

Bozeman Municipal Watershed Project Record of Decision

Table of Contents

	<u>PAGE</u>
I. Introduction	3.
II. Background	3.
III. Purpose and Need for Action	6.
IV. Decision and Issues and Alternatives Considered	7.
A. Proposed Activities	7.
B. Decision and Rationale	11.
C. Consideration of the Issues	16.
D. Alternatives Studied in Detail	28.
E. Alternatives Considered but Not Studied in Detail	31.
V. Public Involvement	33.
A. Overview of the Public Involvement Process	33.
VI. Determination of Non-significant Forest Plan Amendment	34.
VII. Findings Required by Other Laws, Regulations and Policy	37.
VIII. Implementation	42.
IX. Administrative Review and Appeal Opportunities	42.
X. Contact Person	43.

I. Introduction

The Bozeman Municipal Watershed Fuels Reduction Project is in the northern Gallatin mountain range near the city of Bozeman, Montana (see Vicinity Map, Figure 1). The area encompasses approximately the lower one third of the Bozeman Creek and Hyalite Creek drainages beginning just to the north of the Moser Creek Road in the Hyalite drainage. The northern part of Hyalite is also drained by Hodgman and Leverich Creeks. A portion of the Gallatin Fringe Inventoried Roadless Area is included on the eastern side of the project area. The entire project area is considered wildland urban interface (WUI) with many adjacent private homes, sub-divisions, and the project area providing the municipal water supply for the city of Bozeman.

The city water treatment plant is located just outside the National Forest boundary on Bozeman Creek. Two water diversion dams that channel water to the treatment plant, one each on Bozeman and Hyalite Creeks, are approximately one half mile inside the Forest boundary adjacent to the Hyalite and Bozeman Creek Roads.

The Gallatin National Forest proposes to create vegetation and fuel conditions that will reduce the risk of excess sediment and ash resulting from a wildfire event from reaching the municipal water treatment plant. The Final Environmental Impact Statement (FEIS), which analyzes the effects of six fuel reduction alternatives for this project, has been published and is available for review.

My decision is to implement Alternative 6. This alternative was developed to respond to changed economic conditions between the Draft Environmental Impact Statement (DEIS) and FEIS, and to respond to public comments on the DEIS. Treatment units in Alternative 6 were adapted from and are within the range of the alternatives analyzed in the DEIS.

The purpose of this Record of Decision (ROD) is to document my decision on this project and the rationale behind it. The ROD includes background information that led to the proposed action and describes the purpose and need for the project.

Other components of the ROD include: the issues raised during the environmental analysis, effects of implementing the alternatives relative to key issues, a summary of each of the alternatives, an overview of the public involvement process, a description of the associated Forest Plan Amendment, as and documentation regarding policy and regulations and administrative review and appeal opportunities.

II. Background

On March 11, 2005, the Forest Service and the City of Bozeman signed a Memorandum of Understanding to “establish a framework for cooperation between the parties to maintain (in the long term) a high-quality, predictable water supply for Bozeman through cooperative efforts in part by implementing sustainable land management practices.”

This memorandum was a culmination of three different assessments of the Bozeman Municipal Watershed including a Forest Service risk assessment (Bozeman Creek Prototype Analysis, Gallatin National Forest, 2003), a Bozeman Creek watershed assessment by the Bozeman Creek

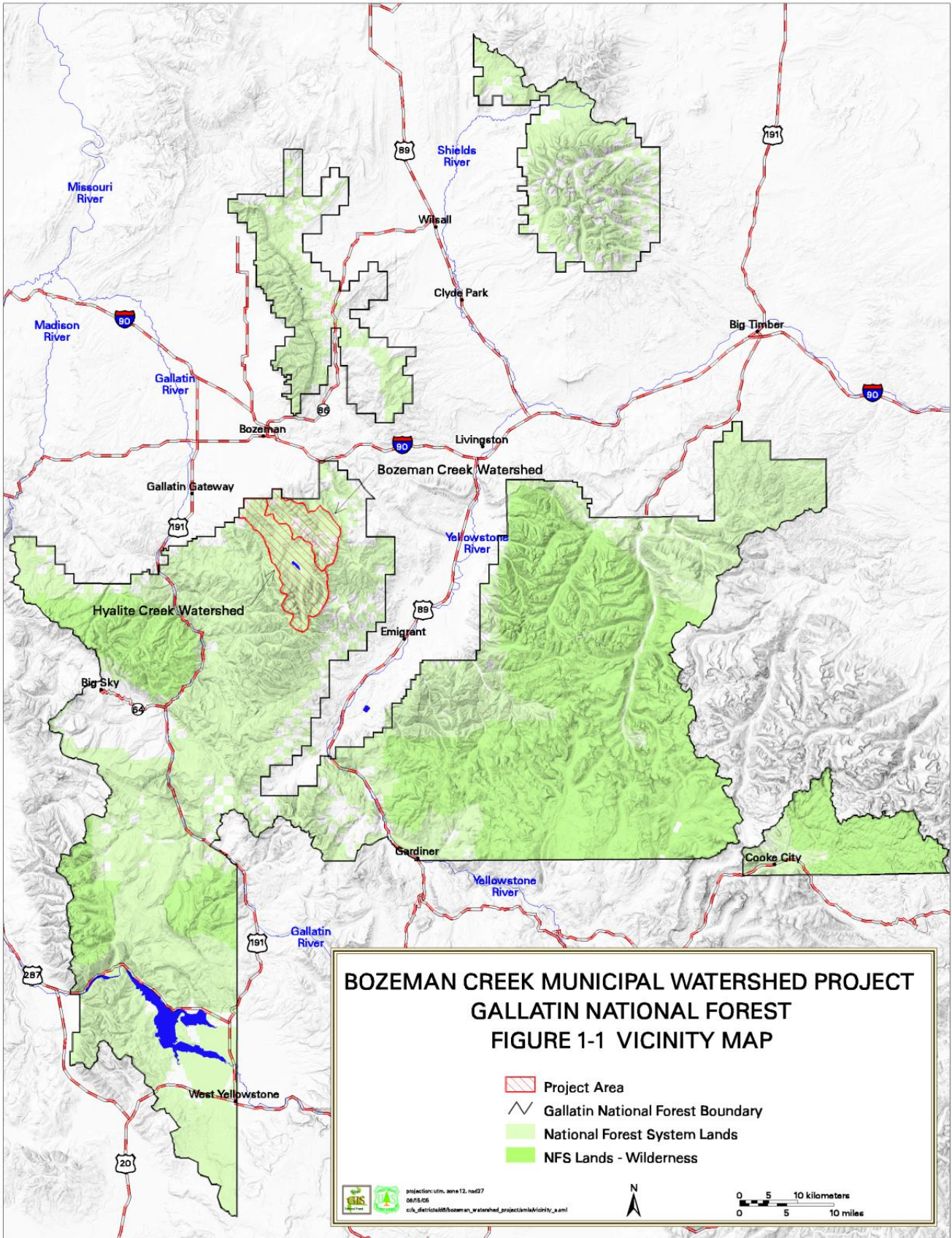
Watershed Council (Sourdough Creek Watershed Assessment, 2004), and a City of Bozeman Source Water Protection Plan (City of Bozeman, 2004). All three of these assessments concluded that fuel conditions within the Municipal watershed posed risks to the municipal water supply in the event of a wildfire.

Bozeman and Hyalite Creeks are the primary sources of water supply for the City of Bozeman. The City has water intake diversions on both streams near the Forest boundary with pipelines to the City Water Treatment Plant near the Bozeman Creek trailhead. Approximately 80% of the City waters supply originates from these drainages with an additional minor source in Lyman Creek in the Bridger Mountains. Water quality in both Bozeman and Hyalite Creeks is good and in compliance with water quality standards. The Montana DEQ water quality standards for both drainages are very restrictive. Bozeman Creek is designated as A-Closed and Hyalite Creek as A-1. These are non-degradation classifications with no allowable point sources of pollution and very strict controls on turbidity and non-point sources.

The Hyalite Creek and Bozeman Creek drainages have been designated as wildland urban interface (WUI) by Community Wildfire Protection Plan (Gallatin County, 2008). It identifies the project area as being within the designated protection plan area. There are several homes and sub-divisions in this WUI area. Many of the homes are within one half mile from the forest boundary.

Because of the importance of the municipal watersheds and their proximity to the urban interface the Gallatin National Forest proposed to mitigate the potential effects of wildfire in the watershed and WUI by using thinning and prescribed fire to reduce fuel loadings that had accumulated over the years. This proposal became known as the Bozeman Municipal Watershed Fuels Reduction Project. The Gallatin National Forest first asked for public comments on the proposed project in September of 2005.

See Figure 1, Vicinity Map for the general location of the project.



III. Purpose of and Need for Action

The principal purpose of this project is to reduce the risk of severe and extensive wildfire on National Forest System lands within the Bozeman Municipal Watershed and thereby reduce the risk to life and property in and adjacent to the project area. More specifically, the purpose and need for the project is described below:

Protection of the municipal water supply for Bozeman:

The Bozeman Municipal Watershed project is designed to strategically modify vegetative fuel conditions using thinning and prescribed fire to lower the risk of severe extensive wildfires in the Bozeman Municipal Watershed, thereby reducing the risk of excess sediment and ash reaching the municipal water treatment plant. Thinning and prescribed burning will reduce crown fire potential, thus reducing rapid spread of fire. Thinning will reduce ladder fuels which allow fire, when it starts, to reach and spread through the crowns of dense stands of trees.

Fire behavior modelling and field inventory indicate that fuel conditions in key areas near the water treatment plant, diversion point at Hyalite, and along the streams, if left untreated, are highly likely to support large and severe wildfires (Bozeman Creek Prototype Analysis, Gallatin National Forest, 2003).

Ash and sediment from a major wildfire in Bozeman and Hyalite Creeks would be a major source of contamination to Bozeman's water supply. A wildfire of large and severe extent in Hyalite and Bozeman watersheds could result in a loss of water supply from a few days to several weeks. Furthermore, the duration of the effects could last up to 2 years following a major wildfire, in the event of heavy rainfall in the drainages.

This would directly affect the water supply for Bozeman. At the very least, water would need to be rationed from the storage tank on the east side of Bozeman if a temporary shutdown was needed. This could supply about 3 days of drinking water, under conservative use. If a prolonged shutdown was necessary, bottled water would be needed to supply drinking water to Bozeman residents until the treatment plant resumed operation.

Reduce fuels along road corridors to provide safer conditions for fire-fighting and evacuation in the event of a wildfire:

Both the Bozeman and Hyalite Creek road systems are potential evacuation corridors for the recreating public in the area. Hyalite is the most heavily used recreation area on the Gallatin National Forest, with up to 2,000 vehicles per day on a busy summer weekend. At the same time, these roads would be the access routes for incoming firefighters and equipment to fight a fire or respond to an emergency. The primary roads are essentially a one-way in, one-way out situation in both drainages. The corridors are often narrow and winding with few places to pull off the road or turn vehicles around. There is a need to strategically reduce fuels along these corridors in order to change fire behavior and change a crown fire to a surface type fire in order to provide safer conditions for fire-fighting efforts and public evacuation.

Reduce the risk of high intensity wildfire spreading from National Forest System lands onto private lands that border these watersheds:

Intense wildfire produces embers or firebrands which are the primary cause of home ignition. Fuel reduction through thinning and prescribed fire also reduces the risk of high intensity firebrand exposure within the WUI adjacent to National Forest System lands in the project area (Cohen, personnel communication; BMW field trip, August 2009).

Heavy forest fuels in the WUI, steep terrain, prevailing winds and long term drought all contribute to the likelihood of wildfire spreading either from National Forest lands to private lands or from private lands onto the National Forest. The entire analysis area is WUI, as delineated by the Gallatin County Community Wildfire Protection Plan (CWPP). Fuel reduction in the WUI will improve the chances of successful control and suppression of wildfires (FEIS, Ch 1-13 and 1-14).

This project also responds to specific policy directing the Forest Service to take action to protect municipal watersheds and wildland urban interface areas from wildfire. That direction is summarized here.

