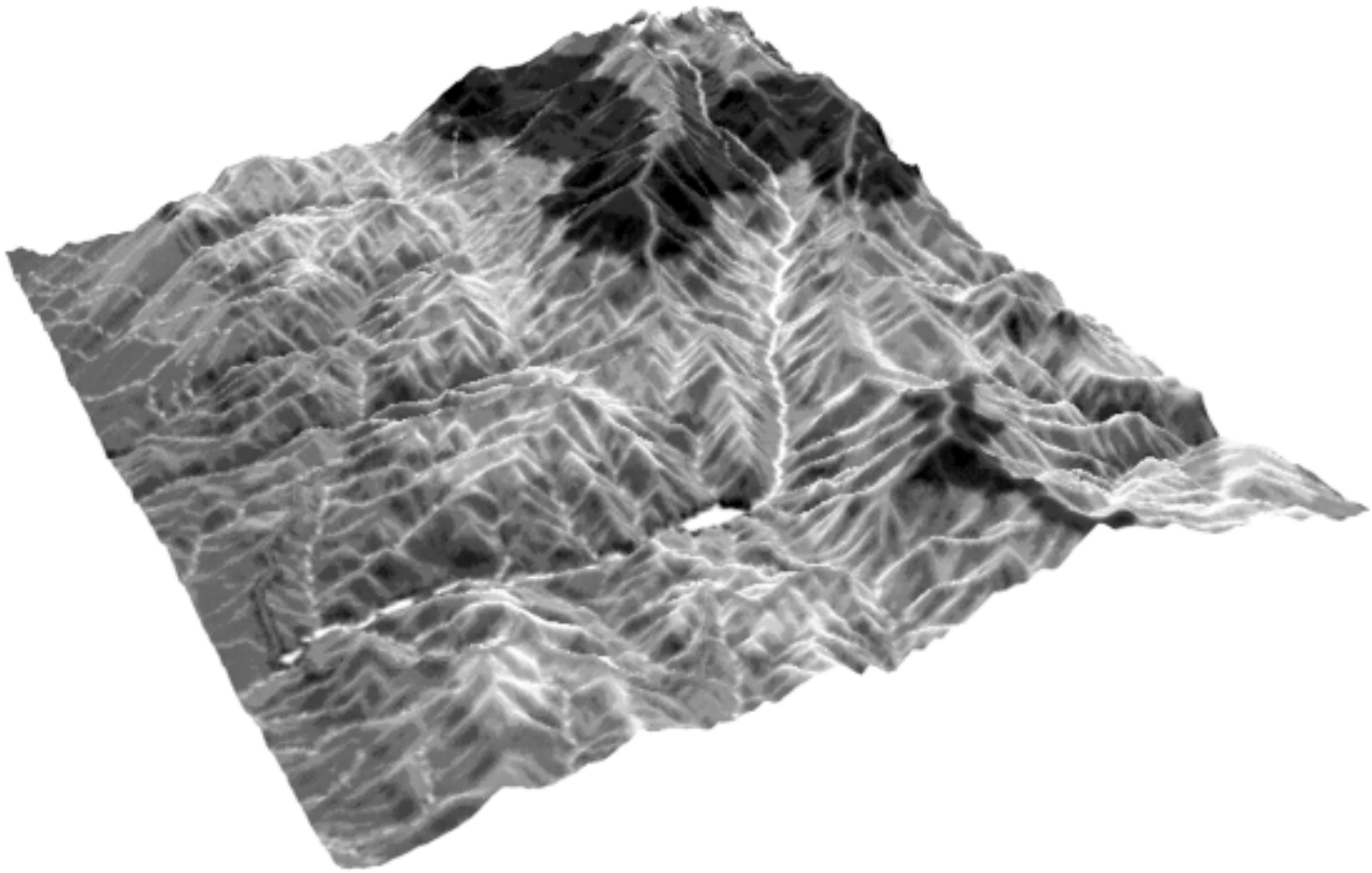
United States
Department of
Agriculture

Forest
Service

**Southwestern
Region**

Record of Decision Santa Fe Municipal Watershed Project

Espanola Ranger District
Santa Fe National Forest
Santa Fe County, New Mexico



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Record of Decision
Santa Fe Municipal Watershed Project

Santa Fe National Forest

Southwestern Region
USDA Forest Service

In cooperation with:

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Record of Decision

Introduction

I am pleased to announce that we have completed the detailed analysis process and Final Environmental Impact Statement (EIS) for the Santa Fe Municipal Watershed Project. The Final EIS consists of the Draft EIS as published, along with an Errata Sheet comprising minor corrections and clarifications to the Draft EIS, an updated Appendix B: Monitoring Plan, and an Appendix C: Response to Comments. We did not write a new EIS because the changes in response to public comments on the Draft EIS were minor and confined to factual corrections, clarifications, and other responses that did not warrant further agency action {40 CFR 1503.4(c)}. Regulations require circulating only changes to the Draft EIS rather than rewriting and circulating the entire EIS when changes are minor {40 CFR 1500.4(m)}. Based on a thorough review of public comments, I determined that there was no need to modify alternatives, develop and evaluate new alternatives, or supplement or modify the analysis in the Draft EIS in order to make an informed decision on this project in accordance with National Environmental Policy Act (NEPA) regulations.

As Forest Supervisor for the Santa Fe National Forest, I have made this fuel reduction project in the Watershed a top priority in an attempt to protect the City of Santa Fe and it's water supply from the potentially devastating impacts of a large catastrophic fire. The Watershed supplies 40 percent of the City's water, and currently contains thousands of acres of exceptionally dense forests that are highly vulnerable to the kind of raging crown fires experienced last year in New Mexico and throughout the U.S. This is a very serious problem. If we do not substantially reduce the number of trees that blanket this area, we can expect a high severity fire that will decimate the Watershed, threaten the City with loss of homes and businesses, cause massive soil and debris flows into the Santa Fe River and it's water supply reservoirs, and send muddy flood waters through Santa Fe's streets and downtown area. We know we cannot prevent a wildfire from ever burning in the Watershed. However, it would be irresponsible for me not to take immediate action to reduce the numbers of trees that form hazardous fuel loads in the Watershed, to the extent necessary to limit the magnitude and intensity of any fires that might occur.

It is my decision to implement fuel reduction treatments described in the EIS for the Santa Fe Municipal Watershed Project as Alternatives C1 and D1, together with Option A (No Wood Removal), along with all mitigation measures identified in the EIS (pp. 27-32) and the comprehensive monitoring and adaptive management plan outlined in Appendix B as updated.

Location and Project Area

This Record of Decision describes the selected alternatives and how I arrived at this selection after comparing the tradeoffs among the various alternatives and options, and considering public comments received on the Draft EIS.

This decision applies to national forest lands identified in the EIS as the "project area" (pp. viii, 1); situated in the upper Santa Fe River canyon that directly borders the City of Santa Fe, in northern New Mexico, Township 17 North, Ranges 10 and 11 East. The project area consists of 7,270 acres within the Watershed, just below the Pecos Wilderness boundary and south of Hyde Park Road (State Highway 475). The selected alternative may also be applied on City-owned land and private land within the project area, with the owner's consent.

This project area consists of primarily 80 to 90-year-old ponderosa pine forest with small patches of other vegetation types. It extends 7 miles up the Santa Fe River canyon to a steeper area where the vegetation changes to a moist, mixed conifer forest. Elevations range from 7,000 to 8,500 feet, and there are no perennial streams in the project area other than the Santa Fe River.

