



United States
Department of
Agriculture



Forest
Service

May 2012

Environmental Assessment

West Tensleep Corridor Master Recreation Project

**Powder River Ranger District, Bighorn National Forest
Big Horn County, Wyoming**

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Table of Contents

Summary Table _____	1
Purpose of and Need for Action _____	2
<i>Introduction</i> _____	2
<i>Location</i> _____	2
<i>Purpose and Need</i> _____	2
<i>Decision Framework</i> _____	2
Results of Public Involvement and Scoping _____	3
Description of the Proposed Action and the No Action Alternative _____	4
<i>Monitoring</i> _____	8
Environmental Impacts of the Proposed Action and No Action Alternative _____	8
<i>Effects to Recreation from the Proposed Action</i> _____	9
<i>Effects to Recreation from the No Action Alternative</i> _____	10
<i>Effects to Human Health and Public Safety from the Proposed Action</i> _____	11
<i>Effects to Human Health and Public Safety from the No Action Alternative</i> _____	11
<i>Effects to Landscape Aesthetics from the Proposed Action</i> _____	11
<i>Effects to Landscape Aesthetics from the No Action Alternative</i> _____	12
<i>Effect to Soils and Water Quality from the Proposed Action</i> _____	13
<i>Effect to Soils and Water Quality from the No Action Alternative</i> _____	14
<i>Effect to Wildlife from the Proposed Action and No Action</i> _____	15
<i>Effects to Sensitive Plants from the Proposed Action</i> _____	17
<i>Effects to Cultural Resources from the Proposed Action and No Action</i> _____	18
Compliance with Other Laws and Regulations _____	18
Agencies and Persons Consulted _____	19

SUMMARY TABLE

What action is proposed?	The proposed action is to manage use in the West Tensleep corridor to address the human health and safety concerns, resource concerns, concerns about maintaining older campground equipment and to achieve the management objectives for the corridor.
Why?	<p>The high public demand and use and the location and design of the existing campsites are not adequately providing for natural resource protection and recreation use for the following reasons:</p> <ol style="list-style-type: none"> (1) Two developed campground are located too close to West Tensleep Creek. (2) Numerous dispersed campsites are located too close to West Tensleep Creek and existing developed campgrounds. (3) There is improper disposal of human waste. (4) Forest Service Road (FSR) 27 receives very high use compared to what it was designed for. <p>Relocating existing structures and designating dispersed campsites will reduce the environmental impacts and improve the public health and safety. Managing the level of use on FSR 27 will improve public safety.</p>
What other action would meet the same need?	None
What would it mean to not meet the need?	Soil compaction and impacts in the water influence zone would continue. There would be continued safety hazards from speeding vehicles in a high-use area. Use and management in the corridor would not be in compliance with the 2005 forest plan.
What factors will be used when making the decision between alternatives?	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 reduced resource impacts and improved recreation experiences and human health and safety.
Are there any ways to mitigate adverse effects?	Adverse effects will be reduced through the implementation of design features.
What monitoring is required?	Effectiveness monitoring will be done through public contact and monitoring of enforcement issues. Vehicle use and speed on FSR 27 will be monitored.

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* (forest plan FEIS) for the *Revised Land and Resource Management Plan* (forest plan) for the Bighorn National Forest.

Location

The project area is located along Forest Service Road (FSR) 27 starting at the Tyrrell Work Center and going north to the head of the West and Middle Tensleep drainages on the Bighorn National Forest in Big Horn County. The total project area is about 25,000 acres, including a portion of the Cloud Peak Wilderness. FSR 27 is located approximately 45 miles west of Buffalo, WY and 20 miles east of Tensleep, WY and intersects with U.S. Highway 16 near Deer Haven Resort in Big Horn County. A map of the project area is available at the following link: <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=30501>. Click on the link, then click on Vicinity Map.

Purpose and Need

The West Tensleep corridor provides developed and dispersed recreation opportunities on the Powder River Ranger District. It is the most popular access point to the Cloud Peak Wilderness, and FSR 27, West Tensleep Road, is the most heavily traveled forest road. Recreational use in the corridor is high, and resource impacts are increasing.

There is a need to manage use in the West Tensleep corridor to provide a range of recreation opportunities while also providing for human health and safety and reducing resource impacts and the cost of maintaining older campgrounds and equipment. The overall management strategy in this corridor is to offer a more developed recreational setting and experience (e.g., developed campgrounds with parking for large RVs) at the south end of the project area moving to a more primitive recreational experience and setting (e.g., developed campgrounds with tent camping only) at the north end of the corridor and ultimately to a primitive recreational setting with no development in the wilderness.

Decision Framework

Based on the analysis and environmental impacts disclosed in this EA, the responsible official will decide whether to implement the proposed campgrounds relocation, day-use trail development, dispersed camping management, and requirement for all camping in the corridor to be self-contained for solid human waste.

