



United States  
Department of  
Agriculture



Forest  
Service

*May 2012*

# **Environmental Assessment**

## **Muddy Guard Road Reroute**

## **Forest Service Roads 473 and 472**

**Powder River Ranger District, Bighorn National Forest  
Johnson County, Wyoming**

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## SUMMARY TABLE

<b>What action is proposed?</b>	The proposed action is to improve public safety by re-routing the access to Muddy Guard cabin and providing an OHV route.
<b>Why?</b>	The current entrance and exit to FSR 473 presents safety concerns for those accessing Muddy Guard cabin, as well as other forest users. FSR 473 intersects US Highway 16 on an upslope grade within a forested area, both of which limit sight distance. Vision is further impaired by the curve in US Highway 16 immediately to the south of the intersection.
<b>What other action would meet the same need?</b>	None
<b>What would it mean to not meet the need?</b>	Possible vehicle accident.
<b>What factors will be used when making the decision between alternatives?</b>	The environmental assessment does not identify any significant environmental consequences of the proposed action. Any adverse environmental consequences of the proposed action are weighed against the benefit of human health and safety.
<b>Are there any ways to mitigate adverse effects?</b>	Adverse effects will be reduced through the implementation of design features.
<b>What monitoring is required?</b>	Effectiveness monitoring will be done through public contact and monitoring of enforcement issues.

## PURPOSE OF AND NEED FOR ACTION

### Introduction

The Powder River Ranger District has prepared this environmental assessment (EA) in compliance with the National Environmental Policy Act (NEPA). This EA discloses environmental consequences of the proposed action and the no action alternative. It also provides sufficient evidence to determine whether an environmental impact statement (EIS) will be prepared or whether a finding of no significant impact is appropriate. This EA also incorporates by reference the *Final Environmental Impact Statement (FEIS) for the Revised Land and Resource Management Plan* (forest plan) for the Bighorn National Forest.

### Location

The project area includes Forest Service Roads (FSR) 473 and 472 starting at Highway 16 heading east to Muddy Guard cabin and from FSR 33 to FSR 472 using an old two track road. These roads are located at T48N, R84W Sections 1, 2, and 11. FSR 473 provides access to Muddy Guard cabin. This cabin is located approximately 25 miles southwest of Buffalo, Wyoming on the Bighorn National Forest in Johnson County. A map of the project area is available at the following link <http://www.fs.usda.gov/main/bighorn/home>.

### Purpose and Need

The primary purpose of this project is to provide for public safety by improving the access to the Muddy Guard cabin. The current entrance and exit of FSR 473 presents safety concerns for those accessing Muddy Guard cabin, as well as other forest users. FSR 473 intersects US Highway 16 on an upslope grade within a forested area, both of which limit sight distance. Vision is further impaired by the curve in US Highway 16 immediately to the south of the intersection. Current records show that rental of the Muddy Guard cabin use has increased by 768% (25 days of use to 192 days of use annually) in the past 10 years. FSR 473 is the main access route to the cabin. This sizable increase in vehicle traffic amplifies the safety concerns.

There is also a need to provide off highway vehicle (OHV) access between FSR 473 and FSR 33 (Crazy Women Road). Currently OHV users of FSR 473 are accessing FSR 33 via US Highway 16, or illegally traveling in the right-of-way parallel to US Highway 16. This causes safety concerns and increases potential for resource damage due to user created routes versus properly maintained routes.

Cabin renters and forest users have voiced safety concerns about excessive vehicle speeds (specifically OHV) and traffic volume. Concerns are specifically focused on the safety of their children, pets, and livestock. The proposed reroute would shift OHV and automobile use around the Muddy Guard cabin, thus alleviating these safety concerns.

## Decision Framework

Based on the analysis and environmental impacts disclosed in this EA, the responsible official will decide whether to implement the proposed road reroute.

## RESULTS OF PUBLIC INVOLVEMENT

### Scoping and Notice of Proposed Action

Work began on the development of the proposed actions in 2010 when voiced safety concerns of the location of FSR 473 aroused. The Wyoming Department of Transportation provided comment to the development of the proposal and a Forest Service interdisciplinary team (IDT) identified issues that led to the development of the proposal.