A Department of Agriculture Closure Order has kept the Watershed closed to public use since 1932. Direction in the 1987 Forest Plan along with the 1996 administrative closure order reinforce the 1932 order. The project area lies within an inventoried roadless area and is predominantly unroaded. An administrative access road runs through the canyon bottom, from the end of Upper Canyon Road—a narrow and winding residential road—to the wilderness boundary. The steep canyon slopes and lack of access roads within the Watershed, or suitable haul roads outside the Watershed, created a formidable challenge in planning for fuel reduction in this area. Options for disposing of the woody fuels were quite limited.

Partnerships and Public Involvement

The City of Santa Fe was a cooperating agency and partner in the planning of this project. The Mayor and City Councilors toured the project area and met with us on this project, and we worked closely with the City's Sangre de Cristo water department. We also took Santa Fe County Commissioners, State Senators and other government officials to the demonstration sites in the Watershed.

The planning team reached out extensively to solicit input from the public, as well as from scientists with specialized knowledge regarding thinning and burning treatments designed to reduce potential wildfire severity. I felt that by using the best available science, combined with a truly open and collaborative public participation process, I could make an informed decision about how to reduce fuel loads while maintaining the ecological integrity of the natural resources in the Watershed. The analyses for soil, water, and aquatic and terrestrial biota were contracted out to respected experts in those fields. The environmental contractors, together with over 16 resource specialists from the Forest Service, conducted a thorough analysis of the relevant issues and alternatives. They utilized over 200 published scientific research papers, as referenced throughout the EIS. Research scientists from colleges, universities, and research stations were enlisted to advise the project planning team, participate in a community forum, and independently review the Draft EIS.

In our collaborative process, we frequently met with interested agencies and organizations, including Santa Fe Watershed Association, Forest Watch, The Nature Conservancy, Forest Trust, Audubon Society, Sierra Club, Bosque del Rio, the State Environment Department, and many interested citizens. We met with over 15 civic groups and neighborhood associations in Santa Fe including Thousand Friends of New Mexico, Voices of Santa Fe, Network Neighborhood Association, and others. We presented information to the City Council, and they passed a resolution in support of the preferred thinning and burning alternatives. We engaged the public early in the process so citizens could participate in clarifying the problems and developing possible solutions. We created small thin-and-burn demonstration sites in the Watershed, and led monthly public field trips to those sites. We distributed informational brochures, held community meetings, provided an information website, and engaged the media in maintaining the community dialogue regarding this project.

The NEPA process officially began on July 17, 2000 when the Notice of Intent to prepare an EIS was published in the Federal Register. The Notice of Availability for the Draft EIS was published in the Federal Register on April 13, 2001. However, we released the Draft EIS on the internet and to the media in mid-March to allow for some additional public review time. The 45-day public comment period ended on May 29, 2001, and a specialized "content analysis team" systematically compiled, categorized and coded the comments. We then responded in writing to the comments received (see Final EIS Appendix C: Response to Comments).

Public Comments on the Draft EIS

In reviewing public comments, there appeared to be a clear understanding and support for the need to reduce fuel loads and the associated risk of a catastrophic crown fire. There was widespread support for the selected treatment of thinning the small trees, followed by burning the thinning slash and remaining hazardous fuels as necessary. Only a few individuals favored the no action alternative. A few who generally approved of the thinning and burning asked for a more limited approach, while others asked for more extensive and aggressive treatment. Most people gave recommendations about specific environmental protection or monitoring measures they would like to see included with the project. I found the vast majority of these suggestions to be consistent with the features described for the selected alternatives, such as using contour felling, retaining the largest trees, leaving some unthinned patches, not clearcutting the fuelbreaks, thinning to variable densities, restoring historic low-intensity fire regimes, staying out of the riparian zone, implementing in stages, and using monitoring results to adjust treatments over time. In general, there were only a few points of debate or concern over specific treatment methods or components, such as concerns about the use of feller-buncher machines and creation of fuelbreaks. We also received detailed recommendations about monitoring methods, which were either already in the monitoring plan or will be evaluated by the monitoring committee. Some comments were outside the scope of this fuel reduction project, such as those about recreational access, wilderness designation, and reintroduction of native wildlife species. The largest volume of comments came from east-side residents who favored Option A, expressing strong concerns about wood being hauled down narrow and historic residential roads. Most people were opposed to Option B. Along with the comments I've mentioned in this section, I carefully considered all the public comments before making this project decision. I did not treat them as votes, so the number of form letter copies and petition signatures had little bearing on my decision. I focused instead on the substance of the comments. Please review the public comments and responses in Appendix C.

Purpose and Need

The EIS (pp. 3-5) makes it clear that the primary purpose of the project is to reduce the hazardous fuel loading, consisting of hundreds of small trees per acre, in order to decrease the likelihood of a high-severity

crown fire. It states that this is needed to protect the municipal water supply and restore sustainable watershed conditions. It also states that the secondary purpose is to increase herbaceous ground cover to improve long-term soil stability and vegetative diversity. All of the action alternatives analyzed in the EIS addressed this purpose and need, and I compared each alternative to this purpose and need as a key criteria for my decision.

Issues

"Issues" are the concerns about effects of the proposed actions (EIS pp. 11-13). The following were identified as the significant issues, which were used to develop management alternatives, mitigation measures and monitoring requirements {40 CFR 1500.4g, 1500.5d, 1501.7(2,3), 1502.2b}:

- Risk of escaped fire from prescribed burns.
- Risk of smoke impacts from prescribed burns.
- Traffic impacts from wood hauling trucks (accidents, noise, traffic delays, vibration damage to historic homes and properties, and road damage).
- Worker safety hazards and efficiency problems due to steep slopes, loose soil, and lack of road access.

Other issues (concerns) about the proposed treatments were not considered "significant" because the impacts were likely to be negligible once the mitigation and monitoring requirements are applied to minimize potential adverse effects (see EIS Comparison of Alternatives, pp. 33-40). Thus, the following issues were used to design specific mitigation and monitoring measures listed in this document, but they did not play a major role in the decision making process: insect infestations from slash piles; increases in soil erosion or stream sedimentation; reduction in soil productivity under burned slash piles; increases in the spread of invasive plants; reduction in shading near the river causing elevated stream temperatures; noise disturbance to wildlife species; reduction in closed canopies or other habitat features causing impacts to wildlife species; and damage to archaeological sites from thinning or burning.

Selected Alternatives C1 and D1

Thinning and Slash Disposal

The selected manual and machine thinning alternatives (C1 and D1 respectively) involve first cutting down the smallest trees from the slopes that are feasible to thin (not too steep), within a selected portion of the project area. The thinning will create a tremendous volume of slash. Hauling the slash out of the Watershed is not a viable option for most of this project area due to the steep slopes and lack of road access. Other slash disposal methods, such as chipping and spreading the chips, were also determined to be impractical or unfeasible (EIS pp.155-161). Thus, these alternatives involve piling or scattering the hazardous slash (woody stems and branches less than 6-inch diameter), and later burning the slash under appropriate weather and fuel conditions (EIS pp. 16, 53). After treatment, an average of 50-100 of the largest trees per acre will be left standing and the cut tree stems over 5-6 inch diameter, which are not considered hazardous fuels, will remain on the ground. These contour-felled down logs will aid in controlling erosion and runoff, and improve nutrient cycling, vegetative productivity and habitat diversity (EIS p. 53, 97).

In the first year, one portion of the project area will be thinned and slash piled manually by crews with chain saws, and another portion of the project area will be thinned with feller-buncher machines that cut the trees and then lay them on the ground. The relative safety, effectiveness and environmental effects of these two thinning methods will be monitored and evaluated prior to determining whether or not to continue using one or both of these methods in subsequent years. After the slash is burned, in piles or as scattered slash, monitoring results will again be used to compare any obvious differences between the various thinning and slash burning methods.

