

Decision Notice and Finding of No Significant Impact

**Forsythe II Project
USDA Forest Service
Roosevelt National Forest, Boulder Ranger District
Boulder and Gilpin Counties, Colorado
July 2017**

LOCATION

The Forsythe II project area is located on the Boulder Ranger District of the Arapaho and Roosevelt National Forests and Pawnee National Grassland (ARP) in Boulder and Gilpin Counties, Colorado. The entire project area encompasses 18,954 acres; 9,940 of those acres are National Forest System (NFS) lands, 1,892 acres are Boulder County Parks and Open Space lands, and 7,122 acres are private lands. Elevation ranges from 6,082 to 8,945 feet. The project is generally located east of Nederland, CO and west of Gross Reservoir. The project legal descriptions include the following: T1N R72W Sec. 35, 36; T1N R71W Sec. 31, 32; T1S R73W Sec. 13, 24, 25; T1S R72W Sec. 1-3, 8-30, 33-36; T1S R71W Sec. 4-7, 18, 19, 29, 30; T2S R72W Sec. 3, 4 (see Figure 1 in Appendix A).

BACKGROUND

On August 3, 2012 the Forsythe Fuels Reduction Project Decision Notice was signed authorizing vegetation treatments on approximately 5,005 acres (Forsythe Fuels Reduction Project Decision Notice and Finding of No Significant Impact, p. 3). The purpose and need for the 2012 Forsythe project was to *reduce hazardous fuels on National Forest lands that may contribute to the increased spread and intensity of wildfires and to manage increasing populations of mountain pine beetle (MPB)*. The vegetation treatment mapping was completed using the U.S. Forest Service (USFS) corporate Geographic Information System (GIS) vegetation database. Through the analysis, the 2012 Forsythe Fuels Reduction Project Decision Notice identified, 1,706 acres of lodgepole pine treatment, 306 acres of salvage/sanitation in the lodgepole pine cover type, 1,533 acres of ponderosa pine treatment, 209 acres of aspen restoration, 283 acres of meadow enhancement, and 968 acres of prescribed broadcast burning.

During implementation of the Forsythe Fuels Reduction Project, neighborhood residents expressed several concerns with the vegetation management activities, primarily based on the discrepancies between the existing and mapped vegetation. A Supplemental Information Report (SIR) was prepared in October 2014, to review the new information brought forward. The SIR focused on cover type discrepancy, treatment description as described in the Forsythe Fuels Reduction Environmental Assessment (EA) versus task order cutting prescriptions, and consistency of project implementation with design criteria (Forsythe Fuels Reduction Project SIR, 2014). The SIR documented that the information presented did not constitute significant new information or changed circumstances that would change the analysis of effects in the project area. However, District Ranger Sylvia Clark recommended that project implementation be halted so that additional public involvement and supplemental analysis could be conducted to utilize the more precise cover type information and location of specific treatment prescriptions to better display impacts and determine if modifications of treatments were warranted.

The Forsythe II Project was initiated under the authorities allowed in the Healthy Forests Restoration Act of 2003 (HFRA). To comply with the National Environmental Policy Act (NEPA), the Forsythe II Project EA was prepared. The EA tiers to the Environmental Impact Statement (EIS) prepared for the 1997

Revision of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and Pawnee National Grassland (Forest Plan). Documents in the project record, including detailed information from resource specialists, are available upon request from the Boulder Ranger District, Boulder, Colorado.

The objectives of the project are to:

- Reduce the severity and intensity of a wildfire within the wildland urban interface (WUI).
- Restore ponderosa pine/mixed conifer stands, aspen, and meadows/shrublands toward their characteristic species composition, structure, and spatial patterns in order to increase resistance and resiliency to future natural disturbance.
- Emulate natural disturbance in lodgepole pine dominated stands to mimic variable structural and spatial patterns across the landscape in order to increase resistance and resiliency to future natural disturbance.
- Provide private property landowners the opportunity to complete defensible space mitigation around their homes on adjacent NFS lands.

This project is needed to restore meadows/shrublands, ponderosa pine/mixed conifer and aspen stands and create variable structure and spatial patterns in lodgepole pine because of the high potential for catastrophic wildfires to occur in the area. The project area provides a critical community resource to Denver as Gross Reservoir is one of their municipal water sources. There are hundreds of homes and infrastructure at risk within, adjacent to and near the project area. The increasing population and associated development in the area will increase this risk in the future. Tree thinning, broadcast burning, and patchcutting/clearcutting can significantly reduce the hazard of intense fires and increase the resistance and resiliency to future natural disturbances. The need to reduce forest fuels has been clearly demonstrated by the recent large-scale, high intensity fires occurring across the western United States and on the Front Range of Colorado.

The Black Tiger fire (1989), Overland fire (2003), Four Mile Canyon fire (2010), and most recently Cold Springs fire (2016), combined, burned almost 12,000 acres of land and destroyed 232 houses. The Cold Springs fire progressed into the project area under strong winds and had potential to continue burning had fire crews not been able to suppress it. Increased fire activity can be attributed to at least four factors: increasingly hot and dry summers, stronger winds, insect infestations, and human population growth in forested areas.

Throughout the planning process, several changes occurred between the Initial Proposal of the project in September 2015 to this Final Decision. These changes were in response to comments received from the public as well as USFS specialists. Several units were either dropped or modified because of wildlife, soils, or hydrology concerns or in response to public comments. The allowable treatment percentage and size of clearcuts/patchcuts in lodgepole pine units was reduced. Maximum diameter cut limits were established and percent basal area reduction was broken down by dominant vegetation type (i.e. ponderosa pine or Douglas-fir). Reduced acceptable overstory mortality in the broadcast burn units from 35% to 25%. A 300 foot no cut buffer was instituted around all private property within the project area. As a result of these changes, treatment acres have decreased by 1,078 acres. Table 3 in Appendix D displays the changes from the Initial Proposal to the Final Decision in more detail.

DECISION

After reviewing the environmental impacts disclosed in the EA, the comments and objections received from the public, and the Forest Plan, my decision is to combine components of the four action alternatives (see Table 1 below, Figure 2 in Appendix A for a map of the vegetation treatments, Appendix B for the list of vegetation treatments by unit, and Table 3 in Appendix D for a visual comparison of how the components of the alternatives and Draft Decision combine into my Final Decision). Under this decision, management

activities will occur on 2,462¹ acres of NFS lands within the Forsythe II project area to meet the objectives for this project. I intend to allow the ingress/egress routes to be constructed, including all activities required for construction, after a special use permit is obtained. All treatment activities will follow the design criteria (see Appendix C) developed for the project to minimize the potential impacts.

It is expected that implementation of the management activities could take 5-15 years to complete. Implementation stages for manual and mechanical treatment (ranging from 200 to 500 acres) and broadcast burning (ranging up to 340 acres) will be developed. This information will provide a schedule of treatments in order for adjacent neighbors to be informed of the timing for implementation.

The implementation of the treatments will be completed by contractors and/or by USFS employees. The treatments could be done by either mechanized equipment (mechanically) or hand crews with chainsaws (manually). Mechanized equipment operations are limited by the percent slope and amount of rock within a unit. Treatment units that are over 30% slope will be treated manually. However, there may be short distances within a unit where a machine could be working on slopes up to 40%. In some instances, a unit may be designated as a mechanical unit but there may be areas within the unit that are too steep or rocky for a machine to work. In those circumstances, these areas will be treated manually or left untreated.

¹ These acres are of the treatment and differ from the unit acres.

Table 1. Decision activities.

Mixed Conifer Treatment	
Old Growth Basal Area (BA) Reduction	up to 30%
Douglas-fir BA Reduction	up to 40%
Ponderosa Pine BA Reduction	up to 50%
2-Staged BA Reduction	up to 40%
Maximum Cut Limit	14 inches diameter at breast height (DBH)
Treatment Method	Mechanically or Manually
Total Mixed Conifer Treatment Acres	1,233 acres
Lodgepole Pine Treatment	
Percent of Unit Patchcut/Clearcut	up to 30%
Patchcut Size	1-5 acres
Clearcut Size	5-10 acres
Treatment Method	Mechanically or Manually
Total Lodgepole Pine Treatment Acres	331 acres
Regeneration Thin Treatment (Lodgepole Pine)	
Regeneration Thin Spacing	10-15 feet
Treatment Method	Manually
Total Regeneration Thin Treatment Acres	17 acres
Aspen Restoration Treatment	
Maximum Conifer Cut Limit	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine
Conifer Removal Distance from Edge of Aspen Stand	up to 30 feet
Treatment Method	Mechanically or Manually
Total Aspen Restoration Treatment Acres	189 acres
Meadow/Shrubland Restoration Treatment	
Maximum Conifer Cut Limit	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine
Treatment Method	Manually
Total Meadow/Shrubland Restoration Treatment Acres	37 acres
Broadcast Burn	
Total Broadcast Burn Acres	945 acres
Defensible Space	
Treatment Distance from Structure	up to 300 feet
Estimated Percent of Total Acres Treated	10%
Total Defensible Space Acres	2,187 acres
Estimated Total Defensible Space Treatment Acres	219 acres
No Cut Buffer	
Distance Between Private Property Boundary and Treatment Unit ²	300 feet
Road Activities	
Miles of Decommissioning	6 miles
Miles of Reconstruction/Maintenance	16 miles
Miles to Convert to Administrative Use Only (not open to public use)	2.3 miles
Temporary Road Construction	6.4 miles
Special Use Permit – Ingress/Egress Route Construction and Maintenance (NFS lands only)	Doe Trail, 0.04 miles Wildewood Trail, 0.32 miles

² Lodgepole pine regeneration units within this buffer will be treated. Adjacent landowners will have the ability to request that the USFS extend a treatment unit to their private property boundary if the no cut buffer required the unit to be pulled back 300 feet from the boundary.

Vegetation Treatments

The decision includes 1,807 acres of mechanical/manual vegetation treatment (see Table 2 in Appendix B) and 945 acres of broadcast burning. A combination of mechanical/manual treatment and broadcast burning will occur on 290 acres. Reforestation treatments (tree planting of mixed conifer species) will occur in patchcuts/clearcuts. Manually thinning lodgepole pine regeneration in the patchcut/clearcut areas, completed under this decision, will continue every 7-15 years, or as needed into the future.

The dominant vegetation stand conditions (mixed conifer, lodgepole pine, aspen, and meadows/shrublands) that occur across the project area are used to delineate treatment units. Some of these units have situations where a management unit might be delineated as a mixed conifer stand or a lodgepole pine stand but contain aggregations (1/2 acre to 5 acres in size) of the other dominant stand conditions. These aggregations can be expected to occur across 30% of any given unit and across more than 50% of the treatment units. As an example, there may be areas within a unit designated as mixed conifer that contain aspen clones, meadows, or patches of lodgepole pine. In situations where aggregations occur across a unit, the appropriate treatment for that stand type will be implemented as described below. For example, if a patch of aspen occurs within a mixed conifer stand, the aspen patch will be treated to remove conifers as described below for aspen treatment. There may also be regenerated lodgepole pine aggregations that were not identified on the map that will be treated during implementation of this project.

Mixed Conifer Stands

There are 832 acres mapped³ as Douglas-fir mixed conifer treatment, 339 acres as ponderosa pine mixed conifer treatment, 44 acres as 2-staged mixed conifer treatment, and 18 acres as old growth mixed conifer treatment (see Figure 2 in Appendix A). Treatment prescription in units designated as mixed conifer will be as follows:

- Thin to reduce the stand density by no more than 50% in ponderosa pine dominated units, from the existing volume or basal area.
- Thin to reduce the stand density by no more than 40% in Douglas-fir dominated units, from the existing volume or basal area.
- Areas designated as inventoried and retention old growth will have the density reduced by no more than 30%, from the existing volume or basal.
- All limber pine that do not pose a safety hazard will be retained.
- All trees 14 inches DBH and larger will be retained; however, some units may not have trees greater than 14 inches DBH. In this case, the diameter cut limit will be adjusted based on the existing condition while retaining 10% of the existing basal area in the largest diameter trees in each unit.
- Treatment could be done mechanically or manually.

³ Acres were derived by Geographical Information System (GIS) query and are referred to as mapped acres in this document. Exact acreage treated is verified on the ground prior to implementation.

Treatment prescription in Unit 74 is designated as a 2-staged mixed conifer treatment. This unit consists of Douglas-fir dominated stands with heavy downed surface fuels resulting from past disturbances. Because there is heavy fuel loading in the unit, two separate treatments will be performed as described below:

- Stage 1 – Existing downed fuels will be hand piled and later burned. Due to the density of these stands, some live conifers up to 14 inches DBH may be cut and piled with the existing slash in order to establish openings and minimize the scorching of adjacent trees for pile burning.
- Stage 2 – Thin to reduce the stand density by no more than 40% from the existing volume or basal area while incorporating the spatial arrangement mentioned above. All limber pine that do not pose a safety hazard will be retained. All trees 14 inches DBH and larger will be retained. This unit may not have trees greater than 14 inches DBH. In that case, the diameter cut limit will be adjusted based on the existing condition while retaining a percentage of the largest trees. Treatment could be done mechanically or manually.

Lodgepole Pine Stands

There are 1,104 acres mapped for lodgepole pine treatment (see Figure 2 in Appendix A). Up to 30% of the mapped acres (331 acres) will be patchcut/clearcut. Treatment prescription in units designated as patchcut/clearcut will be as follows:

- Patchcuts (removal of all conifer trees) could be 1-5 acres in size.
- Clearcuts (removal of all conifer trees) could be 5-10 acres in size.
- No more than 30% of a unit will be patchcut or clearcut.
- Untreated buffers of at least 100 feet will be left between patchcuts and clearcuts.
- Retain all areas of mixed conifer inclusions ½ acre or less in lodgepole pine stands. If the inclusion is larger, thinning as prescribed could be implemented. An exception is cutting trees for skid trails and landings.
- Following patchcut/clearcut treatments, reforestation treatments (tree planting of mixed conifer species) will occur in these areas.
- Treatment could be done mechanically or manually.

There are 17 acres of lodgepole pine mapped as regeneration thin, 2 acres of which fall within the 300 foot no cut buffer (see Figure 2 in Appendix A). Treatment prescription in units designated as regeneration thin, or other areas not identified on the map (areas previously patchcut/clearcut with trees less than 15 feet tall) will be as follows:

- Thin regenerated lodgepole pine to an average spacing of 10-15 feet.
- Treatment could be done mechanically or manually.

