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February 2017



Draft Decision Notice

Meadow Vapor Project

Sula Ranger District, Bitterroot National Forest, Ravalli County, Montana



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This *Draft* Decision Notice (DN) includes the details of the decision, the rationale behind the decision, and the Finding of No Significant Impact (FONSI) that allowed me to choose an Environmental Assessment (EA) as the appropriate level of analysis. This decision also includes four appendices and two maps to provide more information about the draft decision, and responses to comments received on the Meadow Vapor Project EA. The EA is posted to the project website at <http://www.fs.usda.gov/project/?project=42988>

I. INTRODUCTION

The Meadow Vapor Project is located east of Sula, MT and surrounds the communities of Springer Memorial and Bonanza. The project area boundary includes approximately 11,090 acres and is administered by the Darby/Sula Ranger District, Bitterroot National Forest in Ravalli County (legal location: T.2N. R.17W. sections 7-10, 15-21, 28-30; T.2N. R.18W. sections 13 & 23-27 PMM) (see Figure 1-1). Drainages within the Meadow Vapor project area include Meadow Creek, Vapor Creek, Needle Creek, Lick Creek, Reynolds Creek and Tepee Creek all of which drain into the East Fork of the Bitterroot River. This project does not analyze any activities on private lands.

The Meadow Vapor project includes commercial timber harvest, non-commercial thinning, slash piling, and prescribed burning on approximately 3,134 acres. The proposed treatments would reduce the potential of crown fire behavior in low and mixed severity fire regimes within the Wildland Urban Interface, reduce current and future fuel loadings, and improve forest resilience to natural disturbances.

The project also proposes construction of motorized trails and conversion of existing routes to motorized trails to provide recreation opportunities as indicated in the Bitterroot National Forest Travel Planning Record of Decision (ROD). Watershed and fisheries habitat improvement activities such as road improvements, decommissioning and storage of routes to reduce sediment sources, rehabilitation of user-built motorized trails, and addressing future expansion of dispersed camp sites are also proposed. These proposed activities are all included within the approximate 11,090 acre project boundary.

II. PURPOSE AND NEED FOR ACTION

The forest within the East Fork drainage is comprised of stands of mixed conifer which include ponderosa pine, lodgepole pine and Douglas-fir. In some locations, there are dense pockets of dead and dying lodgepole, Douglas-fir and ponderosa pine due to insect mortality as well as severe western spruce budworm damage in Douglas-fir. These stands are vulnerable to increasing insect infestations and disease rates because of high stocking densities, lack of age class diversity and species composition.

In the mature and old growth ponderosa pine and Douglas-fir there is little diversity in the composition and structure of these stands. Preliminary treatment proposals include harvesting and/or burning in some old growth stands. These treatments would be designed to retain old growth characteristics while increasing the resiliency of the stands to insects and diseases.

Dense tree crowns, ladder fuels, snags, and down wood all contribute to high potential for severe wildland fire. Should a fire start with these vegetative conditions in combination with severe weather (especially along the southern portion of the project area) there is a high probability that the area would burn as an uncharacteristic severe wildland fire. Currently, under severe weather conditions and fuel moistures the potential flame lengths coupled with the existing stand characteristics and topography would result in 47% of the project area burning as surface fire, and 53% of the project area burning as

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passive or active crown fire. Historically, based on the fire regimes present within the project area, only 18% of the acres would have burned as a stand replacing crown fire.

These predictions are based on the existing stand conditions. There are areas with lodgepole beetle mortality located immediately adjacent to private land and homes. These areas would have an increased risk of a high intensity fire occurring in the future when the standing dead trees from the beetle mortality fall down and accumulate on the forest floor. These conditions could compromise public and firefighter safety, reduce the probability of success during initial attack, and limit the options for fire suppression. This type of fire behavior would not be conducive to direct attack by firefighters with hand tools during fire suppression activities.

The Bitterroot Headwaters Total Maximum Daily Load (TMDL 2005) listed the East Fork Bitterroot River within the Meadow Vapor project area as water quality limited, and developed a TMDL and restoration plan. The TMDL goal for sediment is a 42% reduction in the amount of sediment contributed by forest roads. This project would contribute to meeting this goal by reducing the number of stream crossings and improving infiltration through road decommissioning or storage. Road decommissioning and storage treatments improve infiltration (either by mechanical action –immediate improvement, or by allowing existing vegetation to continue to grow with the roots decompacting the road travelway as they expand –slower improvement). Reducing compaction on roads improves infiltration and reduces runoff.

In addition to sediment, the East Fork Bitterroot River is a 303(d) thermally impaired water body. Shade from trees and shrubs in riparian areas along the East Fork of the Bitterroot River will be protected by limiting the expansion of dispersed camp sites to their existing footprints. The objective of this purpose and need is to preserve riparian shade and integrity in future decades.

The purpose and need for this project also includes the implementation of two new OHV (vehicles less than 50 inches in width) connector trails that are included in the recent Travel Planning Final Environmental Impact Statement (PF-REC-002) and Record of Decision (PF-REC-003) to meet recreation needs. This portion of the proposed action was added in response to comments received during the scoping period.

III. PUBLIC INVOLVEMENT

Local Resident Petition

On July 28, 2009 the residents of the East Fork submitted a written petition with 82 signatures to the Sula Ranger District asking for the removal of dead trees, near their homes, to mitigate the potential fire hazard and the devastating effects a high intensity fire would have on homeowners. Private landowners along the National Forest boundary have managed the tree density and structure on their lands to reduce their susceptibility to uncharacteristic, high severity wildland fire and insects. Vegetation management on National Forest lands in the East Fork watershed would complement the treatments on private land by extending the treatment area across a larger landscape.

Community Wildfire Protection Plan

The Meadow Vapor project area is one of several areas on the Bitterroot National Forest identified as high priority for fuel reduction work through the Bitterroot Community Wildfire Protection Plan (DNRC et al., 2006) <http://bitterrootrcd.org/commWildfireProtect.htm> Priority setting was based primarily on

forest and fuel conditions, population density, buildings and other improvements. The Meadow Vapor project is designed to respond to goals and objectives of the Community Fire Plan, National Fire Plan, and the Bitterroot Forest Plan. Over the last 10 years the Bitterroot National Forest has completed fuels reduction activities in a large portion of the high priority areas. This proposal would help move this area towards desired future conditions described in these plans.

Environmental Assessment Comment Period

The 30-day comment period required for the Meadow Vapor EA began on June 5, 2016 and closed on July 5, 2016. We received 13 letters or e-mails, nine of which were from individuals, three from government entities, and one from a local user group. Most of the comments were similar in nature and concerned the proposed road management activities. The majority of commenters were supportive of the proposed vegetation management activities, however, one individual was not supportive of the project. The response to comments can be found in Appendix B.

IV. PROPOSED ACTION

The proposed action includes the following management:

- vegetation treatments and fuel reduction (commercial timber harvest, non-commercial thinning, and prescribed burning);
- road treatments (reconstruction, maintenance, decommissioning and storage);
- Travel Planning implementation of OHV routes (designation of routes for OHV use and construction of two OHV trail connectors);
- minimization of resource impacts from user-built motorized trails and expansion of dispersed camp sites in riparian areas.

VEGETATION TREATMENTS AND FUEL REDUCTION

Under the Proposed Action, approximately 3,134 acres of vegetation treatments are proposed. All 3,134 acres are proposed for prescribed fire treatments while approximately 1,961 acres of commercial thinning and 1,158 acres of non-commercial thinning are proposed. Of the 1,961 commercial thinning acres there are 39 units covering 1,262 acres that would be harvested using a ground-based, whole-tree yarding system. These units are located on gentle topography with slopes that do not exceed 40% gradient. An additional 32 units covering 684 acres of slopes exceeding 40% gradient would be commercially thinned using a skyline yarding system. Approximately 15 acres in three units would be yarded using a ground-lead system to minimize disturbance from short skid distances and steep slope pitches. Map 1 displays the proposed vegetation treatments. Table DN-1 includes the commercial and non-commercial thinning information by unit.

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Table DN-1: Commercial and Non-commercial Thinning Units in the Proposed Action

UNIT No.	PROPOSED ACTION	AREA ACRES	YARDING METHOD		LANDINGS		TEMP ROAD	TLM TRAIL
			GROUND-BASED ACRES	CABLE ACRES	#	ACRES	MILES	MILES
1	Irregular Selection	112	112		3	0.30	0.5	
	Non-commercial thin	35						
2	Irregular Selection	16	16		1	0.10		
	Non-commercial thin	22						
2A	Irregular Selection	12	12		1	0.10		
3	Irregular Selection	14	14		2	0.20		
	Non-commercial thin	34						
3A	Irregular Selection	59		59	43	2.15	0.3	
3B	Irregular Selection	9	9		1	0.01		
3C	Irregular Selection	38		38	27	1.35	0.4	
3D	Irregular Selection	5	5		1	0.01		
4	Irregular Selection	14	14		2	0.20		
	Non-commercial thin	30						
4A	Irregular Selection	2	2		1	0.01		
4B	Irregular Selection	45		45	13	0.65	0.2	
5	Irregular Selection	3	3		1	0.01		
	Non-commercial thin	11						
6	Irregular Selection	6	6		1	0.01		
	Non-commercial thin	2						
7	Improvement Harvest	29	29		1	0.10		0.1
7A	Irregular Selection	21	21		2	0.20		
7B	Irregular Selection	6		6	17	0.17		
7C	Irregular Selection	229		229	60	3.00		
8	Irregular Selection	7	7		18	0.23		
	Non-commercial thin	82						
8A	Irregular Selection	6	6		14	0.18		
8B	Irregular Selection	3	3		5	0.06		
8C	Improvement Harvest	2	2		1	0.01		
9	Improvement Harvest	3	3		1	0.01		
	Non-commercial thin	211						
9A	Improvement Harvest	6		6	8	0.08		
9B	Improvement Harvest	2		2	4	0.04		
9C	Improvement Harvest	2	2	0	1	0.01		
	Irregular Selection	28		28	19	0.95	0.2	0.1

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UNIT No.	PROPOSED ACTION	AREA ACRES	YARDING METHOD		LANDINGS		TEMP ROAD	TLM TRAIL
			GROUND-BASED ACRES	CABLE ACRES	#	ACRES	MILES	MILES
10	Non-commercial thin	96						
10A	Irregular Selection	3	3		1	0.01		
10B	Irregular Selection	18	18					
11	Non-commercial thin	2						
12	Non-commercial thin	2						
13	Irregular Selection	25		25	11	0.55		
	Non-commercial thin	199						
13A	Improvement Harvest	39	39		2	0.20		
13B	Irregular Selection	9		9	7	0.07	0.2	
13C	Irregular Selection	5		5	4	0.04		
13D	Improvement Harvest	2		2	4	0.04		
13E	Improvement Harvest	10		10	6	0.30		
13F	Irregular Selection	44	44		2	0.20		
13G	Irregular Selection	1	1		1	0.01		
13H	Irregular Selection	8	8		1	0.01		
13I	Irregular Selection	6	6		1	0.01		
13J	Irregular Selection	3	3		1	0.01		
13K	Irregular Selection	9	9		1	0.01		
13L	Irregular Selection	8		8	5	0.05		
13N	Improvement Harvest	8		8	4	0.04		
13O	Irregular Selection	13		13	8	0.40	0.1	
14	Irregular Selection	18		18	11	0.55		
	Non-commercial thin	32						
14A	Irregular Selection	4		4	3	0.03		
14B	Irregular Selection	9		9	1	0.01		0.3
14C	Irregular Selection	9		9	4	0.04	0.1	
14D	Irregular Selection	4	4		1	0.01		
14E	Irregular Selection	7		7	1	0.01		0.2
15	Improvement Harvest	11		11	8	0.40	0.2	
	Non-commercial thin	16						
15B	Improvement Harvest	4	4		1	0.01		
15D	Improvement Harvest	4		4	4	0.04	0.04	
15F	Improvement Harvest	3	3		1	0.01		
15A	Improvement Harvest	25	25		2	0.25		
	Non-commercial thin	23						

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UNIT NO.	PROPOSED ACTION	AREA ACRES	YARDING METHOD		LANDINGS		TEMP ROAD	TLM TRAIL
			GROUND-BASED ACRES	CABLE ACRES	#	ACRES	MILES	MILES
15C	Improvement Harvest	4		4	5	0.05	0.2	
15E	Improvement Harvest	9		9	11	0.11		
16	Irregular Selection	1	1		1	0.01		
	Non-commercial thin	44						
16A	Non-commercial thin	15						
	Irregular Selection	19		19	13	0.65		
16B	Improvement Harvest	5	5		1	0.01		
16C	Irregular Selection	55		55	35	1.75		
16D	Irregular Selection	11		11	11	0.55		
16E	Irregular Selection	15		15	9	0.45		
16F	Irregular Selection	4		4	3	0.03	0.2	
16G	Irregular Selection	4	4		1	0.01		
16I	Irregular Selection	2		2	4	0.04		
17	Improvement Harvest	5	5		1	0.01	0.2	
	Non-commercial thin	100						
20	Non-commercial thin	133						
20A	Irregular Selection	16	16		1	0.16		
21	Improvement Harvest	8		8	7	0.07	0.1	
	Non-commercial thin	34						
21A	Improvement Harvest	13	13		1	0.10		
21B	Improvement Harvest	1	1		1	0.01		
22	Non-commercial thin	35						
	Improvement Harvest	10	10		1	0.10		
23	Irregular Selection	413	402		11	1.10		
24	Irregular Selection	52	52		2	0.20		
25	Irregular Selection	342	338		10	1.00	0.7	
	TOTAL AREA OF TREATMENT	3134	1,280 (INCLUDES 15 AC. OF GROUND LEAD)	682	473	20	3.6	0.7

Improvement harvest (205 acres) focuses on improving species composition and forest health. The objective is to improve the existing stands by favoring retention of the largest diameter classes, promoting fire-resilient stands, reducing the number of stems, and reducing impacts from insects and disease, without any effort directed at regeneration.

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Irregular selection (1,772 acres) is a combination of patch clearcuts (with and without reserves) and shelterwood with reserves, integrated with variable density thinning. These combined types of harvest are used in predominately even aged stands that are desired to be more 2-aged or uneven-aged. These treatments are focused in ponderosa pine and lodgepole pine.

Non-commercial thinning (1,158 acres) will involve small diameter thinning in harvest units as well as areas outside of harvest.

- Non-commercial thinning after commercial harvest will be completed to improve stand health of trees less than 7" dbh and prepare for prescribed fire operations.
- Non-commercial thinning outside of commercial harvest areas will be completed to address stand health and prepare for prescribe fire operations. These include:
 - encroached old meadows;
 - standing dead lodgepole;
 - mature overstories; and
 - old plantations.

The commercial thinning operations will require approximately 3.6 miles of temporary roads and 0.7 miles of track-line machine trails to access treatment areas and remove logs. All temporary roads and constructed trails would be obliterated, which includes decompacting and recontouring the road surface, seeding with native plants, fertilizing with an approved organic blend, and covering the obliterated road with slash when available.

Trees would be whole-tree yarded to landings, which means the harvested trees would be dragged to the landing using a ground or skyline cable system. The limbs and tops would be removed at the landing and piled into landing piles. About 473 landings, totaling 20 acres, would be needed to limb and load the logs for the commercial operation. Frequent, small (0.01 acre) roadside landings would be used for the skyline units. Ground-based yarding operations require fewer but larger landings, about a 1/10th acre each. Landings would be located on system and temporary roads.

The thinning contract term would be three years and about 6,000 MBF (12,000 CCF) of sawlog volume would be produced.

Prescribed fire would occur on 3,134 acres after most of the commercial harvest and non-commercial thinning treatments are completed. The implementation of prescribed fire within the Meadow Vapor Project will be a phased approach, completed over 10-15 years. Based on existing conditions, all units proposed for prescribed fire treatment require a combination of mechanical treatments (commercial harvest, thinning, hand piling) to reduce stand densities, ladder fuels and surface fuels prior to the implementation of any underburning. As the mechanical treatments are implemented, hand pile burning may begin as soon as the following year and will take place when fuel moistures and weather conditions limit surface fire spread and smoke approval from the MT/ID Airshed Group has been granted. Following the mechanical treatments and pile burning, underburning will take place in accordance with an approved site specific burn plan that specifies the weather conditions, fuel moistures and desired fire behavior to meet specific burn objectives. These windows of opportunity (burn windows) typically occur in the spring and fall months, prior to and after the normal fire season. The units proposed for burning may be implemented individually or combined with adjacent units depending on size and suitable control features (roads, streams, or firelines). Based on a limited number of burn windows and the acres proposed for prescribed fire treatments within this project it is anticipated it will take time for all burning to be completed.

TRANSPORTATION SYSTEM IN THE MEADOW VAPOR PROJECT AREA

The interdisciplinary team (ID Team) reviewed the transportation system in the project area to determine the appropriate road system for current and future forest management. Timber and fire management professionals were included in this review and accounted for any future use that may be needed for vegetation management or fire suppression. The review included both National Forest system roads and undetermined status roads. The following information provides a summary of the proposed action for roads in the project area.

36 CFR 212.1 defines a forest road as a road wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

The Forest Service uses Natural Resource Manager (NRM) as an integrated data management tool (electronic database) to manage and report accurate information and associated financial data on the inventory of constructed features, such as buildings, dams, bridges, water systems, roads, trails, developed recreation sites, range improvements, administrative sites, heritage sites, general forest areas, and wilderness.

Proposed Action Management of System Roads

Forest system roads are as defined as (36 CFR 212.1): A road wholly or partly within or adjacent and serving the National Forest System that the Forest Service determined necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.

The majority of proposed changes to the system roads would occur on closed roads that are currently maintenance level 1 status. These are system roads that are used intermittently with minimal maintenance. In many cases, these roads have become grown in and may require reconstruction to accommodate full size vehicle travel. Proposed changes to these roads include placing them into long-term storage for future use while roads that are identified as no longer needed for management or pose watershed concerns are proposed for decommissioning. The type of roadwork needed to store and decommission roads is described in the following sections.

Decommissioning

Decommissioning a road removes it from the NF Transportation system. It may or may not require physical treatment on the ground. Every road is unique. In some cases, it may be appropriate to leave the road alone, however, there are many cases where it is necessary to obliterate a road with recontouring. Whether or not to physically treat a road is determined by a number of factors, including the current condition of the road and whether or not the road is likely to have stability problems in the future.

This project proposes to decommission approximately 18.5 miles of roads. Approximately 1.5 miles of road will require physical treatment. The majority of these roads are currently closed and are often difficult to locate on the landscape because they have naturally recovered, or they originally consisted of skid trail or terrace bench in a plantation. Non-motorized access will be maintained on roads that have proposed obliteration treatments. Non-motorized access will be maintained by not placing slash and not roughening surfaces in a location where foot traffic would likely occur through the obliterated area. Prior to the implementation of the 2016 Bitterroot Travel Plan, about 1.8 miles of these roads were open to motorized travel seasonally. The 2016 Bitterroot Travel Plan closed these roads to motorized travel. Appendix C describes road management for this project in detail. Map 2 displays the road management for this project.

Storage

Stored roads are those that will remain on the NF transportation system but will be closed and hydrologically stabilized for future administrative use. Approximately 9 miles of system roads are proposed to be stored. Less than 1 mile of the roads proposed for storage require treatments to hydrologic stabilize them. These treatments would involve removing culverts and restoring natural drainage, and decompacting the road surface where vegetation has not been able to recover the road bed, and seeding and fertilizing to establish vegetative cover. The entrances of the roads would be physically blocked with a gate, rock barrier, or the first 50 to 100 feet would be recontoured to prohibit motorized access. Prior to the implementation of the 2016 Bitterroot Travel Plan, about 0.4 miles of these roads were open to motorized travel seasonally. The 2016 Bitterroot Travel Plan closed these roads to motorized travel. Appendix C describes road management for this project in detail. Map 2 displays the road management for this project.

Roads Used for Commercial Thinning Operations

Roads that will be used for the Meadow Vapor commercial thinning operations may require basic maintenance or could involve reconstruction based on their current condition. Basic maintenance may involve grading, ditch cleaning, brushing, etc. However, if a road is currently overgrown and the prism has been narrowed due to natural cut-slope sloughing then reconstruction would be required. In these cases, the vegetation would be cleared, the road surface widened, and drainage would be improved on roads prior to use. Road improvements will improve watershed conditions by addressing erosion/sedimentation sources and drainage features on open roads.

Temporary Roads Required for Commercial Thinning Operations

Temporary roads and landings will be required to access areas within commercial thinning units to effectively harvest and remove logs. All temporary roads would be rehabilitated after use. Rehabilitation would include removal of all structures, decompacting, recontouring, slashing, and seeding to restore soil productivity.

Proposed Action for Undetermined Status Roads

Undetermined status roads are roads that exist on the landscape but are not part of the Forest Transportation system. The ID Team identified approximately 3.4 miles of undetermined status roads in the project area that are necessary for future forest management and propose they become part of the transportation system and be closed and stored after use. These roads would be opened to accommodate commercial harvest operations and log haul in commercial thinning units. Another 13.9 miles of undetermined status roads are not needed now or in the future and would be decommissioned.

TRAVEL PLANNING IMPLEMENTATION / OHV ROUTES

The Proposed Action Alternative also includes implementation of travel designations included in the 2016 Travel Planning Record of Decision (ROD). The Meadow Vapor project does not propose any changes to existing roads that are open year round to street legal motorized vehicles. Most roads currently open for OHV use will continue to be managed the same. The Travel Planning ROD also proposed to open several closed system roads to allow seasonal OHV use. These proposed travel designations are included in the Proposed Action for this project.

In addition, construction of two OHV trail connectors totaling 1.1 miles are included in the Proposed Action. The OHV trail connectors and the implementation of Travel Planning designations for OHV use on existing roads will create desirable motorized loop routes and provide motorized opportunities that limit user conflict with full size vehicles. These trails will be placed into the Forest trails management database. RD-DARD-09, an undeveloped 0.7 mile trail will require ground disturbance to construct a

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tread and stabilize the track for OHV use. Upon completion, this Lick Creek to Reynolds Creek trail will follow the ridgeline from the 5770 road, circle on top of an old burn, and connect to the 5771 road. The other OHV connector trail will convert Road 73801 to an OHV trail. This will require construction to build a tread and stabilize the track for OHV use. NFSR 13314 in Teepee Creek is 3.4 miles long and is currently open to full size vehicles and will be changed to OHV use only.

McCart Trailhead and Road 5765

Road 5765 is the access point into McCart lookout, a rented facility on the district. At the junction of road 13360, the road/trail to McCart Lookout will be blocked to restrict motorized vehicle use. The trail has been used to access the Lookout with OHV's but is unsuitable for full-sized vehicles. This action will restrict about 0.2 miles of existing motorized use to non-motorized use. The development of a new parking area for 6 vehicles will require minimal ground disturbance and placement of boulders to define the lot.

Tepee Lookout Road

The Proposed Action Map in Meadow Vapor EA (Figure 2-2, p. 2-13) displayed the Tepee Lookout Road, FSR 73571, as having a travel designation of "Trail, Seasonal Closure, 50" or less". We received comments concerned about this section of road being closed to full size vehicles and the designation of "Trail".

The travel management designation of the FSR 73571 was changed in the 2016 Travel Plan. According to documentation in the Travel Plan FEIS, the original existing condition for this road was a seasonal travel restriction, where it was open to motorized wheeled vehicle 50" or less in size from 12/02 to 10/14. The 2016 Travel Plan ROD designated this road as "Trail, Seasonal Closure, 50" or less", open from 6/16 to 10/14. This extended the closure period for motorized use throughout the Tepee Point Area Restriction area to include the winter and the spring calving period. The roads will not be converted to trails. As described in the Travel Plan FEIS, most of these are roads closed to full size vehicles but open to ATV and motorcycles; these are known as "coincident routes." (Please refer to the FEIS, Chapter 3, Sections 3.1 (Transportation) and 3.2 (Recreation and Trails) for additional information.)

We believe the original existing condition brought forward in the Travel Plan was incorrect, as Forest Visitor maps showed the Tepee Lookout Road with a travel designation of R-2, Open to all vehicles, seasonally. Full size vehicles have been allowed to travel on this road for years.