The National Fire Plan (2000) assigns highest priority for hazardous fuel reduction to communities at risk and municipal watersheds where conditions favor the high likelihood for severe and intense wildfires. The Cohesive Strategy (USDA, 2000) focuses on priorities of the National Fire Plan: wildland-urban interface, municipal watersheds, threatened and endangered species habitat, and maintenance of areas that currently have low risk of catastrophic fire. The Healthy Forest Initiative (2004) and Healthy Forests Restoration Act (2004) also promote the reduction of fire risks in the wildland urban interface.

IV. Decision, Issues, and Alternatives Considered

A. Proposed Activities

To achieve a meaningful reduction in potential fire severity and extent within strategic areas of the Bozeman and Hyalite drainages, the selected alternative, Alternative 6, will reduce overstory and understory forest density through thinning and will maintain existing meadows and natural openings through the use of prescribed fire. Treatment units are strategically placed in that they are focused within the lower reaches of both drainages, close to the municipal water intakes. These treatments are expected to maintain greatest effectiveness during the 10-15 years after the project is implemented.

Detailed descriptions of the proposed treatments follow (see Figure 2 and Table 1):

Thinning and partial harvest in mature timber stands

Treatments include thinning (using mechanical equipment) of some larger trees in mature forest stands, followed by additional hand or machine thinning of smaller diameter trees in the understory. Yarding systems (how the trees are removed) for these operations will include

tractor, skyline (cable), and helicopter. Generally, the prescription for thinning will leave the largest and healthiest trees with spacing of a crown width (about 13-15 feet) between individual trees. To facilitate the use of a helicopter to yard trees and to create visual diversity, some units will be thinned in clumps rather than more uniformly. The effect of both types of prescriptions is to reduce fuels both vertically and horizontally, reduce total crown density and ladder fuels, and reduce surface fuel loading (FEIS, Ch 3-4 through 3-10). Overall about 50% of the existing tree canopy within a unit would be removed. In many of the treatment units, the tops and branches will be removed from the unit. These tops and branches will be burned at specific landings or removed as biomass. Where this is not possible, the fuel created by treatments, such as tree tops and branches, will be removed by piling and burning, jackpot or understory burning.

Shaded Fuel Breaks

Some of the thinning units have ridgelines that are important control points for fire suppression. Within a 100 to 200 foot band along these ridgelines (See Figure 2), the decision is to remove about 70% of the overstory conifer canopy, leaving 60-70 feet between tree trunks.

Thinning in previously harvested small diameter stands

Mechanical or hand cutting and piling will occur in some previously logged units that have second growth trees. This thinning will reduce the density of these younger trees and reduce fuels. These previously harvested areas are located along the upper slopes and the divide between Bozeman Creek and Hyalite Creeks. If markets allow, some commercial products, such as post and poles or biomass, may be removed from these stands to help offset the costs of treatment.

Prescribed burning in thinned stands

Prescribed burning will take place subsequent to thinning in some units to further reduce ground fuels. This may be either a broadcast type burn in the understory or burning of piles.

Prescribed burning

Some treatment units have natural openings or sparse tree cover. These units will be burned under prescribed conditions to reduce ground fuels, remove smaller trees, and maintain natural openings. All these actions will help change wildfire intensity and slow fire spread.

Figure 2. Treatment Units

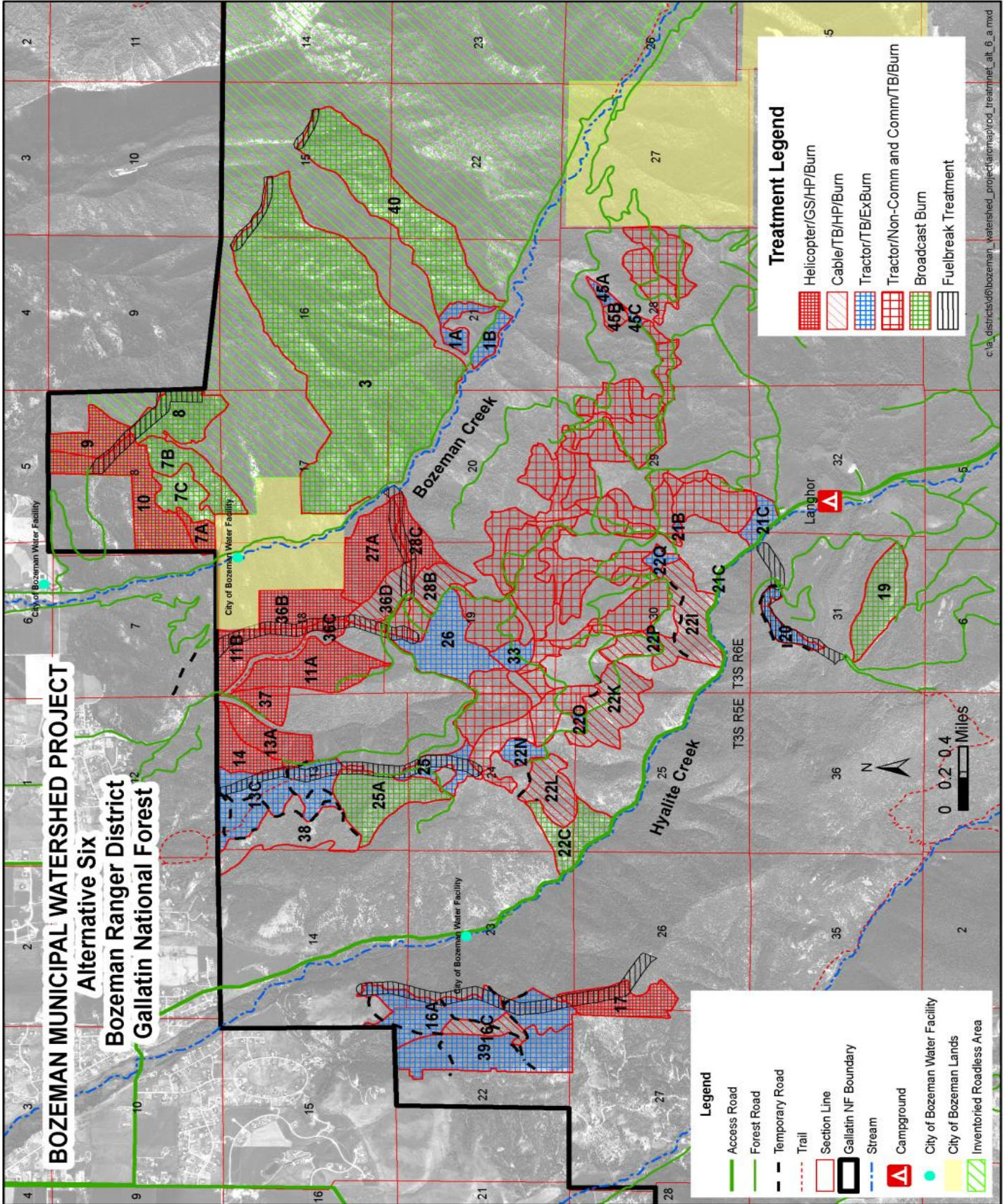


Table 1. Alternative 6 Decision, Treatment Acres by Unit

Unit Number	Skyline thinning	Helicopter thinning	Tractor thinning	Small tree thinning	Prescribed burning
1A			32		
1B			21		
2					
3					876
7A		21			
7B					68
7C					48
8					79
9		51			
10		128			
11A		105			
11B		70			
13A		57			
13C			148		
14		50			
16A			149		
16C	29				
17		69			
19					82
20			23		
21B			2		
21C			24		
22C					63
22I	120				
22K	89				
22L	58				
22N			20		
22O			3		
22P			4		
22O			13		
25			39		
25A			39		101
26			103		
27A		98			
28B	38				
28C		40			
32				574	
33				543	
36B		74			
36C		11			
36D	47				
37		31			
38	104				
39			150		
40					258
45A			8		
45B	12				
45C			4		
Acreage Subtotal by Treatment	497	805	744	1117	1575

B. Decision and Rationale

My decision for the Bozeman Municipal Watershed project is to implement Alternative 6 Including mitigation and monitoring requirements. Alternative 6 was developed between the Draft and Final EIS to respond to public comments and also address evolving economic realities. While still accomplishing the project's purpose and need, Alternative 6 reduces the amount of helicopter harvest and also reducing the level of mechanical treatment in the Gallatin Fringe Inventoried Roadless Area (IRA). Alternative 6 also responds to comments received concerning wildlife habitat, potential weed spread, effects on recreation, and ensures that sedimentation thresholds are being met during project activities. This alternative was designed to meet the overall purpose and need in a manner that is more realistic in terms of being able to secure the funding to complete the work.

I selected Alternative 6 over the other action alternatives primarily because it provided the most realistic way to reduce the risk that wildland fires in this area would result in the type of ash and sediment levels that would compromise the water supply for the community of Bozeman. Alternative 6 is responsive to increased project costs from helicopter use, lack of local timber markets, and the high cost of prescribed burning in urban interface. I also wanted to balance this with treatments that did not cause undue impacts to the very watersheds we are working to protect.

All action alternatives were developed to limit impacts to water quality. Alternative 6 strikes a balance, limiting short-term project-caused sediment delivery while still providing long term positive effects and accomplishing the purpose and need of the project.

The importance of protecting community water supply

In selecting any action alternative, I considered the strong values that people hold for the Bozeman watershed, with water being the most important resource. The primary long-term objective of this project is to maintain a high-quality, predictable water supply for the community of Bozeman. Wildfire has the potential to greatly affect water quality. My emphasis in implementing the fuels reduction efforts reflected in Alternative 6 is to reduce the risk of extensive and severe wildfire and the resulting degradation of water quality. While implementation of this project will modify vegetative conditions in the watershed and reduce the risk that a fire could compromise Bozeman's water supply, it does not change the probability of a fire start within the project area. None of the alternatives can do this.

Alternative 6 treatments are focused in the lower one-third of these drainages as they are the closest to the City's water intake and treatment plant and are within the wildland urban interface. Should a wildland fire occur in these areas, ash and sediment would have less distance to travel and settle and could more readily affect the City's ability to provide clean drinking water.

The perspectives of the City of Bozeman also heavily influenced my decision to select Alternative 6. City officials strongly support the use of fuel treatments designed to reduce the potential negative effects of wildfire in the municipal watershed. This decision compliments the plans the City is developing for fuel reduction treatments of city properties in the Bozeman Creek drainage (City of Bozeman Forest Management Plan, Peck 2009).

Sedimentation concerns from our actions or no action

The fuels specialist and hydrologist modeled the current vegetative and fuels conditions in the two drainages, and showed that a wildfire in average humidity and wind conditions could generate an increase in sediment of 250% over natural conditions (FEIS, Ch 3-40). A wildfire in more extreme weather conditions would cause even higher increases in sedimentation. The City of Bozeman water treatment plant currently can handle only small increases in sediment and ash and certainly not levels modeled for a wildfire under moderate or more extreme conditions.

Our effects analysis also showed that the vegetation treatments in Alternative 6 could reduce potential fire size by 54% when a wildfire occurs in the project area (FEIS, Ch 2-29, Table 2.2 and Ch 3-29, Table 1-3). Further analysis showed that a 4,000 acre fire in the project area after implementation of Alternative 6 would likely increase sediment 30% above natural sedimentation in Hyalite Creek drainage, and increase sediment 54% above natural in the Bozeman Creek drainage. The same size fire pre-treatment would produce sediment increases of 56% and 105% in those same drainages, respectively (Story 2009). A 2,000 acre fire after implementation of Alternative 6 is predicted to increase sediment by 18% over natural in Hyalite Creek and 32% in Bozeman Creek. This analysis convinced me that Alternative 6 will be effective in meeting the purpose and need for the project and that the no action alternative is not acceptable when the drinking water of an entire community is at stake.

Some of the public comments on the project questioned how thinning and burning, along with temporary road construction, would not impair water quality. The environmental analysis for the project documents that the activities associated with all the action alternatives increase short-term sedimentation rates and, except for Alternative 3, meet the Forest plan Standard (FEIS Ch 3-38 through 3-52). In addition, the action alternatives include mitigation and best management practices to minimize any potential sediment production.