Riparian areas will not be thinned, and it is likely that several unthinned and unburned patches will remain after the entire Watershed has been treated. If surrounded by treated areas, untreated patches should not pose a significant fire threat to the Watershed.

Fuel Breaks

Fuelbreaks are considered a high priority component of the selected alternatives, particularly the fuel break on the southern ridge line. Some people expressed concerns about the width, number of trees to be cut, or potential impacts to soils, wildlife, or firefighter safety.

However, based on the scientific research and analysis in the EIS, and the type of "shaded" fuelbreaks proposed for this project, I firmly believe they are essential in meeting objectives for this area. Also, see the EIS Appendix C: Response to Comments, Comments 24-29.

The main points that I considered in approving the fuelbreaks are as follows, based on the EIS and EIS Appendix C. Fuelbreaks will primarily consist of narrow areas along some of the ridges in the project area where the trees will be thinned to a lower density than on the side slopes. The shaded fuelbreaks prescribed for the Watershed will not look like clearcuts or fragment wildlife habitat, as some people feared. They will contain approximately 20-30 of the largest trees per acre, along with grasses, forbs, shrubs and down logs. This post-treatment tree density will be within the historic range of variability for ponderosa pine forest ecosystems in the Southwest, particularly on ridges that tend to have fewer trees than the drainages. Ground vegetation is expected to increase—not be reduced—within these fuelbreaks, due to the increase in sunlight reaching the forest floor. Windthrow does not tend to occur in ponderosa pine fuelbreaks. Fuelbreaks have proven to be very effective in slowing down or stopping a running crown fire. They provide a safe area for fire suppression personnel and helicopters, and a good containment boundary for prescribed burns. Shaded fuelbreaks applied in New Mexico have not been found to cause detrimental impacts to soil or wildlife. The primary fuelbreak and highest priority for treatment in the Watershed is along the southern ridge, due to the topography, fuels, human activity areas along the perimeter (ignition sources), and prevailing southwesterly winds.

Broadcast Burning

Research studies and field experience have shown that low intensity broadcast burns can be used to effectively reduce surface and ladder fuels, and promote growth of ground vegetation (EIS pp. 53-54). However, broadcast burning poses a risk of an escaped fire outside the burn unit, and may create short-term smoke impacts down canyon from the project area. I take these issues quite seriously, and I asked the planning team to analyze alternatives that do not include broadcast burning. However, these alternatives (B2, C2, D2) were found to be substantially less effective in meeting fuel reduction objectives. Thus, to minimize the risks of escaped fire and smoke accumulations, numerous mitigation and monitoring requirements will be employed and strictly enforced (see those listed in this document).

Results from monitoring will be used to determine what modifications, if any, to make in the burn prescriptions, and whether any of the remaining unthinned patches should be broadcast burned in order to meet fuel reduction objectives. Unthinned patches will not be burned unless completely surrounded by pre-treated areas and other fuel breaks such as a road, river, or rock cliff. Portions of thinned and unthinned areas may be burned together if that improves our ability to control the burn and meet objectives. We will not conduct burns in the Watershed if there are any uncertainties about the appropriateness of the weather and fuel conditions, and the availability of qualified personnel and contingency resources.

Reasons for My Selection of Alternatives C1/D1

The treatments described in Alternatives C1 and D1 (EIS pp. 22-25) have been consistently demonstrated to be very effective in reducing fuel volumes and breaking up fuel continuity, thereby limiting the ability of a surface ignition to become a raging crown fire (EIS pp. 43-56). The more acres treated with these thinning and slash disposal actions, the lower the risk of a crown fire (EIS p. 55). Therefore, Alternatives C1 and D1 best meet the purpose and need for this project compared to other alternatives, by mechanically thinning the most acres, burning the slash residues, and allowing for low intensity surface burns where necessary to meet fuel reduction objectives (EIS pp. 43-56). By allowing for periodic, low intensity surface broadcast burns in this fire-adapted ponderosa pine ecosystem, we also improve our ability to establish herbaceous vegetation, stabilize the soil, encourage nutrient cycling and enhance habitat diversity.

Some people expressed concerns about the use of feller-buncher thinning machines (Alternative D1). They are concerned that this alternative may eliminate job opportunities for locals, and that the machines may cause excessive soil erosion, runoff, or other undesirable impacts. I understand the concerns expressed, however, I would like to allow for both manual and machine thinning to be done in the beginning under a short-term contract, so we can monitor and compare each method and determine which method(s) should continue to be used in this area. Machine thinning offers the most expeditious way to thin a large landscape area, thereby minimizing the chance of experiencing a severe fire prior to completing fuel reduction treatments. A feller-buncher operator can do as much thinning work in a day as 8 men with chain saws. It is also shown to

provide for better worker safety compared to manual thinning crews, particularly in steep roadless areas. Feller-bunchers are used on similar projects throughout the West including New Mexico, with good results and safety records. While it is true that forestry businesses in New Mexico do not currently own these machines, this situation may change as it has in other western states. We cannot guarantee that a manual or machine thinning contract will be awarded to an in state business, due to Federal contracting regulations. It is our goal to provide local employment opportunities whenever possible, and the numerous thinning projects we are offering throughout the forest should provide plenty of job opportunities for qualified local thinning crews.

To avoid impacts due to operator negligence, all thinning contracts will have strict provisions governing conduct, specifications and penalties for non-compliance. The machines may not drag the logs, and may often operate on frozen or snow-covered ground, which minimizes soil disturbance. The machines will disturb the soil to some degree, but studies reveal that they would not be expected to cause excessive compaction, erosion or reductions in long-term soil productivity (Final EIS, Appendix C, Comment 25). Noise from feller-bunchers is equal to or less than that from manual crews with chain saws. Scientific research, combined with field observations of feller-bunchers conducting thinning operations, and the determinations made in the EIS by the soil scientists, hydrologists, wildlife biologists and others who analyzed the potential impacts from the feller-bunchers, all indicate that these machines should not incur any significant adverse effects (See Final EIS Appendix C: Response to Comments, Comments 25-29, and EIS pp. 25, 33-37, 72, 78, 86, 97, 104, 112).

I weighed the advantages of Alternative D1 with the disadvantages, such as the fact that more smoke (smoldering time) is expected from burning the bundles of whole trees compared to burning scattered or piled slash (EIS p. 112), and the fact that we currently don't have thinning machine operators in New Mexico. After careful consideration, I decided that it is important to have the flexibility to use the machines to meet fuel reduction objectives as needed, and to be able to compare the actual effects of the two methods with effects predicted in the EIS.

The use of manual and machine thinning in Alternatives C1 and D1 provide for the greatest control over forest stand densities. These alternatives allow us to create a variable density mosaic that mimics natural fire disturbance patterns in ponderosa pine forests. Forest structure will shift from being dominated by trees less than 12 inches in diameter, to one dominated by trees greater than 12 inches in diameter, resembling a more mature pine forest. The analysis in the EIS indicated that implementing these alternatives would be expected to have these additional benefits: improve nutrient cycling and nutrient availability thereby enhancing long-term soil productivity; increase coverage and diversity of ground vegetation thereby increasing soil stability and habitat diversity; enhance tree growth and vigor by reducing competition; reduce susceptibility to insects and disease; increase the abundance of down logs that provide moist microclimates for establishment of herbaceous vegetation; increase the structural diversity of the forest; promote mature forest characteristics that improve habitat for special status indicator species like goshawks; increase aspen regeneration that further enhances habitat diversity and resistance to wildfires, and other benefits. See EIS pp. 52-55, 69-72, 86, 96-97, 104-105 for details. The only unavoidable adverse effects anticipated to occur from implementation of these alternatives are temporary increases in noise disturbance, short-term smoke effects, and minor short-term increases in soil erosion and stream sedimentation (EIS p. 135).