Aspen Stands

There are 189 acres mapped as aspen (see Figure 2 in Appendix A). Treatment prescription in units designated as aspen restoration will be as follows:

- Cut all ponderosa pine and Douglas-fir up to 14 inches DBH and all lodgepole pine up to 12 inches DBH, within and up to 30 feet of the edge of the aspen clone.
- Retain all limber pine.
- If snags are not available in the aspen stand, create snags within the aspen stand by girdling up to five of the largest conifers less than 14 inches DBH, unless they will pose a safety hazard.
- Treatment could be done mechanically or manually.

Meadows and Shrublands

There are 37 acres mapped as meadow/shrubland (see Figure 2 in Appendix A). Treatment prescription in units designated as meadow/shrubland restoration will be as follows:

- Cut all ponderosa pine and Douglas-fir up to 14 inches DBH and all lodgepole pine up to 12 inches DBH.
- Retain all limber pine.
- Treatment will be done manually.

Temporary Roads

Approximately six miles of temporary roads will be constructed to facilitate the vegetation management activities and will be decommissioned after the completion of management activities. Temporary road construction and decommissioning will adhere to design criteria outlined in Appendix C of this Decision Notice.

Slash Treatment

Slash created by these treatments may be piled and burned, chipped, masticated, and/or removed offsite. The treatments may produce 12,000-18,500 hand piles and 200-700 machine piles. Where mechanized equipment is used, forest products will most likely be removed in the form of logs, chips, or firewood. After work is completed, firewood may be removed from the manual treatment units.

Broadcast Burn

Broadcast burning will be implemented across 945 mapped acres (see Figure 2 in Appendix A) after the completion of mechanical/manual treatments that overlap the burn units. The location of the broadcast burn unit boundaries is based on control features surrounding the primary burn areas, including forest roads and Gross Reservoir. The burn will be broken up into six operational burn blocks ranging from 72 – 340 acres in size to reduce the number of acres burned at any one time to allow the area to recover. Implementation of the burn will be phased over a 3-5 year period of time to allow for recovery. The broadcast burn will focus on consuming up to 75% of the understory, including shrubs. Overstory mortality of up to 25% of the 945 mapped acres is acceptable and within the standard prescribed fire prescription, accounting for the range of variables that must be accounted for during the development of prescriptions.

Defensible Space/No Cut Buffer

The defensible space/no cut buffer is delineated along areas where private property abuts NFS lands. The no cut buffer extends 300 feet onto NFS lands from the private property boundary. There are however, seven regeneration units that fall within the no cut buffer that will be treated by the USFS as agreed to by project objectors through email communications in March 2017. Adjacent landowners will have the ability to request that the USFS extend a treatment unit to their private property boundary if the no cut buffer required the unit to be pulled back 300 feet from the boundary. This request must be made to the USFS prior to contract award of specific treatment unit.

The defensible space prescriptions may be applied by private property landowners on NFS lands up to 300 feet from a structure to complement defensible space treatments on private property. The defensible space treatment will only occur if a private property landowner requests and obtains an approved permit from the USFS. The approved permit will allow the adjacent landowner to complete defensible space treatments based on parameters (see following description) in the approved permit.

There are 2,187 acres mapped as defensible space throughout the project area (see Figure 2 in Appendix A). Based on the current information of private structures adjacent to NFS lands, it is estimated that only a portion of those mapped acres, up to 10% or 219 acres, will be treated. Treatment could occur out to Zone

3 and follow the guidelines outlined by USFS resource specialists and in the Defensible Space Management Zones as described by the Colorado State Forest Service.

The three zones that characterize defensible space are defined as the following:

- Zone 1 is the area nearest to the structures that requires maximum hazard reduction. This zone extends up to 30 feet outward from a structure where the most flammable vegetation will be removed including most trees. Remaining trees will be pruned to a height of 10 feet from the ground and be spaced at least 30 feet, or more if on steep slopes, between crowns.
- Zone 2 is a transitional area of fuels reduction between Zones 1 and 3. Typically this zone will extend at least 100 feet from structures. Stressed, diseased, dead or dying trees will be removed along with ladder fuels. Trees will be thinned to a crown spacing of at least 10 feet, or more if on steep slopes. Retained trees will be pruned to a height of 10 feet from the ground. Groups of trees may be left in areas however these groups will have at least 30 feet spacing between the crowns of the group and any surrounding trees.
- Zone 3 is the area farthest from the structure. It extends from the edge of Zone 2 out to 300 feet from the structure. Crown space thinning between retained trees will be variable and based on steepness of slope. Ladder fuels will be removed from underneath retained trees. Retained trees will be pruned to a height of 10 feet if located along trails or firefighter access routes.

The dominant vegetation type (i.e. mixed conifer, lodgepole pine, and aspen) surrounding the structure will determine the prescriptions for the vegetation type to be cut by a permittee. Proximity of the structure to the boundary of NFS lands and average slope of the permitted area will also determine the intensity of the cutting. The defensible space prescriptions are not for restoration purposes; instead, they are intended for structure protection and may be more intensive than other prescriptions within the project area.

All treatments will be completed manually (chainsaws) and treated material will be removed by hand. Skidding of material will not be allowed. All treated material will be transported to the permittee's land, using an ATV (all-terrain vehicle) or UTV (utility vehicle), and the slash disposed of by the permittee. The prescriptions listed below are general in nature and assume the area is flat.

Mixed Conifer Stands

- Zone 1: All conifers less than 14 inches DBH will be cut and removed, and branches from the remaining trees pruned up to 10 feet from the ground. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 2: Conifers will be thinned to approximately 100 to 150 trees per acre (in a radius of 16.7 feet, 2 to 3 trees will be left) or less with at least a 10 foot crown spacing between the residual trees. The largest and healthiest (good vigor, at least 40% crown ratio, insect/disease, and damage free) trees will be retained while the stressed, diseased, dead, or dying trees will be removed along with ladder fuels. Retained trees will be pruned to a height of 10 feet from the ground. Species preference for cutting will be lodgepole pine, then Douglas-fir, then limber pine, and then ponderosa pine. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 3: Conifers will be thinned to approximately 250+ trees per acre (in a radius of 16.7', 5+ trees will be left) by cutting and removing the ladder fuels. The largest and healthiest (good vigor, at least 40% crown ratio, insect/disease, and damage free) trees will be retained while the stressed, diseased, dead, or dying trees will be removed along with ladder fuels (trees less than 6 inches DBH) will be targeted. Species preference for cutting will be lodgepole pine, then Douglas-fir, then limber pine, and then ponderosa pine. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.

Lodgepole Pine Stands

- Zone 1: All conifers will be cut and removed. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 2: Conifers will be thinned to retain groups of conifers (20 to 30 trees) and a crown spacing of 20 feet between the groups. Groups of trees instead of individual trees will be retained in order to reduce the potential for windthrow. Approximately 5 to 8 groups per acre will be left, and the groups will be arranged in a mosaic pattern (non-uniform). Within the groups all dead conifers and ladder fuels will be cut and removed. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 3: Conifers will be thinned to retain groups of conifers (40 to 60 trees) and a crown spacing of 20 feet between the groups. Groups of trees instead of individual trees will be retained in order to reduce the potential for windthrow. Approximately 3 to 4 groups per acre will be left, and the groups will be arranged in a mosaic pattern (non-uniform). Within the groups all dead conifers and ladder fuels will be cut and removed. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.

Aspen Stands

Structures surrounded by aspen for 300 feet are rare, and most likely this prescription will be combined with one of the prescriptions identified above.

- Zone 1: All conifers within the zone will be cut and removed. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 2: All conifers less than 14 inches DBH will be cut and removed, and branches from the remaining trees pruned up to 10 feet from the ground. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.
- Zone 3: All conifers less than 14 inches DBH will be cut and removed, and branches from the remaining trees pruned up to 10 feet from the ground. Aspen will not be cut unless it's to remove a "hung up" conifer or one that has been damaged during the felling activity.

Road Actions

To decrease the risk of erosion and sedimentation and improve hydrologic function, approximately 6 miles of NFS roads will be decommissioned and another 2.3 miles converted to administrative use only (not open to public travel) (see Figure 3 in Appendix A). This decision will close approximately 1.9 miles of road currently open to motorized public use. NFS road 302.1F (0.07 miles) will be decommissioned and removed from the Motor Vehicle Use Map and NFS road 97.1 (1.86 miles) will be converted to administrative use only and removed from the Motor Vehicle Use Map). Unauthorized roads on NFS lands not identified on the map but found during implementation will also be decommissioned. These mileages effect only the portions that cross NFS lands and take into account the transportation system necessary for public access, motorized recreation, and forest management while also accounting for the effects the roads have on the watershed.

In my review of the Proposed Road Actions Map provided in the EA, I found that roads that had already been decommissioned under a different decision were included on the map in the EA in error. These roads were removed from this Final Decision Notice Road Actions Map.

Ingress/Egress Routes

Two ingress/egress routes identified (Doe Trail, 0.04 miles on NFS lands, and Wildewood Trail, 0.32 miles on NFS lands) to the south and east of the Big Springs Subdivision, both currently existing as trails, could become private roads under special use authorization for emergency ingress/egress purposes only for residents of the subdivision (see Figure 2 in Appendix A). Road work including widening, installing gates, and cutting all trees within the 30 foot road corridor will be completed. This clearing will be approximately 3.9 acres (2.6 acres along Doe Trail, 1.3 acres along Wildewood Trail).

Forest Plan Amendments

My decision includes two non-significant Forest Plan Amendments that will only be in effect for the duration of project implementation. I am removing the applicability of Forest Plan Goal 95 (*Retain the integrity of effective habitat areas*) and Forest Plan Standard 2 under Management Area 3.5 (*Maintain or increase habitat effectiveness, except where new access is required by law*) on NFS lands within the Forsythe II project area. The vegetation management activities under this decision will decrease the effective habitat from the existing condition because the treatment activities will likely further reduce effective habitat based on reduction in canopy closure from thinning, patchcuts, and clearcuts where they are in close proximity to roads or trails. Some effective habitat reductions from fuels treatments are expected to return to functioning as effective habitat in the long-term as trees grow back, depending on human activity.

The removal of the applicability of Forest Plan Goal 95 covers the 9,930 acres of NFS lands within the project area and Forest Plan Standard 2 under Management Area 3.5 covers 8,634 acres of NFS lands within the project area (see Chapter 3, Section 3.6 in the EA). These amendments will only pertain to this decision for the entirety of implementation.

Monitoring Plan

Soils

Implementation effectiveness monitoring will be conducted by watershed, planning and implementation personnel on selected treatment units in years one and five following treatments. Specific monitoring items include:

- Conducting soil disturbance classification monitoring and making other monitoring observations/measurements to determine effectiveness of soil and water design criteria and mitigation measures for protection of long term soil productivity in mechanical treatments.
- Monitoring burn pile effects and recovery in manual treatments.
- Monitoring soil burn severity and post treatment erosion in broadcast burn treatments.

Silviculture

Implementation monitoring will include:

- Determining the effects of vegetation management and related treatments to identify adverse impacts and mitigate if necessary.
- Assessing seedling survival in the first and third year, and possibly the fifth year, following planting.

Wildlife

Implementation monitoring will include:

- Monitoring known raptor nest sites for occupancy and reproductive success at least until full completion of all project activities.
- Monitoring for effectiveness of all closed features (temporary roads, landings, and skid trails) to ensure as much effective habitat is maintained as possible and avoid further reduction.

Noxious Weeds

Implementation monitoring will include:

- Inspecting areas within the project area at highest risk for noxious weed infestation and/or spread at least once during the first three growing seasons after ground disturbing operations. The areas at highest risk are generally mechanically treated areas, particularly landings and other areas of heavy activity and/or where mineral soil is exposed; areas where piles have been burned; and areas where high priority weeds were already present.
- Determining treatment and further monitoring needs based on the results of inspections.

Cultural Resources

Implementation monitoring will include:

- Determining if the design criteria were sufficient to protect historic properties and is recommended to occur the first year following implementation and conducted by ARP Heritage personnel.

Engineering

Implementation monitoring of road maintenance, reconstruction and new construction activities will include:

- Ensuring contract specifications and road designs are implemented, through site inspections conducted by ARP personnel and certified engineering personnel, as described in the road contract.
- Determining physical effects, success of natural and enhanced revegetation, and to ensure traffic safety and compliance with state and federal laws by measuring and visually monitoring.

Fire/Fuels/Air

Implementation monitoring will include:

- Reevaluating the treatment areas every 10-15 years for the need to retreat.
- Taking photographs of the smoke column during burning operations to verify smoke dispersion, as necessary.
- Checking the receptors for smoke pooling near those areas, as necessary.

Recreation

Implementation monitoring will include:

- Conducting compliance patrols during the interim start up period for treatment activities and/or related forest orders intended for public health and safety or resource protection.
- Coordinating routine monitoring and compliance patrols with other local agencies and neighborhood watch volunteers.

Collaborative Implementation and Effectiveness Monitoring

Section 102(g)(5) of the HFRA instructs the USDA Forest Service to establish a collaborative multiparty monitoring, evaluation, and accountability process when significant interest is expressed in such an approach. The process will be used to assess the positive or negative ecological and social effects of authorized fuel-reduction projects. In addition, monitoring may be used to determine maintenance needs.

The facilitated multiparty monitoring group will be comprised of a diverse group of interested stakeholders and agency personnel. The group will be formed after this decision is signed. This group will develop a monitoring plan that will describe what will be monitored, how to conduct the monitoring, how the monitoring results will be used, and who is responsible for each step in the process. Unit level prescriptions and design will be provided to the multiparty monitoring group prior to contract finalization and award. The group will meet to review implementation and evaluate how the treatments are meeting the goals and objectives developed by the group. A conceptual framework for monitoring and adaptive implementation that illustrates what this approach may entail can be found in Appendix E of this Decision Notice.