Alternatives 2, 3, 5 and 6 all reduce fuels in high priority (close to water intake facilities) areas within the municipal watershed. Alternative 3 would be more effective in meeting the vegetative purpose and need because it would treat the most acres. However, due to the amount of temporary roads needed to facilitate harvest operations in Alternative 3, expected sediment levels could exceed Forest Plan standards for water quality in some areas (FEIS, Ch 3-43, 44). Even though the increase in sediment from implementation of Alternative 3 would be short-term, I did not want compromise on the water quality issue, therefore I did not select Alternative 3.

All things considered, I believe that the benefits of implementing Alternative 6 far outweigh the short term increases in sediment that could occur. Except for Alternative 4 (burning only), Alternative 6 produces the least sediment relative to the other action alternatives. The City of Bozeman has verified that the amount of sediment produced in the implementation of Alternative 6 will not adversely affect the water treatment facilities and their ability to supply domestic water for Bozeman residents.

Economic realities, helicopter yarding and addressing purpose and need

Alternative 5 was identified as the preferred alternative in the Draft EIS because it was nearly as effective as Alternative 3 in addressing the purpose and need, while reducing some

environmental effects by virtue of using helicopters to accomplish project activities. However, in today's depressed timber market and with the high cost of fuel, there is a high cost associated with the use of a helicopter for removing logs. The FEIS disclosed that in some areas, because of the benefits relative to scenery and water quality, this cost is justified. For this reason, Alternative 6 retains helicopter-yarded units in these key areas, along with a mix of other prescribed burning and yarding systems (FEIS, Appendix A7 through A10).

Part of my decision to select Alternative 6 rather than Alternative 5 was in recognition of the dramatically lower costs due to the reduction of helicopter yarding from 2,480 acres (Alternative 5) to 805 acres. Simply stated, Alternative 6 includes enough fuel reduction measures to meet the purpose and need and will be less costly to implement. Sediment increases are somewhat higher in Alternative 6 than in Alternative 5, because there is less helicopter logging and slightly more temporary road construction, but are well within Forest Plan standards (Gallatin Travel Management Plan, Ch 1-12). In the unlikely event that the timber market recovers enough to substantially reduce the cost of helicopter use, my decision includes the flexibility to use helicopters rather than skyline yarding to treat some units identified in Alternative 6.

To compensate for the loss of overall treated acres relative to Alternative 5, Alternative 6 includes fuel breaks on ridgelines to serve as important fire suppression control points. Thinning of the forest within the fuel breaks would improve the likelihood of controlling fires at the ridgeline and limiting the spread of fire into adjacent drainages. These fuel breaks could also help limit the potential size of wildfires (FEIS, Ch 3-23).

Roadless area values

The Forest, the City, and the public were all concerned about project activities within the Gallatin Fringe Inventoried Roadless Area (IRA) and how these activities might affect roadless values. There were also public comments requesting that we use only prescribed fire in the Gallatin Fringe IRA. We developed Alternative 6 to respond to public comments and concerns about the IRA. Alternative 6 maintains roadless characteristics by reducing the number of acres to be treated mechanically by two-thirds from Alternative 5 (from 660 acres to 200 acres), and increasing the number of acres to be prescribed burned.

The 200 acres of helicopter thinning I have retained in Alternative 6 is immediately adjacent to private land, which has previously been thinned specifically to reduce fuel loadings. These units, combined with the treatments on adjacent private land, will provide cumulatively important additional protection to these private properties. Also in response to the public comments, Alternative 6 will treat about 1,330 acres of the IRA with prescribed fire, compared to 940 acres in Alternative 5.

I have also carefully evaluated the actions in the Gallatin Fringe IRA in light of ongoing development of long term roadless policy and relevant court cases and find my Decision adheres to the Final Roadless Rule and is consistent with subsequent legal rulings and Forest Service direction. For more details, see the Inventoried Roadless section of this Record of Decision on pages 21 and 22.

Need for a Forest Plan Amendment

My decision to select Alternative 6 includes a Forest Plan amendment to modify visual quality objectives only for this project. Alternative 6 includes four treatment units totaling 300 acres that will not meet the Forest Plan scenery standard of Partial Retention. The trees in these units, which can be seen from various viewpoints between Bozeman and the National Forest boundary (FEIS Ch 30-111), will be yarded with a skyline or cable system. Skyline or cable yarding systems can leave pathways where the trees are cabled uphill to a landing. Until they re-establish vegetation, as seen from a distance, these pathways can be visually apparent.

Alternative 5 would meet visual quality standards because the use of helicopters in these treatment units negates the need for cable or skyline removal systems. I did not select Alternative 5 due in part to the extremely high costs of implementation. Alternative 4, which included substantially more prescribed burning, would not have required a Forest Plan amendment and would also have met visual quality standards. However, I believe that the risks of implementing the prescribed burns without mechanical pre-treatment in Alternative 4 were too great. The other action alternatives (Alternatives 2 and 3) would also have required a Forest Plan amendment for visual quality objectives.

In selecting Alternative 6, I have decided to accept the tradeoff of not meeting the visual standard for these four units because of the high cost associated with helicopter yarding and the need to reduce fuels adjacent to private lands. Therefore, this decision site-specifically amends the Gallatin Forest Plan Visual Quality Standard (FP II-16) by suspending this requirement for this project. Section VI of the ROD has the full disclosure of this non-significant Forest Plan amendment. This site-specific amendment will allow the short-term project actions to occur, in return for the long-term benefits to the watershed.

To summarize my rationale for this decision, I believe both mechanical and prescribed burning treatments are necessary to successfully accomplish the goals of this project. Alternative 6 will help ensure a predictable water supply for the residents of Bozeman while minimizing the amount of sediment entering Bozeman and Hyalite Creeks during project activities.

The treatments within the inventoried roadless area are near the boundary with private land, near the city's water facilities, and in areas where dense vegetation make it difficult to conduct a prescribed burn. No road construction will occur in the inventoried roadless area.

Mitigation measures associated with Alternative 6 will help reduce impacts to recreationists by insuring that access is provided to at least one drainage during project activities. I acknowledge the difficulties associated with implementing a project in such a heavily used and valued area. The Forest is committed to working with interested citizens and groups throughout project implementation.

Mitigation Measures for Alternative 6

The decision includes the mitigation measures in the FEIS, Chapter 2 and the Best Management Practices (BMPs) of Appendix B, FEIS, which are summarized below.

Air Quality

In treatment units with a prescription of piling and burning, only one unit at a time will be burned to avoid cumulative smoke effects between units.

Aquatic and Amphibian

- Retain a no-burn buffer of at least 50' for burn treatment areas adjacent to Bozeman Creek, Hyalite Creek, and perennial tributaries.
- Use BMP's in Appendix B of the FEIS for all activities including Montana Streamside Management Act compliance rules.
- Design implementation to keep sediment out of Leverich Creek, including slash filter windrows and skid trail design.

Soils

Gallatin National Forest Soils Best Management Practices (BMPs) would be incorporated in project design (Keck, 2009; Story, 2006b) in order to limit detrimental disturbance associated with implementation. Appendix B FEIS provides a listing of Best Management Practices.

Wildlife

Northern Goshawk Nest Protection

Buffers and timing restrictions recommended in the Northern Region Overview for Goshawks (2009) will be followed around occupied nests.

Bald Eagle Nest Protection

If an eagle nest is found, the National Bald Eagle Management Guidelines; Category C. Timber Operations and Forestry Practices (USDI 2007:13) will be followed.

Grizzly Bear

- Within the Inventoried Roadless Area (IRA), helicopter logging must be completed in the winter denning season or limited to one non-denning season (March 1 to Nov. 30) (FWS, Biological Opinion; Terms and Conditions).
- Manage the schedule for completion of all helicopter logging to be completed in as few days as possible. Track the number of helicopter logging flight days and reinitiate consultation if the operations exceed a total of 144 days for the duration of the project (USFS, Biological Assessment; FWS, Biological Opinion; Terms and Conditions).
- Follow the GNF Travel Management Plan FEIS, Detailed Description of the Alternatives, Chapter 1-31 for any road construction activities

Big Game

During implementation such as marking and layout or sale administration, marking and/or harvest operations will be designed to maintain at least two thirds of the existing hiding cover around the key habitat components such as wet sites, wallow and mineral licks (Gallatin Forest Plan Standard, p. II-18).

Snag Retention

Forest Plan standard for snag retention will be exceeded in the project.

In addition to Forest Plan standards, the following snag retention prescriptions will be followed:

- Where existing snags would be removed for safety concerns, consider leaving the snag(s) in a clump of live trees to meet snag retention objectives.

- Snag Retention Prescriptions by Forest Cover Type:
Douglas fir dominant: minimum of 40 snags ($\geq 10''$ dbh) per 10 acres, leaving largest snags available.
Lodgepole pine dominant: minimum of 50 snags ($\geq 10''$ dbh) per 10 acres.

Recreation and Scenery

- The Bozeman Creek Trail/Road and Moser Creek Road would not both be closed at the same time. Restrict helicopter logging operations and hauling such that both major roads are not closed any one time during fuels management operations.
- Post information at appropriate access points to inform the public of project activities.
- Where practical, all slash piles, decks and landings should be located out of sight in the foreground of key observation points and heavily used recreation corridors and areas.
- Mark and thin the edges of all units that would be visible from key observation points in such a way so that unit boundaries are not easily discernible after the thinning work is accomplished.
- Re-contour and re-establish vegetation on temporary roads and other disturbed areas such as landings.

Range

Protect fences on the Bozeman- Hyalite divide or pasture fences between pastures in the Hyalite Canyon allotment; if currently existing natural barriers are compromised by fuel reduction treatments, build fence to replace the natural barriers.

Heritage Resources

The one known archeological site in the project area will be flagged off when work is in the vicinity to protect it from disturbance.

Invasive Weeds

- Equipment would be washed prior to entry onto the National Forest.
- Use native, weed-seed free seed for all revegetation needs.

C. Consideration of the Issues

My decision to implement Alternative 6 represents a balance between the purpose of the project, an evaluation of short term and long term risks, and resources to be protected. More discussion of these is included below for the resource issues that were analyzed in the FEIS.

Fire and Fuels Issue

Mature forests make up 80% of the Bozeman Creek watershed and 63% of the Hyalite watershed. These extensive areas of dense forest, which have multiple canopy layers and large amounts of downed wood, predispose this landscape to a high risk of severe and extensive natural or human caused fire. Vegetation management and reduction of fuels can reduce the risk

of severe wildfire and protect water quality in the municipal watersheds. This is the core purpose and need of the project.

Fire modeling simulations of the current condition indicate that if a wildfire starts in moderate to high fire weather conditions and is not controlled in the early burning periods, the amount of crown fire would likely exceed a threshold of 830 acres in Bozeman Creek drainage or 740 acres in the Hyalite drainage. These thresholds, established by sediment modeling (FEIS, Ch3-10), show that moderate to high intensity fires in excess of these acreages would likely exceed the 30% over natural sediment yield standard found in the Gallatin National Forest Travel Management Plan (p. I-12). At that level of sediment production, the City of Bozeman water treatment plant would have difficulty filtering ash and sediment. The supply of municipal water could be interrupted for days or longer. For these reasons, Alternative 1, the no action alternative, is not acceptable.

Action Alternatives 2-6 address the intent of the land management goals and standards as outlined in the Gallatin National Forest Plan, the Federal Wildland Fire policy, and National Fire Plan direction.

Fuel models provide important indicators of how the alternatives meet the objective of reducing the severity and extent of wildfire. Fire models were used as a tool to compare the effects of the different amounts of fuel treatments in the action alternatives. Indicators of effective treatment include reducing crown bulk density in timber stands, increasing crown base heights, reducing ladder fuels, and reducing surface fuel

Fuel model 10 represents densely stocked mature stands with downed woody material. Fuel model 184 is representative of mature stands with more widely spaced crowns and little downed material.

Alternative 2 meets the purpose and need by reducing crown bulk density and increasing crown base heights enough to reduce ladder fuels, reduce canopy density, and reduce fuel loadings. The treatments convert 3,239 acres of fuel model 10 to fuel model 184 which greatly reduces fuel loading, reduces spotting potential, and therefore reducing the potential for fire to spread rapidly from tree crown to crown (crown fire).

Alternatives 3 and 5 convert about the same number of acres from fuel model 10 to fuel model 184 (5,176 and 4,743 acres respectively), therefore reducing crown fire spread and intensity of potential wildfires. These alternatives are the most effective relative to the purpose and need for this project.