Therefore, we are proposing to keep the season of use designated in the Travel Plan but allow full size vehicles to travel on the road. This would give the road a Motor Vehicle Use Map (MVUM) designation, "Roads open to highway legal vehicles only, with Seasonal Designation" with a season of use from June 16 to October 14. The next published MVUM will reflect this change.

MINIMIZING IMPACTS FROM UNAUTHORIZED TRAILS AND DISPERSED CAMP SITES

The Proposed Action proposes to rehabilitate (e.g. blocking with boulders, decompacting and revegetating bare and compacted riparian soils) 12 existing riparian dispersed campsites in the Meadow Vapor project area. Most of these sites have been slowly expanding in the riparian areas as people pioneer new 2-track roads to cut firewood and drive full-size vehicles and fifth-wheel campers. These activities gradually reduce riparian shade. About half of the 12 sites are located in the riparian areas along the East Fork Bitterroot River, which is a 303(d) thermally impaired water body. The objective of the action is to limit these riparian dispersed sites to their existing footprints and to stop any future expansion to preserve riparian shade and integrity in future decades. This action will limit size of group able to occupy each site to what currently exists now.

The Proposed Action also proposes to block, decompact and revegetate approximately one mile of user-created motorized trail along Reynolds Creek.

ISSUES

Issues serve to highlight effects or unintended consequences that may occur from the proposed action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand. The ID Team reviewed the comments submitted by the public and determined whether any issues arose that would be directly or indirectly caused by implementing the proposed action. Many commenters are supportive of the project's purpose and some concur with the project design. Others, however, think the project scale/scope should be expanded and that road decommissioning and obliteration treatments are unnecessary.

The following issues are analyzed in the Meadow Vapor project through the range of alternatives, which also includes alternatives considered but not carried through the full analysis. The following issues come from internal discussions and public comments received during scoping.

Road Decommissioning

Comments were received that expressed road decommissioning and obliteration of roads is unnecessary, poor use of funds, causes more harm to watersheds than benefits, and prohibits non-motorized use in these areas. Comments also indicated that the data provided in the tables and on the scoping map was misleading and incorrect. All comments were reviewed and the ID Team explored potential solutions that would meet watershed improvement requirements and also address concerns regarding non-motorized use of roads.

Proposed OHV Connectors and Routes Proposed for OHV Use

Several comments suggested that the OHV connector route from Lick Creek FSR 5771 to Reynolds Creek FSR 5770 be included in the analysis for this project. This proposed connector was labeled RD-DARD-09 in Travel Planning. In addition, the end segments of FSR 5770 and FSR 5771 were proposed to only be open to seasonal OHV use in Travel Planning. These comments were considered and effects of the implementation of this motorized route were analyzed in the Meadow Vapor EA.

Road 73801 exists partially on the ground but does not provide connection of FSR 73582 and 5764 as indicated by road data in INFRA. This route is proposed in Travel Planning as an OHV connector. Construction of this motorized trail was analyzed in the Meadow Vapor EA.

No other OHV connectors proposed by the 2016 Travel Planning decision are located within the Meadow Vapor project boundary.

Effectiveness of Treatments on Wildfire Risk

Comments were received that suggest vegetation and fuels treatments are ineffective at reducing wildfire behavior. Treatments that include surface fuel reduction, particularly by prescribed burning, are well supported for moderating potential wildfire behavior in both long-needle pine and mixed conifer forests. These treatments appear to remain effective for up to ten years, but longevity should be expected to vary by ecosystem productivity (Omi, 2010). Research indicates the most appropriate fuel treatment strategy is often thinning (mechanical treatments that remove ladder fuels and decrease crown density) followed by piling and burning fuels, and prescribed fire. These treatments would provide maximum protection from severe fires in the future (Peterson 2005). Graham (2009) found that in addition to modifying wildfire intensity, the burn severity to vegetation and soils within the areas where the fuels were treated was generally less compared to neighboring areas where the fuels were not treated. Graham also noted that by modifying the fire's behavior, the fuel treatments presented

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suppression opportunities that otherwise may not have been available. The Fire/Fuels section within Chapter 3 of this EA provides a detailed analysis of fuel treatment effectiveness from activities proposed in this project.

Project Boundary

During the scoping period, the project boundary did not include proposed road storage and decommissioning work in the Lick and Reynolds watersheds. Comments were received that recommended the overall project boundary be modified to include this work. This project boundary has since been modified to include road work in these watersheds. As a result, the project boundary acreage was increased from 8,400 acres to 11, 090 acres from initial scoping; the effects analysis in the EA reflect this change.

Expanding Vegetation Treatment Area

Several comment letters provided recommendations that additional areas be included for vegetation management. Specifically, Paint, Martin, Moose, Reynolds, and Lick Creek watersheds and the Needle Creek Roadless area were mentioned as areas that would benefit from vegetation treatments.

These areas were considered for vegetation treatments but have been excluded from this analysis and will be considered for a future integrated resource project. At this time, expansion of vegetation treatments into these areas would require an additional season of field data collection which would also extend the NEPA project by a year, further delaying fuel reduction treatments in the WUI around the EF community.

V. ALTERNATIVES CONSIDERED IN DETAIL

The Meadow Vapor EA analyzed two alternatives in detail, the No Action and the Proposed Action. The Proposed Action has already been described in this *Draft* DN. The No Action Alternative was analyzed as if none of the proposed activities were to take place.

As stated in 36 CFR 220: The EA shall briefly describe the proposed action and alternative(s) that meet the need for action. No specific number of alternatives is required or prescribed.

When there are no unresolved conflicts concerning alternative uses of available resources (NEPA, section 102(2)(E)), the EA need only analyze the proposed action and proceed without consideration of additional alternatives. (36 CFR 220.7(b)(2)(i))

VI. ALTERNATIVES NOT CONSIDERED IN DETAIL

This section discusses alternatives that were considered, but not given detailed study. These alternatives were initially proposed to address issues identified during the public scoping and the ID Team process, but were not considered in further detail for the reasons explained in the following narratives.

Alternatives Considered but Not Carried Through Analysis

Several alternatives to the proposed action were suggested during the public scoping and comment period. These alternatives were considered but not carried through the analysis for the reasons stated in Table DN-2.

Table DN-2: Alternatives considered but not carried through analysis and the reasons they are not analyzed in detail.

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Proposed alternative	Reason not analyzed
<p>Outside the scope of the project</p> <p>Expand the vegetation and fuels treatments to include Paint, Martin, Moose, Reynolds, and Lick Creek Watersheds and the Needle Creek Roadless Area.</p> <p>Does not meet the purpose and need</p> <p>Do not decommission roads.</p>	<p>Though the need to treat this area may be present, the Meadow Vapor project boundaries are based on the need to treat vegetation and fuels primarily in the WUI surrounding the East Fork communities. Addition of these watersheds and an Inventoried Roadless Area would substantially increase the project complexity. Environmental analysis of the treatment for these watersheds may occur at a later date when funding and priorities allow.</p> <p>Road analysis for the project has determined there are roads that are no longer needed for forest management. Most of the roads have natural recovery occurring and do not need treatment. However, there are some roads that will require treatment to reduce risk to resources and improve watershed condition.</p>

VII. *DRAFT* DECISION

As the responsible official for this project, I am authorizing the Proposed Action Alternative. Associated temporary road building to access harvest units would be included in this decision, as would road decommissioning, road storage, and BMPs. This decision includes prescribed burning. This decision also includes a site-specific Forest Plan amendment refining plan standards for coarse woody debris and thermal cover and allowing portions of third-order drainages within the project area to be managed at Elk Habitat Effectiveness values less than the Plan standards.

My decision authorizes the use of skyline and ground based logging systems to conduct 1,961 acres of commercial harvest. Non-commercial treatments will occur over 1,158 acres by hand or use mechanized equipment where necessary to meet the desired post treatment conditions. I am also authorizing a combination of handpiling with pile burning and/or underburning to occur in all of the units as methods of slash treatments.

My decision also authorizes several types of road management activities. This decision authorizes 18.5 miles of road decommissioning and 9 miles of road storage in the project area. This decision resolves the status of 17.3 miles of undetermined status condition roads, incorporating 3.4 miles into the permanent transportation system in the area and decommissioning 13.9 miles of these roads. This decision includes 3.6 miles of temporary road to be constructed for project activities and rehabilitated upon completion.

With my decision new OHV opportunities within the project area are created by constructing two separate OHV trail connectors totaling 1.1 miles as well as a parking area for up to six vehicles to accommodate this use. My decision also authorizes rehabilitation treatments on unauthorized user-built motorized trails specifically near the East Fork community in riparian areas. About 1 mile of trail will need to be rehabilitated. Expansion of dispersed camp sites will also be addressed through treatments

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such as boulder placement that will define the footprint of the sites. There are approximately 12 sites that need rehabilitation.

VIII. RATIONALE FOR THE *DRAFT* DECISION

I have made my decision based on the information in the Meadow Vapor EA, the supporting project file, public comments received, and consideration of issues. I have determined my decision is consistent with all laws, regulations, and agency policies and I have considered the potential cumulative effects of other activities. My criteria for making a decision on this project was based on how well the activities analyzed in the Meadow Vapor EA addressed the purpose and need of the project and considered the issues raised during the project development phase with the public and the comments received on the proposed action. I considered the public comments received on the EA and made adjustments to my draft decision based on these comments. The team has prepared responses to the comments received on the EA, which can be found in Appendix B of this *Draft* Decision Notice.

ADDRESSING THE PURPOSE AND NEED

The desired conditions for the Meadow Vapor project are based on Forest Plan goals, objectives, and standards. The difference between the existing condition and the desired condition in the project area generated the need for change. This need for change helped the team identify a purpose and need for the project to identify what management actions could be taken to address the need for change.

Reduce the potential for crown fire behavior in low/mixed severity fire regimes within the Wildland Urban Interface (WUI) by altering fuels in both the amount available to burn and arrangement.

My decision will change fire type in low/mixed severity fire regimes within the WUI by moving 1,541 acres from crown fire to surface fire. Treated areas would reduce fire intensities to less than 4 feet on 1,500 acres improving firefighter safety and managers ability to follow Forest Plan direction requiring protection of values at risk with prompt, aggressive control of wildfires. The activities I am authorizing will reduce the likelihood for large-scale, severe wildfires affecting National Forest System lands and adjacent private lands within the project area. Treatments will improve the vegetation condition class departure by creating vegetation and fuel conditions similar to those of historic fire regimes. Prescribed fire can then be safely and successfully used to reintroduce fire to this fire dependent ecosystem.

The EA discusses the history of fire in the project area on p. 3.2-3 and 3.2-4. The use of prescribed fire will contribute to restoring natural fire regimes in the project area and promoting fire adapted ecosystems. The activities that I am authorizing will implement recommendations from the Bitterroot Community Wildfire Protection Plan by reducing fuels and changing fire behavior in a high priority area. Implementation of the Proposed Action will also meet all three National Cohesive Strategy goals.

Improve forest resilience to natural disturbances such as fire, insects, and disease.

The vegetation management I am authorizing in this decision is designed to address forest health by: reducing stand densities thereby lowering mountain pine beetle hazard; breaking up the homogenous stand conditions creating stand diversity; and improving the health and vigor of retained large trees by reducing the impacts of forest insects and diseases. Fewer trees would improve individual tree health and vigor as there would be less competition for nutrients and water. Insect and disease infestations would be less severe in the event of a mixed or stand replacing fire event due to treatments. Irregular

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selection would be used to remove Douglas-fir trees heavily infested with dwarf mistletoe. Removal of the heaviest mistletoe infections and thinning to favor tree species not affected by Douglas-fir dwarf mistletoe, such as ponderosa pine, would improve the overall health of the stand (Hadfield et al. 2000), thereby increasing forest resilience.

On 205 acres, I am authorizing the improvement cuts. Improvement cuts are designed to improve the existing stands by featuring the largest diameter classes, promoting fire-resilient stands, and reducing the number of stems, without any effort directed at regeneration. Improvement cuts are designed to focus on improving species composition and forest health.

I am also approving the implementation of irregular selection on 1,772 acres. Irregular harvest treatments establish and develop new age classes. They are designed to improve larger tree health and vigor and reduce the impacts of forest insects and disease.

Address immediate and long term vegetation concerns in mature and old growth ponderosa pine and Douglas-fir.

My authorization of the Proposed Action Alternative will also retain and perpetuate old-growth characteristics in the larger older ponderosa pine forest cover types. Implementing the proposed action alternative will help restore and maintain mature size classes in ponderosa pine and Douglas-fir. Irregular cutting in the overstory would reduce stand basal area and the amount of Douglas-fir, creating openings for natural regeneration. Understory thinning treatments would reduce the density of saplings and poles.

I believe that the timely implementation of these activities will increase the health forest stands in the project area, thereby improving forest health through a reduction in insect and disease as well as reducing the potential for wildfire severity. If these vegetation treatment activities are delayed, the forest stand conditions will continue to deteriorate, increasing the likelihood that they will have greater effects from insect and disease conditions identified in the Forest Vegetation report found in the Meadow Vapor EA (Chapter 3.1).

Provide forest products.

My decision will allow for a removal of about 12,500 CCF/6,000 MBF of saw timber. In addition to contributing to a supply of wood products to the community, removal of these trees will also help to address the other objectives of the project. The economic and social benefits of the project were analyzed in Chapter 3.4 of the Meadow Vapor EA.

Improve watershed conditions and fisheries habitat.

My decision will lead to localized improvements in the tributary streams through road improvements, BMP upgrades, and stream crossing restoration. These activities will provide for management access in the project area while reducing potential effects to water quality. My decision also includes placing 9 miles of road into storage so that roads can be treated to reduce hydrological effects, but will remain on the landscape if future management access is needed. My decision also include decommissioning of approximately 18.5 miles of road, of which about 1.5 miles will receive various types of treatment to remove them from the landscape and from the National Forest Road System (Meadow Vapor EA, Chapters 3.8 and 3.9).

My decision includes the rehabilitation of about one mile of user-created motorized trails and two-track roads in the RHCA along lower Reynolds Creek. Blocking, decompacting, and revegetating these trails will improve the quality and integrity of the RHCA along bull trout critical habitat in the long-term.

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Minimize future resource impacts from recreation activities at dispersed camp sites in riparian areas.

My selection of the Proposed Action Alternative authorizes the rehabilitation of 12 existing dispersed camping sites that are located in the Meadow Vapor Project area. These sites have been slowly expanding, as people drive full-size vehicles and fifth-wheel campers and pioneer new 2-track roads to cut firewood, which gradually reduces riparian shade. About half of the 12 sites are located in the RHCA along the East Fork Bitterroot River, which is a 303(d) thermally impaired water body. The rehabilitation of these sites should limit the sites to their existing footprints and to stop any future expansion. By approving this rehabilitation, I am able to maintain the dispersed camping sites to their current size, allowing valuable recreation opportunities to continue while also preventing damage to important riparian areas.

Implement motorized recreation opportunities

My decision authorizes the construction of two new OHV routes within the project area. These routes were originally proposed in the ROD for the 2016 Bitterroot Travel Plan. Construction of these OHV trail connectors and the designations for OHV use on existing roads will create desirable motorized loop routes and provide motorized opportunities that limit user conflict with full size vehicles.

CONSIDERATION OF ISSUES

In addition to evaluating the purpose and need, I also carefully considered the issues identified following development of the proposed action. These issues were presented earlier in this document on p. 12-13. The first issue is related to road decommissioning and the effects associated with that activity. The second issue is related to OHV connectors and routes proposed for OHV use. The third issue is the effectiveness of treatments on Wildfire Risk.

The following section summarizes how I believe my decision responds to the issues identified in the Meadow Vapor EA.

Road Decommissioning

During both public comment periods on this project, I heard from people who were concerned about the impacts of road decommissioning and storage. Concerns ranged from the actual on-the ground effects of decommissioning activities to the potential loss of access for firefighting and future vegetation management projects. During the original road screening process, there were timber and fire specialists involved. They considered the need for future access. Because timber harvest methods have changed and improved over time, the amount and placement of roads on the landscape has changed. Therefore, roads that were needed in the past are not necessary now and are not anticipated to be necessary in the future. The effects of road decommissioning on wildfire suppression and future fuels management are minimal. Most of these roads are currently grown over or were originally skid trails or terrace benches in plantations and are unusable by a vehicle. Removing these roads from the system will not alter fire management options, the ability to access or suppress future wildfires because they aren't usable now (EA, Chapter 3.2-24).

Based on comments received during the comment period for the EA, the IDT reevaluated the need for road decommissioning activities. While the amount of road being proposed for decommissioning did not change, the team did reconsider on-the-ground treatments and recommended some changes. While the original proposal called for 7.3 miles of treatment, the team decided that some roads would be okay to leave in their current state and monitor for adverse effects into the future. My decision authorized approximately 2 miles of treatment, a reduction of nearly 5 miles. My decision addresses the need to

treat roads within problem areas to address resource issues and to monitor those that are currently stable.

Proposed OHV Connectors

During the original scoping comment period for this project, I heard from some members of the public about the opportunity to include the construction of OHV connector trails that were proposed in the 2016 Bitterroot Travel Plan. Based on these comments, the IDT added these connectors and other recommended motorized travel proposals to the Proposed Action Alternative and evaluated the effects of those actions. Therefore, my decision creates a more user-friendly motorized trail system that reflects the needs expressed by the OHV community.

Effectiveness of Treatments

I received some comments concerned about the effectiveness of the proposed vegetation activities on wildland fire behavior. These comments suggested that the proposed vegetation and fuel treatments are not effective at reducing fire behavior.

As addressed earlier in this *Draft* Decision Notice on p. 15, my decision to authorize the Proposed Action Alternative will change fire type in low/mixed severity fire regimes within the WUI by moving 1,541 acres from crown fire to surface fire. Treated areas would reduce fire intensities to less than 4 feet on 1,500 acres improving firefighter safety and managers ability to follow Forest Plan direction requiring protection of values at risk with prompt, aggressive control of wildfires. Chapter 3.2 of the Meadow Vapor EA discloses the effects of the vegetation treatments in detail.

IX. FINDINGS RELATED TO LAWS, REGULATIONS, AND POLICIES

Numerous laws, regulations, and agency directives require that my decision be consistent with their provisions. I have determined that my decision is consistent with the laws, regulations, and agency policies related to this project. The following summarizes this draft decision's compliance with major environmental laws:

THE NATIONAL FOREST MANAGEMENT ACT (NFMA)

INTRODUCTION

On April 9, 2012, the Department of Agriculture issued a final planning rule for National Forest system land management planning (2012 Rule) (77FR 68 [21162-21276]). None of the requirements of the 2012 Rule apply to projects and activities on the Bitterroot National Forest because the Bitterroot Forest Plan was developed under a prior planning rule (36 CFR §219.17(c)). As the 2012 Rule explains, "[The 2012 Rule] supersedes any prior planning regulation. No obligations remain from any prior planning regulation except those that are specifically included in a unit's existing plan. Existing plans will remain in effect until revised" (36 CFR §219.17).

Consistency with Forest Plan Standards, Goals, and Objectives

Management activities are to be consistent with the Forest Plan (16 USC 1604 (i)). General management direction for the Bitterroot National Forest is found in the Forest Plan, which established Forest-wide and management area standards and guidelines (Forest Plan, Chapter II). This decision to manage the forest in the Meadow Vapor project area is consistent with the goals and objectives of the Bitterroot National Forest Plan listed on pages II-2 through II-10. The project was designed to conform to Forest-wide standards while improving forest resilience to disturbances (Forest Plan pages II-17 through II-33).

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I evaluated the Proposed Action Alternative and compared it to Forest Plan standards. It will meet Forest Plan Standards, as amended, and will contribute toward reaching Forest Plan goals and objectives (EA Ch. 1 pgs. 14-15).

The Forest Plan provides for maintaining diversity through management standards. This project is consistent with the Forest Plan as stated above. The Biological Evaluations and Biological Assessments confirm that this project will not impact the viability of sensitive, threatened and endangered species (EA Ch. 1 pg. 9-10, 15, Ch3 pg. 3.9-21 through 3.9-22, PF-WILD-005).

Other NFMA Requirements - I have determined the selected alternative is consistent with the following provisions of the National Forest Management Act:

1. Suitability for Timber Production: No timber harvest, other than salvage sales or sales to protect other multiple-use values, shall occur on lands not suited for timber production (16 USC 1604(k)).

Stands proposed for harvest treatment in the project area were examined for suitability in accordance with NFMA. Inclusions on non-suitable land were identified within stands proposed for harvest (such as wetlands), and no treatment would occur in these areas, except for the 32 acres of harvest that will occur within RHCA buffers and is described in greater detail in the Meadow Vapor EA on p. 3.9-16 through 16 and p. 3.9-18. All harvest units are located within management areas where lands are considered suitable for timber harvest per Forest Plan direction (MA1, MA2, and MA3a). Based on the analysis provided in the Meadow Vapor EA and project file, the vegetation treatments identified in these areas meet these objectives/standards. All sites considered for timber harvest would use established harvesting and site preparation practices. Bitterroot National Forest Plan standards, as amended by INFISH, and Best Management Practices (BMPs) are sufficient to protect soil and water resource values.

2. Timber Harvest on National Forest Lands (16 USC 1604(g)(3)(E)): A Responsible Official may authorize site-specific projects and activities to harvest timber on National Forest System lands only where:

a. Soil, slope, or other watershed conditions will not be irreversibly damaged (16 USC 1604(g)(3)(E)(i)).

The Proposed Action Alternative will not cause irreversible damage to the soil resource. Proposed activities that have the greatest effect on soil are ground-based yarding. Skid trails will be designated and historic skid trails will be used to the greatest extent feasible to limit new disturbances (EA pg. 1-13). The Meadow Vapor Project protects organic matter, soil porosity, and topsoil by applying BMPs, SWCPs, and design features (Appendix D). Localized and limited losses will occur on landings, skid trails, temporary roads, or where the soil is sterilized from burning slash. However, over most of the project area and the landscape, the processes that lead to soil productivity will be preserved (EA pg. 2-16 through 17).

The Meadow Vapor project is likely to have minor effects on water resources because the activities would be located away from streams and the area of harvest is small relative to watershed size (EA Ch. 3 pgs. 3.8-7 through 3.8-13). The hydrology analysis indicates there is little potential to increase stream flow, sediment, or nutrients in the six project area watersheds.

b. There is assurance that the lands can be adequately restocked within five years after final regeneration harvest (16 USC 1604(g)(3)(E)(ii)).

Treatment units within the Meadow Vapor project will be managed as uneven-aged stands. A final regeneration harvest is not planned (EA pg. 1-17).

- c. Protection is provided for streams, streambanks, shorelines, lakes, wetlands, and other bodies of water from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment, where harvests are likely to seriously and adversely affect water conditions or fish habitat (16 USC 1604(g)(3)(E)(iii)).**

There are no lakes or shorelines in the Meadow Vapor project area. Timber harvest in the Meadow Vapor project area is not likely to seriously or adversely affect water conditions or fish habitat.

Upon review of the Meadow Vapor EA, I find that the timber harvest activities associated with the decision will comply with applicable Clean Water Act and Montana State Water Quality standards and the standards and guidelines of the Bitterroot Forest Plan, including the activities that will occur within the RHCA buffers. As documented in Meadow Vapor EA, INFISH buffers adjacent to streams, streambanks, and wetlands would protect them from water temperature changes, stream blockages, and sediment deposits. Application of BMPs and riparian buffers will protect water resources from harvest activities. In the units where harvest will occur within RHCAs design criteria have been developed to minimize effects to riparian habitat and the aquatic resource section of the EA analyzed the potential effects of these activities. I have reviewed this analysis and believe that my decision will maintain or improve the watershed condition.

- d. The harvesting system to be used is not selected primarily because it will give the greatest dollar return or the greatest unit output of timber (16 USC 1604(g)(3)(E)(iv)).**

I based my decision to implement the Proposed Action Alternative on a variety of reasons discussed elsewhere in this decision. Although some of the timber harvest associated with this project will generate revenue, the activities that my decision authorizes were chosen based upon their ability to achieve the purpose and needs for the project and interdisciplinary resources were considered at every stage of this project, including the project development, environmental analysis, and my decision making process.