The primary goals of this group may include:

- ensure that implementation of treatments responds to dynamic, local on-the-ground conditions, new scientific information, and public input;
- help inform unit level treatment plans and implementation instructions to attain ecological and social objectives;
- demonstrate compliance with management direction specified in the EA and this decision;
- keep the public informed of and involved in treatment unit timing, design, and monitoring;
- ensure integrated engagement of interdisciplinary team members, field personnel, scientists, line officers and the public;
- focus on shared priorities and highlight local concerns related to selection and implementation of treatment units;
- conduct monitoring activities, interpret and share results, adapt implementation practices to improve results and better meet project objectives.

PUBLIC INVOLVEMENT

In October 2014, a SIR was completed on the 2012 Forsythe Fuels Reduction Project which led to a decision, by District Ranger Sylvia Clark, to prepare additional analysis. A public meeting, in Nederland, CO, and field trip, in the project area, was held in December 2014 to discuss concerns and desired outcomes for the new analysis. In April 2015, the USFS attended a public field trip in the project area hosted by Magnolia Forest Group (MFG) to continue discussions on concerns and desired outcomes for the Forsythe II project.

Additional public comments were solicited for the Forsythe II project proposal on September 4, 2015. Approximately 2,400 postcards were mailed to stakeholders, landowners within and adjacent to the project area, and other interested individuals and organizations. This information was also published on the ARP Schedule of Proposed Actions and a news release was sent to the Boulder Daily Camera newspaper as well as other media outlets within Boulder County, Nederland, and Gilpin County. A public field trip was held on September 26, 2015 and attended by approximately 30 people. A webpage was published and made available to the public with up to date information about the project throughout the planning process. The USFS stated that all future announcements and information regarding the project would be shared by email.

A detailed proposed action was developed utilizing the input received from the public and internal USFS resource specialists. The public comment period for the detailed proposed action began on December 31,

2015. Approximately 190 people responded in 2015 to continue receiving information about the project. Emails were sent to those folks during the public comment period. Additionally, emails were sent to the Boulder Ranger District email list that contains over 700 people. Letters were mailed to the following tribes: Cheyenne and Arapaho Tribes of Oklahoma, Northern Arapaho Tribe, Northern Cheyenne Tribe, Ute Tribe, Southern Ute Indian Tribe, and Ute Mountain Ute Tribe. A legal notice was published in the Boulder Daily Camera and the ARP Schedule of Proposed Actions was updated with the proposed action documents. The USFS received 374 comments on the proposed action.

On December 8, 2016 a legal notice was published in the Fort Collins Coloradoan, which initiated the 30-day pre-decisional objection period under 36 CFR 218. Thirty-eight objections were received, twelve of which did not have standing to object. The 12 were set aside because they were received after the close of the objection period, did not provide specific written comments during a designated public comment period for the project, or the objection was incorporated by referencing another objection and did not provide any stand-alone issues in which to review.

An Objector Resolution Meeting was held on February 2, 2017. The Reviewing Officer, Jacque Buchanan, reviewed the objection letters and project record and sent letters to the 26 objectors with standing on February 8, 2017. In accordance with 36 CFR 218, Jacque Buchanan provided response letters to the 26 objectors with standing. In these letters, Jacque Buchanan concluded that the project did not violate any law, regulation, or policy. However, Jacque Buchanan included instructions to the ARP that provided remedies to the objections received and they have been included in this decision as required.

ISSUES CONSIDERED

The 374 comments received were analyzed by the Interdisciplinary Team (IDT) to develop issues for the Forsythe II project. Issues are grouped by resource and described using an issue statement. These issues were used to develop the action alternatives, mitigation measures, and design elements to address the effects of proposed activities for the project. More detailed information about these issues can be found in Chapter 1, Section 1.7 of the EA.

Soils

1. Operation of heavy equipment is likely to cause soil compaction and displacement on temporary roads, landings, heavily traveled sections of primary skid trails and isolated/discontinuous compaction and displacement within the matrix of the treatment unit.
2. Protective ground cover may be impacted by vegetation management treatments, construction of roads and landings and/or application of prescribed fire. Localized erosion and/or sedimentation could occur within and adjacent to areas without adequate protective ground cover.
3. Patchcuts/clearcuts on sensitive soils may impact above and below ground nutrient cycling processes.
4. Pile burning may cause moderate to high soil burn severity effects to the limited spatial extent of the burn pile footprints.
5. Application of broadcast prescribed fire could result in small localized areas of moderate to high soil burn severity but low burn severity is expected to occur over most of the treatment area. Erosion and sedimentation may occur due to removal of protective ground cover.

Hydrology/Fisheries

1. Mechanical timber harvest, permanent and temporary roads, broadcast burns, and burn piles may increase the extent of bare compacted soils and connected disturbed area (surface flow paths that connect upland disturbances directly to stream channels and bypass vegetated buffers or filters), which increases the risk of erosion and sedimentation into streams and aquatic habitat occupied by forest MIS species, macroinvertebrates, and potential habitat for threatened and endangered species (TES) such as the Arapahoe snowfly.
2. Road decommissioning and restoration may decrease the risk of erosion and sedimentation and improve hydrologic function.

Terrestrial Wildlife

1. Proposed vegetation management activities may affect individuals, populations, and/or habitat values for federally Proposed, Threatened or Endangered, Forest Service Sensitive (PTES), MIS, or other terrestrial wildlife species.
2. Road decommissioning and restoration may improve wildlife habitat and reduce disturbance and displacement of wildlife.

Silviculture

1. Management activities being applied to the forested stands in the upper montane zone may be inappropriate.
2. The proposed vegetation treatments may affect old growth (retention, inventoried, and development) integrity and large trees.
3. The proposed vegetation treatments, specifically in lodgepole pine dominated stands, may be susceptible to windthrow or blowdown.
4. Vegetation management activities may lead to increased mountain pine beetle, ips, or other insect infestations.

Recreation/Trails

1. Vegetation management practices may affect recreational access (system and non-system trails and roads) within the project area.

Visual Resources

1. Proposed management activities may affect visual resources.

Noxious Weeds

1. Proposed vegetation management activities may affect occurrence of noxious weeds and other undesirable nonnative plants.

ALTERNATIVES CONSIDERED

The No Action Alternative and four action alternatives were analyzed in the EA. Each action alternative focused on different concerns and comments from USFS resource specialists and the public and are briefly discussed below. A more detailed comparison of all the alternatives can be found in Chapter 2 of the EA.

No Action Alternative

The Healthy Forests Restoration Act does not require a No Action Alternative to be analyzed, rather only the effects of failing to take action. The No Action Alternative serves as a baseline for comparing the effects of the action alternatives on the environment against taking no action.

Under the No Action Alternative, current management plans would continue to guide management of the project area. No vegetation management or other actions from this analysis would be performed therefore the purpose and need for this project would not be met.

Alternative 1 – Proposed Action

This alternative was developed to address the purpose and need for this project. Approximately 3,151 acres of the 9,930 acres of NFS lands within the project area would be treated. The proposed action includes 2,483 acres of mechanical/manual treatment and 968 acres of broadcast burning. A combination of mechanical/manual treatment and broadcast burning would occur on 300 acres. Additionally, 2,032 acres were analyzed for defensible space to provide permitted homeowners adjacent to NFS lands the ability to treat on NFS lands. However, based on previous requests and information provided through Boulder County Wildfire Partners it is estimated that up to 10% of the analyzed defensible space acres would be treated, or 203 acres.

Alternatives 2

This alternative was developed to address wildlife, soils, and hydrology concerns while still meeting the purpose and need for this project. Alternative 2, when compared to Alternative 1 – Proposed Action, limits the size of clearcuts to 10 acres, retains trees 14 inch DBH and greater, increases the amount of basal area or volume cut within ponderosa pine mixed conifer treatment units to 50%, and allows up to 30% of any given lodgepole pine treatment unit to be cut.

Approximately 2,334 acres of the 9,930 acres of NFS lands within the project area would be treated. This alternative includes 1,657 acres of mechanical/manual treatment and 968 acres of broadcast burning. A combination of mechanical/manual treatment and broadcast burning would occur on 291 acres. Additionally, 2,862 acres are analyzed for defensible space to provide permitted homeowners adjacent to NFS lands the ability to treat on NFS lands. However, based on previous requests and information provided through Boulder County Wildfire Partners it is estimated that up to 10% of the analyzed defensible space acres would be treated, or 286 acres.

Alternative 3

This alternative was developed to address wildlife, soils, and hydrology concerns while still meeting the purpose and need for this project. Alternative 3, when compared to Alternative 1 – Proposed Action, 15 units were dropped and another 10 units became smaller units. These changes decreased the treatment acres by 438 acres, however another five units were added, 88 acres, to address public comments received.

Approximately 2,717 acres of the 9,930 acres of NFS lands within the project area would be treated. This alternative includes 2,045 acres of mechanical/manual treatment and 968 acres of broadcast burning. A combination of mechanical/manual treatment and broadcast burning would occur on 296 acres. Additionally, 2,200 acres are analyzed for defensible space to provide permitted homeowners adjacent to NFS lands the ability to treat on NFS lands. However, based on previous requests and information provided

through Boulder County Wildfire Partners it is estimated that up to 10% of the analyzed defensible space acres would be treated, or 220 acres.

Alternative 4

This alternative was developed to address wildlife, soils, and hydrology concerns as well as public comments received during the scoping period while still meeting the purpose and need for this project. Alternative 4 differs from Alternative 1 – Proposed Action, because the treatments would be done manually, except in areas mapped as lodgepole pine treatment, and the diameter cut limit would be 12 inches DBH. The lodgepole pine treatment could be completed either mechanically or manually, only patchcuts up to five acres in size would be allowed, and up to 30% of any given unit could be cut.

Approximately 2,855 acres of the 9,930 acres of NFS lands within the project area would be treated. This alternative includes 2,187 acres of mechanical/manual treatment and 968 acres of broadcast burning. A combination of mechanical/manual treatment and broadcast burning would occur on 300 acres. Additionally, 878 acres are analyzed for defensible space to provide permitted homeowners adjacent to NFS lands the ability to treat on NFS lands. However, based on previous requests and information provided through Boulder County Wildfire Partners it is estimated that up to 10% of the analyzed defensible space acres would be treated, or 88 acres.

Alternatives Considered but Not Analyzed in Detail

Four alternatives were considered by the USFS, but were not analyzed in detail and can be found in Chapter 2, Section 2.2 of the EA. These alternatives were recommendations of the public based on the issues and the purpose and need of the project. These alternatives were dropped from further analysis because they did not meet the purpose and need of the project. However, some components of these alternatives were integrated into the action alternatives for this project.

DECISION RATIONALE

I have carefully considered all the alternatives and the potential impacts presented in the EA and comments received from both USFS resource specialists and the public to help make my decision. The four action alternatives developed for the project took into account concerns brought forward by USFS resource specialists as well as those through the public involvement process. These four action alternatives, the No Action Alternative, and the four alternatives considered but not analyzed in detail fulfill consideration of a reasonable range of alternatives. This decision incorporates the instructions provided to the ARP by the Reviewing Officer, Jacque Buchanan, during the objection resolution process.

There were nine key issues and seven other issues raised during the comment period that were considered during the analysis. Specific information on each issue can be found in Chapter 1, Section 1.7 of the EA. The action alternatives and design criteria were developed to address these issues. My decision responds to the purpose and need for this project described in Chapter 1, Section 1.3 of the EA; addresses the issues identified by USFS resource specialists and the comments received from the public during the scoping and comment periods; addresses the instructions provided to the ARP by the Reviewing Officer; and meets the requirements of the National Forest Management Act and the National Environmental Policy Act (NEPA).

I considered whether the proposed activities would comply with the general direction outlined in the Forest Plan as well as the goals, standards, and guidelines. I also considered the direction outlined in the four geographic areas (Caribou, Lump Gulch, Thorodin, and Sugarloaf) this project falls within. After reviewing Chapter 3 of the EA, I found that the current effective habitat in all four geographic areas is estimated to be lower than Forest Plan percentages due to changes in the project area since 1997. Based on data used for the Forest Plan, mapped effective habitat occurred in the project area as of the 1997 Forest Plan. The Forest Plan developed in the mid-1990s, listed the percentages of effective habitat by geographic area (Forest Plan FEIS Appendix B (pg. 15-16)). The geographic areas, which partially occur in the Forsythe II project area,

were between 41% - 59% (Table 27 of EA). Changes in effective habitat on NFS lands are due to increased private home development (construction of roads accessing private lands); increased recreation use (development of unauthorized social trails); and changed vegetation conditions (including hazardous fuels vegetation treatments, natural and human caused fires, etc.). Fuels treatments, particularly patchcuts and clearcuts, can reduce effective habitat when they are located near roads or trails.

Because the effective habitat is currently estimated to be lower than what the Forest Plan states and proposed activities will likely further decrease effective habitat during implementation, two non-significant site specific amendments will be needed only for the duration of project implementation. These amendments will remove the applicability of Forest Plan Goal 95 and Forest Plan Standard 2 under Management Area 3.5 for effective habitat. The ARP is not currently undertaking a formal Forest Plan revision process. Because the completion of the Forest Plan revision process is not imminent and the last Forest Plan revision was approximately 19 years ago, these non-significant Forest Plan Amendments are being proposed at an appropriate time. In addition, guidance states that in most cases, the later the change, the less likely it is to be significant to the current forest plan. Forest Plan Goal 95 affects the 9,930 acres of NFS lands within the Forsythe II project area Forest Plan Standard 2 under Management Area 3.5 affects 8,634 acres of NFS lands within the project area. These amendments will only pertain to this decision for the entirety of implementation. These site specific amendments will not affect the long-term relationship between levels of goods and services projected by the Forest Plan.

The No Action Alternative would not meet the purpose and need for the project; therefore, I am not selecting this alternative. Although all four action alternatives meet the purpose and need of the project individually, my decision is to combine components from all four action alternatives addresses wildlife, soils, and hydrology concerns. I feel my decision will best meet the objectives of the project by reducing the severity and intensity of a wildfire within the wildland urban interface and increasing the resistance and resiliency to future disturbances while attending to the concerns brought forward by the public. In my review of the EA, I feel there has been sufficient site specific environmental analysis completed on the alternatives which has culminated with my decision.

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

After considering the environmental effects described in the EA, review of public input, and the use of project design criteria, I have determined that the actions of my intended decision will not have a significant effect on the quality of the human environment considering the context and intensity of impacts (40 CFR 1508.13 and 40 CFR 1508.27). Therefore, an Environmental Impact Statement (EIS) will not be prepared. I base my finding on the following, organized by sub-section of the Council on Environmental Quality (CEQ) definition of significance cited above.