Alternative 4 features the use of prescribed fire and no mechanical treatments and converts only 1,571 acres of fuel model 10 to fuel model 184. Therefore, it is the least effective of the action alternatives in meeting the purpose and need for the project.

Alternative 6 would convert about 3640 acres of fuel model 10 to fuel model 184, and effectively reduce crown fire potential on those acres (FEIS, Ch 2 – 27, Table 2-1). With the reduction in surface fuel and crown fire potential, flame length, spotting potential and potential for fire spread would also be reduced. The probability of stand replacing and mixed severity fire would decrease in both drainages but most notably in the Hyalite Creek drainage. With the implementation of Alternative 6, the potential extent of future wildland fires in the Bozeman and

Hyalite watersheds could be reduced by 54% from the current condition (FEIS, Ch 2-29, Table 2-2). During a wildfire, public and firefighter safety would be improved, and threats to private property and the Municipal Watershed would be reduced.

Ridgeline fuel breaks incorporated into Alternative 6 create safe places to defend and hold a fire, they also provide for quicker access and ease of line construction for equipment and hand crews. Air operations such as retardant and water delivery would be more effective in reaching the ground to knock down flames on these more open ridgetops. The net result will be to help keep wildfire from spreading into adjacent stands and nearby drainages.

Water Quality

Water quality in Bozeman and Hyalite Creeks is at risk of sediment and ash reaching streams following a wildfire. This could cause serious problems for the City of Bozeman water treatment plant and reduce the supply of treated water for municipal needs. The City of Bozeman Source Water Protection Plan (City of Bozeman, 2004) and Sourdough Creek Watershed Assessment (Bozeman Watershed Council, 2004) provide information about the water production from Bozeman and Hyalite Creeks, City of Bozeman Water Treatment Plant, out-year water use projections, and need for an upgraded water treatment plant. The Bozeman Source Water Protection Plan (City of Bozeman, 2004) lists wildfire as the highest potential impact for the Hyalite and Bozeman Creek watersheds.

The City of Bozeman Water treatment plant has a treatment output capacity of 15 million gallons/day with average use of about 4-5 million gallons/day, winter use 2-4 million gallons/day, and peak summer use of about 12-14 million gallons/day. The treatment plant uses a direct filtration process and chlorination. Although the water treatment plant is designed to remove suspended sediment and particulates, rapid shifts in sediment and turbidity and high levels of particulates, such as ash following a wildfire, would overwhelm the capabilities of the current treatment system. The replacement plant scheduled for late 2013 will better deal with ash and sediment.

Sediment modeling of the No Action Alternative (Alternative 1) estimates wildfire generated sediment in Bozeman Creek to peak at about 254% over natural for average fire conditions and 520% over natural for extreme fire conditions. Similar sediment response would be expected with a severe wildfire in Hyalite Creek (FEIS, Ch3 - 40). These modeling numbers are consistent with recent (since 2001) wildfires on the Gallatin where modeled and actual sediment yields after wildfires were frequently 200 – 300 % over natural rates with extensive impacts to the stream channel system.

Modeling of the activities associated with timber harvest and temporary road construction associated with action alternatives shows that all alternatives except Alternative 3 meet Forest Plan standards for sediment increases. For Alternative 6, sediment from activities in Bozeman Creek would increase from an estimated 7.9% over natural in 2008 to 10.8% three years after implementation, a 2.9 % maximum increase. Hyalite Creek sediment would increase from an estimated 5.8% over natural in 2008 to 7.1% , a 1.3% maximum increase. Leverich Creek sediment would increase from an estimated 8.4% over natural in 2008 to 10.3, a 1.9% maximum increase. The associated sediment reduction (1.2 tons/year) from road and trail improvements already done in Leverich Creek more than offset the thinning sediment (0.7 tons/year) so the net

sediment levels in Leverich Creek would be lower than 2008, the year modeled, through the implementation period of the thinning treatments.

Although Forest Plan sediment standards for the Gallatin National Forest for Bozeman and Hyalite Creeks would allow up to 30% over natural, the harvest and temporary road construction activities in Alternative 6 were constrained to keep sediment levels in Hyalite Creek at a maximum of 8% over natural and Bozeman Creek at 11% over natural in order to reduce potential turbidity impacts and operational problems at the Bozeman Water Treatment Plant. In reality, the implementation of the proposed treatments would be spread out over more than 5 years, so the peak sediment increase would likely be less. The sediment effects from implementation and ground disturbing activities would generally last for 6 to 7 years. After that time sedimentation rates would return to pre-implementation rates (FEIS, Ch 3-51, and Table 2-7).

Only 0.1 miles of temporary roads would be built upstream from the water intake so potential sediment increases there would occur primarily from thinning treatments and prescribed burning. In Hyalite and Leverich Creeks, some sediment increase would occur from temporary road construction, although the primary potential change in sediment would occur following thinning treatments. The potential sediment production resulting from temporary road construction would be filtered via slash filter windrows as specified in the mitigation measures that are included in this decision.

Overall, Alternative 6 represents the best balance between minimizing short term impacts to water quality from these planned treatments and long term mitigation of the risk from wildfire impacts to the municipal water supply.

Fisheries

The Forest recently discovered a westslope cutthroat trout population in Leverich Creek (FEIS, Ch 3-53). Since this is the only known cutthroat population in the project area, mitigation measures resulting from the fisheries analysis were tailored around the Leverich Creek analysis area.

All five action alternatives (Alternatives 2 thru 6) meet the Forest Plan standard for sediment delivery in the Hyalite and Bozeman Creek drainages. In Leverich Creek, Alternatives 4 thru 6 are within standards but Alternatives 2 and 3 exceed the standard and would require a site-specific Forest Plan amendment to be implemented. Alternatives 4, 5, and 6 all meet the intent of the Memorandum of Understanding and Conservation Agreement for Westslope Cutthroat Trout in Montana (Powell, B.E., 2002) and sedimentation levels post-treatment would be well below Forest Plan standards (FEIS, Ch 3-51, Table 2-7).

Alternative 5 included a landing at the Leverich trailhead. This would have required enlarging the trailhead and removing several streamside trees to improve the helicopter flight corridors. By reducing the number of treatment acres and the helicopter landing site in Alternative 6 within the Leverich Creek drainage, projected sediment delivery in Leverich Creek would increase by only 0.6% below the forks of the creek. Remaining fuels treatments in the Leverich Creek drainage would reduce the probability of a stand replacing and mixed severity fire in the next 10 to 20 years as compared to the No Action Alternative (Alternative 1).

Therefore, Alternative 6 represents the best balance between minimizing short term impacts to fisheries from planned treatments while addressing long term mitigation of the risk from wildfire impacts.

Scenery

The viewshed of Bozeman and the Gallatin Valley is highly valued by local residents and visitors. The Gallatin Valley is ringed by views of five mountain ranges, including the most visually dominant Bridger Mountains, the Gallatin Range, the Madison Range, the Tobacco Root Mountains and Horseshoe Hills. The southern edge of this viewshed, which is defined by the north end of the Gallatin Range, is often referred to as the Gallatin Face. Timber harvests over the last 50 years on the Gallatin Face have left a variety of configurations of old harvest units and roads, which in a few places, are not currently meeting Forest Plan standards for visual quality due to the sharp, straight and discernible edges of some of old harvest units and lines created by cable corridors and roads.

Proposed fuel reduction activities could affect the scenery on the Gallatin Face and interior to the area in three ways: A) lowering the quality as a result of residual effects, such as unnatural-appearing vegetation patterns, obvious cable drag lines, stumps, slash piles, skid and temporary road corridors; B) improving the quality by adding desirable diversity or opening up vistas; or C) improving the quality through reducing or mitigating existing negative visual elements of past harvests.

Some action alternatives that include thinning would require a Forest Plan amendment to change the visual quality standard for some treatment units from the current Partial Retention to Rehabilitation, because these stands are not currently meeting the standard. Alternatives 2, 3, and 5 would include this project-specific Forest Plan amendment. However, Alternative 6 includes a Forest Plan amendment to exempt four proposed fuel reduction treatment units from meeting the Forest Plan visual quality standard. Alternative 6 includes an exemption for the following units (FEIS, Ch 3-111):

- Unit #36 D, proposed for cable thinning
- Unit #16 C, proposed for cable thinning
- Unit #38, proposed for cable thinning
- Most of unit #22I, proposed for cable thinning

These units (representing a total of 300 acres) are on slopes that are highly visible from the Gallatin Valley. To accomplish the necessary fuels treatments through thinning on these steeper slopes, cable logging is planned. Cable corridors tend to be sufficiently unnatural-appearing as to visually dominate, especially when there is snow on the ground and roads but not on the trees. The FEIS (Ch 2 -18, 19) includes several mitigation measures for scenery. However, the effects of the cable corridors cannot be completely mitigated.

Because of these potential effects, I am including as part of my decision, the option of using helicopter logging in these units should this become economically viable during the implementation of the project.

Portions of the shaded fuel breaks in Alternative 6 would be visible from the Gallatin Valley. However, these fuel breaks would mimic the natural openings and sparser trees of the north ridge/shoulder of “False” Mount Ellis in the eastern portion of the Gallatin Face. Some of the ridges in the Bozeman Creek and Hyalite drainages, especially on the south facing sides, are naturally open. Therefore, the fuel breaks will not have a large impact on visual quality.

Inventoried Roadless Lands

Proposed fuel treatments in the Bozeman Watershed project may affect roadless character within the Gallatin Fringe Inventoried Roadless Area (IRA) (# J1-548, Mt. Ellis parcel, Final Environmental Impact Statement, Gallatin National Forest Plan and Gallatin National Forest Roadless Area Inventory) and in unroaded lands that are within the project area. The project proposal and its alternatives have been analyzed to disclose the effects on wilderness attributes and the acres of roadless lands (inventoried as well as unroaded lands) affected (FEIS, Ch 3-149). Wilderness attributes include natural appearance, undeveloped character, outstanding opportunities for solitude or primitive and unconfined recreation, special features and values, and manageability.

Alternative 6 responds to some of the public input concerning development in inventoried roadless areas. Some groups were concerned about mechanical harvest in roadless even though harvest in any alternative would be done by helicopter with no road construction. The amount of helicopter thinning was reduced from 666 acres in Alternative 5, the DEIS preferred, to 200 acres in Alternative 6. This 200 acres of thinning retained in Alternative 6 is in WUI, immediately adjacent to private land.

Prescribed burning will also be used in the IRA. Prescribed burning most closely replicates natural processes and best retains the inherent roadless characteristics of apparent naturalness, sense of remoteness, opportunities for solitude or a primitive recreation experience. Typically the mechanical treatments associated with prescribed burning are minimal (some slashing of undergrowth trees) and not obvious to most observers. Depending on current stand conditions, mechanical thinning has some of the more obvious and longer lasting effects on the roadless characteristics of apparent naturalness, sense of remoteness, and natural integrity.

On Jan 21, 2001 the 2001 Roadless Conservation rule was established (36 CFR 220). The 2001 rule prohibited road construction, road reconstruction and timber cutting, sale and removal in inventoried roadless areas with some exceptions. On July 13, 2003, the 2001 roadless rule was enjoined by a U.S. District Court Judge Brimmer in Wyoming, after which the Forest Service established Interim Directives for the management of roadless areas.

In May 2005, the 2005 State Petitions Rule was established which allowed governors to petition for individual, state-specific rules to manage IRAs in national forests and grasslands in their states. In October 2006, Judge Laporte (Northern District Court of California) set aside the State Petitions Rule and reinstated the 2001 Roadless Rule. In December 2008, the Court limited its injunction to states within the Ninth Circuit Court and New Mexico (excluding Idaho). In August 2009, the 9th Circuit Court of Appeals affirmed the Northern District Court of California’s opinions.

On Jan 12, 2007 the state of Wyoming again challenged the 2001 Roadless rule Wyoming. On August 12, 2008 the District Court of Wyoming, Judge Brimmer issued a ruling enjoining the 2001 Roadless Rule for the second time. This opinion has been appealed to the 10th Circuit Court of appeals.