The other management alternatives did not meet the project's purpose and need as well as Alternatives C1 and D1, for the following reasons:

Alternative B1: This alternative treats most of the project area with prescribed fire rather than manual or machine thinning, in order to complete the treatments in the shortest amount of time and with the least risk to worker safety. However, research and experience have shown that thinning with prescribed burns is not nearly as effective as mechanical thinning (with saws) in controlling the density of forest fuels. In addition, this alternative would have the highest risk of an escape fire and result in more days of nuisance smoke compared to other alternatives.

Alternative B2: This alternative excludes the use of prescribed broadcast burns to address the key issues of escape fire and smoke, and limits mechanical thinning to gentle slopes near the existing road to address the key issue of worker safety. This alternative does not treat enough acres to fully meet fuel management objectives, and was determined to be the least effective of the six action alternatives analyzed.

Alternatives C2 (manual thin) and D2 (machine thin): These alternatives also exclude the use of prescribed broadcast burns in order to address the key issues of escape fire and smoke, while mechanically thinning as many acres as possible in the project area. If I selected either or both of these alternatives, I forego

the option of using prescribed broadcast burns in this area as a tool to further reduce fuel loads, which could result in leaving unacceptable fuel loads that continue to create a crown fire risk. Alternatives that don't allow for low intensity surface burns are also less effective in establishing ground vegetation and improving soil qualities and habitat diversity.

I understand the public concerns and risks associated with conducting a prescribed burn in this Watershed adjacent to the City of Santa Fe. I do not discount the fact that prescribed burning in the Watershed is likely to create some undesirable smoke impacts for some people during the mornings following a burn day, and there is always a risk that a spot fire could potentially occur outside the defined burn unit. However, I had to weigh these potential risks against the high probability of a large uncontrolled wildfire that would create heavy, long lasting smoke accumulations and devastating impacts to the community and water supply (see EIS pp. 48-56, 109-112).

Summary of Rationale for C1/D1

In summary, I selected Alternatives C1 and D1 because I feel it is important to have some flexibility over the next 5 to 8 years to use either manual or machine thinning methods, based on the results from monitoring these methods in selected portions of the project area. I also believe it is critical to reduce the volume of thinning created slash through carefully planned and implemented burns, and to allow for the option of using low intensity surface burns where needed to further reduce forest fuels and encourage growth of ground vegetation. Based on the analysis described in the EIS, Alternatives C1 and D1, together with the comprehensive mitigation and monitoring requirements listed in this document, will provide the most effective fuel reduction methods to reduce the risk of a catastrophic fire and will incur minimal risk of any significant adverse environmental impacts.

Based on all the reasons stated for selecting Alternatives C1/D1 (with Option A) for implementation, I also consider these alternatives to be the "environmentally preferred alternatives" for this project {identified in accordance with 40 CFR 1505.2 (b)}. Even though other alternatives are perhaps lighter on the land because they thin or burn fewer acres or do not use a machine to thin the trees, Alternatives C1/D1 will be the most effective in reducing the risk of experiencing a catastrophic fire in the project area. The analysis in the EIS shows that the greatest potential for environmental harm is from the no action alternative, and secondly from alternatives that are not as effective in reducing hazardous fuels, due to the high probability of experiencing severe crown fires in this area. Options A and B each affect less than 2 percent of the project area, so they had no real bearing on my selection of the environmentally preferred alternative. The next sections describe my reasons for selecting Option A and not selecting Option B.

Selected Option A: No Roadside Wood Removal

The proposed action that generated the most public comment and concern was the removal of wood from the Watershed through the east-side neighborhoods of Santa Fe. The planning team originally estimated that 560 acres of the 7,270-acre project area were accessible to the service road, including both City and National Forest lands. Many people said they would like to see the wood put to a beneficial public use. Hence, we originally proposed removing the small wood products from those roadside acres in order to provide firewood and local jobs, rather than leaving all the logs on site. When the public voiced concerns about the potential impacts of hauling wood through their narrow residential roads and historic neighborhoods, the planning team identified this as a key issue and developed Option A-No Roadside Wood Removal to avoid the potential impacts (EIS pp. 12, 26 and 119-120).

Upon further field reconnaissance, we have determined that substantially less ground is feasible for wood removal. Of the 300-350 acres originally estimated for removal from City lands in the Watershed, it appears there are only approximately 50 roadside acres realistically available. The City' contractor is proceeding with removing woody fuels less than 6-inch diameter from those 50 acres. We currently estimate that there are only 50-120 acres on national forest land in the Watershed that may be feasible for wood removal (about 2 percent of the project area). The size and species of the wood to be thinned is of low value relative to other small wood products sold in Santa Fe (see Appendix C, Comment 43, "cost versus value"). In addition, we expect fuel reduction thinning in roaded portions of the national forest outside the Watershed will yield at least 10,000-15,000 cords of firewood annually, in addition to a million board feet of other small products.

I reviewed many letters of concern about hauling out the wood. There is an increased risk of traffic accidents associated with adding haul trucks to such narrow, low-standard roads that are used by pedestrians, school children, bicyclists, tourists, and commuters who live, work and recreate on these roads. There are no side-

walks or crosswalks, and there is a day care center and at least 3 schools along these roads. The potential hazards along Upper Canyon and adjacent roads are greater than those on most national forest haul routes. The Historic Santa Fe Foundation and others expressed major concerns about possible vibration damage from haul trucks to historic structures listed on national and state registers of historic places, as well as to old adobe homes along the road. According to our informal traffic counts and additional information from residents, residents are already experiencing traffic delays, road damage, safety hazards and other problems associated with current traffic loads relative to the design of the road. Upper Canyon Road is heavily used by residents, tourists, visitors to the Audubon Center, water treatment plant employees, as well as Forest Service and City employees, and others who work in the Watershed. Thus, I must consider the cumulative effects of incrementally adding to the truck traffic on these roads.

At this time, I do not believe it is prudent or necessary to approve additional wood removal from the minor acreage of accessible national forest land in this project area. This decision is based on considering: (a) public concerns and potential impacts associated with adding to the truck traffic in this area; (b) the small volume of low-quality wood products that could come from this area; (c) the large amount of wood products anticipated from roaded areas on the forest; (d) the 1-2 days of extra slash burning that may be needed if we leave the cut wood on these acres; and (e) leaving the logs and burning the slash on these acres rather than hauling the material out will not reduce our ability to meet fuel reduction objectives.

Non-Selected Option B: Thin the Larger Conifers on 100 Acres

This option was developed to address the project's purpose and need, in light of the fact that some very dense patches of conifers exist in the canyon bottom. I fully considered the tradeoffs involved in this option that involves thinning the larger trees (up to 24-inch diameter) on 100 acres scattered in small patches across the canyon bottom. The conifers are larger in the canyon bottom near the river due to the higher site productivity there compared to the side slopes. In order to open up these dense conifer patches such that they would discourage crown fire activity, numerous trees both large and small would need to be cut and the slash burned.

The EIS described the advantages of implementing this option, such as reducing the potential for severe crown fire effects and enhancing re-establishment of soil stabilizing herbaceous vegetation by creating openings in the canopy (EIS pp. 51, 78). However, most of those who commented on the EIS expressed concerns with this option, and forest ecologists consulted believed that the disadvantages of cutting down these large trees outweighed the potential fuel reduction advantages. Trees over 16-inch diameter are a very rare habitat component in this area (EIS, pp. 86, 98). In addition, the planning team had some concerns about having exceptionally large volumes of down logs left in areas where wood removal is not feasible. Therefore, after considering the various tradeoffs expressed and considering the small acreage affected by this option, I decided not to select Option B.