- 3. Clearcutting and Even-aged Management (16 USC 1604(g)(3)(F)): Insure that clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even aged stand of timber will be used as a cutting method on National Forest System lands only where:**

- a. For clearcutting, it is determined to be the optimum method, and for other such cuts it is determined to be appropriate, to meet the objectives and requirements of the relevant land management plan (16 USC 1604(g)(3)(F)(i)).**

There is no harvest designed to regenerate even-aged management in the Meadow Vapor project area. Openings, generally 2-20 acres (EA 3.1-14), will be created in predominately even-aged stands that resulting in uneven-aged stands. These treatments are focused in ponderosa pine, Douglas-fir, and lodgepole pine.

- b. The interdisciplinary review as determined by the Secretary has been completed and the potential environmental, biological, esthetic, engineering, and economic impacts on each advertised sale area have been assessed, as well as the consistency of the sale with the multiple use of the general area (16 USC 1604(g)(3)(F)(ii)).**

The Meadow Vapor interdisciplinary team analyzed the potential project effects on each resource found in the project area. The timber sale is consistent with the multiple use of the project and analysis areas (EA Chapter 3).

- c. Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain (16 USC 1604(g)(3)(F)(iii)).**

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The openings created in this project will blend with natural terrain and the edges will be feathered to avoid straight lines (EA Chapter 3.1, 3.1-14)

- d. **Cuts are carried out according to the maximum size limit requirements for areas to be cut during one harvest operation, provided, that such limits shall not apply to the size of areas harvested as a result of natural catastrophic conditions such as fire, insect and disease attack, or windstorm (FSM R1 supplement 2400-2001-2 2471.1, 16 USC 1604(g)(3)(F)(iv)).**

Openings created by harvest in this project will be less than 40 acres (EA pg. 1-17).

- e. **Such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource (16 USC 1604(g)(3)(F)(v)).**

Timber harvest proposed in the Meadow Vapor project is consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources (EA Chapter 3). Regeneration harvests are not proposed in this project but openings will support ponderosa pine regeneration.

4. **Stands of trees are harvested according to requirements for culmination of mean annual increment of growth (16 USC 1604(m)).**

Units proposed for harvest in the Meadow Vapor project area have met CMAI requirements.

5. **Construction of temporary roadways in connection with timber contracts, and other permits or leases: Unless the necessity for a permanent road is set forth in the forest development road system plan, any road constructed on land of the National Forest System in connection with a timber contract or other permit or lease shall be designed with the goal of reestablishing vegetative cover on the roadway and areas where the vegetative cover has been disturbed by the construction of the road, within ten years after the termination of the contract, permit, or lease either through artificial or natural means. Such action shall be taken unless it is later determined that the road is needed for use as a part of the National Forest Transportation System (16 USC 1608(b)).**

All temporary roads constructed through this project will be rehabilitated within 10 years of contract termination.

6. **Standards of roadway construction: Roads constructed on National Forest System lands shall be designed to standards appropriate for the intended uses, considering safety, cost of transportation, and impacts on land and resources (16 USC 1608(c)).**

Temporary roads will use existing road and trail templates to the extent feasible to limit the creation of new areas of soil disturbance.

SITE SPECIFIC FOREST PLAN AMENDMENT

According to the current 1987 Bitterroot Land and Resource Management Plan (Forest Plan), proposed management activities in the Meadow Vapor Project area are located within Management Areas (MAs) 1, 2, and 3A. The Meadow Vapor Decision Notice will suspend the following Forest Plan Management direction for the duration of this project, as described below, in order to implement the Proposed Action Alternative while still maintaining consistency with forest plan goals and desired conditions for all resources:

***Forest-wide standard for Coarse Woody Debris (Forest Plan, pp. III-19, f (4)):* Site preparation methods will assure the retention of modest levels of organic matter, including woody materials 8 inches or less in diameter, to provide nutrient and ectomycorrhizal levels necessary for maintaining growth rates; while**

still providing an adequate mineral base for seed germination and reduction of grass competition. On dry and harsh sites, at least 10 to 15 tons per acre of residual debris is needed (Harvey, et al 1981a & 1981b; Harvey, 1982).

This project specific amendment is intended to apply the best available science to the coarse woody debris design of the Meadow Vapor project and support goals and objectives in Forest Plan and project proposal.

Since the Forest Plan was signed, additional science is available regarding the amount of coarse woody debris that would be expected in different habitat type groups (Graham et al. 1994; Brown et al. 2000), which provides more refined guidelines for meeting the Forest Plan goals and objectives. The amounts prescribed in the Forest Plan are sometimes contradictory to each other (i.e. 10 to 15 tons/acre in one standard and 25 tons/acre in another; sometimes referring to the same piece of ground). In addition, to reduce fire intensity (flame length and rate of spread), heavy amounts of coarse woody debris should not be left in stands in the Meadow Vapor project area.

Management Area 3a standard for Thermal Cover (Forest Plan ROD, p. 8): Winter range will be managed to provide diversity of forage and hiding cover with at least 25 percent of the area in thermal cover at all times.

This proposed site-specific standard amendment is intended to apply the best available science to the Meadow Vapor project's thermal cover design and adapt to changes that have occurred on the landscape in support of Forest Plan and project goals and objectives.

The purpose of the 1987 Forest Plan Record of Decision (USDA Forest Service 1987b) thermal cover requirement was to provide habitat that at that time was believed to be necessary to meet the Forest Plan goals and objectives of maintaining the State's population goals for elk. Recent research, however has questioned the necessity of thermal cover for survival of wintering elk (Cook et al. 1998). The researchers found "no significant, positive effect of thermal cover on the condition of elk during any of their six experiments. In contrast, dense cover provided a costly energetic environment, resulting in significantly greater over-winter mass loss, fat catabolism, and (in one winter) mortality." Whether thermal cover is necessary for individual elk survival or elk population viability seems open to question. As discussed under cumulative effects, large amounts of winter range thermal cover do not seem necessary to support the State's elk population goals on the Bitterroot National Forest.

Forest-wide standard for Elk Habitat Effectiveness (Forest Plan pp. II-21, F.1.e.(14)): Manage roads through the Travel Plan process to attain or maintain 50 percent or higher elk habitat effectiveness (Lyon, 1983) in currently roaded third order drainages. Drainages where more than 25 percent of roads are in place are considered roaded. Maintain 60 percent or higher elk habitat effectiveness in drainages where less than 25 percent of the roads have been built.

This project specific amendment is intended to acknowledge that EHE standard cannot not be met in five third order drainages in the analysis area. The small size of the 3rd order watersheds in this project area limits the amount of roads that can be present on the ground. In order to meet the standards, the mileage of roads needed to be closed would limit forest management access and conflict with other Forest Plan management objectives to provide roaded, dispersed recreation.

The environmental analysis protocol includes elk security analysis (Hillis et al. 1991), which has proven to be a better tool than elk habitat effectiveness analysis for achieving the Forest Plan objective to

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maintain elk populations and hunting season opportunities in cooperation with Montana Fish, Wildlife and Parks. Elk numbers in the area are relatively stable, which may reflect limited hunter access in areas that may not technically qualify as security area. The rugged topography in much of the area limits hunter access. Elk may also escape hunting pressure by moving to private land where hunting is limited or prohibited.

HOW THE FOREST PLAN AMENDMENT MEETS THE 2012 PLANNING RULE REQUIREMENTS

I prepared this project specific amendment under the 2012 Planning Rule, which has different provisions than the 1982 Planning Rule, under which the existing plan was developed. Although the existing plan is not changed, the exception that this amendment allows to the current plan’s coarse woody debris, thermal cover and Elk Habitat Effectiveness standards must be evaluated based on the 2012 planning rule.

As explained below, this amendment complies with the procedural provisions of the 2012 Planning Rule and all the directly related resource requirements in sections 219.8 through 219.11 of the 2012 Planning Rule (36 CFR Part 219).

These procedural provisions as related to a project specific amendment are: using the best available scientific information to inform the planning process (§ 219.3), providing opportunities for public participation (§ 219.4), the plan amendment process (§ 219.13), and including specific information in a decision document (§ 219.14). This plan amendment has complied with these procedural provisions by:

§ 219.8 Sustainability

The Forest Plan amendment maintains wildlife habitat connectivity and aquatic organism connectivity. The amendment will provide for ecological sustainability on these lands by applying forest plan components and state and federal protections that will improve and maintain fish and wildlife habitat. The plan amendment applies forest plan standards to maintain soil productivity, water quality, and air quality for prescribed burning activities. The Forest Plan amendment maintains the current social, cultural, and economic conditions of the area, including sustainable recreation for both non-motorized and motorized uses where authorized; ecosystem services such as drinking water and forest functions; multiple use opportunities for forest products which contribute to local and regional economies; and maintains cultural uses as demonstrated through consultation with the Confederated Salish and Kootenai Tribes.

§ 219.9 Diversity of Plant and Animal Communities

The forest plan amendment maintains the diversity of plant and animal communities within the Meadow Vapor Project area through the application of forest plan standards and guidelines, including but not limited to: Northern Rockies Lynx Management Direction; Interim Strategies for Managing Fish-producing watersheds (INFISH); and other forest and regional direction to provide for the diversity of plant and animal communities across all lands managed by the Bitterroot National Forest. The Forest Plan amendment maintains wildlife habitat connectivity and aquatic organism connectivity. The amendment will provide for ecological sustainability on these lands by applying forest plan components and state and federal protections that will improve and maintain fish and wildlife habitat. The plan

amendment applies forest plan standards to maintain soil productivity, water quality, and air quality for prescribed burning activities. The Forest Plan amendment maintains the current social, cultural, and economic conditions of the area, including sustainable recreation for both non-motorized and motorized uses where authorized; ecosystem services such as drinking water and forest functions; multiple use opportunities for forest products which contribute to local and regional economies; and maintains cultural uses as demonstrated through consultation with the Confederated Salish and Kootenai Tribes.

§219.10 Multiple Use

The Forest Plan amendment maintains components to address multiple uses of NFS lands. The multiple uses include, but are not limited to: scenery, air quality, cultural and heritage resources, fish and wildlife species, habitat and habitat connectivity, grazing, recreation opportunities, riparian habitat, soil, water quality, timber, vegetation, and wilderness.

§219.11 Timber requirements based on the NFMA

The Forest Plan amendment appropriately meets the applicable provisions of 36 CFR 219.8 – 219.11 and does not preclude any of the other substantive provisions of the 2012 rule.

COMPLIANCE WITH 36 CFR § 212.55(b)

36 CFR § 212.55 (b) provides direction to Federal agencies in response to Executive Order 11644, as amended by Executive Order 11989. The rule applies to decisions on motorized access designations. Sub-section (b) provides:

Specific criteria for designation of trails and areas. In addition to the criteria in paragraph (a) of this section, in designating National Forest System trails and areas on National Forest System lands, the responsible official shall consider effects on the following, with the objective of minimizing:

- 1) damage to soil, watershed, vegetation, and other forest resources;
- 2) harassment of wildlife and significant disruption of wildlife habitats;
- 3) conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring Federal lands; and
- 4) conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring Federal lands.

Where 36 CFR § 212.55 (b) Applies

This sub-section applies to the “designation of trails and areas” for motorized use. The Meadow Vapor project area includes non-motorized trails and roads that are restricted to OHV use only (R-4 designation, vehicles <50” in width) but does not currently have any designated motorized trails. The Proposed Action includes the construction of two new motorized trail segments (Table 1-2).

Table 1- 1: Project Area Proposed New Motorized Trails (OHV<50”)

Trail #	Trail Name	Trail Mileage	Trail Class	Designed Use	Trail Restriction	Implementation Requirements
TBD	RD-DARD-09	0.7	3	OHV <50”	TR-2	Balanced Bench construction

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Trail #	Trail Name	Trail Mileage	Trail Class	Designed Use	Trail Restriction	Implementation Requirements
TBD	73801	0.4	3	OHV <50"	TR-2	Balanced Bench construction
	TOTALS	1.1				

Context for the Decision and Application of 36 CFR § 212.55 (b).

The project area includes Forest Plan Management Areas 1, 2, and 3a. Overall, there are approximately 80 miles of National Forest System Roads with varying levels of access, from fully closed to no restriction. In addition, there 17.3 miles of undetermined status roads that are closed to motorized travel; many are grown in and not drivable. Of the 17.3 miles of undetermined roads in the project area, the Proposed Action would decommission 14.9 miles and return them back to the productive land base. Approximately 2.5 miles of undetermined road would be added to the National Forest System of Roads under the Proposed Action. For further information on undetermined roads see the Transportation section 3.3. Roads analysis for this project has also identified 2.6 miles of system road to be decommissioned and 9 miles of road storage. The total amount of road decommissioning (17.5 miles) and road storage are proposed to reduce existing and future watershed effects. Routes seasonally closed to OHV (vehicles <50" in width) from October 15 to December 1, will be increased by 2.7 miles. Adding or removing motorized access to trails does not change the EHE attainment.

Cross-country travel was closed across the entire Bitterroot National Forest in 2001, eliminating adverse effects from that use in the project area, including the adjacent IRAs.

The ID Team reviewed the proposed trails in respect to the four criteria provided and the condition and characteristics of the project area. The IDT also reviewed Switalski and Jones (2012), a peer-reviewed paper on off-road vehicle BMPs, for additional direction in planning OHV routes. After considering the results of this review, the Proposed Action incorporates the following criteria to minimize adverse effects:

Criteria (b) 1:

- To *not* consider opening any "play" or "challenge" areas to minimize erosion and vegetation damage.
 - The Proposed Action meets this goal, and does not open any areas to cross-country riding.
- To avoid locating new connectors near threatened, endangered or unique plant species, or through bogs, wetlands or riparian areas, to minimize ecological disturbance.*
 - The Proposed Action meets this goal by completing rare plant and wetland surveys on potential connector routes prior to inclusion in an alternative – no connectors are proposed within these sensitive areas.
- To minimize the length of potential new connectors and use existing roads, where possible, to minimize new disturbances and erosion.

* Criteria is directly related to Planning and Decision-making BMPs in *Off-road vehicle best management practices for forestlands: A review of scientific literature and guidance for managers* (Switalski and Jones 2012).

- The Proposed Action meets this goal, by connecting selected roads with the shortest possible connectors that also meet the other criteria.
- To ensure potential new connectors would meet Forest Service trail specifications for the design vehicle, to minimize erosion and promote long-term sustainability.*
 - The Proposed Action meets this goal – neither of the connector trails exceed the USFS trail specification standards for the design use and vehicle.

Criteria (b) 2:

- To include big-game rifle season restrictions on all new connectors to reduce the tendency to push elk to private lands and support better traditional, non-motorized hunting opportunities.
 - The Proposed Action meets this goal, by restricting motorized access on all new connector trails.
- To only consider connector trails that did not need new water crossings, to minimize effects to fisheries.*
 - The Proposed Action meets this goal, as DARD-09 and 73801 have no new water crossings, and are located outside of RHCAs specified in the Forest Plan.

Criteria (b) 3:

- To restrict motorized use during big-game rifle season on all new connectors to reduce user conflicts during the busiest time of year.
 - The Proposed Action meets this goal by including the above restrictions.

Criteria (b) 4:

- To separate vehicle classes where resource concerns are fully addressed and feasible, to increase recreational experience and reduce safety hazards.
 - The Proposed Action meets this goal to the extent feasible, while minimizing effects to other resources, as all new connectors are limited to OHV<50" in width.

36 CFR § 212.55 (b) does not require that every designation choice be made in favor of natural resources. Motorized designations in the Proposed Action minimize resource effects in a feasible, prudent, and reasonable manner and meet the intent of 36 CFR § 212.55 (b) in the multiple-use context in which the designations occur.

ENDANGERED SPECIES ACT

Threatened or endangered terrestrial wildlife species, or their suitable habitat are not known to occur in the Meadow Vapor project area, except for a few small, isolated areas of lynx habitat in the very top of the Tepee Creek drainage, some larger areas around McCart Lookout above all the vegetative management units in that area, and some large areas in the Lick Creek and Reynolds Creek drainages. Proposed

* Criteria is directly related to Planning and Decision-making BMPs in *Off-road vehicle best management practices for forestlands: A review of scientific literature and guidance for managers* (Switalski and Jones 2012).

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vegetation treatments in these areas would be dropped from treatment. Roads within mapped lynx habitat that are proposed for decommissioning would be recontoured for a short distance from the entrance if the road prism does not qualify as snowshoe hare habitat. If the road prism does qualify as snowshoe hare habitat, the road entrance would be blocked but the road prism would not be disturbed. The proposed road 5770/5771 OHV connector would be located to avoid mapped lynx habitat. If part of the trail location crossed mapped lynx habitat, the tread would be located to avoid snowshoe hare habitat (EA p. 3.7-5). The wildlife biologist determined the Meadow Vapor project would have *Not likely to adversely affect* on Canada lynx and a *No effect* on Yellow-billed cuckoo (PF- WILD-055).

On May 24, 2016, the U. S. Fish and Wildlife Service (FWS) added wolverine as a Proposed species to their list of Threatened, Endangered, and Candidate species that may occur on the Bitterroot National Forest. The Forest acknowledges this status change and reviewed the Meadow Vapor project analysis. The proposed activities would not occur in suitable wolverine habitat (EA, p3.7-1). The project's wildlife biologist used the Region 1 Programmatic Biological Assessment for North American Wolverine to support a determination of *No Jeopardy* for wolverine in the Meadow Vapor project. This determination is reflected in the Determination of Effects for TES Wildlife Species (PF-WILD-005). Projects routinely conducted on Forest Service lands are not considered to be a threat to the wolverine. The Bitterroot National Forest does not need to consult with FWS when a determination for Proposed species is *No Jeopardy*.

No plants listed as threatened or endangered for listing were found in the Meadow Vapor project area. (EA p. 3.11-1).

Bull trout (*Salvelinus confluentus*) is listed as a threatened species with designated critical habitat in all of the East Fork Bitterroot River below Star Falls, Moose Creek below Cuba Creek, Meadow Creek below Balsam Creek, and the lower two miles of Reynolds and Lick creeks. The fisheries biologist determined the Meadow Vapor project *May Affect, not likely to Adversely Affect* bull trout or their critical habitat. The Proposed Action is expected to maintain occupied bull trout habitat and bull trout critical habitat in a condition that is indistinguishable from the existing condition. The Proposed Action is unlikely to result in the death, injury, harm, or harassment of individual bull trout, or adversely modify bull trout critical habitat to the point that it could potentially lead to the injury or death of bull trout (EA, Chapter 3.9-19).

CLEAN WATER ACT

The Proposed Action Alternative is consistent with Montana Impaired Waters (303(d)) programs since the proposed harvest activities require implementation of BMPs. Montana State Code (75-5-703, Annotated 2001) provision 10 c) states that "new or expanded nonpoint source activities affecting a listed water body may commence and continue provided those activities are conducted in accordance with reasonable land, soil, and water conservation practices". Applicable soil and water conservation practices include timber sale contract clauses that control site disturbance, haul operations during wet conditions, and road surface maintenance activities (Meadow Vapor EA, Appendix A, TSC B5.12 and C5.12, with others as applicable). Stream buffers consistent with the Bitterroot National Forest Plan, as amended by INFISH, minimize changes in temperature regimes (EA Chapter 1 p. 1-10).

NATIONAL HISTORIC PRESERVATION ACT

Compliance with §106 of the National Historic Preservation Act was fulfilled under terms of 36CFR 800. A cultural resource inventory report was submitted to the Montana State Historic Preservation

SHPO concurrence on determinations of National Register eligibility and project effect on significant cultural resources was received on February 24, 2016. Consultation with the Confederated Salish and Kootenai Tribes was completed on March 5, 2015 with no tribal cultural concerns identified.

ENVIRONMENTAL JUSTICE EXECUTIVE ORDER 12898

Executive Order 12898 requires fair treatment and meaningful involvement of all citizens regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This decision would not disproportionately affect any minority or low-income population. We have treated all citizens fairly and allowed meaningful involvement by every person regardless of race, color, national origin, or income (EA Ch.3.4).

OTHER CONSIDERATIONS

RAVALLI COUNTY NATURAL RESOURCE USE POLICY

The Ravalli County Natural Resource Use Policy (RCNRUP) was signed and adopted by the Ravalli County Board of Commissioners on November 21, 2012. The policy was developed to help guide the county with their involvement with public land managers. The Ravalli County Natural Resource Use Policy contains Goals and Objectives for how the county would like to see natural resources within the county managed. The interdisciplinary team reviewed the relevant goals and objectives of the natural resource policy.

I understand county representatives perceive issues regarding effects related to the proposed road management activities in the Meadow Vapor Project area. Based on comments submitted on the Meadow Vapor EA, the IDT reevaluated the need for road decommissioning activities. While the amount of road being proposed for decommissioning did not change, the team did reconsider on-the-ground treatments and recommended some changes. While the original proposal called for 7.3 miles of treatment, the team decided that some roads would be okay to leave in their current state and monitor for adverse effects into the future. My decision authorizes approximately 2 miles of treatment, a reduction of nearly 5 miles. My decision addresses the need to treat roads within problem areas to address resource issues and to monitor those that are currently stable. The Meadow Vapor EA discusses these impacts, but I acknowledge the counties still dispute whether my decision will strike the correct balance between ecological protection and local access needs. I recognize the public is dependent on access and use of the Forest. The majority of the roads being proposed for decommissioning and storage were already closed to motorized travel, therefore there is little change to public access. By not physically treating some of these roads, non-motorized access may still be available.

X. FINDING OF NO SIGNIFICANT IMPACT

In accordance with CFR 1508.13 and direction provided in the Forest Service Handbook (FSH 1909.15, Chapter 40, Section 43.1), I have determined that the management actions included in the decision for the Meadow Vapor Project do not constitute a major federal action, and that the implementation of the decision will not significantly affect the quality of the human environment. Accordingly, I have determined that an Environmental Impact Statement does not need to be prepared for this project. I

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have followed the implementing regulations for NEPA (40.CFR 1508.27) and other criteria for determining the significance of effects.

Before making my determination, I carefully reviewed and considered the following information:

- The direct, indirect, and cumulative effects of these actions as documented in the Meadow Vapor Environmental Assessment (EA), issued June 2016.
- The analysis documentation in the project file of the Meadow Vapor Project.
- Comments received during all scoping, and comments received after the EA was published for this project.
- Past experiences with similar activities and projects.

Significant, as used in NEPA requires consideration of both **context** and **intensity**.

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. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short and long-term effects are relevant (40 CFR 1508.27).

The effects of the proposed action are limited in context. The project includes commercial tree harvest on 1,961 acres; non-commercial thinning on 1,158 acres; and prescribed burning on 3,134 acres.

These activities are limited in duration. Effects are local in nature and significant impacts to regional or national resources are not predicted.

On the Bitterroot National Forest and elsewhere across the Northern Region and the nation as a whole, similar projects have been occurring to address similar purposes; in this regard, this project will be a continuation of on-going efforts. Any short-term adverse effects will be avoided through implementation of the standards and guidelines in the Bitterroot National Forest Land and Resource Management Plan (Forest Plan), best management practices BMPs (Appendix A), and the design criteria (*Draft DN*, Appendix D) developed specifically for this project.

The project design criteria minimize and avoid adverse impacts to the extent that such impacts are almost undetectable and immeasurable, even at the local level.

Within the **context** of the landscape as a whole, or at the stand level, the ecological consequences are not found to be significant in the short or long-term.

Intensity refers to the severity of impact. The following ten aspects are considered in the evaluation of intensity (40 CFR 1508.27):

- 1) *Impacts may be both beneficial and adverse. A significant effect may exist even if the balance of the effects will be beneficial.*

The Meadow Vapor Project would have both beneficial and adverse effects and both have been taken into consideration when making a determination of significance. While there will be beneficial effects, in the short and the long term, this action does not rely on those effects to balance adverse environmental

impacts. Detailed specialist reports included in the Meadow Vapor EA and project file contain comprehensive effects analyses and the findings from these resource specific reports form the basis for my decision.

The project includes a range of activities, including timber harvest and associated temporary road construction, non-commercial thinning, prescribed burning, road decommissioning, road storage, and OHV trail construction. These activities have varying effects on the physical, biological, or social components of the affected environment. Some of these effects are more favorable to a particular resource component than to another resource component. Below is a summary of the effects of the activities however, none of the effects, whether favorable or unfavorable, beneficial or adverse, are significant.