Context

The context of the environmental effects is based on the environmental analysis presented in the EA. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. This project is located in a populated area within the wildland urban interface. There are many homes located throughout the project area and Gross Reservoir provides a municipal water source for the city of Denver. Proposed activities will be localized. Cumulative effects of past and reasonably foreseeable future management actions combined with the proposed activities are described by resource area in detail in Chapter 3 of the EA.

Intensity

Intensity refers to the severity of the impact based on information from the effects analysis presented in Chapter 3 of the EA. The effects of actions of this project have been thoroughly considered with an analysis that considered concerns and issues raised by both the USFS resource specialists and public. Relevant scientific information and site visits were used to determine the environmental effects of this project. Implementation of project design criteria will reduce the impacts of the proposed activities. The following ten factors were considered in evaluating the intensity.

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect would be beneficial.

I have considered both the beneficial and adverse impacts described in the EA if my decision were to be implemented. The purpose and need of this project is to reduce the severity and intensity of a wildfire within the wildland urban interface; restore the landscape in order to increase resistance and resiliency to future natural disturbances; and provide private property landowners the opportunity to complete defensible space mitigation around their homes. The activities of my decision would be beneficial to the lands from a wildfire prospective because the treatments would lessen the potential of a catastrophic wildfire. Threats from a future wildfire to homes, infrastructure, a municipal water source, and firefighter/public safety would be reduced as a result of the activities.

As a result of the analysis for this project, I found that the current effective habitat is estimated to be lower than what is stated in the Forest Plan. I am removing the applicability of Forest Plan Goal 95 and Forest Plan Standard 2 under Management Area 3.5 within the project, only for the duration of implementation of this project, because of current estimated effective habitat. The treatment activities would likely reduce effective habitat further, in the short-term, by opening the forest canopy in many areas and creating temporary roads, skid trails, and landings. In the long-term, some treated areas may return to functioning as effective habitat, depending on human use. Effective habitat could be reduced in the long-term if temporary roads or skid trails receive continued use after closure. Design criteria provide for obliteration of temporary roads and skid trails within one year after completion of use which should help to minimize the potential for continued human use. Although there are some adverse effects, I feel the benefits of reducing the effects of a wildfire and increasing the resistance and resiliency to future disturbances outweigh the adverse effects.

Commenters on the project had varying views of the benefits this project could provide. Some of the public expressed concern that management activities would impact social values, including sense of place, quality of life, and peace of mind gained by wildlife viewing, walking in the forest and being in nature; impact recreational experiences; and reduce property values. Still other public expressed support for the management activities because of the concern of wildfires.

2. The degree to which the proposed action affects public health or safety.

My decision will not significantly affect public health or safety. The treatments will provide emergency ingress/egress access to the Big Springs Subdivision in case of a wildfire providing for public safety. The treatments will increase firefighter safety in the event of a wildfire. Smoke produced during pile burning and broadcast burning will be short-term impacts to air quality for individuals near areas being burned. All burning operations will be in compliance with requirements outlined by the Colorado Air Pollution Control Division removing significant impacts to air quality.

3. Unique characteristics of the geographic area such as the proximity to historical or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

The analysis completed for this project did not indicate there are parklands, prime farmlands, or wild and scenic rivers within the project area. A total of 2,188 acres within the project area have been

adequately inventoried for cultural resources within the last 10 years. Design criteria developed for this project will protect cultural resources from damage as a result of treatment activities. Although wetlands have not been mapped in the project area, they are known to exist. Design criteria developed for this project should protect wetlands.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The effects on the quality of the human environment are not likely to be highly controversial. Controversy, in this context, refers to opposing scientific opinions, not public opposition to a project. Generally the scientific community agrees that reducing the amount of hazardous fuels lowers the potential for high intensity wildfire behavior and increases the resistance and resiliency to future natural disturbances. Studies have shown that effective structure protection from wildfire requires creation of defensible space around the building in combination with fuel reduction treatments on a landscape scale.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The treatments in my decision are commonly implemented on NFS lands. The analysis of the anticipated environmental effects on key resources is disclosed in Chapter 3 of the EA. The environmental effects and associated risks of the types of treatments analyzed in the EA have been documented in many studies and post treatment monitoring has not disclosed adverse effects.

6. The degree to which the action may establish precedent for future actions with significant effects or represents a decision in principle about a future consideration.

Implementing my decision will not establish a precedent for future actions or represent a decision in principle about a future consideration. The activities will not be a major departure from the types of activities common to the ARP. Additionally, decisions made in regards to activities within this project area will not commit the USFS to actions on lands outside this project area.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The cumulative effects analysis presented in Chapter 3 of the EA for each key resource discloses the past, present, and reasonably foreseeable future actions that could lead to impacts, which are cumulative in nature. From the analysis completed, the effects of implementing my decision will not individually, nor when considered with other past, present or reasonably foreseeable future actions near the project area, reach a level of significance.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

A total of 2,188 acres within the project area have been adequately inventoried for cultural resources within the last 10 years. All cultural resources were evaluated for eligibility to the National Register of Historic Places according to the criteria described in 36 CFR 60.4. Design criteria developed for this project will protect cultural resources from damage as a result of treatment activities.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Based on my review of the determinations from biological documents prepared for this project (see project record) and summarized in the EA, I have found that implementing my decision will not result in significant adverse effects to any federally listed plant or animal species or its habitat. The finding for Mexican spotted owl and Preble's meadow jumping mouse is *may affect, but is not likely to adversely affect*, which is below the level of significant effect. A full discussion of threatened, endangered species and their habitat can be found in Chapter 3, Section 3.6 of the EA.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

I have reviewed the EA, Biological Assessments, and the project file and have determined that no federal, state, or local laws, regulations, or requirements for protection of the environment will be violated if I select combined components from the four action alternatives. These laws and requirements are detailed in Chapter 1, Section 1.6 of the EA.

FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

Implementation and effects of this decision would be consistent with the following Acts and Executive Orders:

Architectural Barriers Act (ABA) of 1968
Americans with Disabilities Act (ADA) of 1990
Archaeological Resource Protection Act of 1978
Clean Air Act of 1955, as amended
Clean Water Act of 1948, as amended
Endangered Species Act of 1973, as amended
Fish and Wildlife Coordination Act of 1934, as amended
Forest and Rangeland Renewable Resources Planning Act of 1974
Multiple-Use Sustained Yield Act of 1960
National Environmental Policy Act of 1969, as amended
National Historic Preservation Act (NHPA) of 1966, as amended
Organic Administration Act of 1897
Safe Drinking Water Act of 1974, as amended
Protection of Wetlands Executive Order 11990

I have determined that none of the action alternatives will have any overall differences in their effects on minorities, Native American Indians, women, or the civil liberties of any American citizen. I have also determined that implementing my decision will not have a disproportionately adverse health or environmental effect on any low-income or minority populations, and will affect all persons who visit the area equally (Environmental Justice: In accordance with Executive Order 12898).

IMPLEMENTATION

Implementation of this decision may occur immediately following this Decision Notice being signed.

FOR FURTHER INFORMATION

For further information concerning this decision, contact Cambria Armstrong, Interdisciplinary Team Leader, 2150 Centre Avenue, Building E, Fort Collins, CO 80526, (970) 295-6768, or cnarmstrong@fs.fed.us.



MONTE WILLIAMS
Forest Supervisor
Responsible Official
Arapaho and Roosevelt National Forests
and Pawnee National Grassland



Date

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Appendix A

Maps

Figure 1. Forsythe II vicinity map.

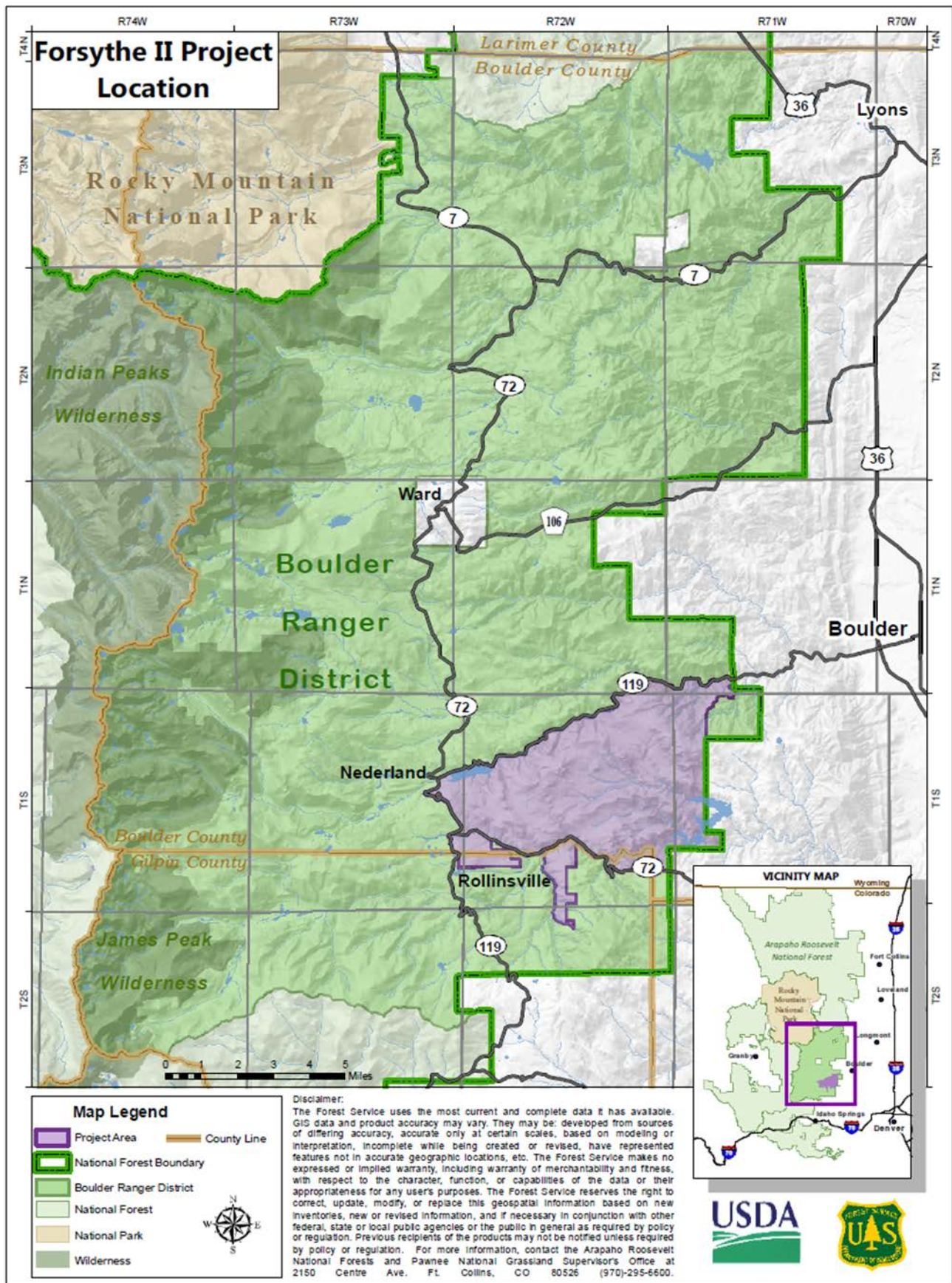


Figure 2. Vegetation treatment Decision map.