Alternatives Considered and Eliminated From Detailed Study

Many alternatives were considered and eliminated from detailed study. Public comments received on the EIS asked that we reconsider the following alternatives that were described and eliminated in the Draft EIS: using horses or mules; chipping the slash: building new roads; using goats to reduce fuels, and the Forest Conservation Council alternative to limit thinning to trees 6-inch diameter or less along with prescribed burning. I reconsidered these alternatives and still believe the reasons previously described for their elimination are valid and well supported by scientific analysis, so there is no reason to analyze them any further. Please refer to the rationale for their dismissal in the EIS (pp. 155-162) and in Appendix C: Response to Comments (Comments 11-18).

Mitigation and Monitoring Requirements

I have selected all of the mitigation measures described in the EIS (pp. 27-32) and the monitoring requirements described in the EIS Appendix B, as summarized in this section, to be implemented as part of the selected alternatives. By incorporating these requirements with the design features of the treatment alternatives (from EIS pp. 15-19), I believe that all practical means to avoid or minimize environmental harm have been adopted. Monitoring items summarized in this section are identified with an asterisk (*). Monitoring provides a quality control and adaptive management strategy. By monitoring and evaluating the effects of treatments, we can make appropriate modifications, assess resource trends and apply new knowledge to future projects.

Prescribed Burning and Risk of Escape Fire

- Keep the size of slash piles generally less than 6 to 8 feet in diameter by 5 to 6 feet high.
- Burn slash piles during times of cool temperatures and high humidity when the fuels surrounding the piles have high fuel moisture.
- Avoid having tightly compacted piles in order to increase ventilation, combustion and fuel consumption. During the burning, tend the piles to assure that larger pieces of fuel are consumed.
- Consider covering the piles with plastic when they are built, to keep the piles dry for later burning.
- Develop detailed broadcast burn plans, and conduct broadcast burning only in accordance with those plans. Several Forest Service officials will review the burn plans. Burn methods must be those proven safe and effective, and be modeled using a fire behavior computer model to validate they will meet burn objectives with minimum risk of fire escape.
- Design burn units to reduce the risk of escape, based on size of unit, accessibility, topography, fuel type, fuel load, weather, time of year, etc.
- Ensure the perimeter of each broadcast burn unit is surrounded by existing openings such as reservoirs, streams, roads, or trails, or treated areas where fuels have been reduced. Firelines may be built around the burn unit by clearing the fuels to mineral soil with hand tools.
- Locate fuel breaks where they will be most effective in controlling the burns, such as along ridges, drainages or other topographic breaks, taking into consideration fuel type and fuel loading.
- Prior to burning, complete the "go/no go" checklist, risk assessments and daily review checklists in the burn plans.
- Prior to ignition, ensure that there are adequate fire engines and water tanker trucks on site and contingency suppression resources available, as indicated in the site-specific burn plan. Do not ignite broadcast burns when the Southwest Area's "preparedness level" is at III or higher. This indicates that contingency resources may not be available due to other fire activity in the Southwest.
- For some of the more complex broadcast burn units, consider having a helicopter with water dropping capability, and/or an air tanker available on standby. Also consider laying down fire (water) hose around the perimeter of the broadcast burn unit and having portable water tanks and pumps in place prior to ignition.
- Ensure that fire personnel implementing broadcast burns have the appropriate knowledge, skills and qualifications for a complex-rated burn. Personnel conducting the broadcast burns should also be qualified for fire suppression positions as a contingency in the event of an escape fire situation.
- Plan for and locate burn implementation personnel in safe and strategic areas for monitoring and containing the broadcast burn.
- Exclude certain areas from the broadcast burn unit where because of stand density or topography, there would be a risk of high intensity fire behavior and escaped fire.
- After the flames from the broadcast burn have subsided, mop-up (extinguish) any hazardous heat concentrations along or adjacent to the fireline that could threaten to cross the line.
- * Prior to ignition and during the burn, monitor the current and 3 to 10-day weather forecasts from the National Weather Service Fire Weather Forecaster in Albuquerque, NM, plus daily spot weather forecasts, for trends in temperature, relative humidity, wind, frontal passages, etc.
- * Prior to ignition, monitor (via computers) the forest's 5-day energy release component (ERC) from the forest's weather stations. The ERC is related to energy or heat that will be released in a fire. The ERC is an indicator of the relative dryness of the fuel, which dictates how hot a fire will burn. Do not broadcast burn when the ERC is above 65.

All large wildfires on the forest have occurred when the ERC has been above 68.

- * Prior to ignition and throughout burn implementation, monitor and record fuel moistures. Do not broadcast burn when live fuel moistures are below 100 percent. Do not broadcast burn complex burn units when the Palmer Drought Index (PDI) indicates a moderate or higher drought index. This will reduce the likelihood of an escape fire and lessen the chance of killing desired trees.

- * During prescribed burns, monitor and record the observed fire behavior, and compare it with predicted fire behavior in the burn plan. Evaluate the results to modify future burn plans and burns. Patrol the area during the burn to ensure that the fire stays within the burn unit. Monitor daily until the burn has been declared out. Have an aerial observer over the area when broadcast burning the complex units. If a fire should spread outside the burn unit, all ignitions will cease until the spot fire is controlled. The prescribed fire burn boss will decide if the burn should continue based upon prescription criteria and observed fire behavior.

- * After implementation, monitor the reduction in live fuel loads, including changes in canopy structure and ladder fuels, and compare with project objectives.

Air Quality

- Avoid broadcast burning on days when mixing heights are less than 1,641 feet and transport winds are less than 4 mph, in order to get the best lifting and dispersion of smoke. This should allow for burning to occur during periods of sufficient atmospheric instability, but not during instability, to improve smoke dispersal.

- Plan activities so that air quality will meet applicable Federal, state and local regulations, including protection of Class I air sheds such as the Pecos Wilderness (described in air quality section of EIS) (Forest Plan, page 80).

- The amount of soil in piles and windrows will be minimized to reduce smoldering.

- Notify the local agencies and the public through radio, TV, newspapers, and/or personal contacts at least a week in advance of the broadcast burns as well as a day before the burn.

- Obtain a burn permit from the State Environment Department at least a month before ignition as outlined in the New Mexico Smoke Management Memorandum of Understanding.

- Continue to provide educational materials on the benefits and tradeoffs of prescribed burning, including signs along Hyde Park Road, contacts in campgrounds, and so on. Include educational information in firewood permits on correctly storing and burning firewood to minimize smoke.

- * Monitor particulate matter from smoke. As a minimum, set up a particulate matter monitor device along Upper Canyon Road to record particulate levels of smoke that may drift down canyon into the city during the evening or morning hours after burning. If particulate matter approaches the National Ambient Air Quality Standards, take corrective measures to reduce smoke and notify the New Mexico Environment Department Air Quality Bureau.

- * Conduct visual monitoring continuously through the burn periods. Behavior of the smoke plume will be monitored as well as visibility conditions along all major roads in the area of the burn. If smoke becomes a serious problem, stop ignition or initiate fire suppression to reduce the generation of smoke. If smoke starts to settle and limit motorist visibility along Hyde Park Road, Canyon Road, U.S. Highway 84/285, or other major travel ways, take immediate measures to alert motorists of the danger, contact the appropriate state or local traffic control agencies, and close roads where necessary to avoid traffic accidents.

Soil and Water

- Directionally fell “contour logs” on steep slopes as soil erosion barriers.