RESULTS OF PUBLIC INVOLVEMENT

Scoping

The proposal was listed in the forest schedule of proposed actions on October 1, 2009 and was also provided to the public and other agencies for comment. A news release was sent to the following papers: Northern Wyoming Daily News – Worland, Casper Star-Tribune, Buffalo Bulletin, Gillette News Record, Sheridan Press, Billings Gazette, and Cody Enterprise. The Buffalo Bulletin printed an article about the project on January 27, 2011 which provided information on how to provide comment on the proposal.

Preliminary issues were identified by the interdisciplinary team (ID team) prior to scoping. Additional issues were identified after reviewing comments received during scoping. Issues from scoping were categorized as key or tracking. Key issues are those that drive the development of alternatives. Tracking issues reflect legal requirements and/or internal concerns for resource protection. The issues are summarized in the following table.

Table 1. Key and tracking issues for the project.

Category	Issue Statement	Indicator(s)
Recreation	There is a concern that the proposed action will reduce the recreation experience in the corridor and that there will not be enough camp sites. Tracking issue	Campsite use and dispersed site compliance
Trail access	There is a concern about lack of access to, and parking for, non wilderness, day use trails. Key Issue	Addressed in the proposed action
Human health and public safety	There is a concern about the management of human waste in the West Tensleep corridor. Exposed human waste exists within the corridor. Key issue	Presence or absence of methods to control human waste
	There is a concern about traffic speed and safety on FSR 27. Key issue	Presence or absence of methods to control speed on FSR 27
Access	There were concerns that the proposed actions were an attempt to limit access and use of the forest. Tracking issue	Change in number of developed and dispersed sites.
Water quality	There is a concern about the presence and proper disposal of human waste in the West Tensleep corridor and how it affects water quality. Key issue	Reduction in the amount of improperly disposed waste observed.
	There is a concern that sediment from recreation activities is affecting water quality in the West Tensleep corridor due to erosion from roads, dispersed campsites, and developed campgrounds. Key issue	Presence or absence of recreation activities in the water influence zone.
Scenic integrity	There is a concern that the proposed actions will decrease scenic integrity within the corridor. Tracking issue	Estimate change in scenic integrity objectives.

Category	Issue Statement	Indicator(s)
Landscape aesthetics	There is a concern that proposed actions will have a negative impact on the landscape aesthetics of the area. Tracking issue	Estimate change in landscape aesthetics.
Soils	There is a concern that some of the proposed actions may cause soil compaction and/or erosion. Cryaquoll soils are particularly sensitive to disturbance. Tracking issue	Existing or proposed activities with the potential to cause soil compaction/erosion.
Wildlife and plants	There is a concern that the proposed actions could impact R2 sensitive species, MIS, Local Concern, etc. Tracking issue	Determinations/results of effects analysis for these species.

Notice of Proposed Action

In response to comments received during scoping the proposed action was modified and released in the notice of proposed action (NOPA) on October 18, 2011. The NOPA was posted to the forest's web page and mailed to those individuals, organizations, and agencies that responded to scoping. The legal notice for the NOPA was printed in the Casper Star Tribune on October 19, 2011. Comments were received from the Wyoming Wilderness Association. No new issues were raised.

DESCRIPTION OF THE PROPOSED ACTION AND THE NO ACTION ALTERNATIVE

Alternative 1 – No Action

For this project, the no action alternative means the forest would not relocate two campgrounds, develop two day-use trails, manage dispersed camping opportunities, change the road management objectives for FSR 27, or require all camping in the corridor to be self-contained for solid human waste. Developed and dispersed recreation opportunities would not change.

Proposed Action

The following list of actions are proposed to address the human health and safety concerns, resource concerns, concerns about maintaining older campground equipment and to achieve the management objectives for the corridor:

1. Relocate West Tensleep Campground approximately one-half mile south of its current location, and construct a new handicapped accessible trail to West Tensleep Lake. Maximum capacity would be twenty sites. Ten sites would be drive-in; ten sites would be walk-in. Campsites would be for tent camping only; no trailers or generators would be permitted. The handicapped accessible trail to West Tensleep Lake would tie back to the existing West Tensleep trailhead.

