

Fall River County Community Wildfire Protection Plan



Working document:

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Acknowledgements

Any community planning process requires a great deal of work and commitment from a wide variety of people. This plan was initiated by the Fall River Emergency Management in Hot Springs with financial assistance provided by the State of South Dakota.

The majority of the work on this plan was done in collaboration with the dedicated volunteer fire fighters. This plan was created for the benefit of the volunteer fire fighters and the citizens of Fall River County.

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Introduction

A Community Wildfire Protection Plan, CWPP, is a community-based forest management planning process that identifies areas that may be at risk from wildfire and develop projects and priorities to mitigate the risks associated with hazardous fuels. New incentives generated by the enactment of the Healthy Forest Restoration Act, (HFRA), in 2003 and the National Fire Plan provides a mechanism for identified and prioritized hazardous fuels projects to be given consideration by the USDA Forest Service and the USDI Bureau of Land Management. For a community to take full advantage of this opportunity it must develop a Community Wildfire Protection Plan. Collaboration with federal agencies and other interested parties is important to develop a sound comprehensive mitigation plan. Another aspect of a Community Wildfire Protection Plan addresses ideas that homeowners and communities can implement to reduce the structural ignitability of structures and other values in the Wildland Urban Interface by utilizing FireWise practices and procedures. This CWPP is a dynamic plan that can change as collaborators encounter additional information, changed conditions and/or new opportunities that address wildfire and hazardous fuels reduction needs in Fall River County.

Wildfires in the upper Midwest, including the southern Black Hills, are burning more acres with greater intensity than any other time in recent history. These larger catastrophic fires may be a result of denser forests, continued drought conditions and high stand mortality rates, as a consequence of increased insect infestation. Active fire suppression activities that have occurred over the past 100 years

have contributed to higher stocking levels across the landscape. These denser stands are conducive to insect infestation and also contribute to high intense stand replacement conflagrations. Weather during burn periods greatly influences fire behavior, e.g. fuel moisture, wind, and temperatures. Cooperation between agencies to improve documentation of fire history should be a continuing effort. The circumstances during a fire event such as conditions of fuels, temperature, relative humidity, fire behavior and topography are important when planning mitigation strategies.

Protecting lives, property, resources and critical infrastructure is the primary concern for mitigating the threat from wildfire. Areas of higher fuel loads cause more concern during wildfire events for firefighter and public safety.



The Battle Mountain communications site is located just East of Hot Springs.

Consideration should be given to provide safe egress for the public during a fire event; also emergency responders need safe ingress/egress during fire suppression activities.

A collaborative effort between local government, fire personnel and state/federal agencies will help identify objectives for the protection of community values within Fall River County. Stakeholders working together to develop continuity between different projects will make treatments more effective. A grass-roots effort will help to reduce the threat from wildfire in Fall River County. Protecting life, property and natural resources all add to the economic sustainability of the County.

The National Incident Management System, (NIMS), was developed so responders from different disciplines can work together better to respond to natural disasters and emergencies.



The devastating Alabaugh Fire occurred during July 2007 and consumed over 10,000 acres.

NIMS benefits include a unified approach to incident management, standard command and management structures and emphasis on preparedness, mutual aid and resource management. Future funding opportunities may be dependant on personnel completing NIMS training and implementing these procedures.

Another concern is the increased amount of people developing and living in the Wildland Urban Interface, (WUI). The WUI is a set of conditions that exist when structures and other human development meet or intermingle with Wildland or vegetative fuels. As structure density increases in an area,



Proactive vegetation management in developing WUI areas can reduce the risk from wildfire.

consideration must be given not only to the natural vegetation but also to urban fuels. For example, homes are urban fuels and would contribute to fire intensity if ignited. FireWise practices and procedures can greatly reduce structural ignitability by interrupting fire spread and reducing receptive fuel beds in and around structures. Public education pertaining to wildfire prevention can help reduce loss of life, property and resources.

Wildfire does not recognize governmental or jurisdictional boundaries and the occurrence of fire crossing these lines is common. Cooperation between all agencies is important to reduce the risk from wildfire. Sharing information and cooperative development of plans will enhance the effectiveness of wildfire mitigation. Firefighter and public safety is the number one priority. Reducing the risk to values from uncontrolled wildfire is an important concern in Fall River County.

The Healthy Forest Restoration Act

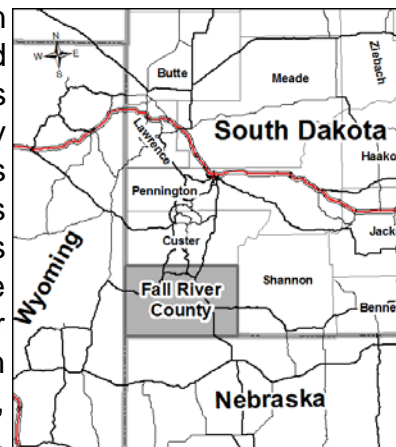
The Community Wildfire Protection Plan concept is outlined in the Healthy Forest Restoration Act of 2003. This act provides the basis to encourage and allow comprehensive community-based forest planning and prioritization of fuel reduction projects. This legislation includes statutory incentives for the USDA Forest Service and the USDI Bureau of Land Management to give consideration to these priorities and planning suggestions set out in individual Community Wildfire Protection Plans.

The Healthy Forest Restoration Act builds on the National Fire Plan and the Ten Year Comprehensive Strategy for reducing Wildland fire risks to communities and the environment. It also establishes an expectation that federal land management agencies will work with communities and local governments to reduce fire and forest health risks within and around WUI areas and Communities At Risk (CAR). The HFRA specifically encourages efforts to restore healthy forest conditions by authorizing expedited environmental assessments, administrative appeals and judicial review for hazardous fuels projects on federal land and gives preference in the use of these authorities to agencies who partner with communities in a collaborative fashion.

Community Wildfire Protection Plans provide communities with a mechanism to influence where and how federal agencies implement fuel reduction projects on federal lands and how additional federal funds may be distributed for projects on non-federal lands.

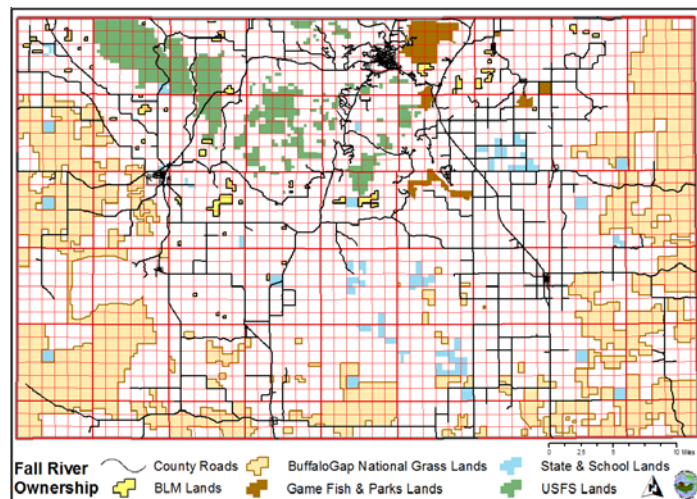
Community Discussion

Fall River County was organized as a county in Dakota Territory in November 1883 and Hot Springs was chosen as the county seat. The county was once known as Forsythe County. It is situated in the southwestern corner of South Dakota with Niobrara County, Wyoming on the west,



Custer County to the north, Shannon County on the east, Sioux County, Nebraska on the south and Dawes County, Nebraska on the southeast. The total area of the county is 1,749 square miles; 1,740 square miles of land and 9 square miles of water. The population of Fall River County in 2004 was 7,352.

Primary land owners in Fall River County include; USDI Bureau of Land Management, County, Private, State of South Dakota, South Dakota Game Fish and Parks, Buffalo Gap National Grasslands and USDA Forest Service. There are approximately 798,378 acres of private property in Fall River County. There are approximately 231,954 acres of the Buffalo Gap National Grasslands located in Fall River County. The USDI Bureau of Land Management administers approximately 7,125 acres. The Whitney Nature Conservancy owns approximately 4,626 acres. The South Dakota Game Fish and Parks manage approximately 11,233 acres. Also the USDA Forest Service administers approximately



46,465 acres. There is also state land consisting of school lands, game production areas and fish hatcheries accounting for approximately 19,300 acres. Fall River County owns approximately 9 acres. Approximately 72% of the property in Fall River County is privately owned and the other 28% is managed by governmental entities.

The Buffalo Gap National Grasslands cover approximately 597,431 acres in both South Dakota and Nebraska. The grasslands were established on June 23, 1960 and are governed by the USDA Forest Service and are a division of Nebraska National Forest. The Buffalo Gap National Grasslands are the second largest national grasslands in the country. Mixed-grass prairie

grasses in general along with patches of short grass areas wind among severely eroded and chalky badlands to create this wonderful natural area. Grasslands are used for many purposes including, grazing, watershed management, recreation, and wildlife habitat. In what is known as the Conata Basin region of the grassland, the most successful black-footed ferret reintroduction program has established a small but sustainable population of these previously endangered mammals. In the grasslands there are many types of recreation available such as, camping, fishing, hiking and biking, horse riding, hunting, rock hounding and wildlife viewing.

Called Minnekahta, (warm waters), by the original white settlers in 1879, the town's name was changed to Hot Springs in 1886. Spurred by a vast range and tall grass, ranchers staked their bankroll on cattle and helped build the town of Hot Springs. Merchants sold their wares and by 1890 local residents such as businessman Fred Evans and others of entrepreneurial spirit embarked on an ambitious plan to turn the whole town into a health spa. Evans built the Evans Plunge over a group of small springs and one giant thermal spout of warm mineral water. There are 4 major hot springs in Fall River County with the largest spring being the Mammoth Springs, which is the largest hot spring in the Black Hills that produces over 10,000 gallons per hour.

Also home to Fall River County is the Mammoth Site. The world's largest mammoth research facility was founded in 1974 and is located near Hot Springs. This site is an archeological dig in progress. More than 40 woolly and Columbian mammoths have been uncovered here in the past quarter century.

The Black Hills Wild Horse Sanctuary is home to America's largest wild horse herd and is located in Fall River County. Over 500 wild horses from state governments, Bureau of Land Management and forest service land make their home on 11,000 acres on or near the pristine Black Hills. The wild

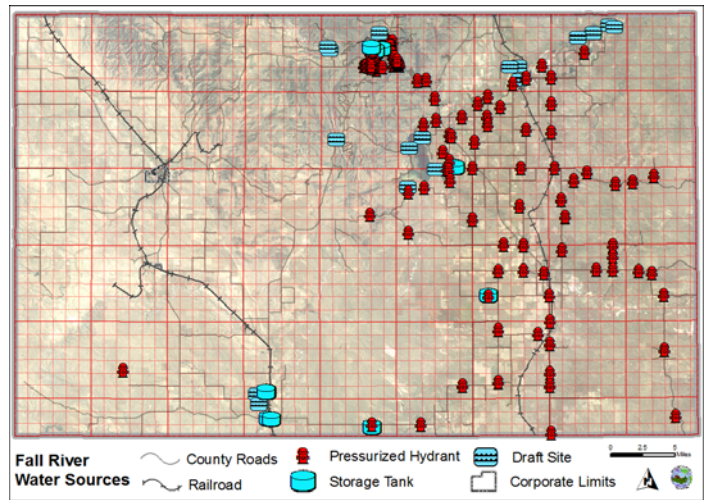


horse herds graze on prairie grasses and water in the Cheyenne River that wind thru wild canyon lands in the heart of Fall River County.

Angostura is one of the few large reservoirs in western South Dakota. The dam was built in 1949 by the Bureau of Reclamation across the Cheyenne River for irrigation purposes but paved the way for recreation. The lake's crystal waters and strong fishery make it a popular vacation area. The average depth is 29 feet and the deepest area is 75 feet when full. The lake's average summer temperature is 66 degrees F. The reservoir has 36 miles of shoreline and some of the finest sandy beaches in the state. Angostura is a water-lovers haven with plenty of room for boating, fishing and swimming.

Fire Protection

9 fire departments provide fire protection for Fall River County; all of these are volunteer fire departments. There are a total of 8 fire stations Countywide. The level of emergency preparedness in Fall River County relies on volunteer fire fighters. Response capability may vary dramatically depending on the day and time of the incident. Most departments can respond and be effective until the incident severity exceeds the capability of the responding agency. As the severity of an incident increases the capability and effectiveness of suppression crews may be dramatically reduced. Considering the downward trend of volunteer fire department memberships, most departments would be unable to staff all of their apparatus 24 hours a day, 7 days a week. Most volunteers cannot stay out on a fire for extended amounts of time because of employment and other obligations. All of the

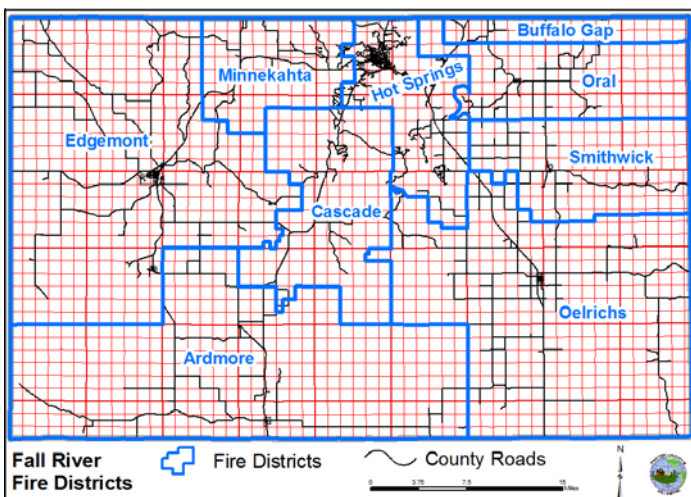


departments in Fall River County have increased their wildland response capability in recent years. The cost of refurbishing or replacing fire apparatus makes it difficult for many of the departments to upgrade older apparatus. Many of the older apparatus are still in use but the serviceability of this older equipment may be a concern.