On May 28, 2009, Secretary of Agriculture Tom Vilsack issued Memorandum 1042-154 which reserves “to the Secretary the authority to approve or disapprove road construction or reconstruction and the cutting, sale, or removal of timber in those areas identified in the set of inventoried roadless area maps contained in Forest Service Roadless Area Conservation, Final Environmental Impact Statement, Volume 2, dated November 2000.” The Secretary has since re-delegated five categories of activities back to the Forest Service. These are:

- a) Road construction and timber cutting in emergency situations involving wildfire suppression, search and rescue operations, or other imminent threats to public health and safety.
- b) Timber cutting incidental to the implementation of an existing special use authorization.

The cutting, sale, or removal of generally small diameter timber:

- c) To improve habitat for threatened, endangered, proposed, or sensitive species;
- d) To maintain or restore the characteristics of ecosystem composition and structure; or
- e) For personal or administrative use.

The area of fuels treatments proposed for the project includes lands within the Gallatin Fringe Inventoried Roadless Area. The Gallatin Fringe IRA was allocated to MA 12 in the Forest Plan. The management emphasis for MA 12 is wildlife and dispersed recreation and is unsuitable for timber production. There have been no proposals for timber harvest in the IRA until this time. Prior to the 2001 Roadless Rule there had been no proposals for road construction because of public concern for maintaining roadless character and the cost of road construction.

The focus of this project has always been to reduce the risk of wildfire by reducing fuel and biomass through thinning and prescribed fire. There was no differentiation between the IRA lands and the rest of the watershed outside the IRA in choosing priority treatment areas. Both thinning and prescribed burning treatments in the IRA would be accomplished without road construction. This was consistent with past management of roadless areas on the Gallatin as described above. The cost of constructing roads into the IRA would be prohibitive.

Water quality was the major issue both within and outside the IRA. Sediment production was a limiting factor in the amount of thinning and burning treatments and their associated activities. The City of Bozeman water treatment plant could not operate if large amounts of ash and sediment were produced and entered the streams as a result of erosion following a severe wildfire. With this in mind, the location of vegetation treatments were prioritized to most effectively protect the quality of water which reached the treatment plant and to protect private land in the WUI. Acreage treated was limited to meet Forest Plan sedimentation standards.

The portions of the project lands closest to the water treatment facilities and adjacent to private land were in the priority locations targeted for necessary fuels reduction. These lands are both within and outside the IRA and were chosen for their location and relative importance irrespective of roadless status. The types of thinning and prescribed burning proposed in the IRA

would not require road construction. Thinning in dense mature timber stands would be done by helicopter. Prescribed burning in less dense stands of timber would not require roads. Portions of the IRA are also in the WUI and adjacent to private forested land.

The DEIS and FEIS for the project analyzed and disclosed the effects of these treatments to determine if implementation would significantly affect the roadless character (FEIS pp. Ch 3 – 149 through 169). The rationale for fuel treatment within the IRA is the same as that for the rest of the project area, that is, to reduce the risk of severe and extensive wildfire in the municipal watershed and reduce the risk to life and property in the project area.

Alternative 6 will use helicopter thinning on 200 acres of mature timber in a portion of the IRA. The diameter of trees to be commercially harvested is generally 10-12 inches or less. These 200 acres are closest to the water treatment plant and water intake structure and are directly adjacent to private lands and WUI. Because of the density of fuels, the proximity of the 200 acres to the City of Bozeman facilities, and the nearness to private forested lands which have been thinned, the treatment of these stands is important in achieving the purpose and need of the project.

Timber cutting in the IRA meets the 2001 Roadless Rule exception 294.13(b)(1)(ii) (FEIS p, Ch 1- 151). The exception permits timber cutting, sale, and removal of generally small diameter trees to maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. The prescriptions for cutting in the IRA specify trees less than 12 inches. Marking guidelines for implementation will preclude harvest of old growth.

A range of alternatives was developed to address public comment and concerns about harvest in the IRA. The alternatives range from 1,150 acres to 1,630 acres of treatment units within the IRA and vary in the amounts of helicopter thinning and prescribed burning. The Selected Alternative treats a total of 1330 acres of prescribed burning and 200 acres of timber thinning within the IRA. The prescriptions for both the IRA and lands outside the IRA are the same regardless of the 2001 Rule. In addition, the mechanical thinning within the IRA is consistent with the management area direction in the forest plan. These lands are not suitable for timber harvest, but vegetation management is permitted to maintain or restore the characteristics of ecosystem composition and structure. Based on specialist review, (FEIS, Ch3-149 to 169), treatments in the IRA comply with all Forest Plan management standards as amended with this decision. Therefore, I conclude that my decision for the Bozeman Municipal Watershed project is not in conflict with Judge Brimmer's decision.

I have also determined that I have the authority to approve this decision based on the October 2, 2009 re-delegation letter from the Secretary, and subsequent November 10, 2009 letter from the Regional Forester. My decision authorizes the harvest on 200 acres within the Gallatin Fringe Roadless Area. Generally small diameter timber will be removed, with the emphasis on retaining larger trees that are more resilient to wildland fires. Thinning on the 200 acres will maintain or improve ecosystem composition and structure by retaining trees that are spaced so they are more resilient to fires, and reducing fuel loads to reduce the risk of uncharacteristic wildfire effects.

Recreation

The majority of recreation use occurs during the summer months when some of the fuel treatment activities are expected to occur. At times while treatment activities are being implemented, recreationists can expect to see and hear equipment and to experience an increase in dust and smoke resulting from project implementation activities.

Winter recreationists may also be impacted by project activities as some roads and trails could be temporarily closed while equipment is working in the area.

During the summer and winter seasons, recreationists can expect to encounter additional truck traffic on all roads within or accessing the project area. Specifically this would affect users of the main Hyalite Road, Moser Creek roads, Leverich Canyon area, and the Bozeman Creek Road.

Public use of some areas including roads, trails and dispersed sites may have to be temporarily restricted during treatment due to hazardous situations from helicopter operations, equipment, commercial thinning, log hauling, burning operations, and other fuels activities. Portions of the Bozeman Creek Road will have to be closed during some helicopter and treatment operations.

The fuels management activities of all alternatives are not outside the scope of what has historically been conducted in the two drainages. Recreation Opportunity Spectrum (ROS) classifications in thinning units may be temporarily altered during treatment but most should revert to previous status once operations are completed. All existing recreation opportunities will continue to be available after the project has been implemented and completed but in a slightly modified visual setting. Although fuel treatments may temporarily displace or prevent recreation use of some routes and areas and affect some dispersed opportunities, this will be on a limited, short-term basis.

Air Quality

The burning associated with the Bozeman Municipal Watershed Project may temporarily increase particulate matter (FEIS, Ch-280) levels along residential areas and roads. In addition, smoke from burning may temporarily obscure visibility along the Hyalite Creek Road. Smoke may also temporarily pose nuisance levels to residences near the WUI areas on the north side of the project.

Air quality within the Bozeman Municipal Watershed area is generally excellent with very limited local emission sources and consistent wind dispersion. Existing sources of emissions in the Bozeman Municipal Watershed area include occasional construction equipment, vehicles, road dust, residential wood burning, wood fires, and smoke from logging slash disposal and wildland fire.

Emissions are very limited with no local visible sources of impairment. Wind dispersion throughout the Bozeman Municipal Watershed area is robust, with no visible inversions or localized concentrations of emissions. Down valley drainage is frequently robust during nighttime and early morning hours, particularly at the mouth of Hyalite Creek and Bozeman Creek. The entire Bozeman Municipal Watershed area is considered to be in attainment by the

Montana DEQ. The nearest non-attainment area is Butte for PM₁₀ (84 miles to the west). All of the area and the entire Gallatin NF is a Class II airshed. The nearest Class I airshed is Yellowstone National Park, 33 miles to the south.

The project area does not develop temperature inversions, which trap smoke and reduce smoke dispersal. Dispersion of emissions within the project area is very high due to the mountainous terrain and high wind activity. The Wind Energy Resource Atlas of the U.S. (Elliott et al., 1986) shows the Bozeman Municipal Watershed area with high wind energy. The Bozeman Municipal Watershed area has some potential for cumulative concentrations of smoke and residential and transportation emissions but visible inversion conditions do not occur. Up valley winds during daytime and down valley wind (cold air drainage) at night can dominate valley winds more than overall prevailing wind direction on ridgetops.

Based on modeling results (FEIS, Ch3-290), projected emissions for Alternative 6 from all prescribed burning totals 83.5 tons of PM_{2.5} over the period of the project. This is the lowest of all action alternatives.

Forest Vegetation

The Bozeman Municipal Watershed analysis area is a landscape dominated by steep canyons and timbered slopes in the lower reaches of Bozeman and Hyalite creeks. Dominant vegetative communities include Douglas-fir and lodgepole pine. Stands in both drainages are predominantly in the mature and older age/size class (72%) with fewer seedling, sapling, or pole size stands (18%).

Mature and older lodgepole pine and subalpine fir is found at all elevations and aspects within the project area. The natural fire frequency in these stands varies from those that experienced thinning fires on a 35 to 40 year frequency to stand replacing fires approximately every 150 to 200 years. Without periodic disturbances like fire, subalpine fir eventually replaces lodgepole pine. Older Douglas- fir is also common in the project area. On Douglas-fir sites, natural fire frequency ranged from 35 to 45 years and typically thinned the stand instead of replacing it.

In the last two years, many of the larger lodgepole pine in the project area have been attacked by mountain pine beetles, which are native but usually only present at endemic levels. The area is currently experiencing an epidemic that will likely increase large lodgepole pine tree mortality over the next five years. Prescriptions for thinning will address this by favoring removal of beetle-killed trees over other tree species that are not affected by mountain pine beetles.

In all the action alternatives, the amount of old growth forest retained is well above the 10% Forest Plan Standard (28% to 32%). Based on the old growth analyses completed for this project (FEIS, Ch 3-224, 231, 237, 243, 249), Alternatives 2 and 6 propose treating the least amount of old growth forest (625 and 651 acres, respectively). Alternative 3 proposes treating the most old growth stands (944 acres). Alternative 5 and Alternative 4 would treat 885 and 700 acres, respectively.

Alternative 6 will provide for the continued availability of older forested stands in these drainages to a greater degree than Alternatives 3, 4, or 5, and will help prevent potential loss of old growth forest that will eventually occur under the no action alternative.

Wildlife and Wildlife Habitat

The wildlife effects analysis (FEIS, Ch 3-171 through 3-209 and 2-247 through 3-417) disclosed varying levels of possible impacts to wildlife habitat across the range of alternatives in the FEIS.

The Canada lynx is listed as a threatened species under the Endangered Species Act, and as such, I carefully considered potential effects to lynx and lynx critical habitat. Effects of Alternative 6 were addressed in a Biological Assessment in consultation with the US Fish and Wildlife Service (FWS). In the Biological Opinion (FEIS Appendix D) issued for the BMW project, the FWS found that the project falls within the range of fuel and timber management projects analyzed for amending Forest Plans for lynx management. The FWS found that effects of the BMW project were adequately analyzed, and that the project conforms to the incidental take statement developed for the lynx amendment. Further, the FWS determined that the effects of the BMW project are not likely to result in the destruction or adverse modification of lynx critical habitat.

Between the Draft and Final EIS (September 21, 2009), a court order vacated the delisting of the Greater Yellowstone Area grizzly population segment, thus re-establishing the Yellowstone grizzly bear as a threatened species. In compliance with the Endangered Species Act, a Biological Assessment was prepared and we entered into consultation with the US Fish and Wildlife Service with a determination of may affect, likely to adversely affect. The Biological Opinion issued by the FWS found that the effects of the BMW project are not likely to jeopardize the continued existence of the grizzly bear. I have incorporated Terms and Conditions set forth in the Biological Opinion as mitigation measures for project implementation.

The Northern goshawk is a Management Indicator Species for the Gallatin National Forest. The wildlife analysis showed that there could be some impacts to goshawk habitat; however, mitigation measures were identified to protect known occupied nesting and post fledging areas. The mitigation measures I incorporated into the decision follow the most current Regional guidance for management of northern goshawk habitat (FEIS, Ch 2-21).

Snags are recognized as an important component of wildlife habitat. With the number of trees currently dead or dying due to epidemic levels of insect infestation in the project area, there is no reason to believe that implementation of the BMW project will adversely impact this resource. However, to ensure maintenance of adequate habitat for snag-dependent species, I have incorporated mitigation measures for snag retention in treatment units (FEIS, Ch 2 – 22).