2. Relocate campsites from the Deer Park Campground to a newly constructed Warner Draw Campground just north of the Tyrrell Work Center. Maximum capacity would be thirty sites. This campground would accommodate recreation vehicles (RVs) up to sixty-five feet in length.
3. Decommission (remove) and rehabilitate the old West Tensleep and Deer Park campgrounds. In the 2008 recreation facilities analysis, these two campgrounds were identified for replacement due to their age and the deterioration of the equipment.
4. Require all dispersed camping from Tyrrell Work Center north and within the West and Middle Tensleep drainage (including the portion in the Cloud Peak Wilderness) to be self-contained for solid human waste.
5. Allow dispersed camping only in designated dispersed campsites. The designated sites would be marked by numbered posts. Maximum capacity would be forty sites; including some proposed sites less than $\frac{1}{4}$ mile from existing or proposed developed campgrounds. Designated dispersed sites would be at least one hundred feet from water. Ultimately, fires in these designated sites would only be allowed in steel fire rings permanently installed by the Forest Service. Until the permanent fire rings are installed, campfires would be permitted within fifty feet of the numbered posts marking the designated campsites.
6. Retain the current level of road management from Tyrrell Work Center north on FSR 27 to milepost 2.9, the entrance to Island Park Campground. Initial road management actions to be implemented include returning this segment to a double-lane, twenty-four foot wide road with shoulders. Currently the road is up to thirty feet wide. Surfacing gravel would remain at $\frac{3}{4}$ inches in size with two maintenance trips per year. No chemical surface treatments would be applied to this section. Additional actions could be implemented if monitoring of, and public complaints about, traffic speed and volume on this segment indicate the initial actions are not effective. Additional adaptive management strategies would be implemented in the following order of priority: a) install speed bumps, b) narrow the road width to twenty feet, c) install regulatory signing, d) construct "S" curves, and e) construct islands.
7. Modify the current level of road management from milepost 2.9 at Island Park to the end of FSR 27 at West Tensleep Trailhead, milepost 7.48. This section of road would be managed at Level 3 which is one level lower than the segment in Item 6. Level 3 roads are open to travel by prudent drivers in standard passenger cars with user comfort and convenience as a lower priority. Road management actions to be implemented with this decision include using coarser gravel up to 2 inches in size with only one maintenance trip per year. No chemical surface treatments would be applied to this section. Additional actions could be implemented if the following things occur: monitoring of, and public complaints about traffic speed and volume indicate initial actions are not effective, visitor use at West Tensleep Trailhead exceeds parking capacity, and forest plan standards and guidelines for wilderness are exceeded.

7., cont.

Additional adaptive management strategies would be implemented in the following order of priority: a) install speed bumps, b) narrow road width to twenty feet, c) install regulatory signing, d) remove culverts and replace with rolling dips, e) construct “S” curves, f) construct islands, and g) narrow road to a fourteen-foot-wide single-lane with intervisible turnouts.

8. Just north of the current Deer Park Campground location, construct a turn-around to allow larger RVs and vehicles with trailers to return south on FSR 27. This would minimize difficulties with large RVs with trailers trying to turn around further north along the road towards the trailhead. Provide parking spaces at this location for access to Trail 67.
9. Limit parking at the West Tensleep Trailhead parking area to the number and type of vehicles for which the area was designed (forty-five cars and four double-length trailer spots). No parking would be permitted within ¼ mile of the trailhead.
10. Construct a horse/foot trail from the bridge at Warner Draw north to the bridge at Deer Park along the east side of Middle Tensleep Creek. Another option is to construct a spur trail with a bridge to the Island Park campground from this proposed new trail.
11. Create a loop trail from west of Warner Draw Campground to Trail 69.

Design Features for the Proposed Action

The following design features will be incorporated into the proposed action.

Table 2. Design features for the proposed action.

1.	During construction at West Tensleep Lake, do not operate machinery during weekends and holidays.
2.	Install public information signs during construction to inform the public of safety hazards.
3.	Meet Highway Safety Act requirements and <i>Manual of Uniform Traffic Control Device</i> regulations. This is Forest Service standard operating procedure.
4.	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> .
5.	Avoid the population of <i>Botrychium lunaria</i> (common moonwort) during all construction. If any sensitive plant species are found during construction, they will be avoided.
6.	Minimize the number of trees removed to retain some for nests/cavities, unless tree removal is needed for public safety.
7.	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.
8.	Maintain a forested landscape character in the view from recreation developments (cabins, campgrounds, trailheads etc.) and travel routes where it currently exists. Prepare a vegetation management plan to retain the forested look and feel in campgrounds and in the immediate foreground of the travelways.

Design features, cont.

9.	<p>Design and construct campground facilities at development level 2 (West Tensleep campground) or 3 (Warner Draw campground) as defined below:</p> <p>Development level 2 – minimal site modification Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimize contacts between users. Primary access usually over primitive roads. Interpretive services informal, almost subliminal.</p> <p>Development level 3 – moderate site modification Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standard roads. Interpretive services informal if offered, but generally direct.</p>
10.	<p>Implement an erosion control plan and revegetate with locally adapted native plants as appropriate.</p>
11.	<p>Reclaim campgrounds, roads, dispersed campsites, 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 reseeded with native seed mix to aid in the establishment of vegetation and reduce sediment delivery to waterbodies.</p>
12.	<p>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).</p>
13.	<p>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).</p>
14.	<p>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).</p>
15.	<p>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).</p>
16.	<p>Avoid wetlands and disturbing their drainage patterns during construction/decommissioning activities (WCPH 12.4a-e).</p>
17.	<p>Eliminate soil-disturbing activities during periods of heavy rain or on wet soils (WCPH 13.1b).</p>
18.	<p>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 waterbodies. In addition, fewer culverts are needed, reducing maintenance needs and erosion due to culvert failure (Robichaud et al. 2010).</p>

19.	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.
20.	Design, construct, and maintain recreational travelways and their stream crossings for proper drainage and sediment control (WCPH 13.1h).
21.	Construct roads and other disturbed sites to minimize sediment discharge into waterbodies. Use filter strips and sediment traps where needed (WCPH 13.2)
22.	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
23.	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).

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.