The proposal was listed in the forest's schedule of proposed actions (SOPA) on April 1, 2012 and a Notice of Proposed Action (NOPA) was published via legal notice in the Casper Star Tribune the same date. The NOPA was also mailed to interested individuals, organizations, and agencies. Along with a news release sent to the Buffalo Bulletin. The public comment period was open for 30 days. Five favorable comments were received and no new issues were raised.

The issues that were identified based on the expected effects to the environment from the proposed actions were separated into categories. Key issues drove the development of the proposed action. Tracking issues are either addressed by law, regulation or policy or used to analyze environmental effects. The indicators are used to compare the alternatives.

Table 1. Key and tracking issues for the project

<b>Issue Category and Statement</b>	<b>Issue Type</b>	<b>Indicator(s)</b>
<p><b>Issue 1: Human Health and Safety</b></p> <p>There is a concern that the present access route is unsafe, due to highway intersection being on a curve with limited sight distance.</p>	Key – this issue drove the development of the proposed actions .	Reports of near misses from the limited sight distance entering and exiting from FSR 473 onto Highway 16.
<p><b>Issue 2: Landscape Aesthetics</b></p> <p>There is a concern over road visibility from US Highway 16 and dust and noise from vehicles traveling in front of the cabin.</p>	Key – this issue drove the development of the proposed actions.	Visibility of roads from US Highway 16. Traffic levels in front of cabin.
<p><b>Issue 3: Forest Plan species of focus</b></p> <p>There is a concern that the proposed actions could impact R2 sensitive species, MIS, Local Concern, etc.</p>	Tracking Issue – this issue is addressed by law, regulation and policy.	Determinations/results of effects analysis for these species as documented in the biological evaluation.
<p><b>Issue 4: Heritage Resource</b></p> <p>There is a concern that project activities could adversely affect cultural artifacts</p>	Tracking Issue – this issue is addressed by law, regulation and policy.	Cultural survey performed prior to project activities to identify any heritage resources.

Issue Category and Statement	Issue Type	Indicator(s)
<p><b>Issue 5: Soil Resource</b></p> <p>There is a concern that project activities would impact soils due to heavy equipment operations. There is also a concern of soil erosion due to lack of vegetation in disturbed areas.</p>	<p>Tracking Issue - Tracking Issue – this issue is addressed by law, regulation and policy.</p>	<p>Failure to follow Watershed Conservation Practices handbook.</p> <p>Native plan regeneration success.</p>
<p><b>Issue 6: Water Resource</b></p> <p>There is a concern that the locations of existing dispersed campsites are affecting water quality due to their location within the Water Influence Zone (WIZ).</p>	<p>Key Issue – The proposed action addresses this issue.</p>	<p>Number of dispersed sites within the WIZ</p>
<p><b>Issue 7: Water Quality</b></p> <p>There is a concern that project activities will increase sediment in the water bodies/stream course.</p>	<p>Tracking Issue - Tracking Issue – this issue is addressed by law, regulation and policy.</p>	<p>Failure to follow Watershed Conservation Practices handbook.</p>

## DESCRIPTION OF THE PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

### Alternative 1 – No Action

The no action alternative would not relocate FSR 473 or 472. The aesthetic impacts of road scars visible from US Highway 16 would continue to be visible; noise, dust, lights, and traffic would continue to increase on FSR 473 in front of Muddy Guard cabin.

### Proposed Action

The following list of actions are proposed to address the issues:

- Utilization of an existing two-track route and portions of FSR 472 to link FSR 33 to FSR 472 east of the Muddy Guard cabin.
- Provide a legal OHV route between FSR 473 and FSR 33
- Reconstruction of existing two track
- Elimination of through vehicle traffic at the Muddy Guard site
- Rerouting the road away from the intersection of FSR 473 and 472 eliminating resource damage caused by a low spot in the road that collects water and causes traffic to go through or around the mud puddle.
- Decommissioning of approximately 950 feet of FSR 472 and 473.