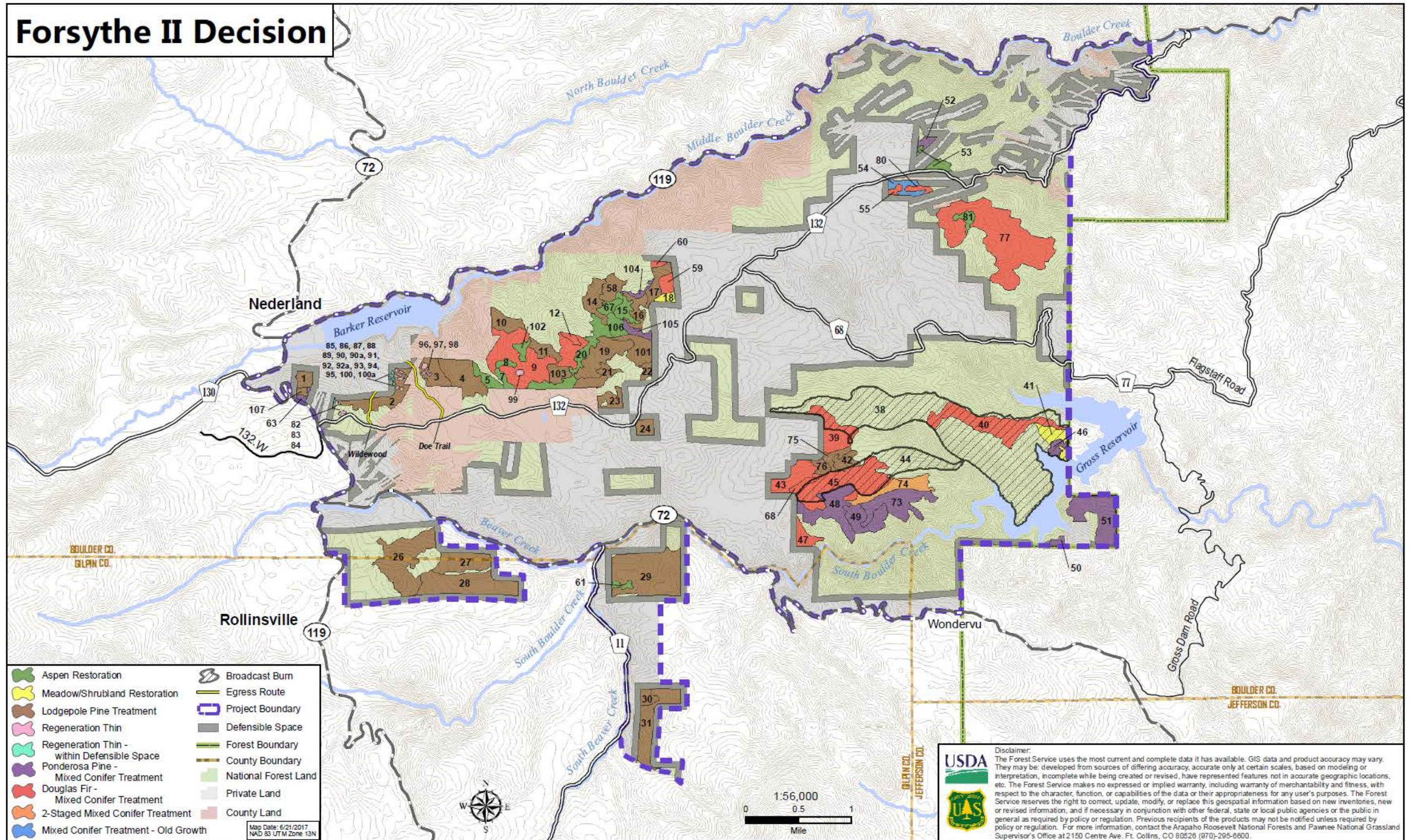
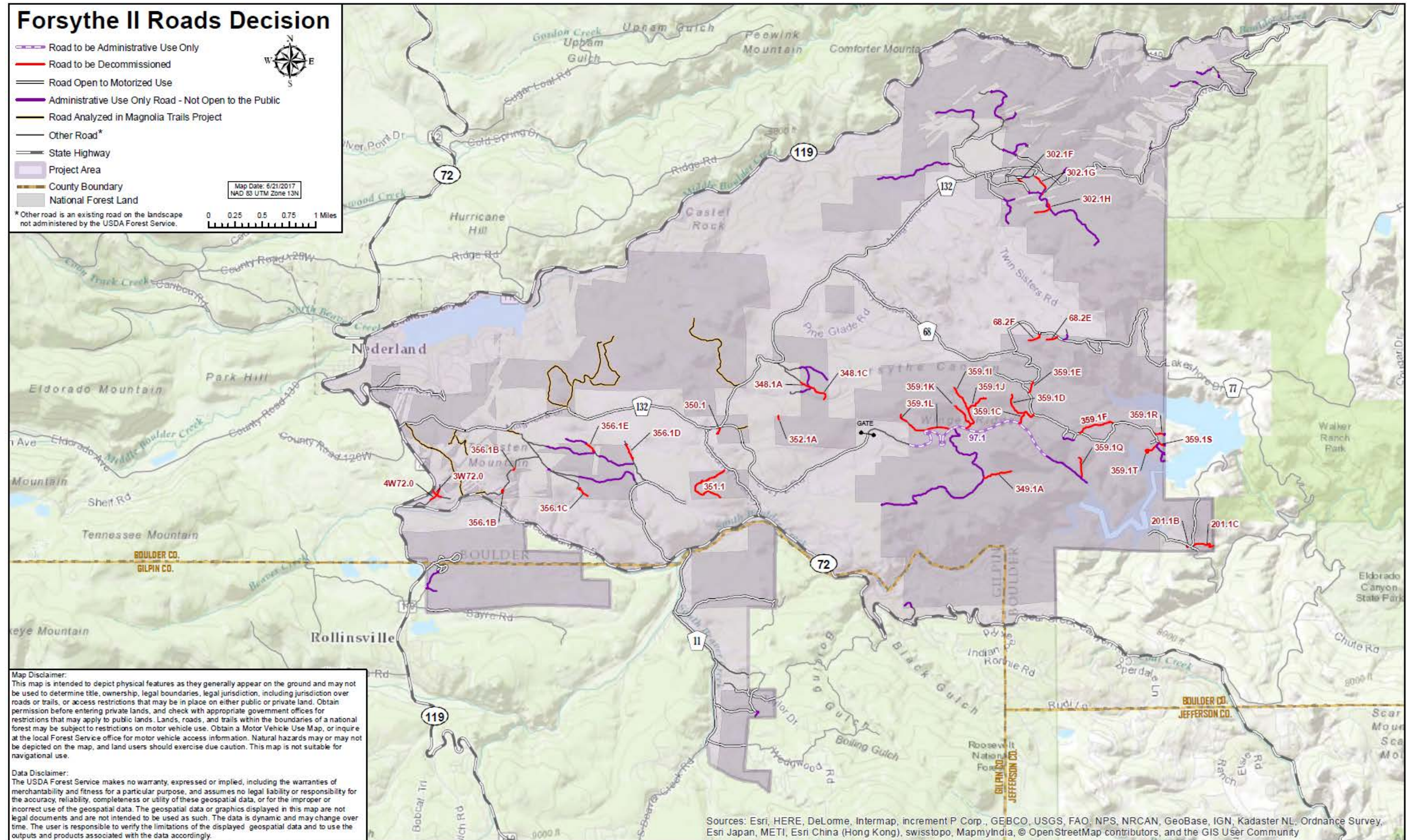


Figure 3. Road actions Decision map.



Appendix B

Descriptive Treatment Table

Table 2. Decision treatment table.

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
1	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	15	4.5
2	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	49	14.7
3	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	31	9.3
4	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	64	19.2
5	Aspen Restoration	Manual	chip and/or pile & burn	17	17
7	Aspen Restoration	Manual	chip and/or pile & burn	9	9
8	Aspen Restoration	Manual	chip and/or pile & burn	7	7
9	Douglas-fir Mixed Conifer Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	156	156
10	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	28	8.4
11	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	20	6
12	Douglas-fir Mixed Conifer Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	7	7
14	Lodgepole Pine Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	35	10.5
15	Aspen Restoration	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	21	21
16	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	26	7.8

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
17	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	26	7.8
18	Meadow/Shrubland Restoration	Manual	chip and/or pile & burn	8	8
19	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	64	19.2
20	Aspen Restoration	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	58	58
21	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	27	8.1
22	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	10	3
23	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	21	6.3
24	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	16	4.8
26	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	122	36.6
27	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	55	16.5
28	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	109	32.7
29	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	164	49.2
30	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	14	4.2
31	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	73	21.9
38	Broadcast Burn	Broadcast Burn	Broadcast Burn	747	747
39	Douglas-fir Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	59	59

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
40	Douglas-fir Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	106	106
41	Meadow/Shrubland Restoration	Manual	chip and/or pile & burn	29	29
42	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	19	5.7
43	Douglas-fir Mixed Conifer Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	42	42
44	Broadcast Burn	Broadcast Burn	Broadcast Burn	198	198
45	Douglas-fir Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	131	131
46	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	12	12
47	Douglas-fir Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	20	20
48	Ponderosa Pine Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	75	75
49	Ponderosa Pine Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	47	47
50	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	7	7
51	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	89	89
52	Ponderosa Pine Mixed Conifer Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	8	8
53	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	16	16
54	Mixed Conifer Treatment OG	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	18	18
55	Douglas-fir Mixed Conifer Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	5	5

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
58	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	26	7.8
59	Douglas-fir Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	14	14
60	Douglas-fir Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	5	5
61	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	7	7
63	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	5	5
67	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	13	13
68	Douglas-fir Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	10	10
73	Ponderosa Pine Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	76	76
74	2-Staged Mixed Conifer Treatment	Manual	1) pile & burn 2) thin and pile & burn	44	44
75	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	14	4.2
76	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	12	3.6
77	Douglas-fir Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	269	269
80	Douglas-fir Mixed Conifer Treatment	Mechanical/Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	8	8
81	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	12	12
82	Regeneration Thin	Manual	chip and/or pile & burn	1	1

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
83	Regeneration Thin	Manual	chip and/or pile & burn	0.4	0.4
84	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.3	0.3
85	Regeneration Thin	Manual	chip and/or pile & burn	1	1
86	Regeneration Thin	Manual	chip and/or pile & burn	1	1
87	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.5	0.5
88	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.4	0.4
89	Regeneration Thin	Manual	chip and/or pile & burn	1	1
90	Regeneration Thin	Manual	chip and/or pile & burn	0.5	0.5
90a	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.5	0.5
91	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.6	0.6
92	Regeneration Thin	Manual	chip and/or pile & burn	0.5	0.5
92a	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.5	0.5
93	Regeneration Thin	Manual	chip and/or pile & burn	0.5	0.5
94	Regeneration Thin	Manual	chip and/or pile & burn	1	1
95	Regeneration Thin	Manual	chip and/or pile & burn	0.4	0.4
96	Regeneration Thin	Manual	chip and/or pile & burn	2	2
97	Regeneration Thin	Manual	chip and/or pile & burn	1	1
98	Regeneration Thin	Manual	chip and/or pile & burn	0.3	0.3
99	Regeneration Thin	Manual	chip and/or pile & burn	2	2
100	Regeneration Thin	Manual	chip and/or pile & burn	0.5	0.5
100a	Regeneration Thin within Defensible Space	Manual	chip and/or pile & burn	0.5	0.5

Unit Number	Vegetation Treatment	Treatment Method	Slash Treatment	Unit Acres	Treatment Acres
101	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	39	11.7
102	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	11	11
103	Lodgepole Pine Treatment	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	20	6
104	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	8	8
105	Ponderosa Pine Mixed Conifer Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	12	12
106	Aspen Restoration	Mechanical	Remove off-site and/or chip and/or masticate and/or pile & burn	18	18
107	Lodgepole Pine Treatment	Manual	Remove off-site and/or chip and/or masticate and/or pile & burn	5	1.5
Total Vegetation Treatment Acres				2,579.4	1,807
Total Broadcast Burn Acres				945	945

Appendix C

Design Criteria

In response to public comments and collaboration for this project and from analysis by the USFS resource specialists, project design criteria were developed to minimize the potential impacts the decision activities may cause. Experience has shown these project design criterion to be effective in other projects.

All Treatment Areas

1. Following project implementation, at least 70% effective ground cover should be maintained within mechanical and manual treatment units to lower the risk of soil erosion. Effective ground cover includes surface rock cover, pine needle cover, and cover provided by low lying vegetation and mulch.
2. In chipped areas, chip depth shall average less than 3". Chip depth of up to 5" may occur over small areas (not to exceed 5% of the treatment unit). Chips shall be distributed in a mosaic pattern over no more than 30% of the activity area.
3. In masticated areas, chunks shall be distributed to avoid dense accumulations that could potentially impede growth of native grasses, forbs or seedlings.
4. All treatment areas will be reviewed by a USFS Landscape Architect prior to final unit layout. Unit boundaries shall be natural edges whenever possible and prevent the appearance of uniform tree spacing and straight line unit boundaries. Straight line boundaries shall be treated by 'feathering⁴' and 'scallop⁵'.
5. Minimize damage to aspen 8" DBH and larger.
6. Leave live and dead wildlife trees as individually designated by a USFS Wildlife Biologist and/or according to marking guidelines agreed to in coordination with a USFS Wildlife Biologist, Silviculturist, Fuels Planner, and prep crews. Leave trees may include trees with cavities, trees with large squirrel middens, and/or Abert's squirrel nest trees.
7. Within treatment units where Rocky Mountain juniper occurs, leave an average of one large individual, or clump of three or more if available, Rocky Mountain Juniper per acre.
8. If a federally listed or USFS sensitive wildlife species is identified within treatment units or areas potentially impacted by proposed project activities prior to or during implementation, a USFS Wildlife Biologist will be contacted as soon as possible to ensure Forest Plan direction and Endangered Species Act requirements are met.
9. If raptor nesting activity (e.g. nesting behavior, nest sites, or fledglings) is detected within treatment units or areas potentially impacted by proposed project activities prior to or during implementation, a USFS Wildlife Biologist will be contacted as soon as possible to ensure Forest Plan direction for nesting raptor protection are met.

⁴ To 'feather' would be to go from a clearcut or maximum thinned density to existing stand density in 50 to 200 feet in a gradual progression.

⁵ To 'scallop' would be to cut curvilinear edges of varying wavelength and amplitude for example, a short one followed by two long ones, and then a medium one, etc.

10. Retain a minimum of 5 of the largest available dead trees, in clumps where available, minimum 8" DBH for lodgepole and 10" for ponderosa pine and Douglas-fir, per acre, as an average across each treatment unit. Give preference to retaining ponderosa pine snags where available. Criteria for snag selection will be specified in the silviculture prescription with emphasis on retaining the largest diameter snags present. If the minimum number of snags is not available, then the largest available live, green replacement trees will be retained for future snags.
11. Retain a minimum of 5 logs and 100 linear feet per acre of existing down logs distributed randomly across each unit, with a minimum diameter of 8" for lodgepole pine and 10" for other conifer species. Do not cut live trees to meet this criterion, except where live trees will be cut according to the prescription in lodgepole pine patchcuts and clearcuts. Jackstrawed bole wood, created by treatment, 6" in diameter or greater and left in the unit must be scattered and be in contact with the ground. Individual boles of 6" or greater can be left unbucked.
12. Within flammulated owl territories:
 - a. Thin small and medium sized trees to maintain large-open grown canopies.
 - b. Retain live trees, 12" DBH and greater, including on ridgelines.
 - c. In riparian areas, leave all trees with existing cavities and remove conifers less than 8" DBH except those with cavities.
13. All treatment units adjacent to existing raptor nests will be resurveyed the nesting season prior to implementation. This is to ensure that the birds have not moved their nests into an active unit.
14. Buffer known roost locations for Fringed myotis bat and Townsend's big-eared bat from treatment activities during key activity times. Prescribed burning should avoid smoke saturation of roost sites during key activity times.
15. Sensitive plant species and species of local concern locations will be determined by a USFS Botanist and designated buffers will be applied.
16. All areas potentially impacted by proposed project activities that have not been surveyed for rare plants and that contain high-quality suitable habitat for sensitive and local concern plant species will be surveyed in such habitat prior to disturbance activities.
17. To minimize risk of noxious weed introduction and spread, require all equipment to be used for ground-disturbing activities for this project (not including service trucks or other vehicles that remain on roadways) to be cleaned, i.e., free of mud, dirt, plant parts, and seeds, or other debris that could contain or hold seeds, prior to entering the project area. All wheeled or tracked vehicles, including trailers, or other equipment entering constructed temporary roads shall be cleaned prior to entry to the project area. Equipment will be considered free of soil and other debris when a visual inspection does not disclose such material. Equipment shall be re-cleaned prior to transfer from a unit where noxious weeds are known to be present into a unit where noxious weeds are not known present.
18. For known weed occurrences and for any new noxious weed infestations found in or near units prior to or during implementation of vegetation treatment, implementation personnel will coordinate with USFS District Invasive Plants Coordinator to implement appropriate prevention measures, such as avoidance, treatment of weeds prior to fuels implementation, and/or additional equipment cleaning requirements, such as between infested and uninfested units.
19. Coordinate with USFS District Invasive Plants Coordinator to locate landings, staging areas, skid trails, burn piles, and other areas of severe soil disturbance to best reduce risk of spread of invasive plants.