Monitoring Objective	Monitoring Item	Monitoring Type	Frequency
Effectiveness of designated dispersed site	Monitor for dispersed use outside designated areas.	Ocular	Weekly during periods of heavy summer use.
Compliance	Monitor for compliance with requirement for self-containment of solid human waste.	Ocular, incident reports, warnings, and violation notices	Weekly during periods of heavy summer use.
Effectiveness of traffic control	Monitor average daily traffic	Traffic counts	Annually
Effectiveness of traffic control	Monitor vehicle speeds on FSR 27.	Random samples	Annually
Assess user experience Effectiveness of traffic control	Monitor user conflicts over traffic congestion, dust, noise, and speed.	Random samples	Annually
Effectiveness of revegetation	Monitor revegetated areas	Ocular	1 st 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, and future actions with potential effects are listed in table 4; these actions were considered in the effects analysis.

Table 4. Past present and reasonably foreseeable future actions considered in the cumulative effects analysis for the project.

Action	Date and Description
FSR 27 (West Tensleep Road) reconstruction and maintenance	1965: Road improved from a four-wheel-drive, high-clearance road to the current two-lane, graveled, all-vehicle road. Use increased as a result. 2004: Road surface chemically treated to reduce wash-boarding and dust and increase user comfort and convenience.
Campground construction	1965-1975: West Tensleep, Island Park, and Deer Park campgrounds were built, creating a total of 27 developed camping sites along FSR 27.
Wilderness designation	1984: Cloud Peak Wilderness was designated by the Wyoming Wilderness Act, resulting in increasing popularity of the West Tensleep Trailhead at the end of FSR 27.
Trail/trailhead construction	1989: The West Tensleep Trailhead was relocated and capacity was expanded to handle the increasing use.
Timber, fuel treatments, wildland fire	1970s, 1980s, 1990s, 2010s: Timber harvests and activity fuel treatments were conducted. 1999: Island Park wildland fire 2012: West Tensleep II fuels reduction project

Effects to Recreation from the Proposed Action

In general, there may be slight adverse effects on aesthetic recreation experiences during construction phases of the campgrounds and trails. Use from large RVs is expected to increase as the facilities and trails are upgraded. Hiking, access to fishing locations, and other recreation opportunities along West Tensleep Creek and West Tensleep Lake will improve.

Developed recreation: Users that prefer a more developed, structured setting will be better served by the proposed action, especially those with disabilities. New campground facilities would be constructed according to the *Built Environment Image Guide* and *Americans with Disabilities Act* (ADA) standards. This meets the identified purpose and need and meets forest plan guidelines for the Powder River Ranger District’s recreation facilities and program by:

- ◆ Reducing backlog maintenance at recreation facilities district-wide by being fiscally responsible with limited recreation budgets.
- ◆ Operating and maintaining recreation sites to ADA and health and safety standards.
- ◆ Complying with forest plan standards and guidelines for resource protection by relocating campgrounds that are within 100 feet of water.

Designating one of the campgrounds as “tent only” will reduce conflicts between RV campers and those that prefer a more primitive camping experience. Upgrading the other two facilities will allow those with full size RVs access to an area that is currently not suitable for large vehicles. This alternative will increase the number of developed sites from the current twenty-seven sites to forty recreational vehicle (RV) sites and twenty tent sites.

Dispersed recreation: Restricting dispersed camping to designated sites may reduce the recreation experience for users who would prefer to choose their own campsite. Because the maximum number of proposed dispersed sites is forty, some users may be displaced.

Locating dispersed camping in designated sites would help comply with forest plan direction by eliminating existing dispersed camping that occurs within one hundred feet of water or less than ¼ mile from developed sites. However, approximately ten designated dispersed sites would still be permitted within ¼ mile of developed camping.

Initial implementation and operation of the designated dispersed sites would be relatively high, while long-term maintenance of the area would be significantly lower.

Trails: Users who want access to nonmotorized trails will be better-served because of the addition of a trail along the east side of West Tensleep Creek, a loop trail from the proposed Warner Draw Campground to Trail 69, and the addition of an ADA-accessible trail from West Tensleep Campground to West Tensleep Lake. The addition of more trails in the project area may also shift some of the day use from wilderness to non-wilderness areas.

Cumulative effects: Past wildfire and timber harvest have had no effect on recreation in the project area. Past recreation and road maintenance projects (see table 4) and the steady increase in recreation on the forest created the current conditions of high use and associated impacts. Cumulatively, the proposed action may reduce impacts in some areas by dispersing users and confining dispersed use to designated sites.

Effects to Recreation from the No Action Alternative

Developed recreation: Campground conditions would continue to decline due to significant deferred maintenance costs and high occupancy rates. Reconstruction to expand or accommodate future needs would continue to be limited due to location. Facilities would continue to be out of compliance with ADA accessibility standards. Deer Park and West Tensleep Lake campgrounds would remain within one hundred feet of the WIZ and thus continue to be out of compliance with the forest plan.

