

CHAPTER 1

Purpose and Need for Action

I. INTRODUCTION

The Gallatin National Forest is beginning an environmental analysis, as required by the National Environmental Policy Act (NEPA), to evaluate fire risk and the potential effects of implementing a hazardous fuel reduction project on National Forest System lands along the Main Boulder River corridor – a wildland/urban interface area – that is outside of the Absaroka Beartooth Wilderness. The National Fire Plan defines wildland/urban interface (WUI) as “The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels”.

The Boulder River corridor parallels the Main Boulder River, beginning in the north at the boundary of the Gallatin National Forest and continuing southerly to Box Canyon. The corridor is about ½ mile wide. The southern two-thirds of the corridor extend on either side as far as the wilderness boundary. The project area is located approximately 30 miles southwest of Big Timber, Montana on the Gallatin National Forest, Big Timber Ranger District, Sweet Grass and Park Counties, Montana.

The Main Boulder Fuels Reduction Project is part of a continuing effort by Federal, State and local agencies and groups to address the risk of fire in the Main Boulder drainage. The project was developed considering fuel hazard, risk of human-caused ignition, social values, property, and human lives at risk. In numerous reviews over the past 10-15 years, fire behavior specialists did not find any safe areas in the Main Boulder corridor, where large groups of people could take refuge from a large fire. All of their reviews have concluded that evacuation is the only method of protecting the 2500-3000 members of the public from a large wildfire in the Main Boulder drainage. The prospect of an urgent wildfire situation would have increased danger from large buses, recreationists, and residents exiting over the single lane Main Boulder Road and encountering incoming fire equipment and personnel.

The Sweet Grass County Fire Plan has identified this drainage as the county’s highest wildland/urban interface risk. The fire plan states, “The highest wildland fire danger is in the southernmost 20 miles of the Main Boulder drainage extending from the Natural Bridge recreation area south, up to and including Box Canyon”. This matches the description of the proposed project area. A copy of this fire plan can be found in the Project File.

In addition, Sweet Grass and Park Counties’ fire chiefs, county commissioners, sheriffs, and numerous other fire behavior and public safety personnel have long recognized the Main Boulder’s risk. Because the Main Boulder Road is owned and maintained by the county, the Forest Service can’t improve access in and out of the river corridor, however, the Forest is working closely with the county to identify possible funding for road improvement projects.

Collaboration with the public, private landowners, recreationists, and other interested parties is an important part of the Main Boulder Fuels Reduction Project. The proposal has been developed with input from adjacent private homeowners, the local watershed association, as well as state, county, and local officials and groups. The Forest Service has been meeting with the Boulder River Watershed Association since September of 2001. More than 20 meetings have been held, with the Forest Service providing information and updates regarding the Main Boulder Fuel Reduction Project. The Big Timber Ranger District has engaged a long list of community interests in this project in addition to the watershed association including the Sweet Grass County Commissioners, Sweet Grass Department of Emergency Services, Big Timber Fire Chief and Fire Department, Sweet Grass County Sheriff, Sweet Grass Conservation District, the Sweet Grass County Road Department, Park County Commissioners, Park County Rural Fire Department, Montana Department of Natural Resources and Conservation, Bureau of Land Management, and

local residents. On May 7, 2003 a meeting was held at the American Legion Hall in Big Timber to inform the public about the availability of and how to apply for funds through grants, to be used for county and private fuel reduction activities. Following this meeting, a number of interested individuals joined together, forming the Boulder River Fuels Reduction Cooperative.

In June of 2003, the Big Timber Rural Fire Department had performed seventy "fire wise" assessments on private structures in the Main Boulder Corridor.

The Boulder River Fuels Reduction Cooperative has been awarded two grants, one from the USDI Bureau of Land Management, and another from the Montana Department of Natural Resources and Conservation, to assess and implement fuels reduction efforts on private land. The Boulder Fuels Reduction Cooperative has hired a project coordinator to manage the program and engaged a consultant firm, Fire Logistics, to develop the Boulder River Community Assessment and Mitigation Plan. This plan, developed independently from the Main Boulder DEIS, assessed fire risk and fuel conditions in the Main Boulder Corridor, and identifies actions necessary on private ground to protect private land values as well as providing for public and firefighter safety (Boulder River Community Fire Plan by Fire Logistics, Rath et al, August 2004). Three demonstration fuel reduction sites were completed in spring of 2004. Fuel activities have been completed or are currently occurring on approximately fifteen additional private sites.

Numerous other field trips to the project area were conducted during the summer/fall of 2004. Those attending included both members of the public and various organizations including the US Fish & Wildlife Service, Environmental Protection Agency, Trout Unlimited, and the Greater Yellowstone Coalition.

Implementation of the Main Boulder Fuel Reduction Project is scheduled to begin in the winter of 2004/2005. The project is expected to be complete in approximately five to seven years. Following completion of the project, ongoing maintenance will be needed for an indefinite period in order to maintain fuels at a reduced level.

This Environmental Impact Statement (EIS) is being prepared to address the direct, indirect, and cumulative environmental effects of stand density reduction and prescribed burning as the key components of this hazardous fuels reduction project. The primary goal for this proposal is to reduce the risk to the public and increase firefighter safety in the event of a human-caused or wildland fire start originating in the urban interface of the Main Boulder River Corridor or the adjacent wilderness areas. Reducing fuel volumes and breaking up the continuity of vertical and horizontal fuels would lower public and firefighter risk by changing the intensity and pattern of a wildfire, thereby gaining time to evacuate or take other safety measures. Secondary goals are to improve wildlife forage and habitat, restore aspen stands, improve fire protection in the wildland/urban interface and create residual stand conditions that are less susceptible to insect and disease infestations. A secondary and socially driven goal is to provide public education and cooperation with groups and individuals on the hazards, risks, and actions possible to minimize losses from wildfires on private lands in the wildland/urban interface.

The primary emphasis of this project is to identify fuel modification opportunities on National Forest lands that are adjacent to the Main Boulder Road, the Boulder River, recreation residences, campgrounds, and administrative sites. Specific design criteria and mitigations have been developed to buffer these areas (See Ch 2-31 and Appendix B-1) for various resource concerns. Results of fieldwork show several opportunities for fuel modification, while still maintaining eligibility of the Boulder River for consideration and possible inclusion into the National Wild and Scenic River System. Because the non-wilderness river corridor is narrow (approx. ½ mile wide in most areas) and mechanical vegetative manipulation in the Absaroka-Beartooth Wilderness is prohibited, most modification opportunities will be restricted to areas adjacent to the road and residences; the area that is known as the wildland/urban interface. These modifications, though limited in scope, would reduce the chance of human-caused fire starts (7 of 10 starts since 1979 were human caused).