A Type 6 Engine, or brush truck, carries between 150 and 400 gallons of water and has a minimum pump capability of 30 gpm at 100 psi. It is required to have 300 feet of 1½" hose and 300 feet of 1" hose with associated fittings and appliances. These engines require 3 personnel. A Type 4 Engine has a capacity of storing a minimum of 750 gallons of water and has a pump capacity of 50 gpm at 100 psi, a minimum of 300 feet of 1 ½ inch hose and 300 feet of 1-inch hose. A Type 3 Engine carries more than 500 gallons and has a minimum pump capability of 150 gpm at 250 psi. It is required to have 500 feet of 1½" inch hose and 500 feet of 1" hose with associated fittings and appliances. These engines require 3 personnel also. The Type 3 Rotary Helicopter contains 5-8 seats and can carry up to 1200 pounds of cargo. It requires a minimum of a 100-gallon bucket. Please refer to page 27 for a complete list of fire suppression equipment for each department.

Fire History

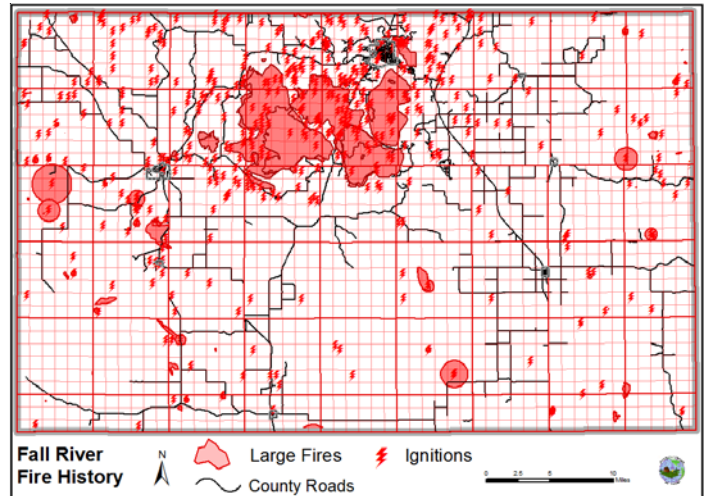
According to **point fire data** acquired from the SD Wildland Fire Suppression, the USDA Forest Service and the Buffalo Gap National Grasslands, there have been 530 ignitions recorded and suppressed by fire suppression crews in the past 22 years in Fall River County. These fires range from



.1 to 10,550 acres. Fuel loads, fire weather and fuel moisture content and topography determine the spread rate of wild land fire. Many of the fire records for the past 100 years are not accurate or the data is incomplete. Many historically large fires have names, acres burned and possibly an ignition point location. Many records have no specific perimeter data and developing and maintaining accurate information is essential. The fire history data acquired and analyzed for this plan was the best available data at the time.

The following list of **large fire history** was compiled from USDA Forest Service data and the Buffalo Gap National Grasslands. There have been 25 large fires recorded; these fires range from 26 acres to 21,746 acres and occurred between 1949 and 2007.

All or a portion of each of these fires burned within Fall River County. There are particular years that fire activity was much more severe; 1960, 1974, 1985, 1996, 2000, 2001 and 2007 show more activity and more acres burned. Many fire scars, from the 1930's on, were still evident on a 1973 land



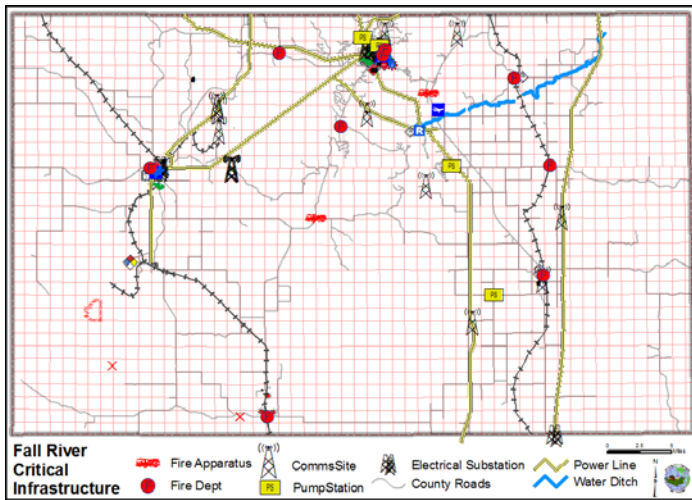
satellite image. This could indicate that some of these fires burned very intensely and caused stand mortality to a majority of the acres burned. These years of higher fire activity may have had dryer conditions prior to and during the fire season and fire weather during the burn period that may have contributed to increased fire behavior. Fire history in the Black Hills indicates that extreme fire behavior is not uncommon when favorable environmental conditions are present, e.g. low humidity, high temperatures, low fuel moisture content and high winds.

In the pre-fire suppression era before European Settlement, wildfires burned more frequently but usually with less intensity. This resulted in a more open savanna type condition with widely spaced stands of mature Ponderosa Pine. Indications show pre-settlement forest stand density separation between the canopies. The greater amount of acres burned annually helped the ground fuel from accumulating into dense fire prone fuel conditions. Timber litter or surface fuel loads were maintained at lower levels by naturally occurring ground fires. The dead litter and regeneration were not given a chance to form the vertical continuity that fire requires to get off the ground and into the forest canopy thus maintaining less intense fires.

Values

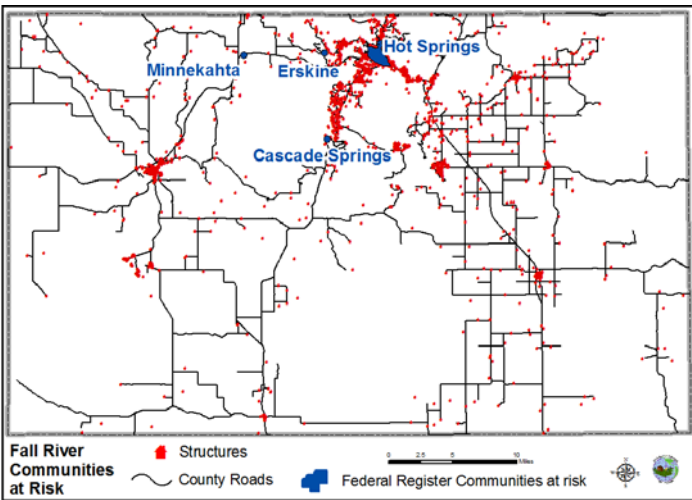
Values in Fall River County need to be protected from the existing hazards and associated risks of wildfire. Values at risk include structures, improvements and critical infrastructure owned by county, federal, municipal, private, utilities and state entities. Veteran's medical center, agricultural,

Fire Name	Year	Acres
Battle Mountain	1949	1,169
Flint Hill	1959	154
Synder	1959	33
Green Canyon	1960	6,389
Wildcat Canyon	1960	10,454
Gull Hill	1972	599
Argyle #2	1974	4,356
Flag Pole	1974	26
Gull Hill #2	1975	774
Flint Hill	1985	21,746
Seven Sisters	1985	8,587
Coffee	1987	4,858
Sides	1988	1,606
Cascade	1991	253
Edgemont Cemetery	1992	86
Chilson Canyon	1994	625
Chilson	1996	203
Gravel Pit	1996	2,266
Hay Bail	1996	1,500
Burdock	1997	165
Flagpole Mtn	2000	7,386
West Hell	2001	10,547
Cottonwood Creek	2003	1,155
Hells Acre Complex	2006	288
Alabaugh	2007	10,324



commercial, historical property, rangeland, recreational, residential, timber products, watersheds, wildlife habitat are all values present in Fall River County. The economic value and development of land in Fall River County is very diverse but very important for sustained economic growth. Everyone living in Fall River County should be eligible to receive the same consideration and benefits as the people that are identified in Communities At Risk in the Federal Register, if they are threatened from hazardous fuels that would influence fire behavior.

The United States Department of Agriculture in conjunction with the United States Department of Interior identified a list of communities and placed them in the Federal Register. These communities are in areas in the vicinity of federal lands that have been identified as being at high risk from wildfire. Other areas of Fall River County are also at high risk from wildfire including, but not limited to, the communities identified in the Federal Register. These identified communities that are on the Federal Register include Hot Springs, Minnekahta, Cascade



Springs and Erskine. In addition, this plan recognizes any community that is at risk from uncontrollable wildfire as a community at risk. Many structures in Fall River County may be at risk from wildfire due to overstocked forest stands and non-FireWise conditions around structures. Considering the increasing number of people moving into the WUI and other activities occurring in the forest, objectives and plans need to be identified and implemented across the landscape to be more prepared for wildfire.

Data acquired from the Fall River County Department of Equalization in 2008 indicate there are approximately 3,918 structures in the County with an assessed value of approximately \$388 million. There are approximately 523 structures within the Black Hills Forest Fire Protection District; these structures have an assessed value of \$6.8 million. 7 incorporated municipalities exist in Fall River County. The surrounding property and structures, including the aesthetic importance of the vegetation on the landscape, must be protected to maintain the value of the area. The beauty and appeal of living in this area could be jeopardized by uncontrolled high intensity conflagrations.

There are many recreation sites associated with southern South Dakota that provide camping and recreation activities for Fall River County visitors. There are also private campgrounds and recreation areas that are of major concern during a fire due to evacuation and logistical concerns. The Buffalo Gap National Grasslands, Angostura Reservoir and other



The Angostura Reservoir is located at the southeast edge of the Black Hills on the Cheyenne River.

recreation and tourist attractions need to be protected from wildfire. Loss of aesthetics from catastrophic wildfire would be very detrimental to attracting visitors to the area.

The Conservation Reserve Program, (CRP), is a program that provides technical and financial assistance to eligible farmers and ranchers to address soil, water, and related natural resource concerns on their land in an environmentally beneficial and cost-effective manner. This program reduces soil erosion, protects the Nation's ability to



Properly maintained shelter belts can reduce the risk from wildfire.

impacts including, insects, diseases or competing vegetation. The trees or shrubs should also be protected from fire and damage from livestock. Properly maintained shelterbelts can create a buffer that may reduce fire intensity..

This plan will help collaborate ways to share and develop interagency cooperation for hazardous fuel treatments within Fall River County. Stakeholders working together to develop continuity between different fuel projects will make treatment areas more effective. Wildfire prevention should be a major concern for all landowners in Fall River County. Protecting life, property and natural resources all add to the economic sustainability of the County.

Structural Hazard Assessment

Structures in Fall River County should be assessed to determine their preparedness for wildfire. Form 502 has been included in this plan on page 31 and can be used as a guide. Access, signage, vegetation, canopy condition, fuel type, topography, water source, fire department response time, survivable space, roofing material, building construction and placement of utilities and other fuel sources are all considered during the assessment process.

The development of this Community Wildfire Protection Plan will be used to implement an official hazardous fuels reduction program that will reduce the risk to values and critical infrastructure in Fall River County. Reducing hazardous fuels, creating fuel breaks and improving survivable space will help



Example of the Conservation Reserve Program.

produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, shelterbelts or riparian buffers. Some of this land may require fuel treatments such as prescribed burning.

Shelterbelts are defined as linear plantings of single or multiple rows of trees or shrubs or sets of linear plantings. Their purpose is to reduce soil erosion from wind, to manage snow deposition, to provide shelter for structures, for livestock and recreational areas, to improve air quality by reducing and intercepting particulate matter and to enhance aesthetics. Maintenance of shelterbelts is very important. Replacement of dead trees or shrubs should be continued until the barrier is functional. Thinning or pruning the barrier is needed to better maintain its functionality. Trees and shrubs should be inspected periodically to protect from adverse

reduce fire intensity near values at risk. Reducing hazardous fuels also will provide fire suppression crews a safer environment to perform fire suppression activities.

Historical Sites

Properties listed in the National Register of Historic Places include buildings, bridges, districts, railroads and sites that are significant in American and Native American archeology, architecture, culture, engineering and history. The National Park Service administers the National Register, which is a branch of the United States Department of the Interior. These sites present a range of beautiful historic places throughout the County. Visitors can access places well worth visiting in Fall River County. Individual historic destinations can be easily found that cover a tremendous range for points of interest. The historical places in Fall River County are not only important for historical value but local residents and tourists value them. Mitigation efforts to help preserve these sights are important and should be considered during fuel treatments in these areas.

There are 70 registered historical sites in Fall River County. Of these, 37 sites are located in Edgemont. Hot Springs contains 17 registered sites and Oelrichs contains 1. Also there are 2 registered Historic Districts in Fall River County, the Hot Springs historic District and the Log Cabin Tourist Camp. See page 34 for a complete list of historic places.



The Hot Springs Historic District features commercial and government buildings built during the late 1800's and early 1900's.