20. Use non-agricultural mulch materials for revegetation and sediment/erosion control. Non-agricultural products include wood straw or shred and wattles made from excelsior, wood or other non-agricultural materials.
21. To avoid damage to the Boulder Gravity Line, driving across the line shall be avoided.
22. Consultation with Denver Water Board shall occur for any project activities occurring within the FERC boundary for the Gross Reservoir Hydroelectric Project.
23. There are several utility (electric, natural gas and communication) lines within the project area. Care shall be taken when working around these lines to avoid damage to them or their infrastructure.
24. All recreation facilities (NFS roads, NFS trails, recreation sites) and infrastructure (such as gates, fences, sign kiosks, picnic tables) shall be protected from damage from all treatment activities. Any damaged facilities or infrastructure shall be repaired, replaced, or reconditioned to the level of the existing condition, or greater, to provide safe public access, as needed. Consult with Recreation Staff and/or Specialist as needed.
25. High use public access portals (such as trailheads and highly traveled trail corridors) will not be used for fuels treatment project work or long term operations unless no other alternative exists. If used, safe public access on weekends will be provided. Fuels treatment work sites will be designed in a manner to allow safe public access even when occupied. Where this is not feasible, short-term forest orders closing fuels treatment areas to public access will be implemented, as needed, to ensure public safety, protect natural resources and improve effectiveness of project area objectives. Involve the Recreation Staff and/or Specialist through planning, implementation, and monitoring as needed.
26. Public notification shall occur prior to major project activities to raise public awareness. Local agency cooperators will be notified about the duration, intensity, and potential issues for the project work.
27. Knolls (small rounded hilltops) and geologic features (rock outcrops) will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs.

Mechanical Treatment Areas

1. No mechanical logging equipment (e.g. feller-bunchers, skidders, etc.) shall be permitted to operate within a 100 foot buffer from the edge of the water around perennial streams⁶, intermittent streams⁷, lakes, ponds, wetlands, fens, or wet meadows⁸. A no mechanical treatment buffer of 328 feet (100 meters) from the edge of the water shall be established around Winiger Gulch and the unnamed southern tributary to Winiger Gulch as shown in the attached map. Activities that shall be excluded from the buffer include:
 - Mechanical fuels treatment operations using heavy equipment
 - Machine piles
 - Vehicle service and fueling areas
 - Driving tracked or wheeled machinery except along existing roads, in the southwest corner of Unit 40 and the northeast corner of Unit 74 where they overlap mapped Preble's meadow jumping mouse habitat.
2. For ephemeral streams⁹, equipment shall be excluded from the stream channel, except to cross at points designated by a USFS Contract or Sale Administrator(s).
3. Limit operation of heavy equipment to slopes of less than 30%. Slopes up to 40% may be considered on a site specific basis and will require evaluation by a Soils Scientist.
4. Slash take back will only be allowed on skid trails, in patchcut/clearcut units where it is needed to meet the coarse and fine woody debris retention criteria (see Patchcut/Clearcut Areas, 1a and 1b, in this document), or other areas designated as adversely impacted by a USFS Soil Scientist/Hydrologist/COR/Sale Administrator, for soil stabilization, and to a maximum depth of 18 inches.
5. A cultural resource inventory will be completed on all units that have been identified by a USFS Archaeologist in consultation with the SHPO. The survey and reports will be completed and sent to the SHPO prior to project implementation. Implementation will not begin until the SHPO has concurred with a determination of *no historic properties affected* or *no historic properties adversely affected*.
6. Sites located during the field inventory that are evaluated as eligible for the NRHP, will have a 50 foot buffer placed around the exterior site boundary. No mechanical treatment will occur within the site boundary and the 50 foot buffer. When treatment is necessary, eligible sites and the 50 foot buffer will be hand treated for hazard trees and accumulated fuel build up by hand felling trees. Slash will either be hand piled for chipping and/or bucked up by hand, and loaded onto rubber tired vehicles to be hauled to designated burn piles for burning. No thinning, pile burning, or other slash treatments will occur within these buffers unless determined to be appropriate by a USFS Archaeologist.
7. All NRHP eligible or unevaluated sites within the units proposed for mechanical treatments will be flagged on the ground for avoidance during implementation.

⁶ Perennial Streams: Streams that carry water year round.

⁷ Intermittent Streams: Streams that carry water for at least some period of time annually, sufficient to maintain a defined streambed.

⁸ Wetlands, fens, and wet meadows may occur within or adjacent to treatment units. These features may not be mapped and may only be discovered during unit layout.

⁹ Ephemeral Streams: Streams that carry water only during precipitation or runoff events. Ephemeral streams do have a defined streambed and do not support riparian vegetation.

8. Previously undiscovered sites encountered during the course of project activities will be avoided until they can be evaluated by a USFS Archaeologist. If affected properties are discovered after project activities are completed, the USFS will document any damage and consult with SHPO and Council pursuant to the procedures in 36CFR Part 800.13(b).

Manual Treatment Areas

1. Tree cutting of conifers can occur to the edge of the stream bank for perennial, intermittent and ephemeral streams. No woody riparian vegetation (e.g. willows, alders, river birch, etc.) shall be cut. Trees shall be directionally felled away from stream channels where practicable.
2. Retain all existing down woody material 5" DBH or greater within and up to 100 feet of riparian areas. This applies to portions of Units 40 and 74 where they overlap Preble's meadow jumping mouse habitat.
3. Lopped and scattered slash shall be removed from the stream channel of perennial, intermittent and ephemeral streams.
4. No tree cutting shall occur within wetlands, fens, or wet meadows. These features may not be mapped, and may only be discovered during unit layout.

Mixed Conifer Areas

1. Trees shall be marked as either leave trees or cut trees, whichever is most efficient, prior to any cutting.
2. Recognizing that not all units may have trees greater than 14 inches DBH, and to acknowledge the value of larger trees to the public, the diameter cut limit will be adjusted based on the existing condition while retaining 10% of the existing basal area in the largest diameter trees in each unit. The maximum diameter cut limit is 14 inches DBH.

Patchcut/Clearcut Areas

1. Retain coarse and fine woody debris (CWD and FWD) throughout clearcut/patchcut units to maintain long term soil productivity.
 - a. At least 8 tons/acre of CWD¹⁰, with preference for large diameter material (boles)
 - b. At least 4 tons/acre of FWD¹¹
2. Involve a USFS Wildlife Biologist during layout of patchcuts/clearcuts to determine needs for narrow areas and/or island exclusions for wildlife crossing and cover.
3. In general, locate openings away from system trails, or social trails that will be changed to system trails, once a Decision is made on the Magnolia Trails Project. A wildlife biologist shall approve locations of patchcuts and clearcuts in the vicinity of such trails.
4. In order to meet scenery standards within the proposed patchcut/clearcut lodgepole pine dominated units, three to five uncut islands of trees must be retained within patchcut/clearcuts greater or equal to 5 acres in size. These islands shall be at least ½ acre in size and total 25% of the appropriate patchcut/clearcut area within each unit. The acreage within the islands will not decrease the number of overall acres to be cut within a designated patch/clearcut unit. For example in unit 11 (20 acres), 30% or 6 acres of the unit could be cut utilizing a combination of patchcut/clearcuts. To equate to a one 6-acre clearcut that is treated, the boundary of the clearcut will encompass 7.5 acres to account for the 25% acre retention to be included without changing the intent of reducing the overall acreage by 30%.

¹⁰ Coarse woody debris is defined as material >3" in diameter

¹¹ Fine woody debris is defined as material <3" in diameter

5. Retain all areas of mixed conifer inclusions $\frac{1}{2}$ acre or less in lodgepole pine stands. If the inclusion is larger, thinning as prescribed could be implemented. An exception is cutting trees for skid trails and landings.

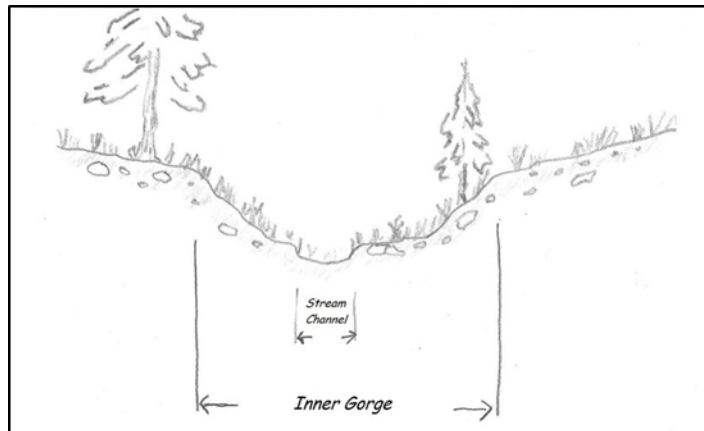
Old Growth/Effective Habitat/Interior Forest Areas

1. In Management Area 3.5, exclude vegetation treatment from inventoried or discovered lodgepole pine old growth per Forest Plan standard. Exceptions may be made if the lodgepole old growth is considered non-functional at time of implementation. This determination of functionality is to be made for the stand as a whole within the treatment unit.
2. Where effective habitat occurs in treatment units, unit boundaries and/or canopy cover reduction may be modified as determined by a wildlife biologist, if needed to maintain these habitats.
3. Within mapped interior forest and within a 328 foot buffer around mapped interior forest, retain at least 40% canopy cover. Exceptions may occur based on involvement of wildlife biologist and silviculturist and use of updated USFS data.
4. Retain a minimum of 5 of the largest available dead trees, minimum 8" DBH for lodgepole and 10" for ponderosa pine and Douglas-fir, per acre, as an average across old growth retention and inventoried stands within a treatment unit. Give preference to retaining ponderosa pine snags where available. Criteria for snag selection will be specified in the silviculture prescription with emphasis on retaining the largest diameter snags present. If the minimum number of snags is not available, then the largest available live, green replacement trees will be retained for future snags.

Slash Piles

1. To the extent practicable, construct machine slash piles on landings. If machine piling is done off landings, conduct piling to leave topsoil in place and to avoid displacement of topsoil. Machinery that lifts and places material into burn piles is recommended over machinery that pushes or drags material into burn piles.

2. Hand constructed burn piles shall be located at least 50 feet from perennial streams, wetlands, fens, wet meadows, and aspen stands. For intermittent and ephemeral streams, burn piles shall be located 50 feet from the stream or outside the inner gorge, whichever is less. For Preble's meadow jumping mouse, piles shall be located at least 100 feet from the edge of the water around Winiger Gulch and the unnamed southern tributary to Winiger Gulch. If it not practicable to locate piles sufficiently away from streams, or if doing so will violate other requirements (e.g. minimum spacing between piles, minimum distance from residual trees), do not cut the water adjacent trees, unless approved by a USFS Soil Scientist, Hydrologist, or Fish Biologist.



Inner Gorge: Many streams exhibit a sharp increase in slope as the stream channel is approached. The first sharp break in slope on either side of the stream defines the inner gorge.

3. To minimize long term effects of pile burning, watershed, botany and/or implementation personnel will conduct surveys to identify if and where burn pile restoration actions are needed following pile burning activities. Any combination of the following restoration actions will be recommended if/where needed:
 - a. Tilling/scarifying after burning to promote recovery by breaking up water repellent layers, increasing water infiltration, and mixing in organic material from areas adjacent to the pile.
 - b. Weed treatments
 - c. Seeding
 - d. Covering with litter, duff and/or slash
4. Burn piles should be located out of sight of major viewpoints as designated by a USFS Landscape Architect whenever possible within the constraints of the contract.
5. In treatment units where slash is piled by hand, leave an average of 2 piles per acre for wildlife habitat, including any piles remaining from previous vegetation treatment, distributed randomly throughout the unit.
6. Minimum pile size, hand or machine created, shall be no less than 6 feet high by 6 feet wide.
7. Consult USFS Fuels Specialist during contract preparation for current maximum pile size and pile separation requirements as regulated by the Colorado Air Pollution Control Division.
8. Piles shall be constructed in a manner to minimize large air spaces and dirt within the piles. Piles shall not have material extending more than 4 feet in any direction beyond the pile perimeter and a minimum of 4 feet of separation from pile perimeter to surrounding down woody material to reduce unwanted fire spread.

9. Construct a minimum of a 6 foot wide control line, down to bare mineral soil, around each machine pile to create separation between piled material and surrounding slash mat. If piles are grouped, a single control line may be placed around the entire group rather than around individual piles. The scraped material must be moved outward to avoid a berm adjacent to the piles' edge.
10. In machine units, reasonably gather and place activity slash material, 1" to 6" diameter, into piles. If more than 50% of a treatment unit has continuous slash depth greater than 6" after initial treatment, additional piling will be required.
11. In manual units, pile sound, existing and/or created slash material, 1" to 6" diameter and 2 feet or longer. Alternatively, any slash that must be moved more than 50 feet to meet minimum required pile size may be lopped and scattered to a maximum depth of 18". Lopped and scattered material is expected to be a rare occurrence and most likely occur in very open grown areas where a few trees are required to be cut to meet spacing specifications, but not enough trees are cut to produce enough slash to create a minimum sized pile.
12. Locate machine piles a minimum of 150 feet and hand piles a minimum of 50 feet from any infrastructure or private property boundary.

