File Code: 1940 Monitoring **Date:** 9/11/14

To: Yellowstone District Ranger

Subject: Smith Creek Vegetation Treatment Project Implementation Monitoring Review

On August 21, 2014 an Implementation Monitoring Review was held to evaluate the Smith Creek Vegetation Treatment Project on the Yellowstone Ranger District. The project was partially complete at the time of the review, with harvest complete in units G, B1, B2 and ongoing in units C and H. No burning had been conducted. Monitoring Review attendees included Alex Sienkiewicz, Lauren Oswald, Rachel Feigley, Clint Sestrich, Barb Ping, Keith Konen, Steve Martell, Dale White.

The objectives of the review were to:

1. Evaluate the implementation and effectiveness of EA/contract mitigation measures.
2. Provide recommendations for other units to yet to be harvested under the existing contract, and for future projects, concerning appropriateness and effectiveness of standards, guidelines, and contract provisions.

The stated purpose and need for this integrated vegetation treatment project was as follows:

- To modify potential wildfire behavior by creating vegetation and fuel conditions that provide for safer firefighter response and public evacuation in the event of a wildland fire.
- To improve wildlife habitat diversity by maintaining meadow and aspen areas, and decreasing tree densities in Douglas-fir stands.
- To decrease tree densities in the WUI adjacent to private lands, so that the remaining trees are less susceptible to future insect and disease infestations.

The Smith Creek Vegetation Treatment Project was designed to improve public and firefighter safety by lowering the intensity of potential wildfire behavior. This would be accomplished by breaking up the vertical and horizontal continuity of vegetation and fuel conditions in the portions of the WUI in closest proximity to residences, other structures, and primary transportation routes.

Treatment units were also designed to improve wildlife habitat diversity by modifying forest structure where encroachment from conifers is occurring in meadow, aspen, and historically open grown Douglas-fir stands. By removing bug-infested trees and decreasing stand density, stand conditions would also be less susceptible to future insect and disease infestations.

The process for this review consisted of the following:

1. Identification and listing of project Best Management Practices (BMP's) and similar requirements including those pertaining to soil and water, wildlife, timber harvest practices, noxious weeds, air quality, visual impacts, and aquatic habitat protection. Over 100 BMP's and similar directive requirements were included in the EA and project contract, of which the 35 most important/relevant requirements were included in this review. Sources included the Environmental Assessment and the Documentation of Contract Pre-Operations Meeting for 2013/2014.

2. Field review of units G, B1, and B2.
3. Team ratings (consensus) for application and effectiveness of BMP's observed at the reviewed harvest units.
4. Team recommendations for the remainder of this timber sale and for future timber sales.

EVALUATION PROTOCOL

BMP implementation and effectiveness was evaluated using a modified form of the Forestry BMP review protocol developed by the Montana DNRC. The application and effectiveness rating system consisted of the following scoring system:

Application	**4 points**. Operation meets requirements of objective or measure
	3 points. Minor departure from objective or measure, requirements mostly met
	2 points. Major departure from objective or measure, requirements marginally/barely met
	1 point. Gross neglect of objective or measure, requirements not met at all
Effectiveness	**4 points**. Adequate Protection of resources, effective
	3 points: Minor & temporary impacts on resources, moderately effective
	2 points: Major & temporary or minor & prolonged impacts on resources, slightly effective
	1 point: Major and prolonged impacts on resources, not effective

EVALUATION WORKSHEET

Evaluation Items - BMP's	Source	Applic	Effect	Comments
Timber Harvesting BMP's				
1) Merchantable trees will be whole tree yarded and skidded to designated landings for all of the tractor units.	DN	4	4	
2) No log hauling from April 1 - June 1	Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	
3) Units A1, B, B1, D, G & Z: no heavy equipment use from April 1 – October 31.	Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	In Units B, B1, and G a contract mod allowed an excavator to conduct cleanup/rehab after April 1. This was necessary due to high snowpack and associated late melt
4) Operations shall not result in detrimental soil conditions in excess of 15%.	EA Appendix B	4	4	