Hazards

The vegetation coverage across Fall River County is diverse. The primary hazardous fuels in Fall River County consist of Ponderosa Pine, Cedar, Rocky Mountain Juniper and cured grasses. The east and southern portion of the County is primarily Great Plains Grasses with some hardwoods in various draws and drainages. There may also be areas of



of Ponderosa Pine stands that could pose a threat to values in these areas.

Light flashy fuels, such as tall grass, can cause a wildfire to threaten structures.

The city of Hot Springs has some areas that are at severe risk from uncontrolled wildfire. Steep topography with dense conifer vegetation has the stage set for possible catastrophic fire events. Structures are built at mid-slope and above with many situated right at the top of the slope with a buildup of hazardous fuels below. The pine, cedar, and Juniper along with accumulated surface fuels, pose a significant threat to upslope values.

Hazardous fuels can also be associated with cured grasses found on the prairie. Tall grasses that are cured and available to burn can generate high intensity fires that can spread very quickly. These grass fires can be very dangerous because of the volatility of the fuels involved. Several firefighter fatalities in South Dakota have occurred on the prairie with grass as the fuel model.

Shelterbelts need to be maintained properly to help preserve them from wildfire. Maintenance may include disking between rows of trees to reduce the amount of fine, flashy fuels. It may also include weed control, thinning and pruning. Removing dead material and restoring with fire resistive plant species may help a shelterbelt survive a wildfire event by reducing fire intensity. Shelterbelts that are continuously regenerated and properly maintained can create a buffer that may reduce fire intensity and provide suppression opportunities during a fire event. Each spring prior to fire season wind blown debris such as Russian thistle or tumbleweeds,



Lack of maintenance can threaten a shelter belt and nearby values.

should be removed to reduce the built-up fuel from endangering shelterbelts.

Ponderosa Pine should be one of the primary concerns when considering hazardous fuel types in Fall River County. Thinning of live conifers to create canopy separation helps reduce the chance of high intensity stand replacement fires from occurring. A surface fire generally burns with lower intensities and provides the larger more mature trees a better chance of survival. These surface fires also help consume typical forest litter and keep fuels from building up to a hazardous level. Fuel reduction activities should target reducing surface fuels such as storm-damaged trees, slash and timber litter. Breaking the vertical continuity of the ladder fuels that contribute to torching and crowning fire behavior help reduce the chance of the fire spreading into the canopy and also improves forest health. Another



Hazardous fuel loads on the slope below this structure put it at risk from the possibility of extreme fire behavior.

benefit of reducing crown fires is maintaining the aesthetics after a fire event, thus protecting the economic sustainability across the landscape.

The primary vegetation affecting wildfire in Fall River County is grasses, forbs, cedar, Juniper, and Ponderosa Pine. There are many areas in Fall River County that have had the absence of fire for over 100 years. This has resulted in abnormally high fuel loads measured in tons/acre ratios of fuel. These fuels increase the threat from wildfire by increasing fire intensities and possibly providing a path for the fire to spread into the forest canopy. This is not only detrimental to the forest but it can allow a fire to become a large enough conflagration to quickly overwhelm fire suppression crews.

Fire history in Fall River County shows fires can grow to large sizes with extreme fire behavior thus being very detrimental to forest health. Proactive planning and mitigation efforts can lower fire intensities, thereby reducing the loss of life, property, and resources. The USDA Forest Service maintains vegetation data coverage on national forest system lands. Of 46,447 acres, 31% is grassland and 66% is Ponderosa Pine. 15 acres are covered in juniper and 1,548 acres are unclassified or are irrelevant. Stocking data on private land is unavailable.

Fire Regime Condition Class

The fire regime condition classes are qualitative measures describing the degree of departure from historical fire regimes. Alterations of key ecosystem components such as species composition, structural stage, stand age, stand density, canopy closure and fuel loads may result from departure of historic conditions. One or more of the following may have caused this departure: fire suppression, timber harvesting, livestock grazing, introduction and establishment of exotic plant species, insects or disease or other past management activities.

The USDA Forest Service, data classifies the Black Hills National Forest Historical Fire Regime as low intensity, with high frequency or a Condition Class 3. This means that a historical fire frequency was 35-years or less and that fires generally burned at low intensities and low to moderate severities.

Condition classes range from 1 to 3. A rating of 1 means that the fire regimes are within a historical

range and the risk of losing key ecosystem components is low. A rating of 2 means that fire regimes have been moderately altered from their historical range and the risk of losing key ecosystem components is moderate. A rating of 3 indicates that the forest area is at high risk of losing key ecosystem components. An easy indicator of condition class is to count the number of fire return intervals or frequency intervals missed. Generally speaking, if an area has missed 3 or more frequency return intervals then the stand is at high risk of significant change.

A fire regime condition class 3 has been significantly altered from the historical range. The risk of losing key ecosystem components is high. Fire frequencies have departed from historic frequencies by multiple return intervals. This has resulted in dramatic changes to one or more of the following: fire size, intensity, severity and landscape patterns. Vegetation attributes have been significantly altered from their historic range. The structure and orientation of fuels in Fall River County vary tremendously. Some areas have had fuels reduction projects done in recent history; other areas have not. Areas that have had some type of fire or fuels activity may have less hazardous fuels than areas that have not had any vegetation management in many years.

Risks

The risk of wildfire occurring in Fall River County is evident based on the fire history of the county. Ignitions have occurred from burning debris, campfires, equipment, incendiary, lightning, vehicles, power lines, railroads, smoking and other human caused events. Fire history records indicate that the risk of ignition is higher around inhabited areas. By utilizing better community planning of WUI areas, using Firewise choices to preserve life and property, utilizing hazardous fuels reduction, updating fire suppression apparatus and utilizing public education we can decrease the potential risk from wildfire. It is not a matter of “if it burns, but when it burns”. Reducing risk means reducing the likelihood and frequency of an ignition from occurring.

Heightened awareness of current forest condition verses historical forest conditions may help people become aware that we need to work toward getting the forest returned to a more natural condition

on Federal and Non-Federal land. Reducing the risk from wildfire by lowering fire intensities can help save values and the aesthetics that are associated with living in the Black Hills.

Railroads are a concern with wildfire as they cause a significant amount of ignitions. Two railroad systems traverse Fall River County. One on the eastern side of the County runs from north to south and the other on the western side runs northwest from Ardmore. Not only can railroads spark a wildfire but they can also carry hazardous materials. Precautions need to be taken to prevent future emergencies from this risk.



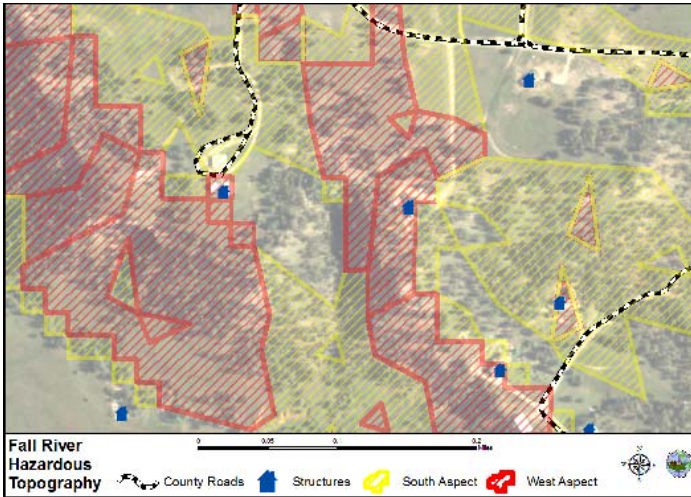
Railroads and hazardous materials are a concern throughout the County.

Structure density should be considered when reducing the risk from wildfire. A structure burning inside of another structure’s survivable space adds to the overall intensity and spread of a wildfire. In many cases fire consumes structure after structure and the natural vegetation is not consumed. In these cases it is the urban fuels that are supporting the spread of the wildfire.

Another important consideration is the insurability of property in the county. If structures are at higher risk from wildfire, insurance companies may insure them at higher rates or they may not even insure these properties. Insurance companies are starting to recognize Firewise practices and techniques to reduce the exposure from wildfire. If we can make the overall area better prepared for wildfire, this may help reduce insurance costs or possibly prevent insurance companies from canceling existing policies or denying insurance altogether.

Topography

The topography of Fall River County will influence wildfire and must be considered when mitigating the threat from wildfire. The shape of the country can influence the intensity and spread of wildland fire. Slopes with south or west aspects will become drier and the fuels will cure earlier in the



Values may be at higher risk due to topography and fuel combinations.

season. The following slope and aspect values were derived from a digital elevation model of Fall River County. Topography alters the normal heat transfer process and modifies the general weather patterns, producing localized weather conditions that influence fire behavior. Fires starting at the base of slopes become larger and more intense because of availability of up-slope fuels. As slope increases, rate of spread and flame lengths also increase. The topographic configurations of narrow canyons pose



Topography creates situations that shout "Watch Out!"

dangerous conditions that Shout "Watch Out" for fire suppression crews. Values or improvements in saddles, chimneys or at mid-slope and above need to consider additional mitigation efforts to reduce fire intensity in these topological challenged areas. The fuels on south and west slopes are also preheated from the sun and may produce more erratic fire behavior. Down slope areas adjacent to structures need to increase the amount of survivable space to provide additional protection to these values from wildfire. We cannot control when or where fire will occur, but with proactive planning and preparedness we may be able to lessen the impact it has on life, property and resources.

Weather

The overall climate of this area is continental, which is characterized generally by low precipitation, hot summers, cold winters and extreme variations in both precipitation and temperatures. Research indicates that historically there have been long durations of drought and wet periods dating back as far as the 1600's. Long periods of drought directly affect tree mortality, insect activity and possibly contribute to more severe fire behavior.

During the fire season in southwestern South Dakota, when the winds are from the south the temperatures are usually higher and the relative humidity is usually lower. These conditions are conducive for fires to easily become large conflagurations that are hard to manage. Large fires



Lightning is a common cause of wildfire in Fall River County.

also occur that are wind driven events. The spread rate and direction vary according to predominant wind direction, topography, fuel conditions, and relative humidity. Heightened awareness of current fire weather conditions, such as Red Flag Warnings, may help people make different choices concerning activities that could cause a wildfire ignition.

Fire Resistive Building Construction

People need to be educated in the importance of Firewise building procedures and practices. A fire resistive roof covering is needed to protect a structure from initial ignition from firebrands. Fire resistive building materials need to be used to keep a wildfire from igniting a structure from flame impingement or from radiant or convective heat transfer. Fire resistive vegetation should be used in the home ignition zone of a structure to help reduce intensities. Windows and skylights should be double pained or tempered glass. No vinyl or plastic windows, door assemblies or siding. All structure openings need 1/8-inch metal screen to keep out embers and wind-blown fuels. A burning ember can travel up to one mile from a burning wildfire. Eaves should be enclosed and not vented. All external walls and decks should have a 20-minute fire rating. Debris needs to be kept off roofs and out of gutters. These areas should be re-checked throughout fire season. Heavy timber or log construction is acceptable; these materials have high mass and can absorb moderate to high amounts of heat before they reach ignition temperatures.

Firewood, combustible materials and other fuel sources should not be stored in unenclosed spaces beneath structures, on decks, under eaves, canopies or overhangs. These materials should be



Alternate fuel sources should be stored away from structures.

a minimum of 30 feet from the structure. These items should also be within the survivable space of the structure so they can be protected and do not present a hazard during a fire event.

All structures should be marked with the appropriate address signage. If the structure is not visible from the primary road the structures address should be posted at the intersection of the primary road and driveway access and also on the structure. In the case of a cluster of structures in an area, individual structure numbers should be very apparent to emergency responders.

Residents should be encouraged to develop a site-specific fire protection plan that addresses specific details to be more prepared from wildfire. These may include: topography, including aspect and slope, possible climatic conditions, fire history, water sources, evacuation egress, fire resistive building construction, fire protection systems, equipment, survivable space and vegetation management. See page 37 for a complete list of fire resistive building materials.

Survivable Space

Survivable space around structures is very important when mitigating the risk from wildfire. Building materials, topography, types of vegetation and fuel loads are key considerations when determining how much survivable space is required. Effective survivable space varies from 30 to 200-feet around a structure and provides firefighters working room to safely perform suppression activities. Structures that are built on steeper slopes require more survivable space on the down-slope side. There is documented scientific research that indicates structures that are 100-feet or farther from



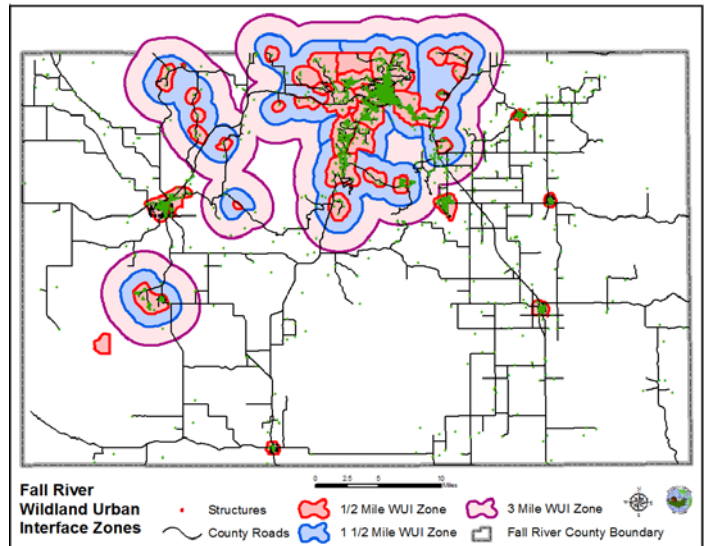
This structure has survivable space that will help protect it from wildfire.

high intensity crown fire normally do not ignite from the radiant or convective heat. Usually, it is the small things that people overlook that cause initial ignition of the structure. Survivable space needs to be maintained such that it will not support high intensity crown fire that may ignite a structure. Ladder fuels need to be removed to lower the possibility of the fire spreading into the canopy from the ground. Not only is there a danger of a fire approaching from outside an area but there is also the danger of a fire starting within the survivable space and spreading outward. Fuel modification within the survivable space can also reduce the threat to the surrounding forest. Fire resistive vegetation is an efficient way to reduce fire intensities. Hardwoods and deciduous types of vegetation are good ways to provide safety, while providing pleasing aesthetic value. Natural barriers such as rock walls, gravel and other fuel breaks also help reduce the spread of fire.