Broadcast Burning

1. Limit total unrecovered burned area within the project area to no more than 340 acres.
2. Design and implement prescribed fire for low soil burn severity effects and rapid recovery¹² of ground cover. Soil burn severity classes are defined in the Field Guide for Mapping Soil Burn Severity (http://www.fs.fed.us/rm/pubs/rmrs_gtr243.pdf).
3. Rehabilitate constructed fire lines by installing water bars, raking topsoil back over the line, covering with slash or other mulch materials; and seeding, if recommended by a USFS Botanist.
4. A 300 foot buffer shall be established around Winiger Gulch and the unnamed southern tributary to Winiger Gulch as shown in the attached map. No active ignition shall occur within the buffer. Fire will be allowed to back down into riparian areas and streamside zones. If needed to accomplish burn objectives or to provide for safety, establishment of control features (e.g. fire lines) or active ignition may occur within the buffer following consultation and agreement with a USFS Fish Biologist, Soil Scientist or Hydrologist.
5. Conduct burning operations so that no more than 10% of either stream bank area within riparian zones burns with high intensity (i.e. top kill of willow and/or aspen). Actively suppress fire if this 10% threshold is exceeded.
6. No active ignition shall occur within 25 feet of ephemeral streams.
7. In prescribed burn Units 38 and 44, choose individuals or clumps of three or more, if available, Rocky Mountain juniper to leave that are not ladder fuels for other conifers 12"+ DBH. Leave trees should be at least 300 feet away from property boundaries and prescribed burn containment lines.

¹² An unrecovered burn is one that has insufficient ground cover to reduce runoff, erosion, and sedimentation rates to pre-burn conditions. Typical recovery time is 2-4 years, but is highly variable with vegetation type and precipitation.

8. Prior to prescribed burning in Units 38 and 44 within inventoried old growth, old growth retention, and identified old growth development areas, remove ladder fuels from around trees 12" DBH and larger to minimize fire moving into crowns of these larger trees. Where feasible, such as near firelines during mopup, moisten coarse woody material within root zones of trees 12" DBH and larger, to minimize root damage from smoldering material.
9. Prior to prescribed burning in Units 38 and 44, scratch fireline around and/or use other techniques to minimize fire impacts to at least 5 logs per acre totaling at least 100 linear feet. These logs should have a minimum diameter of ten inches if available, or largest down logs available.
10. A cultural resource inventory will be completed on all areas within prescribed burn units that have been identified by a USFS Project Archaeologist in consultation with the SHPO. This inventory may be completed after the NEPA decision has been made but prior to burn implementation.
11. All NRHP eligible or unevaluated sites located within prescribed burn units will be marked on the ground by the Project Archaeologist. A USFS Project Archaeologist and Fire Staff will design protection measures to remove the sites from the burn's Area of Potential Effects. These protection measures will take into consideration the site type, environmental setting, and anticipated burn conditions. These protections may include, but are not limited to: fuel breaks, no treatment buffers, wrapping, foaming, wetting, black line, fire line (machine or hand dug), and raking.
12. All potentially ground-disturbing fire lines, staging areas, helispots, and all road improvement, construction or deconstruction, or designated ATV or vehicle routes/ways will be intensively (Class III) surveyed for cultural resources prior to project implementation; any NRHP-eligible cultural resources will be avoided by project design.

Timing Restrictions

1. Avoid treatment operations from May 1 through August 10 in flammulated owl territories. Avoidance areas will be determined by a USFS Wildlife Biologist based on survey results, flammulated owl territory size, topography, and vegetation. Prescribed burning operations may be conducted if determined to be appropriate by a USFS Wildlife Biologist. This applies to most units in the Winiger Ridge and South Winiger areas, and may apply to other areas if appropriate based on survey results.
2. Raptor nest areas, including species-specific buffers, will generally have no treatment activity from March 1 through September 15, depending on species, or until determined unoccupied by the wildlife biologist. Access through buffers during this period will be assessed by a USFS Wildlife Biologist.
 - a. If known nests become unoccupied, additional surveys will be conducted during the breeding season prior to any project activity. The extent and timing of surveys will be determined by a USFS Wildlife Biologist.
 - b. Units with suitable nest habitat will also be resurveyed for new nest locations prior to implementation. If a new active nest is detected during surveys or becomes known by other means, appropriate mitigations will be implemented.
 - c. For northern goshawk nests including alternate nest sites, exclude treatment in up to a 30-acre area containing the nest tree. Site-specific exclusion areas will be determined by a USFS Wildlife Biologist based on topography, vegetation and other factors. Outside of the breeding season, generally from September 16 through February 28, limited thinning may be allowed within this area if determined necessary to help reduce the risk of losing the nest site to wildfire. A USFS Wildlife Biologist will help design and approve treatment.

3. Unless a site-specific exception is determined to be appropriate by a USFS Wildlife Biologist, avoid treatment from December 1 through March 30 in elk severe winter range and winter concentration areas. These areas are based on the most current available mapping data from Colorado Parks and Wildlife.
4. Project operations will not be conducted on Memorial Day, 4th of July and Labor Day holiday weekends and on Sundays. Operating times for heavy equipment and chainsaws shall be limited to the hours of 7 a.m. to 7 p.m.
5. Piles outside the 100 foot riparian buffer but within 328 feet of the stream channel may only be burned from November 1 through April 30 during Preble's meadow jumping mouse hibernation. This applies to Units 40 and 74.

Roads/Skid Trails/Temp Roads/Landings/Equipment Use

1. Temporary roads, skid trails, landing areas, and equipment use in mechanical treatment units shall be subject to operating equipment restrictions to protect soil and water. Operate heavy equipment only when soil moisture in the upper 6 inches is below the plastic limit (a ball can be formed in the fist that holds together on gentle tossing or shaking) OR protected by at least one foot of packed snow or 2 inches of frozen soil. This may mean temporary restriction on equipment operation and travel within the treatment area in periods of heavy rains and snow or when soils are wet.
2. The USFS shall approve locations of skid trails and landings prior to treatment. Re-use existing skid trails as much as practicable to minimize new disturbance. Within mapped effective habitat, a USFS Wildlife Biologist will approve locations of skid trails and landings.
3. All temporary road construction, including skid trails, shall be obliterated within one year of completion of use, including pile burning. Project implementation, watershed, soil, and engineering personnel shall cooperate to determine appropriate obliteration methods.
 - a. Temporary road surfaces, including skid trails and landings, shall be decompacted along the entire road/skid trail length or landing area unless waived by Soil Scientist. Roads that were constructed with cut and fill shall be partially or fully recontoured or pitted. Roads that were constructed on the natural ground contour shall be pitted, subsoiled, or ripped.
 - Partial recontouring of the road prisms shall be utilized in areas where it is not feasible or beneficial to disturb soils previously unaffected by construction operations to stabilize a decommissioned temporary road. Factors such as steep slopes, large amounts of rock, or vegetation may impact a decision to utilize partial recontouring. Partial recontouring shall use available fill material from original construction. Fills shall be returned to, and compacted into, the cut removal area. No further ground disturbance involving cutting material shall occur. Handle soil to ensure that minimal segregation of materials occurs. Compaction may be by machine track or bucket. The recontoured surface shall be outsloped a minimum of 5% for the entire road prism width and no berms shall remain. Finished grades shall minimize drainage following the contour of the road, where necessary grade dips shall be installed along the grade to direct drainage off the disturbed area. Where high cut slopes are present, continue pulling up fill material and backfilling cut removal areas until no cut slope remains greater than 1:1 H:V in slope and two feet in height.

- Full recontouring of the road prisms shall be utilized in decommissioning temporary road segments where it is both feasible and advantageous to disturb soil previously unaffected by construction operations to completely recontour the road. Full recontouring shall include pull up of all fill material and place/compact into the cut removal area. Very little disturbance of the natural ground under the fill shall occur. The final slope area, over the entire width of the road prism, shall reproduce the pre-road natural slope. It shall blend in with the surrounding slope and no berms or windrows of any material shall remain.
 - b. Where applicable, remove all temporary stream crossings and restore stream bed and banks.
 - c. Restore natural drainage patterns across the road template.
 - d. Provide effective closure at junctions with open roads and NFS trails to prevent unauthorized use. Effective closure techniques may include recontouring or pitting for site distance, fencing, gates, berms, barrier rocks of various sizes (median size of 2.5 ft. x 2.5 ft. x 2.5 ft. [1 ton], grouped in natural arrangements and 1/3-1/2 buried), plantings, and/or felled trees.
 - e. Scatter slash on restored disturbance.
 - f. Restore ground cover using native seed or plants, methods and timing, and soil amendments as practicable to meet revegetation objectives and in consultation with a USFS Botany Representative. Use government furnished seed when available.
4. Vegetation treatment implementation and related contracting will incorporate use of existing and/or previously used areas as much as possible for fuels treatment operations, in order to reduce the amount of new disturbance which usually leads to new “social” routes being created. Any non-system roads which are used for access to fuels treatment units shall be considered to be temporary roads and shall be obliterated following the design criteria for temporary roads.
 5. Where topsoil depth exceeds 2”, topsoil shall be salvaged and stockpiled from all areas to be disturbed by construction of temporary roads and road improvements and shall be incorporated into the reclamation.
 6. Temporary road construction shall be kept to the minimum construction possible to accommodate intended use and shall meet the following guideline.
 - a. Roads shall not follow fall line of the land but shall traverse contours to minimize slopes. Generally, slopes of 10 percent or less shall be maintained, however reaches of 200 feet or less may be up to 14 percent in slope.
 - b. Road alignment shall be selected to minimize cuts and fills to 2-foot maximum.
 - c. Road widths shall be the minimum required for the equipment and shall not exceed 15 feet.
 - d. Roads shall be outsloped where possible and rolling dips shall be constructed instead of ditches and culverts, wherever practicable, as necessary to control sediment and erosion. Drainage features shall not drain directly into streams. Best Management Practices shall be employed at the termination of drainage features to protect vegetation from sedimentation.
 7. Construction of temporary roads and road improvements shall to the extent possible minimize ground disturbance, avoid crossings of drainages, provide buffers to drainages and sensitive areas, avoid steep slopes, avoid wet areas and swale bottoms, avoid unstable slopes, and shall minimize erosion potential and sedimentation of water ways.
 8. If material will be imported for road base or other uses, developed borrow sources or pit-run material sources will be inspected for weeds, weed parts or weed seeds by either a Forest Service employee or other party approved by the Forest Service. Aggregate base or riprap sourced from commercial pits does not need to be inspected.

9. Planning, construction and maintenance of temporary roads shall include sediment and erosion controls as necessary to prevent resource damage. Such controls are to be maintained and supplemented as necessary through the life of the project.
10. Prior to the construction on NFS land of any egress route from Big Springs subdivision, the Forest shall approve locations, plans, best management practices, storm water management plans, and any other plans necessary to protect NFS lands and resources. Resource protection measures shall be installed and maintained during construction and for a sufficient time after construction until the site has stabilized.
11. System roads shall not be used during winter and wet periods when there is a reduction in the ability of the road or road structure to support traffic, provide drainage, or provide safe transportation. Examples of reduction in the support value or safety of the roadway include, but are not limited to, soil, mud, debris, or oversized rocks incorporated into the roadway that affect drainage, normal maintenance activities, or the strength of the surface structure; intermixing of slash or subgrade soil with aggregate base; severe alteration of drainage that leads to surface aggregate loss, changes in character of ditches or drainage structures, or concentration of water that harms streams or water sources; accelerated breakdown of asphalt surfaces.

If removal of snow from system roads for winter operations is allowed, provide adequate maintenance to maintain the road surface structure, drainage of the roadway, and safe passage for vehicles.

Snow storage areas shall be approved by the USFS. Avoid riparian areas, wetlands or streams for snow storage to the extent possible.

Space, construct, and maintain drainage holes in the dike of snow or berm caused by snow removal operations. Place drain holes to obtain surface drainage without discharging on erodible fills.

Perform maintenance work in a manner to preserve and protect roads and appurtenances, and prevent erosion damage to streams and other Forest values.

Any type of equipment to remove snow may be utilized provided:

- a. The equipment is of the size and type commonly used to remove snow and will not cause damage to the road surface or structure.
 - b. The use of plows or dozers to remove snow requires written approval by the USFS. Equip plows or dozers with shoes or runners to keep the dozer blade a minimum of 2 inches above the road surface.
12. Existing road conditions shall be assessed prior to implementation for all roads to be used for the project including County and private roads used to access National Forest lands. Roads shall be maintained in their existing condition through-out the project, if any widening or other improvements are required for the project these improvements shall be assessed at the completion of the project to determine if they are acceptable or need to be removed.
 13. When the work is complete the existing roads shall be inventoried to ensure drainage is operational and road surface is intact.
 14. Unless the condition of an existing road is suitable for truck and trailer traffic, mechanized equipment shall be 'walked' (travel under its own power as opposed to transported on a trailer) into any units where mechanical treatments is planned.
 15. Coordinate all work and traffic that impacts County roads, including hauling, with the County ahead of the work commencing. Obtain County permits as necessary.

16. Coordinate with road users, who will be impacted by the work, obtain access as necessary and contact information for any temporary closures or other coordination.
17. All roads impacted by project activities shall have warning signs and traffic control as follows:
 - a. In accordance with the “Manual of Uniform Traffic Control Devices.”
 - b. Maintained for through traffic during felling, slash treatment, and/or removal operations.
 - c. Left in an operational condition that will adequately accommodate traffic at the end of each work day.
 - d. Have barricades erected and/or proper signs placed at any traffic hazards in or adjacent to the road at the end of each workday.
 - e. All felled trees shall be decked or removed and slash piled or removed from the bladed, mowed, or brushed road corridor each day.
18. Linear woody material designated to remain from roadway clearing activities shall be placed outside the clearing limits in close contact with, and perpendicular to, the slope. All other available organic and inorganic debris shall be scattered evenly outside of the clearing limits.
19. Roads which have been authorized for private uses should remain available to those uses to the greatest extent possible. Any deterioration of the road should be repaired to a similar or better condition than before project activities occurred.
20. Treatment units that already have off-road impacts and/or the potential for new and increased off-road vehicular use impacts are generally in areas that have a moderate or low slope angle (35% or less), and enough terrain to use the vehicle (four-wheel drive or all-terrain vehicles included). These areas will be protected from further encroachment of motorized vehicles by creating a buffer zone of no treatment or modification of treatment between the road, open for motorized travel, and the treatment area by installing fencing or other barriers made from natural materials (rock or wood). Buffer zones should be wide enough (minimum of 100 feet from edge of road) to discourage attempts at creating new routes. These areas will be identified with input from recreation staff and unit layout personnel prior to final unit boundary designation.
21. NRHP eligible sites located during the field inventory will have a 50 foot buffer established around the exterior boundary of the site. No construction activities will take place within the site and the 50 foot buffer area.
22. All potentially ground-disturbing activities proposed for staging areas, road improvement, construction, or obliteration outside of planned treatment units will be intensively surveyed for cultural resources prior to project implementation. Any NRHP-eligible cultural resources will be avoided by project design.
23. Consultation with Native American tribes must be completed prior to the closure of roads to ensure that access to areas of cultural importance is not inadvertently removed.

