1900 NEPA, 2500 Watershed Date: 12/7/2011

Subject: Shields TMA Travel Plan and Road Decommissioning – Implementation Monitoring Review

To: Yellowstone District Ranger

On October 6, 2011 an Implementation Monitoring Review was held in to evaluate Gallatin Travel Management Plan implementation with a focus on a variety of travel plan work including trail rehabilitation/construction/improvements (Northern GNF ATV Trails Rehab contract) road decommissioning project work (2009 & 2010), aquatic passage (2010), road drainage improvements (2009 and 2010), flood damage (2011), and travel plan goals and objectives standard compliance. Attendees included Lauren Oswald, Wendi Urie, Clint Sestrich, Rachel Feigley, Kimberly Schlenker, Steve Christensen, Dale White, and Mark Story.

This review is consistent with Appendix B of the Gallatin NF Travel Plan (FEIS Appendix B-12) which calls for an Implementation review team to evaluate if the Travel Plan goals, objectives, standards, and guidelines were implemented and effective and still valid.

This monitoring review consisted of the following process:

Review and rate the Smith TPA road decommissioning, bridge and AOP replacement, and ATV trails rehab project, aquatic passage, and road drainage improvements for application and effectiveness of the following:

- -Gallatin NF Road and Trail Improvement Projects DN & FONSI Standard Operating Procedures and Additional Mitigation
- -Gallatin NF Travel Plan Goals, Objectives, Standards, and Guidelines.

Provide recommendations for future travel plan implementation in Smith TPA and as appropriate for the rest of the GNF.

The application and effectiveness rating system consisted of the following measures:

Application
5- operation exceeds requirements of objective or measure
4- operation meets requirements of objective or measure
3- minor departure from measure, objective marginally met
2- major departure from measure, objective sporadically met
1- gross neglect of measure, objective not met

Effectiveness
5- improved conditions over pre-project condition
4- adequate protection of resources, effective
3- minor and temporary impacts on resources, moderately effective
2- major and temporary or minor and prolonged impacts on resources or only slightly effective
1- major and prolonged impacts on resources or not effective

Gallatin NF Travel Plan Goals, Objectives, Standards, and Guidelines				
Rating item	source	apply	effect	comments
1. Goal D. Obj. D-1. Close and rehabilitate existing roads that are in excess to administration, recreation, and access needs.	GNF Travel Plan Detailed Descp of Decision FEIS pg. 1-11	4	4	-closed 25 miles in 09/10 -slash closure adjusted for livestock -D4 OHV Ranger presence effective in Smith Creek area
2. Shields Travel Plan area Goal 1: Provide opportunities for summer recreation use with an emphasis on motorized and mountain bike use in Smith Creek and non-motorized in upper Shields. Emphasize passenger car use along open roads Obj 1-3 – restore and designate old roads for motorized and mountain bike opportunities	GNF Travel Plan, Detailed Description of the decision Chapter II -164	3	4	-sign protocol not finalized or implemented yet -provide a non-sign tool to emphasize non-motorized recreation opportunities
3. Shields Travel Plan area Goal 3: Provide YCT habitat Obj 3-1 reduce road and trail sediment.	GNF Travel Plan, Detailed Description of the decision Chapter II -164	4	4	-extensive erosion reduction completed 09/10 -some AOP sites need seeding & mulching exposed soil area
4. Provide road and trail system that accommodated traffic with protecting soil and watershed conditions. Obj 4-1 repair damage to road and trail system and schedule maintenance to achieve non erosive conditions.	GNF Travel Plan, Detailed Description of the decision Chapter II -164	4	3	-East Fork and Smith Creek roads substantially improved since 2006 -ATV trail maintenance funds limited, need a consistent motorized trail maintenance budget
5. Standard D-5. Project Roads. Existing roads that were constructed for project use and not designated for motorized use via the Forest Travel Plan are to remain closed to public (wheeled) motorized use.	GNF Travel Plan FEIS pg. 1-11	4	4	
6. Goal E. Water Quality, Riparian, Fisheries and Aquatic Life. Manage a road and trail system that fully supports the protection of water quality, and habitat for fish, riparian dependent species, and other aquatic organisms.	GNF Travel Plan FEIS pg. 1-13 GNF Travel Plan, Detailed Description of the decision Chapter II -165	4	3	
7. Obj 4-2 interpretive/educational signing to use camp spots out of wet, muddy, and shrubby areas	GNF Travel Plan, Detailed Description of	na	na	-this objective was met but not with signing -campsites not designated