Beneficial Effects:

Long-term vegetation benefits are expected through proposed treatments which will reduce forest stocking. Fewer trees would improve individual tree health and vigor as there would be less competition for nutrients and water. Insect and disease infestations would be less severe in the event of a mixed or stand replacing fire event due to treatments. Implementing proposed treatments will allow managers flexibility to incorporate wildland fire on the landscape when those fires do occur, knowing the treated vegetation is more resilient to insect and disease infestations and fire events. Beneficial effects of these proposed treatments would be seen for approximately 10 to 20 years. The vegetation treatments will retain and perpetuate old-growth characteristics in the larger older ponderosa pine (remnant pine) forest cover types.

The proposed action will reduce acres of crown fire behavior in low/mixed severity fire regimes within the WUI, provide beneficial fire effects similar to those of historic fire regimes, and reduce the risk from wildfire to firefighters and the public. The Proposed Action will reduce the likelihood for large-scale, severe wildfires affecting National Forest System lands and adjacent private lands within the project area. Proposed treatments will improve the vegetation condition class departure by creating vegetation and fuel conditions similar to those of historic fire regimes. Prescribed fire can then be safely and successfully used to reintroduce fire to this fire dependent ecosystem.

The restoration activities proposed for the Meadow Vapor watershed will have a number of beneficial effects. In the long-term, the upgrades will improve road drainage and benefit TES aquatic species by reducing delivery of road sediment to streams during storms and wet periods. Blocking, decompacting, and revegetating user-created motorized trails in the RHCA along lower Reynolds Creek will improve the quality and integrity of the RHCA along bull trout critical habitat in the long-term.

Reclamation of roads through road decommissioning and storage in the long term will benefit westslope cutthroat trout by reducing road sediment inputs, particularly in Tepee Creek adjacent to and downstream of NFSR 73573, and in the upper Lick Creek drainage.). The removal of ten crossings will reduce sediment contributions by eight tons/year and move towards the TMDL target of a 42% reduction in sediment contributions in the East Fork Bitterroot River watershed.

Treatments will reduce the risk of stand-replacing fire, and will improve stand composition and structure in the longer term. This will result in improved elk habitat quality in the future.

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The construction of two motorized trail connectors and conversion of a road to motorized trail for OHVs will allow for an improved riding experience in the area by the creation of looped routes.

Potential Adverse Effects

The Proposed Action has the potential to increase soil disturbance on about 168 acres for a total DSD of 309 acres. No units will exceed the R1 SQS for soil quality in the Proposed Action.

The ground disturbing and canopy-opening activities of timber harvest, thinning, pile burning, landing construction and slash burning, and temporary road construction in the Proposed Action will create additional colonization and spread opportunities for the invasive/noxious weed species shown in Table 3.12-1 of the EA. However, the design features described in Appendix D can counteract the increased invasion potential to a degree that will result in a minimal short term and long term increase of invasive/noxious weed density and extent within the project area.

The selected Alternative has several direct and indirect effects to stream sedimentation, both positive and negative. It is probable that some erosion of newly recontoured slopes from the decommissioning of FSR 73573 will occur for up to four years and sediment could be contributed to Tepee Creek due to the proximity to the stream. In the long-term, decommissioning will allow for greater infiltration of runoff and precipitation

Implementation of the Proposed Action will have some short term negative impacts to thermal cover and hiding cover, but this is not expected to reduce the analysis area's carrying capacity for elk. Treatments will reduce canopy closure in some units by reducing overhead canopy to some extent, which would reduce thermo-regulatory benefits. However, reducing the canopy closure would also stimulate elk forage production. The sum total of these effects to elk habitat and elk security is expected to have little effect to elk population numbers in HD 270. The analysis area would continue to support elk viability within HD 270 and the Bitterroot drainage. Proposed treatments would help improve elk habitat and populations in the long term at both the local and Forest scales.

The recreation report determined that recreationists will be temporarily displaced during road and area closures associated with the logging and prescribed burning activities. Dispersed campsites in the project area may be temporarily closed due to area closures during logging and burning operations. Area closures will temporarily displace those recreating in the general forest and on the closed roads (such as horseback riders, mountain bikers, hikers, hunters, etc.); however, there are other places on the forest that offer similar recreation opportunities.

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

All burning of logging slash and the prescribed burn units would comply with State Air Quality Standards and be coordinated through the Montana Airshed Group. Dust from timber hauling activities will be controlled using the dust abatement requirements within the stewardship/timber sale contract provisions. Herbicide treatments of weeds would comply with label directions and in accordance with and under decision authority of the Bitterroot National Forest Noxious and Invasive Weed control EA and Decision Notice (USDA May 2001), to which the Meadow Vapor EA references. Contractors would be required to post signs warning of activities and traffic associated with treatment. Use of open roads or trails by the public may be restricted for safety purposes during logging operations. Roads that currently have restrictions for public motorized use would remain closed during harvest operations.

I believe that the selected action is not likely to have any significant impact to public health or safety.

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

There are no parkland, prime farmlands, ecological critical areas, or wild and scenic rivers within the project area and therefore would not be impacted by the decision. The selected actions would not affect cultural resources because there are no sites in or near the proposed activities.

There are 32 acres of harvest proposed within the RHCA. The potential effects were analyzed in the EA (Chapter 3.9) and design criteria were developed to minimize potential effects to wetlands from harvest activities.

Based on this information, I conclude that my decision will protect RHCA values and the habitat that they provide to fish, wildlife, and plants that use them and have minimal effects on unique resources.

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

Based on the limited context of the project, my review of comments received during the scoping of this project, and the analysis documented in the EA and Project File, I do not find any highly controversial effects to the human environment.

I conclude that the effects of the decision are not considered highly controversial by professionals, specialists, and scientists from associated fields of forestry, wildlife biology, soils, fisheries, and hydrology.

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

Based on my review of comments received during the scoping of the project, the comments received after the publication of the EA, and the analysis documented in the EA and Project File, I find the possible effects on the human environment that are uncertain or involve unique or unknown risks are minimal or non-existent.

The Meadow Vapor Project is similar to other projects conducted across the Bitterroot National Forest. Analysis of this project considered the effects of these past projects as a frame of reference in conjunction with scientifically accepted analytical techniques, available information, and best professional experience and judgement to estimate effects to the human environment.

Beneficial Effects:

The Meadow Vapor Project EA documents the following beneficial effects of implementing management actions:

Long-term vegetation benefits are expected through proposed treatments which will reduce forest stocking. Fewer trees would improve individual tree health and vigor as there would be less competition for nutrients and water. Insect and disease infestations would be less severe in the event of a mixed or stand replacing fire event due to treatments. Implementing proposed treatments will allow managers flexibility to incorporate wildland fire on the landscape when those fires do occur, knowing the treated vegetation is more resilient to insect and disease infestations and fire events. Beneficial effects of these proposed treatments would be seen for approximately 10 to 20 years. The vegetation treatments will

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retain and perpetuate old-growth characteristics in the larger older ponderosa pine (remnant pine) forest cover types.

The proposed action will reduce acres of crown fire behavior in low/mixed severity fire regimes within the WUI, provide beneficial fire effects similar to those of historic fire regimes, and reduce the risk from wildfire to firefighters and the public. The Proposed Action will reduce the likelihood for large-scale, severe wildfires affecting National Forest System lands and adjacent private lands within the project area. Proposed treatments will improve the vegetation condition class departure by creating vegetation and fuel conditions similar to those of historic fire regimes. Prescribed fire can then be safely and successfully used to reintroduce fire to this fire dependent ecosystem.

The restoration activities proposed for the Meadow Vapor watershed will have a number of beneficial effects. In the long-term, the upgrades will improve road drainage and benefit TES aquatic species by reducing delivery of road sediment to streams during storms and wet periods. Blocking, decompacting, and revegetating user-created motorized trails in the RHCA along lower Reynolds Creek will improve the quality and integrity of the RHCA along bull trout critical habitat in the long-term.

Reclamation of roads through road decommissioning and storage in the long term will benefit westslope cutthroat trout by reducing road sediment inputs, particularly in Tepee Creek adjacent to and downstream of NFSR 73573, and in the upper Lick Creek drainage.). The removal of ten crossings will reduce sediment contributions by eight tons/year and move towards the TMDL target of a 42% reduction in sediment contributions in the East Fork Bitterroot River watershed.

Treatments will reduce the risk of stand-replacing fire, and will improve stand composition and structure in the longer term. This will result in improved elk habitat quality in the future.

The construction of two motorized trail connectors and conversion of a road to motorized trail for OHVs will allow for an improved riding experience in the area by the creation of looped routes.

Potential Adverse Effects

The Meadow Vapor EA documents the following potential adverse effects from implementing management actions:

Soil Productivity

The Proposed Action has the potential to increase soil disturbance on about 168 acres for a total DSD of 309 acres. No units will exceed the R1 SQS for soil quality in the Proposed Action.

Invasive Plant Species

The ground disturbing and canopy-opening activities of timber harvest, thinning, pile burning, landing construction and slash burning, and temporary road construction in the Proposed Action will create additional colonization and spread opportunities for the invasive/noxious weed species shown in Table 3.12-1 of the EA. However, the design features described in Appendix D can counteract the increased invasion potential to a degree that will result in a minimal short term and long term increase of invasive/noxious weed density and extent within the project area.

Water Quality and Sedimentation

The selected Alternative has several direct and indirect effects to stream sedimentation, both positive and negative. It is probable that some erosion of newly recontoured slopes from the decommissioning of FSR 73573 will occur for up to four years and sediment could be contributed to Tepee Creek due to the proximity to the stream. In the long-term, decommissioning will allow for greater infiltration of runoff and precipitation

Wildlife

Implementation of the Proposed Action will have some short term negative impacts to thermal cover and hiding cover, but this is not expected to reduce the analysis area's carrying capacity for elk. Treatments will reduce canopy closure in some units by reducing overhead canopy to some extent, which would reduce thermo-regulatory benefits. However, reducing the canopy closure would also stimulate elk forage production. The sum total of these effects to elk habitat and elk security is expected to have little effect to elk population numbers in HD 270. The analysis area would continue to support elk viability within HD 270 and the Bitterroot drainage. Proposed treatments would help improve elk habitat and populations in the long term at both the local and Forest scales.

Recreation

The recreation report determined that recreationists will be temporarily displaced during road and area closures associated with the logging and prescribed burning activities. Dispersed campsites in the project area may be temporarily closed due to area closures during logging and burning operations. Area closures will temporarily displace those recreating in the general forest and on the closed roads (such as horseback riders, mountain bikers, hikers, hunters, etc.); however, there are other places on the forest that offer similar recreation opportunities.

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

The Meadow Vapor Project represents a site-specific project that does not set precedence for future actions or present a decision in principle about future considerations. Any proposed future project must be evaluated on its own merits and effects. Management actions are compatible with the Forest Plan and the capabilities of the land. I believe they do not represent a decision in principle about a future consideration.

- 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.*

Connected, cumulative, and similar actions have been considered and included in the scope of the analysis. The analysis accounts for past, present, and reasonably foreseeable actions. Based on my review of the analysis and disclosure of effects in the EA, specialist reports, Biological Assessments, and other analysis in the project file, I conclude that the Meadow Vapor Project does not represent potential cumulative adverse impacts (please refer to the Meadow Vapor EA, Chapter 3 resource section for resource specific cumulative effects analysis, and individual resource sections in the project file).

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

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I am not aware of management actions that will have adverse effects on, nor cause the loss or destruction of, significant scientific, cultural or historic resources. Heritage surveys have been completed in the Meadow Vapor Project area and no new historic or prehistoric properties are within the proposed treatment units (Project File PF-CULTURAL-001 and Meadow Vapor EA, p. 3.14-1). I believe implementation of the Proposed Action Alternative will not have a significant effect on scientific, cultural, or historical resources.

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.

This project will not significantly adversely affect threatened or endangered species or their habitat. Biological assessments (BAs) (PF-FISH-002 and PF-WILD-005) were completed to assess potential impacts to threatened, endangered, and proposed species and their habitat. These BAs and supporting documentation led to the following determinations for listed species:

Wolverine - Not likely to jeopardize the continued existence of the species

Canada Lynx - Not likely to adversely affect (PF-WILD-005)

Bull Trout - May affect, not likely to adversely affect

Bull Trout Critical Habitat - May affect, not likely to adversely affect

A determination of "may affect, not likely to adversely affect" was made for bull trout and bull trout designated critical habitat (PF-FISH-002). The "may affect, not likely to adversely affect" determination is due to a negligible (extremely low) probability of project activities having adverse effects on bull trout or causing destruction or adverse modification of designated critical habitat. The USFWS concurred with this determination and stated that "The proposed action includes a number of additional mitigation measures designed to minimize the potential impacts to bull trout. Implementation of the Design Features for the Meadow Vapor Project, as described in the biological assessment in Table 2, will likely result in undetectable changes to fine sediment levels in downstream salmonid habitat. Thus, effects of sediment to bull trout will be insignificant. In summary, effects to bull trout as a result of the proposed action will be discountable and/or insignificant.

The Service has reviewed the biological assessment and concurs with the determinations that the proposed action is not likely to adversely affect the threatened bull trout." (PF-FISH-003, p. 2).

10) Whether the action threatens a violation of federal, state or local law or requirements imposed for the protection of the environment.

As described in the EA (Regulatory Framework and Consistency sections for each resource area in Chapter 3), the selected actions are consistent with all applicable federal, state, or local laws or requirements imposed for the protection of the environment.

This decision is consistent with Forest Plan direction. I have concluded that the selected actions do not violate any federal state or local laws or requirements imposed for the protection of the environment.

XI. PRE-DECISIONAL ADMINISTRATIVE REVIEW PROCESS

Copies of the Meadow Vapor *Draft* Decision Notice are available for review at the Darby Ranger Station in Darby, Montana, and at the Forest Supervisor's Office in Hamilton, Montana. Electronic copies are available on the Bitterroot National Forest's webpage: <http://www.fs.usda.gov/project/?project=42988>

The responsible official for this decision is Forest Supervisor Julie King. Individuals or organizations who submitted specific, written comments in response to scoping or the comment period provided for the Environmental Assessment have standing to object under 36 CFR 218, Subparts A and B. Issues raised in objections must be based on previously submitted timely, specific written comments regarding the proposed project unless the issue is based on new information arising after the designated comment opportunities.

The following address should be used for objections sent by regular mail, private carrier or hand delivery:

Objection Reviewing Officer
USDA Forest Service, Northern Region
Building 26 Fort Missoula Road
Missoula, MT 59804

Office hours are Monday through Friday, 8:00am to 4:30pm, excluding Federal holidays.

Objections can be faxed to the Objection Reviewing Officer at (406) 329-3411. The fax coversheet needs to include a subject line with "Meadow Vapor Project Objection" and should specify the number of pages being submitted.

Electronic objections must be submitted to the Objection Reviewing Officer via email to appeals-northern-regional-office@fs.fed.us, with "Meadow Vapor Project Objection" in the subject line. Electronic submissions must be submitted in a format that is readable with optical character recognition software (e.g. Word, PDF, and Rich Text) and be searchable. An automated response should confirm your electronic objection has been received.

The objection must meet the content requirements of 36 CFR 218.8(d), and include the following information: 1) the objector's name and address, with a telephone number or email address, if available; 2) a signature or other verification of authorship upon request (a scanned signature for email may be filed with the objection); 3) when multiple names are listed on an objection, identification of the lead objector as defined in 36 CFR 218.2 (verification of the identity of the lead objector shall be provided upon request); 4) the name of the project being objected to, the name and title of the responsible official, and the name of the national forest and ranger district on which the project will be implemented; 5) a description of those aspects of the project addressed by the objection, including specific issues related to the project and, if applicable, how the objector believes the environmental analysis or draft decision specifically violates law, regulation, or policy; suggested remedies that would resolve the objection; and supporting reasons for the reviewing officer to consider; and 6) a statement that demonstrates the connection between prior specific written comments on the particular project or activity and the content of the objection, unless the objection concerns an issue that arose after the designated opportunity for formal comment. With certain exceptions (36 CFR 218.8(b)), all documents referenced in the objection must be included with the objection.

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An objection, including attachments, must be filed with the appropriate reviewing officer within 45 calendar days following publication of the legal notice of the objection filing period in the newspaper of record, the *Ravalli Republic*. The publication date in the newspaper of record is the exclusive means for calculating the time to file an objection. Objectors should not rely upon dates or timeframe information provided by any other source. It is the objector's responsibility to ensure timely filing of a written objection with the reviewing officer pursuant to 36 CFR 218.9. All objections are available for public inspection during and after the objection process. Responses that do not adhere to these requirements make review of an objection difficult and are conditions under which the reviewing officer may set aside an objection pursuant to 36 CFR 218.10.

XII. CONTACT PERSON

For more information or to request a copy of the *Draft* Decision Notice, please contact Amy Fox, Project Team Leader, at (406) 363-7120 or by email at amyvfox@fs.fed.us with "Meadow Vapor Project" in the subject line.

JULIE K KING
Forest Supervisor
Bitterroot National Forest

Date

APPENDIX A - BEST MANAGEMENT PRACTICES

INTRODUCTION

Best Management Practices (BMPs) are the primary mechanism to protect beneficial uses and water quality from non-point pollution such as sediment (Environmental Protection Agency 1987). This document describes the Forest Service BMP process in detail; BMPs are chosen to fulfill specific, appropriate Soil and Water Conservation Practices (SWCP) and made part of the legally binding Timber Sale Contract (TSC). This document also includes cross-references to the Montana Department of Natural Resource Conservation BMPs (State BMPs) that each SWCP addresses, information related to implementation and planning review, and lists the contractual clauses, or *provisions*, needed to make the BMPs a legal requirement in a timber sale. This document also addresses the effectiveness of selected BMPs.

BMPs include, but are not limited to, structural and non-structural controls, operational controls, and site maintenance procedures. Many BMPs are applied during the planning phase, such as unit designs that avoid stream channels or wetlands. BMPs are applied before, during, and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 CFR 130.2, EPA Water Quality Standards Regulation). Usually BMPs are applied as a system of overlapping and integrated practices rather than a single practice. BMPs are selected on the basis of site-specific conditions that reflect natural background conditions, the proposed activities and technical and economic feasibility.

The Bitterroot National Forest Plan states "Soil and Water Conservation practices will be a part of project design and implementation to ensure soil and water resource protection" (Forest Service Handbook 2509.22, Forest Plan, pg II-25). Montana State Water Quality Standards require the use of Reasonable Land, Soil, and Water Conservation Practices (analogous to BMPs) as the controlling mechanism for nonpoint source pollution. Use of BMPs is required in the Memoranda of Understanding between the Forest Service and the State of Montana as part of our responsibility as the Designated Water Quality Management Agency on National Forest System (NFS) lands.

The Practices described herein are tiered to the practices in FSH 2509.22. They were developed as part of the NEPA process, with interdisciplinary involvement, and meet Forest and State water quality objectives.

In addition to the state BMP and SWCP requirements, Forest Service activities are also controlled by the Inland Native Fish Strategy Environmental Assessment and Finding of No Significant Impact (INFISH) Forest Plan Amendment. This amendment outlines management objectives, standards and guidelines, and monitoring requirements for protecting native fish habitat in western Montana and other areas. The requirements of INFISH and how they are addressed in the project design and analysis are outlined in Chapter 2 of the Environmental Assessment (EA). For the purpose of this project, all state SMZ requirements are met or exceeded through implementation of INFISH Riparian Habitat Conservation Area (RHCA) boundaries.

BMP IMPLEMENTATION PROCESS

In cooperation with the State, the USDA Forest Service primary strategy to control nonpoint sources is implementation of preventive practices (BMPs) determined necessary to protect identified beneficial uses.

The Forest Service Nonpoint Source Management System consists of:

1. BMP selection and design based on site-specific conditions; technical, economic and institutional feasibility; and the designated beneficial uses of the streams.
2. BMP application before, during and after land management activities;
3. BMP monitoring to ensure the practices are implemented and effectively protect designated beneficial uses.
4. Evaluation of BMP monitoring results.
5. Applying monitoring results to current/future activities and BMP design. The District Ranger is responsible for insuring that this BMP feedback loop is implemented on all projects.

1. **BMP Selection and Design.** Forest Plans identify water quality goals. These goals meet or exceed applicable legal requirements, including State water quality regulations, the Clean Water Act and the National Forest Management Act. Project environmental assessments are tiered to Forest Plans during the NEPA process.

The project interdisciplinary team selects the appropriate BMPs. After identifying the designated beneficial uses for the associated streams, the initial list of BMPs is developed from the Forest Plan standards and guidelines, Forest Service handbooks, and special provisions identified by watershed and fisheries specialists for sensitive areas.

BMP selection and design are dictated by water quality objectives, soils, topography, geology, vegetation, and climate. Environmental impacts and water quality protection options are evaluated and alternative mixes of practices are considered. A final collection of practices are selected that not only protect water quality but meet other resource needs. These final selected practices constitute the project BMPs.

2. **BMP Application.** The BMPs are translated into contract provisions or special use permit requirements. This ensures that the operator or person responsible for applying the BMP is legally required to apply it. Specialists review timber sale contracts to insure needed resource protection is included as appropriate contract provisions. Pre-sale crews and engineers take many of the site-specific BMP prescriptions from plan-to-ground during harvest unit and road layout through marking, tagging, flagging, tagline surveys, and locating road drainage and stream crossings. This is when final adjustments to fit the BMP prescriptions to the site are made before implementing the resource activity. Other BMPs are operational guidelines that are monitored by the Timber Sale Administrator (TSA).
3. **BMP Monitoring.** During the course of project activities (e.g. timber harvest or road construction), timber sale administrators, engineer representatives, and resource specialists ensure that the BMPs are implemented according to plan. BMP implementation monitoring is done before, during, and after resource activity implementation. This monitoring answers the question: Did we do what we said we were going to do? Once BMPs have been implemented, further monitoring is done to evaluate if BMPs are effective in meeting management objectives and protecting water

beneficial uses. State water quality standards, including beneficial uses, are one of the evaluation criteria monitored.

4. ***BMP Monitoring Evaluation.*** The technical evaluation of monitoring described above determines how effectively BMPs protect or improve water quality. Water quality standards and conditions of the beneficial uses are one evaluation criteria. If the evaluation indicates that water quality standards are not met or beneficial uses are not protected, corrective action considers the following three components:
 - A. Is the BMP properly designed, technically sound, and effective? Is there a better practice, which is technically sound and feasible to implement?
 - B. Was the BMP applied as designed? What factors were involved in partial, or lack of, implementation – inadequate personnel, equipment, funds, or training?
 - C. Do the parameters and criteria used for effectiveness evaluation adequately reflect changes in water quality and beneficial uses? Was the BMP effective?
5. ***Feedback and Adaptive Management.*** Response to BMP evaluation is both short- and long-term. Where corrective action is needed, immediate response is undertaken. Responses may include: modification of the BMP, modification of the activity, or ceasing the activity. BMP evaluations over the long-term may indicate trends that require responses or changes in management direction.

ITEMS COMMON TO ALL SOIL AND WATER CONSERVATION PRACTICES

Responsibility for Implementation: The District Ranger is responsible for ensuring the factors identified in the following SWCPs are incorporated into the correct timber sale contract provision, that the provisions are included in the timber sale contract, or public works contract through the inclusion of specific contract provisions, and implemented on the ground. Specific timber sale contract provisions are included below in Table A-1 for further reference, and are listed with a "B" or a "C" followed by a number (e.g. B6.4). If the contract is a Stewardship Contract, instead of a traditional Timber Sale Contract, the provision numbers will vary. For example in the Timber Sale Contract, "C6.4# Conduct of Logging" controls logging operations. In the Stewardship Contract the exact same provision is "K-G.4# Conduct of Logging". In general, all of the provisions found in the Timber Sale Contract are also found in the Stewardship contract, under a different numbering scheme. For the purpose of this Appendix A, the provisions referred to will be from the Timber Sale Contract.

Unless otherwise specified, the Presale Forester is responsible for insuring that the factors identified in the following SWCPs are incorporated into the correct timber sale contract B or C provision and that the provisions are included in the timber sale contract.

The Timber Sale Administrator or Engineering Representative are the official representatives of the Contracting Officer (COR) on timber sale and public works contracts, respectively. They are responsible for insuring that the contract provisions are properly administered.

Monitoring: As part of administering the timber sale or public works contracts, the Timber Sale Administrator and Engineering Representative monitor BMP implementation. Resource Specialists also monitor SWCPs and provide feedback to the contract administrators.