With a continual increase in recreational usage of the drainage and a documented history of human-caused fire starts, a preplanned fuel modification project would be advantageous. The

proposed modifications would reduce the chances of accidental ignitions. In the event of a fire, modifications to the volume and arrangement of fuels would reduce fire intensity and rate of spread. These changes in fire behavior would provide the time needed to evacuate recreationists, residents, and firefighters.

This analysis is being prepared in compliance with the National Environmental Policy Act (NEPA), Council of Environmental Quality (CEQ) regulations and the Gallatin National Forest Land Management Plan (GNFP1987). This EIS will also tier to the Absaroka-Beartooth Wilderness Fire Management Guidebook (1993).

The purpose of the NEPA process is to help public officials make decisions that are based on an understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment (40 CFR 1500.1(c)).

II. DOCUMENT ORGANIZATION

The Forest Service has prepared this Environmental Impact Statement in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Impact Statement discloses the direct, indirect, and cumulative impacts that would result from the proposed action and no action alternatives. The document is organized into four chapters.

Chapter 1. Purpose and Need for Action: This chapter includes information on the history of the project proposal, the purpose and need for the project, and the agency's proposal for meeting the purpose and need.

Chapter 2. Issues and Alternatives: This chapter details how the Forest Service informed the public of the proposal and how the public participated and responded. Chapter 2 provides a more detailed description of the proposed action as well as other possible alternative methods for achieving the stated purpose. These alternatives were considered in light of key issues raised by the public and other agencies. This chapter also includes a discussion relating to design criteria, mitigation measures, and monitoring requirements.

Chapter 3. Affected Environment and Environmental Consequences: This chapter describes the affected environment, the current conditions of the resources involved, and the environmental effects of implementing the proposed action or no action alternatives. The analysis is structured around key issues. This chapter discloses the past, present, and reasonably foreseeable activities in the project area, as well as the forest-wide goals, objectives, and standards applicable to the project. Chapter 3 includes a discussion of applicable laws, regulations, and other guidance.

Chapter 4 Consultation and Coordination: This chapter provides a list of preparers and agencies consulted during the development of the environmental impact statement. Chapter 4 includes a discussion on public involvement, the scoping process, and how this document was made available and reviewed.

Appendices (A-E): Appendix A discusses issues that were not considered to be of sufficient concern to play a major role in the analysis. Appendix B describes unit specific mitigation. Appendix C lists the Best Management Practice's to be followed to protect water quality and maintain soil productivity. Appendix D addresses species viability for the Gallatin National Forest. Appendix E, added between the Draft and Final EIS, includes the comments received on the Draft EIS and the agency's responses to those comments. These appendices are followed by a glossary and a literature cited section.

III. CHANGES BETWEEN THE DRAFT EIS AND THE FINAL EIS

Section I. Introduction

- Introduction: The National Fire Plan definition of a Wildland Urban Interface has been added
- Two paragraphs were added describing the Sweetgrass and Park County officials' and the Sweetgrass County Fire Plan's identification of the Boulder River Valley as a high risk for wildland fires
- Current activity and treatments occurring on private land in the corridor were updated from the DEIS.

Section II. Document Organization

- Document Organization was added to the FEIS.

Section VI. Purpose For and Description of the Proposed action

- Under The proposed action, the statement that treatment prescriptions would attempt to bring stand conditions closer to historic levels was deleted. The proposed changes in vegetation address the need to increase human safety in the event of a wildfire. Whether the resulting condition conforms to pre-settlement patterns is not a concern.
- Secondary goals numbers 5 and 6 were reworded in the FEIS.
- The descriptions for Commercial Harvest and amount of Temporary Road Development were modified.

Section VII. Scope of the Proposed Action

- Scope of the proposed action: Two paragraphs describing actions that are not within the scope of the proposed action were added.

Section VIII. Relationship to the Forest Plan and other Administrative Direction

- Map 1-5: The MS2 line was corrected on the FEIS map.
- A section describing the nine guiding principles of the National Fire Plan Direction and how it pertains to the Main Boulder Fuel Reduction project was added to the FEIS.

Section IX. Decisions to be Made

- Revisions to the wording of the bullets describing the decisions to be made.

IV. BACKGROUND INFORMATION

General Description of the Area

The Main Boulder River Corridor consists of a strip of non-wilderness National Forest land approximately 24 miles long and one-half mile wide. The Absaroka-Beartooth Wilderness, which encompasses approximately 1,000,000 acres, borders the river corridor for about two-thirds of its length. The river corridor consists of a "box canyon" with steep sides characteristic of glaciated landscapes. The Boulder River flows roughly 3000-4000 feet below high elevation plateaus on either side of the canyon. The drainage is characterized by a combination of densely timbered hillsides, lightly timbered, steep rocky slopes, and occasional meadows. The majority of the one-half mile wide corridor is forested with various sizes and species of trees, which, in conjunction with other vegetation, form a nearly continuous canopy. Concentrations of down trees are common.

Due to the unique nature of the drainage, as well as the potential for mineral exploration, development has been continuous. There are approximately 115 mining claims in the drainage. Recreation has become the predominant use with approximately 250 private structures, many of which are seasonal residences, 25 permitted recreational residences on National Forest land, 4 church camps, 6 well used designated Forest Service campgrounds and numerous wilderness trailheads and dispersed camp sites. Use by tourists, camp participants, private landowners, and

recreationists is greatest during the summer and fall months, with as many as 2,000 – 3,000 people occupying the area on a typical summer weekend.

The Gallatin Forest Plan specifies that the Main Boulder River is eligible for consideration and possible inclusion into the National Wild and Scenic Rivers System. Potential classifications for “scenic and recreational” considerations are as follows:

- Wilderness boundary to Bramble Creek (Scenic Classification)
- Bramble Creek to Miller Creek (Recreation Classification)
- Miller Creek to Blakely Creek (Scenic Classification)
- Blakely Creek to the Forest Boundary (Recreation Classification)

In Appendix J of the Gallatin Forest Plan, the Forest Service commits to maintaining and protecting the values for which river segments were initially identified as eligible for classification as a Wild and Scenic River (PL 90-542). Protection will continue until suitability studies are completed.