Soils

Soils in the 8100 acre analysis area for the project are primarily moderately-coarse textured with many rock fragments that are not prone to compacting. They have formed in weathered hard-crystalline metamorphic and granitic rocks (87% of the area). Landslide (mass-wasting) hazards are low, with the exception of a small area in the southwest corner of the study area (1%). Erosion hazards are high in some of the area, because of the steep slopes and relatively sandy-droughty soils.

All alternatives meet soil quality standards with the specified mitigation described in the FEIS (Ch 2-19, 20) and included in this decision. Alternative 6 will include up to 147 acres of skid trail restoration and 40 acres of existing temporary road restoration to meet soil quality standards.

Best management practices for soils will be applied during project implementation (FEIS, Appendix B-1). Mitigation for soils (FEIS, Ch 2-20) includes restoration activities for past harvest areas. Restoration activities include re-contouring and seeding existing skid trails and non-system roads in each previously-harvested unit. Re-contouring will help to restore the soil profile, increase infiltration, and reduce erosion. Re-contouring is designed for slopes less than 20%, to maximize topsoil replacement. Re-contouring on slopes greater than 20% is very limited because it may result in bringing up infertile subsoil, and increasing weed potential.

In previously harvested areas, skid trails, either from past or the current treatments will be rehabilitated using native seed mixes. Restoration is also planned for the temporary roads needed for this project.

Weeds

My decision was influenced by consideration of the noxious weeds which could be established or spread by disturbances associated with the project activities. Compared to Alternative 5, Alternative 6 will result in fewer total acres of activities occurring on those sites most conducive to weed establishment. The overall cost of weed treatments in Alternative 6 is also predicted to be less than Alternative 5.

The action alternatives vary in their potential for weed spread. Alternative 4 treats the most acres and has the second highest cost of weed treatment because of the high level of prescribed burning. However, Alternative 4 has less soil disturbance than Alternatives 2, 3, 5 or 6 again, because of the large number of acres being treated with prescribed burning. Tractor logging and associated road construction, and soil disturbance from landings and skid trails in Alternatives 2, 3, 5 and 6 have a higher likelihood of new weed establishment than Alternatives 1 or 4.

The additional temporary roads needed to use cable and tractor logging systems in Alternatives 2, 3, 5 and 6 have the potential to create pathways for weed establishment and dispersal. While activities associated with the action alternatives increase the potential for weed establishment, there are several mitigations such as washing equipment, identifying and treating weed infested areas, and maintaining weed free equipment parking areas that are included in this project .

Economics

While the costs and economic benefits of implementing this project are relevant to consider, it is critical to remember that the intent of this project is to protect the valuable resources of these Bozeman watersheds, not to produce the most economic benefits. The investments for the project are focused on addressing un-quantified benefits such as clean water, public safety, scenic vistas, and high quality recreation experiences. At the same time, I must be realistic about what the Forest can afford to implement and prioritize treatments with this in mind.

The Bozeman Municipal Watershed project has both commercial and non-commercial thinning activities. Helicopter yarding is very costly in today's market with the high cost of fuel and the low value of timber. Therefore, Alternative 6 was a conscious choice to eliminate some of the helicopter logging that was analyzed in Alternative 5 in an effort to provide a better balance between project costs and acres treated.

The difference between the present net value (PNV) for Alternative 5 which was the DEIS Preferred and Alternative 6 (FEIS, Ch 3-270) was largely due to the reduction of helicopter logging in Alternative 6. This convinced me that the financial tradeoff for reducing the amount of helicopter thinning from Alternative 5 to Alternative 6 was an important consideration in my decision.

However, as mentioned before, if economic considerations change during the project, I am including the option of using helicopter yarding in some cable units if this becomes economically viable in order to avoid some adverse effects to scenic resources.

D. Alternatives Studied in Detail

The Draft EIS which was published for public review in August of 2007, analyzed five alternatives, including the No Action and Proposed Action alternatives, in response to issues raised by the public and agency specialists during the scoping period. The Final EIS added a sixth alternative to respond to changed conditions and to public comment on the Draft EIS. I believe these alternatives address the issues raised, consider requests for alternatives, and provide for a broad range of alternatives to the proposal. These alternatives are briefly described below

Alternative 1, No Action

Under the No Action alternative, current management plans would continue to guide management of the project area. No fuels reduction activities would be implemented.

Alternative 2, The Proposed Action

This alternative is a more detailed version of the proposed action presented to the public during scoping. An interdisciplinary team with specialties in hydrology, fisheries, wildlife, silviculture, ecology and wildland fuels convened and using technical expertise, existing data, fire behavior and landscape dynamic models, and spatial analysis developed the Proposed Action presented in the Draft EIS. The proposed action alternative reflects the priority treatment areas and one treatment scenario that would address the purpose and need for actions.

The approximate duration of the proposed activities would be a 5-12 year timeframe. A more detailed description of the treatment prescription and implementation methods is in FEIS, Appendix A.

Alternative 3

This alternative was designed to meet the purpose and need for action and to achieve the desired conditions more aggressively than Alternative 2. Given the extent of and current condition of the municipal watershed, an issue was raised by agency specialists that the proposed action was not extensive enough to be effective toward meeting the purpose and need for action. Treating additional acres would more effectively reduce the potential extent of future crown fires resulting in less severe fires and fire behavior.

Alternative 4 The No Logging/Prescribed Burning Alternative

In this alternative, treatments would be limited to prescribed burning, small tree removal and no additional roads. This alternative combines an effort to meet the purpose and need for action without thinning large trees using logging methods. This alternative is also the agency response to the request during scoping to consider an alternative limited only to prescribed burning and to consider an alternative with no additional roads.

Alternative 5 - DEIS Preferred

Alternative 5 is designed to improve the effectiveness of the project toward meeting the purpose and need for action while mitigating unacceptable impacts to scenery, watershed, and westslope cut throat trout. Design of this alternative incorporates treatment areas in and near the wildland urban interface that were unintentionally left out of other alternatives and areas that through additional analysis were determined to be strategically important with respect to fire spread. This alternative makes refinements in treatment prescriptions and/or methods as contrasted with the original proposed action based on more accurate information that allowed specialists to make more accurate treatment recommendations.

Alternative 6 – FEIS Selected Alternative

Alternative 6 was developed following the release of the DEIS and after the interdisciplinary team reviewed public comment on the alternatives. The purpose and need of reducing the risk of large scale, severe wildfire and reduced risk to life and property was still foremost, but the cost of implementation of the project were also considered and necessitated a reduction in the number of acres of helicopter yarding. This was accompanied by an increase in prescribed burning, mostly inside the IRA. Some public comment favored more prescribed burning and less mechanical thinning. Some comments also requested less thinning in the inventoried roadless area.

Alternatives 2 – 6 Comparison Table

	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6
Prescribed burning – no pre thinning	850 acres	1100 acres	2046 acres	950 acres	1575 acres
Mechanical and hand cutting, thinning and piling of young trees	1150 acres	1150 acres	1250 acres	1156 acres	1117 acres
Partial harvest (percentage by harvest system)	1,926 acres Ground based (23%) Skyline (32%) Helicopter (45%)	3621 acres Ground based (19%) Skyline (35%) Helicopter (46%)	0	3708 acres Ground based (21%) Skyline (12%) Helicopter (67%)	2045 acres Ground based (37%) Skyline (24%) Helicopter (39%)
Forest Plan Amendment for Visuals	Yes	Yes	No	Yes	Yes
Temporary Road Construction	7.2 miles	13.5 miles	0	6.9 miles	7.1 miles
Re-opening and Closing Existing Roads	3 miles	5.4 miles	0	1.7 miles	1.7 miles
Activities within Gallatin Fringe IRA	<ul style="list-style-type: none"> • 4608 acres helicopter thinning • 687 acres prescribed burning 	<ul style="list-style-type: none"> • 738 acres helicopter thinning • 895 acres prescribed burning 	<ul style="list-style-type: none"> • 0 acres helicopter thinning • 1147 acres prescribed burning 	<ul style="list-style-type: none"> • 666 acres helicopter thinning • 941 acres prescribed burning 	<ul style="list-style-type: none"> • 200 acres helicopter thinning • 1329 acres prescribed burning

E. Alternatives Considered but Not Studied in Detail

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives were viewed as outside the scope of the Bozeman Municipal Watershed Project, duplicative of the alternatives considered in detail, or determined to have components that would cause unnecessary environmental harm. Therefore, four alternatives were considered, but dismissed from detailed study for reasons summarized below.

Scoping Alternative

This alternative was the original proposal presented by the Forest Service for the initial scoping effort. (GNF, 9/2005) It was developed to achieve the purpose and need outlined in Chapter 1 of the EIS. Fuel reduction activities being considered included treating up to 6,000 total acres, including a small portion of the Gallatin Divide IRA in the Bozeman Creek watershed, and treating up to 3,000 acres in the Hyalite Creek watershed with a combination of prescribed burning, thinning, brush cutting, and commercial tree harvest. This proposal was a broad description for the area proposed for treatment and the types of treatments. It was the starting point from which Alternative 2-5 were developed. Alternative 2 is the detailed description of this conceptual alternative and was considered in detail.

Water Treatment Facility Improvements Alternative

During scoping, comments were submitted that asked the Forest Service to consider an alternative that improved water treatment facilities such as building sediment traps, upgrades to treatment plant, and wells. The intent was to focus mitigation on the City facilities to address the purpose and need rather than National Forest System lands. The recommendations were shared with the City of Bozeman for consideration. These options are not within the decision authority for the Forest Service so this alternative is not within the scope of the decision. The City of Bozeman is considering upgrades to water management system and the suggestions provided by the public were forwarded to the City staff.

The City commissioned a facility plan evaluation of the treatment plant with the long term potential to convert from direct filtration to conventional or membrane filtration. The City of Bozeman Water Facility Master Plan (City of Bozeman, 2006) http://www.bozeman.net/bozeman/engineering/documents/Water_Facility_Plan.pdf contains an extensive analysis of potential water treatment upgrade alternatives. The potential impacts of the upgrades considered in the Master Plan are incorporated into the FEIS discussion on water quality (FEIS, Ch 3-35 and 36).

While the City of Bozeman and the Forest Service are working together, each entity has a unique role. The Gallatin National Forest does not have jurisdiction on City of Bozeman water system operations. It is important to remember that high intensity wildfire within these drainages would affect water quantity and quality, and could impact the City's ability to provide a necessary water supply to meet the resident's needs. Given the water treatment technology currently being used

by the City of Bozeman, these concerns cannot be fully addressed until the City is able to upgrade their water treatment facilities.

Wildland Fire Use Alternative

During scoping the Forest Service was asked to consider an alternative focused on natural fire ignitions to achieve this project's purpose and need. Currently the project area is within Fire Management Unit #3 Gallatin Protection in the Gallatin National Forest Fire Management Plan. This FMU is designated Interface/Intermix meaning WUI, Municipal Watershed, campground, dispersed recreation and heavy public use.

According to the current Gallatin National Forest Plan (1987) the Management areas (MA) in the project area identifies fire suppression as the Appropriate Management Response. The Forest can utilize 'contain' and 'confine' strategies relative to wildland fire before and after fire season (May 1 to Sept 30). Otherwise, during fire season the response is to control (or suppress) the fire. Although the Forest is considering amending the Forest Plan to allow additional fire management options, managing fire for resource benefits in this area would likely be outweighed by the risks posed by having fire in a municipal watershed that is bordered by subdivisions and receives very heavy recreation use.

Human caused ignitions would require a control strategy, unless safety to firefighters or values at risk allow for safer strategies/tactics, and cost considerations. Planned ignition (prescribed fire) is an option under the forest plan and is included within the alternatives in the EIS.

Wildland Urban Interface/Homes Alternative

During scoping the Forest Service was asked to consider fuel reduction treatments only in the Wildland Urban Interface immediately around homes. Treatment in the WUI could easily be considered in a stand alone decision tiered to the current analysis. However, the purpose and need for this project is reducing fire risk to the Municipal Watershed and protection of the Bozeman municipal water treatment facilities. Elimination of treatment outside of the WUI would not meet the purpose and need defined for this effort because the entire analysis area is within the wildland urban interface, as delineated by the Gallatin County Community Wildfire Protection Plan.

