

CHAPTER 1

Purpose and Need for Action

I. INTRODUCTION

This Environmental Analysis (EA) addresses the direct, indirect, and cumulative effects of proposed improvements to the Shields River Road #844, located on the Livingston Ranger District of the Gallatin National Forest. In addition to improving the Shields River Road, the Forest Service proposes to replace the bridge on Deep Creek, construct a parking area with an accessible toilet at the junction of the Shields and Sunlight (#6630) roads and relocate existing gates on the Shields and Sunlight roads closer to the parking area. To compensate for wetlands eliminated by widening the Shields River Road, the agency proposes to expand a comparable wetland on National Forest land in the Shields River drainage.

This analysis is being prepared in compliance with the National Environmental Policy Act (NEPA), Council of Environmental Quality (CEQ) regulations, and the Gallatin National Forest Land Management Plan (1987).

The information and analysis in this document will be used to determine whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI).

The purpose of the NEPA process is to help public officials make decisions that are based on the understanding of environmental consequences, and to take actions that protect, restore, and enhance the environment (40 CFR 1500.1(c)). This process also ensures the public has opportunities to become informed and involved throughout all aspects of the process.

II. BACKGROUND INFORMATION

The Shields River road provides primary access to over 35,000 acres of public land and over 15,000 acres private lands within the Shields River Drainage. Private lands provide for agricultural and residential uses. National Forest lands provide a combination of agricultural, administrative, and recreational uses.

Changes in land use, specifically the continuing subdivision of formerly agricultural lands in the Smith Creek drainage, and increasing recreational activities on National Forest lands have led to increased demands for road access across private land. These access demands often result in damage to the Shields River Road because portions of the road become slick when wet and travel in late fall and spring commonly results in road deterioration.

Use of the Shields Road in the spring and late fall by local property owners creates a greater need for maintenance than would likely be the case if road use during these periods involved only visitors to the National Forest. The needs of dependent property owners call for a level of road maintenance that may be more appropriately met by Park County.

This analysis will be used to determine whether a portion of the Shields River Road should be improved to a standard that will support four-season access by all vehicles – particularly during spring break-up and what improvements are needed if the Shields River Road is to support and sustain increasing numbers of vehicles in all weather situations. Actions considered include widening the road, extending the paved surface to the junction with the Smith Creek Road, and laying a gravel surface that will withstand snow plowing and remain predictable in wet weather. Additional actions are proposed to avoid unnecessary, adverse environmental impacts to resources on the National Forest or to mitigate the foreseeable effects of the proposed road improvements. These actions include replacing the bridge on Deep Creek, resurfacing approximately one-tenth mile of road leading to the bridge, constructing a parking area at the junction of the Shields River Road and the Sunlight Road, relocating the gates on the Shields and Sunlight roads closer to the proposed parking area, installing a toilet facility at the parking area and expanding an existing wetland on National Forest land in the Shields River basin by approximately 0.58 acre. This document discusses the anticipated environmental effects of these actions and the consequences of continuing to use the road in its current condition.

The availability of funding from the Federal Highways Administration creates an opportunity to bring the existing road up to a standard that will withstand use in all weather situations. This standard also satisfies the requirements agreed to by Park County pursuant to the county assuming jurisdiction and responsibility for future road maintenance across private lands in Sections 26-30, T5N, R10E and Section 25, T5N, R9E.

III. Description and Purpose of the Proposed Action

Description

The proposed action would implement the road improvements agreed to by the Forest Service and Park County Commissioners. Upon completion of the agreed-to improvements, Park County would assume jurisdiction for the Shields River Road where it crosses private land in Section 25, T5N R9E and Sections 29-30, T5N R10E, MPM (junction with the Smith Creek Road #991). Improvements to this segment of the road would consist of widening the travel surface to 26 feet and paving the travel way.

From the junction with the Smith Creek Road to National Forest land in the east one-half of Section 26, T5N R10E, MPM, improvements to the Shields River

Road would include widening the roadway to 24 feet (two traffic lanes) and laying a gravel surface.

Proposed road improvements detailed in the agreement with Park County include:

- Widening road shoulders to accommodate snow plowing.
- Reducing the steep slopes on adjacent cut and fill slopes.
- Widening two bridges across the Shields River by approximately 6 feet on each side to allow double-lane traffic.
- Replacing a major culvert on the South Fork of the Shields River.