Vegetative types vary within the river corridor. Spruce and remnant aspen occur in the canyon bottoms and lower portions of the side drainages. Increasing amounts of Douglas-fir and lodgepole pine occupy slopes above the canyon bottom. Conifers have encroached upon aspen stands leading to a decline in vigor. Conifers have replaced aspen in many areas. A continuous forest canopy covers much of the canyon. Down woody fuels are moderate to heavy. Tree limbs and smaller trees combine to create continuous vegetation from the forest floor to the tops of the tallest trees. Near the canyon bottom, the forest floor is interrupted by four large meadows, some of which are associated with the church camps. One of the meadows is irrigated, resulting in a prolonged period of fresh, green growth. In the others, grasses tend to cure by mid-summer of an average year.

Forested soils in the project area are generally moderately coarse textured with many boulders on the surface and within the soil profile. These soils have relatively low productivity when compared with other soils in mountainous areas in Montana. Meadows contain soils having few rock fragments and medium textures with high productivity. Both soils have moderate to low erosion potential. No large landslide areas occur in the canyon.

Aerial and ground surveys, as well as insect traps within the analysis area since 2000, show continuing tree mortality from Douglas-fir beetle that have moved from adjacent wilderness areas onto National Forest and private lands. In May 2003, a field visit by the Regional Entomologist, Ken Gibson, confirmed that beetle populations have reached epidemic levels and are increasing. Gibson’s field report is in the Project File. There are also isolated populations of mountain pine beetle within the analysis area and there are outbreak populations in adjacent areas (Yellowstone NP). Several groups of Western Balsam Bark Beetle (WBBB)-killed subalpine fir (SAF) were found in the upper part of the drainage, from Elk Creek nearly to Boulder Pass. Approximately 400 acres of subalpine fir stands have been affected. Ground surveys indicate lodgepole pine dwarf mistletoe is also present. Dead and dying trees, from insect and disease occurrences in the Main Boulder drainage, are creating additional fuel loads in addition to existing high natural fuel loadings. In the event there is a fire, these high fuel loadings may hamper fire control actions and create additional public safety hazards.

Access to all locations in the Boulder River Corridor is limited to a single county road. Ownership of the road is divided between Sweet Grass and Park Counties, with Sweetgrass County conducting the annual maintenance through a shared agreement. The road runs through the canyon bottom for approximately 24 miles ending at the wilderness boundary in the Monument Peak area. The Main Boulder Road is rough, unpaved, low-speed and single lane with several one-lane bridges crossing the river. At the urging of the Forest Service and County Fire Wardens, some improvements to the road have been made since 1998. Sweetgrass County recently applied for Federal Highway Access Funds to be used for additional road improvements. At this time, it is not known whether these funds will become available.

The four church camps have school buses on site during their operating season. The buses are available to transport campers in emergency situations. In the event of an urgent wildfire situation, large buses, recreationists, and residents exiting over the single lane Main Boulder Road would encounter incoming fire equipment and personnel. Traffic would become congested, travel would slow and people would be at risk.

The Boulder River Corridor experiences frequent high wind events with wind speeds of up to 35-40 miles per hour. High winds sometimes persist for several hours. Dry thunderstorms, as well as Pacific Frontal Systems with their associated jet stream, occur during the summer and fall. These storms often produce strong downdrafts in the narrow confines of the corridor. Strong downdrafts contribute to weather that is conducive to extreme fire behavior.

Main Boulder Fire History

In the late 19th century John Leiberg conducted a survey for the Department of the Interior. Leiberg's work included mapping and inventorying the forest reserves within the Absaroka Division of the Yellowstone Forest Reserves. His narrative and mapping indicate that most of the Main Boulder corridor was used for grazing. A significant portion of the drainage had recently burned. Observations of the burn pattern suggest that most of the corridor burned with no influence of attempts at suppression. In the years following Leiberg's study, much of the area was settled through homesteading and mineral development. Along with this settlement came a very successful fire suppression program, allowing a pronounced change in vegetation to occur.

Beginning in the late 1970's, the northern front range of the Absaroka began to experience wildfires of a larger size and scope than those that occurred during the previous seven decades. Some of the large fires were: the Benbow Fire 1979, Sand Dune Fire 1987, Storm Creek Fire 1988, Hellroaring Fire 1988, Iron Mountain Fire 1990, Thompson Creek Fire 1991, Blacke Butte Fire 1994 and the Sheppard Mountain Fire 1996. The Sheppard Mountain fire occurred in the steep, glaciated slopes of the northeasterly facing East Rosebud drainage. Specialists in fire behavior recognized that the Main Boulder drainage exhibited many of the characteristics of the East Rosebud drainage.

The Hellroaring and Storm Creek fires burned within three miles of the project area. These large wildfires were recognized as having potential to enter the Main Boulder drainage from the south. The composition of fuels in the Main Boulder corridor is very similar to those that burned aggressively in the Hellroaring and Storm Creek fires. Fire Management personnel on the Gallatin National Forest along with Sweet Grass and Park County officials recognized the need for further preplanning to better prepare for wildfire in the Main Boulder canyon. In the winter of 1988-89, a task force was created to develop an evacuation plan, a pre-attack plan, and a vegetative plan for the Main Boulder drainage. The task force developed three documents, assigned fire prevention and suppression roles, and began implementing a fuels reduction plan.

In 1996, the Sheppard Mountain Fire burned 14,800 acres and destroyed 24 structures. Numerous residents had to be evacuated. This fire burned with wind speeds of 35-40 miles per hour in association with a weather front. The resulting crown fire burned the entire canyon.

Due to similarities between the East Rosebud and the Main Boulder canyons, fire management personnel from the Gallatin requested assistance from the Intermountain Fire Sciences Laboratory to determine if safety zones were present in the Main Boulder corridor. Safety zones could provide protection for forest users and residents. The fire lab concluded that 90 years of successful fire suppression efforts and significant increases in vegetation and fuels put the corridor in a potentially hazardous situation during periods of severe fire weather. Natural safety zones do not exist. Specialists concluded that an ignition during periods of severe fire weather would produce extreme fire behavior. Lives and property would be threatened.