Structures exposed to wildland fire are a potential fuel source and can be ignited by direct flame impingement, radiant heat, or by airborne firebrands (Cohen, Jack D. 1999). The 100 foot zone around a home is the critical "survival" zone relative to a crown fire. The public agencies have no authority to regulate the "fuels" in this zone; but to sustain our ecosystems and ecosystem benefits, protecting homes is always a goal. By thinning high elevation forests, we are reducing the potential for crown fires which reduces the fire brands that burn down homes. All the action alternatives analyzed have taken these realities into account and realize that strictly treating the survival zone without taking other fire factors into account is less effective.

V. Public Involvement

A. Overview of the Public Involvement Process

Prior to the DEIS

The Notice of Intent (NOI) for the Bozeman Municipal Watershed project was published in the *Federal Register* on October 18, 2005. The NOI asked for public comment on the proposal. In addition, as part of the public involvement process, the agency asked that initial comments on the project be submitted by November 11, 2005.

A public scoping document was sent to agencies and interested individuals on September 19, 2005. The scoping document described the project area, laid out the purpose and need for the project, and identified some preliminary issues associated with the project. The list of individuals, agencies, and interest groups who were sent the scoping document are part of the project record (BMW Mailing List, Gallatin NF, 2005)

Because the two drainages involved, Bozeman Creek and Hyalite Creek, encompass the City of Bozeman Municipal Watershed, the Forest Service worked closely with the City of Bozeman in development of the purpose and need. The City and the Forest Service signed a Memorandum of Understanding concerning our mutual goals and objectives. This MOU is a part of the project record (FS Agreement No. 05-MU-1101100-010).

The Bozeman Watershed Council, a local interest group concerned about the management of the watershed, had been meeting periodically with the Forest Service. They produced an assessment of Bozeman Creek in 2004 outlining the management needs for the drainage (Sourdough Creek Watershed Assessment, 2004).

Other interest groups, concerned citizens, and the local rural fire districts had collaborative discussions with the Forest Service on the specific needs of the watershed prior to the initiation of the project.

The following summarizes the public participation that has occurred since the announcement of the project:

1. During the public comment period we received detailed letters from 18 individuals and 11 interest groups. These are part of the project record. The comments that were received in these letters were developed into the issues that are described below.
2. On May 3, 2006 we had a meeting with several individuals and groups for a briefing on the issues that had been raised during scoping and afterward.
3. We had numerous meetings with the City of Bozeman staff members to coordinate our efforts.
4. On June 12, 2006 we briefed the Bozeman City Commission on the progress of the project.

5. On August 3, 2006 we sent a letter to all those on our mailing list briefing them on progress.
6. On August 8, 2006 there was a field trip to the project area for congressional staffers and others.
7. On September 13, 2006 an open house was held to bring the public up to date on the alternatives that were being developed for the DEIS.
8. During the month of May, 2007, the District Ranger sent invitations and issued a press release that he was having four “morning coffee” meetings for people to come, visit, and get an update on the project. These were held at the Eagle Mount conference room.
9. On August 30, 2007 the Draft Environmental Impact Statement for the Bozeman Municipal Watershed fuels reduction project was released for public review and comment. A 45 day comment period was provided. See Appendix C for a summary of the public comments and the Forest Service response to the comments.

Following the release of the DEIS

1. The Forest Service and the City of Bozeman held an open house on September 25, 2007 for a public review of the project and an opportunity for people to get their questions about the project answered. Two public tours of the project area were conducted in October.
2. The Forest Service received seven substantive letters commenting on the DEIS from agencies and organizations and 36 letters from groups and individuals.
3. The Forest Service briefed the Bozeman City Commissioners on the BMW project and discussed what additional environmental review would take place before a decision was made.
4. On August 27, 2008, the Forest Service met with City of Bozeman Staff to discuss how the project would be implemented.
5. On August 26, 2009, a field trip to the BMW was conducted with Jack Cohen, Forest Service researcher, accompanied by city staff and interested public participants to discuss the scientific background of the project including research on wildfire effects in the wildland/ urban interface.

VI. Determination of Non-Significant Forest Plan Amendment

Alternative 6 includes a site specific forest plan amendment to the Gallatin Forest Plan (1987). My decision amends the Gallatin Forest Plan to modify visual quality standards of the Forest Plan specifically as they relate to this project in units 16C, 22I, 36D, and 38.

The need for this amendment, in order to achieve the purpose and need of the project, was first disclosed in the DEIS and is further analyzed in the FEIS (Ch 3-111) for this project. Forest Service Manual Section 1926.51 gives guidance for determining what constitutes a “significant amendment” under NFMA. I have determined, based on this guidance, that this site-specific

forest plan amendment is not significant because it will not individually or cumulatively significantly alter the long-term relationship between levels of multiple-use goods and services originally projected; and, it will not have an important effect on the entire land management plan or affect land and resources throughout a large portion of the planning area during the planning period. This amendment modifies standards only for this time and place. Therefore, it is not a long term change in the plan. The changes will not have an important effect on the entire Forest Plan or affect land and resources throughout a large portion of the planning area during the planning period. It will only affect the municipal watershed area specifically and only for this project. The public has been notified of these amendments throughout the NEPA process.

The following describes:

- Amendment element
- Purpose and the need for the amendment
- Direct, indirect and cumulative impact of the amendment
- Criteria for assessing whether or not the amendment is significant, and
- My conclusion on significance or non significance.

Scenic Quality Standard

The Forest Plan (p. II-16) contains the following visual quality standards for which I am making an exemption for four areas of the project. The standards read:

1. The Gallatin National Forest has developed visual quality objectives (VQOs) which provide guidance for all landscape altering activities. Reference maps of VQOs are at the Supervisor's Office and each Ranger District for use in designing projects and for public inspection.
2. Environmental analysis and project designs will detail how the range of visual quality objectives identified for each Management Area in Chapter 3 will be utilized. If the VQO cannot be met the Forest Supervisor must approve the exemption in the decision document.

Exemption Proposed for this Standard

Alternative 6 includes a project-specific Forest Plan amendment to exempt the proposed fuel reduction treatment from meeting the Forest Plan visual quality standard in four separate units:

- Unit #36 D, proposed for cable thinning
- Unit #16 C, proposed for cable thinning
- Unit #38, proposed for cable thinning
- Most of unit #22I, proposed for cable thinning

The locations of these units are on slopes that are highly visible from the Gallatin Valley, as close as one mile for some. Cable drag corridors tend to be unnatural appearing (except near avalanche corridors, etc), especially when some snow is on the ground and the access roads but not on the trees. This situation exists especially when those cable corridors face directly toward viewers. In addition, the cable drag corridors tend to accentuate the road along the top of them, due to the necessary removal of more trees below the equipment set-up points to facilitate unimpeded dragging. I have determined that the only way to economically treat these units is to cable log them and this is necessary to help meet the purpose and need of the project.

Amendment Purpose and Need

This site specific visual quality exemption is needed in order to treat the vegetation in the four units listed above. The thinning will be accomplished by cable logging systems, some of which will be visible from parts of the Gallatin Valley south of Bozeman. These areas are designated for Partial Retention because of their location and potential sensitivity to ground disturbing activities such as logging. These stands were proposed to be logged by helicopter in Alternative 5, the DEIS Preferred Alternative. Helicopter logging would meet the standard of Partial Retention because there would be no cable yarding corridors which are associated with cable logging. However, as stated in my reasons for the decision, I chose not to select the alternative which helicopter logged these stands because of the cost and the possibility that that it could not be implemented.

Direct, Indirect, and Cumulative Effects of the Amendment

The locations of these units are on slopes that are highly visible from the Gallatin Valley, as close as one mile for some. As described in the FEIS, Ch 3-111, cable drag corridors tend to be sufficiently unnatural-appearing so that they visually dominate, especially when some snow is on the ground and the access roads but not on the trees. This situation exists especially when those cable corridors face directly toward viewers. In addition, the cable drag corridors tend to accentuate the road along the top of them, due to the necessary removal of more trees below the equipment set-up points to facilitate unimpeded dragging. While the ground-based and helicopter units, along with the associated temporary roads would cause these hillsides to appear whiter in winter by allowing more snow on the ground to show and most likely small portions of new road prisms, the overall visual result of the entire project would still be predominantly natural-appearing and cause no negative cumulative effects to the scenery. The cable thinning units combined with their associated temporary access roads and existing cabled units outside the project area that are still visually dominant and not meeting Forest Plan visual quality standards from the Gallatin Valley, would result in negative cumulative effects to the scenery.

Application of FSM 1926.51 Directives Not Significant Criteria

My determination of whether this proposed amendment is significant was done using the process in the Forest Service Planning Manual, 1926.51. The handbook states that changes to the land management plan that **are not significant** can result from four specific situations. This site specific amendment to exempt is compared to those situations below:

1. Actions that do not significantly alter the multiple use goals and objectives for long-term land and resource management.

The amendment to exempt the visual quality standard for four units does not alter the multiple-use goals and objectives for long-term land and resource management. The amendment will allow the project to better meet the fuels reduction purpose and need which is a Forest management goal. The amendment affects a very small portion of the Forest. It is a short term, site-specific and project-specific amendment that will have no effect on Forest Plan objectives or outputs.

2. Adjustments of management area boundaries or management prescriptions resulting from further onsite analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management.

The visual quality exemption does not adjust management area boundaries or management prescriptions. It does provide for more site-specific application by allowing thinning of these timber stands by cable systems because it is the only economically feasible means to achieve the desired objective.

3. Minor changes in standards and guidelines.

The amendment is a minor change to the overall standards for visual quality for the entire watershed. Four stands out of 47 stands are affected by this amendment.

4. Opportunities for additional projects or activities that will contribute to achievement of the management prescription.

This criteria does not apply because of the character of the visual quality standards. Future projects and activities which contribute to management prescriptions may or may not be affected by visual quality standards.

Conclusion – Significance/Non-significance

Based on consideration of the four factors identified in the Forest Service Planning Handbook, 1926.51, and considering the Forest Plan in its entirety, I have determined that the amendment to exempt certain stands from visual quality standards is not significant. This amendment is fully consistent with, but further refines and clarifies the means to achieve, current Forest Plan goals and objectives.

VII. Findings Required by Other Laws, Regulations, and Policies

Based on the issues addressed in Chapter 3 of the FEIS, principal Federal Laws applicable to this proposal include the National Forest Management Act of 1976, Endangered Species Act of 1973, Migratory Bird Treaty Act (16 USC 703-711), National Historic Preservation Act (as amended 1992), the Clean Air Act, and the Clean Water Act. Compliance with these laws is discussed below. References within the FEIS are noted. The State of Montana Water Quality Act (1969, 1975, 1993, 1996) is also discussed below under *State Laws*.

Federal Laws

National Forest Management Act of 1976 / Gallatin Forest Plan

A. Non-significant, project specific Forest Plan amendments: As stated in the 2004 interpretive rule

“During the transition period, responsible officials may use the provisions of the 1982 rule to prepare plan amendments and revisions.”

“Projects implementing land management plans and plan amendments, as appropriate, must be developed considering the best available science in accordance with §219.35(a).”

My decision includes a site specific forest plan amendment to the Gallatin Forest Plan (1987). Therefore, my decision amends the Gallatin Forest Plan to modify visual quality standards of the Forest Plan specifically as they relate to this project in units 16C, 22I, 36D, and 38.

I have determined that this amendment is not significant because it will not significantly alter the long term relationship of levels of goods and services originally protected. It is not a long term change in the Forest Plan (see section VII. above for this determination).

B. Forest Plan consistency: All management activities must be consistent with the Forest Plan (16 USC 1604 (i)). General management direction for the Gallatin National Forest is found in the goals, objectives, standards, and guidelines of the Forest Plan. I have determined Alternative 6 is consistent with the Plan, as amended, including all standards and guidelines. The decision also supports NFMA’s diversity provision at 16 USC 1604 (g)(3)(B) through management standards. The Biological Evaluations and Biological Assessments (FEIS, Appendix D) confirm that this project will not impact the viability of sensitive, threatened and endangered species.