Dispersed recreation: Based on predicted increases in recreation use across the forest, dispersed camping would continue to increase and current impacts to other resources would continue. Existing dispersed camping sites would continue to be located within 100 feet of water and ¼ mile of existing developed facilities and thus would still be out of compliance with the forest plan.

With no campground or trail relocation, there would be no implementation costs and no increased operations and maintenance costs. Budget allocations are currently inadequate to maintain the sites and would likely remain so.

Cumulative effects: Past wildfire and timber harvest have had no effect on recreation in the project area. Past recreation and road maintenance projects (see table 4) and the steady increase in recreation on the forest created the current conditions of high use and associated impacts. Cumulatively, the no action alternative would continue to add to the impacts from the past activities and anticipated future increases in recreation use in the project area.

Effects to Human Health and Public Safety from the Proposed Action

Requiring self-containment of solid human waste and reducing speeds on FSR 27 would help address current human health and safety concerns in the corridor.

Visitors have reported improper human waste disposal issues in dispersed campsites along FSR 27 and within the Cloud Peak Wilderness in the West Tensleep drainage. It is estimated that around 6.5 tons of solid human waste are left in the Cloud Peak Wilderness in the West Tensleep drainage each year (Brownlee 2005). Similar estimates could be expected from the dispersed tent camping sites along FSR 27, bringing the total estimated human waste in the West Tensleep drainage to thirteen tons per year. Numerous pathogens are present in solid human waste which can be passed from human to human by contacting exposed human waste. Requiring self-containment of human waste for dispersed campers and for users in the portion of the project area that is in wilderness helps address this problem. Toilet facilities are not furnished for dispersed recreation users; they are available for people staying in the developed campgrounds.

Excessive speeds along FSR 27 are a public safety concern both from the standpoint of accidents between vehicles and the chance of a vehicle hitting a pedestrian. Implementation of traffic control will address this concern. The first actions will focus on road maintenance, followed by other adaptive actions described previously in the *Proposed Action* section (see items 6 and 7).

Cumulative effects: No past, present, or reasonably foreseeable future actions in the project area (see table 4) would have an effect on human health and public safety.

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

Improper human waste disposal would continue. Traffic speeds would continue to pose a safety issue for both the public and Forest Service employees. Toilet facilities would still be available in the developed campgrounds, and there would be no toilet facilities for dispersed camping users.

Cumulative effects: No past, present, or reasonably foreseeable future actions in the project area (see table 4) would have an effect on human health and public safety.

Effects to Landscape Aesthetics from the Proposed Action

The West Tensleep corridor project area is intensively developed and used by visitors to the Bighorn National Forest. The area's scenic quality is an important part of its appeal for recreation use. The sounds and scents of nature are also part of the aesthetic or sensory experience of a landscape.

New development at Warner Draw and the relocated West Tensleep Campground would reduce scenic integrity at these sites. By limiting development to level 3 or less, taking advantage of natural screening, and possibly adding vegetative screening, both sites are

expected to meet the moderate scenic integrity objective (SIO) prescribed in the forest plan for viewers on travel routes. The Warner Draw Campground, which would accommodate larger vehicles, is expected to meet the low range of moderate integrity from within the site. Developments at the West Tensleep Campground will be visually subordinate to the natural appearing landscape at the site.

In the dispersed campsites to be rehabilitated and in the existing West Tensleep Campground, scenic integrity would increase in the long-term. The existing soil compaction, loss of herbaceous plants, damage to mature trees, and the absence of seedling/sapling trees result from heavy recreation use. Site rehabilitation may decrease visual aesthetics in the short-term.

Reducing the number of dispersed campsites along the FSR 27 could reduce the aesthetic impact of that activity on other recreation users of the area in the short- and long-term. Designated dispersed camps near the recreation residences at Bear Lake are located on the opposite side of FSR 27. The aesthetic impacts of dispersed camping could continue to affect recreation residence owners and visitors.

Recreation use at the proposed Warner Draw Campground site and the relocated West Tensleep Campground site is expected to change the appearance of the vegetation over the long-term. Controlled vehicle travel, defined pedestrian routes and contained gravel use pads for tables and fire rings may reduce these effects. Short-term aesthetic effects of soil disturbance, noise, and dust are expected during and following construction.

Sites relocated from Island Park to Warner Draw might be considered less attractive for recreation. The Deer Park Campground is an area rated as moderate in scenic attractiveness. However it is surrounded by a stream, an oxbow lake, and rock features that rate high in scenic attractiveness. The other existing campgrounds and the Warner Draw site are all in areas rated as moderate in scenic attractiveness with a stream or lake on one side in an area rated high in scenic attractiveness.

Cumulative effects: The combination of the West Tensleep II fuels treatment and the proposed Warner Draw Campground development could reduce the scenic integrity level below the moderate SIO prescribed in the forest plan. At Bear Lake, the cumulative effects of the proposed action and the fuels reduction activities may reduce the SIO from moderate (the desired condition in the forest plan) to low.

Effects to Landscape Aesthetics from the No Action Alternative

The scenery analysis area would continue to meet scenic integrity objectives in most areas in the short- and long-term. Areas affected by past harvest would achieve higher levels of scenic integrity over the long-term as trees grow.