Given the lack of fire free zones, the current situation in the Main Boulder corridor (i.e. potential fire behavior, usage, facilities, and access) presents a serious threat to human safety.

Main Boulder Station Historic Photo (1930's)



Main Boulder Station Current Photo (1990's)



MAP 1-1 HISTORIC VEGETATION MAP

MAP 1-2 CURRENT VEGETATION MAP

MAP 1-3 FIRE RISK MAP

V. PROJECT AREA LOCATION AND DESCRIPTION

The Main Boulder Fuels Reduction project area consists of roughly 2500 acres of non-wilderness National Forest Land. The project area follows both sides of the Main Boulder River for a distance of approximately 24 miles. The project area is approximately one-half mile wide. The project area is approximately 30 miles southwest of Big Timber, Montana on the Big Timber Ranger District of the Gallatin National Forest. The legal description is T3S R12E, T4S R12E, T5S R12E, and T6S R12E P.M., Sweet Grass and Park Counties, MT.

Fuel management treatments are being considered from the Forest boundary near the Natural Bridge and Falls south to the Box Canyon Guard Station, (refer to Map 1-4, Ch. 1-12). Vegetation types include: Douglas-fir, Engelmann and white spruce, lodgepole pine, aspen, and native grasslands. Vegetation management activities would be restricted to the non-wilderness corridor along the Main Boulder Road (#6639).

The analysis area for the Main Boulder Fuels Reduction project consists of the Main Boulder Watershed, which is made up of timber compartments 116 through 129 and 136. This area includes numerous acres of National Forest System lands, Wilderness and non-wilderness, and private lands, all of which drain into the Boulder River. The analysis area consists of approximately 151,000 acres, including the private land, in 15 timber compartments with about 82% of those acres classified as wilderness and another 2% privately owned, leaving approximately 16% being proposed for treatment. The cumulative effects area for some of the resources will vary from the project analysis area depending on the environmental factors being analyzed.

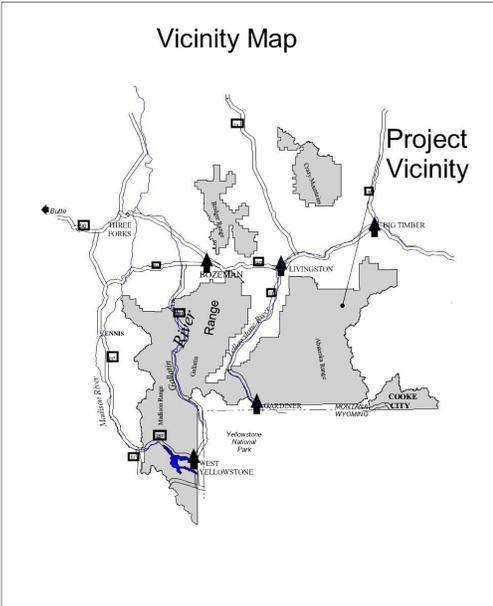
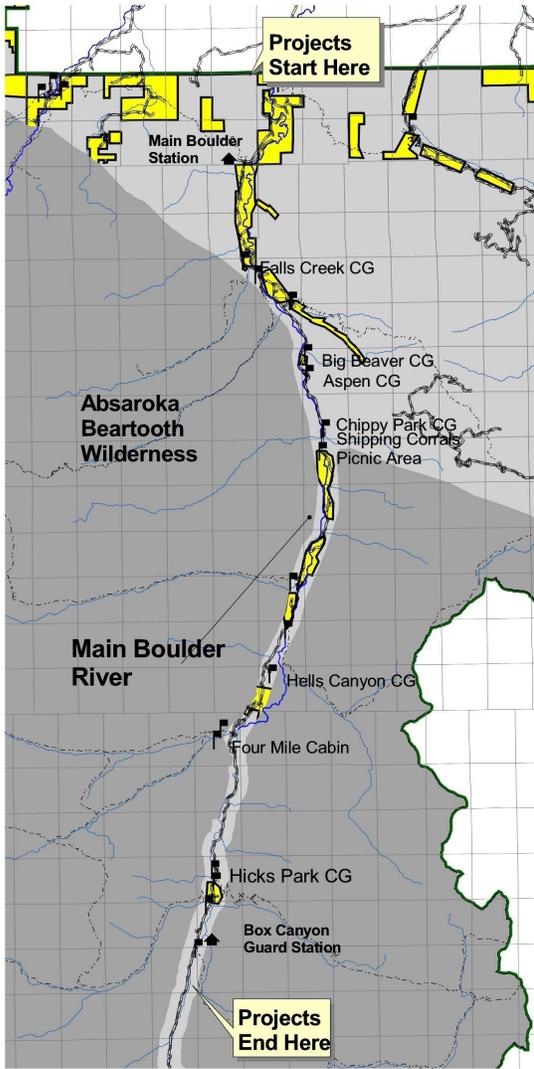
Map 1-4 VICINITY MAP

Main Boulder Fuels Reduction Project

Scoping Map

Legend

-  Campgrounds & Trails
-  Trails
-  Main Boulder River
-  Private land Boundaries
-  Streams
-  Absaroka Beartooth Wilderness
-  Forest Boundary



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VI. PURPOSE FOR AND DESCRIPTION OF THE PROPOSED ACTION

Purpose and Need

The primary goals of the proposed action, which have formed the purpose and need are:

- 1) Provide for public and firefighter safety by minimizing the probability and effects of future human-caused fire starts and/or helping to reduce the intensity of a potential wildland fire leaving the wilderness and entering the wildland/urban interface of the Main Boulder River Corridor.
- 2) Extend the potential time available for evacuation in the event of a wildfire by reducing the fire hazard along the Main Boulder Road.
- 3) Reduce fuel loadings and break up the composition of vertical and horizontal fuels in the river corridor, where possible.

The secondary goals are to:

- 1) Improve wildlife habitat/forage by enhancing winter range and meadows.
- 2) Rejuvenate aspen stands.
- 3) Improve fire protection in the wildland/urban interface.
- 4) Increase tree vigor at the stand level, making trees less susceptible to future insect and disease occurrences.
- 5) Maintain and protect values for river segments that are eligible for consideration and possible inclusion into the "Scenic and Recreational" classifications of the National Wild and Scenic River System.
- 6) Through collaboration and public involvement in the NEPA process, increase the potential acres treated by providing property owners and local groups with the information needed to appreciate opportunities to implement similar hazardous fuel reduction plans on private land.

