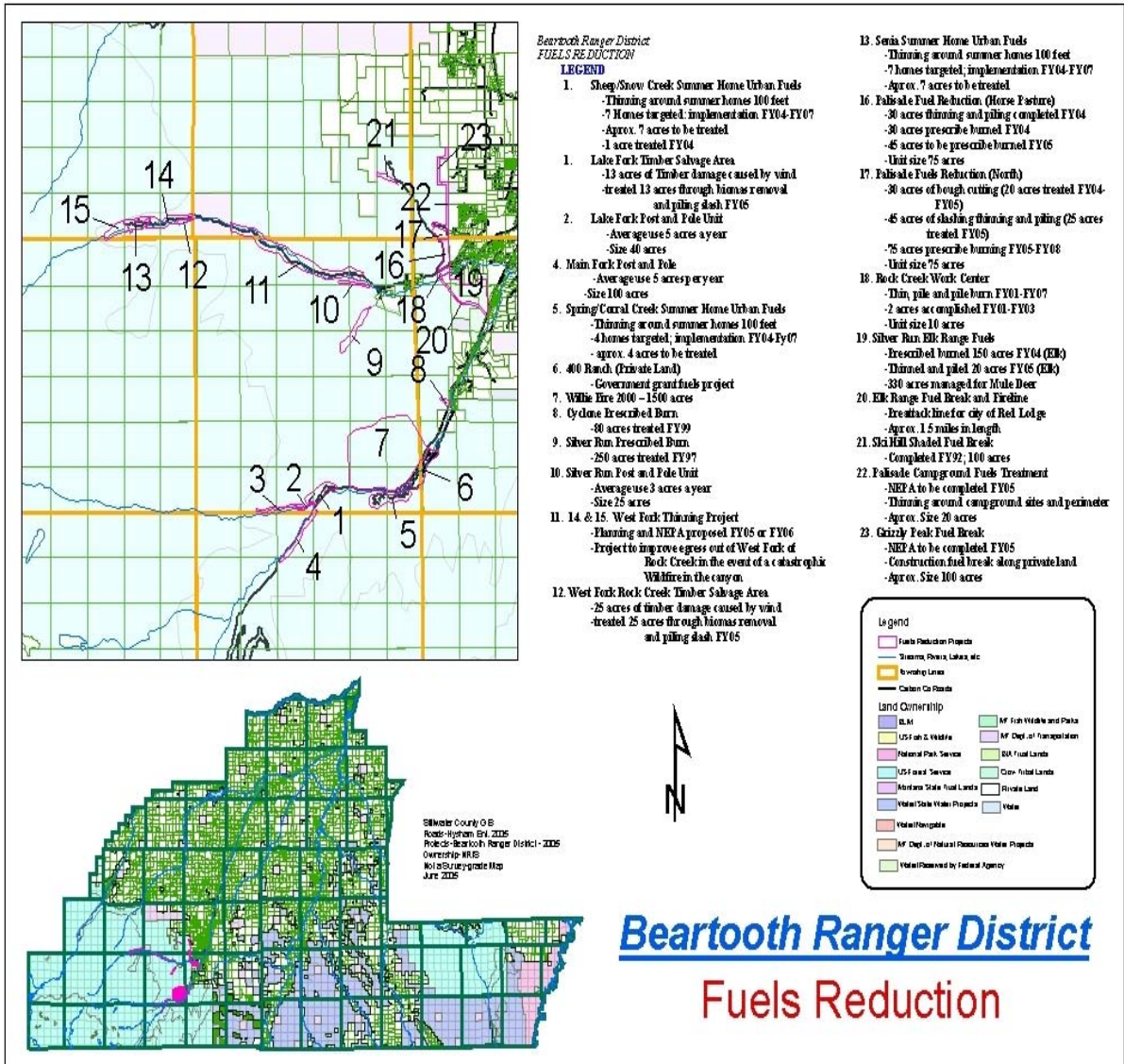
The following projects have been ranked as High, Medium, or Low. They were first ranked subjectively by the Chair of the Fire Council and contractor based upon values and lives at risk, how broadly they applied across the county, and the duration of affect. The projects were then reviewed, adjusted, and concurred with by the Fire Council members at their April 21, 2005 meeting in Bearcreek. Projects will be pursued dependent upon staff and dollar resources available.

