Main Boulder Fuels Reduction Stewardship Project
Review - Vegetation Council Review 5/28/2008
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This reports documents hydrology items of the Vegetation Council review of the Main Boulder Fuels Reduction project on 5/28/2008. The units treated to date are in compliance with all of the water resource mitigation measures and result in hydrology effects which are very minor and accurately disclosed in the Main Boulder Fuels FEIS. Findings will be illustrated in a few photos.

Unit 1A was treated with felling and machine skidding, then slash burned in individual piles. Most of the work in Unit 1A was done in 12/2007 and 1/2008. The frozen/snow covered conditions during felling and skidding were adequate to virtually eliminate any soil displacement or erosion. In addition the high amount of rock in the surface soils provided additional erosion resistance. Sufficient fine slash was evenly distributed during the harvesting to form a protective mulch layer. Individual hand piles and burning resulted is lower burn depth and much shorter erosion slope lengths than much larger machine pile burns.

East end of Unit 18A. This unit had a combination of hand treatment and ground based excavator skidding. Access was provided with a temporary road. The compliance with mitigation measures IX A. 3 (SMZ rules FEIS 2-31) and IX B. 2 (no harvest within 15' of streams) was acceptable and provided sufficient water quality protection. The SMZ retention guidelines apply to the 50' nearest the Main Boulder River in which retention guidelines constrained harvest to no more than 50% of the trees >8" dbh. The 15' no harvest mitigation measure was very effective for the intended mitigation purpose of providing thermal regulation, overhead cover, and immediate bank protection of the Main Boulder River.

A skid trail between units 13 and 13A crossed a small perennial stream. The streambank protection measures included placing several logs along a straight section of the stream, skidding over the logs, then removing the logs. The treatment included even placement of small slash along the stream bank and additional coarse slash from about 5' to 10' from the stream on each side for additional sediment filtration. The overall result was acceptable and considerably less impact than if the stream had been forded or protected with a temporary culvert.

The west end of Unit 13 A has a long skid trail along the west boundary which was covered with fine slash. This winter skid trail had no obvious compaction, likely due to the snow/frozen condition when skidding occurred. The soil felt "springy" and in fact less compacted than adjacent areas not in the skid trail. Although fine slash was effective in soil protection, slash piling could be less thorough and leave more larger slash (branches and small boles) to further provide surface protection and break up the visual skid trail line. The K-G 6.3.3# (temporary road, skid trail, landing scarification) clause was not necessary due to the winter logging and lack of compaction.

Temporary road into Unit 18A. This temporary road will be obliterated within the next few weeks per contract clause K-G.6..3.2# (Temporary Road and Tractor Road Obliteration). The obliteration will be done using an excavator to pull the "fill slope" (mainly boulders) and re-contouring to original. Ample root wads and slash remains to cover much of the re-contoured road.

Observations and Recommendations

1. Small irrigation ditches cross some of the units. A few ditches have perennial flow and a question was raised whether these ditches are "streams" per the Montana SMZ rules. Ditches are not inherently considered as "streams" under the SMZ definition since SMZ "streams" (36.11.312) are defined as "natural watercourses". The 2006 rules (pg. 21) however, have added a section (pg. 21) defining ditches as " OBW's" or "Other Body of Water" if they discharge directly into a stream or pond. If a ditch discharges to another water body it is then treated similar to a Class 3 stream segment with SMZ boundaries, crossing requirements, side cast prohibition, and shrubs and sub-merchantable tree protection.

2. The stream course protection measures observed were very effective in protecting riparian vegetation, maintaining SMZ filtration function, and protecting water quality. The 15' no cut measure adjacent to perennial streams provided additional protection which in addition to SMZ rules. The result was no observed sedimentation to the Main Boulder River or tributaries.

3. Scarification of skid trails was not done in the units reviewed and was not judged to be necessary. Slash cleanup (piling) was judged to be too thorough in areas adjacent to skid trails. It is recommended that skid trails and particularly temporary roads be more heavily slashed in future Main Boulder Fuels units to provide additional erosion protection, visual mitigation, and more organic matter. The winter harvesting skid trails generally do not need waterbars, particularly if slash on the skid trails in increased. Heavy slashing of obliterated road segments in recent GNF timber sales and road decommissioning projects has been very effective in accelerating rehabilitation of these former road segments.

4. An examination of some of the units by Henry Shovic, Gallatin NF Soil Scientist would help determine if the units completed in Main Boulder Fuels meet the <15% disturbance standards per the R1 soil protection guidelines.