C. Other NFMA consistency requirements (16 USC 1604)

The selected alternative is consistent with the National Forest Management Act requirements under 16 USC 1604 (g) (3) (E).

1) No soil, slope, or other watershed conditions will be irreversibly damaged. No system roads will be built during this project, so the project will not create any permanent impairment. Alternative 6 protects the organic matter, soil porosity, and topsoil through the use of BMP’s and mitigations. Localized and limited losses will occur on landings, skid trails, and temporary roads.. However, over the majority of a unit and the landscape, the processes that contribute to productive soils will be preserved. (FEIS, Ch 3-317 through 329). BMP’s and mitigations assure that no irreversible damage to the watershed or stream channel conditions will occur (FEIS, Appendix B-1, 2).

2) Alternative 6 provides protection for streams, stream banks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment through implementation of the Forest Plan standards and guidelines and project design and mitigations (FEIS, Ch 2 – 16, 2 -19, and 2- 20.

3) In Alternative 6 the harvesting systems were not selected primarily to generate the greatest dollar return or the greatest unit output of timber. Rather, they were selected to appropriately balance treatment efficiency with minimizing resource impacts.

The selected alternative is consistent with the NFMA requirements under 16 USC 1604 (g) (3) (F) which concerns even-aged management and clearcutting. The cutting of live trees to create an even-aged system is not proposed.

D. Consideration of best available science (219.35(a)):

My decision is based upon my review of the FEIS and the documentation of the scientific information that was used in the analysis of effects of the proposal and the alternatives developed. The scientific basis that supports the analysis of the actions included in my decision is referenced throughout the FEIS.

Endangered Species Act of 1973

Under Section 7 of the Endangered Species Act, each Federal agency must ensure that any action authorized, funded, or carried out is not likely to jeopardize the continued existence of any threatened or endangered species. If a threatened or endangered species, or species proposed for listing occurs in an area where a project is proposed, a Biological Assessment (BA) must be conducted.

I have found this analysis to comply with the Endangered Species Act, Section 7. A Biological Assessment for the Selected Alternative was submitted to the US Fish & Wildlife Service for review. In a letter dated August 8, 2008, the US Fish and Wildlife Service reviewed the Biological Evaluation for lynx and concurred with the findings of the Bozeman Ranger District Wildlife Biologist. These findings concluded that the Selected Alternative 6 is not likely to adversely affect the threatened Canada lynx.

Between the Draft and Final EIS (September 21, 2009), a court order vacated the delisting of the Greater Yellowstone Area grizzly population segment, thus re-establishing the Yellowstone grizzly bear as a threatened species. In compliance with the Endangered Species Act, a Biological Assessment was prepared and the Forest entered into consultation with the US Fish and Wildlife Service. The Biological Opinion issued by the FWS found that the effects of the BMW project are not likely to jeopardize the continued existence of the grizzly bear.

Terms and conditions were issued and have been incorporated into the required mitigation for this project (FEIS, Ch 2-22). The Fish and Wildlife Service also offered Conservation Recommendations in their Biological Opinion. Recommendation #1 suggests that the Forest Service leave untreated post-harvest slash instead of piling and burning. Given that this treatment is contrary to the fuels reduction objectives of the project, it will not be incorporated into the project prescriptions. The second recommendation, to continue to manage across the Forest to achieve lower road densities, will be followed to the extent that it is consistent with the Gallatin National Forest Travel Plan.

Migratory Bird Treaty Act (16 USC 703-711)

Migratory bird species are protected from harm under the Migratory Bird Treaty Act (MBTA). A January 2001 Executive Order requires federal agencies to ensure that environmental analyses of federal actions evaluate the effects of actions and agency plans on migratory birds, with an emphasis on species of concern.

Species of concern identified (Brewer's sparrow, grasshopper sparrow, great gray owl, olive-sided flycatcher, and Swainson's hawk) are generally associated with open forest, including burned forest, and grass/shrub types. Brewer's sparrow and grasshopper sparrow are shrub (sage) and grassland nesting species respectively (USDA 1991:466, 476). Nesting habitat for these species generally occurs on warm, dry, south and west-facing slopes at lower elevations in the project area. Great gray owls typically nest in the more open structure associated with relatively dry, montane coniferous or deciduous forest. Nest sites are generally located in close proximity to open areas used for hunting (Duncan and Hayward 1994:164). Foraging habitat consists of relatively open, grassy areas including natural meadows, logged areas and open forest (Nero 1980, Mikkola 1983, Winter 1986). Olive-sided flycatchers are strongly associated with recently burned forest, but are also relatively common in logged areas, including clear-cuts and partial harvest treatments (Hutto and Young 1999:25). Swainson's hawks typically nest in lowland river bottoms (MFWP 2006), habitat that is not generally found on NFS lands but occurs in the rural and agricultural land adjacent to the project area. Swainson's hawks feed on small mammals, birds and insects. They commonly hunt in agricultural fields, and might occasionally enter the project area in search of prey.

The proposed treatments for this project will affect a relatively small proportion of habitat in the analysis area that provides forage for migratory birds and may result in habitats that provide differing, but valuable foraging habitats for these and other species in the future. The implementation of the decision will not likely have adverse impacts on any of the migratory bird species (FEIS, Ch 3 – 387).

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations, directs Federal agencies to integrate environmental justice considerations into federal programs and activities. Environmental justice means that, to the greatest extent practical and permitted by the law, all populations are provided the opportunity to comment before decisions are rendered or are allowed to share in the benefits of, are not excluded from, and are not affected in a disproportionately high and adverse manner by government programs and activities affecting human health or the environment (EO 12898 and Departmental Regulation).

My decision regarding the Selected Alternative sought out and incorporated public involvement through scoping, the DEIS 45-day public comment period, and numerous public meetings and field trips to the project area. My decision will not have a discernible effect on minorities, American Indians, or women, or the civil rights of any United States citizen. Nor will it have a disproportionate adverse impact on minorities or low-income individuals.

National Historic Preservation Act

The Forest Service is mandated to comply with the National Historic Preservation Act (NHPA) (as amended 1993) [Public Law 89-665]. Section 106 of the NHPA requires that federal agencies with direct or indirect jurisdiction over undertakings afford the Advisory Council on Historic Preservation (ACHP) reasonable opportunity for comment on such undertakings that affect properties included in or eligible for inclusion to the National Register of Historic Places (NRHP) prior to the agency's approval of any such undertaking (36CFR800.1). Historic

properties are identified by a heritage resource inventory and are determined as either eligible or not eligible properties for the National Register. Eligibility is reviewed, and concurrence given by the Montana Historic Preservation Office (MTSHPO). Sites that are determined eligible are then either protected in-place or adverse impacts must be mitigated. This process has been completed and this project will have no impacts on the identified sites

Clean Air Act

Congress passed the Clean Air Act in 1963, and amended it in 1972, 1977, and 1990. The purpose of the act is to protect and enhance air quality while ensuring the protection of public health and welfare. The act established National Ambient Air Quality Standards (NAAQS), which must be met by state and federal agencies, and private industry. States are given primary responsibility for air quality management. Section 110 of the Clean Air Act requires States to develop State Implementation Plans (SIP) what identify how the State will attain and maintain NAAQS, which are identical to the Montana standards for PM₁₀ (particulate matter with less than 10 microns. The SIP is promulgated through the Montana Clean Air Act and implementing regulations. The regulations provide specific guidance on maintenance of air quality, including restrictions on open burning (ARM 16.8.1300). The Act created the Montana Air Quality Bureau (now under DEQ) and the regulatory authority to implement and enforce the codified regulations.

The NAAQS have been established for carbon monoxide, nitrogen oxide, sulfur dioxide, lead, ozone, and PM₁₀. There are numerous types of pollution that could be controlled, but particulate matter is the primary pollutant of concern. The PM_{2.5} standard requires concentrations of PM_{2.5} not to exceed a 24-hr average of 65 ug/m³ (micrograms per cubic meter). Average annual arithmetic PM_{2.5} concentrations are not to exceed 15 ug/m³.

The August 1977 Clean Air Act amendments designated areas into PSD (Prevention of Signification Deterioration) classes. Class 1 airsheds are given the most protection from human caused air pollution in order to protect their pristine character. Class II airsheds allow for a greater amount of human caused pollution. The EPA has not yet identified any Class III airsheds.

By incorporating the specific guidelines for air quality, which are outlined in the mitigation section of the FEIS on Ch. 2-15, implementation of the Selected Alternative will comply with all of the laws, policies, and guidelines that are discussed above. Impacts to air quality are not usually evident or cumulative.

Clean Water Act

The Clean Water Act provides the overall direction for the protection of the nations waters from both point and non-point source of water pollution. The Montana Water Quality Act establishes general guidelines for water quality protection. It requires the protection of the state's water as well as the full protection of existing and future beneficial uses. All of the streams within the analysis area for the proposed Bozeman Municipal Watershed Fuels Reduction Project are classified as A-1 or A-Closed streams under the Montana Water Classification system.

The Selected Alternative is consistent with all of the above-mentioned laws. These laws will be strictly adhered to upon implementation of the Selected Alternative with the protective mitigation that has been established for the project (FEIS, Ch 2-20, 21).

VIII. Implementation

The implementation of the Bozeman Municipal Watershed project is expected to begin in 2010.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

IX. Administrative Review or Appeal Opportunities

This decision is subject to appeal pursuant to 36 CFR 215.11. Only individuals or organizations that submitted substantive comments during the comment period may appeal. A written appeal must be submitted within 45 days following the publication date of the legal notice of this decision in the Bozeman Chronicle, Bozeman, Montana. It is the responsibility of the appellant to ensure their appeal is received in a timely manner. The publication date of the legal notice of the decision in the newspaper of record is the *exclusive* means for calculating the time to file an appeal. Appellants should not rely on date or timeframe information provided by any other source.

Paper appeals must be submitted to: USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, P.O. Box 7669, Missoula, MT 59807; or USDA Forest Service, Northern Region, ATTN: Appeal Deciding Officer, 200 East Broadway, Missoula, MT 59802. Office hours: 7:30 a.m. to 4:00 p.m. Fax (406) 329- 3411.

Electronic appeals must be submitted to: <appeals-northern-regional-office@fs.fed.us>. In electronic appeals, the subject line should contain the name of the project being appealed. An automated response will confirm your electronic appeal has been received. Electronic appeals must be submitted in MS Word, Word Perfect, or Rich Text Format (RTF).

It is the appellant's responsibility to provide sufficient project- or activity-specific evidence and rationale, focusing on the decision, to show why the decision should be reversed. The appeal must be filed with the Appeal Deciding Officer in writing. At a minimum, the appeal must meet the content requirements of 36 CFR 215.14, and include the following information: The appellant's name and address, with a telephone number, if available; A signature, or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal); When multiple names are listed on an appeal, identification of the lead appellant and verification of the identity of the lead appellant upon request; The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision; The regulation under which the appeal is being filed, when there is an option to appeal under either 36 CFR 215 or 36 CFR 251, subpart C; Any specific change(s) in the

decision that the appellant seeks and rationale for those changes; Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement; Why the appellant believes the Responsible Official's decision failed to consider the substantive comments; and, How the appellant believes the decision specifically violates law, regulation, or policy.

If no appeal is received, implementation of this decision may occur on, but not before, five business days from the close of the appeal filing period. If an appeal is received, implementation may not occur for 15 days following the date of appeal disposition.

Offer to Meet. When an appeal is received under this rule, the Responsible Official, or designee, must contact the appellant and offer to meet and discuss resolution of the issues raised in the appeal (36 CFR 215.17). If the appellant accepts the offer, the meeting must take place within 15 days after the closing date for filing an appeal (i.e. 45 to 60 days from the publication date of the legal notice of this decision in the Bozeman Chronicle). These meetings, if they take place, are open to the public. For information on if, when and where such a meeting is scheduled, please visit the following web site:

“www.fs.fed.us/r1/planning/final_appeals/current_appeals_and_objections.pdf”

X. Contact Person

For additional information concerning this decision or the Forest Service appeal process, contact Jim Devitt, Forest Planner and team leader, Gallatin National Forest Supervisor's Office, P.O. Box 130 Bozeman, Mt. 59715, (406) 587-6749.

Mary C. Erickson
Forest Supervisor
Gallatin National Forest

Date: March 22, 2010

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.