Structures situated in the prairie areas also need to give consideration to the hazards associated with fuels such as cured grasses. Mitigation efforts could include graveled driveways and/or disking fuel brakes. Rock, gravel or cultivated flowerbeds are also efficient fuel breaks. A fuel break adjacent to a structure will break the continuity and reduce the chance of fire spreading to and igniting the structure.

Wildland Urban Interface Buffers

Treatments in identified ½, 1½ and 3-mile buffers will all fall under general prescription parameters until site-specific project areas are identified, at which time prescription elements will be developed according to site specific needs and conditions. An interagency collaborative process will identify and prioritize the site-specific project areas and associated prescription. The goal of fuels reduction projects will be to reduce the risk from fire by lowering fire intensities and reducing crowning and torching activities that threaten values in the WUI. Treatments should utilize wood fiber as commercial logs, products other than logs, firewood or other forest products where practical. Main considerations for these projects should encourage canopy separation that would reduce sustained crown fire activity, and hazardous fuels reduction projects that would reduce surface fire intensity. This will help generate fuel breaks and give fire suppression crews



better opportunities for suppression activities. Restoration of original species in stands where Ponderosa Pine have encroached in the last century will help maintain a mosaic of vegetation and species viability of these stands. Land management should consider the use of free thinning practices to maintain uneven aged or multi-storied stand structure to obtain stand diversity. These stands may need to be retained in a somewhat more open condition if they are to be managed for multistoried structure classes to achieve ladder fuel reduction objectives. Canopy base height, or the distance from the ground to where the canopy begins, should be considered to reduce torching and crowning during a fire event. This is achieved by interrupting the vertical continuity of the fuels also known as ladder fuels. Crowning Index, conditions needed for fire to spread through the canopy and Torching Index, conditions needed to



Continuous fuels of Ponderosas Pine, Cedar and cured grasses create a hazardous fuel load.

torch individual trees, will help identify areas of high risk. Where available this data will be referenced to help develop fuels treatments. Dead standing trees that contribute to the threat in the WUI should be addressed especially if they pose a safety hazard to firefighters and the public. Riparian areas and north slopes may retain higher stocking levels where appropriate.

Site-specific spatial data including structure density, hazardous topography, conifer canopy condition and proximity to state and federal treatment areas will be analyzed to identify hazards and help develop and prioritize projects that reduce risk and decrease the potential of structural ignition from wildfire. Structure assessments in the WUI areas should be conducted to help assess conditions in the county and determine future mitigation planning strategies. This information in conjunction with GIS will display information more efficiently to help show relationships that may not be apparent otherwise. This data is also important to managers during suppression activities and structure protection during a wildfire. Contact with homeowners during assessment activities allows one-on-one discussion of mitigation efforts landowners can do to reduce the threat from wildfire. People are more aware and interested in wildfire mitigation when it is their own property being discussed. Heightened interest by landowners in wildfire issues will help generate more support in the area of wildfire mitigation and promote higher levels of participation in the future. Encouraging people to live Firewise lives is crucial to protecting life and property. This cannot be achieved easily but will require the shared responsibility of everyone that has a stake in its success.

Structure data, aerial photography, and topographic maps of Fall River County contributed to the development of 43 ½-mile WUI zones that consist of approximately 63,082 acres. These ½-mile buffers have been identified around structures, values, and defined communities at risk. The intent of these buffer zones is to reduce hazardous fuels to the point where the average worst condition during a wildfire would not support a high intensity crown fire in the vicinity of values in the WUI. This should be done by providing conifer canopy separation, removal of ladder fuels and reducing dead and down timber litter. Conifer stands need aggressive treatment to reduce the chance of high intensity fire



Adequate canopy separation allowed this stand to survive the Ricco Fire in 2005.

or lofted embers from endangering communities ahead of severe wildfire. When a wildfire approaches structures through these ½-mile buffers, it should decrease in intensity and burn on the ground. This would give suppression crews a safer environment and better opportunities for protecting life, property and resources. The ½-mile buffer zones will have a target prescription of an average of 20-feet of separation between conifer canopies. This can reduce the chance of active crown fire in the general vicinity of structures and other improvements. The ½ mile WUI zones will be the basis for prioritizing hazardous fuels reduction projects and the criteria will be based on structure density, hazardous topography, conifer canopy condition and proximity to state and federal treatment areas on federal and non-federal property.

The 1½-mile buffer zones will have a target prescription of an average of 10-feet between conifer canopies. Stands may be stocked at higher levels if they do not threaten WUI values during a fire event from radiant, convective heat or lofted firebrands. 8 1½-mile buffer zones have been identified that account for approximately 141,893 acres.

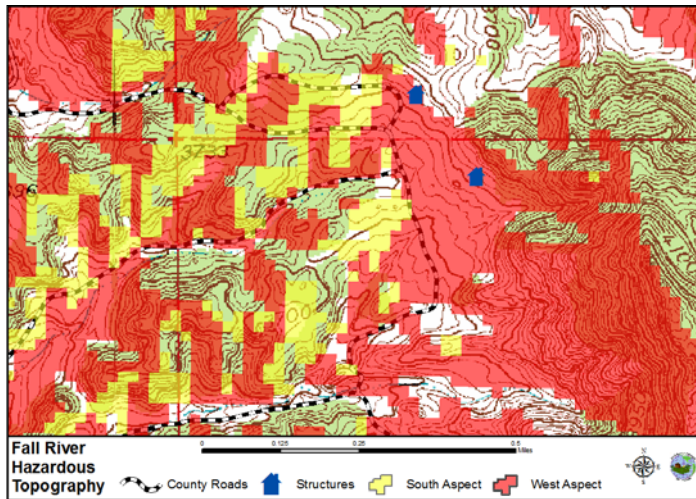
The 3-mile WUI buffer zones will be treated to reduce uncontrolled high intensity wildfire such as the Alabaugh Fire. The identified 3-mile buffer zone consists of approximately 272,175 acres and enable land managers to design projects at a landscape level. Large areas of slash may require the creation of fuel breaks where slash will be piled and burned or chipped. The homogeneity of the forest will be diversified at a landscape level to provide strategic protections emphasizing safety and survivability for

homeowners and landowners to escape a fire event. Additionally, they will reduce the hazardous fuels and increase the survivability of the forest environment surrounding private property. Firefighters will then have opportunities to engage in firefighting activities in an environment where their life safety is not compromised and the probability of success is greatly increased.

Slopes with south or west aspect, “hot slopes”, that are situated with a southerly orientation from communities or that are below communities on a slope may need more aggressive treatments. South and west slope areas may require thinning to provide greater open spaces, which would significantly lower fuel loads that would influence fire behavior in these critical topographic areas from fast moving fires spreading from dry southerly winds.



Prescribed fire will reduce Pine regeneration and surface fuels.



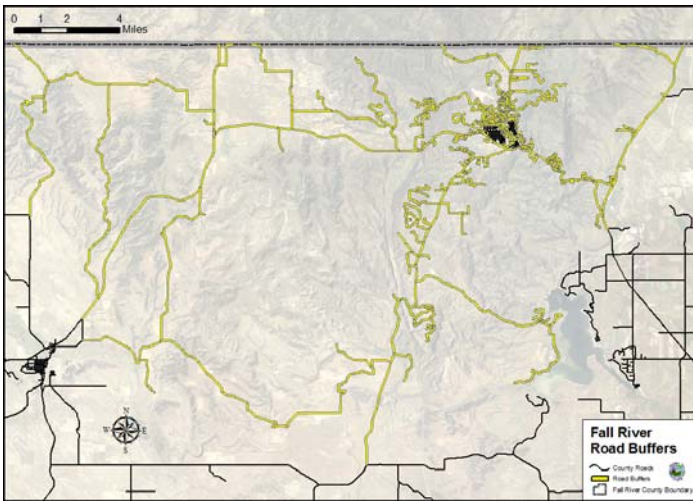
Under story and ladder fuels should be managed to reduce the risk of crowning and torching.

Prescribed fire may be used to manage fuel levels and maintain historical fire scars where appropriate. Burned areas may need future fuel treatments because of fuels that were not completely consumed during the initial fire event. At a minimum, all slash will be lopped and scattered and will not exceed a depth of more than 18-inches. Logging slash is debris consisting of treetops, limbs, cull logs and other separate vegetation remaining after harvest, which has no commercial value. Generally, forest thinning or logging slash should be removed, chipped, ground, or piled and burned in such a manner that would minimize the potential for residual forest stands to be damaged if the resulting residue was consumed during a fire event. Slash created by forest operations should be managed according to federal, state and local requirements. Forested

areas should be managed in such a manner that will minimize the chances of a catastrophic crown fire from threatening WUI values, forest health and aesthetics. Not all forest stands will be required to be thinned. There are many areas that are not conducive to landscape treatments due to topography and other challenges.

The intent of these treatment guidelines is to reduce the risk to values in the Wildland Urban Interface. Interagency collaboration by all interested stakeholders will help reduce the conflict with other land management programs and forest management objectives. Areas of endangered species, critical wildlife habitat or areas with mandated special requirements would require special considerations. Various treatments across the landscape should be developed to dovetail together to reduce risk from uncontrolled wildfire. Prescribed burning, mechanical thinning and slash treatment activities are very important for reducing hazardous fuel conditions. Fire and fuel management through above described methods will help protect biological and aesthetic values, but reducing the risk to the values in the Wildland Urban Interface will take precedence not only to protect structures but also aesthetics and valuation of property and resources.

Access is an important consideration for emergency response whether it is fire, ambulance or law enforcement vehicles. All of these agencies may be responding into an incident area. Another consideration would be the public trying to evacuate during a wildfire incident and emergency service personnel responding into the area; properly planned



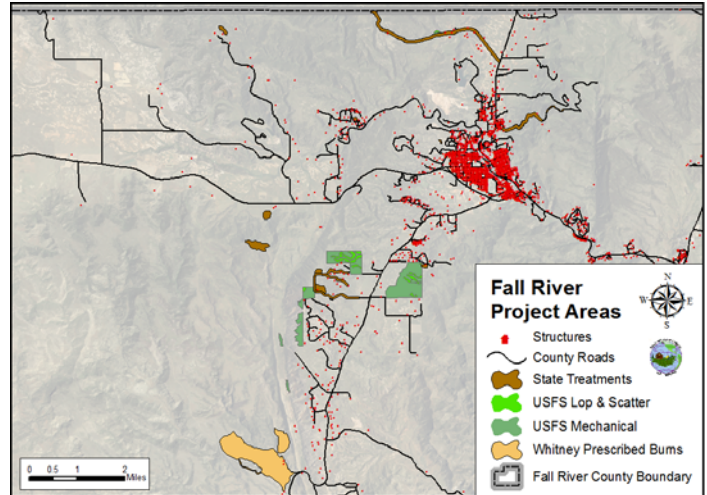
access would provide a safer and more efficient environment. Primary access roads should be built to county specifications. Design loads for bridges on driveways longer than 200-feet should be rated to support the maximum weight of the responding apparatus.

Primary ingress/egress roads associated with the WUI access in Fall River County have been identified and should be treated to provide for safe access during a fire event. GIS buffers have been developed to identify treatment areas for primary roads at 180-feet on either side; with the last 30-feet tapering into a natural forest habitat creating a shaded fuel break. These shaded fuel breaks provide a more pleasing aesthetic appearance because the treatments do not end abruptly at the edge of the treatment area. The forested areas of these buffered escape-ways need to be managed in such a manner that will minimize the chances of a catastrophic crown fire from threatening the use of these travel routes during a fire event. Ladder fuels and timber litter would be greatly reduced or eliminated within these fuel breaks. Conifer canopy separation of an average of 20 feet between individual crowns is desirable with small clusters of trees allowable to create diversity. These fuel breaks will also provide fire crews opportunities to conduct tactical suppression activities and possibly reduce spread of an active crown fire.

Agency Projects

The USDA Forest Service has some treatment projects in progress or planned for Fall River County within the Alabaugh Fire perimeter. The primary focus of these projects is to reduce

hazardous fuels. 75 acres have been identified for a lop & scatter treatment and 455 acres have been targeted for a mastication treatment. Fuels reduction projects on Federal and Non-Federal lands, in the vicinity of these treatment areas, will provide more effective fire mitigation by continuing fuels reduction programs and developing continuity of fuel treatments across the landscape to reduce fire intensity.