Aesthetic impacts – noise, dust, lights, traffic – of a large number of dispersed camps would continue and could increase in the Bear Lake vicinity, with negative effects on nearby recreation residence owners and visitors. The existing aesthetic effects of soil compaction, loss of herbaceous plants, damage to mature trees, and the absence of seedling/sapling trees, that are long-term effects of heavy recreation use are expected to continue and increase in existing dispersed and developed use areas.

Cumulative effects: West Tensleep II fuels reduction activities (units 12, 14, and 16) are expected to reduce scenic integrity (from moderate to low SIO) at recreation residences and dispersed camps in the vicinity of Bear Lake. Cumulatively, the potential increase in noise, dust, and traffic from the no action alternative plus the effects of fuels reduction could further decrease the scenic integrity near Bear Lake.

Effect to Soils and Water Quality from the Proposed Action

Soils: Cryaquolls soils are typically associated with riparian areas that have frequent flooding and poor drainage (Nesser 1986). This soil association is found along stream corridors and lake shores throughout the project area. Although Cryaquolls occupy a small percentage of the total project area (2%), they are easily compacted or displaced by activities such as dispersed camping, campground construction, and road-building. Other soil associations in the project area may also be impacted by the proposed campground rehabilitation/construction and road construction.

Deer Park Campground, portions of proposed foot trails, and approximately ten of the forty designated dispersed campsites are located on or near the boundary of Cryaquoll soils, a sensitive soil prone to frequent flooding and poor drainage. Limiting the timing of construction activities to the summer months when soils are drier and establishing areas for designated dispersed camping away from Cryaquolls soils would help reduce effects. The effect to Cryaquolls soils will be eliminated by moving the existing campsites off these soils and will be reduced by the implementation of the design features 11 and 12 in table 2.

Campground and campsite removal, rehabilitation, and construction could cause soil compaction and erosion in the short-term. In the long-term, moving the campgrounds and dispersed campsites out of the WIZ would benefit soil resources. Even though there are more developed sites under the proposed action, these sites would be located on hardened surfaces which reduces the likelihood of soil erosion. There are also fewer dispersed sites proposed.

The three proposed horse/foot trails and associated stream crossings would displace soils during construction activities and would compact soils with long-term use.

Water Quality: There are approximately one hundred miles of streams in the project area, the majority of which are characterized by intermittent (forty-six miles) and ephemeral flow (thirty miles). West Tensleep and Middle Tensleep Creeks are the largest streams found in the drainage and together comprise approximately nineteen miles of perennial stream in the project area.

West Tensleep Creek and Middle Tensleep Creek are classified as 2AB and designated beneficial uses include drinking water, fisheries, aquatic life, recreation, wildlife, agriculture, industry, and scenic value (WYDEQ 2001). Currently, there are no streams or waterbodies in the project area identified in the state of Wyoming *305(b) State Water Quality Assessment Report* and *303(d) List of Waters with Water Quality Impairments* (WYDEQ 2008).

Self-containment for human solid waste would be implemented under the proposed action, reducing the accumulation of unburied waste on or near streambanks and lakeshores. The chance that soils and waterbodies would be contaminated with human solid waste and potential pathogens would be reduced. Visitors and forest personnel frequently report improper human waste disposal in the West Tensleep Creek drainage portion of the Cloud

Peak Wilderness and in the dispersed campsites along FSR 27. In 2009, water quality monitoring conducted by the Bighorn National Forest showed elevated total coliform levels at nine sampling locations along the six-mile stretch of West Tensleep Creek and its tributaries, north of Tyrrell Work Center. Total coliform counts are used as an indicator of fecal contamination of water bodies. Warm-blooded animals naturally have fecal coliform bacteria in their intestinal tracts, which are transmitted via fecal material (Ishii and Sadowsky 2008). The presence of coliform bacteria in West Tensleep Creek indicates fecal contamination and the possibility that disease-causing pathogens are present.

Reconstructing the FSR 27 road prism and associated ditches/culverts would increase short-term sedimentation and water quality effects to adjacent waterbodies and aquatic habitat. Reducing maintenance frequency, allowing coarser road surface material, and reducing the total area of FSR 27 would reduce the long-term delivery of sediment into waterbodies, as FSR 27 parallels West Tensleep Creek and has multiple road-stream crossings in the project area. Construction of the turn-around and parking area would displace and compact soils but would be located away from the water influence zone and would follow design criteria to minimize erosion and potential sources of sedimentation to waterbodies.

The three proposed horse/foot trails and associated stream crossings would displace soils during construction activities and would compact soils during long-term use. Potential disturbance to hydrology and fisheries resources would increase, as sediment delivery to waterbodies may occur from trail erosion, especially at trail-stream crossings and on steep slopes. However, best management practices and design features (see table 2) would be implemented during trail design and construction, providing for proper drainage to control the concentrated flow of water and sediment.

Cumulative effects: Road maintenance, timber harvest, and recreation have contributed to changes in watershed condition and soil structure and have increased sediment availability to aquatic habitats. There may be some short-term cumulative increases in sediment from the proposed action. However, the long-term cumulative effects of moving developed and dispersed campgrounds/campsites out of the WIZ, implementing new road management objectives, installing proper road drainage, and controlling the improper disposal of human solid waste would be positive.