**Table 5.10. Mitigation Project Ranking**

<i>Project</i>	<i>Description</i>	<i>Ranking</i>	<i>Potential Resources</i>
1.1.a	Raise awareness	Medium	Fire Council, BLM, DNRC, Forest Service
1.1.b.	Communicate with media about Red Flag warnings	<b>High</b>	Fire Council, DNRC, Forest Service, BLM, Carbon County News, Cable MT, radio station
1.2.a.	Evacuation pamphlets	Low	Fire Council, BLM, DNRC, Forest Service
2.1.a	Improve cellular communications in CF valley	<b>High</b>	Cell phone companies, Carbon County LEPC, Fire Council, DES
2.1.b.	Pursue grants for PPE and communications equipment	Medium	Fire Council, BLM, DNRC, Forest Service
2.2.a.	Monitor drought stress in vegetation	Medium	BLM, Forest Service
2.2.b.	Monitor contracted CRP acreage	Medium	Fire Council, NRCS
2.2.c.	BNSF hazmat briefings	Low	BNSF, Fire Council
2.2.d.	Locate and develop a safe area in the West Fork drainage	<b>High</b>	DNRC, Forest Service
2.2.e.	Demolish Edgar grain elevator	Low	Edgar VFD, DNRC, BLM
2.3.a.	Conduct after-action analyses	Medium	Fire Council
3.1.a.	Pursue grants for equipment and training	Medium	Fire Council, BLM, DNRC, Forest Service
4.1.a.	Pursue WUI fuel reduction projects in high risk areas of the county on private, FS and BLM	<b>High</b>	Fire Council, BLM, DNRC, Forest Service, Subdivision Associations
4.1.b.	Grove Creek Major fuel reduction	Low	BLM, FS, RFD, private
4.1.c.	Fuel reduction on 400 Ranch	Medium	FS, FD, Subdivision Assn
4.1.d.	Fuels reduction, recreation residences	Medium	Forest Service, cabin owners



4.1.e.	Prepare evacuation plans for interface areas	<b>High</b>	Fire Council, BLM, DNRC, Forest Service
4.1.f.	Attend board meetings of organizational camps in interface	Low	Forest Service
4.1.g.	Fire prevention at Klammerts	Low	Joliet RFD
4.2.a.	Host Firewise workshop for WUI subdivisions	Medium	BLM, DNRC, FS, DES, Fire Council
4.2.a.	Fire prevention message with tax notice	Medium	Carbon County, Fire Council
4.2.b.	Fuel reduction and structure protection projects at RL M	Medium	RLM, Red Lodge Rural, Forest Service
4.3.a.	Bury electrical lines	Medium	Beartooth Electric, Forest Service
4.4.a.	Map fire protection water sources	<b>High</b>	Fire Council, BLM, DNRC, Forest Service, Town Public Works
4.4.b.	Develop new water sources	<b>High</b>	Fire Council, BLM, DNRC, Forest Service
4.4.c.	Address physical access issues	Medium	Fire Council, BLM, DNRC, Forest Service
5.1.a.	Training on subdivision review	<b>High</b>	County Attorney, Fire Council
5.2.a.	Develop a regulatory mechanism for subdivision fire protection	<b>High</b>	County Planning Dept, Commissioners, Fire Council
5.3.a.	Workshop for design, construction, real estate professionals	Medium	Fire Council, DNRC, BLM, Forest Service
5.3.b.	Workshop for planning staff	Medium	Fire Council, BLM, DNRC, Forest Service
6.1.a.	Address areas without fire protection	Medium	Fire Council, BLM, DNRC, Forest Service
6.3.a.	Review existing MOUs	Medium	Fire Council, DNRC
6.3.b.	Develop/update MOUs	Medium	Fire Council, DNRC
6.4.a.	Firefighter recruiting materials	<b>High</b>	Fire Council, DNRC, BLM, Forest Service
6.4.b.	News feature of firefighters	Medium	Carbon County News, fire fighters
6.5.a.	Report fires to state	Medium	Fire Chiefs
6.5.b.	Document call-outs	Medium	Carbon County Dispatch
7.1.a.	Desired condition mapping	Medium	Fire Council, DNRC, BLM, Forest Service
7.1.b.	Condition class goals	Medium	DNRC, BLM, FS
7.1.c.	Develop fire use criteria	Medium	DNRC, BLM, FS