SOIL AND WATER CONSERVATION PRACTICES IN THE MEADOW-VAPOR PROJECT

FORMAT OF THE SOIL AND WATER CONSERVATION

In this section, we list the SWCPs in a table followed by a more detailed description of their application to the Meadow-Vapor project. The table lists the class of SWCP, cross-references State BMPs, the timber sale contract provision that implements the SWCP, whether the SWCP applies to the project, and how the SWCP is implemented or reviewed. The following definitions assist with reviewing the table:

CLASSES OF SWCP (BMP)

A = Administrative

G = Ground Disturbance Reduction E = Erosion Reduction

S = Stream Channel Protection/Stream Sediment Reduction

W = Water Quality Protection ACRONYMS

SAM = Sale Area Map

SMZ = Streamside Management Zone

TSA = Timber Sale Administrator

TSC = Timber Sale Contract

REFERENCES

- SWCP (Soil and Water Conservation Practice) number – From R1-R4 Soil and Water Conservation Practices Handbook, Forest Service Handbook 2509.22
- State BMP reference number from MTDNRC 2006 Best Management Practices for Forestry
- Applicability – does this BMP/SWCP apply to this project?
- Planning Review – how is the BMP implemented or addressed in environmental planning for this project?

The detailed description of the SWCPs applicable to the Meadow-Vapor project follows the format outlined below. Montana State BMPs are not referenced in the detailed descriptions.

Title: Includes the SWCP number and a brief title

Objective: Describes the SWCP objective(s) and the goals of implementation.

Effectiveness: Provides a qualitative assessment of expected effectiveness that the applied measure will have on preventing or reducing impacts on water quality. The SWCP is rated High, Moderate, or Low based on the following criteria:

- A. Literature/Research (must be applicable to area)
- B. Administrative studies (local or within similar ecosystem)
- C. Experience (judgment of an expert by education and/or experience)
- D. Fact (obvious by reasoned [logical] response)

Implementation: Identifies the range of site-specific water quality protection measures to be implemented and how the practices are expected to be applied.

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Table A-1: Soil and Water Conservation Practices – Meadow-Vapor Project.

Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
Section 11 Watershed Management						
A	11.01	IV.A.1	Determination of Cumulative Watershed Effects	NA	Y	Completed during project planning, refer to EA
E	11.03	III.D.10	Watershed Improvement of Roads, OHV Trails and Skid Trails	C5.419# C6.632# C6.633#	Y	See watershed improvement list for project
A	11.05	IV.A.1	Wetlands Analysis and Evaluation	B6.61 B6.62 SAM B6.62 C6.62#	Y	Stream and wetland SMZs are physically included within the larger RHCA buffer required by INFISH. Only activity improving the quality of wetlands, such as aspen enhancement, will be allowed within the wetland RHCA. No machinery will be allowed within the RHCA, except on existing roads and landings.
A	11.09	III.E.6	Management by Closure to Use	C5.41#	Y	Specifics of closures and affected roads identified in TS Contract and enforced by TSA (timber sale administrator)
W	11.13		Sanitary Guidelines for Construction of Temporary Labor, Spike, Logging, Fire Camps and Similar Installations	B6.2	Y	Applicable only if camps are established during logging operation.
Section 13 Vegetation Manipulation						
G	13.02	IV.A.1., 2, 4, 5 IV.B.1	Slope Limitations for Tractor Operation (14.07)	C6.4#	Y	Ground-based skidding will be restricted to slopes less than 40%, as stated in the Forest Plan. This is facilitated through cutting unit design.
G	13.03	IV.A.1 IV.B.1& 2	Tractor Operation Excluded from Wetlands, Bogs, & Wet Meadows	B6.61 B6.422 B6.62 SAM C6.62#	Y	Logging Equipment will be excluded from SMZs.
E	13.04	IV.B.6 IV.C.1	Revegetation of Surface Disturbed Areas	B6.6 C6.601# C6.633#	Y	Disturbed sites will be revegetated with a seed mix identified by Forest Botanist.

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
E	13.06	IV.A.1, 4	Soil Moisture Limitations for Tractor Operations	B6.6	Y	Sale administrator will monitor soil moisture conditions, and control activity as needed to protect soils.
A	13.07		Pesticide Use Planning	NA	Y	Incorporated in project planning and design. Addresses in terms of impacts, mitigation.
W	13.08		Apply Pesticides According to Label and EPA Registration Directions	NA	Y	Mitigation and project design.
WA	13.09		Pesticide Application Monitoring and Evaluation	NA	Y	Mitigation and contract administration
A W	13.10		Pesticide Spill Contingency Planning	NA	Y	Project design and mitigation.
W	13.11		Cleaning and Disposal of Pesticide Containers and Equipment	NA	Y	Project design, mitigation, compliance with laws, regulation and proper pesticide application.
W	13.12		Protection of Water, Wetlands, and Riparian Areas During Pesticide Spraying	NA	Y	Project design, mitigation compliance with laws, regulation and proper pesticide application.
	13.13		Controlling Pesticide Drift During Spray Application	NA	Y	Project design, mitigation compliance with laws, regulation and proper pesticide application.
Section 14 Timber Harvest						
A	14.02	IV.A.2-6	Timber Harvest Unit Design (14.08, 14.10)	SAM	Y	Anticipated Detrimental Soil Disturbance (DSD) has been analyzed in the EA, and cutting boundaries have been designed to avoid impacts to RHCA/SMZs. Refer to EA for mitigation and discussion on unit design.

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
A	14.03	IV.A.1 – 4, 6 & B.1 - 3	Use of Sale Area Maps for Designating Soil and Water Protection Needs	B1.1 B.42 B6.5 B6.42 B6.61 B6.62 C6.4	Y	SAM will identify protected stream courses, wetlands and riparian areas, slumps and other areas excluded from harvest
A	14.04	IV.A.1	Limiting the Operating Period of Timber Sale Activities	B6.65 B6.6 B6.31 B6.311 B6.312 C6.316#	Y	Normal operating seasons will be identified in the TSC. TSA will monitor conditions and enforce as needed.
A	14.05	IV.A.1	Protection of Unstable Areas	C6.4#	N	No unstable (mass-movement-prone) areas located during planning or fieldwork
A	14.06	II. (all) III.D.10	Streamside Management Zone Rules, Riparian Area Designation	B6.5 B1.1 C6.50#	Y	SMZ's are typically more narrow than RHCA's that will be marked and excluded from harvest.
G	14.07	IV.A.2& 4	Determining Tractor Loggable Ground	B1.1 B6.42	Y	Initially determined during project planning in IDT discussions. Will be field checked during cutting unit layout. Refer to mitigation, Soils and Watershed reports as well as SWCPs 13.02, 13.03, 14.02, 14.03, 14.05, 14.06.
E	14.08	IV.A.2,4, 5	Tractor Skidding Design	B6.422 C6.4#	Y	Unit Table lists units appropriate for ground based yarding.
E	14.09	IV.A.1, 2	Suspended log Yarding in Timber Harvesting	B6.42 C6.4#	Y	BMP describes requirements for suspended (cable, helicopter) yarding. Applicable to all non-tractor units, determined by field review during planning stages.

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
A	14.10	IV.A.6, B.4	Log Landing Location and Design	B6.422 C6.422	Y	Potential landings have been identified and reviewed on the ground for accessibility. Landings locations will be selected that require the least amount of excavation and have the least potential for erosion. Locations are agreed upon by the purchaser and Forest Service. Mitigation describes treatment after use.
E	14.11	IV.B.4	Log Landing Erosion Prevention and Control	B6.6 B6.311 B6.64 C6.6 C6.601#	Y	BMP describes design of landings and post- use treatment to minimize erosion
E	14.12	IV.B.5&6	Erosion Prevention and Control Measures During Timber Sale Operations	B6.6 B6.64 B6.311 C6.4 C6.6 C6.601#	Y	Erosion control revegetation will occur in a manner approved by the forest botanist.
E	14.15	IV.B.1,5 &6, IV.A.5	Erosion Control on Skid Trails	B6.6 B6.311 B6.65 B6.66 C6.4 C6.6 C6.601#	Y	Water bar spacing identified in BMP, limit summer skidding based on soil moisture to reduce compaction and displacement.
E	14.16	IV.A.1&5	Meadow Protection During Timber Harvesting	B1.1 B5.1 B6.422 B6.61 C6.4# C6.66	Y	Equipment will be prohibited from entering meadows.
S	14.17	IV.A.1&5	Stream course Protection (Implementation and Enforcement)	B1.1 B6.5 B6.6 C6.50# C6.6	Y	Stream courses will be identified on SAM, excluded from equipment entry (SMZ and INFISH), and excluded from treatment area Unless otherwise identified in the EA, Ground based heavy equipment will be prohibited from entering SMZ and RHCAs.
E	14.18	III.E.2, 8, IV.A.5, IV.B.4, 6	Erosion Control Structure Maintenance	B6.67	Y	TSC requires maintenance of erosion control structured by purchaser and is monitored by TSA

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
A	14.19	III.E.7, IV.A.5, B.4, 5, 6	Acceptance of Timber Sale Erosion Control Measures Before Sale Closure	B6.36	Y	Direction according to TSC and certification by TSA required prior to sale closing.
E	14.20	IV.C (all)	Slash Treatment in Sensitive Areas	SAM B6.5 C6.50# B6.7 C6.7 C6.71 C6.753	Y	Mechanized equipment will not be allowed to operate in Sensitive Areas as described in SWCP 14.20.
A	14.22		Modification of the Timber Sale Contract	B2.37 B8.3	Y	Within TSC provision to modify contract for resource reasons.
A	14.23	IV.C.1	Reforestation Requirement	internal	N	No reforestation needs identified.
G	NA	IV.C.3,4, 6	On-site Large Woody Residue and Soil Litter Retention	C6.7# C6.406#	Y	Silvicultural prescriptions specify the amount of woody materials to be left on site following treatments and is displayed in mitigation table. Soil scientist involved in final recommendations.
G	NA	VI. (all)	Winter Logging	C6.4#	Y	Purchaser may work in qualifying winter conditions at their discretion. See mitigations in EA Chapter 2 for details.
Section 15 – Roads and Trails						
S	15.02	III.A,B,C III.D.5, IV.A.5	General Guidelines for the Location and Design of Roads and Trails	B5.2	Y	Applies to any road design and location on the project area. A 124 state permit is required for any stream channel modification.
E	15.03	III.C.1, 7	Road and Trail Erosion Control Plan	B6.31, B6.5, B6.6, C5.31#, C6.6, C6.601#, C6.632#, C6.633#	Y	Seeding and fertilizing of disturbed sites would occur, effectiveness monitoring would determine if reseeding is necessary. Maintenance of haul routes would occur as directed by TSA and TSC. Refer to mitigations in EA.

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
E	15.04	III.D.4 III.E.4,7	Timing of Construction Activities	B6.31 B6.311	Y	TSA will monitor conditions and restrict when needed to prevent adverse results.
E	15.06	III.D.7, III.E.2	Mitigation of Surface Erosion and Stabilization of Slopes	C6.601#	Y	Seeding and fertilizing of disturbed sites would occur, effectiveness monitoring would determine if reseeded is necessary. Erosion control needs determined by TSC and TSA. Refer to mitigations in EA.
E	15.07	III.C.1,5 III.D.2, III.E.2	Control of Permanent Road Drainage	B/C6.6 B6.65 C6.601 C5.31# C6.661	Y	Standard road maintenance and BMP work will be covered under C5.31#.
E	15.08	III.D.1	Pioneer Road Construction	B5.2, B6.5, B6.6, B6.62, C5.1, C5.23#, C6.6, C6.62#	Y	A 124 state permit is required for any stream channel work.
E	15.09	III.D.2 III.E.7	Timely Erosion Control Measures on Incomplete Road and Stream crossing Projects	B6.6 B6.66 C6.6 C5.23#	Y	As directed by TSA and TSC
E	15.10	III.D.3,8	Control of Road Construction Excavation & Side cast Material	B5.2, B5.21,	Y	Controlled through TSC and engineering representative (ER).
S	15.11	VII.A. (all)	Servicing and Refueling of Equipment	B6.34 B6.341 B6.342	Y	Servicing of equipment will be excluded from RHCA/ SMZs.

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Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
S	15.12	III.A.5 IV.B.1	Control of Construction in Riparian Areas	B6.5 B6.61, C6.51, and C6.52. 124 permit	Y	124 state permit required for stream channel modification.
S	15.13	III.E.5	Controlling In-Channel Excavation	C6.36, C6.52, and B6.5	Y	State 124 permit required.
S	15.14	IV.A.(all) V.C.5	Diversion of Flows Around Construction Sites	B6.5	Y	State 124 permit required.
S	15.15	IV.A.(all) V.B.2, V.C.4	Stream crossings on Temporary Roads	B5.1 B6.5 C5.1	N	No new stream crossings planned. No temporary roads planned in RHCA's
S	15.16	IV.A.(all) V.C.(all)	Bridge and Culvert Installation (Disposition of Surplus Material and Protection of Fisheries)	B5.21, B6.5	Y	No new stream crossings planned, culvert replacement may occur as pre-haul maintenance.
E	15.18	III.D.6,8	Disposal of Right-of-Way and Roadside Debris	B5.21, B6.5	Y	Appropriate mitigation for temporary road construction, and pre-haul maintenance.
E	15.21	III.D.1 III.E.1,2	Maintenance of Roads	C5.12 C5.31# C5.316# C5.314# C5.312# C5.41	Y	Road maintenance plan identified in TSC.
E	15.22	III.D.7	Road Surface Treatment to Prevent Loss of Materials	C5.31# (T-103) C5.314#	Y	As directed by TSC.
E	15.23	III.D.6 IV.B.1	Traffic Control During Wet Periods	B5.12, and C5.12	Y	As directed by TSA.
E	15.24	III.E.3,4 VI.B.2	Snow Removal Controls	C5.316#	Y	Refer to TSC, monitored by TSA.

MEADOW VAPOR PROJECT DRAFT DECISION NOTICE

APPENDIX A

BEST MANAGEMENT PRACTICES

Class	SWCP #	State BMP Ref.	SWCP Title	TSC Provision	Applicable? Y/N	Implementation/Planning Review
E	15.25	III.E.8	Obliteration of Temporary Roads	C6.632#	Y	Refer to TSC, monitored by TSA. Required for all temporary
Section 18 Fire Suppression and Fuels Management						
A	18.02	IV.C.2	Formulation of Fire Prescriptions	NA	Y	Rx have been developed in IDT setting with specialist input and consideration of habitat type, existing vegetation, fuel loadings and position on landscape.
E	18.03	IV.C.8	Protection of Soil & Water from Prescribed Burning Effects	NA	Y	Burning should only occur during Rx window to meet prescribed fire intentions. See soil mitigations in EA.
E	18.04	None	Minimizing Watershed Impacts from Fire Suppression Efforts	NA	Y	Should a prescribed fire escape, resource advisor would advise suppression team of sensitive areas and resource concerns.
E	18.05	None	Stabilization of Fire Suppression Related Watershed Damage	NA	Y	This practice would be applied in the event a prescribed fire escaped containment. A resource advisor would inform the fire suppression team of sensitive areas and resource concerns.

SWCPS DESCRIPTIONS

PRACTICE 11.07 - OIL AND HAZARDOUS SUBSTANCE SPILL CONTINGENCY PRACTICE 15.11 - SERVICING AND REFUELING OF EQUIPMENT

OBJECTIVE: To minimize contamination of waters from accidental spills of fuels, lubricants, bitumen, raw sewage, wash water, and other harmful materials by prior planning and development of Spill Prevention Control and Countermeasure Plans.

EFFECTIVENESS: High based on reason, logic response, and observation.

IMPLEMENTATION: The Contracting Officer, Engineering Representative, or Timber Sale Administrator would designate the location, size, and allowable uses of service and refueling areas. They would also be aware of procedures to follow in case of a hazardous spill, as outlined in the Forest Hazardous Substance Spill Contingency Plan (SWCP 11.07). Contract provisions CT6.34 Sanitation and Servicing and BT6.341 Prevention of Oil Spills are included in all timber sale contracts. BT6.341 requires the purchaser to prepare a spill prevention control and countermeasure plan, which shall meet applicable EPA requirements, including certification by a registered professional engineer. This requirement is implemented when the total oil or oil products storage exceeds 1,320 gallons, or when any single container exceeds 660 gallons.

PRACTICE 13.02 - SLOPE LIMITATIONS FOR TRACTOR OPERATION PRACTICE 13.06

**- SOIL MOISTURE LIMITATIONS FOR TRACTOR OPERATION PRACTICE 14.02 –
TIMBER HARVEST UNIT DESIGN****PRACTICE 14.07 – DETERMINING TRACTOR LOGGABLE GROUND PRACTICE
14.08 – TRACTOR SKIDDING DESIGN**

OBJECTIVE: To insure that timber harvest unit design would secure favorable conditions of water flow, maintain water quality and soil productivity, and reduce soil erosion and sedimentation during and following thinning and fuel reduction.

EXPLANATION: The recommendations in these practices are based on soil conditions and slope, which relate to erosion hazard. The objective of these practices is to minimize erosion by limiting tractor yarding to appropriate terrain and soils, and by designing skidding patterns to best fit the terrain. General slope limitations for tractor logging are 35% standard and 20% adverse (uphill).

All tractor units would be logged using designated skid trails. Equipment would occasionally leave the trails to access trees or accomplish other activities.

Logging may occur in either winter or summer (subject to applicable timing restrictions required for other resources, such as wildlife). The goal is to occupy less than 15 percent of the harvest area, which includes soil disturbance from skid trails, temporary roads, and landings associated with either past activities or proposed activities.

All of the proposed units either have less than 15 percent existing detrimental soil disturbance, or would after post-logging treatments are implemented (e.g., subsoiling). Most of the existing soil disturbance is from old skid trails or roads, some of which can be reused.

All existing roads and skid trails would be reused to the extent feasible unless doing so would adversely affect soil, water, or other resources. If roads or trails cannot be reused, their extent must be considered when laying out additional skid trails.

To the extent possible, logging in summer would occur when the soils are drier than field capacity nearing the permanent wilting point, as determined by the hand feel method and observations of grasses and forbs, or other agreed-upon method.

Winter logging requires a combination of soil frost and snow depth sufficient to protect the soil from detrimental disturbance

Timber Sale Administrators will monitor soil moisture conditions prior to allowing equipment to begin operations in summer and monitor snow and temperature conditions prior to winter logging. This monitoring must be documented in the Timber Sale reports.

All burn units would be ignited when burning conditions meet the prescription and would maintain soil quality within an acceptable range.

If monitoring after project implementation indicates that detrimental soil disturbances for a given treatment unit exceed or equal 15 percent, then all or a portion of the following actions will be used to begin the restoration of soil quality. Restoration would occur on sites with a high amount of detrimentally disturbed ground such as designated skid trails and landings:

- Scarify heavily used skid trails and landings with the teeth on an excavator bucket to a depth of 2 to 4 inches. Subsoiling with a grapple rake (SGR) or excavator bucket (SEB) may be necessary if it is determined that subsurface compaction is root limiting. In these cases, the subsoiling would decompact the skid trail to the appropriate depth to allow for productive vegetative growth.

- Plant Montana-certified weed free native grasses on the scarified soils as recommended by the Forest Botanist.
- Plant native shrubs where needed to augment natural vegetation and scarification.

The site condition will be used to determine which of the above mitigations would be used. These mitigations do not result in instant restoration of detrimentally disturbed soils; rather they begin the restoration process.

All temporary roads (constructed and re-used existing templates) will be reclaimed after use, as soon as logistically practicable. The reclaiming of temporary roads will include removing any installed culverts or temporary bridges, re-contouring the entire road template to natural ground contour, and, to the extent feasible, placing the top soil back on the soil surface. Decomposition of the road bed will be completed on existing templates where topsoil materials are no longer available. Woody material should be placed on the recontoured and decomposed road as available. The road reclamation will be completed with fertilization and seeding as specified by the Soil Scientist and Forest Botanist.

EFFECTIVENESS: High - Experience of Bitterroot NF Soil Scientist and Botanist; based on reason, logic and observation.

IMPLEMENTATION: The following features would be designated on the Timber Sale Area Map:

Project Specific BMPs would be implemented primarily with the use of timber sale contract provision CT6.4, or other appropriate contract provisions.

PRACTICE 14.03 - USE OF SALE AREA MAPS FOR DESIGNATING SOIL AND WATER PROTECTION NEEDS

PRACTICE 14.16 – MEADOW PROTECTION DURING TIMBER HARVESTING

PRACTICE 14.17 STREAM COURSE PROTECTION (IMPLEMENTATION & ENFORCEMENT)

OBJECTIVE: To delineate the location of protection and special treatment areas and ensure their recognition, proper consideration, and protection during project activities.

EFFECTIVENESS: High; the hydrologist, fisheries biologist, and soil scientist review the timber sale area map; based on reason, logic, and observation.

IMPLEMENTATION: The following features would be designated on the Timber Sale Area Map:

Stream courses (perennial and intermittent) to be protected under contract provision BT6.5 Special treatment zones (STZS) as needed as per contract provision CT6.62 (site-specific wetland protection measures).

PRACTICE: 14.06 - RIPARIAN AREA DESIGNATION

OBJECTIVE: To minimize the adverse effects on Riparian Areas from adjacent logging and related land disturbance activities.

EFFECTIVENESS: High; local monitoring, and experience of the soil scientist, hydrologist, sale administrator and interdisciplinary team (ID Team) are that these requirements and criteria are highly effective in minimizing soil erosion.

IMPLEMENTATION: The Riparian Area requirements are identified during the environmental analysis by the ID Team. The timber sale project is designed to include site specific recommendations for the prevention of sedimentation and other stream damage from logging activities. The

environmental analysis will provide for planning of harvests to insure long-term health and revegetation of the Riparian Areas, while meeting shading, debris recruitment, and other management objectives. As appropriate, monitoring and evaluation will be identified in the environmental analysis documentation. The Presale Forester is responsible for the inclusion of the Riparian Areas in the Timber Sale Contract and on the Sale Area Map.

The certified Sale Administrator is responsible for contract compliance during harvest operations. Riparian area widths are determined by INFISH criteria and exceed MT DNRC requirements.

PRACTICE 14.09 – SUSPENDED LOG YARDING, LANDING LOCATION AND DESIGN

OBJECTIVE: To protect the soil from excessive disturbance and accelerated erosion and to maintain the integrity of the Riparian Area and other sensitive watershed areas.

EFFECTIVENESS: High; Local monitoring, and experience of the soil scientist, hydrologist, sale administrator, and ID Team members indicate these requirements and criteria are highly effective in minimizing soil erosion.

IMPLEMENTATION: During the environmental analysis, the ID Team identifies areas where suspended log yarding is needed. The specific systems are included in the contract and designated on the Sale Area Map by the Presale Forester. The Timber Sale Administrator oversees the project operation using the guidelines and standards established in the timber sale contract with reference to the environmental analysis documentation.

Suspended log yarding includes all yarding systems in which logs are partially or wholly suspended off of the ground. These systems include high-lead, skyline, helicopter, and balloon yarders. The systems are used on steep or unstable slopes and in Riparian Areas where tractors cannot operate. All of these systems cause less soil disturbance because there is less contact between the soil and heavy machinery. In most cases, these systems require fewer roads because they have a longer “reach”. Fewer roads and less soil disturbance causes less soil and water resource impacts.

PRACTICE 14.10 - LOG LANDING LOCATION AND DESIGN

PRACTICE 14.11 - LOG LANDING EROSION PREVENTION AND CONTROL

PRACTICE 14.12 - EROSION PREVENTION AND CONTROL MEASURES DURING TIMBER SALE OPERATIONS

PRACTICE 14.15 - EROSION CONTROL ON SKID TRAILS

OBJECTIVE: To protect water quality by minimizing erosion and subsequent sedimentation derived from log landings and skid trails.

EFFECTIVENESS: High; experience of the soil scientist, hydrologist, sale administrator, and ID Team indicate that these requirements and criteria are highly effective in minimizing soil erosion).

IMPLEMENTATION: Standard Timber Sale provision BT6.6 requires the purchaser to conduct operations in a reasonable fashion to minimize erosion. Additionally, specific erosion requirements would be spelled out in provisions such as CT6.4, CT6.6, CT6.601, CT6.62, and CT6.623. Project-specific BMPs would be implemented primarily through timber sale contract provision CT6.4, or other appropriate contract provisions.