Note: The proposed action calls for fuel reduction treatments only on National Forest System (NFS) lands (including National Forest land authorized for special use permits) outside of the Absaroka-Beartooth Wilderness. Private landowners are responsible for fuels reduction treatments and structure protection measures on privately owned property.

Recreational usage in the project area is high, with church camps, private dude ranches, recreational residences, private dwellings and other outbuildings totaling more than 250 structures. There are approximately 115 mining claims in the drainage as well as Forest Service campgrounds, administrative facilities, and numerous trailheads. The only vehicle access to the entire corridor is a single-lane gravel road providing one-way access. Currently, evacuating the public and firefighters in the event of a wildfire would be extremely time consuming and could prove futile due to limited access and the likelihood that fire would spread rapidly.

The Forest Service should consider fuels management measures in the Main Boulder corridor for the following reasons:

- 1) Topographic features within this river corridor (a narrow, steep-sided, confining drainage surrounded by heavily timbered slopes) are conducive to a large-scale, rapidly spreading wildfire.
- 2) There is heavy public use throughout the area.
- 3) The Forest Service has "protection responsibility" (responsibility to fight fires that occur in this drainage)
- 4) The Forest Service has the ability to reduce the likelihood of a major conflagration (large fire) by breaking fuel continuity and reducing fuels.

Treatments are proposed on National Forest land that is adjacent to private property, residences, and the Main Boulder road. Treatments are planned for areas that are adjacent to permitted summer homes, recreation areas, campgrounds and Forest Service administrative sites.

Mitigations call for buffering these areas to avoid major changes in a forested setting that is attractive to users.

The Proposed Action

The proposed action was designed to meet the purpose and need for the project. This alternative was developed considering the areas of high fuel hazard, high risk of human-caused ignition, and high social values. Considering hazard, risk, and value, stands of trees that have high potential for lethal fire to affect lives and property in this wildland/urban interface were included for treatment in this alternative. The proposed action includes as a priority for treatment stands where the reintroduction of fire would maintain and/or improve wildlife habitat, and those having existing insect and disease outbreaks. The proposed action would contribute to meeting society's need for wood products. The proposed action is consistent with the management direction of the GNF Forest Plan.

The project area is situated within the Main Boulder River Corridor, along the Main Boulder Road from the natural bridge south to Box Canyon. All of the treatments have been designed to maintain and protect values for river segments that are eligible for consideration and possible inclusion into the "Scenic and Recreational" classifications of the National Wild and Scenic River System

Mechanized equipment would not be allowed within Streamside Management Zones or wet areas in conformance with the State of Montana Best Management Practices (BMP's).

Conifers would be removed around aspen clones for a 100-foot radius surrounding them in order to encourage aspen regeneration.

Maps 2-1 through 2-4 in Ch. 2-23 through 2-26 display the areas of treatment associated with the proposed action. Detailed descriptions of the proposed treatment groups to be implemented with the proposed action can be found in Ch. 2-14 through 2-18. Table 2-1 (Ch. 2-21 through 2-22) displays individual unit information (stand treatment group, forest type, acres, management area, slope %, fuel model, and remarks). Operating periods for the various associated activities are described in Ch. 2-13. Design criteria and mitigation measures that are applicable to all units can be found in Ch. 2-31 through 2-41. Table B-1, displaying unit-specific mitigations, can be found in Appendix B, B-1 through B-4.

The entire project is expected to take 5-7 years to complete. Implementation could begin in Winter, 2005 and the project will be separated into logical subdivisions for implementation purposes. Components of the proposed action include:

Commercial Harvest

Proposed fuel reduction treatments would occur on up to approximately 2500 acres in fifty-one separate units. Stand density reduction, utilizing ground-based harvest equipment, would occur on approximately 1060 acres on slopes up to 35%. Large and small diameter trees would be harvested. Up to 1040 acres on slopes greater than 35% and/or areas not operable by conventional ground-based equipment would be treated with other methods. These treatments could utilize specialized equipment, as well as horse logging on slopes less than 20%, cable logging, aerial systems, hand thinning, hand piling, and burning. Approximately 200 acres on slopes >35% may be inoperable by any means due to the terrain. See Maps 2-1 through 2-4 in Ch 2-23 through 2-26.

Leave trees would be unevenly spaced with patches of multi-storied trees as well as open spaced individual trees. The continuity of vertical and horizontal fuels among individual trees within a stand would be broken. Prescriptions would vary between adjacent stands to help break up fuel continuity among stands. Understory burning and/or pile burning would occur in conjunction with the thinning activities. Burning would occur during the spring and late fall seasons.

Retention Areas (Leave Clumps)

A minimum of 15 to 20 percent of the planned acreage for each unit will be left untreated to provide diversity across the landscape and maintain undisturbed habitat. Harvest will not occur within 15 feet of water bodies (Riparian Reserves). Riparian reserves will be joined with other retention areas where possible. No-cut buffers around water bodies are intended to prevent disturbance to soil, organic matter, and surface vegetation in order to maintain and enhance their function as sediment catches and refuge for wildlife.

Small-diameter Fuels Treatments

In addition to reducing surface fuel loading by commercial thinning and salvaging large diameter trees, small-diameter fuel reduction will occur in each unit. These treatments will include the thinning small diameter materials (6" diameter or less) and piling and burning the slash or chipping it. Some of the <6" material may be sold and utilized as forest products, if a market is available. Approximately 5-10 tons per acre of down woody material should be retained following thinning.

Meadows

Conifers would be slashed and prescribed burning activities would occur on approximately 400 acres of meadow type habitats. Prescriptions will attempt to bring meadow habitat conditions closer to those that occurred historically. Aspen clones would have conifers removed within a radius of 100-feet in order to encourage aspen regeneration. Prescribed burning will help to rejuvenate grasses. Many of these areas have been identified as elk winter range.