and keep vehicles 50' lakes and streams.	the decision Chapter II -165			
8. In order to mitigate effects to wildlife during important times of year such as calving and fawning, wintering, road/trail work will be conducted from 7/15 to 10/15**.** Outside of important big game winter ranges, work in the late fall or winter may occur. Complete road/trail work in high elevation whitebark pine habitat by 9/1 to avoid conflicts with grizzly bear. (See Travel Plan Guideline I-1)	Road and Trail Work DN & FONSI p 25	4	4	-some trail construction may have occurred after 10/15 but before rifle hunting season so in compliance with "late fall" provision. -Districts should review road & trail contracts for implementation timing
9. Rare plants. All projects will be surveyed prior to construction for rare plants/habitats and appropriate mitigation will be planned if found	Road and Trail Work DN & FONSI p 27	3	4	-FS crews did general reconnaissance in 2009 but not as systematically as in 2010 or 2011.
10. If an affected area is within potential goshawk, surveys will be completed during the year work is planned. No ground disturbing activities from April 15 to August 15 to protect goshawk pairs and fledglings.	Road and Trail Work DN & FONSI p 28	3	4	Smith Ck has limited old growth so potential goshawk habitat limited. -FS crews did general reconnaissance but not as specifically as in 2011.
11. Road Restoration, Stabilization, and Decommissioning Treatment Type II: This treatment is for closing roads that may be reused in the future or for roads that will be decommissioned and of low risk for sediment production into stream courses. Remove road surface compaction by ripping road to 12" depth. Remove at risk culverts from drainages and remove road fills within drainage. Plug and store ditch relief culverts for future use. Install frequent cross drains. Slash road surfaces. Seed any exposed soils. Block road entrances with an earthen berm, ripping and slashing, recountouring & slashing, or a mix.	Road and Trail Work DN & FONSI p 24	4	4	-rip & slash treatments in Smith Creek done adequately

12. Road Restoration, Stabilization, and Decommissioning Treatment Type III: This treatment is used for closing roads and decommissioning them from the system. It may also be used on road segments that are at high risk for mass wasting into stream courses, even though the entire road may remain on the road system. Recontour the prism to original ground profile as close as practical. This is usually considered to be around ¾ of the original on this Forest. Remove all drainage structures and dispose of them. Remove all fills from drainages to as close to the original geometry as practical. Armor stream bottom if needed to prevent excessive erosion Slash open soils Seed open soils	Road and Trail Work DN & FONSI p 25	4	4	recontoring treatments in Smith Creek done adequately
13. Water, Fisheries and Aquatic Life. Road materials shall not be side-cast into streams or wetlands. (See Travel Plan Guideline E-7).	Road and Trail Work DN & FONSI p 25	4	4	-BMP's for revegetation could be improved at culvert crossings
14. Invasive Weeds**.** For projects scheduled to be implemented in 2010 and beyond, weed surveys of project areas shall be conducted at least 1 year prior to soil disturbance. If weeds are found, work with the district weed specialist to adjust project design or execution as needed to minimize the risk of spreading weeds. Any weed treatment shall be done at least one year in advance of soil disturbance work. For projects to be implemented in 2009, work shall be scheduled in late summer and fall such that weed surveys and any needed treatment can be done earlier in	Road and Trail Work DN & FONSI p 27	3	3	-weed treatments done before road decommissioning

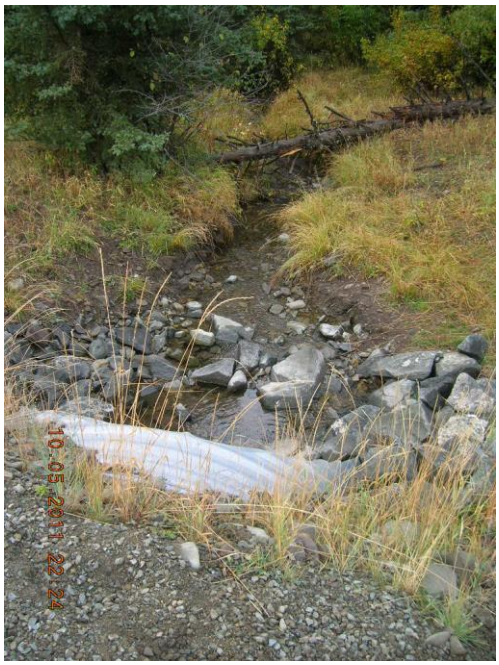
the summer.				
15. Visuals Scenery ("visuals") The visual quality objective for this area is "partial retention".	Forest Plan Standard. No specific standards for scenery were articulated by the travel plan decision.	4	4	-treatments generally not visually obtrusive -slashing highest visual impact -some roads closed with high cuts on stumps to keep slash elevation high –this treatment not appropriate for sensitive visual areas

Smith Creek road #991 section which was resurfaced in 2010.