The proposed route begins on FSR 33 where it exits US Highway 16 in section 2 and continues for approximately 400 feet. From there, the route would follow an old two track road for approximately 900 feet. The proposed reroute will remove approximately 950 feet of FSR 472 and FSR 473. One dispersed campsite (near the intersection of FSR 473 and 472) would be lost. The project map can be viewed on the Forest's web page at <http://www.fs.usda.gov/goto/bighorn/projects>.

### Design Features for the Proposed Action

The following design features will be incorporated into the proposed action. The reroute construction will take 2 to 3 days.

Table 2. Design features for the proposed action.

1.	Install public information signs during construction to inform the public of safety hazards. <b>Addresses Issue #1</b>
2.	Meet Highway Safety Act requirements and <i>Manual of Uniform Traffic Control Device</i> regulations. This is Forest Service standard operating procedure. <b>Addresses Issue #1</b>
3.	Construct road profile grades and turning radiuses to accommodate passenger vehicles appropriate to the site in accordance with AASHTO's <i>A Policy on Geometric Design of Highways and Streets</i> . <b>Addresses Issue #1</b>
4.	If any unforeseen, ground-disturbing activities occur, the programmatic agreement with the Wyoming State Historic Preservation Office will be consulted to determine appropriate actions prior to conducting the disturbance. If heritage resources are discovered during construction, operations must cease and a Forest Service archeologist must be notified. <b>Addresses Issue #4</b>
5.	Maintain a meadow landscape character in the view from US Highway 16 and travel routes. Prepare a vegetation management plan to retain the meadow. <b>Addresses Issue #3</b>
6.	Implement an erosion control plan and revegetate with locally adapted native plants as appropriate. <b>Addresses Issue #5</b>
7.	Reclaim roads, dispersed campsite, and other disturbed sites within one year after use ends, to prevent resource damage (WCPH 13.4). Restore organic ground cover using certified weed-free local native plants, if natural regeneration does not occur (WCPH 11.2b) and consider scarifying compacted soils to a minimum depth of 8 inches and reseeding with native seed mix to aid in the establishment of vegetation and reduce sediment delivery to water bodies. <b>Addresses Issue #5</b>
8.	Keep heavy equipment out of streams, swales, and lakes. If heavy equipment must cross these areas at designated points, activity should occur during winter months or when soils are dry (WCPH 12.1c). <b>Addresses Issue #7</b>
9.	Keep new concentrated-use sites out of the water influence zone (WIZ), riparian areas, and wetlands. Reclaim existing sites located in the WIZ (developed campgrounds, roads, and dispersed campsites) to prevent detrimental soil and bank erosion (WCPH 12.1e). <b>Addresses Issue #6</b>
10.	Do not excavate earth material from, or store material in any wetland, stream, lake, swale, or WIZ, except at designated road-stream or trail-stream crossings (WCPH 12.1m). <b>Addresses Issue #6</b>
11.	Design and install road- and trail-stream crossings to sustain channel geometry and bank stability during all design flows. Obtain necessary permits. Install crossings on straight and resilient stream reaches, perpendicular to flow, and provide passage for fish and other aquatic life. Consult hydrologist/fisheries biologist during design and installation of road- and trail-stream crossings to ensure hydrologic and aquatic passage (WCPH 12.1k, 12.2a-d, 13.1h). <b>Addresses Issue #6</b>