Temporary Road Development

No new permanent road construction is being proposed. Commercial harvest operations are expected to require the construction of temporary roads. A maximum of 7.4 miles of temporary road may be necessary to access the areas proposed for mechanical fuels treatment using conventional ground-based logging systems. Of this total, approximately 4.8 miles will be re-examined on the ground prior to project implementation to determine whether opportunities exist to reduce the length of newly constructed temporary road by using existing roads on private or National Forest land. One of the key factors in determining the use of existing roads on private land is whether permission to use the roads can be obtained. Existing roads on either ownership may require reconstruction to support safe and efficient use, consistent with project design criteria and mitigations. Options to use existing roads will be examined to assure that the environmental effects of using roads on private and public land do not exceed what has been disclosed in this document. Maps 2-5 through 2-8 in Ch. 2-27 through 2-30 disclose the approximate locations of proposed temporary roads, including those roads to be re-examined.

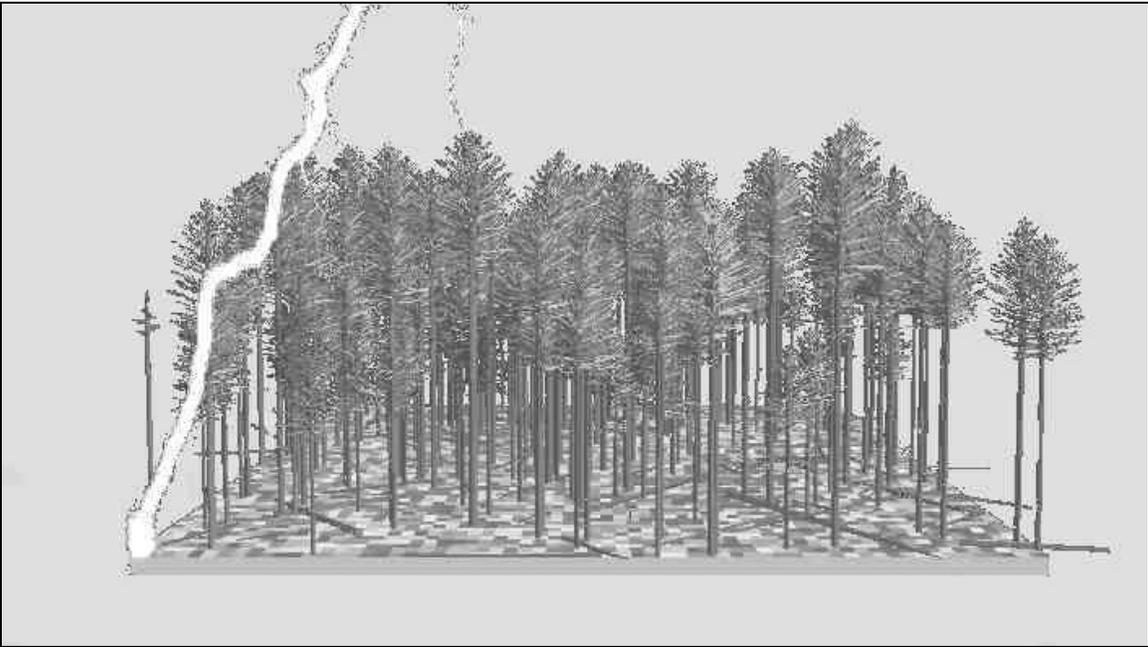
Actual temporary road locations are determined through agreement by the Forest Service during timber sale contract administration. Temporary roads would be constructed to provide access to the interior of harvest units to facilitate ground-based harvest systems. These roads would be built on relatively flat ground slopes (less than 20%) and would be constructed to the lowest possible standard capable of supporting log haul in order to minimize ground disturbance. Temporary road construction, including clearing and removing of wood products from within the road right-of-way, would occur July 1- October 30. All newly constructed temporary roads would be closed to the public during harvest activities and permanently closed and rehabilitated within one year upon completion of harvest related activities within that portion of the project area. Rehabilitation will include making the temporary roads on National Forest System lands impassable for any motorized travel, as well as necessary other resource protection practices. Temporary roads that are seen from key observation areas would be recontoured (the road prism removed) in order meet visual concerns and other resource needs.



**Pre-Treatment Wildfire Progression Simulation
(Ignition)**



**Pre-Treatment Wildfire Progression Simulation
(Crown Fire)**



**Post-Treatment Wildfire Progression Simulation
(Ignition)**



**Post-Treatment Wildfire Progression Simulation
(Ground Fire)**

VII. SCOPE OF THE PROPOSED ACTION

The Council of Environmental Quality (CEQ) regulations implementing NEPA define the “scope” of an action consisting of “...the range of actions, alternatives, and impacts to be considered”. To determine the scope, federal agencies shall consider three types of actions; (1) connected actions; which are two or more actions that are dependent on each other for their utility; (2) cumulative actions; which when viewed with other proposed actions may have cumulatively significant effects and therefore be analyzed together; and (3) similar actions; which when viewed with other reasonably foreseeable or proposed actions have similarities that provide a basis for evaluating their environmental consequences together. (40 CFR 1508.25).

The scope of the proposed actions addressed in this FEIS is limited to stand density reduction and the reduction of downed fuel loadings on National Forest Land including:

- Thinning large diameter green conifers
- Harvesting insect or disease damaged/killed conifers.
- Cutting small diameter conifers
- Slashing conifers encroaching into meadows and aspen stands.
- Prescribed burning meadow type areas and underburing in treated stands.
- Piling and removing or burning downed woody materials and fuels resulting from treatment actions.

Actions that are not within the scope of the proposed action include:

- Decisions supported by an environmental analysis of the current situation commonly remain valid for six to eight years. Fuel reduction and maintenance projects that may become necessary and could begin beyond this timeframe (possibly ten to twenty years) are outside the scope of the decision to be made. The environmental effects of any future projects would be disclosed and a project-specific decision made before these projects would be implemented.
- The Forest Service can only guess what types of fuel reduction activities may occur on private land and the agency has no control over the amount or type of activity occurring on private land. Decisions private landowners may make concerning fuel reduction activities on private land are outside the agency’s authority and so outside the scope of the decision to be made.