Aquatic passage culvert installed in 2011 on Smith Creek road #991. The construction contract was not complete at the time of the review. Items yet to be completed include an additional grade control at the culvert inlet and surface erosion control.

Waterbar installed in the East Fork Smith Creek road # 6635 in 2010. The combination of improved road drainage and spot surfacing crossings and road sections near streams has substantially reduced road sediment to the East Fork.

Section of the new ATV trail# 263 near Bitter Creek crossing. This section of was built in 2010.



Outlet of a new aquatic passage (AOP) culvert on a fork of Smith Creek on road #991. The weir at the outlet end of this culvert needs to be adjusted to reduce the outlet drop. The channel below the culvert was downcut about 0.5 to 1.0 ‘ in the snowmelt/rainfall event of May 2011. The stream evidently headcut up to the culvert outlet. Additional weirs could be place below the culvert to smooth out grade transition to the stream.

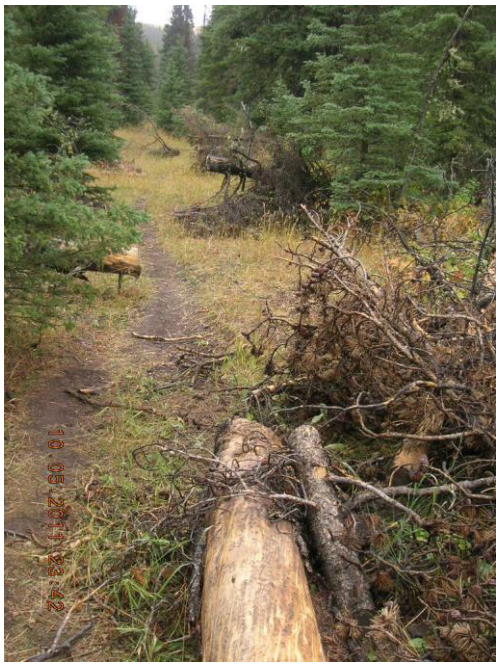
A curve of Stag Creek below the bridge on trail #263 was undercut during the snowmelt/rain runoff in May 2011.

The photo above of the Smith Creek crossing was during the high low of 5/21/11. The trail #263 repairs were included in an ERFO flood damage request but not yet designed.

Stag Creek bridge site at the trail #263 bridge site crossing. Fill for the bridge abutments was collected adjacent to the stream thereby creating a potential sediment source. Fill could be collected from designated non-streamside barrow areas and avoid stream sedimentation.

New bridge across Bitter Creek in ATV trail #263. This bridge is designed to also allow pickup trucks for administrative maintenance. The left photo shows the lack of trail fill material being flush with the top of the bridge. In the right photo bridge abutments are not sufficiently protected with rock. Recommended maintenance includes gravel placement at the top of the bridge to avoid the sharp grade transition. In addition, angular 1' to 2' rock should be placed under each corner of the bridge to augment the gabion abutments in protecting the structure from high flows.

AOP culvert installed on East Fork road #6635 in 2010. Coarse riprap at the lower end of the culvert and rock weirs to reduce gradient have improved fish crossing capability. This culvert passed the 2011 May high flow event without damage.



Slash treatments were frequently used in the Smith Creek road decommissioning to block closed routes to motorized travel but without ripping and ground disturbance. The upper left photo is of a road spur near the Bitter Creek ATV bridge. The lower left photo along ATV trail #263 is intended to direct ATV use along the trail and not in the spur. Trees were cut about 3' off the ground so the trees would provide a more visible road closure treatment. The upper right photo is of a slash closure which was opened to a 36" width to allow livestock to access a grazing allotment pasture above the slash motorized closure.