- Do not exceed low to moderate fire intensity during broadcast burning (flame height of 1 to 4 feet) to help maintain soil productivity,

minimize erosion, and prevent detrimental amounts of ash, sediment, nutrients, and debris from entering water bodies (consistent with features common to all action alternatives).

- Prohibit vehicle use of roads or trails in the Watershed during periods of wet weather unless the roads have a stable surface and sufficient drainage to prevent undesirable erosion or sediment runoff impacts.

- If fire suppression becomes necessary, do not allow any fire retardant drops within 400 feet of surface water (Santa Fe River or reservoirs), to minimize risk of contaminating the water supply.

- *Before prescribed burning, monitor soil moisture levels. Soil moisture levels should be at least 11-15 percent to maintain long-term soil productivity and improve the chance for vegetative response after burning.

- * Monitor the change in soil erosion (movement) to ensure it is within acceptable limits. If soil erosion exceeds standards, take corrective action and modify treatments as needed. (Forest Plan, pages 76 and 80).

- * After two full growing seasons following a thinning and burning treatment, measure the amount of vegetative ground cover. Apply native grass seeds (or plantings) where determined necessary by the forest soil scientist to re-vegetate specific bare soil areas for erosion and sediment (runoff) control, such as where ground vegetation is less than 10-20 percent coverage. A realistic goal for the granitic soils in this area is to achieve 30-50 percent ground cover.

- *After the first growing season following slash pile burning, monitor soil impacts by having a soil scientist check the soil under the piles. Where necessary and feasible, rake, till, and seed areas under burned slash piles to promote vegetative response.

- * Monitor water quality in key locations to aid in identifying and correcting any problems and to ensure that water quality will continue to meet drinking water standards (Forest Plan, page 80). Monitor sediment, turbidity and total suspended solids, as well as water chemistry parameters.

- * Monitor changes in peak flows before and after thinning, as well as subsequent changes in stream morphology, to determine whether treatments are causing any detrimental affects to the stream channel.

Riparian Ecosystems and Aquatic Habitat

- Do not pile slash within 15 feet of perennial streams (Santa Fe River) to reduce the chance of ash entering the water following slash burning.

- Avoid piling slash in or adjacent to patches of young cottonwoods in the riparian corridors to protect them from mortality during burning.

- Manage riparian areas in accordance with legal requirements regarding floodplains and wetlands; protect the productivity and diversity of riparian-dependent species, emphasizing protection of soil, water, vegetation, wildlife, and fish resources. Manage in accordance with Forest Plan guidelines regarding ground cover, shade, bank cover, streambed sedimentation, plant composition, plant structure, and crown cover (Forest Plan, pages 79-80).

- Do not conduct thinning activities within the riparian area or within 15 feet of the riparian area (riparian is defined in the section on Aquatic Habitat).

- Locate log landing areas outside sensitive areas including riparian areas, wetlands and wet meadows, and special status species habitat (Forest Plan, page 73). Once landings are no longer needed, rip and re-vegetate landing sites as needed to recover site productivity (Forest Plan, page 78).

- Directionally fell trees away from all stream channels to help reduce slash accumulations within drainage bottoms and to avoid the need to turn trees around in or near riparian corridors. (Forest Plan, page 78)

- Retain all willow, alder, and cottonwood trees in riparian areas. This is consistent with features common to all alternatives.

- * Monitor changes in fish habitat before and after implementation, including changes in aquatic insects, to ensure that thinning and burning activities do not adversely affect aquatic habitat or fish.

- * Monitor for increases in stream temperature following any thinning in the canyon bottom near the riparian area which could degrade aquatic habitat.

- * Monitor changes in the number of active beaver dams before and after treatment to ensure that treatment activities are not having adverse affects on the existing beaver population.

Terrestrial Habitat and Associated Wildlife

- If any proposed, threatened, endangered, or sensitive plant or animal species are discovered during project implementation, stop work in the immediate vicinity of the species until a Forest Service wildlife biologist or plant ecologist has investigated and recommended the appropriate protective measures. These measures may include restricted operating periods, no-activity zones, protection or creation of snags, or other measures.

- If a northern goshawk nest is found, stop work within 30 acres of the nest site. Do not conduct broadcast burning during May or June within the nest area to avoid the potential for crown fire or smoke to drive the birds off or consume the nest tree (Forest Plan, Appendix D, pg. 10).

- Apply other standards/guidelines for potential northern goshawk habitat, as detailed in Forest Plan, Appendix D, pages 6-10, including the following features common to the design of all action alternatives: retain large snags and down logs wherever possible; retain old age trees and the mature/old forest structure; sustain a mosaic of vegetation densities, age classes and species composition across the landscape; increase herbaceous vegetation to provide for goshawk prey species and to maintain satisfactory soil conditions; use R3 protocol to survey for goshawks (surveys were completed and no goshawks found); have variable canopy coverage (averaging about 40 percent) with openings up to 4 acres each while retaining at least two small groups of trees per acre with minimum 12-inch diameters.

- Avoid cutting trees containing a squirrel nest or having large piles of cones at the base of the tree, as well as any adjacent tree with a crown interlocking the nest tree and a diameter equal to or greater than the nest tree.

- Retain (do not cut) at least 15 percent of the mature and older mast-producing stands in pinyon/juniper and oak zones (Forest Plan, page 65).

- Within one-quarter mile of perennial water (Santa Fe River) do not burn two slash piles per acre so they may be used as potential nest cover for wild turkey. These piles should be at least 3-feet high by 10-feet wide (Forest Plan, page 65).

- Retain all sound snags, except within fuel breaks and 100 to 300 feet from the edge of fuel breaks if the snag may pose a hazard during broadcast burning. Retain at least 220 snags or potential snags per 100 acres where consistent with fuel management objectives. Particular attention will be given to retaining trees with dead or broken tops, heart rot, and lightning scars, in order to maintain and promote habitat for cavity nesting or roosting species (Forest Plan, page 72).

- Retain trees over 20-inch diameter within 200 feet of major ridges, cliffs, and openings (except snags that must be cut for fuel breaks), to provide perch and roost trees for raptors. This requirement is consistent with features common to all action alternatives (Forest Plan, page 66).

- Retain at least five large down logs per acre where consistent with fuel loading objectives. The desired goal is to have logs at least 11 inches in diameter and 15 feet long, in various stages of decomposition (Forest Plan, page 62).

- When cutting trees over 12-inch diameter, leave two or three of the stumps per acre at a height of 12 inches above the ground to

serve as plucking posts for raptors and feeding and "lookout stations" for small rodents.

- Wherever possible without sacrificing fuel reduction objectives, retain two thickets of small trees per acre for cover and foraging areas for flammulated owls and neotropical migratory birds.
- Expand aspen stands where possible by reducing the amount of shading and competition from conifers, and using prescribed burns to stimulate sprouting of aspen (Forest Plan, page 74). This measure is consistent with features common to all action alternatives.
- Retain (do not cut) oaks *(Quercus gameli)* and shrubs, such as wild rose *(Rosa* spp.), mountain mahogany *(Cercocarpus montanus*), Rocky mountain maple *(Acer glabrum*), currants *(Ribes* spp.), and raspberry *(Rubus* spp.).
- * Monitor the effects of treatment on wildlife habitat, recording changes in the following key habitat components: overstory tree composition, structure and density; and retention of existing large snags and hardwood trees.
- * Monitor for changes in populations of breeding birds and small mammals.
- * Monitor for increases in invasive plants where soil is disturbed by management activities. Take corrective action as indicated by monitoring results.