Effect to Soils and Water Quality from the No Action Alternative

Deer Park and West Tensleep campgrounds and approximately twenty-five dispersed campsites would remain within one hundred feet of the WIZ, and therefore would continue to be out of compliance with the forest plan. A total of 100 to 125 dispersed campsites would remain in the West Tensleep Corridor.

Soils in the WIZ and uplands would not recover from camping activities and would continue to experience long-term compaction, erosion, and bare ground. Soils in the WIZ would be affected to a greater extent because they remain wet for longer periods during the year and are more easily compacted and displaced. Existing impacts to Cryaquoll soils would continue.

Water Quality: Camping activities in or near the WIZ would continue to impact hydrologic resources. These areas would continue to experience overland flow, soil erosion, and sedimentation. Improper disposal of human solid waste would continue to be a problem, leaving unburied waste on or near streambanks and lakeshores in the project area. Soils and waterbodies would remain contaminated with human solid waste and pathogens passed via human feces would most likely be present.

The no action alternative would cause less short-term erosion and sedimentation because road construction and construction of the turn-around, parking area, and horse/foot trails would not occur.

Cumulative effects: Leaving two developed campgrounds and approximately twenty-five dispersed campsites in the water influence zone and not controlling the improper disposal of human solid waste under alternative 1 would add cumulatively to the negative effects from road maintenance, timber harvest, and recreation activities in the project area.

Effect to Wildlife from the Proposed Action and No Action

Wildlife reviews were completed for endangered, threatened, proposed, and candidate, (ETPC) species; Region 2 sensitive species; management indicator species (MIS); species of local concern; and demand species. The effects analyses for these species used the forest plan analyses and species assessments, heritage database records, district data, literature reviews, field surveys, and communication with district personnel. If a species or its habitat might be present in the project area, direct, indirect, and cumulative effects to that species are disclosed.

Endangered, threatened, proposed, and candidate species: The Canada lynx was the only endangered, threatened, or proposed species considered in this document. No critical habitat has been designated for Canada lynx or any other federally listed species on the Bighorn National Forest. The proposed action would not affect the Canada lynx. There are no known occurrences of the species on the forest, and lynx habitat is being maintained.

In 2010, the greater sage grouse was listed as a candidate species by the U.S. Fish and Wildlife Service. It is also a sensitive species in Region 2 and on the forest. The proposed action would not affect greater sage grouse. The species is not known to occur in the project area, and there is no suitable habitat.

Sensitive species, management indicator species (MIS), species of local concern, and demand species: The effects of the proposed action on these species were considered. Species that do not occur or have habitat in the project area were not analyzed further. For the species that occur in the project area or have habitat there, determinations are listed in table 5.

The current or proposed recreation activities could potentially disturb or displace northern goshawks, boreal owls, American marten, and blue grouse from the project area. The same current and proposed activities may disturb or disperse mule deer from the immediate area, but few long-term impacts are expected. Moose may occur in the project area in the summer and fall. Some recreation activities may disturb or disperse moose, but these impacts are expected to be short-term.

For the olive-sided flycatcher and American three-toed woodpecker, there could be short-term disturbances from tree removal or road building. Tree cutting may result in mortality of calliope hummingbird eggs or nestlings during the nesting season, and current or proposed recreation activities could potentially disturb or displace this species. Effects would be similar for the gold-crowned kinglet. The proposed action may remove a limited number of potential nesting trees for the red-breasted nuthatch; however, many dead trees and snags are available nearby.

There is potential harlequin duck habitat along Tensleep Creek. Under the no action alternative and the proposed action, camping and associated recreational activities along the creek could disturb harlequin ducks.

Potential northern leopard frog habitat may be present in the project area, but the closest documentation of these frogs is near Meadowlark Lake. The proposed action and the no action alternative would likely pose little risk of significant mortality to individuals if any are present.

Cooper's Rocky mountainsnail can thrive with little cover and thin litter (Anderson 2005). Recreational activities could kill individuals but would have little population impact as the species has been found in more and more sites since 2010 surveys. Effects to the pygmy mountainsnail would be similar.

The proposed action with fewer dispersed campsites may benefit elk.

The proposed action and the no action alternative would not affect red squirrels; they are abundant and their mixed-conifer and spruce-fir habitat are available forestwide.

For great gray owls, there would be little chance of impacts from the proposed action or the no action alternative because this species is not known to occur in the project area and no owls were detected during forest owl surveys.

Mountain lions may pass thru the project area during the summer, but impacts are not expected.

The availability of human and pet foods along the West Tensleep corridor has generally resulted in food-conditioned black bears, which ultimately required the relocation or mortality of individual bears. This situation would persist under the proposed action and the no action alternative.