Left photo rip and seed spur to East Fork Smith Creek road #6635 which was ripped with an excavator in 2010. The excavator ripping is deeper that was done with a dozer in the right photo in 1995. The excavator ripping exceeded the decommissioning contract specifications but was judged to be effective in closing the road. Seed germination and revegetation establishment was adequate.

Buck and pole fence construction in 2010 was augmented with a road closure ditch barricade to prevent ATV use on trail #263 from driving up into the meadow behind the fence. Buck and pole fence closures have been useful as a road closure methodology in D4 and D6.

Conclusions:

1. The review team consensus is that the road decommissioning was successful in meeting the GNF travel plan objectives by closing 25 miles of roads, reducing road source sediment to East Fork and Smith Creek, and providing an approximately 20 mile of ATV trail system of trails #130, #254, #255, and #263.

2. Several implementation items were rated as only moderately effective with minor and temporary impacts on resources due to some needed follow up construction fine tuning or future procedures including more weirs around some AOP culverts, reinforcement of ATV bridge abutments, better and standardized signing, improved erosion protection BMP's, and more systematic implementation of rare plant and goshawk mitigation measures.

3. As GNF Travel Plan facilities and activities are implemented, the GNF is adding maintenance inventory workload such as trail heads, trail section and bridges, signs, decommissioning closure maintenance, road improvements, and AOP maintenance.

3. Overall the Smith Creek drainage is in much better watershed condition that when many of the heavily roaded and logged sections were acquired in 1992. This is due to decommissioning of 53 miles of roads in the Smith Creek and Shields River areas in 1994/1995, AMP revisions, road improvements, AOP culverts, and revegetation and reforestation of historical logging units.

Recommendations:

1. Additional needed rehabilitation work noted by the review team included seeding exposed soil in two of the Smith Creek AOP the Creek bridge crossings, and reinforcing ATV bridge construction abutments (Bitter Creek bridge).

The Smith Creek culvert on Rd #991 was seeded and mulched by the culvert contractor in late October, however mulch was judged to be insufficient. Clint Sestrich added several weed free straw bales on 12/6/2011 which should insure sufficient erosion control while revegetation occurs in 2012.

2. Place emphasis on finalizing and implementation the road and trail sign protocol.

3. Standard Gallatin NF contract specifications should be developed and included for stream crossing road and trail construction areas including fords, bridges, and culverts. The speciation should include seeding all bare soil disturbed areas within 50' of a stream then covering with 1-2" of weed free straw mulch or erosion blankets. Followup weed treatments are recommended either by the culvert contractor or force account crews using approved seed mixes appropriate for the site

4. Standard Gallatin NF contract specifications for bridges and culvert installation should include designated barrow areas with at least 25' of vegetative buffering from streams.

5. Weed encroachment into treated areas poses an increasing constraint to decommissioning of GNF roads. Future GNF road decommissioning projects should be more aggressive in following weed management practices in FSM 2080, in the Gallatin NF Weed EIS mitigation measures, and in the Gallatin NF Roads and Trails EA.

- To the extent possible, areas to be decommissioned should be inventoried for weeds and treated up to 3 years prior to decommissioning in order to minimize noxious weeds which could be stimulated from the decommissioning.

- It is important to understand the vulnerability and exposure of road decommissioning treatment areas to weed expansion.

- For treatment areas where weeds are increased, persist in weed treatments as long as necessary.

- To the extent possible and practical, in heavily weed infested areas, minimize the length or road segments that are ripped or recontoured. Often only a relatively short length of segment needs to be treated to effectively close a road.

6. Mitigation measure and contract provisions for Travel Plan implementation construction projects should develop a mitigation synopsis by SO design staff in coordination with District staff. The mitigation synopsis could then be used by both COR's and inspectors and District staff in understanding the construction design and subsequent maintenance.

7. Outyear CMRD, CMTL, CMLG and consolidated NFRR funds should be planned and allocated for Travel Plan related road and trail maintenance, road closure reinforcement, weed treatments, and sign maintenance.

8. Goshawk surveys in May/June could result in delay of actual construction of Travel Plan contracts to August 15 if an active Goshawk nest is documented. Alert contract preparation staff if the project area has potential Goshawk nesting habitat and potential contractors of the possibility of a no sooner than 8/15 startup date around nest areas.

9. Consider 5 year follow-up reviews of for some of the previously reviewed travel plan areas. These could include Bangtails TPA in 2014, Mill Creek in 2015, and Smith Creek in 2016.

Mark Story
Forest Hydrologist