Heritage Resources

- Survey for and mark heritage resource sites according to specifications provided in FSM 2309.24 and FSH 2361.28.
- Avoid all known (marked) heritage resource sites during tree thinning, firewood collecting, constructing firelines, maintaining and improving roads, and other land disturbing activities associated with the project.
- Avoid burning perishable remains on heritage resource sites, and protect heritage resources having exposed burnable materials, through one or more of the following methods (determined by a Forest Service archaeologist): digging or burning firelines around the site; clearing fuels away from the site; directing the fire away from the site; foaming and/or covering wooden structures with a fire shelter; or other protective measures. Exclude burning entirely from sites if protective measures cannot be effectively applied.
- Directionally fell trees away from known (marked) heritage resource sites.
- Do not build slash piles in or near heritage resource site boundaries.
- If previously undocumented heritage resource sites are discovered during project activities, stop all work in the immediate vicinity of the site and do not restart until authorized by a Forest Service archaeologist.
- If it is not possible to avoid or protect heritage resource sites during thinning or burning operations, or if mitigation measures prove unsuccessful, then data recovery may be conducted.
- If Native American tribes or other traditional communities express concerns about traditional use areas that may be affected by management activities, mitigation may include avoidance of those areas during operations, or other measures determined through consultation with the affected tribe or community.
- * Monitor to determine if any heritage resource sites were damaged during thinning or burning operations. If any site has been damaged, a Forest Service archaeologist will determine the appropriate corrective actions to take to minimize the risk in the future. If damage to a heritage resource site is discovered during project implementation, stop all work within the immediate vicinity of the site, evaluate the damage and determine what corrective measures are needed. Do not resume work until authorized by a Forest Service archaeologist.

Permits and Agency Approvals Required

The EIS (p. 13) lists four permits or authorizations that must be obtained prior to implementing the project. One has already been obtained—the consultation and

concurrence from U.S. Fish and Wildlife Service on the Biological Assessment. The remaining three are hereby incorporated by reference into this Record of Decision.

Findings Required By Other Laws

The planning and decision making process for this project was conducted in accordance with all applicable laws, regulations, policies and plans. This section briefly describes my findings regarding the legal requirements most relevant to this project decision.

National Environmental Policy Act (NEPA) and 40 CFR 1500 Regulations

I find that the planning and decision making process for this project was conducted in accordance with the requirements in NEPA and its implementing regulations, based on the contents of the EIS and supporting documents in the project record.

One person who commented on the Draft EIS was concerned that it did not adequately analyze the impacts of all alternatives, including the no action alternative. However, in reviewing the EIS I found nearly 100 pages that clearly describe the direct, indirect and cumulative impacts of each alternative including the no action alternative (EIS Chapter 3, including 11 separate sections devoted to cumulative effects). The interdisciplinary team analyzed two no action alternatives: one that assumes no change from status quo conditions (as a baseline) and one that assumes a high-severity wildfire would occur, based on the calculated 99 percent probability for such a fire within the next 20 years (see Appendix C, Comments 1 & 19).

National Forest Management Act (NFMA) and 36 CFR 219 Regulations

I find that the selected alternatives are consistent with the 1987 Santa Fe National Forest Plan, as amended, which sets forth programmatic direction in accordance with NFMA. This is based on the following factors:

- The descriptions in the EIS of selected alternatives and mitigation measures (pp. 15-32), as well as descriptions of environmental consequences (EIS Chapter 3) are clearly consistent with the Forest Plan goals described for wildlife and fish, cultural resources, soil and water, and riparian (Forest Plan pp. 19-20).
- The Forest Plan's forest-wide standards and guidelines were incorporated by reference on pages 5 and 10 of the EIS, and used to develop the alternatives to ensure Plan consistency (EIS p. 15).
- The mitigation measures for the selected alternatives include and reference the applicable forest-wide standards and guidelines, in order to help ensure compliance with the Forest Plan.
- The EIS describes project conformance with Forest Plan direction for management area "O", as amended in 1996, which applies to the Santa Fe Municipal Watershed (Forest Plan pages 155-156). The management area emphasis is "water quality production," and the primary purpose for this project is to "...protect the municipal water supply and restore sustainable watershed conditions" (EIS p.5). Forest Plan management area direction specifically states that prescribed fire may be used to reduce fuels. Management area direction does not prohibit thinning, nor does it address thinning specifically, which means thinning is an allowable use in this management area. Thinning is specifically allowed by forest-wide direction that states "use pre-commercial thinning to control stocking that will meet management objectives as identified in management areas and in stand specific prescriptions" (Forest Plan p. 71). The project does not involve regulated or commercial timber production and is, therefore, consistent with the management area designation of "non-suitable timber lands."
- By not building roads in this area, this project is consistent with the Forest Plan and with the agency's 2001 Roadless Area Conservation Strategy for inventoried roadless areas.
- The EIS Appendix C: Response to Comments, Comments 6-8, also discloses information regarding consistency with specific Forest Plan requirements.

I also find that the selected alternatives comply with the seven management requirements in 36 CFR 219.27(b) regarding vegetation manipulation, because the project:

1. Is best suited to the multiple-use goals established for the area considering the various

physical, biological, social, economic and other impacts as stated in the regional guide and Forest Plan. The thinning and burning features and methods have been used successfully in the past, and effects predicted in the EIS are consistent with forest plan goals, as previously described.

2. "Assures adequate restocking...". This provision is not applicable to this type of fuel reduction thinning project. Restocking requirements apply to regeneration harvest treatments.

3. Is not chosen primarily because it will give the greatest dollar return or the greatest output of timber. This project is not expected to generate revenues or timber outputs. It is expected to cost $3-4 million to implement (EIS p. 124). This is less that the predicted cost of the no action alternative that presumes a large crown fire would very likely devastate the Watershed and result in costs exceeding $150 million.

4. Is chosen after considering potential effects on residual trees and adjacent stands. The EIS describes the post-treatment effects on residual trees and adjacent stands as a beneficial effect because it leaves all the key components of the ecosystem, including the largest trees, snags, down logs, and shrubs, in a more variable density distribution over the landscape that mimics natural fire disturbance patterns in ponderosa pine forests.

5. Avoids permanent impairment of site productivity and ensures conservation of soil and water resources. The EIS provides ample evidence that long-term site productivity will be maintained, and soil and water resources will not be adversely impacted by the selected alternatives (pp. 73-75, 135).

6. Provides the desired effects on water quantity and quality, wildlife and fish habitat, regeneration of desired tree species, forage production, recreation uses, aesthetic values, and other resource yields. The EIS (Chapter 3) describes how the action alternatives are expected to have desired effects on all of these resources.

7. "Is practical in terms of transportation and harvesting requirements...." This is not applicable to this project, as there will be no harvesting or transportation of wood products from national forest lands in this project.

National Historic Preservation Act (NHPA) and 36 CFR 800 Regulations

I find that this project is consistent with the requirements of Section 106 of the National Historic Preservation Act, based on the following factors:

- Prior to implementation in any given portion of the project area, the forest will complete the process required by Section 106 of the National Historic Preservation Act in accordance with the Programmatic Agreement for the Santa Fe Municipal Watershed Project signed by the Advisory Council on Historic Preservation (Council, the New Mexico State Historic Preservation Officer SHPO and USDA Forest Service, Region 3, Regional Forester (36 CFR 800.14(b)(3)) (Project Record). Consultation with the Advisory Council and the SHPO for this project has been ongoing, and the Council and the SHPO have approved the survey and clearance protocols being used for this project.

- The documentation of project area surveys and Section 106 consultation procedures are tiered through the agreement mentioned above to the Programmatic Agreement for Wildland Urban Interface Hazardous Fuels Reduction Projects signed by the Council, SHPO and Regional Forester on July 19, 2001.