12.	Avoid wetlands and disturbing their drainage patterns during construction/decommissioning activities (WCPH 12.4a-e). <b>Addresses Issue #6 and #7</b>
13.	Eliminate soil-disturbing activities during periods of heavy rain or on wet soils (WCPH 13.1b) <b>Addresses Issue #7</b>
14.	Where possible, construct roads with outslope and rolling grades instead of ditches and culverts (WCPH 13.1d). This minimizes concentrated flow and therefore reduces erosion and sedimentation into water bodies. In addition, fewer culverts are needed, reducing maintenance needs and erosion due to culvert failure (Robichaud et al. 2010). <b>Addresses Issue #6</b>
15.	Avoid unstable or highly erodible soils (i.e., Cryaquolls soil) when possible. Retain stabilizing vegetation on these soil types (WCPH 13.1e). Consult aquatics program personnel during trail layout, designated dispersed campsite layout, and campground decommissioning to avoid sensitive soils. <b>Addresses Issue #5</b>
16.	Construct roads and other disturbed sites to minimize sediment discharge into water bodies. Use filter strips and sediment traps where needed (WCPH 13.2) <b>Addresses Issue #5</b>
17.	Stabilize and maintain roads and other disturbed sites during and after construction to control erosion. Provide sediment control until erosion control is permanent (WCPH 13.3). <b>Addresses Issue #5</b>
18.	Operate heavy equipment only when soil moisture is below the plastic limit (“the water content at which soil begins to break apart and crumble when rolled by hand into threads 3mm in diameter (Sowers 1979)”), or protected by at least 1 foot of packed snow or 2 inches of frozen soil (WCPH 14.1b). <b>Addresses Issue #5</b>

## Monitoring

Table 3. Monitoring to be conducted for the proposed action in addition to Forest Plan required monitoring. All monitoring is the responsibility of the Forest Service.

<b>Monitoring Objective</b>	<b>Monitoring Item</b>	<b>Monitoring Type</b>	<b>Frequency</b>
Compliance	Visitors are using the reroute to FSR 33	Ocular, incident reports, warnings, and violation notices	Weekly during periods of heavy summer use.
Effectiveness of revegetation	Monitor revegetated areas	Ocular	1 <sup>st</sup> year after revegetation and every three years until established.

## ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND NO ACTION ALTERNATIVE

The environmental impacts of the proposed action and the no action alternative are described below. The environmental analysis focuses on those resources identified by issue as most likely to be affected.

### **Past, Present, or Reasonably Foreseeable Future Actions**

There are no cumulative effects additional to the proposed action. The project area is all Forest Service lands with no other foreseeable actions proposed. The Wyoming Department of Transportation has no scheduled projects for US Highway 16 in the area.

### **Effects to Human Health and Public Safety from the Proposed Action**

Visitors would have a safe route for FSR 473 to access Muddy Guard cabin. The intersection of FSR 33 with US Highway 16 is along a straight road section in an open meadow, with good visibility. Rerouting FSR 473 will eliminate through traffic in front of the cabin. Which will improve public safety and visitor experience at the historical cabin.

The reroute would provide a legal and safe route between FSR 33 and FSR 473 for OHV users.

### **Effects to Human Health and Public Safety from the No Action Alternative**

Visitors would continue to use an unsafe entrance and exit from FSR 473 to US Highway 16. Many near misses from oncoming US Highway 16 traffic have been reported. Visitors exit FSR 473 with a limited sight distance entering US Highway 16 with vehicles travelling 65 MPH. Rental of the cabin has increased 768% in 10 years, and projected to increase further due to the cabin being highlighted on [www.recreation.gov](http://www.recreation.gov). This increasing use amplifies the safety issue for the entrance of FSR 473 to US Highway 16.

The through traffic would remain at the cabin which causes a safety issue for renters at the cabin with children, pets and livestock.

OHV users would continue to use US Highway 16 or the user created trail beside the highway to get to FSR 33. OHV riders will be exiting FSR 473 with a limited sight distance with full size vehicles travelling 65 MPH on US Highway 16.

### **Effects to Landscape Aesthetics from the Proposed Action**

The project area landscape would continue to meet scenic integrity objectives in the short- and long-term. No new roads will be created since the reroute will use old two tracks which are presently visible from US Highway 16.

Noise, dust, lights, traffic would be eliminated in front of Muddy Guard cabin, increasing the satisfaction of cabin renters

## Effects to Landscape Aesthetics from the No Action Alternative

The project area would continue to meet scenic integrity objectives in the short- and long-term. Several old two tracks are visible from US Highway 16 on the hill between FSR 22 and 473.

Noise, dust, lights, traffic would continue to on FSR 473 in front of Muddy Guard cabin, decreasing the satisfaction of cabin renters.