5) Maintain an average of at least 100 feet between skid trails, and allow no ground-based skidding equipment off these trails at any time, with the exception of designated landings and system roads.	EA Appendix B	4	4	Contract mod allowed 75' mininum distance between skid trails to allow use of old road prisms existing within units.
6) Standards for down woody material will follow recommendations of 10-15 tons/acre as per Forest Plan direction.	EA	4	4	Note: Forest Plan requires minimum 15 tons/acre
7) Contractor shall use slash to blockade noted roads for 100 feet from the junction with the main road as shown on the Stewardship Projects Map. Where roads intersect the main road, slash shall be placed in this manner on both intersecting segments for 100 feet. Slash shall be place to look as natural as possible, given meeting the objective of blockading access. Slash shall consist of at least 50% trees by volume (greater than 5 inches in DBH) with the remainder in misc. woody material. Where the entire road is specified for slashing, the above specifications shall be used for the entire road.	Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	Suggest modifying requirement to include some logs that are 2x the width of the rehabbed road/trail and are placed so that they span the width of the road/trail. Could spec on such log every 50-100 feet of rehabbed trail
8) Unless waived in writing by the Forest Service on specific roads, skid trails/skid roads or landings, all landings, skid trails/skid roads, and Temporary Roads constructed or used by Contractor shall be scarified by the Contractor following use. Scarification shall span the width of the compacted areas and shall be done to a depth of not less than 6 inches, but not to exceed a depth of 14 inches, and must effectively prepare the ground for seeding.	Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	The Smith Creek DN and subsequent TS contract was concurrent with the Gallatin Travel Plan ROD. Some of the routes displayed on the Smith Creek contract map as *existing* or *designated* were subsequently classified as excess (non-designated) in the Travel Plan. These routes were used by the contractor but were not scarified afterwards – because the contract showed the roads as existing or designated routes. One example is the route leading into Unit G which is no longer designated yet was not scarified after use by the Smith Creek contractor. The IDT agreed this was not

				preventable and will figure how to get that work accomplished.
Aspen				
9) Remove all conifers within and around aspen clones (individual trees sharing a common root system) for a distance of at least 100 feet	DN	4	4	Rated Unit G only. This requirement resulted in the removal of all conifers within quite a large area around the edges of the aspen stand and where site conditions differed substantially enough to not support aspen. In the future consider more precisely defining areas of aspen potential, define default prescription where there is none, and/or feathering conifer removal around edges of aspen stand to provide cover for wildlife and better meet project objectives.
10) Units A & G have large concentrations of aspen clones and will have the majority of the conifers removed leaving 10-15% of the best formed, healthiest conifers in clumps. Key areas for clump retention will include trailheads, along system roads and ATV trails, wet areas, and viewsheds from adjacent private lands	DN	3	4	Rated Unit G only. This requirement may appear to be somewhat in conflict with #9 above. However, conifer clumps may be defined where there are no inclusions of aspen or aspen potential, near wet sites where we would not operate equipment anyway, and be used to meet the snag standard. Conifer clump retention around trailheads may not be desired or aesthetic and should be revisited.
11) Fuels resulting from the treatments will be piled and burned at the landings or away from the root systems of the remaining aspen clones	DN	4	4	This item primarily applies to hand treatment units (not included in this review)
Fuels/Fire				
12) Piles shall be reasonably compact and free of soil to facilitate burning. Piles will not be less than six feet in height. Piles shall be of a size and location which will not impair road use or result in damage to residual timber.	Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	

Piles shall be located at least 50 feet from residual timber.				
Soils				
13) Ground-based mechanical harvest operations must be on frozen ground or over 8" of snow. Mechanical harvest operations outside of this period would require a slash mat or similar technique to limit soil disturbance. Normal operating period for mechanical harvest and skidding would be November 1- March 31.	EA	4	4	The required frozen ground or 8" of snow were not present in 2011 or 2012, so logging was not carried out those years. The project was finally able to procede in 2013/14. The slash mat requirement (option) is not consistent with the required whole tree yarding method.
Water Quality				
14) Apply standard BMP's for all activities including Montana Streamside Management Zone (SMZ) compliance rules	EA	3	3	In Unit G some trees were cut within the SMZ of a small ephemeral channel
Fisheries				
15) For Units A1, A2 and G, favor leaving the largest diameter trees along riparian corridors. Purpose is to protect those trees most likely to provide anchored and stable large woody debris (LWD) when it is recruited to the channel.	EA	4	4	Location of unit boundary assured compliance with this requirement (except that some trees were cut within the SMZ of a small ephemeral channel in Unit G)
16) For Units A1, A2 and G, follow SMZ rules relative to tree retention guidelines. At least 50% of trees $\geq$ 8 in dbh should be retained within a 50' distance to the stream edge.	EA	4	4	Location of unit boundary assured compliance with this requirement
17) Favor leaving trees that are leaning towards the stream channels and favor taking trees leaning away from the stream channel.	EA	4	4	Location of unit boundary assured compliance with this requirement
18) Fisheries biologist will assist in tree marking along all riparian corridors.	EA	4	4	Location of unit boundary assured compliance with this requirement