- A heritage resource impact analysis was completed (EIS pp. 125-130), and additional details are contained in the specialist's report (Project Record). Archaeologists who prepared this analysis concluded that the selected treatments offer the best protection for heritage resources in the area compared to the no action or more limited treatment alternatives because these other alternatives leave heritage resources highly vulnerable to damage or destruction by wildfires (EIS pp. 128-130).

- Tribes have been contacted regarding identification of potentially affected historic properties as required under 36 CFR 800.4(a)(4) (Project Record). To date, tribes have not revealed any traditional cultural or other historic properties of concern in the project area.

- Mitigation measures and monitoring requirements listed in this document and in the Final EIS Appendix B help ensure compliance with these requirements. "Mitigation

and monitoring measures are expected to be effective in creating a low risk of damage to heritage resources based on past experience with similar thinning and burning projects on the Santa Fe National Forest" (EIS, p. 129).

Endangered Species Act (ESA) and 50 CFR 402 Regulations

I find that the project is consistent with this Act and it's implementing regulations, based on the following factors:

- The required biological assessment and consultation with U.S. Fish and Wildlife Service have been completed for this project, under the Regional Biological Assessment & Evaluation (BA&E) for Wildland-Urban Interface Fuels Treatment (USDA FS 2001; Project Record and *www.fs.fed.us/r3/wui*).
- The U.S. Fish and Wildlife issued a Biological Opinion that concurred with the Regional BA&E. The BA&E and Biological Opinion conform to Endangered Species Act regulations (available on the internet at *www.fs.fed.us/r3/wui*).
- The EIS shows tht all ESA listed species known to occur in Santa Fe County were considered (Table 31, p. 99), and that none are known to occur or likely to occur in the project area, which contains very minor amounts of potential habitat for Mexican spotted owl and southwestern willow flycatcher (p. 99).
- Surveys were completed for spotted owl and none were found (Project Record). The project area contains no occupied habitat, critical habitat, or "protected activity centers" for any listed species. The EIS states that the action alternatives would have no adverse impacts to threatened or endangered species and would likely improve habitat diversity, prey species habitat, and mature forest characteristics (pp. 103-105).
- The EIS states that treatments would have no negative effect on potential flycatcher habitat, and treatments just outside the riparian buffer may improve potential flycatcher habitat by increasing the abundance of riparian vegetation.

Migratory Bird Treaty Act (MBTA)

I find that the project is consistent with this Act, as well as recent agency guidelines for conformance with the MBTA, based on the following factors:

- No "Important Bird Areas" as defined by Partners In Flight occur on the Santa Fe National Forest.
- The comprehensive wildlife analysis in the EIS includes consideration of the Priority Species identified by Partners In Flight that may occur in the project area. The EIS considered all birds, amphibians, reptiles and mammals that may have suitable habitat in any of the five vegetation types that occur in the project area (p. 87-89).
- The EIS disclosed effects of the project for these bird species (pp. 89-98). The analysis considered over 30 migratory bird species that use ponderosa pine stands comprised of 5 to 12-inch diameter trees with 40-100 percent canopy cover (Table 27, p. 90), that dominate the project area. The analysis considered effects to migratory birds associated with snags, down logs, riparian and other habitat types (pp. 85-98 and Tables 25-30).
- Analysis in the EIS shows that the project provides an opportunity to restore and enhance wildlife species richness for migratory birds, compared to current conditions that have low habitat diversity (pp. 90-91, 95-97).
- The monitoring plan includes surveys of migratory birds and small mammals before and after treatment to track changes in populations (Appendix B: Monitoring Plan).

Clean Water Act, 40 CFR 130 Regulations and State Water Quality Standards

I find that the project is consistent with this Act and its implementing regulations and is expected to adhere to State water quality standards, based on the following factors:

- The project area contains only one perennial stream—the Santa Fe River. Water quality for the river within the project area meets water quality standards for its designated uses, and the designated uses reflect the highest water quality classification in the state's classification system (EIS p. 60).

- The effects of the action alternatives upon surface water quality were carefully analyzed in the EIS (pp. 60, 68, 71, 72, 74), which states "The actions alternatives are not expected to adversely impact water quality and would not have an incrementally additive effect on water quality problems experienced in downtown Santa Fe and below the City limits" (p. 74). The EIS also states that if a large fire occurs under the no action alternative, that water quality standards would not be met and water quality would be seriously impaired (pp. 60, 73, 74).

- The New Mexico Environment Department Surface Water Quality Bureau was involved in the planning of this project, and continues their involvement in monitoring the effects of selected treatments. They will monitor turbidity, suspended solids and peak flows from paired (treated and untreated) subbasins established for monitoring purposes, as well as water chemistry parameters and stream geomorphology along the Santa Fe River (Appendix B: Monitoring Plan).

- Best Management Practices were used to design the mitigation measures that help avoid or minimize impacts to water quality (EIS p. 29), as listed in this document.

Floodplains and Wetlands, Executive Orders 11988 and 11990

I find that the project is consistent with the Executive Orders intended to protect floodplains and wetlands, based primarily on the following factors:

- Thinning and slash disposal activities will not occur within or impact any wetlands, riparian areas, or the riparian buffer zone (EIS pp. 84-86)

- The EIS analyzes the vegetation and peak flows in the Santa Fe River floodplain (p. 58-59, 70, 72, 79-83, Figure 45-47). Most of the project area lies below McClure Reservoir where water flows are regulated. Treatments are not expected to cause peak flows that would alter the existing floodplain (EIS p. 70, 72). However, I should note that the no action alternative with wildfire would be expected to have a 30 percent chance of creating a major flood that would impact residential, historic and commercial districts in the100-year floodplain in Santa Fe (EIS pp. 64-67).

Clean Air Act, 40 CFR 50 Regulations and Air Quality Standards

I find that this project is consistent with Clean Air Act and Air Quality Standards, based on the following factors:

- The project area lies within an air shed that meets air quality standards.

- The planning team consulted with New Mexico Environment Department Air Quality Bureau in the planning process to ensure consistency with state standards.

- The analysis in the EIS includes models for daily burning emission estimates including carbon monoxide and particulate matter from prescribed burns. It identifies the sensitive receptors for smoke (p. 108), and considers potential short and long-term effects on: Class I wilderness, regional haze, visibility, human health, and other factors (pp. 108-112).

- The analysis in the EIS compares the effects of the action alternatives to the National Ambient Air Quality Standards (NAAQS) set by the Environmental Protection Agency to ensure compliance with the Clean Air Act (p. 106-112), and concludes that "Based on experience conducting an average of 12,000 acres of prescribed burning per year on the Santa Fe National Forest, surrounding communities are not likely to experience prolonged periods of heavy smoke, and we are not likely to exceed air quality standards or cause air quality alerts" (p. 112).

Environmental Justice, Executive Order 12898

I find that the selected alternatives would not disproportionately impact minority or low-income populations, based on the assessment regarding the effects of the alternatives on environmental justice contained in the EIS (p.117, 121), along with the social impact analysis on pages 113-121.

Administrative Appeal Provisions

This decision is subject to appeal pursuant to 36 CFR 215.7. As stated in 36 CFR 215.11, an appeal may be filed by any person or non-Federal organization. A written appeal must be submitted within 45 days after the date that the notice of this decision is published in the Albuquerque Journal. Appeals must meet the content requirements of 36 CFR 215.14. Appeals must be submitted to:

USDA Forest Service
Southwestern Regional Office
ATTN: Appeal Deciding Officer
333 Broadway Blvd., SE
Albuquerque, NM 87102

Implementation

If no appeal is received, implementation of this decision may occur after 5 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.

Contact

For more information about the project, please contact John Miera, Espanola District Ranger (505-753-7331) or William Armstrong (505 438-7845).

Leonard Atencio — Date
Forest Supervisor