VIII. RELATIONSHIP TO THE GALLATIN FOREST PLAN AND OTHER ADMINISTRATIVE DIRECTION

Gallatin Forest Plan

The Gallatin Forest Plan (1987) embodies the provisions of the National Forest Management Act, its implementing regulations, and other guiding documents. The Forest Plan sets forth in detail the direction for managing the land and resources of the Gallatin National Forest. The Main Boulder Fuels Reduction FEIS tiers to the Forest Plan FEIS, as encouraged by 40 CFR 1502.20. Chapter 3-5 includes a summary by resource of the standards and guidelines established in the Forest Plan that are pertinent to this action. The proposed action is also supported by the following Forest Plan direction:

Forest Plan Goals

- Use prescribed fire to accomplish vegetative management objectives. (p. II-2)
- Provide a fire protection and use program, which is responsive to land and resource management goals and objectives. (p. II-2)

Forest Plan Objectives

- Prescribed fire will be used as a tool to carry out vegetative management activities. (p. II-6)

Forest Plan Standards

- General Standards: Forest lands and other vegetative communities such as grassland, aspen, willow, sagebrush and whitebark pine will be managed by prescribed fire and other methods to produce and maintain the desired vegetative condition. (p. II-19)
- Fire Standards: Treatment of natural fuel accumulations to support hazard reduction and management area goals will be continued. (p. II-28)

The Forest Plan uses management areas to guide management of the National Forest lands within the Gallatin National Forest. Each management area (MA) provides for a unique combination of activities, practices, and uses. The Main Boulder Fuels Reduction project area includes eight management areas. The majority of the timber harvest and thinning activities involved with this project would occur in MA5 with some harvest areas in MA7, MA3, MA11, and MA15. The majority of the temporary road construction would occur in MA5. All fuel reduction activities associated with the proposed action comply with Forest Plan guidelines for the applicable MAs. See MA map, Ch 1-21 and Table 2-1 (Individual Unit Descriptions), Ch 2-21 for MA designations of individual units.

The Forest Plan (Chapter III) contains a detailed description of each management area as it relates to significant issues. Following is a brief description of the applicable management area direction for each of the MAs affected with the proposed action:

Management Area 3 (MA 3)- These areas consist of non-forest, noncommercial forest, and forested areas unsuitable for timber production. Timber salvage, product and firewood removal may occur where access exists. Salvage of dead, dying, or high-hazard trees to prevent insect and disease population buildups that could adversely affect regulated timber stands is permitted. Prescribed fire may be used to meet management area goals.

Management Area 5-(MA 5) These areas include travel corridors that receive heavy recreational use. They are classified as suitable for timber production and should be managed to provide a diverse vegetative pattern. Acceptable harvest methods include even-aged and uneven-aged harvest systems including commercial and pre-commercial thinning if they enhance recreational values. Design, construct, reconstruct, and maintain roads consistent with management area goals and traffic demands. Prescribed burning may be used to meet management goals. Emphasize fire prevention contact.

Management Area 6 (MA 6) – These areas are generally large blocks of undeveloped land with a trail system and a few roads passing through. They provide a wide variety of opportunity for dispersed recreation uses in a variety of terrain and vegetation types (FP, pp. III-17 through III-18). Management goals for MA 6 include: (1) Provide for a wide variety of dispersed recreational opportunities, (2) Provide additional public access to these areas. Timber Standards 1) Area is classified as unsuitable for timber production, 2) Harvesting of firewood, post and poles, or other products can take place adjacent to

existing roads. A portion of the Main Boulder Station unit is the only treatment area within this MA.

Management Area 7 (MA 7) This management area consists of riparian zones across the forest. It will be managed to protect the soil, water, vegetation, fish and wildlife dependent on it. These areas are classified as suitable for timber production if adjacent areas contain suitable timber. Design timber harvest to meet the needs of riparian dependent species. Commercial or pre-commercial thinning may be used. Prescribed fire may be used to meet management goals. *Note: These areas often times are too narrow to be displayed on forest MA maps due to the small scale of these maps.*

Management Area 11 (MA 11)- These areas consist of forested big game habitat. They include productive forestlands that are suitable for timber harvest, provided that big game habitat objectives are met. Harvest should be designed to enhance winter range capability for big game species. Include even and uneven aged harvest systems. Prescribed fire may be used to meet management goals.

Management Area 12 (MA 12)- MA 12 provides goals and objectives to maintain and improve the vegetative condition to provide habitat for a diversity of wildlife species and a variety of dispersed recreation opportunities. Harvest of post, pole, and other wood products can take place adjacent to existing roads. Prescribed burning can also be used on lands within this MA to meet management area goals.

Management Area 15 (MA 15) Under MA 15, harvest of post, poles, and other wood products is allowed in areas adjacent to existing roads. Prescribed fire can be used to meet/obtain management area objectives and goals. Roads will not be constructed for surface management, except to provide public access. Goals for MA 15 include: (1) Meet grizzly bear mortality reduction goals as established by the Interagency Grizzly Bear committee; (2) Manage vegetation to provide habitat necessary to recover the grizzly bear; (3) Provide forage for livestock consistent with goal 1; and (4) Provide dispersed recreation opportunities consistent with goal 1.

Management Area 17 (MA 17)- These areas are grasslands or nonproductive forest lands on slopes less than 40 percent that are suitable for livestock grazing and contain important big game habitat and heavily used portions of range allotments. Allow for harvest of post and poles and other wood products in areas adjacent to existing roads. Prescribed fire may be used to meet management area goals.

MAP 1-5 PROJECT OVERVIEW & MANAGEMENT AREAS

HENRY Correct MS2 line on Map

National Fire Plan Direction

The 1995 Federal Wildland Fire Management Policy and Program contain nine guiding principles that are supported by the Gallatin National Forest Fire Management Plan and the Main Boulder Fuels Reduction Project.