The following criteria would be used to control or minimize erosion from landings and skid trails:

1. Landings:

- Maintain landings during periods of use in a manner that prevents debris and sediment from entering any streams.
- Landings would drain in a direction and manner that would minimize erosion and preclude sediment delivery to any stream.
- Standard timber sale contract provision B6.64 Landings requires that after landings have served the Purchaser's purpose, the Purchaser shall ditch or slope them to allow water to drain or spread.
- Landings would be seeded as needed with a mix approved by the Forest Botanist.

2. Skid Trails:

- Skid trails would be water-barred as needed; the Timber Sale Administrator would designate the trail location and spacing (SWCP 15.25).
- Skid trails likely to produce sediment would be covered with slash and/or seeded with a mix of seed and fertilizer specified in CT6.601

PRACTICE 14.18 - EROSION CONTROL STRUCTURE MAINTENANCE

OBJECTIVE: To ensure that constructed erosion control structures are stabilized and working effectively.

EFFECTIVENESS: High; experience of the soil scientist, sale administrator, and ID Team members is that the following requirement is highly effective in minimizing soil erosion.

IMPLEMENTATION: Timber Sale Contract provision, BT6.66, requires that during the period of the contract, the Purchaser shall provide maintenance of soil erosion control structures constructed by the Purchaser until they stabilize. The Forest Service may agree to perform such structure maintenance under BT4.228 Cooperative Deposits, if requested by the Purchaser, subject to agreement on rates. Should the Purchaser fail to do seasonal maintenance work, the Forest Service may assume the responsibility and charge the Purchaser accordingly. The Timber Sale Administrator would ensure that erosion control structures are working effectively.

PRACTICE 14.19 - ACCEPTANCE OF TIMBER SALE EROSION CONTROL MEASURES BEFORE SALE CLOSURE

OBJECTIVE: To assure the adequacy of required erosion control work on timber sales.

EFFECTIVENESS: High; reasoned, logical response or observation.

IMPLEMENTATION: Timber Sale Contract provision BT6.36, requires that upon the Purchaser's written request and assurance that contract work has been completed; the Forest Service shall perform an acceptance inspection. For erosion control work, "acceptable" means only minor deviation from established standards, provided no major or lasting impact is caused to soil and water resources. The Timber Sale Administrator would not accept as complete, any erosion control work that does not meet this criteria.

PRACTICE 15.02 - GENERAL GUIDELINES FOR THE LOCATION AND DESIGN OF ROADS AND TRAILS

OBJECTIVE: To locate and design roads and trails with minimal soil and water resource impact while considering all design criteria.

EXPLANATION: Several considerations must be incorporated into the location and design of roads

and trails. These factors directly affect protection of water quality, soil, and other resource values. The following coordination instructions apply to all transportation activities:

- A. Area Transportation Analysis and project planning will be completed using an interdisciplinary process, and the appropriate NEPA document will be prepared and tiered to the Forest Plan. Area Transportation analysis is an extremely effective tool to reduce overall road mileages and minimize potential resource impacts.
- B. Location, design, and construction activities shall utilize appropriate technical resource staffs, when needed, to evaluate effects of transportation development and operations, and recommend mitigating measures to minimize adverse impacts.
- C. Roads and trails will be located and designed to facilitate completion of the transportation system, serve specific resource management needs, fit the terrain, and minimize damage to improvements and resources. Fragile, unstable, sensitive, or special areas should be avoided.
- D. Roads and trails should be designed based on traffic and safety requirements of anticipated use and to meet the overall transportation plan. The design shall incorporate features to prevent or minimize soil movement and sedimentation as well as undue disruption of water flow.
- E. Stream crossing structures shall be designed to provide the most efficient drainage facility consistent with resource protections, importance of the road, legal obligations, and total costs. The design may involve a hydrologic analysis to determine runoff rates and volumes, flood conditions, velocities, scour, open channel shapes, approach topography, materials-foundation condition, and fish passage, as required. An economic comparison of various flood frequencies versus structure sizes and types is also considered.
- F. Locate and design roads and trails to drain naturally by appropriate use of out-sloping or in-sloping with cross drainage and grade changes, where possible. Relief culverts and roadside ditches will be designed whenever reliance upon natural drainage would not protect the running surface, excavation, or embankment. Road and trail drainage should be channeled to effective buffer areas to maximize sediment deposition prior to entry into live water.

EFFECTIVENESS: High for new permanent or temporary roads; reasoned, logical response, or observation.

IMPLEMENTATION: During the environmental analysis, the ID team ensured that management needs, objectives, requirements, and controls are incorporated in the location and design of roads and trails. Mitigation measures needed to protect soil and water resources were identified in the NEPA process. Contract provisions will be prepared that meet the soil and water resource protection requirements.

PRACTICE 15.03 - ROAD AND TRAIL EROSION CONTROL PLAN

OBJECTIVE: To prevent, limit, and mitigate erosion, sedimentation, and resulting water quality degradation prior to the initiation of construction and maintenance activities through effective contract administration during construction and timely implementation of erosion control practices.

EXPLANATION: Land disturbing activities usually result in at least short-term erosion. Poorly designed, located, constructed, and maintained roads and trails are usually responsible for the majority of stream sedimentation problems associated with forest management practices. By effectively planning for erosion control, sedimentation can be minimized.

Roads and trails require a variety of erosion control measures. Many erosion control practices not only protect water quality but also maintain road prism integrity, reduce maintenance costs, and improve traffic characteristics. The location of the road or trail with respect to streams, beneficial uses of that water, soil, and geologic information and other site factors govern the degree of stabilization required. Stabilization usually includes a combination of practices that promotes the re-establishment of vegetation on exposed slopes, provides physical protection to exposed surfaces, prevents the downslope movement of soil, or controls road drainage.

Since a newly constructed road is most susceptible to erosion from seasonal precipitation, the timing of erosion control practices is of primary concern. Those practices that can be accomplished concurrent with road construction shall be favored as a means of immediate protection of the water resource

EFFECTIVENESS: Moderate – High; reason, logical response, and observation).

IMPLEMENTATION: Erosion control objectives and detailed mitigation measures are developed using an interdisciplinary approach during the environmental analysis. The contract specifications and provisions for the road or trail shall reflect these measures and objectives. When standard specifications do not provide the degree of mitigation required, the ID team will develop special project specifications.

Prior to the start of construction, the Purchaser shall submit a schedule for proposed erosion control work as required in the timber sale contract standard specifications. The schedule shall include all erosion control items identified in the specifications. The schedule shall consider erosion control work necessary for all phases of the project. The Purchaser's construction schedule and plan of operation will be reviewed in conjunction with the erosion control plan to insure their compatibility before any schedules are approved. No work will be permitted on the project until the Contracting Officer has approved all schedules.

The Contracting Officer or Engineering Representative shall ensure that erosion control measures are implemented according to the approved schedule and are completed in an acceptable fashion. Field reviews and on-site inspection by the Line Officer and/or Forest Engineer will identify any additional erosion control measures required to protect the streams that were not recognized during planning or design. Necessary correction measures shall be implemented immediately through normal administrative channels.

The following items may be considered as erosion control measures when constructed in a timely manner. To maximize effectiveness, erosion control measures must be in place and functional prior to seasonal precipitation or runoff.

- A. **Measures to reestablish vegetation on exposed soils:** This is usually

accomplished by seeding suitable grass and legume species in conjunction with mulching and fertilization. In some situations, treatments may include tree seedling planting or sprigging of other woody species.

- B. **Measures which physically protect the soil surface from detachment or modify the topography to minimize erosion:** These treatments may include the use of dust oil or gravel on the road travelway and ditches and the use of mulches, riprap, erosion mats, and terracing on cuts, fills, and ditches. Temporary waterbars on unfinished roads and trails can effectively reduce sedimentation.
- C. **Measures which physically inhibit the downslope movement of sediments to streams:** These measures may include the use of slash filter windrows on or below the fill slopes, baled straw in ditches or below fill slopes, catch basins at culvert inlets, and sediment basin slash filter windrows may be utilized in live water drainages where fish passage is not required and where peak flows are low.
- D. **Measures that reduce the amount of soil disturbance in or near streams:** These measures may include dewatering culvert installation or other construction sites, and immediate placement of permanent culverts during road pioneering. Temporary pipes should not be allowed unless positive control of sedimentation can be accomplished during installation, use, and removal.
- E. **Measures that control the concentration and flow of surface and subsurface water:** These may include insloping, outsloping, ditches, cross drains, under drains, trenches, and so forth.

PRACTICE 15.06 - MITIGATION OF SURFACE EROSION AND STABILIZATION OF SLOPES PRACTICE 13.04 - REVEGETATION OF SURFACE DISTURBED AREAS

OBJECTIVE: To protect soil productivity and water quality at culvert removal and culvert upgrade sites by minimizing soil erosion.

EXPLANATION: This practice is used to stabilize disturbed area surfaces with vegetation. The type of vegetation to use is determined by evaluating soil fertility and water holding capacity, slope, aspect, landtype characteristics, climate, vegetation species characteristics, and project objectives. Based on field observations and interpretations, the ID Team selects the type of vegetation that meets many or most of the management objectives for the area; range, wildlife, timber, fuels, minerals, and aesthetics. Grass or browse species (shrubs) may be seeded or planted between recently planted trees for erosion prevention, wildlife habitat enhancement, or other management needs.

EFFECTIVENESS: Moderate; reason, logical response, and observation

IMPLEMENTATION: The identification of disturbed areas and vegetation species mix are determined during the NEPA process. The responsible Line Officer assigns specific individuals to execute the project. Projects are subsequently monitored to assess the revegetation effectiveness, and need for follow-up action.

PRACTICE 13.07 – PESTICIDE USE PLANNING

PRACTICE 13.08 – APPLY PESTICIDES ACCORDING TO LABEL AND EPA REGISTRATION DIRECTIONS

PRACTICE 13.09 – PESTICIDE APPLICATION MONITORING AND EVALUATION

PRACTICE 13.10 – PESTICIDE SPILL CONTINGENCY PLANNING

PRACTICE 13.11 – CLEANING AND DISPOSAL OF PESTICIDE CONTAINERS AND EQUIPMENT PRACTICE 13.12

**– PROTECTION OF WATER, WETLANDS, AND RIPARIAN AREAS DURING PESTICIDE SPRAYING
PRACTICE 13.13 – CONTROLLING PESTICIDE DRIFT DURING SPRAY APPLICATION PRACTICE:
13.07 – PESTICIDE USE PLANNING**

OBJECTIVE: To incorporate water quality and hydrologic considerations into the Pesticide Use Planning Process.

EXPLANATION: The pesticide use planning process will be used to identify problem areas and the objectives of the project, establish the administrative controls, identify treatments and preventive measures, and incorporate the hydrologic considerations contained in SWCP 13.08 through 13.13. The NEPA process addresses these considerations in terms of impacts, mitigation measures, and alternative treatment measures. Project work and safety plans specify management direction.

Factors considered in pesticide selection are: purpose of the project, application methods available, target species, timing of treatment, pest location, size of treatment area, and need for repeated treatment.

Practicability of application considers: registration restrictions, form and method of application, topographic relief and areas to be avoided, and social acceptance of the project. The degree of risk considers: hazard to humans, method of application, transportation and handling hazards, carriers needed, and chemical persistence.

EFFECTIVENESS: High; reason, logical response, and observation

IMPLEMENTATION: The interdisciplinary team evaluates the project in terms of potential site response, potential social and environmental impacts, mitigating measures needed to protect water quality, and the need and intensity of monitoring and evaluation. The responsible Line Officer then prepares the necessary NEPA documentation, Project Plan and Safety Plan. Depending on the pesticide use, (FSM 2151.04) the Forest pesticide-use coordinator or Integrated Pest Management Working Group or regional IP-MWG reviews the documents along with the Pesticide-use Proposal, form FS-2100-2, and makes recommendations for or against approval of the project.

REFERENCES: NFMA; NEPA; FSM 2150 and 2323; State Hazardous Waste Management Plans; see references in “Best Management Practices” Definition 05—2 and 3.

PRACTICE 13.08 – APPLY PESTICIDES ACCORDING TO LABEL AND EPA REGISTRATION DIRECTIONS

OBJECTIVE: To avoid water contamination by complying with all label instructions and restrictions.

EXPLANATION: Label directions for each pesticide are detailed and specific, and include legal requirements to use.

EFFECTIVENESS: High; reason and logical response.

IMPLEMENTATION: Constraints identified on the label and other legal requirements of application are incorporated into project plans and contracts. Responsibility for ensuring that label directions and other applicable requirement are followed rests with the Forest Supervisor or designate such as the Forest Pesticide Use Coordinator. For contracted projects, it is the responsibility of the Contracting Officer to ensure that label directions and all other requirements are followed.

REFERENCES: FSM 2150; Best Management Practice Definition (05—2 and 3).

PRACTICE 13.09 – PESTICIDE APPLICATION MONITORING AND EVALUATION

OBJECTIVE: To determine and document that pesticides have been applied safely and to provide an early warning for any contamination of water or non-target areas or resources.

EXPLANATION: This practice provides feedback on the placement accuracy, application amount, and any water contamination that might occur from pesticide use to minimize or eliminate hazards to non-target areas or resources. Monitoring and evaluation methods include spray cards, dye tracing, and direct measurement of pesticide in or near water. Type of pesticide, equipment, application difficulty, public concern, beneficial uses, monitoring difficulty, availability of competent laboratory analysis and applicable federal, State, and local laws and regulations are factors considered when determining the monitoring and evaluation needs.

EFFECTIVENESS: High; reasoned and logical response.

IMPLEMENTATION: The monitoring and evaluation of pesticide application is a component of SWCP 11.2. The need for a monitoring plan is identified during the Pesticide Use Planning Process/NEPA process. If determined necessary, this monitoring and evaluation plan will consider the same items as in SWCP 11.02. A technical staff familiar in pesticide monitoring will evaluate and interpret the monitoring results in terms of compliance, State water quality standards, and adequacy of project specifications.

REFERENCES: FSM 2150; Best Management Practice Definition (05—2 and 3).

PRACTICE 13.10 – PESTICIDE SPILL CONTINGENCY PLANNING

OBJECTIVE: To reduce contamination of water from accidental pesticide spills.

EXPLANATION: A contingency plan that contains a predetermined organization and immediate actions to be implemented in the event of a hazardous substance spill will be prepared. The plan lists notification requirements, time requirements for notification, how spill will be handled, and who will be responsible for clean-up. Factors considered for each spill are: specific substance spilled, quantity, toxicity, proximity of spill to waters, and the hazard to life, property, and the environment.

EFFECTIVENESS: High; reasoned, logical response, and observation.

IMPLEMENTATION: The Pesticide Spill Contingency Plan will be incorporated into the Project Safety Plan. The NEPA process will provide the means for including public and other agency involvement in plan preparation. The plan will list the responsible authorities.

REFERENCES: SWCP 11.07; Pesticide Storage, Transportation, Spills, and Disposal Handbook (FSH 2109.12); FSM 6740, 7442, 7443, and 7460; Oil and Hazardous Substances Pollution contingency Plan for EPA Region 8 and 10, 7/26/85; R1 and R4 Emergency and Disaster Plan; Best Management Practice Definition (05—2 and 3).

PRACTICE 13.11 – CLEANING AND DISPOSAL OF PESTICIDE CONTAINERS AND EQUIPMENT

OBJECTIVE: To prevent water contamination and risk to humans from cleaning and disposal of pesticide containers.

EXPLANATION: The cleaning and disposal of pesticide containers and equipment must be done in accordance with Federal, State, and local laws, regulations, and directives, and in a manner which

will safeguard public health, the beneficial uses of water, aquatic organisms, and wildlife. Containers are rinsed three times, the rinse water applied on the project area as soon as practical, and the containers taken to the designated disposal site. Application equipment is also rinsed and rinse water applied to the project site before the equipment is moved from the project area.

EFFECTIVENESS: Moderate; reason, logical response, and observation

IMPLEMENTATION: The Forest or District Pesticide Use Coordinator will locate proper rinsing and disposal sites, and will arrange for container disposal in an approved disposal site when pesticide is applied by Forest Service personnel. When the pesticide is applied by a contractor, the contractor is responsible for proper clean-up and container disposal in accordance with label directions and Federal, State, and local laws.

REFERENCES: SWCP 11.07; Pesticide Storage, Transportation, Spills, and Disposal Handbook (FSH 2109.12); FSM 6740, 7442, 7443, and 7460; Oil and Hazardous Substances Pollution contingency Plan for EPA Region 8 and 10, 7/26/85; R1 and R4 Emergency and Disaster Plan; Best Management Practice Definition (05—2 and 3).

PRACTICE 13.12 – PROTECTION OF WATER, WETLANDS, AND RIPARIAN AREAS DURING PESTICIDE SPRAYING

OBJECTIVE: To minimize the risk of a pesticide entering surface or subsurface waters or affecting riparian areas, wetlands, or other non-target areas.

EXPLANATION: When applying pesticides, an untreated buffer strip will be left alongside surface waters, wetlands, and riparian areas. Factors considered in establishing buffer strip widths beyond minimums established by FSM and NEPA documents are: beneficial water uses, adjacent land use, rainfall, temperature, wind speed, wind direction, terrain, slope, soils and geology, vegetative type, and aquatic life. Other considerations include: persistence mobility, toxicity, and formulation of the pesticide, method of application, equipment used, spray pattern, droplet size, application height, and application pattern.

EFFECTIVENESS: High; reasoned, logical response, observation

IMPLEMENTATION: The interdisciplinary team and the Forest Pesticide Use Coordinator will identify and map protected areas during the NEPA process. Protection of untreated areas is the responsibility of the project supervisor for Forest Service applications and the Contracting Officer for contracted projects. The certified commercial applicators are briefed about location of protected areas. These areas are flagged or otherwise marked when necessary to aid in boundary identification.

REFERENCES: FSM 2526, 2527, 2245, and 2150; see references in **Best Management Practice** (05—2 and 3).

PRACTICE 13.13 – CONTROLLING PESTICIDE DRIFT DURING SPRAY APPLICATION

OBJECTIVE: To minimize the risk of pesticide contaminating non-target areas.

EXPLANATION: Pesticide spray applications will be accomplished according to a prescription that specifies the following: areas to be left untreated, buffer areas, type of spray and associated materials, equipment and method to be used, droplet size, spray height, application pattern, flow rate, terrain, and weather. Hand spraying, with less associated risk, will have fewer application restrictions for drift than aerial spraying.

EFFECTIVENESS: High; reasoned, logical response, and observation

IMPLEMENTATION: The ID Team and the Forest or District Pesticide Use Coordinator prepare the prescription during the NEPA process. The Line Officer is responsible for designating a project supervisor who is responsible for ensuring the prescription is followed during application and for terminating application if the standards are exceeded.

REFERENCES: FSM 2150 and 2245; SWCP 13.12; Best Management Practice Definition (05—2 and

3). Other BMPs

- A spill cleanup kit will be available whenever pesticides (herbicides) are transported or stored.
- A spill contingency plan will be developed prior to all herbicide applications. Individuals involved in herbicide handling or application will be instructed on the spill contingency plan and spill control, containment, and cleanup process.
- Herbicide applications will only treat the minimum area necessary for control of noxious weeds.
- No spraying will occur when wind velocity exceeds 6 miles per hour or as specified on the label.
- Do not spray if precipitation is occurring or is imminent.
- Do not spray if air turbulence is sufficient to affect the normal spray pattern.

For additional information on SWCP's, including Objectives and Effectiveness, refer to Forest Service Handbook 2509.22 on file at the Supervisor's Office.

APPENDIX B- RESPONSE TO COMMENT

PUBLIC COMMENT ON THE EA

The 30-day comment period required for the Meadow Vapor EA began on June 5, 2016 and closed on July 5, 2016. The Forest received 13 letters or e-mails, nine of which were from individuals, three from government entities, and one from a local user group. Most of the comments were similar in nature and concerned the proposed road management activities. The majority of commenters were supportive of the proposed vegetation management activities, however, one individual was not supportive of the project.

Each comment letter was carefully considered by the Interdisciplinary Team. Letters were analyzed to identify comments (as defined by 36 CFR 218.2). All comments received were fully considered in my decision. These comments also influenced my decision on which activities were included in the selected alternative described in this draft decision.

RESPONSE TO COMMENT ON THE EA

This appendix does not include all comments received on the EA. Rather, it includes comments received from multiple commenters around a common issue. 40 CFR 1503.4(a) **Response to comments** refers to final environmental impact statements, and is not applicable to environmental assessments. This project is an EA, and is subject to the Project-Level Predecisional Administrative Review Process (36 CFR 218). 218.25(b)(1) states, "The responsible official shall consider all written comments submitted in compliance with paragraph (a) of this section." and (2)" (2) All written comments received by the responsible official shall be placed in the project file and shall become a matter of public record." The complete response to comments can be found in the project record (EA COMMENTS-014).

The comment and responses have been organized according to comment subject matter. Where similar comment were received, a single response was provided for multiple comment or representative comment were chosen for a single response.

Table B-1 lists the commenter and the letter number as it appears in the Response to Comment.

TABLE B-1. COMMENTERS ON THE MEADOW VAPOR EA

LETTER NO.	COMMENTER
1	Kevin Brown
2	Eric Kurtz
3	Dick Artley
4	Robert Ray, MT DEQ
5	Ravalli County Commissioners
6	Dan Thompson, Ravalli County Off Road User Association
7	Larry Hoffland
8	Alice & Ron Brace
9	Randy Arnold, Montana Fish, Wildlife & Parks

LETTER NO.	COMMENTER
10	Mike & Kathy Jeffords
11	J. Tenzer
12	Marsha Waliser (Received after close of comment period)
13	Robert Embree (Received after close of comment period)

SUPPORT FOR VEGETATION MANAGEMENT

Comment: I am for this project, and many others like it, it would be nice to see these forests cleaned up and put to good use, I work all over the NW forests and sick of seeing stands of dead, or dying trees that are still marketable and accessible to salvage, please help the local economy by continuing with this project, and others like it. (1-1)

We both want to express our support for the construction of the two new OHV connector trails that are included in the Travel Plan Record of Decision. (8-1)

The Board of Ravalli County Commissioners in general supports the vegetation management as proposed. We agreed that our forests are in desperate need of proactive management to prevent catastrophic fires that sterilize the landscape, negatively affect water & air quality, destroy wildlife habitat, fisheries and view shed. Ravalli County requests the Forest Service consider the "Ravalli County Natural Resource Policy" in your analysis and decision making process. The Board also supports the connector loops for OBY as proposed in the project. (5-2)

I am in favor of the Meadow Vapor Project. It would be great for the wood mills of Western Montana to get 5 million board feet of timber to harvest. With all the natural disasters in the U.S. we will need a lot of building materials to rebuild all that was lost. (7-1)

I am writing to you in full support of the proposed Meadow Vapor Forest Health Restoration Project EA, Bitterroot National Forest, Darby/Sula Ranger District. The proposed healthy forest management project is long overdue. (2-1)

Again as stated in our Scoping Comments (dated 12/15/15), we support the vegetation management proposed by this project, including commercial and noncommercial thinning and fuel reduction activities as long as it does not follow the shoddy work that was done in the 2014-2015 season in the McCart Area. (12-3)

Response: Thank you for your support of the project.