Additional proposed actions not part of the Park County agreement include:

- Modifying the streambed upstream of the existing bridge over the Shields River at milepost 2.6. Rock will be excavated from the channel and placed to redirect stream flows away from erodible banks.
- Re-positioning existing riprap at the base of the bridge abutments to widen the channel beneath the bridge while retaining loose fill material along the approaches on either side of the Shields River.
- Constructing a parking area near the junction of the Sunlight Road #6630 and the Shields River Road. A permanent, handicapped-accessible toilet would be installed in the parking area. The toilet would be available on a year-round basis.
- Relocating the existing gate at mile 5.1 on the Shields River Road. The existing gate on the Sunlight Road, located approximately one-half mile above the junction of the Sunlight and Shields River Roads, would be moved closer to the proposed parking area.
- Replacing the existing bridge across Deep Creek. The road surface would be replaced on a short (0.1) mile segment of the Shields River Road leading to the Deep Creek Bridge. The current 16-foot road width would not change.
- Installing education and information signs at the end of the pavement to remind people to stay on the designated routes due to the road going through private property. These signs are reassurance for the traveling public and they lessen the possibility of the public driving or recreating on private lands.

- Expanding an existing wetland on National Forest land in the Shields River basin by approximately 0.58 acres. Approximately 0.47 acres of an existing wetland will be buried under fill when the Shields River Road is widened to support two-lane traffic. The resulting loss of wetlands is being mitigated by increasing the area of a comparable wetland on public land in the same river drainage. Executive Order (EO) 1190 requires wetlands replacement in kind with no net loss. The Corps of Engineers will review the proposed mitigation and specify any needed changes before approving the mitigation project. Wetlands mitigation must be complete within one year of completing the road project and the newly created wetland must be established within three years.

Implementing the proposed improvements to the Shields River Road will necessitate a supply of suitable gravel. The Forest Service proposes to develop a pit site adjacent to the Sunlight Road in Section 26, T5N R10E, MPM. Gravel will be stored at the pit and made available for future road maintenance. Developing a gravel pit at the proposed site will conflict with public travel on the Sunlight Road while gravel is being hauled. The conflict will be mitigated by constructing a turnout on the Sunlight Road, below the pit site and above the junction of the Sunlight and Shields River roads. Gravel haul will be restricted to weekdays only. This limits the impact to weekday travelers on the Sunlight Road to occasional, twenty-minute delays.

Improvements are proposed to approximately 5.6 miles of the Shields River Road. Road easements across private land extend 30 feet on either side of the road centerline, for a total width of 60 feet. These easements would remain in effect after improvements are complete. Construction activity would continue for at least two years.

Purpose and Need

The purpose and need for upgrading approximately 5.6 miles of the Shields River Road, #844, stems from: (1) changes in the ownership patterns on private lands from a largely agricultural land use to recreational property development resulting in increased and all weather road use, and (2) increasing recreation use on National Forest lands in the Shields River area. Forest Service policy is to provide safe access to National Forests. The current road is mostly native surface, 16-20 feet wide (one to 1 ½ traffic lanes), and capable of supporting only single-lane summer and early fall traffic without damage to the road. Upgrading the road would increase road width to 24 feet (two traffic lanes). Improved road surfacing will support current and foreseeable future demands for recreation and resource management on public lands.

The purpose and need for the work proposed in addition to what has been agreed to by Park County and the Forest Service is to better provide for demands for year-round access to the National Forest. The proposed parking area would be available during the seasonal closure of the Sunlight Road #6630,

during spring and fall, and during the winter if winter maintenance can be provided from the Shields River Road east of the junction with the Smith Creek Road. Constructing a parking area will facilitate snowplowing in the future by providing a turn around and eliminate the need for snowmobiles to ride on a plowed road. A permanent toilet and a bulletin board would also be constructed at the parking area.

These facilities would be available to the public on a year-round basis. During the summer, motorized enthusiasts such as ATV riders, motorcyclists, bicyclists and hunters, would use the parking area. It would also serve as a rest stop for other recreationists.

The purpose and need for relocating the gates on the Shields River and Sunlight Roads is to bring the gates closer to the proposed parking area.