- 1.) *Firefighter and public safety is the first priority in every fire management activity.* The purpose and need of the Main Boulder Fuels Reduction project is to provide for firefighter and public safety, modifying fire behavior by changing the fuels environment throughout the project area. The modification of fuels will provide safer conditions in the event of a large wildfire event.
- 2.) *The role of wildland fire as an essential ecological process and natural agent have been incorporated into the planning process.* Treating the Wildland Urban Interface will reduce the current level of risk, allowing the possibility of future wildland fires to play an ecological role in the adjoining wilderness landscape under certain conditions.
- 3.) *Fire management plans, programs, and activities support land and resource management plans and their importance.* The project is consistent with the Federal Wildland Fire Management Policy and the Gallatin National Forest Fire Management Plan.
- 4.) *Sound risk management is the foundation for all fire management activities.* The Main Boulder Fuel Reduction project analyzes the risk to the public and firefighter communities associated with each alternative, by comparing the resulting fuel conditions associated with management activities versus “no action”, as related to fire behavior.
- 5.) *Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.* With the Main Boulder Fuel Reduction project, the overriding value at risk is the safety of the public and firefighters. A cash-flow analysis included in the Appendix to this document supports the conclusion that:

... the anticipated return from the sale of wood products will exceed the total cost of the activities likely needed to realize the desired post-treatment condition.
- 6.) *Fire management plans must be based on the best available science.* The Main Boulder project has incorporated the latest science and modeling techniques for fire behavior prediction and the effectiveness of fuels treatments (NEXXUS).
- 7.) *Fire management plans and activities incorporate public health and environmental quality considerations.* The Main Boulder Fuels Project addresses the need for increasing public and firefighter safety in the event of a large fire event. Smoke management, recreational values, and the impacts of fuels treatments on wildlife, fish, noxious weeds, soils, and visual quality are also addressed in the document.
- 8.) *Federal, Tribal, State and local interagency coordination and cooperation are essential.* Coordination and cooperation for the project included local consultation with the Main Boulder Fuels Reduction Cooperative, Boulder Watershed Group, Park and Sweet Grass County officials including fire and law enforcement, and local environmental groups. Federal cooperation and consultation includes State and Federal Private Forestry groups and interested tribal governments.
- 9.) *Standardization of policies and procedures among Federal agencies is an ongoing objective.* This is not applicable to this particular project.

Other Administrative Direction

Project objectives include creating a more defensible area in the Wildland Urban Interface (WUI) by reducing the wildfire severity risk and crown fire hazard in the Main Boulder River Corridor.

- Directed by National Fire Plan (2000), the Cohesive Strategy (October 2000), 10 Year Comprehensive Strategy (August 2001), 2001 Review and the 1995 Federal Wildland Fire Management Policy, Gallatin National Forest Plan, (1987).
- Measured in terms of a reduction of *crown bulk density*, an increase in *crown base height* and site conversion to *Fuel model 8*. Under these conditions, the sites meet guidelines established in Fire Smart – Protecting your Community from Wildfire, (1999) for interface hazard mitigation.

Maintain low risk areas by reducing conifer encroachment.

- Directed by National Fire Plan (2000), the Cohesive Strategy (October 2000), 10 Year Comprehensive Strategy (August 2001), 2001 Review and the 1995 Federal Wildland Fire Management Policy, Gallatin National Forest Plan (NFP), (1987).
- Measured in terms of percent effectiveness of mortality estimates for mature and small trees from the First Order Fire Effects Model (FOFEM, 4.0 Reinhardt, Keane and Brown, 1997).

In August 2000, President Clinton asked Secretary of the Interior (Babbitt) and Secretary of Agriculture (Glickman) to recommend how best to respond to the recent fire events, reduce the impacts of wildland fires on rural communities, and ensure sufficient firefighting resources in the future. The President also asked what actions federal agencies, in cooperation with states and local communities, could take to reduce immediate hazards to communities in the wildland urban interface and to ensure that fire management planning and firefighter personnel and resources are prepared for extreme wildland fires in the future.

National and regional level reports have set the stage for more aggressive fuels management:

Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildland Fire Threats (GAO/RCED-99-65). This report concluded: “(The) most serious problem related to the health of the national forests in the interior West is the over-accumulation of vegetation.”

Managing Impacts of Wildfires on Communities and the Environment, Sept. 2000. This report (prepared by Secretaries Babbitt and Glickman) made recommendations on how to respond to the 2000 wildfires, how to reduce their impacts to communities, and how to ensure sufficient firefighting resources in the future.

Protecting People and Sustaining Resources in Fire-adapted Ecosystems – A Cohesive Strategy, October 2000. This report outlines a strategy to reduce wildland fire threats and restore forest ecosystem health in the interior West. The Cohesive Strategy outlined four priorities: 1) wildland urban interface; 2) readily accessible municipal watersheds; 3) threatened and endangered species habitats; and 4) maintenance of existing low-risk Condition Class 1 areas (refer to 2.3.B).

Towards Restoration and Recovery: An Assessment of the 2000 Fire Season in the Northern and Intermountain Regions, January 2001. This document describes current conditions, identifies opportunities, and sets priorities for restoration after the 2000 fires.

A Collaborative Approach for Reducing Wildland Fire Risk to Communities and the Environment – 10-yr. Comprehensive Strategy, August 2001. *This document responds to Congressional direction for a multi-agency strategy by outlining a comprehensive approach to the management of wildland fire. The 10-year comprehensive strategy has four goals: 1) improve prevention and suppression; 2) reduce hazardous fuels; 3) restore fire-adapted ecosystems; and 4) promote community assistance. This document provides the initial foundation of the recent President's Healthy Forest Initiative (August 2002).*

The Main Boulder Fuels Reduction Project is responsive to the hazardous fuels reduction and restoration elements of the **National Fire Plan (2000)**, which states:

Hazardous Fuels Reduction – *Assign highest priority for hazardous fuels reduction to communities at risk, readily accessible municipal watersheds, threatened and endangered species habitat, and/or other important local features, where current conditions favor uncharacteristically intense fires.*

By reducing hazardous fuels and promoting community assistance in the management of wildfire this project responds to the more recent **Healthy Forest Initiative (August 2002)**.

IX. DECISION TO BE MADE

This FEIS is not a decision document. It does not identify the alternative to be selected by the Deciding Official. This document discloses the environmental consequences of implementing the proposed action and alternatives to that action. The Gallatin Forest Supervisor, Rebecca Heath, is the Deciding Official. Based on the analysis documented in this FEIS, and comments received during the 45-day comment period, the Deciding Official will make a decision on this project. Her decision and the rationale for that decision will be stated in the Decision Notice.

The decisions to be made are:

- What types of hazardous fuels reduction treatments and prescribed burning should occur, if any, to improve public and firefighter safety.
- What, if anything, should be done to extend the potential time available for evacuation in the event of a wildfire
- Should fuel loadings be reduced and fuel arrangements modified to break-up the continuous fuels present in the corridor.
- Mitigation and monitoring requirements.

The decision will be documented in a Record of Decision and official notification published in the Federal Register and the Bozeman Chronicle.