The Nature Conservancy has targeted 491 acres for a total of two prescribed burn treatment projects. The first project is the Brainerd Knob Burn, near Cascade, which has targeted 64 acres for treatment. Also identified is the Aspen Springs Burn, which is 427 acres in size. The Aspen Springs Burn is also near Cascade.

Public Education

The public shall be provided with important information pertaining to Firewise building procedures and practices. A fire resistive roof covering is needed to protect a structure from initial ignition from firebrands. Fire resistive building materials need to be used to keep a wildfire from igniting a structure from direct flame impingement or from radiant or convective heat transfer. Fire resistive vegetation should be used in the home ignition zone of a structure. Windows and skylights should be double paneled or tempered glass. No vinyl or plastic windows, door assemblies or siding. All structure openings need 1/8-inch metal screen to keep out embers and wind-blown fuels. Eaves should be enclosed and not vented. All external walls and decks should have a minimum of a 20-minute fire rating. Debris needs to be kept off roofs and out



Proper maintenance is required to reduce risk.

of gutters. These areas should be r e c h e c k e d throughout fire season. Heavy timber or log construction is acceptable; these materials have a lot of mass and possess high heat

absorbency characteristics.

Firewood, combustible materials and other fuel sources should not be stored in unenclosed spaces beneath structures, on decks, under eaves, canopies or overhangs. These materials should be a minimum of 30-feet from the structure. These items should, however be within the survivable space of the structure so they can be protected but situated so they do not present a hazard during a fire event.

All structures should be marked with the appropriate address signage. If the structure is not visible from the primary road the structures address should be posted at the primary road. Signage should be clearly visible and constructed with fire resistant material.

Residents should be encouraged to develop a fire protection plan that addresses specific details to be more prepared from wildfire. These may include: topography, slope/aspect, flammable vegetation, climatic conditions, fire history, water sources, access, building ignition, fire resistant factors, equipment, survivable space and vegetation management.

Survivable space is very important when mitigating for wildfire. Building materials, types of vegetation and fuel loads are key considerations when determining how much survivable space is required. Effective survivable space may be anywhere from 30-200 feet. Structures that are built on steeper slopes require more survivable space on the down slope side. There is documented scientific research that indicates structures that are 100 feet or farther from high intensity crown fire normally do not ignite from radiant or convective heat. Usually, it is the small things that people overlook that cause initial ignition of the structure. Privately owned parcels shall be maintained so that they will not support high intensity crown fire. Ladder fuels need to be removed to lower the possibility of the

fire spreading up into the canopy from the ground. Not only is there a danger of a fire approaching from outside an area but there is also the danger of a fire starting within the survivable space and spreading outward. Surface fuels need to be significantly reduced or eliminated to reduce surface fire intensity. See page 39 for Firewise landscaping. Fire resistive vegetation is an efficient way to reduce fire intensities. Hardwoods and deciduous types of vegetation are good ways to



Lean, green and clean helped this structure to survive.

provide safety, while providing pleasing aesthetic value. See page 40, Fire Resistive Plant Species for the Great Plains, for a complete list of fire resistive vegetation.

Structures situated in the open areas also need to give consideration to the hazards associated with fuels such as cured grasses. Mitigation efforts could include graveled driveways and/or disking fuel brakes. This will interrupt the continuity of the natural fuels that threaten a structure.

Encouraging people to live Firewise lives is crucial to protecting life and property. This cannot be achieved easily but will require the shared responsibility of everyone that has a stake in its success.

Community Action Plan

Collaborative efforts between local government, local fire officials, state and federal entities responsible for forest management will develop mitigation strategies for Fall River County to reduce the threat from uncontrolled wildfire.

Prioritization of hazardous fuels reduction projects will be based on criteria within the WUI zones. Structure density, hazardous topography, conifer canopy condition and proximity to state and federal treatment areas will be used to prioritize fuels reduction projects on federal and non-federal property. When more detailed data is required of existing conditions on the ground, structure/community assessments will be conducted using Form 502. This data can also provide information to land owners, fire management officers and other collaborators about existing conditions that may influence wildfire. Collecting, analyzing, and sharing data will provide needed information to identify areas that need mitigation work to reduce the risk from uncontrolled wildfire. Collaborative efforts to identify and prioritize hazardous fuels reduction activities and the associated prescriptions and preferred treatment methods will be utilized. Open public meetings maybe held to help develop protection and hazard mitigation needs for Fall River County. These meetings will be open to all interested parties who are dedicated to reducing the threat from wildfire.

The home ignition zone, or survivable space is the 30 to 200-foot area around structures and associated outbuildings. Reducing the ignitability



Different home ignition zones require different treatments and landscaping techniques.

of homes and other structures in the WUI will be one of the primary goals of this plan. Public education information will be disseminated to residents in Fall River County to share concepts that will reduce the chance of initial ignition of structures that are at risk from uncontrolled wildfire.

This will include information about developing survivable space, reducing hazardous fuels, creating a Firewise landscape, generating fuel breaks to interrupt the spread of wildfire, using prescribed fire to reduce hazardous fuels and information about fire resistive building construction and design. Much of this information and more is available in the State publications “Living With Fire; A Guide For the Black Hills Homeowner” and “Forestry Best Management Practices For South Dakota”.

As funding becomes available Fall River County may develop a Hazardous Fuel Reduction Program for Non-Federal lands. This Hazardous Fuels Reduction Program will provide a mechanism to achieve a structural condition of fuels that will reduce the risk from wildfire to values in Fall River County. This program will focus on removing surface fuels, reducing ladder fuels and creating conifer canopy separation. The removal of surface fuels will reduce surface fire intensities. Reducing ladder fuels may interrupt the vertical continuity of the fuel, which allows fire to spread into the canopy. Developing separation of the conifer canopy can significantly reduce a sustained crown fire from spreading through the canopy. If the canopy will not support crown fire activity, the fire is forced to burn on the ground; this will significantly reduce fire intensity. This will not only promote a healthier forest but it will maintain the value and aesthetics of the area in the event of a fire. This also provides fire fighters a safer and more effective working environment to conduct suppression activities. Steep slopes require more spacing between trees to maintain canopy separation and to protect against more aggressive fire behavior. Improving emergency preparedness and first response may also be a concern. Updated equipment and properly trained personnel will provide more efficient emergency response. With the decrease of volunteers in recent years, we must strive to be more prepared to efficiently manage incidents in Fall River County. Wildfire incidents need to be managed aggressively but safely to reduce the chance of the incident overwhelming the responding resources. Incident Command System (ICS) should be implemented during all incidents. This system allows more efficient management of the event with mechanisms built in to allow it to grow with the incident.

Individual Hazardous Fuels Cost Share Program

The following individual hazardous fuels cost share program will provide a mechanism to achieve a structural condition of fuels that will reduce the risk to the values in Fall River County.

Mitigating the threat from wildfire by reducing hazardous fuels will be accomplished through a cost sharing program between private land owners who are interested in participating and Fall River County. The liaison for this program will be the Wildland Urban Interface Specialist and the Fall River County Emergency Manager. The WUI Specialist administering the program will maintain records and documentation of treatment areas. All documentation should be forwarded to the WUI Specialist.

Private property that is at risk from wildfire due to hazardous fuels will be eligible for the program as funding allows. The treatment area will be identified and documented before any treatment begins. Conifer vegetation that is properly managed can survive a wildfire without severe damaging effects. This will not only promote a healthier forest but it will maintain the value and aesthetics of the landscape in the event of a wildfire.

The prescription for the Fall River county individual hazardous fuels reduction program is as follows. Conifer canopy spacing shall be maintained at an average of 20 feet between other conifer canopies. All surface fuels must be removed or treated. Ladder fuels under conifer vegetation shall be maintained at a height that will preclude ground fire from spreading vertically into the conifer canopy. All ladder fuels must be trimmed up a minimum of 6 feet off the ground. This breaks the vertical continuity of the fuel and prevents the fire from spreading into the canopy. Isolated patches of volatile shrubs and regeneration can exist if they are well separated from surrounding overstory. Steep slopes require more spacing between trees to maintain canopy separation and to protect against more aggressive fire behavior. When selecting trees for removal, large dominant trees that are straight, with good form and vigor should be left providing they meet the minimum spacing requirements. Remove all storm bent or damaged trees. Also dead or split top trees or trees with stem cankers should be removed. Remove unhealthy or defective trees first, and then remove remaining trees until desired spacing is achieved.

Remove, chip or pile and burn all resulting vegetation residue. If chips are to be scattered they should not be more than 4 inches deep. Chips or other residue should not be placed under vegetation that could cause a ladder affect, or generate enough intensity to cause mortality to the vegetation above it. Utilize wood as commercial logs, firewood, mulch or other forest products where practical.

To diminish the threat from wildfire action needs to be taken to reduce fire intensity in proximity to structures, associated outbuildings and other values at risk. This will provide fire suppression crews a better opportunity to perform suppression activities and a safer working environment.

The landowner will be required to submit 2 bids from contractors to do the work. Cost share assistance will be based on the lowest bid. The landowner will be responsible for all work being performed on the property and for the project being done to the specifications of the prescription. The landowner will track all costs and provide documentation of such at the completion of the project. Any profit or revenue received by the landowner as a result of the fuels reduction project will be subtracted from the total cost of a project before determining the total of all qualifying costs. Documentation of any and all revenue the landowner receives as a result of the fuels reduction must also be provided at the completion of the project. The program will reimburse the landowner 65% of all qualifying costs from approved fuels reduction activities with a maximum of \$975.00 per acre. The commitment to maintain this prescription for 10 years by the landowner will increase the cost share of the program to 75% with a maximum of \$1,125.00 per acre. There would be no reimbursement for this maintenance after the initial completion of the project. Qualification of a property for the program will be at the discretion of the WUI Specialist.

This program will only reimburse a maximum of 75% of \$1500 per acre of treatment costs. All costs above \$1,500 per acre will be the responsibility of the landowner. Projects that will be eligible for the cost share program include; thinning dense stands of trees, thinning dense under story, using prescribed fire to reduce hazardous fuels or maintain historic fire scars, slash or biomass disposal, eliminating ladder fuels and removal of

volatile fuels in close proximity to structures. This program is not intended to provide selective tree removal if the entire survivable space of structures and associated project area are not treated.

When the project is complete a certificate of completion form, a copy of all invoices and records of merchantable products, a copy of the canceled check or payment, and a completed W-9 form must all be submitted to Fall River County. The project will be inspected to insure all requirements have been met and then the landowner would be reimbursed for the amount of the approved project.

Fall River County will not be held liable for work that is conducted under this program on a landowner's property. The property owner will be responsible for all work being completed to the standards of the prescription. All issues that arise with the contractor will be the responsibility of the landowner.

Funding for additional hazardous fuels reduction programs will be pursued to continue reducing risk from wildfire in Fall River County. These projects may include larger landscape scale treatments. Projects may vary depending on the situation, cost-share requirements and available funding.

Forest products generated from the treatments may be used as in-kind match or cost-share. Existing values in the WUI will be assessed using Form 502 and ratings of high or extreme will be considered for mitigation projects. A narrative for newly identified projects will be developed to justify the need. This narrative will be used to support the application of funding opportunities.

There is no guarantee that the property treated will survive a wildfire event. This program is only intended to **reduce the risk** from wildfire.