Appendix D

Visual Comparison of Initial Proposal, Proposed Action, Action Alternatives, and Draft Decision Compared to Final Decision

Table 3. Visual comparison of Initial Proposal, Proposed Action, all Action Alternatives, Draft Decision, and Final Decision.

Mixed Conifer Treatment	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Old Growth Basal Area (BA) Reduction	n/a	up to 30%	up to 30%	up to 30%	up to 30%	up to 30%	up to 30%	up to 30%
Douglas-fir BA Reduction ¹³	up to 50%	up to 40%	up to 40%	up to 40%	up to 40%	up to 40%	up to 40%	up to 40%
Ponderosa Pine BA Reduction ¹³	up to 50%	up to 40%	up to 40%	up to 50%	up to 40%	up to 40%	up to 50%	up to 50%
2-Staged BA Reduction	n/a	up to 40%	up to 40%	up to 40%	n/a	up to 40%	up to 40%	up to 40%
Thin from Below	n/a	n/a	n/a	n/a	5 inches DBH (Unit 109)	n/a	n/a	n/a
Maximum Cut Limit	None	16 inches DBH	16 inches DBH	14 inches DBH	16 inches DBH	12 inches DBH	14 inches DBH	14 inches DBH
Treatment Method	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Manually	Mechanically or Manually	Mechanically or Manually
Total Mixed Conifer Treatment Acres	1,425	1,594	1,449	1,141	1,358	1,449	1,449	1,233
Lodgepole Pine Treatment	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Percent of unit patchcut/clearcut	up to 80%	up to 50%	up to 50%	up to 30%	up to 50%	up to 30%	up to 30%	up to 30%
Patchcut Size	1-5 acres	1-5 acres	1-5 acres	1-5 acres	1-5 acres	1-5 acres	1-5 acres	1-5 acres
Clearcut Size	5-20 acres	5-20 acres	5-20 acres	5-10 acres	5-20 acres	n/a	5-10 acres	5-10 acres
Treatment Method	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually
Total Lodgepole Pine Treatment Acres	1,197	689	741	308	383	445	445	331
Regeneration Thin Treatment (Lodgepole Pine)	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Regeneration Thin Spacing	10-15 feet	10-15 feet	10-15 feet	10-15 feet	10-15 feet	10-15 feet	10-15 feet	10-15 feet
Treatment Method	Manually	Manually	Manually	Manually	Manually	Manually	Manually	Manually
Total Regeneration Thin Treatment Acres	Not calculated	14	17	8	17	17	17	17

¹³ Dominant vegetation stand condition breakdowns were not used in the Initial Proposal and Proposed Action. Douglas-fir and ponderosa pine were referred to only as mixed conifer.

Aspen Restoration Treatment	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Maximum Conifer Cut Limit	16 inches DBH	16 inches DBH	16 inches DBH	14 inches DBH	16 inches DBH	12 inches DBH	14 inches DBH	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine
Conifer Removal Distance from Edge of Aspen Stand	up to 50 feet	up to 50 feet	up to 50 feet	up to 10 feet	up to 50 feet	up to 50 feet	up to 50 feet	up to 30 feet
Treatment Method	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Mechanically or Manually	Manually	Mechanically or Manually	Mechanically or Manually
Total Aspen Restoration Treatment Acres	196	193	231	163	255	231	231	189
Meadow/Shrubland Restoration Treatment	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Maximum Conifer Cut Limit	16 inches DBH	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine	14 inches DBH	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine	12 inches DBH	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine	14 inches DBH for ponderosa pine and Douglas-fir; 12 inches DBH for lodgepole pine
Treatment Method	Manually	Manually	Manually	Manually	Manually	Manually	Manually	Manually
Total Meadow/Shrubland Restoration Treatment Acres	54	54	45	37	32	45	45	37
Broadcast Burn	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Total Broadcast Burn Acres	968	968	968	968	968	968	968	945
Defensible Space	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Treatment Distance from Structure	up to 300 feet	up to 300 feet	up to 300 feet	up to 300 feet	up to 300 feet	up to 100 feet	up to 300 feet	up to 300 feet
Estimated Percent of Total Acres Treated	Not calculated	10	10	10	10	10	10	10
Total Defensible Space Acres	Not calculated	1,969	2,032	2,862	2,200	878	2,032	2,187
Total Defensible Space Treatment Acres	Not calculated	197	203	286	220	88	203	219

No Cut Buffer	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Distance Between Private Property Boundary and Treatment Unit ¹⁴	n/a	n/a	n/a	n/a	n/a	n/a	n/a	300 feet
Roads	Initial Proposal	Proposed Action	Alternative 1 Proposed Action	Alternative 2	Alternative 3	Alternative 4	Draft Decision	Final Decision
Miles of Decommissioning	n/a	5	6	6	6	6	6	6
Miles of Reconstruction/Maintenance	n/a	Not included	19.6	19	19	19.6	19.6	16
Miles to Convert to Administrative Use Only (not open to public use)	n/a	n/a	2.3	2.3	2.3	2.3	2.3	2.3
Temporary Road Construction	Not calculated	Not calculated	7	7	5	5	7	6.4
Miles of Construction for Special Use Permit Ingress/Egress Emergency Access Road (NFS lands only)	n/a	Not calculated	0.36	0.36	0.36	0.36	0.36	0.36

¹⁴ There are seven regeneration units that fall within the no cut buffer that will be treated by the USFS as agreed to by project objectors through email communications in March 2017. Adjacent landowners will also have the ability to request that the USFS extend a treatment unit to their private property boundary if the no cut buffer required the unit to be pulled back 300 feet from the boundary.

Appendix E

Conceptual Framework for Multiparty Monitoring and Adaptive Implementation

Purpose

A multiparty monitoring and adaptive implementation process will be organized to conduct monitoring and ongoing adaptive management for the Forsythe II Project. The purpose of multiparty monitoring is to engage all interested and affected parties in a transparent, structured process to assess implementation compliance and ecological effects of management actions in accordance with the Forsythe II Environmental Assessment (EA) and Decision Notice (DN). The process will be open to any member of the public, and will also involve USFS personnel and researchers, the Colorado Forest Restoration Institute (CFRI) at Colorado State University, and researchers from other institutions with relevant subject matter expertise.

Developing a clear concise plan for how monitoring will be conducted and how monitoring results will be used towards adaptive implementation and future decision-making is an essential part of any monitoring program. The monitoring group will establish monitoring indicators, measures, and methods based on the EA stated goals, objectives, management direction, and expected outcomes. A monitoring and adaptive implementation plan will help ensure that the data that is gathered is credible, useful, and meaningful.

The primary goals of the multiparty monitoring and adaptive implementation plan are to:

- continue the public participation and collaborative learning that occurred during the planning phase, and encourage and support the continuation of collaborative efforts throughout implementation;
- help inform unit level treatment plans and implementation instructions to attain ecological and social objectives;
- conduct a transparent implementation process that keeps the public informed of and involved in treatment unit timing, design, and monitoring;
- ensure that implementation of treatments responds to dynamic, local on-the-ground conditions;
- demonstrate compliance with management direction specified in the EA/DN;
- ensure integrated engagement of interdisciplinary team members, field personnel, line officers and the public;
- assess the effects of treatments on ecological and social attributes; and
- conduct monitoring activities, interpret and share results, adapt implementation practices to improve results and better meet project objectives.

The Multiparty Monitoring Process

The multiparty monitoring process is a five-step process, starting with engaging participants and understanding why and what they want to monitor and ending with collectively evaluating and using monitoring results. The steps are shown below:

- Step 1. Assemble multiparty monitoring group
- Step 2. Determine monitoring objectives, indicators, measures, and methods
- Step 3. Develop a monitoring and adaptive implementation plan defining roles, responsibilities, and timeframes for carrying out items identified in Step 2
- Step 4. Collect and analyze data
- Step 5. Interpret, share and use results within the confines of the DN

Monitoring Process Participation

The Forsythe II multiparty monitoring process will be open to participation by individuals representing a range of perspectives, including a monitoring facilitator, individuals from the local community, stakeholders who have concerns about potential project results, USFS personnel, technical experts, project implementers, environmental/conservation groups, local governing bodies and other governmental agencies and land management decision makers. The composition, size, and structure of multiparty monitoring participation will be determined through a facilitated process convened by a third-party facilitator and informed by current multiparty monitoring models and best practices.

What to Monitor – Choosing Goals and Indicators

The monitoring group will establish the goals and information that will be monitored during the implementation of the Forsythe II DN. Once the group has identified the goals that it wants to monitor, indicators will be selected to measure changes in that goal. An indicator is a unit of information measures over time that documents specific changes. A good indicator is reliably and repeatedly measurable, precise, consistent, and sensitive to changing conditions. The monitoring plan can be brief, but it should set forth some very basic elements of the monitoring program:

- What will be monitored?
- How will it be monitored?
- Who will do the monitoring?
- When does the monitoring need to be done?
- Where does the monitoring need to occur?
- Where will monitoring data be stored?
- How, when, and by whom will monitoring data be analyzed?
- How, when, and by whom will monitoring results be used?
- How much will monitoring cost, and how will it be paid for?

Implementation Framework

The Forsythe II EA/DN specifies the implementation framework for defining treatment locations and design, determining monitoring questions, reviewing and evaluating the effects of treatments and the management towards desired conditions and away from undesirable conditions. The implementation steps will cover pre-implementation treatment planning, post-implementation review, annual monitoring, and evaluation. Prescribed broadcast burning, commercial, and non-commercial treatments that occur under the authority of the FEA/DN will take up to several years to pass through all the phases of

implementation. Therefore, at any given time there will be several projects occurring that have passed through different steps of implementation and monitoring.

The monitoring for Forsythe II will inform certain elements of the project's implementation, but implementation must remain within the sideboards of the final decision. The monitoring activities completed by this group will complement the monitoring that the ARP completes in order to meet agency requirements. The information that is collected will evaluate the effectiveness of the treatments as it relates to the objectives outlined in the purpose and need for the project. The multiparty monitoring group will agree on the types of monitoring that would be conducted throughout the monitoring process. Suggested monitoring include implementation monitoring, effectiveness monitoring, and validation monitoring. It is anticipated that the monitoring would be collected in both qualitative and quantitative formats. These types of monitoring are described below:

- Implementation monitoring also known as compliance monitoring, records actions taken and outputs relative to targets. Implementation monitoring asks, "Did we do what we said we would do?"
- Effectiveness monitoring measures changes in specific conditions relative to desired outcomes. Effectiveness monitoring asks, "Did we achieve our desired results?"
- Validation monitoring tests underlying assumptions about how a system operates. Validation monitoring asks, "What caused the observed changes?"

Example Multiparty Monitoring Framework

While the multiparty monitoring group will determine the exact framework to be used, the following steps may be used as a guide.

Step 1) Develop a monitoring framework defining monitoring indicators, measures, and ranges or thresholds of desired effects for each goal stated in the EA.

The multiparty monitoring group should identify which components of the DN and project are of most interest. Principles of implementation, effectiveness, and validation monitoring could guide development of the framework.

Step 2) Ensure that delineated treatment units are consistent with treatment priorities, design features, and other parameters in the EA and DN.

The direction in the EA/DN reflects comprehensive public participation and collaborative efforts conducted over a three-year planning period. Once the boundaries of the treatment units have been identified, USFS personnel and the monitoring group could review the lines to evaluate compliance with design criteria in the DN. Nearer-term treatment units will be delineated by the USFS with more detail, while out-year treatments may be shown with broader treatment area boundaries.

Step 3) Conduct pre-treatment monitoring.

The multiparty monitoring group could collect pre-treatment monitoring data to assess current conditions as a baseline against which to assess effects post-treatment. They might also delineate untreated areas of similar site conditions for long-term assessment of treatment effects over time.

Step 4) Complete field surveys of treatment units.

USFS personnel and the multiparty monitoring group might conduct initial field surveys of proposed treatment units to confirm that treatments can be designed and implemented in compliance with EA/DN parameters, and how to do so.

Step 5) Provide input to assist USFS in refining treatment plans and implementation instructions.

The monitoring group will provide input to assist the USFS in refining treatment plans and implementation instructions, including applicable design features, unit layout guidance, and road work.

Step 6) Determine compliance and implementation monitoring plan and conduct monitoring.

The multiparty monitoring group will conduct compliance and implementation monitoring of the treatment area.

Step 7) Conduct public field trips of treatment areas.

The public will be invited to interact regularly (e.g. every year) with USFS personnel and members of the monitoring group in an implementation field review. Field review may focus on pre-treatment areas; however, post-treatment and monitoring activities could likely be viewed on the same trip. There could be 1 or 2 field trips per field season, depending on public interest.

Step 8) Conduct post-treatment effects monitoring as specified by the multiparty monitoring plan.

USFS personnel and the monitoring group might conduct field surveys of treatment units following treatment to determine the effectiveness of the treatments as described in the EA and DN.

Step 9) USFS provides summary information of the post-treatment review process to the multiparty monitoring group for individual member input on future project changes.

Each year the forest will conduct one formal post-treatment to provide stakeholders the opportunity to interact directly with Forest Service implementation teams, line officers, and science members. Stakeholders, including the F2MG, will be invited to help inform mechanical treatments, manual treatments, or broadcast burning treatments subject to the review. This formal agency review will:

- Demonstrate treatments are implemented in accordance with the EA/DN and other requirements or identify corrective actions.
- Ensure ARP accountability to stakeholders and show that treatments are being implemented in accordance with best available scientific evidence through the iterative treatment design and monitoring cycle.
- Ensure ARP accountability to stakeholders that pre-treatment input was considered in treatment location, design, implementation, and follow-up.

Step 10) Summarize and provide annual report of implementation activities, stakeholder participation, and management review findings.

Following completion of the annual management review, the F2MG may develop a summary of the monitoring results and all the steps in the implementation and monitoring framework that occurred in the specific year. Goals may include ensuring compliance with FEA/DN, applicable laws/regulations; integration of best available science throughout the life of the DN; or to demonstrate public participation in this framework.