The purpose and need for replacing aging drainage structures (culverts), reconfiguring the riprap at the base of the Shields River Bridge, modifying the Shields River channel immediately upstream from the Shields River Bridge and replacing the bridge on Deep Creek is to prevent unnecessary and unacceptable adverse environmental impacts to water quality. The culvert on the South Fork of the Shields River is too small to accommodate spring flows. The current placement of riprap at the base of the Shields River Bridge unnecessarily constricts channel flow, resulting in an accumulation of finer textured sediment above the bridge. Modifications to the Shields River stream channel are needed to protect the improved road from damage during periods of high stream flow. The Deep Creek bridge abutments are subject to erosion. The proposed improvements will bring these structures into compliance with current standards, including Best Management Practices (BMP's) designed to maintain water quality.

The purpose and need for expanding an existing wetland on the National Forest is to replace wetlands on either side of the Shields River Road that will be buried under fill when the road is widened to two lanes. Executive Order (EO) 1190 requires wetlands replacement in kind with no net loss of wetlands.

IV. PROJECT AREA LOCATION AND DESCRIPTION

Improvements would be made to the existing Shields River Road #844 in Section 25, T5N R9E and Sections 26-30, T5N R10E, MPM. In addition, the existing bridge across Deep Creek on National Forest land near the center of Section 26, T5N R10E, MPM, would be replaced. A parking area would be constructed proximate to the junction of the Shields River Road # 844 and the Sunlight Road #6630, Section 26, T5N R10E, MPM. The parking area would support recreational traffic during the seasonal closure of the Sunlight Road #6630 and the Smith Creek Road #844. If the Shields River Road were plowed east of the junction with the Smith Creek Road #991, the proposed parking area on National

Forest land would potentially replace winter parking areas on private land near mileposts 1.5 and 2.0.

Constructing the road improvements requires access to suitable gavel or native material that can be crushed to make gravel. Initially, three potential pit sites were identified. These sites were identified as sites #1, #2 and #3 on the map that accompanied the Scoping document. Following specialist review and public comment, sites #1 and #3 were eliminated from further analysis. Site #2 is on National Forest land adjacent to the Sunlight Road in Section 26, T5N R10E, MPM. The environmental effects of developing site #2 will be analyzed in detail. A site off National Forest land could be used. A discussion of the environmental effects of developing a site on private land to resources present on private land is outside the scope of the decision to be made. The only specifications for a site off the National Forest are (1) the site must supply suitable gravel on a commercial basis, (2) the site must near the project area and (3) the site must be reviewed by the Forest Service for the presence of noxious weeds.

If the decision were to develop a pit site on National Forest land, more gravel would be crushed than would be needed to complete the proposed road improvements. Surplus gravel would be stored at the pit and be made available for future maintenance of Forest Service roads in the Shields River basin. Consequently, disturbance at the pit site would be periodic, possibly recurring every two or three years, well into the future.

If the decision were to purchase gravel from a commercial source the Forest Service would be obliged to purchase gravel to make the initial improvements in the surface of the Shields River Road and to make additional purchases whenever gravel was needed to maintain roads on National Forest land in the Shields River basin.

V. SCOPE

The Council of Environmental Quality (CEQ) regulations implementing NEPA define the “scope” of an action consisting of “...the range of actions, alternatives, and impacts to be considered”. To determine the scope, federal agencies shall consider three types of actions; (1) connected actions; which are two or more actions that are dependent on each other for their utility; (2) cumulative actions; which when viewed with other proposed actions may have cumulatively significant effects and therefore must be analyzed together; and (3) similar actions; which when viewed with other reasonably foreseeable or proposed actions have similarities that provide a basis for evaluating their environmental consequences together. (40 CFR 1508.25).

The scope of the proposed actions addressed in this EA is limited to:

- Widening and resurfacing the Shields River Road.

- Widening the bridges on the Shields River.
- Developing a source of suitable gravel and storing gravel at the source for future use.
- Constructing a parking area and constructing a permanent sanitation facility.
- Moving the existing gates on the Shields River Road and the Sunlight Road closer to the parking area.
- Modifying the Shields River channel immediately upstream from the Shields River Bridge and reconfiguring the riprap at the base of the Shields River Bridge.
- Replacing aging drainage structures.
- Replacing the Deep Creek Bridge.
- Expanding an existing wetland on National Forest land in the Shields River drainage to replace wetlands impacted by construction.