Fall River County Action Items

- **Hazardous Fuels Reduction**
 - **Identify values at risk from wildfire**
 - **Implement hazardous fuels reduction program**
 - **Use fuel breaks to interrupt fire spread**
 - **Maintain road ditches (mow and rake)**
 - **Shelterbelt maintenance**
 - **Create fuel breaks around municipalities**
 - **Perform fuels reductions within municipalities (cured grass, lumber, trash, tires, ladder fuels, etc.**
 - **Create fuel breaks around cemeteries**
 -
- **Emergency preparedness and first response** need to be improved
 - **Update equipment**
 - **Increase Fire fighter training, including ICS**

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Fall River Fire Department Apparatus Lists

Ardmore Fire Dept

Type	Year	GPM	Location	Comments
Type 4 Engine	1975	150	Ardmore VFD	Chain saw and drip torch
Type 4 Engine	1975	300	Ardmore VFD	Crossmount pump for full pump and roll and 250 GPM portable pump
Type 5 Engine	1972	500	Ardmore VFD	
Type 6 Engine	1988	75	Miller Ranch (East of Ardmore)	
Type 7 Engine	1980	100	Nyquist Ranch (West of Ardmore)	
6 Passenger Ford	1992		Craig Hunter (North of Ardmore)	
Portable Pump		250	Ardmore VFD	

Buffalo Gap Fire Dept

Type	Year	GPM	Location	Comments
Ambulance / Rescue	1982	n/a	Buffalo Gap VFD	EMT Equipment support services
Type 4 Engine	1965	250	Buffalo Gap VFD	
Type 4 Engine	1967	180	Buffalo Gap VFD	
Type 4 Engine	1969	100	Buffalo Gap VFD	300 GPM portable pump
Type 6 Engine	1986	100	Buffalo Gap VFD	
Type 6 Engine	1986	100	Buffalo Gap VFD	
Type 6 Engine	1964	60	Buffalo Gap VFD	
Type 6 Engine	1989	100	Buffalo Gap VFD	
Type 2 Tender	1986	250	Buffalo Gap VFD	Quick dump
Portable pump		300	Buffalo Gap VFD	
Portable tank			Buffalo Gap VFD	1000 gallon
Portable tank			Buffalo Gap VFD	1500 gallon
Slip-on unit		100	Schroth Ranch 6S 7E	Slip On Unit
Transportation	1979		Schroth Ranch 6S 7E	Personnel transport, strike team leader vehicle support servies

Cascade Fire Dept

Type	Year	GPM	Location	Comments
Type 4 Engine	1975	100	Cascade VFD	
Type 6 Engine	1989	50	Cascade VFD	Chain saw, chaps, hand tools (2 ea), draft capable, extra hose fittings, siren
Type 6 Engine	2005	95	Cascade VFD	Fusies, hand tools (2 ea.), fire extinguisher, hose fttings, draft capable, siren
Type 3 Tender	1968	173	Cascade VFD	3000 gal porta-tank, quick dmp, 2 hose reels, 8' of 2 1/2" rigid
Generator			Cascade VFD	3 Kw Generator
Portable pump		300	Cascade VFD	
Portable tank			Cascade VFD	2000 Gallon

Edgemont Fire Dept

Type	Year	GPM	Location	Comments
Type 1 Engine	1981	1500	Edgemont VFD	
Type 3 Engine	1966	750	Edgemont VFD	
Type 4 Engine	1967	300	Edgemont VFD	
Type 4 Engine	1985	250	Edgemont VFD	
Type 6 Engine	1996	18 hp	Edgemont VFD	Chain saw, 2 bladder packs
Type 7 Engine	1965	50	Childers Ranch	
Type 7 Engine	1980	85	Edgemont VFD	
Type 7 Tender	1975	50	Edgemont VFD	
Type 3 Tender	1968	300	Edgemont VFD	
Type 1 Tender	1983	850	Edgemont VFD	
Portable Tank			Edgemont VFD	2500 Gallon
Rescue Truck	1980		Edgemont VFD	Amkus rescue tools, 4 Kw generator, lights, salvage equipment, Hasy 3120 Rescue saw
Transportation	1988		Edgemont VFD	4x4 Chev, Suburban Crew

Hot Springs Fire Dept

Type	Year	GPM	Location	Comments
Type 1 Engine	1978	1000	Hot Springs VFD	SCBA, generator, exhaust fan, deluge gun
Type 1 Engine	1986	1200	Hot Springs VFD	Gas powered generator, smoke exhaust fan
Type 2 Engine	1983	1000	Hot Springs VFD	Jaws of life, generator w/ lights, rescue truck
Type 3 Engine	1990	250	Hot Springs VFD	
Type 4 Engine	1983	250	Hot Springs VFD	
Type 6 Engine	1962	750	Hot Springs VFD	75' Ladder aerial water way, SCBA, generator w/ lights, smoke exhaust fan
Type 6 Engine	1988	100	Hot Springs VFD	
Type 6 Engine	1988	100	Hot Springs VFD	
Type 6 Engine	1995	100	Hot Springs VFD	
Type 2 Tender	1995	600	Hot Springs VFD	20' of 6" hard suction, 20' of 2 1/2" hard suction, drafting capability, high pressure pump
Type 4 Tender	1986	1200	Hot Springs VFD	Gas powered generator, smoke exhaust fan
Type 4 Tender	1978	1000	Hot Springs VFD	SCBA, generator, exhaust fan, deluge gun
Type 4 Tender	1983	1000	Hot Springs VFD	Jaws of life, generator w/ lights, rescue truck
Floatable Pump		400	Hot Springs VFD	
Portable Tank			Hot Springs VFD	1500 Gallon
Portable Tank			Hot Springs VFD	2100 Gallon
Command Vehicle	1994		Hot Springs VFD	Chevrolet

Minnekahta Fire Dept

Type	Year	GPM	Location	Comments
Type 4 Engine	1975	100	Minnekahta VFD	1500 Gallon porta tank 7 transfer pump
Type 5 Engine	1971	500	Minnekahta VFD	
Type 6 Engine	1996	100	Minnekahta VFD	
Type 6 Engine	1986	100	Minnekahta VFD	
Type 9 Engine	1974	10	Phillips Ranch T7S R4E S	
Type 3 Tender	1975	100	Minnekahta VFD	

Oelrichs Fire Dept

Type	Year	GPM	Location	Comments
Type 6 Engine	1992	140	Oelrichs VFD	
Type 6 Engine	2003	120	Oelrichs VFD	
Type 6 Engine	1974	250	Oelrichs VFD	
Type 6 Engine	1991	250	Oelrichs VFD	
Type 6 Engine	1975	400	Oelrichs VFD	
Type 3 Tender	1974	200	Oelrichs VFD	
Type 3 Tender	1978	250	Oelrichs VFD	

Oral Fire Dept

Type	Year	GPM	Location	Comments
Type 4 Engine	1990	100	Oral VFD	Newton dump valve, barricade gel, Scott AirPaks, ladders, generator and lights, 10 gallon foam cell
Type 6 Engine	2001	100	Oral VFD	Drip torch, chain saw
Type 6 Engine	1986	n/a	Oral VFD	Barricade gel
Type 3 Tender	1975	n/a	Oral VFD	BB4 Wajax pump, portable pump

Smithwick Fire Dept

Type	Year	GPM	Location	Comments
Type ? Engine	1996	50	Smithwick VFD	120 GPM portable pump
Type ? Engine	1984	9-Apr	Smithwick VFD	
Type 9 Engine	2000	100	Smithwick VFD	
Type 9 Engine	1963	50	Smithwick VFD	
Type 9 Engine	1990	100	Smithwick VFD	Wildland and structural
Type 9 Engine	1979	100	Smithwick VFD	Wildland and structural
Type 9 Engine	2002	100	Smithwick VFD	140 GPM portable pump

South Dakota Wildland Fire Suppression Division

Type	Year	GPM	Location	Comments
Type 6 Engine				
Type 6 Engine				
Type 6 Engine				
Type 6 Engine				
Type 6 Engine				
Type 3 Engine				CAFS
Type 3 Engine				CAFS
SEAT Base			Hot Springs	

US Forest Service

Type	Year	GPM	Location	Comments
Type 6 Engine			Newcastle	
Type 6 Engine			Newcastle	
Type 6 Engine			Custer	
Type 3 Helicopter			Custer	6 person module
Type 6 Engine			Hot Springs	Buffalo Gap National Grasslands

Fire Hazard Severity Form

Form 502

A. Subdivision Design Points

- | | | |
|--|--|---------|
| 1. Ingress/Egress | | |
| Two or more primary roads | | 1 ____ |
| One road | | 3 ____ |
| One-way road in, one-way road out | | 5 ____ |
| 2. Width of Primary Road | | |
| 24 feet or more | | 1 ____ |
| Less than 24 feet | | 3 ____ |
| 3. Accessibility Road grade | | |
| 5% or less | | 1 ____ |
| 5% to 10% | | 5 ____ |
| 10% or more | | 10 ____ |
| 4. Secondary Road Terminus, | | |
| Loop roads, cul-de-sacs with an outside turning radius of 45' or greater | | 1 ____ |
| Cul-de-sac turnaround or dead end roads 200 feet or less in length | | 3 ____ |
| Dead-end roads greater than 200 feet in length | | 5 ____ |
| 5. Street Signs | | |
| Present | | 1 ____ |
| Not present | | 5 ____ |

B. Vegetation

- | | | |
|--|--|---------|
| 1. Grass | | |
| Light – Only grass/forbs less than 2 feet tall | | 1 ____ |
| Medium – Grass greater than 2 feet tall | | 3 ____ |
| Heavy – Grass with conifer reproduction covering 25% or more ground area | | 5 ____ |
| 2. Conifer: Ponderosa pine or pine spruce mix | | |
| Light – Open well space conifers greater than 10 feet tall with grass/forbs | | 3 ____ |
| Medium light – Conifers more than 50% of vegetation, crowns not touching w/ no ladder fuels | | 5 ____ |
| Medium – Conifers more than 50% of the vegetation, crowns not touching, with under story or ladder fuels | | 7 ____ |
| Heavy – Dense conifers with crowns touching | | 10 ____ |
| Extreme – Dense conifers w/ crowns touching & thick dead and down fuels and ladder fuels | | 12 ____ |
| 3. Aspen/birch | | |
| Light – Sparse or mature aspen with grass/forbs under story | | 1 ____ |
| Medium – Aspen/birch intermixed with scattered conifers | | 3 ____ |
| Heavy – Decadent aspen/birch with standing and fallen dead and intermixed conifers | | 5 ____ |
| 4. Oak/hardwood brush | | |
| Light – Patchy oak with less than 25% of the area covered with grass | | 1 ____ |
| Medium – Mature oak with scattered (less than 10%) conifer | | 3 ____ |
| Heavy – Continuous oak brush covering more than 50% of area with grass | | 5 ____ |

C. Topography (Slope Hazard Rating)

- 8% or less 1 _____
- More than 8%, but less than 20% 4 _____
- 20% or more, but less than 30% 7 _____
- 30% or more 10 _____

D. Fire Protection-Water Source

- 1000 GPM hydrant within 500 feet 1 _____
- Hydrant farther than 500 feet or draft site 2 _____
- Water source 20 min. or less, round trip 5 _____
- Water source farther than 20 min., and 45 min. or less, round trip 7 _____
- Water source farther than 45 min., round trip 10 _____

E. Fire Department Response Time (Type I Engine)

- Less than 15 minutes 1 _____
- 15 to 30 minutes 5 _____
- More than 30 minutes 10 _____

F. Survivable Space

- 70% or more of the site 1 _____
- 30% or more, but less than 70% of site 10 _____
- Less than 30% of site 20 _____

G. Existing Building Roofing Material

- Fire Proof 1 _____
- Resistive 5 _____
- Non-Fire Rated 20 _____

H. Existing Building Construction Materials

- Noncombustible siding/deck 1 _____
- Noncombustible Siding/combustible deck 5 _____
- Combustible siding and deck 10 _____

I. Utilities (gas and/or electric)

- All underground utilities 1 _____
- One underground, one aboveground 3 _____
- All aboveground 5 _____

Total _____

Individual Structure Rating

- (Sum of B, C, F) Total** _____
- Low 4 – 20
- High 21 – 28
- Extreme 29 – 42

Overall Community Rating

- Low Hazard 32-39
- Moderate Hazard 40-59
- High Hazard 60-74
- Extreme Hazard 75-150

REQUIRED SURVIVABLE SPACE

COMBINED SCORE B & C FORM 502	
URBAN-WILDLAND INTERFACE AREA	FUEL MODIFICATION DISTANCE
0-8	100-feet
9-12	150-feet
13+	200-feet