19) No harvest in active floodplains (inundated on 1.5 – 2 year recurrence interval). Fisheries biologist will assist in identifying these areas.	EA	4	4	Location of unit boundary assured compliance with this requirement
Wildlife				
20) Follow Snag management direction, Forest Plan Amendment #15 and/ or Northern Region Snag Management Protocol. Retain snags in clumps rather than uniformly distributing them throughout harvest units.	EA	3	3	Snags were not retained in clumps and a few may have blown down due to this. Design criteria for clumps was not met; meant to be interior to the unit. Clump retention can meet multiple resource needs – protection of wet areas and SMZs, hiding cover retention, snag retention, visuals, etc.
21) Hand or machine treatments (including helicopter) would not be conducted in any of the proposed vegetation units during from September 1 through October 15 to accommodate the concentrated elk migration in the area. Exceptions to this restriction may occur only after consultation with Montana Fish, Wildlife, and Parks.	EA	4	4	Variance was obtained from FWP to work between Sept 1 and Oct 15 during 2013. The request for variance in 2014 was not granted from FWP.
22) Buffer existing springs and other areas exhibiting riparian characteristics and do not allow equipment use within the area of influence.	EA	3	3	In Unit G the unit boundary could have been used to provide required protection to wetland area (some trees were removed from the small wetland area and designated SMZ). Requirement should be reworded to clarify what should not occur within the buffer.
Weeds				
23) Spray all weeds adjacent to roads with herbicide prior to the treatment activities (including road work).	EA	2	2	No Pre treatm
24) In order to prevent the spread of noxious weeds into the Contract Area, Contractor shall be required to clean all off-road logging and construction equipment prior to entry on to the Contract Area. For hand-treatment and helicopter units that would be	EA and Documentation of Contract Pre-Operations Meeting for 2013/2014	4	4	

treated while the ground is not frozen, power-wash and inspect all off-road vehicles before entering *each* unit.				
25) Monitor units and associated activity areas for new weed infestations both pre and post-activity and treat infested areas.	EA	4	4	
Visuals				
26) Avoid creating units that are shaped with straight lines, square corners or other configurations that are not naturally occurring in the area. This applies to all units, especially where NF land abuts private land boundaries.	EA	4	4	
27) Transition the edges of units into the surrounding area, either by reducing the percent removal into adjacent dense forest, or increasing the percent removal adjacent to natural openings.	EA	4	4	Treatment prescription created a visually feathered edge without the need for specific effort to “feather.”
Recreation				
28) Post warning signs at key entrances and exits during the time of the activity and remove or cover them during times of inactivity.	EA	4	4	
29) All skid trails would be slashed heavily for at least the first 100 yards off roads and trails to discourage vehicular access.	EA	4	4	
30) Feather edges of harvest units along roads and trails	EA	4	4	Treatment prescription created a visually feathered edge without the need for specific effort to “feather.”
Grazing				

31) Manage grazing to protect aspen regeneration. The area of Units A1, A2, and G should be rested from livestock grazing for a minimum of 1 year following harvest.	EA	1	2	Cattle have not been excluded from Unit G and grazing is impacting site recovery, particularly wet areas and aspen regeneration.
Roads				
32) No new permanent or temporary roads will be constructed for the project. Access to units will be on existing roads.	EA	4	4	See notes for Rating Item #8
33) All re-opened project roads (previously used for logging) should be signed or gated as "closed to the public" during periods of harvest activity.	EA	3	4	Temp barricades were employed but did not specifically state "closed to public." Note: Road closures require a closure order from the District Ranger.
34) Following use, project roads (previously used for logging) that are re-opened for harvest activities should be permanently closed and rehabilitated to meet adjacent land management objectives with no regard to future access.	EA	4	4	See notes for Rating Item #8
35) All Forest roads utilized by this project are vulnerable to spring break damage and should be restricted between March 30 and June 1.	EA	4	4	

PHOTOGRAPHS

Photo 1. Monitoring team in Unit G

Photo 2. Wet area on Unit G access route. Cattle and ATV impacts are slowing recovery.