All of these activities were considered to be connected actions and have been analyzed in the environmental analysis. Approximately 5.6 miles of the Shields River Road and one-half mile of the Sunlight Road, along with a parallel width encompassing the existing road easements, were included in the project area.

The Project's Relationship to the Forest's Travel Planning Effort

Another, entirely separate planning effort focuses on public access on the Gallatin National Forest. The Forest is currently involved in the Travel Planning process to determine and designate appropriate uses and seasons of use for Forest roads and trails, including those areas accessed by the Shields River Road. The Travel Planning effort will also consider potential future changes in types of recreation use and incorporate public comments addressing use in the Smith Creek and Shields area. The issues of whether user conflicts occur in the Shields River basin and how they might be resolved will be addressed during the Travel Planning process. Also, the need to consider improving the road surface arises from the damage occurring to the road from travel when the road surface is wet and not from an appreciation of the differing and sometimes incompatible expectations of people using National Forest lands in the Shields River basin.

The Scope of Analysis

The scope of this analysis is limited to the improvements being proposed to prevent damage to the Shields River Road and to provide safe access to the National Forest. Mitigation measures will be identified to address adverse environmental effects resulting from road construction activities or the final road design. We will also discuss measures needed to maintain public safety, including the need for a predictable travel surface and construction of a parking area. The analysis will not address issues of land use as these uses in turn contribute to, for example, the quality of the recreational experience available in the Shields River drainage. These issues, in addition to the user conflict issues discussed above, are more appropriately addressed in the Travel Management

Plan. Nearly all of the proposed road improvements would occur where the road crosses private land. The Forest Service' objective is to provide safe and reliable access to public land.

The Forest Service currently holds full USDA easements across all private lands traversed by the Shields River Road. There is evidence that the existing road does not fully reside within the 60-foot easement of record. Potential discrepancies will be addressed with the affected landowner. Resolution of any discrepancies is outside the scope of the decision to be made.

Park County Agreements and Involvement

The agency believes the demands on the Shields River Road for public and private land access would be more appropriately managed by Park County as a public road access. The Forest Service approached the Park County Commissioners to discuss maintenance requirements in the event Park County were to assume jurisdiction over the Shields River Road where it crosses private land. The Commissioners and the Forest Service agreed to a set of road standards that would allow Park County to assume jurisdiction over the road where it crosses private land. A detailed description of the standards, along with their formal acceptance by the Forest Service and Park County Commissioners, are provided in a letter dated September 18, 2002, located in the project file. The standards agreed to by both parties are:

The segment of the Shields River Road (#844), from the end of existing pavement to the junction with the Smith Creek Road (#991):

26' paved surface – 11 foot driving lanes with 2-foot shoulders
3:1 inslopes on ditch side(s) 8 feet wide for snow storage.
2:1 fill and cut slopes typical

The segment from the junction with the Smith Creek Road to the Shields River Bridge near the west section line of Section 28, T5N, R10E Montana Principle Meridian (MPM):

24' gravel surface – two 12' driving lanes.
3:1 inslopes on ditch side(s) 8 feet wide for snow storage.
2:1 fill and cut slopes typical

Replace the current single lane Shields River Bridge near the west section line of Section 28, T5N R10E, MPM with an appropriate double lane bridge.

The segment from approximately the Shields River Bridge crossing near the west section line of Section 28, T5N, R10E MPM to the junction with the Sunlight Road near the center of Section 26:

Placement of a minimum of 4 inches of aggregate to create a 20

foot travel way.

The future cost to the county will be road maintenance and the Forest Service will forego future costs for road maintenance with no change in public access to the National Forest. In order to transfer jurisdiction to Park County, the cost to improve the existing road to acceptable standards falls to the Forest Service in its role as administrator of National Forest lands and as holder of the road easements across private land.

In addition to the standards listed in the September, 18, 2002 agreement letter, the Forest identified a need to replace a culvert at the junction of the South Fork of the Shields River and the Shields River Road. During Interdisciplinary Team review of the site following normal run-off in the spring of 2003, specialists observed extensive temporary channeling and gully erosion resulting from flows that had been impeded by the culvert. If left in its current condition, impounded flows above the culvert may jeopardize the improvements proposed for the Shields River Road. For this reason, replacing the culvert is addressed in this analysis as integral to implementing the agreed-upon improvements to the road.