## **Implementation**

### **Roles and Responsibilities**

The goals in this Community Wildfire Protection Plan will be realized through implementation of the projects. The plan contains a variety of types of projects. Due to the variety, many individuals and agencies will play a role in project implementation.

Individual property owners will be responsible for educating themselves and taking appropriate action to create defensible space around their structures, both residential and commercial. Subdivision associations will have the opportunity to work with their local fire departments, state, and federal agencies to select specific fuel treatment alternatives.

Not-for-profit organizations such as the Yellowstone Bighorn Research Association, the Girl Scouts, and other various special use camp permit holders will be responsible for coordination with professionals in the agencies to obtain technical expertise and education, and to do fuel reduction treatments within their capabilities.

For-profit businesses may be involved in sharing expertise, as in the case of the Burlington Northern Santa Fe on hazardous materials. Or, they may be involved in infrastructure evaluation and upgrades, such as the cellular phone companies in the Clarks Fork Valley. The Carbon County News may be asked to run features about firefighters to assist in recruiting efforts. Beartooth Electric may look to partner with funding agencies to accomplish the project to bury overhead lines in the West Fork drainage. Private business may also obtain contracts for work identified in this plan to reduce fuel or other hazards.

County responsibilities fall in the area of education on existing regulations and investigation of additional regulatory needs. The county may also assist in bringing together parties for cooperative projects.

The Department of Natural Resources and Conservation (DNRC) will continue to provide assistance to local fire departments in the form of grants, technical expertise, and resources when wildland fires exceed local capacity.

The Bureau of Land Management (BLM) and Forest Service will both provide technical assistance, project funds, suppression assistance, educational materials, and training. The BLM will schedule and carry out fuel reduction projects in cooperation with neighboring land owners including other agencies and private individuals.

The Natural Resources Conservation Service may be asked to assist in monitoring the acreage enrolled in the Conservation Reserve Program as a way to better understand the fuel hazard.

The Federal Emergency Management Agency (FEMA) may provide grant funds to accomplish projects and may be involved in post-disaster assistance in the event of a catastrophic fire.

## **Schedule**

No firm schedule has been established for accomplishing the listed projects. Accomplishment of projects depends on the availability of resources and funding. Many of the projects can proceed through the efforts of an individual or individual agency or organization, such as the Forest Service fuel reduction program in the West Fork of Rock Creek. Not all of the projects will require specific funding, for example, the County Attorney will likely be able to set up a training course for the county fire chiefs on subdivision regulations with no additional resources.

Other projects, for example the fuel reduction surrounding the Grove Creek subdivision, or creating defensible space around recreation residences will require bringing many parties to the table and the alignment of priorities and funding from several sources. These projects will proceed as the circumstances allow.

As required by the National Fire Plan, federal agencies are to align their funding and staff resources with the priorities expressed in this community wildfire protection plan. As a result, accomplishment of many of the projects will depend on the funding and staffing of the BLM and Forest Service. Additionally, the amount of VFA/RFA funds available to the local fire departments will have an effect on the ability of those departments to participate in the planning and execution of projects on the ground.

By jointly identifying the projects and their priorities with city, county, state, and federal partners, it is hoped that project planning and execution will be well coordinated and occur first on the highest priority projects.