Moderate hazard

Combined score of <8

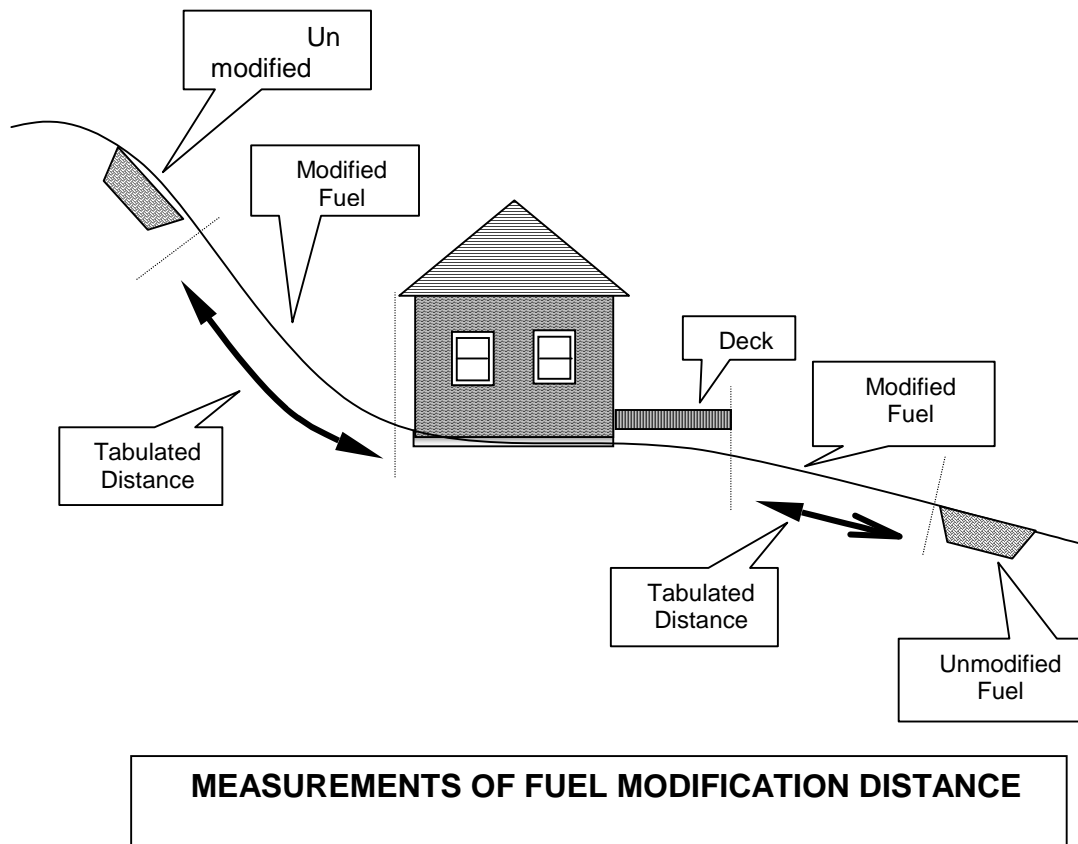
High hazard

Combined score of 8 to 12

Extreme hazard

Combined score of >12

For down slope side of structure add 25% to fuel modification distance



Fall River List of Historic Places

	Resource Name	Address	City	Listed	Multiple
1	Allen Bank Building and Cascade Springs Bath House-Sanitarium	Address Restricted	Hot Springs	2/23/1984	
2	Archeological Site 39FA1638	Address Restricted	Edgemont	7/14/2005	Prehistoric Rock Art of South Dakota MPS
3	Archeological Site 39FA1336	Address Restricted	Edgemont	7/14/2005	Prehistoric Rock Art of South Dakota MPS
4	Archeological Site 39FA1337	Address Restricted	Edgemont	7/14/2005	Prehistoric Rock Art of South Dakota MPS
5	Archeological Site No. 39FA1010	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
6	Archeological Site No. 39FA1013	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
7	Archeological Site No. 39FA1046	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
8	Archeological Site No. 39FA1049	Address Restricted	Hot Springs	8/6/1993	Prehistoric Rock Art of South Dakota MPS
9	Archeological Site No. 39FA1093	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
10	Archeological Site No. 39FA1152	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
11	Archeological Site No. 39FA1154	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
12	Archeological Site No. 39FA1155	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
13	Archeological Site No. 39FA1190	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
14	Archeological Site No. 39FA1201	Address Restricted	Edgemont	8/6/1993	Prehistoric Rock Art of South Dakota MPS
15	Archeological Site No. 39FA1204	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
16	Archeological Site No. 39FA243	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
17	Archeological Site No. 39FA244	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
18	Archeological Site No. 39FA316	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
19	Archeological Site No. 39FA321	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
20	Archeological Site No. 39FA395	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
21	Archeological Site No. 39FA446	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS

22	Archeological Site No. 39FA447	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
23	Archeological Site No. 39FA448	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
24	Archeological Site No. 39FA542	Address Restricted	Edgemont	10/25/1993	Prehistoric Rock Art of South Dakota MPS
25	Archeological Site No. 39FA678	Address Restricted	Edgemont	8/6/1993	Prehistoric Rock Art of South Dakota MPS
26	Archeological Site No. 39FA679	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
27	Archeological Site No. 39FA680	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
28	Archeological Site No. 39FA682	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
29	Archeological Site No. 39FA683	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
30	Archeological Site No. 39FA686	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
31	Archeological Site No. 39FA688	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
32	Archeological Site No. 39FA690	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
33	Archeological Site No. 39FA691	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
34	Archeological Site No. 39FA767	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
35	Archeological Site No. 39FA788	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
36	Archeological Site No. 39FA806	Address Restricted	Hot Springs	8/6/1993	Prehistoric Rock Art of South Dakota MPS
37	Archeological Site No. 39FA819	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
38	Archeological Site No. 39FA86	Address Restricted	Edgemont	8/6/1993	Prehistoric Rock Art of South Dakota MPS
39	Archeological Site No. 39FA88	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
40	Archeological Site No. 39FA89	Address Restricted	Edgemont	8/6/1993	Prehistoric Rock Art of South Dakota MPS
41	Archeological Site No. 39FA90	Address Restricted	Hot Springs	10/20/1993	Prehistoric Rock Art of South Dakota MPS
42	Archeological Site No. 39FA99	Address Restricted	Edgemont	10/20/1993	Prehistoric Rock Art of South Dakota MPS
43	Bartlett--Myers Building	506 1/2 2nd Ave.	Edgemont	5/31/2006	
44	Chilson Bridge	Local rd. over Burlington Northern RR tracks	Edgemont	12/9/1993	Historic Bridges in South Dakota MPS
45	Flint Hill Aboriginal Quartzite Quarry	Address Restricted	Edgemont	7/14/1978	
46	Hot Springs High School	146 N. 16th St.	Hot Springs	5/7/1980	
47	Hot Springs Historic District	Roughly both sides of River St. from Summit Rd. S to Baltimore St., including part of Minnekahta Ave.	Hot Springs	6/25/1974	

48	Jensen, Governor Leslie, House	309 S. Fifth St.	Hot Spring	9/25/1987	
49	Log Cabin Tourist Camp	SD 1	Hot Springs	1/28/2004	
50	Lord's Ranch Rockshelter	Address Restricted	Edgemont	7/14/2005	Prehistoric Rock Art of South Dakota MPS
51	Petty House	201 N. Third St.	Hot Springs	2/12/1999	
52	Site 39FA1303	Address Restricted	Edgemont	6/8/2005	Prehistoric Rock Art of South Dakota MPS
53	Site 39FA1639	Address Restricted	Edgemont	6/9/2005	Prehistoric Rock Art of South Dakota MPS
54	Site No. 39 FA 277	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
55	Site No. 39 FA 389	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
56	Site No. 39 FA 554	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
57	Site No. 39 FA 58	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
58	Site No. 39 FA 676	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
59	Site No. 39 FA 677	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
60	Site No. 39 FA 681	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
61	Site No. 39 FA 684	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
62	Site No. 39 FA 685	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
63	Site No. 39 FA 687	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
64	Site No. 39 FA 7	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
65	Site No. 39 FA 75	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
66	Site No. 39 FA 79	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
67	Site No. 39 FA 91	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
68	Site No. 39 FA 94	Address Restricted	City Restricted	5/20/1982	Rock Art in the Southern Black Hills TR
69	St. Martin's Catholic Church and Grotto	Lot Six Block 5	Oelrichs	5/30/2005	
70	Wesch, Phillip, House	2229 Minnekahta	Hot Springs	2/23/1984	

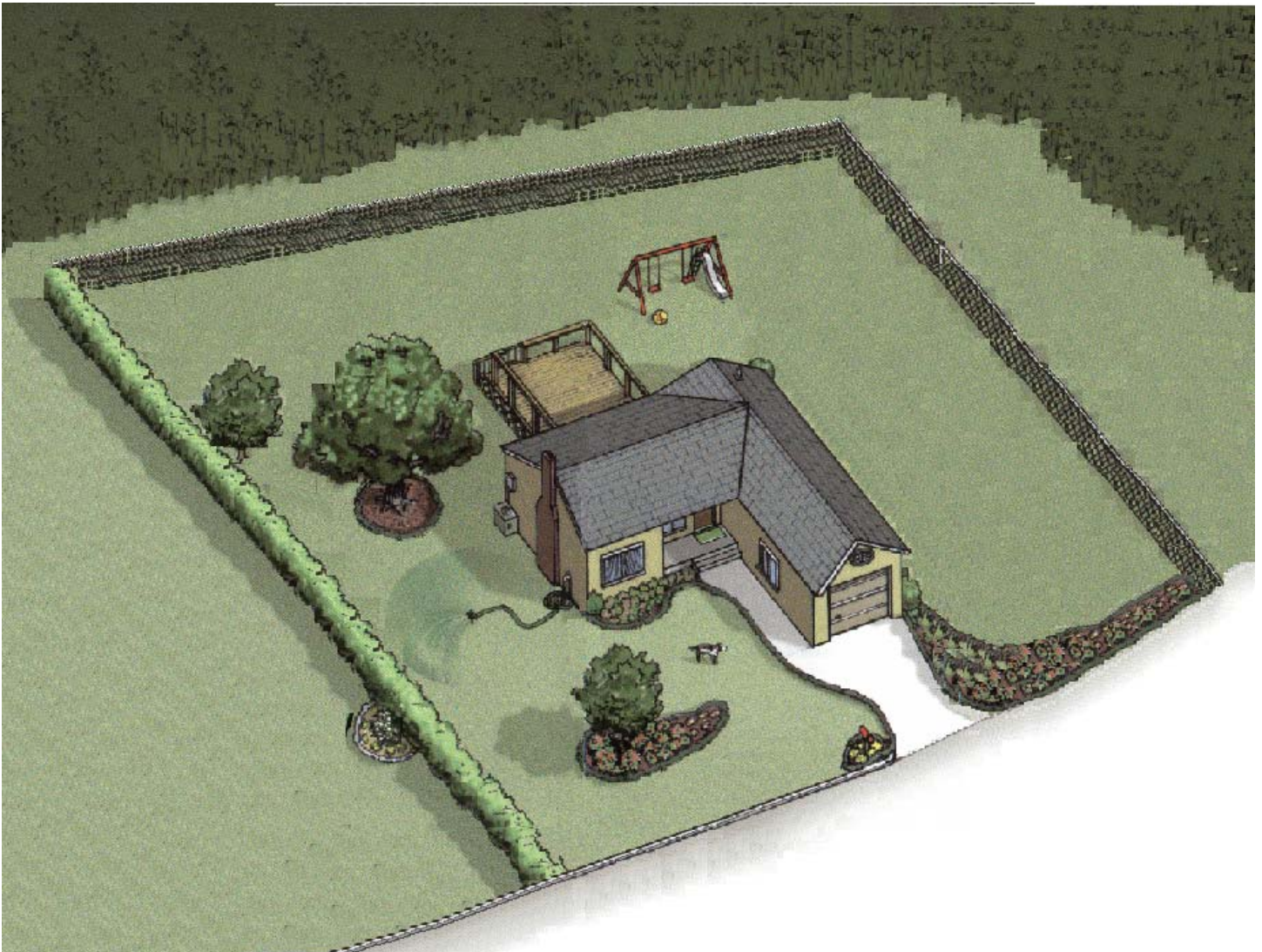
Fire Resistive Building Materials and Practices

Requirements addressing building design, location and construction are set forth as below:

- A. Shingles shall be Class A, B, or C fire resistant material.
- B. No wooden shake shingles are allowed.
- C. Vents shall be screened with a corrosion resistant, noncombustible wire mesh with the mesh opening not to exceed nominal 1/8 inch in size.
- D. Eaves shall be boxed in with 5/8 inch nominal sheathing or noncombustible materials.
- E. Where the roof profile allows space between the roof covering and the roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire stopped with approved materials, or have additional assembly components of noncombustible materials to prevent ignition.
- F. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall be covered with nominal 1/8 inch mesh corrosion-resistant metal screen or other noncombustible and approved material that offers equivalent protection.
- G. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas on those exposures facing hazardous vegetation.
- H. Attic spaces shall be ventilated as approved for the building configuration, the climatological conditions of the site, and the moisture and temperature conditions associated with the occupancy and use of the building.
- I. All overhanging projections and overhanging buildings shall be of heavy timber construction; be constructed of noncombustible material, fire retardant treated wood, or other ignition resistant material; or be 1-hour fire-rated assembly.
- J. Exterior vertical walls shall meet the requirements for heavy timber construction, ignition-resistive material, fire-retardants-treated wood, or a minimum 20-minute fire-rated assembly where walls are potentially exposed to a wildland fire.
- K. All exterior walls shall be protected with 2 inch nominal solid blocking between exposed rafters at all roof overhangs, under the exterior wall covering on all sides exposed to native vegetation.
- L. When appendages and projections are attached to exterior fire resistive walls, they shall be constructed to maintain the fire resistive integrity of the wall.
- M. Structural elements that result in or could result in the collection of combustible materials proximal to the structure shall be protected.
- N. Exterior windows, windows within exterior doors, and skylights shall be tempered glass, multi-layered glazed panels, glass block, or have a fire-resistance rating of no less than 20 minutes.
- O. Window screening shall be noncombustible mesh and installed to prevent the collection of firebrands and embers or their entry into open windows.

- P. Exterior doors shall be solid core wood no less than 1³/₄-inch thick, approved noncombustible construction, or have a fire protection rating of no less than 20 minutes.
- Q. Vents for attic and sub-floor ventilation shall be screened with a corrosion-resistant wire mesh, with the mesh opening not exceeding nominal 1/8 inch in size.
- R. No vents shall be installed in a location that faces heavy vegetative fuels.
- S. Every fireplace and wood stove chimney and flue shall be provided with an approved spark arrester constructed of a minimum 12-gauge welded wire or woven wire mesh, with openings not exceeding 1/2 inch.
- T. Vegetation shall not be allowed within 10 ft of a chimney outlet.
- U. Accessory structures shall meet all of the requirements of this section or shall be separated from the main structure by a minimum of 30 feet.
- V. Permanently located mobile and manufactured homes with an open space beneath shall have a skirt of noncombustible material or material that has a minimum fire-resistive rating of 20 minutes.
- W. Any enclosed space beneath the mobile or manufactured home shall be vented according to C. above.

Firewise Landscaping



The following guidelines can help to reduce the risk from wildfire.

- Make sure your house number is visible.
- Keep grass and lawns cut short and well irrigated
- Use fire resistive vegetation in close proximity to structures
- Separate natural fuels from combustible structure materials
- Provide survivable space for structures
- Keep dead organic material maintained
- Keep trees a minimum of 15 feet away from chimneys
- Combustible materials attached to the house may be a concern
- Topography will influence the amount of survivable space required
- Provide a hose and ladder for fire service personnel
- Keep firewood and other fuels at least 30 feet from structures

Fire Resistive Plant Species for the Great Plains

All Plant material will burn but the following is a list of plants that are more fire resistive.