The Forest Service proposes that the surface of the Shields River Road be upgraded to a standard that will withstand use in all weather situations. However, providing year-round, all season access by maintaining the road in the winter is not part of this proposal.

A Vicinity Map is included at the end of this chapter.

VI. RELATIONSHIP TO THE GALLATIN FOREST PLAN

The proposed improvements are supported by the Forest Plan direction stated on page II-26:

1. The Forest will cooperate with other landowners in developing roads or road systems which serve mutual needs.
2. A satisfactory jurisdictional status for roads on National Forest and other public land will be sought in cooperation with appropriate authorities.

Additional direction is found on page II-27 and 28:

1. Road and trail management will be determined as part of area transportation analysis and will be based on management area needs, such as recreation access, wildlife security, soil protection, economics, and protection of the investment.
2. Roads and trails will be designed to standards that meet resource management objectives.
3. Noxious weeds along roads and trails will be treated.

4. Existing roads and trails will be maintained consistent with management area goals.

Direction specific to the Management Area assigned to the location of the parking area and the location of the pit site proposed on National Forest land is found on page III-24-26:

Management Area 8: Timber Management

1. Recreation Opportunity Spectrum classes are roaded natural appearing and roaded modified.
2. Dispersed recreation opportunities will be provided at a low level of investment that focuses primarily on travel planning and trail maintenance... Management activities will be oriented toward reducing the impacts associated with recreation activities on other resource values, including protection of soil and water quality.
3. Local roads and some collector roads will be closed as needed to protect the road surface, reduce maintenance costs, and protect other resources.

Direction specific to the Management Area assigned to the locations of the bridges to be widened or replaced and the drainage facilities proposed for upgrade is found on page III-19-22:

Management Area 7: Riparian Management

1. Maintain suitable habitat for those species of birds, mammals, and fish that are totally or partially dependent upon riparian areas for their existence.
2. Minimize amount of material from road and trail construction wasted into riparian areas. Follow best management practices that apply to road construction.
3. Design road drainage to minimize entry of sediment into streams. Road design will also provide for low risk of drainage failure and mass failure.
4. Locate and design approaches to stream crossings to minimize damage to the riparian area. Design all crossings located in fisheries streams to allow for upstream fish passage.
5. Avoid channel realignment where possible.
6. Minimize short-term sedimentation during bridge or culvert installation.

Project-specific Forest Plan Amendments

The proposed actions comply with Forest Plan direction. No amendments to the Plan are needed.

VII. POTENTIAL CUMULATIVE EFFECTS

Geographical Location

See the **Vicinity Map** at the end of this chapter for a display of the regional location and general area of the proposed project site within the Shields River watershed.

Timing and Duration

Work could begin no earlier than the fall of 2004. Implementation will take more than one working season, which is generally considered to be June through October, depending upon weather conditions. Construction may be completed in 2006.

Potential Cumulative Effects

The NEPA requires consideration of “cumulative effects”. A cumulative effect is the effect on the environment, which results from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions (40CFR 1508.7). The first step in cumulative effects analysis is to determine how the proposed actions in the area contribute to the additive effects on the various resources.

Cumulative actions considered in this EA differ slightly among issues as well as alternatives. Past, present, and reasonably foreseeable actions and their effects with the actions proposed are discussed in detail for each issue found in Chapter III and Appendix A (Other issues). These actions include past timber harvesting and road construction, current harvesting on adjacent state and private lands, all-season recreation use, livestock grazing, Travel Management Planning and the Upper Shields River Allotment Revisions. The following projects are ongoing or planned in the foreseeable future:

- Livestock grazing on the Shields River allotment.
- Noxious weed treatment (ongoing)
- Bennett Creek land exchange

VIII. DECISION TO BE MADE

Based on the analysis documented in this EA, and comments received during the 30-day comment period, the Deciding Officer (District Ranger) will make a decision on this project. The decisions to be made are:

- Should the Shields River Road be improved to meet the standards accepted by the Forest Service and Park County.

- Should actions identified independently of the agreement with Park County be implemented to meet the objectives for long-term management of resources on National Forest land.

VICINITY MAP