ROAD DECOMMISSIONING

Comment: Generally, we agree with the USFS's assessments that the project will result in very few long-term negative effects to wildlife, and that the need for fuels reduction and beetle mitigation outweighs the minimal risk. There will also be short-term impact to Teepee Creek, which is a small stream with westslope cutthroat trout. But long-term, again due to road decommissioning, the project should have positive impacts for fish. (9-4)

Ravalli County opposes decommissioning of roads. There are a number of BMP's that can be adopted at road and stream intersections to mitigate erosive impacts at the crossing. Decommissioning a road

because of the ""potential"" erosion impacts to a watershed is not sufficient reason to decommission a road and only strengthens the argument for better vegetation management which would include more commercial harvest and fuels reduction on federal public lands. It is Ravalli County's position that the Forest Service does not have the authority to decommission roads established prior to 1976 under RS 2477. (5-9)

"Finally, RCORUA repeats our opposition to treating decommissioned roads with heavy equipment. Our objections to recontouring or decompacting segments of decommissioned roads are discussed thoroughly in our Scoping comments and will not be repeated herein. In a nutshell, it is RCORUA's collective experience that heavy-handed road treatments employed on decommissioned roads causes more environmental harm than good, and permanently removes the road prism from any possible future uses for fire or vegetation management. We strongly recommend that the BNF engage in a more robust conversation with the public and local governments concerning the application of these heavy-handed road treatments, including the consequences of wasting money on questionable treatments at the expense of maintaining existing Forest infrastructure." (6-7)

Response: *The IDT reevaluated the need for road decommissioning activities. While the amount of road being proposed for decommissioning did not change, the team did reconsider on-the-ground treatments and recommended some changes. While the original proposal called for 7.3 miles of treatment, the team decided that some roads would be okay to leave in their current state and monitor for adverse effects into the future. The Proposed Action now proposes approximately 2 miles of treatment, a reduction of nearly 5 miles. Please see Appendix C to the Draft Decision Notice for more information concerning road decommissioning and storage treatments. Chapter 3.8 of the EA contains the analysis of effects for watershed resources for the project. Page 3.8-11 addresses the effects of physical road decommissioning. Monitoring of roads, stored or decommissioned, has found that vegetation recovery on recontoured decommissioned roads is much better than on roads that were only decompacted or subsoiled. Vegetation on subsoiled roads shows little change from the pre-implementation condition but it is expected that over time, shrubs and deeper rooted vegetation would become more common on the road surface due to better soil moisture conditions that result from decompaction of the road surface and allow for better infiltration and vegetation cover. (Forest Monitoring Report 201-2013).*

Comment: I'm guessing the most of you weren't here for the 2000 fires, but if it wasn't for the roads, the fire fighters would have never been able to get up above Springer to help keep our property safe. Who knows when the next fires will hit this area. If you go ahead with your plans to decommission roads on this project then the Forest Service could be liable to property owners if our homes are destroyed by fire. (13-10)

The extreme treatments of decommissioned or stored roads essentially prevents those roads from ever being used again for any purpose. We do not know who has the "crystal ball" that says the road will never be needed again for management of the forest. The road was put in to MANAGE the forest and it surely will be needed sometime in the future for the same reason. On page 2-6 under Proposed Action for Undetermined Status Roads the data is not consistent with the table 2-2, "3.4 miles are necessary for future forest management ..." With the last sentence saying "another 13.9 miles of undetermined status roads are not needed now or in the future and would be decommissioned." And on page 2-27 Decommissioned roads, no motorized travel the proposed action has 17.5 miles. So is this just another "pull the wool over the public" and not tell the whole truth! (12-7)

Response: *Timber harvest methods have changed and improved over time, therefore, the amount and placement of roads on the landscape has changed. Roads that were needed in the past are not necessary now and are not anticipated to be necessary in the future. The majority of roads being proposed for decommissioning and storage are currently closed to motorized travel and are often difficult to locate on*

the landscape because they have naturally recovered, or they originally consisted of skid trail or terrace bench in a plantation. The effects of road decommissioning on wildfire suppression and future fuels management are minimal. Most of these roads are currently grown over or were originally skid trails or terrace benches in plantations and are unusable by a vehicle. Removing these roads from the system will not alter fire management options, the ability to access or suppress future wildfires because they aren't usable now (EA, Chapter 3.2-24).

Comment: DEQ also recommends prioritizing the removal or relocation of roads that closely parallel streams or are within the flood plain. (4-3)

Response: Appendix C to the Draft DN details the proposed road decommissioning and storage activities.

Comment: The project roads should be accessible to full sized vehicles for safe access and remain accessible during and after the project is completed for the gathering of Firewood and normal forest access. (11-4)

Response: Roads open to motorized use yearlong will remain open unless timber operations alongside the road warrant a temporary closure to protect public health and safety. Appendix C to the Draft DN details the proposed road decommissioning and storage activities.

OHV CONNECTOR TRAILS

Comment: It is our desire that these connector trails (RD-DARD-09 and RD 73801) will be constructed/reconstructed as ATV trails rather than roads. This is a significant distinction since the FS specifications for trails are much different than the FS specifications for roads and it is the trail experience that is most desired by motorized visitors. We strongly urge the Agency to explicitly state that the connectors RD-DARD-09, RD73801 and the appropriate reconstructed segments of RD5770 and RD5771 will be constructed/reconstructed as Class II trails, and that the resulting routes will be incorporated into the trails database. For many observers, this issue may be dismissed as a mere matter of semantics, but for RCORUA there is a very important distinction between the qualities of the experience on a road versus a trail. During the recently completed Travel Management process, this distinction was a very controversial issue and RCORUA has become sensitized to this issue because there is a huge difference between the quality of experience between an OHV road and an ATV trail. We respectfully request that this issue be dealt with explicitly in a revised EA or Decision Memorandum for this project. (6-5)

I would however ask that the agency make the distinction between roads and trails. I believe that talking about atv roads and trails in the same document confuses most atv riders. Most riders are looking for trails, knowing that on an atv trail chances of coming across full size vehicles are rare. (10-1)

Response: Please see the discussions in the Draft Decision Notice concerning Travel Plan Implementation/OHV Routes and Compliance with 36 CFR § 212.55(B).

PROJECT BOUNDARY

Comment: As expressed in our scoping comment letter, the Commissioners supported the boundary expansion, if the expansion included fuels reduction or timber harvest. We oppose the expansion of the project for the sole purpose of decommissioning roads. The intent to decommission roads in the Reynolds and Lick Creek drainages seemed predetermined as the roads were identified outside of the

original scoped project boundary and then the boundary was precisely drawn around the previously identified road decommissioning in this environmental assessment. (5-3)

While RCORUA is grateful that the Agency extended the project boundary to the northeast to include the Reynolds and Lick Creek drainages, we are disappointed that no vegetative management activities were specified for the extended project boundaries. Our Scoping comments were quite specific on this issue and recommended vegetative treatments for the extended project area. While we recognize that there may be practical constraints on accommodating this request, we emphasize that vegetative treatments in the extended project area would be beneficial to forest resilience and ecosystem integrity. (6-6)

Response: *On July 28, 2009 the residents of the East Fork submitted a written petition with 82 signatures to the Sula Ranger District asking for the removal of dead trees, near their homes, to mitigate the potential fire hazard and the devastating effects a high intensity fire would have on homeowners. Members of the interdisciplinary team (IDT) representing timber, silviculture, and fire/fuels management met to assess stands on National Forest system lands that were immediately adjacent to private property in the Springer Memorial and Bonanza area.*

At the same time, the Forest Service was engaged in the Forestwide Travel Planning Project and had made commitments to the public to address roads analysis on a project by project basis. When the full IDT met, it was decided to address undetermined roads in the Reynolds and Lick Creek areas because these areas were the last remaining drainages in this vicinity that needed a roads analysis completed. The original project boundary was not drawn to include this area; however, the road management activities were included in the proposed action that went to the public for scoping.

Project area boundaries are usually drawn to provide a visual for where a project is located. The project boundary does not come with an obligation to prescribe a certain set of management activities nor does it mean that nothing can be proposed outside of its borders. We realize that having road treatments outside the "original" boundary shown during the scoping period created some confusion, therefore, we redrew the project boundary to include the area where the road treatments were proposed. Expansion of vegetation treatments into this area were not proposed due to the amount of additional time that would have been needed to collect field data. This would have extended the NEPA project by at least a year, further delaying critical fuel reduction treatments in the WUI around the Springer Memorial and Bonanza communities.

TEPEE LOOKOUT ROAD

Comment: Why are you changing the designation of roads to trails. For example roads 13314/73521 up to Tee . Pee lookout. This is wrong! People drive up to Tee Pee lookout all summer long to enjoy the view and check on fires in the area. I believe your decision to change the designation of roads to trails is just the first step in closing down more access to us. Right now tee pee roads are drivable. By changing them to trails will let the Forest Service stop providing maintenance to the roads and eventually closing the trails. Again less roads means less access for fire fighting. (13-17)

It is totally nuts to convert the Road to Teepee Lookout to a OHV Trail it is flat out discrimination of the elderly, handicap and the citizens that enjoy our PUBLIC LANDS. (12-9)

Response: *The Proposed Action Map in Meadow Vapor EA (Figure 2-2, p. 2-13) displayed the Tepee Lookout Road, FSR 73571, as having a travel designation of "Trail, Seasonal Closure, 50" or less". We received comments concerned about this section of road being closed to full size vehicles and the designation of "Trail".*

The travel management designation of the FSR 73571 was changed in the 2016 Travel Plan. According to documentation in the Travel Plan FEIS, the original existing condition for this road was a seasonal travel restriction, where it was open to motorized wheeled vehicle 50" or less in size from 12/02 to 10/14. The 2016 Travel Plan ROD designated this road as "Trail, Seasonal Closure, 50" or less", open from 6/16 to 10/14. This extended the closure period for motorized use throughout the Tepee Point Area Restriction area to include the winter and the spring calving period. The roads will not be converted to trails. As described in the Travel Plan FEIS, most of these are roads closed to full size vehicles but open to ATV and motorcycles; these are known as "coincident routes." (Please refer to the FEIS, Chapter 3, Sections 3.1 (Transportation) and 3.2 (Recreation and Trails) for additional information.)

We believe the original existing condition brought forward in the Travel Plan was incorrect, as Forest Visitor maps showed the Tepee Lookout Road with a travel designation of R-2, Open to all vehicles, seasonally. Full size vehicles have been allow to travel on this road for years.

Therefore, we are proposing to keep the season of use designated in the Travel Plan but allow full size vehicles to travel on the road. This would give the road a Motor Vehicle Use Map (MVUM) designation, "Roads open to highway legal vehicles only, with Seasonal Designation" with a season of use from June 16 to October 14. The next published MVUM will reflect this change.

GRAVEL PIT

Comment: The rock/gravel pit to which we are referring, which may or may not be the same rock pit referenced in the EA, is used by local residents and visitors for recreational shooting. It is especially well suited for this activity since the pit face provides a safe and convenient place to situate targets, and there is enough space between the shooting positions and the target positions for accuracy distance shooters. This location does not conflict with any other recreational activities, and users of this facility do not use trees to pin up their targets. (6-11)

If we are indeed talking about the same place, we strongly recommend that the location be kept accessible to the public for recreational shooting. We would support any remedial activities to the road or the pit drainage, but would be emphatically opposed to closure of the access road. (6-13)

The closure of the Gravel Pit (rd 62936) is outrageous. (13-11)

Response: This was a mistake in the EA. The gravel pit and access road in the Meadow Vapor area will remain open.

APPENDIX C - DETAILS OF ROAD TREATMENTS

ROAD MANAGEMENT

The Proposed Action Alternative includes several different types of road management activities. System roads within the project area will be evaluated for BMPs and applied as necessary to haul routes. Roads not needed for future management would be decommissioned and removed from the system, while other roads that are not needed for management in the short term, would be placed into storage but stay on the NFS road system.

DECOMMISSIONING

Decommissioning a road removes it from the NF Transportation system. It may or may not require physical treatment on the ground. Every road is unique. In some cases, it may be appropriate to leave the road alone, however, there are many cases where it is necessary to obliterate a road with recontouring. Whether or not to physically treat a road is determined by a number of factors, including the current condition of the road and whether or not the road is likely to have stability problems in the future.

The Proposed Action Alternative will decommission approximately 18.5 miles of road, which will remove these road segments from the National Forest Road System. Approximately 1.5 miles will need actual treatment on the ground. The remaining 17 miles will require no treatment to decommission. Prior to the implementation of the 2016 Bitterroot Travel Plan, about 1.8 miles of these roads were open to motorized travel seasonally. The 2016 Bitterroot Travel Plan closed these roads to motorized travel.

STORAGE

Several roads were identified during project development for evaluation and placement into road storage. These roads are system roads that are currently closed yearlong to motorized access. All roads were reviewed in the field to identify work items needed for placement into storage. Some of the roads would require active work, such as removing stream and cross drain culverts and constructing water bars, while others are already in a self-maintaining state and would not require any active work (passive).

The Proposed Action Alternative will place approximately 9 miles of road into storage. Approximately, one-half mile will need treatment on the ground. The remaining 8.5 miles of road will require no treatment. Prior to the implementation of the 2016 Bitterroot Travel Plan, about 0.4 miles of these roads were open to motorized travel seasonally. The 2016 Bitterroot Travel Plan closed these roads to motorized travel.

UNDETERMINED ROADS

Undetermined status roads are roads that exist on the landscape but are not part of the Forest Transportation system (PF-TRANSPORT-052). The long-term purpose and need for these roads has yet to be determined.

The Meadow Vapor project has about 17.3 miles of undetermined status roads. The ID Team identified approximately 3.4 miles of undetermined status roads in the project area that are necessary for future forest management and propose they become part of the transportation system and be stored after proposed harvest operations. These roads would be opened to accommodate commercial harvest operations and log haul in commercial thinning units for this project. Another 13.9 miles of undetermined status roads have been assessed by the ID Team and have been determined as not needed now or in the future and would be decommissioned.

TERRACES

Several of the roads originally identified as a forest transportation route, and appeared on the Forest's transportation system terraces on the ground. These were constructed in the late 1960's for planting trees and improving growth rates. These terraces are a bench that when first constructed look like a road on an aerial photo but are narrower than a road and were planted. The terraces are now covered with many ponderosa pine trees that are 10-15 feet apart and about 30' tall. Therefore, these will be removed from the Forest transportation system (decommissioning).

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Table C-1 below identifies roads that will be decommissioned or stored and require treatment on the ground.

Table C-2 below identifies roads that will be decommissioned or stored but do not require any treatment on the ground at this time. The Forest will monitor these routes for the effectiveness of the current condition in keeping the roads closed. If monitoring reveals a need to put in place a more permanent closure, the work will be conducted at that time.

Table C-1: Roads Requiring Treatments on the Ground

ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION ¹	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	LENGTH OF TREATMENT (MILES)	TREATMENT REQUIRED
5770B	Undetermined	Not included	Decommission	0.30	0.30	Natural recovery is not working well enough. Recontour entire road and maintain non-motorized access throughout recontour.
13315a	Undetermined	Not Included	Decommission	0.30	0.02	Will use for skidding and then treat appropriately. Most likely decompact and scarify with an effective closure.
73573	Route Open to Vehicles 50" or Less in Width, Seasonally	Route Closed to all Motorized Use	Decommission	0.40	0.40	Recontour entire road, pull crossing and maintain non-motorized access throughout recontour.
73584	Decommissioned	Not included	Decommission	0.50	0.02	Will leave dispersed site near entrance, then recontour 50-100 ft. Will maintain non-motorized access throughout recontoured portion.
73636	Undetermined	Not included	Decommission	0.60	0.30	Campsite not present here, located below gate on 5770. Recontour first 0.3 mile of road. Maintain non-motorized access throughout recontour.
73637	Undetermined	Not included	Decommission	0.40	0.20	Recontour first 0.2 mile of road. Maintain non-motorized access throughout recontour.

¹ A status of "Not included" means a road was not considered for motorized travel during the Forest-wide Travel Planning Project. Therefore, with no designation on the Motor Vehicle Use Map, it would not be available for motorized travel. All roads in this project that were "Not included" in the Travel Plan were either undetermined, previously decommissioned, or already closed to motorized travel.

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ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION ¹	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	LENGTH OF TREATMENT (MILES)	TREATMENT REQUIRED
73795	Decommissioned	Not included	Decommission	0.10	0.10	Spur road off 73584, need only to recontour entrance above dispersed camp area and maintain non-motorized access throughout recontoured portion.
73796	Route Closed to all Motorized Use	Route Closed to all Motorized Use	Decommission	0.30	0.01	Road leaves 5765 at a small saddle, no material for recontour, block with rock beyond saddle.
13362	Route Open to Vehicles 50" or Less in Width, Seasonally	Route Closed to all Motorized Use	Store	0.40	0.40	Camping spot will stay open. Current kelly hump will remain. Will be able to walk road. Will put an effective closure back in place after sale to prohibit motorized travel. Effective closure may be kelly hump or recontour depending on condition after the sale.
13363	Route Closed to all Motorized Use	Not included	Store	0.40	0.02	Road proposed for haul. After sale, scarify road, seed, and recontour entrance (first 50 -100 feet) and maintain non-motorized access through the recontoured closure.
73555	Route Closed to all Motorized Use	Route Closed to all Motorized Use	Store	1.60	0.02	Maintain camping spot, block access using rock, maintain non-motorized access through closure. This road is very wet and not appropriate for motorized travel.
73563	Route Closed to all Motorized Use	Route Closed to all Motorized Use	Store	1.10	0.02	if used for skidding in timber sale, will be scarified and seeded. Kelly hump to remain in place after sale. Will monitor to see if additional stabilization or closure treatments are needed in the future.
73592	Route Closed to all Motorized Use	Route Closed to all Motorized Use	Store	1.30	0.02	Leave camping area and then recontour 50-100 feet after that to close, maintain non-motorized access throughout recontoured portion.
			Total Miles	7.70	1.83	Total Miles of Treatment

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Table C-2: Store and Decommission Roads Not Requiring Treatments on the Ground in the Proposed Action - Meadow Vapor Project.

ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION ²	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	NOTES
74813	Undetermined	Not included	Decommission	0.10	No access due to road alignment, in area of heavy revegetation, no work required.
13332	Undetermined	Not included	Decommission	1.60	
73319	Undetermined	Not included	Decommission	0.10	
73552	Undetermined	Not included	Decommission	0.30	
73553	Undetermined	Not included	Decommission	0.40	
73554	Undetermined	Not included	Decommission	0.30	
73556	Undetermined	Not included	Decommission	0.60	
73557	Undetermined	Not included	Decommission	0.90	No access from 5771 due to growth of trees and shrubs.
73558	Undetermined	Not included	Decommission	0.90	Spur road off end 73557 and is not accessible due to heavy growth of vegetation.
73559	Undetermined	Not included	Decommission	0.40	Spur road off end 73557 and is not accessible due to heavy growth of vegetation.
73560	Undetermined	Not included	Decommission	0.60	Road difficult to find, much of entrance is gone due to road realignment or/and sloughing.
73561	Undetermined	Not included	Decommission	1.20	Road difficult to find, much of entrance is gone due to road realignment or/and sloughing.
73562	Undetermined	Not included	Decommission	0.70	Fisheries concern due to proximity to stream .Decommission from milepost 0.8 to milepost 1.5. Beginning of road will be placed into storage.

² A status of "Not included" means a road was not considered for motorized travel during the Forest-wide Travel Planning Project. Therefore, with no designation on the Motor Vehicle Use Map, it would not be available for motorized travel. All roads in this project that were "Not included" in the Travel Plan were either undetermined, previously decommissioned, or already closed to motorized travel.

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ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION ²	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	NOTES
73564	Undetermined	Not included	Decommission	0.30	
73568	Undetermined	Not included	Decommission	0.50	Monitor and treat in the future if problems arise.
73569	Undetermined	Not Included	Decommission	0.5	Won't be used for timber sale. Road is grown-in. Will install a kelly hump, if necessary, to maintain closure but no other treatment necessary.
73570	Undetermined	Not Included	Decommission	1.4	Spur road off 73976 and is not accessible.
73585	Route Closed to all Motorized Use	Not included	Decommission	0.40	Road has been decompacted and has small trees growing in ruts
73586	Undetermined	Not included	Decommission	0.30	
73587	Route Closed to all Motorized Use	Not included	Decommission	0.90	
73591	Route Open to Vehicles 50" or Less in Width, Seasonally	Not included	Decommission	0.70	Monitor and treat in the future if problems arise.
73593	Undetermined	Not included	Decommission	0.00	No road prism exists.
73594	Undetermined	Not included	Decommission	0.00	No road prism exists.
73595	Undetermined	Not included	Decommission	0.00	No road prism exists.
73596	Undetermined	Not included	Decommission	0.00	No road prism exists.
73597	Undetermined	Not included	Decommission	0.00	No road prism exists.

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ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION²	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	NOTES
73638	Undetermined	Not included	Decommission	0.70	Monitor and treat in the future if problems arise.
73639	Undetermined	Not included	Decommission	0.80	Monitor and treat in the future if problems arise.
73797	Undetermined	Not included	Decommission	0.00	No road prism exists.
73798	Undetermined	Not included	Decommission	0.00	No road prism exists.
73799	Undetermined	Not included	Decommission	0.00	No road prism exists.
73800	Undetermined	Not included	Decommission	0.00	No road prism exists.
73802	Trail Open to Vehicles 50" or Less in Width, Yearlong	Route Closed to all Motorized Use	Decommission	0.30	Road planted with ponderosa pine. Not accessible without major reconstruction. No work needed to decommission.
74814	Undetermined	Not included	Decommission	0.20	No access, road already treated, no further treatment needed.
74816	Undetermined	Not included	Decommission	0.00	No road prism exists.
73569	Route Closed to all Motorized Use	Not included	Decommission	0.50	No longer needed for timber sale.
73557	Undetermined	Not included	Store	0.50	
73562	Undetermined	Not included	Store	0.80	Store milepost 0.0-0.8, no entrance treatment needed at this time. Remainder of road will be decommissioned.
73564	Undetermined	Not included	Store	0.70	No access due to vegetation, no treatment at this time.
73565	Undetermined	Not included	Store	0.40	
73567	Undetermined	Not included	Store	0.50	Road proposed for haul. After sale, scarify road, seed, and maintain non-motorized access.