It is anticipated that other projects and the proposed action will have a neutral cumulative effect on wildlife species and associated habitat in the project area. Livestock grazing is ongoing in the project area and high traffic occurs on the roads during the summer and fall months. The Wyoming Game and Fish Department currently authorizes fishing and big game hunting in the immediate area. Depending on species, wildfire impacts could be short- or long-term. The northern leopard frog and mountainsnails could be impacted by watershed events due to wildfire under no action alternative or the proposed action.

Table 5. 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	<p>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</p> <p>MIS Red-breasted nuthatch, pygmy nuthatch</p> <p>Species of local concern Great gray owl, calliope hummingbird, golden-crowned kinglet</p> <p>Demand species Blue grouse, mule deer, moose, black bear</p>
No impact	<p>MIS Rocky Mountain elk, red squirrel</p> <p>Demand species Mountain lion</p>

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. Species abundance surveys conducted on July 29 and September 3, 2011 found no occurrences of plant species of local concern or plant demand species. 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
Russet cotton-grass

Festuca hallii
Hall's fescue

Pyrrocoma clementis var. villosa
Tranquil goldenweed

Species of Local Concern

Botrychium multifidum
Leathery grapefern

Botrychium lanceolatum
Lance-leaved grapefern

Botrychium minganense
Mingan moonwort

Cirsium foliosum
Leafy thistle

Eritrichium howardii
Howard forget-me-not

Listera borealis
Northern twayblade

Listera convallarioides
Broad-leaved twayblade

Symphyotrichum molle (Aster mollis)
Soft aster

Species surveys did find one location of *Botrychium lunaria* (common moonwort). Although not designated as a sensitive species, species of local concern or demand species, *B. lunaria* is a species commonly surveyed for on the Bighorn National Forest. Project design will protect this known population of *B. lunaria* by locating the proposed ADA trail in previously disturbed habitat alongside an abandoned roadbed east of the *B. lunaria* population.

New trail construction from the bridge at Warner Draw north to the bridge at Deer Park as well as new trail construction from Warner Draw Campground to Trail 69 may draw increased recreational use to these areas. Increased use could increase collection and trampling of plant populations if any are discovered in the future. Because new trail locations are in marginal habitat that does not support known existing populations, and because overall the project is anticipated to reduce recreational use within the West Tensleep Corridor, there is anticipated to be an overall beneficial impact to potential habitat or potential new plant populations.

Effects to Cultural 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 under the 4.3 Dispersed Recreation management area prescription (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

Scoping documents and/or the notice of proposed action for this project were sent to the following agencies, organizations, and individuals. The EA, decision notice, and finding of no significant impact are available at <http://www.fs.fed.us/nepa/fs-usda-pop.php/?project=30501> and in hard copy, by request, from Craig Cope, 1415 Fort Street, Buffalo, Wyoming 82834, phone (307) 684-7806.

Senator John Barasso	Senator Michael Enzi	Congresswoman Cynthia Lummis
Wyoming Game and Fish, Cody, WY	Wyoming Game and Fish, Greybull, WY	Mayor Fred A. Firnekas Tensleep, WY
Big Horn County Commissioners	Washakie County Commissioners	Washakie County Conservation District
Big Horn Mountain Coalition, EDD	Wyoming Wilderness Association	Cloud Peak Backcountry Horsemen Association
Bighorn Adventures	A Double J Outfitters	Shoshone Backcountry Horsemen Association
South Fork Resorts	Gallatin Canyon Campgrounds	YMCA Camp Widjiwagan
WY Assoc. of Rural Water Systems		
Martha Argeris	Dean & Cheryl Austad	Landis Benson
David Bostrom	George Q. Bower	Forrest Kelly & Susan Clay
David & Cynthia Loden	Alberta Broughton	Denise Bryant
Linda Coleman-Smith	Elizabeth Claire Venn	Elaine Decker
Pete & Wanda Hansen	Larry & Dora Fink	James & Mary Ellen Farmer
Gary Fostmeier	Catherine Froyd Saeger	Keith & Carolyn Gentzler
Rex Allen Shepperd	Randall S. Hake	Dave & Valerie Hinkel
Mark Hinkel	Thomas L. Shultz	Dustin and Elizabeth Spomer
Donald Lowe	Tim & Yvonne Barritt	John Maxwell
Mr. and Mrs. Boyd	Tim & Corliss Allison	Larry A. & Therese J. Mead
Mr. Charles Paris	Rusty Bogers	Mr. Lloyd Nielson
Mr. Gerald Ford	Carl Lynch	Mr. and Mrs. Cody Patrick
John Iversen	Alden and Janice Curtis	David & Julie Fall
Paul & Nancy Landeck	Jean Paris	Jack Porter
Robert & Betty Richins	Gary & Laure Mitchell	Loren and Marsha Barritt
Thomas Walker	John Snyder	Kevin Shryack
Marilee Sonesen	Richard Strickler	James & Margaret Wetzel
Carla Bryant	David & Linda Witt	Dennis and Karen Sinclair
Doug & Becky Cooley	Ben Schiffer	Michael Pearlman

Dallas Grubbs	J. Goodwin	Jim Hloucal
Debbie Stoetzel	John Reman	Thomas L. Schultz
John Lawrence	Rosemary Carr	