## Effect to Wildlife from the Proposed Action and No Action

Table 4. Determinations for sensitive species, MIS, species of local concern and demand species

Determination	Species
May adversely impact individuals or habitat, but is not likely to result in a loss of viability of populations on the Forest, nor cause a trend to federal listing, or a loss of species viability range wide	Demand species mule deer, moose
No impact	Sensitive species Northern goshawk, boreal owl, American three-toed woodpecker, olive-sided flycatcher, harlequin duck American marten Northern leopard frog Cooper's Rocky mountainsnail, pygmy mountainsnail MIS Rocky Mountain elk, red squirrel, red-breasted nuthatch, pygmy nuthatch  Demand species Blue grouse, black bear, mountain lion

## Effects to Sensitive Plants from the Proposed Action

There are no threatened, endangered, proposed, or candidate plant species on the Bighorn National Forest. The project area was surveyed in 2011 for field presence/absence of sensitive plant species. No sensitive plant species have been located. However, the project area does have potential habitat for the following sensitive species and species of local concern:

### Sensitive Species

*Botrychium ascendens*  
Upward-lobe moonwort

*Botrychium paradoxum*  
Peculiar moonwort

*Eriophorum chamissonis*

### Species of Local Concern

*Botrychium multifidum*  
Leathery grapefern

*Botrychium lanceolatum*  
Lance-leaved grapefern

*Botrychium minganense*

<b>Sensitive Species</b>	<b>Species of Local Concern</b>
Russet cotton-grass	Mingan moonwort
<i>Festuca hallii</i> Hall's fescue	<i>Cirsium foliosum</i> Leafy thistle
<i>Pyrrocoma clementis</i> var. <i>villosa</i> Tranquil goldenweed	<i>Eritrichium howardii</i> Howard forget-me-not
	<i>Listera borealis</i> Northern twayblade
	<i>Listera convallarioides</i> Broad-leaved twayblade
	<i>Symphotrichum molle</i> ( <i>Aster mollis</i> ) Soft aster

## Effects to Heritage Resources from the Proposed Action and No Action

The proposed action and the no action alternative will not result in any effects to heritage resources because none were identified during the Class III survey. The Forest Service has made a finding of *no historic properties affected*. In the event heritage resources are discovered during construction, operations must cease and a Forest Service archeologist must be notified.

## COMPLIANCE WITH OTHER LAWS AND REGULATIONS

**National Forest Management Act** – The proposed action is consistent with all forest plan standards and guidelines, and all proposed activities are allowable (see forest plan, chapter 2). No forest plan amendment is required.

**Endangered Species Act** – Biological evaluations were completed for threatened, endangered, proposed, and sensitive animal species. No threatened and endangered animal species would be affected by the proposed action.

**National Historic Preservation Act of 1966** – Section 106 of the National Historic Preservation Act requires that all federal undertakings follow the regulations found at 36 CFR §800 to identify and protect cultural resources that are within the project areas and which may be effected by projects. The Bighorn National Forest will follow the procedures in the programmatic agreement between the forest and the Wyoming State Historic Preservation Office (SHPO) regarding management of the project area. The Forest Service reached a finding of “no historic properties affected” on October 26, 2011. Wyoming SHPO concurrence was documented in a letter on December 12, 2011 (see cultural resources specialist report).

**Executive Order 12898 – Environmental Justice** – Implementation of this project is not anticipated to cause disproportionate adverse human health or environmental effect to minority or low-income populations.

## AGENCIES AND PERSONS CONSULTED

The notice of proposed action for this project was printed in the Casper Star Tribune and mailed to the following agencies, organizations, and individuals. The EA, Finding of No Significant Impact (FONSI) and Decision Notice (DN) are available at <http://www.fs.usda.gov/main/bighorn/home> and in hard copy, by request, from Patty Bills, 1415 Fort Street, Buffalo, Wyoming 82834, phone (307) 684-7806.

Johnson County Commissioners	Wyoming Department of Transportation	Wyoming Department of State Parks and Cultural Resources Division of Cultural Resources
Susan Theune	Mary Fowlkes	Priscilla Baker