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ROUTE#	STATUS PRIOR TO 2016 TRAVEL PLAN	2016 TRAVEL PLAN DESIGNATION ²	STORE OR DECOMMISSION	LENGTH OF SEGMENT (MILES)	NOTES
73600	Route Closed to all Motorized Use	Not included	Store	0.40	Road proposed for haul. After sale, scarify road, seed and maintain non-motorized access.
74815	Undetermined	Not included	Store	0.30	Road leaves 5771 at cut-through, no material to block entrance. Currently trees at entrance and beyond contributing to natural recovery.
74817	Undetermined	Not included	Store	0.20	Road proposed for haul. After sale, scarify road, seed and maintain non-motorized access.
			Total Miles	19.4	

APPENDIX D - PROJECT DESIGN CRITERIA

In response to resource concerns expressed by the ID Team and public comments on the proposal, features are designed into the project to prevent or reduce potentially negative effects on resources. Mitigation measures are activities proposed to compensate for negative effects that cannot be avoided through project design or implementation. Most of the design features for the Meadow Vapor project (Table D-1) are applied during timber sale contract administration. Many of the design features have been applied in timber sales since 2000, have been refined through monitoring, and have proven to be effective (PF-MONITOR-001)

Table D-1: Design Features for the Proposed Action - Meadow Vapor Project

OBJECTIVE	DESIGN FEATURE										
SOILS											
<p>Minimize soil erosion and compaction</p>	<p>Activities will comply with Best Management Practices (BMPs) to minimize effects to soil resources. BMPs are listed in Appendix A. Complete descriptions are available in the Project File.</p> <p>Summer ground-based yarding will occur when soils are dry (test soil moisture by forming soil into a ball in your hand and lightly toss several times; if soil maintains ball shape moisture is too high for ground-based yarding, if soil crumbles moisture levels are low enough to allow ground-based yarding). Consult the Forest Soil Scientist when questionable moisture conditions are present.</p> <p>Winter operations are required in the ground-based units 23, 24, and 25 and would be allowed in any other ground-based units if the following conditions are met: snow depth, distribution, and air temperatures must be such that ground-based operations maintain the following combination of snow depth and frozen soil conditions</p> <table border="1" data-bbox="672 1247 1373 1464"> <thead> <tr> <th data-bbox="672 1247 1016 1336">Depth of compacted (by equipment) snow under wheels or track tread</th> <th data-bbox="1016 1247 1373 1336">Minimum thickness of solidly frozen soil needed below compacted snow layer</th> </tr> </thead> <tbody> <tr> <td data-bbox="672 1336 1016 1368">10 or more inches</td> <td data-bbox="1016 1336 1373 1368">0 inches</td> </tr> <tr> <td data-bbox="672 1368 1016 1400">7 to 10 inches</td> <td data-bbox="1016 1368 1373 1400">1 inch</td> </tr> <tr> <td data-bbox="672 1400 1016 1432">4 to 7 inches</td> <td data-bbox="1016 1400 1373 1432">2 inches</td> </tr> <tr> <td data-bbox="672 1432 1016 1464">less than 4 inches</td> <td data-bbox="1016 1432 1373 1464">4 inches</td> </tr> </tbody> </table> <p>*Pre-trailing. Pre-trailing selected skid trails a day or so prior to skidding or other heavy trail use is a way to achieve this objective. If average, pre-compacted snow depth along the proposed trail is more than 15 inches, pre-trailing can be done whether or not the soil is frozen. If pre-compacted snow depth is 8 to 15 inches; pre-trailing should be done only if the soil is solidly frozen in the top one inch or more. Otherwise, pre-trailing should be delayed until more snow falls to accumulate to the 15 inch or more depth. To further aid soil protection, pre-trailing should be done using an "easy-does-it" approach, including slow ground speeds and steady movements. Avoid spinning tires and bouncing equipment around on trails as much as possible. Adequate pre-trailing air temperatures generally are in the low 20's Fahrenheit or lower. For more information about pre-trailing conditions, consult with the Forest soil scientist.</p>	Depth of compacted (by equipment) snow under wheels or track tread	Minimum thickness of solidly frozen soil needed below compacted snow layer	10 or more inches	0 inches	7 to 10 inches	1 inch	4 to 7 inches	2 inches	less than 4 inches	4 inches
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	Skid trails will be designated and historic trails and road prisms will be used as skid trails to the extent feasible.
Reduce detrimental soil disturbance (DSD)	Rehabilitation activities of temporary roads, track-line machine trails would include recontouring cut and fill areas, slashing with readily available debris, and application of organic fertilizer and native plant seed. Use local seeding guidelines for detailed procedures and appropriate mixes. Refer to the Bitterroot National Forest Seed Mix to determine which species to use (FSM 2070.3)
	Pile burning should occur during moist conditions to minimize duff consumption and high severity burn impacts on soils.
	Hand pile sizes, not associated with landings, will average 6-8 feet in diameter so localized areas of soil disturbance will be less than about 50 square feet.
	Where feasible, pile and burn slash where detrimental soil disturbance (DSD) already exists, such as on old log landings, skid trails, and roads associated with the past harvest units. By piling and burning thinning slash in areas where soil disturbance currently exists, no new areas of DSD would result from the proposed activities.
Unit-Specific Design Criteria	Units 23, 24, and 25. Existing detrimental soil disturbance in the units requires that ground-based yarding be completed in the winter.
	All Proposed Ground-Based Yarding Units have inclusions of slopes that exceed 40% gradient. Forest Plan standards do not allow ground-based yarding equipment on slopes exceeding 40%. Directional felling, ground lead, or alternative methods of yarding will be required to remove trees from steep slope inclusions.
Maintain soil productivity	Coarse woody debris (CWD) larger than 15 inches in diameter will not be intentionally ignited during hand lighting. It is understood that once hand crews light the fire, fire may burn into and combust some large CWD.
	Allow time for nutrients to leach from slash prior to burning. The slash will be left through one winter after cutting to allow for initial decomposition and nutrient leaching.
	Upon completion of prescribed fire or maintenance burning, at least 70 percent ground cover is necessary to prevent detrimental accelerated erosion and loss of soil productivity. In those cases where ground cover is less than 70 percent prior to burning, consumption and loss of ground cover should not exceed 15 percent. Ground cover includes duff, organic soil horizons, tree basal area, fine woody debris, coarse woody debris, and surface coarse fragments. In those cases where ground cover is less than 70 percent prior to burning, fuel consumption and ground cover loss should not exceed 15 percent. Fire prescriptions will be designed to meet these soil protection requirements.
	The silvicultural prescriptions will be designed to account for future large CWD (>15 inches diameter) recruitment that will meet acceptable levels in stands where CWD is less than minimum levels before treatment. CWD will be left in these stands to the extent feasible to meet minimum requirements that do not pose a fuels hazard. High amounts of small CWD (3-6 inches diameter) may present wildfire risks.
	Upon completion of commercial harvest and prescribed fire activities, the following levels of coarse woody material (greater than 3 inches diameter)

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	<p>shall be left. This material will include the combination of standing dead as well as down woody fuels.</p> <table border="1" data-bbox="646 336 1336 655"> <thead> <tr> <th data-bbox="646 336 1084 406">Fire Group</th> <th data-bbox="1084 336 1336 406">Coarse Woody Debris (CWD) (Tons/acre)</th> </tr> </thead> <tbody> <tr> <td data-bbox="646 406 1084 470">Warm, Dry Ponderosa Pine and Douglas-fir (FG-2, 4, & 5)</td> <td data-bbox="1084 406 1336 470">5-10</td> </tr> <tr> <td data-bbox="646 470 1084 502">Cool, Dry or Moist Douglas-fir (6)</td> <td data-bbox="1084 470 1336 502">10-20</td> </tr> <tr> <td data-bbox="646 502 1084 655">Cool Sites Usually Dominated by: Lodgepole Pine (FG-7); Dry, Lower Subalpine (FG-8); Moist, Lower Subalpine (FG-9); and Warm, Moist (FG-11).</td> <td data-bbox="1084 502 1336 655">8-24</td> </tr> </tbody> </table> <p>CWD will generally be evenly distributed on each acre, unless otherwise agreed to by the Contracting Officer or their designee</p>	Fire Group	Coarse Woody Debris (CWD) (Tons/acre)	Warm, Dry Ponderosa Pine and Douglas-fir (FG-2, 4, & 5)	5-10	Cool, Dry or Moist Douglas-fir (6)	10-20	Cool Sites Usually Dominated by: Lodgepole Pine (FG-7); Dry, Lower Subalpine (FG-8); Moist, Lower Subalpine (FG-9); and Warm, Moist (FG-11).	8-24
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WATERSHED AND FISHERIES									
<p>Ensure riparian- dependent resources receive primary emphasis in Riparian Habitat Conservation Areas (RHCAs.) And, ensure Montana Streamside Management Zone Laws are met.</p>	<p>The standard INFISH (USDA Forest Service 1995) RHCAs will be applied. A map of these areas is located in PF-FISH-006. The RHCAs are:</p> <ul style="list-style-type: none"> 300 feet on each side of fish-bearing streams 150 feet on each side of permanently flowing, non-fish bearing streams 100 feet on each side of seasonally flowing or intermittent streams 150 feet on each side of ponds, lakes or wetlands > 1 acre in area 100 feet on each side of ponds, lakes or wetlands < 1 acre in area 100 feet of landslide prone areas. <p>RHCA boundaries will be designated and marked on the ground in consultation with the fisheries biologist or hydrologist.</p> <p>Felling of commercial timber and yarding of logs will be prohibited in the RHCAs with the exception of specified areas > 150 feet from streams in units 1, 2, 5, 6, 7, and 8, and > 50 feet from an intermittent stream in unit 8c (SMZ Rule #5). In those specified zones, salvage of dead and dying trees will be allowed.</p> <p>In RHCAs, trees can be felled when they pose a safety risk. Felled hazard trees will be left on-site unless their removal is deemed necessary for safety reasons by the Timber Sale Administrator (TSA). If a felled safety tree in an RHCA falls across a road, the portion of the felled tree blocking the road will be cut up and rolled/thrown into the nearby RHCA. All portions of the felled tree not blocking the road will be left on site.</p> <p>If trees felled outside of the RHCAs land or roll into the RHCAs, their boles may be removed, but the tops and limbs will be left behind in the RHCAs.</p> <p>Log landings will be located outside of RHCAs. Exceptions may be granted for previously used landings in RHCAs upon field review by the fisheries biologist or hydrologist. An example of this would be existing clearings along NFSR 432 in unit 7 that are located > 150 feet from Moose Creek.</p> <p>Ground-based equipment will be prohibited from entering SMZs without the appropriate variance from Montana DNRC (SMZ Rule #4).</p> <p>Temporary roads and track-line machine trails will not enter RHCAs.</p> <p>Generally, there will be no fuel storage, mixing of fuels, or refueling equipment in RHCAs. If there are no alternatives, refueling in RHCAs may occur, but must be pre-approved by the fisheries biologist or Hydrologist, and have an approved spill containment plan. Small pumps (for example,</p>								

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	<p>Mark III) and chainsaws can be refueled within the RHCA as long as proper spill containment actions are implemented (USDA Forest Service 1995).</p>
<p>Provide stable roads and conduct road maintenance to minimize sediment</p>	<p>Log hauling will occur when roads are either adequately frozen or dry. Hauling will cease during periods that are wet enough to produce movement of fines on the road surface. The TSA is responsible for determining when conditions are too wet to haul and has the authority to suspend hauling during those times. The TSA or resource specialists will monitor road conditions during log hauling operations.</p>
	<p>Drainage from haul roads will be maintained during all hauling periods. This includes, but is not limited to, providing water access to ditches and inlets of ditch relief pipes, and ensuring that outlets are kept free of blockage. Holes in snow berms will be established during the first plowing and kept open throughout the duration of winter hauling.</p>
	<p>Project-related traffic will be regulated during wet periods to minimize erosion and sediment delivery to streams (INFISH RF-2)</p>
	<p>Side-casting of road material (during road maintenance and snowplowing) into streams, wetlands, and RHCAs is prohibited (SMZ Rule #8; INFISH RF-2(f)).</p>
	<p>On the near stream haul road segments that may receive winter log hauling (Tepee Creek #5778; Moose Creek #432, Lick Creek #5771, and East Fork Trailhead #724 Roads): Straw bale check dams will be installed prior to winter hauling and maintained during all periods of winter hauling. The check dams will be installed below the outlets of all ditch relief culverts, at stream crossings; in the road ditches that that may be a potential sediment source, and below road drainage features such as drive-thru dips that lack adequate vegetative filter distance. Snow berm drainage holes will be established during the first plowing and kept open throughout the duration of winter hauling.</p>
	<p>On NFSR 725 (Meadow Creek), log hauling will be restricted to June 1 to November 1. Straw bale check dam mitigation will be used during the hauling period in the same locations as described above for winter hauling.</p>
	<p>Road maintenance activities (including snowplowing and dust abatement) will follow the minimization measures for each road activity type specified in the April, 2015 Programmatic Biological Opinion for Road-Related Activities (USFWS, 2015b).</p>
	<p>There will be no manual thinning or slash piling within 50 feet of streams and wetlands (SMZ Rule #5).</p>
<p>Provide for diverse and productive native and desirable non-native plant communities in riparian zones</p>	<p>Helicopter ignition will not occur in RHCAs.</p>
	<p>Hand ignition will not occur within 50 feet of streams and wetlands (SMZ Rule #3). Fire will be allowed to back into and burn across the RHCAs if it so desires.</p>
	<p>Generally, hand fireline will not be dug in the RHCAs. If needed, hand fireline can be dug in the RHCAs and must 1) avoid wetlands, 2) contain proper drainage structures, and 3) be recontoured and covered with slash upon completion of the burn. Machine fireline is prohibited in RHCAs. Allowing prescribed fire to back into RHCAs and wetlands negates the need for firelines near these areas.</p>
	<p>If drafting from streams occurs, intake hoses will be fitted with a screen mesh equal to or smaller than 3/32 inch.</p>

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Avoid direct effects to native fish and risks associated with aquatic invasive species.	Prior to entering the project area all equipment that has the potential to come into contact with water must be inspected, clean and dry. Do not transfer any water, sediment, or vegetation when moving between drafting sites							
Ensure that water-related beneficial uses are protected and that State water quality standards are met	Recontoured and decompacted roads will be seeded, fertilized, and slashed. Weed-free straw mulch is required on sites located within 300 feet of streams.							
	Where culverts with flowing water are removed, a straw bale check dam will be installed below the outlet prior to removing the culvert.							
	Any segments of NFSR 73562 within 100 feet of Lick Creek will remain untreated (i.e. no ground disturbance).							
WILDLIFE								
Maintain snag density	Stand level prescriptions by a certified silviculturist and wildlife biologist will provide unit-specific snag retention requirements including spatial distribution, species, and snag sizes.							
	Prescriptions will meet the proposed snag standards including the following number of snags over 9" DBH retained by Fire Groups if they exist in the unit prior to treatment.							
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Fire Group</th> <th style="text-align: center;">Snags (average number of trees per acre)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2, 4</td> <td style="text-align: center;">2-5</td> </tr> <tr> <td style="text-align: center;">5, 6</td> <td style="text-align: center;">4-12</td> </tr> <tr> <td style="text-align: center;">7, 8, 9</td> <td style="text-align: center;">10-15</td> </tr> </tbody> </table>	Fire Group	Snags (average number of trees per acre)	2, 4	2-5	5, 6	4-12	7, 8, 9
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2, 4	2-5							
5, 6	4-12							
7, 8, 9	10-15							
Irregular distribution and small clumps are desirable. Location away from open roads is preferable. Species preference in order is ponderosa pine, Douglas-fir, lodgepole pine, and true firs. Snags retained will include some from the largest diameter size class available within that unit. Larger snags are preferred over smaller snags for retention.								
Protect signed wildlife trees	Protect trees identified with "Wildlife Tree" signs from cutting or other damage. Exceptions include compliance with the silvicultural prescription and trees that pose a safety hazard. Wildlife trees that must be felled for safety reasons will not be yarded.							
Provide coarse woody debris for wildlife	Do not remove pre-existing down logs from cutting units. In areas with little CWD, meet CWD retention guidelines by leaving 5 to 10 boles > 8' long in the 10 to 20" diameter range per acre, or 10 to 15 boles > 8' long in the 3" to 10" diameter range per acre. Species preference for longer pieces of CWD is Douglas-fir or true firs, to avoid problems with Ips beetles.							
	Leave 1 to 2 hand piles per acre unburned in areas where hand piling is used for slash disposal to enhance habitat for small mammals and birds.							
Limit disturbance around active goshawk nests	Restrict project activities within ½ mile of any active goshawk nest between April 15 and August 31 to limit disturbance to nesting goshawks. The Wildlife Biologist will determine occupancy.							
SENSITIVE PLANTS								
Protect sensitive plant populations during implementation of all treatments	Rare plant populations would be identified and buffered from project activities. Buffer widths are based on habitat requirements of the specific plant populations. Buffered rare plant populations will be mapped and identified in the field.							
	Machinery, fire ignition, tree felling, anchor trees, hand piles, and slash piling would not occur within an identified rare plant buffer.							

	<p>Proposed alterations to locations of temporary roads and log landings will follow standard contact provisions for the protection of rare plants, along with the timely involvement of the Forest Botanist or alternate specialist designated by the Forest Botanist. Rare plant populations would be protected by a minimum 100' buffer. Use of existing roads within 100' of population is allowed.</p> <p>Prescribed fire would not be allowed to creep into buffered areas unless authorized by the Forest Botanist.</p> <p>Reduce or limit handpiles as much as possible and lop and scatter when possible. Do not place handpiles within 100' from buffer edge.</p>
INVASIVE PLANTS	
<p>Prevent the export out of and spread within the project area of hawkweed species seed and vegetative stolon propagules</p>	<p>Insure that logging equipment that is used off of established roads in the harvest units of hawkweed concern (7, 7A, 7C, 9, 9A, 24 and 25) are thoroughly cleaned of plant parts at the designated wash site before exiting FSR 5778 or driving south of the East Fork Guard Station on FSR #432.</p> <p>Roads designated for storage and decommissioning that will need pre and post action treatment include FSRs: 74817, 73570, 73569, 74815, 73565, 73564, 73563, 73568, 73567 and 73562</p>
<p>Prevent the import into, export out of and spread within the project area of invasive plants and noxious weeds</p>	<p>1) Implement Equipment Best Management Practices (BMPs)</p> <p>a. Remove all mud, soil and plant parts from all equipment before moving into the project area. Cleaning must occur off National Forest lands. Service vehicles that are intended for travel on established roads must be cleaned before their first entry into the project area. Vehicles will be inspected prior to operation in the project area by a Forest Service representative.</p> <p>b. All gravel and borrow sources located outside the project area must be inspected and approved by the Forest Invasive Species Specialist, Forest Botanist or designated representative prior to transport into the area.</p>
<p>Pre and post-harvest treatment actions to suppress and contain the spread or increased density of existing invasive/noxious weed species</p>	<p>1) Herbicide Treatment</p> <p>a. Treat new staked permanent, temp and re-opened road locations during the growing season before initiation of ground disturbing activity (pre-harvest) and</p> <p>b. Treat existing constructed road system during the growing season before initiation of harvest activities.</p> <p>c. Treat all skid trails post-harvest</p> <p>2) Revegetation</p> <p>a. Re-establish native species vegetation on soil-disturbed sites resulting from harvest activities using methods and prescriptions shown to have a high degree of efficacy in competing with invasive plant species.</p> <p>b. Use only certified weed free seed and mulch during revegetation implementation. Certification must meet both State of Montana and</p>

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	<p>North American Invasive Species Management (NAISM) standards for species content in any seed mix used.</p> <p>c. Use only seed mixes, proportions and application prescriptions approved by the Forest Botanist and included in the contract specifications. Proposed modifications to prescribed seed mixes must be approved by the Forest Botanist <u>prior</u> to purchase of the seed by the contractor.</p>
TIMBER MANAGEMENT	
Prevent the spread of annosus root disease	<p>Apply borate to freshly cut ponderosa pine stumps greater than 12 inches in diameter (inside bark).</p> <p>Minimize damage to residual trees during harvest</p>
Prevent bark beetle population increases	<p>If extensive beetle activity is observed in green-attacked trees within one mile of harvest units, it is desirable to consider limiting timber harvest during the flight period in July and August.</p>
Prevent pine engraver (<i>Ips</i> spp.) population increases	<p>The most effective cultural practice to prevent <i>Ips</i> colonization is to avoid harvesting activities between October and June because it reduces the time <i>Ips</i> beetles have to complete their lifecycle. However, avoiding harvest during this period is not often feasible so the following methods would be used:</p>
	<p>Green slash exceeding 3" in diameter would be lopped into 4-8 foot lengths for Douglas-fir and 4-6 foot lengths for all other species and scattered in areas with direct exposure to sunlight. Treating the slash in this way reduces <i>Ips</i> habitat quality because the slash dries out before the beetle brood can mature. All fresh slash and logs would be located several yards away from living trees.</p>
	<p>Piling slash in large-sized piles can provide suitable host material in the middle of the pile that lures <i>Ips</i> deeper into the pile. Ideally, piles should be at least 10 x 10 x 20 feet in height x width x length.</p>
	<p>Should small slash piles be constructed from October to June, infested material can be burned, chipped, or otherwise destroyed prior to beetle emergence in early July. Surveys of host material prior to July can indicate the risk of tree mortality or top kill to residual stems in treatment units. In high-risk areas where <i>Ips</i> mitigation options are limited, mass trapping of <i>Ips</i> with pheromone lures and Lindgren funnel traps may reduce <i>Ips</i>-related damage to residual stems.</p>
	<p>The silviculturist, wildlife biologist, and fuels specialist would conduct post-harvest exams before underburning units to evaluate the completeness of vegetation treatments.</p>
SCENERY	
Subordinate management activities to the natural character of the landscape.	<p>Blend units including fuel breaks with natural landscape features such as natural openings, rock outcrops, and topography. Harvest units should be shaped to mimic natural patterns found in the landscape. Do not use straight lines or geometric shapes for unit design. Unit edges should be natural appearing, to mimic the adjacent natural landscape character (uneven/feathered).</p>
	<p>Disturbed areas, including but not limited to temporary road, landing construction, burn pile footprints, etc. would be re-vegetated after the site has been satisfactorily prepared. The operator would be advised as to species from Forest Botanist, methods of re-vegetation, and seasons to plant. Forest would monitor seeding and/or planting would be repeated until satisfactory re-vegetation is accomplished, this includes control of</p>

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	<p>invasive species Seeding might not be necessary if natural regeneration is sufficient.</p> <p>All equipment and construction debris would be removed from the site at the close of operations.</p> <p>Reduce the contrast between treated and untreated forest by softening the edges, retaining some understory trees, and blending tree density on the unit borders.</p> <p>Reduce visual contrast of skyline corridors. To the greatest extent possible locate skyline corridors so they are not directly aligned with sensitive views, using lateral yarding, vary the distance between cable corridors.</p>
Units with sensitive foreground views (0-300 feet of viewing platform). See Scenery Table 3.13-1.	<p>Cut Stumps to 6 inches or less.</p> <p>Where feasible minimize skid trails, piles, landings, and slash out of sight from roads FH-78, 432, 5771, 5765, and, 73571.</p> <p>Slash piles along road 724 will have a priority for burning and will be burnt as soon as feasible.</p> <p>Utilize species designation where appropriate to minimize the amount of necessary marking.</p> <p>Use cut tree (as opposed to leave tree) marking where appropriate.</p>
Skid Trails and Temp Roads- in Partial Retention VQOs	<p>The location of the road should fit the landscape with a minimum degree of landform alteration limiting the amount of earthwork.</p> <p>When feasible, new skid trails that cross roads should cross at right angles and curve after crossing.</p> <p>When feasible, temporary roads should intersect system roads at right angles and curve after crossing.</p> <p>Disturbed sites would be prepared to provide a seedbed for reestablishment of desirable vegetation. Practices may include ripping, and scarifying.</p> <p>Minimize the vegetative clearing limits above and below the road prism to help screen the road.</p> <p>Excess slash from roadwork would be piled and burned.</p>
Road Obliteration- in Partial Retention VQOs	<p>Minimize the vegetation clearing limits above and below the road prism to help screen the road.</p> <p>When vegetation is disturbed during the obliteration process, feather edges between obliteration zone and surrounding vegetation to reduce probability of reopening a human-made linear feature on the landscape.</p>
FIRE AND FUELS	
Control of prescribed fire	<p>All prescribed burning will take place under the guidelines set forth in a prescribed fire burn plan developed specifically for this project area. Prescribed burn plans will address parameters for weather, air quality, contingency resources, and potential escapes. Prescribed underburning and pile burning would only be initiated when burn objectives could be met and when weather and fuel conditions are within specific prescription parameters.</p> <p>Firelines would be constructed as needed for fire control and protection of specific resources. Existing roads, trails, drainages, wet meadows, rocky outcrops, and other natural barriers would be used as where possible.</p> <p>Fireline would be rehabilitated post-fire</p>
AIR QUALITY	

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Maintain air quality	All prescribed burning will be implemented in full compliance with MDEQ air quality program through coordination with the Montana/Idaho Airshed Group.
	Prior to prescribed burning, public notifications would be made. (mail, email, phone, website, Facebook, Inciweb and/or press releases..
	Signs warning of potential visibility impairment or temporary area closures may be posted as needed along roads during burning operations.
RECREATION MANAGEMENT	
Protect public safety	Place area closure signs and maps at trailheads and on trails during harvest and rehabilitation operations.
Prevent damage to existing trail features	All structures will be marked on the ground and the sale area map.
	All trees or posts with trail signs or related information shall remain in place or be replaced in-kind.
	Use existing trails for skidding and temporary roads as much as possible.
	All trails and their constructed features in the project area will be maintained, restored, or replaced in-kind to their original design according to the USDA Forest Service Standard Trail Plans and Specifications.
Reduce disruptions of public use on trails	Identify alternative parking areas for trails when operations are near trailheads.
	Timber sale operations should be completed within 3 years, except as required by contract obligations
	Seasonal timing of the project and log hauling may be restricted as agreed by the District Ranger and Contracting Officer. Otherwise, log hauling will not occur on weekends or holidays
Protect trail aesthetics	Existing unauthorized trails used in timber sale operations but are not part of the trail system will be obliterated and rehabilitated by decompacting, seeding, fertilizing, and covering with slash
Prevent unauthorized trail development and motorized access through newly logged units and on skid trails	Use signage, slash, downed logs, earthen humps or berms, or boulders as well as increased agency presence in the area
HERITAGE RESOURCES	
Protect cultural sites within the project area	No ground disturbance or pile burning would occur on known archaeological sites or historic structures. Report new discoveries of cultural material to the Forest Heritage specialist. Consult with the Forest Heritage Specialist during road and cutting unit design, and when fuels treatments will occur in areas where heritage sites are present.
Protect cambium-peeled trees.	No removal of cambium-peeled ponderosa pine trees. No ground disturbance or herbicide use within the dripline of cambium-peeled trees. Employ directional falling of trees within one-and-a-half tree lengths of cambium-peeled trees. Employ hand removal of shrubs, ladder fuels, and surface duff layers prior to underburning. Report new discoveries of cambium-peeled trees to the Forest's Heritage specialists.