Photo 3. Cattle present in Unit G

Photo 4. Aspen clump and conifer snags near north end of Unit G.

OBSERVATIONS AND CONCLUSIONS

The team felt that most planning and implementation requirements were being met and were effective for the most part, and agreed that recommendations resulting from this review will be useful in implementing the remainder of the project. Notable observations follow.

1. The contract required existing roads that were re-opened and used for harvest activities to be permanently closed and rehabilitated to meet adjacent land management objectives. The access road to Unit G was used by the contractor but was not scarified afterwards – due to the the contract showing the road as an existing, designated route. This designation was correct at the time the contract was awarded but was modified by the Travel Plan, which was developed concurrent with this project. The IDT agreed this was probably not preventable and will figure how to get that work accomplished.

2. A requirement to remove all conifers within and around aspen clones for a distance of at least 100 feet resulted in the removal of all conifers within quite a large area around the edges of the aspen stand and where site conditions differed substantially enough to not support aspen.

3. Ground disturbance from logging activities was minor and will be short term. Disturbance to the forest duff layer and understory vegetation on skid trails in the B Units was virtually undetectable in many locations, and full recovery can be expected to be rapid.

4. The contract required ground-based mechanical harvest operations to be on frozen ground, over 8" of snow, or upon a slash mat or similar technique to limit soil disturbance. Although providing excellent protection to soils and understory vegetation, this requirement posed challenges.
   - The required frozen ground or 8" of snow were not present in 2011 or 2012, so logging was not carried out those years. The project was finally able to procede in 2013/14.
   - The slash mat option is not consistent with the required whole tree yarding method.
5. Some trees were cut within a wet area and within the SMZ of a small ephemeral channel in Unit G. The unit boundary could have been used to provide required protection to wetland area.
6. Snags were not consistantly retained in clumps and a some may have already blown down as a result. Design criteria for clumps was not met; meant to be interior to the unit.
7. Unit G was required to be rested from livestock grazing for a minimum of 1 year following harvest, however cattle were present and were impacting site recovery, particularly wet areas and aspen regeneration.

RECOMMENDATIONS

1. In the future consider more precisely define areas of aspen potential, define default prescription where there is none, and/or feathering conifer removal around edges of aspen stand to provide cover for wildlife and better meet project objectives.

2. Balance the desire to lighten impacts to soils and vegetation by requiring logging to occur over snow or frozen ground with the risk of delaying project implementation, perhaps significantly, if those

conditions do not occur as or when expected.

3. Alternative methods for soil protection, such as operation on a slash mat, must be consistent with the logging/yarding method.
4. To the extent possible, use unit boundaries to delineate SMZ's, wetland areas, and other no-go zones. This is the simplest and clearest way to protect sensitive areas.
5. Stress that snag clumps are meant to be interior to the unit when possible, not just around the unit perimeter.
6. Consider road and trail closure slash installation requirements to include logs of length at least twice the width of the rehabbed road/trail placed so that they span the width of the road/trail.
7. Follow planned post-harvest livestock grazing restrictions designed to prevent cattle from impacting site recovery and/or achievement of project objectives (e.g., aspen regeneration).
8. In order to capture all resource concerns and potentially circumvent any unintended resource damage and better meet project purpose and need, IDT discussions should take place prior to each field season to ensure any needed preparation or work is captured.

General Recommendation: Educate (train) specialists regarding the pre-approved clauses available for inclusion in timber sale contracts so that they can select relevant clauses to meet their mitigation goals. "Custom" mitigation measures should be proposed only when pre-approved timber sale contract clauses are insufficient to provide the desired resource protection.

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