Trees:	Common Name:	Perennials:	Common Name:
Betula	Birch	Achillea spp.	Yarrow
Acer spp.	Maple amur and silver	Allium schoenoprasum	Chives
Alnus spp.	Alder	Bergenia spp.	Bergenia
Catalpa speciosa	Northern Catalpa	Brodiaea spp.	Lily
Cornus florida	Flowering Dogwood	Coreopsis spp.	Coreopsis
Fraxinus spp.	Ash green	Erysimum linifolium	Wall flower
Gleditsia tricanthos	Honeylocust	Eschscholzia spp.	California poppy
Malus spp.	Apple siberian crab	Fragaria sp.	Wild Strawberries
Populus spp.	Aspen, Cottonwood, Poplar	Geranium spp.	Geranium
Prunus spp.	Cherry common chokecherry	Hemerocallis hybrids	Daylillies
Quercus spp.	Oak (bur)	Heuchera spp.	Coral bells
Robinia pseudoacacia	Black locust	Iris spp.	Iris
Salix spp.	Willow golden and white	Kniphofia uvaria	Red hot poker
Ulmus pumila	Siberian elm	Lupinus spp.	Lupine
Pyrus ussuriensis	Harbin pear	Oenothera spp.	Evening primrose
		Penstemon spp.	Beard tongue
		Solidago spp.	Goldenrod
		Strachys bysantina	Lamb's ear
Shrubs:	Common Name:	Groundcovers:	Common Name:
Amelanchier spp.	Serviceberry	Succulents:	
Atriplex canescens	Four Wing Saltbush	Delospema nubigenum	Hardest ice plant
Buddilia davidi	Butterfly Bush	Echeveria spp.	Hens & Chicks
Caryopteris x clandonesis	Blue-Mist Spirea	Sudem spp.	Stone crops
Cornus serica	Red Osier Dogwood		
Cotoneaster spp.	Cotoneaster	Non-succulents:	
Ligustrum spp.	Privet	Schillea tomentosa	Wolly yarrow
Mahonia spp.	Creeping Grape Holly	Ajuga reptans	Carpet bugle
Pachistima canbyi Dqarf	Mountain Lover	Arctostaphylois uva-ursi	Kinnikinnick
Philadelphus spp.	Mock Orange; Syringa	Armeria meritima	Sea pink; thrift
Rhamnus fragula	Buckthorn	Cerastium tomentosa	Snow in summer
Rhododendron spp.	Azalaes, Rhododendrons	Cotoneaster dammeri	Bearberry cotoneaster
Ribes spp.	Currant	Euonymus fortunei	Winter creeper
Sheperdia argentea	Silver buffaloberry	Potentilla tabernaemontanii	Spring cinquefoil
Symphoricarpos albus	Snowberry	Senecio cineraria	Dusty miller
Viburnum trilobum	Cranberry bush	Thymus praecox articus	Mother of thyme
Yucca spp.	Yucca	Verbenia bipinnatifida	Verbenia
Syringa vulgaris	Common lilac		

The highlighted species have a higher chance of survival; the other species may grow as a landscape species with proper care.

Fall River Contact List

Agency	Name	Phone	E-mail
Great Plains Interagency Dispatch Center		1-800-275-4955	
Fall River County Emergency Management	Frank Maynard	O (605) 745-7562 M (605) 890-7245	frem@gwtc.net
Fall River Sheriff	Jeff Terrell	(605) 745-4444	frcso@gwtc.net
Fall River County Equalization	Joel Wendell	(605) 745-5136	frdoe@gwtc.net
Fall River Highway Department	Randy Seiler	(605) 745-5137	frchwydept@gwtc.net
Fall River County Commissioner	Joe Allen	(605) 745-1890	allenranch@gwtc.net
Hot Springs Police Dept.	Bob Evans	(605) 745-5200	pdchief@gwtc.net
Ardmore VFD	Wayne Wasserburger	H (605) 459-2431 M (605) 890-0449	wasranch@gwtc.net
Cascade VFD	Tim Lamont	H (605) 745-7110 W (605) 745-4511	
Edgemont VFD	Paul Nelsen	H (605) 662-6194 M (605) 890-0412	pnelsen@gwtc.net
Hot Springs VFD	Jim Stevens	(605) 745-4444	
Minnekahta VFD	Rich Ball	(605) 745-5438	
Oelrichs VFD	Larry Osmotherly	H (605) 535-6660 M (605) 890-2737	oelrichsvfd2001@hotmail.com
Oral VFD	Russel Sanders	(605) 424-2795	
Smithwick VFD	Monty Flemming		
Edgemont Ambulance	Paul Nelsen	H (605) 662-6194 M (605) 890-0412	pnelsen@gwtc.net
Hot Springs Ambulance		(605) 745-3651	
Oelrichs Ambulance	Derrick Sletto	(605) 535-2069	
South Dakota Wildland Fire Chief/Division Director(Rapid City)	Joe Lowe	O (605) 393-8011 M (605) 381-6313	Joe.Lowe@state.sd.us
South Dakota Wildland Fire Suppression FMO (Rapid City)	Jim Strain	O (605) 393-8114 M (605) 381-9966	jim.strain@state.sd.us

Agency	Name	Phone	E-mail
South Dakota Wildland Fire Suppression FMO (Hot Springs)	Les Madsen	O (605) 745-5820 M (605) 890-2305	Lester.Madsen@state.sd.us
SD Resource Conservation and Forestry Division	Dave Hettick	O (605) 745-5820	Dave.Hettick@state.sd.us
South Dakota Wildland Fire Suppression Rapid City WUI Specialist	Rob Lehmann	O (605) 394-2584 M (605) 209-0804	robert.lehmann@state.sd.us
US Forest Service - Hell Canyon District Ranger	Lynn Kolund	O (605) 673-4853	lkolund@fs.fed.us
US Forest Service - Hell Canyon District Fuels Planner	Gwen Lipp	O (605) 673-9373	glipp@fs.fed.us
US Forest Service - Hell Canyon District Fire Management Officer	Charlie Patterson		cpatterson@fs.fed.us
USFS Buffalo Gap National Grasslands	Brian Daunt	O (605) 745-4107 M (605) 890-2238	Bdaunt@fs.fed.us
Wind Cave National Park	Jim McMahill	O (605) 745-1156	
Wind Cave National Park	Rick Mossman	O (605) 745-1151	
SDSU Extension Office- Hot Springs	Dusty Jager	O (605) 745-5133	
SD Office of Emergency Management	Brent Kolstad	O (605) 393-8051	Brent.Kolstad@state.sd.us
Bureau of Land Management	Travis Lipp	O (605)-892-7013 M (605) 210-0741	tlipp@blm.gov
Nature Conservancy	Jeff Symstad	(605)-745-6990	jsymstad@tnc.org

Fall River Frequency List

Name	Usage	Comment	System	Tx	Rx	Tone
Black Hills Fire 3	Operations	Command or operations	SD Digital			
NWS_W	Weather comm-unications	Rapid City weather service	SD Digital			
Fall River EM, Battle Mtn RPT	Operations	Custer / Fall River EM Mt. Coolidge	Duplex	153.995	156.210	88.500
Fall River EM, Ball Ranch RPT	Operations		Duplex	153.755	155.820	123.000
SZ Cicero		USFS Frequency	Duplex	169.900	172.375	110.900
VA Battle Mtn RPT	Operations		Duplex	162.225	164.175	432.000
Battle Mtn Talk Around	Operations		Simplex	164.175	164.175	432.000
Hot Springs VFD 1	Operations		Simplex	154.250	154.250	CSQ
Hot Springs VFD 2	Operations		Simplex	154.220	154.220	CSQ
SD MAID 1	Operations Tactical	SD Mutual Aid 1	Simplex	154.265	154.265	CSQ
SD MAID 2	Operations Tactical	SD Mutual Aid 2	Simplex	154.295	154.295	CSQ
NIIMS	Operations		Simplex	168.550	168.550	CSQ
National Fire	Operations		Simplex	154.280	154.280	CSQ
SD EMS Ch 3	Operations		Simplex	155.340	155.340	210.700
SD EMS Ch 4	Operations		Simplex	155.280	155.280	210.700
SD EMS Ch 2	Operations		Simplex	155.385	155.385	210.700
Rapid City Weather	Weather		Receive Only	n/a	162.550	

This plan has been reviewed and met the approval of the local agencies that enter into collaborative efforts to reduce the risk from wildfire for non-federal and federal land in Fall River County.

Approved By:	Representative:	Date:
Fall River County Commission:	<u>Joe Falkenberg</u>	<u>3-30-09</u>
Fall River County VFD Representative:	<u>Tim Toth</u>	<u>4-9-09</u>
South Dakota Department of Agriculture:		
1. Wildland Fire Suppression Division:	<u>Joe Jowse</u>	<u>6/18/09</u>
2. Resource Conservation Forestry Division:	<u>Keith A. Lawen</u>	<u>5/4/09</u>
Reviewed By:		
USDI Bureau of Land Management:	<u>Travis Lipp</u>	<u>5/26/09</u>
USDA Forest Service:	<u>Fynn D Kolund</u> District Ranger	<u>5/21/2009</u>

Glossary

Basal Area— Basal area/acre, (B.A./acre), is a method used to quantify forest stand density on the landscape. It is the sum of the basal area of the individual trees, measured 4.5 feet above the ground in feet squared, on an acre of land. The Black Hills National Forest LRMP identifies an optimal B.A./acre for the 1/2 mile buffers as 40 B.A./acre to 60 B.A./acre.

CAR— Community at Risk.

Community—A group of people living in the same locality and under the same government.

Community At Risk— A group of homes and other structures with basic infrastructure in an area that is at risk from uncontrolled wildfire.

Community Wildfire Protection Plan—A document that addresses the needs of the people involved in its development. Issues such as wildfire response, hazard mitigation, community preparedness, and structure protection may be covered topics.

Crown Fire—A wildfire that spreads across the tops, (crowns), of trees, more or less independent of any fire on the ground.

HFRA— Healthy Forest Restoration Act; 2003.

Fire Regime Condition Class 3 —This term means the condition class description developed by the USDA Forest Service Rocky Mountain Research Station in the Development of Coarse-Scale Spatial Data for Wildland Fire and Fuel Management (RMRS-GTR-87, http://www.fs.fed.us/rm/pubs/rmrs_gtr87.html), dated April 2000 (including any subsequent revisions).

Fire regimes on the land have been significantly altered from historical ranges. A high risk exists of losing key ecosystem components from fire. Fire frequencies have departed from historical frequencies by multiple return intervals, resulting in dramatic changes to the size, frequency, intensity, or severity of fires or landscape patterns. Values of vegetation attributes have been significantly altered from their historical ranges.

Fire Regime I—This term means an area that historically has had low-severity fires every 0 to 35 years that is located primarily in low-elevation forests of pine, oak, and pinyon-juniper.

Firewise Construction—The use of materials and systems in the design and construction of a building or structure to safeguard against the spread of fire within the building or structure as well as the spread of fire to other buildings or structures or to adjacent natural areas.

Firewise Landscaping—Vegetation placed around a home or other structure in a manner so as to reduce the exposure of the building to an encroaching wildfire, or slow/inhibit the spread of fire from an adjacent wildland area to the building or from the building to the wildland area.

Fuel—Native vegetation that is available to burn in a wildfire.

Home Ignition Zone—See Survivable Space.

Infrastructure—The physical support systems of a subdivision, including roads, power lines and central water and sewage.

Ladder Fuels—Fuels that provide vertical continuity between strata, thereby allowing fire to move from surface fuels to the crowns of trees, (or to structures), with relative ease.

Municipal Watershed—A community water system “that serves at least 15 service connections used by year-round residents of the area served by the system; or regularly serves at least 25 year-round residents” (Safe Drinking Water Act, Section 1401, 42 U.S.C.A. 300f.(15)).

Municipal Water Supply System—This term means the: Reservoirs, canals, ditches, flumes, laterals, pipes, pipelines, and other surface facilities and systems constructed or installed for the collection, impoundment, storage, transportation, or distribution of drinking water.

NFP—National Fire Plan; August 2000.

Prescribed Burning/Prescribed Fires—Carefully controlled fires set by land managers to reduce hazardous accumulations of wildland vegetation, (fuel), control forest insect and diseases, improve forage for livestock, improve wildlife habitat and maintain healthy ecosystems.

Risk—Activities or things that provide a source of heat sufficient to result in a fire ignition.

Survivable Space—The area between wildland fuels and structures, (typically a width of 30 feet or more), that allows firefighters to protect the structure from wildfire. In the absence of firefighters, this safety zone increases the likelihood that the structure will survive on its own.

Shelterbelt—A barrier of trees and shrubs that protects against the wind and reduces erosion.

Value—Natural resources, improvements, or other values that may be jeopardized or lost if a fire occurs.

Wildfire—A fire that burns out of control in forest or wildland areas damaging or destroying natural resources and sometimes threatening or destroying life and property.

Wildland-Urban Interface—A zone where structures and other human development meet and intermingle with undeveloped wildland or vegetative fuels.

Wildland-Urban Interface Buffer Zones (½, 1½ and 3-mile) —Geographic areas centered around values at risk that help develop mitigation strategies to reduce the risk from wildfire.

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