

Draft Environmental Impact Statement

Draft Section 4(f) Statement

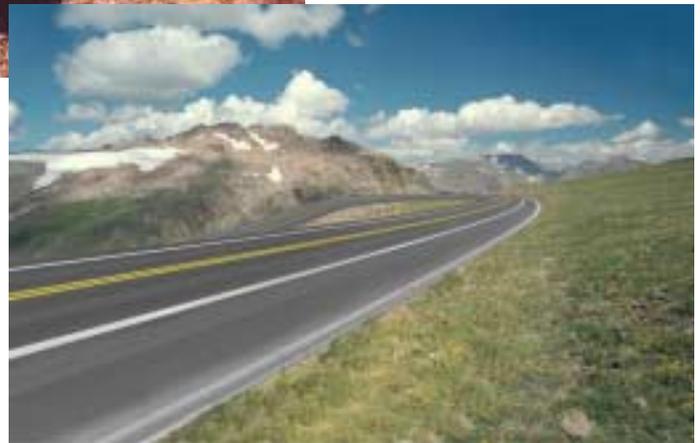
Wyoming Forest Highway 4 U.S. 212 (KP 39.5 to KP 69.4) The Beartooth Highway Park County, Wyoming



Beartooth Highway construction
circa 1934
© Flashes, Red Lodge, MT



Beartooth Highway 2001



Visual simulation of the reconstructed road at 8.4 meters (28 feet)

June 2002



United States Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division



**METRIC TO ENGLISH/ENGLISH TO METRIC
CONVERSION FACTORS (APPROXIMATE)**

When You Know:	Multiply By:	To Find:
meters (m)	3.281	feet
feet (ft.)	0.3048	meters
kilometers (km)	0.621	miles
miles (mi.)	1.609	kilometers
hectares (ha)	2.471	acres
acres (ac.)	0.405	hectares

LIST OF ACRONYMS AND ABBREVIATIONS USED IN THIS DOCUMENT

AASHTO	American Association of State Highway and Transportation Officials	mph	Miles per hour
ADT	Average Daily Traffic	MS	Management Situations
BMPs	Best Management Practices	NEPA	National Environmental Policy Act
BMU	Bear Management Unit	NPS	National Park Service
CEM	Cumulative Effects Model	NRHP	National Register of Historic Places
CFR	Code of Federal Regulations	PCA	Primary Conservation Area
CNF	Custer National Forest	PSD	Prevention of Significant Deterioration
Corps	U.S. Army Corps of Engineers	RNA	Research Natural Area
dBA	Decibels	SADT	Seasonal Average Daily Traffic
DHV	Design Hourly Volume	SEE	Social, Environmental, and Economic (Team)
EIS	Environmental Impact Statement	SHPO	State Historic Preservation Office
EO	Executive Order	SNF	Shoshone National Forest
FHWA	Federal Highway Administration	SSD	Stopping Sight Distance
GNF	Gallatin National Forest	USFS	U.S. Forest Service
GYA	Greater Yellowstone Area	USFWS	U.S. Fish and Wildlife Service
km/h	Kilometers per hour	WDEQ	Wyoming Department of Environmental Quality
KP	Kilometer post	WNDD	Wyoming Natural Diversity Database
MA	Management Area	WYDOT	Wyoming Department of Transportation
MNHP	Montana Natural Heritage Program	YNP	Yellowstone National Park

Wyoming Forest Highway 4
U.S. 212 (KP 39.5 to KP 69.4)
The Beartooth Highway
Park County, Wyoming

DRAFT ENVIRONMENTAL IMPACT STATEMENT

DRAFT SECTION 4(f) STATEMENT

Submitted Pursuant to 42 U.S.C. 4332(2)(c)
(and where applicable, 49 U.S.C. 303) by the
U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division

Cooperating Agencies

U.S. Forest Service
National Park Service
U.S. Army Corps of Engineers
U.S. Fish and Wildlife Service

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Date

ABSTRACT

The Beartooth Highway is a 108-kilometer (67-mile) route that begins at the northeast entrance to Yellowstone National Park and ends in Red Lodge, Montana. The Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, proposes to reconstruct a portion of the road that begins at kilometer post 39.5 (mile post 24.5), just west of the Clay Butte Lookout turnoff, traverses over Beartooth Pass, and ends at the Montana/Wyoming state line at kilometer post 69.4 (mile post 43.1).

The segment proposed for reconstruction has not been rebuilt since its original construction in the 1930s. The road has deteriorated significantly and does not accommodate current or future vehicle types or volumes. Reconstruction would be along the existing road corridor with an improved alignment, grade, and width to standards of the Wyoming Department of Transportation. The reconstruction would maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that safely accommodates projected 2025 traffic; provide a roadway that could be reasonably maintained by a maintaining agency; and support management of National Forest lands adjacent to the road, including maintaining the Scenic Byway/All-American Road intrinsic qualities. Construction would begin in 2004 and last 6 years, if a build alternative is approved and selected in the Record of Decision in early 2003.

This Draft Environmental Impact Statement and Section 4(f) Statement for the Beartooth Highway Reconstruction Project document an analysis of the potential environmental consequences of the proposed road reconstruction project. In addition to the No Action Alternative, five build alternatives have been developed and analyzed. All build alternatives would follow the existing alignment closely in most locations. Options for realignment or road construction in six areas are considered. Some build alternatives have alignment options designed to avoid wetlands, to reduce visual impacts, or to provide a more consistent alignment. A workcamp is proposed for use by employees during the 6-year construction period.

The build alternatives would disturb between 70 to 78 ha (173 to 194 ac.) of previously undisturbed areas. Anticipated effects would include disturbance of 3 ha (6 to 8 ac.) of wetlands, and the permanent loss of 7 to 8 ha (17 to 22 ac.) of alpine meadows and 7 to 10 ha (17 to 24 ac.) of grizzly bear habitat. All build alternatives would alter the footprint and location of the historic roadway, and all build alternatives except Alternative 2 would remove four historic bridges, adversely affecting the resources. One bridge would not be dismantled in Alternative 2. All build alternatives would be in compliance with the Shoshone National Forest Land and Resource Management Plan. The Federal Highway Administration has developed plans to mitigate all unavoidable wetland impacts and landscape and revegetate all areas disturbed by the project, and would mitigate adverse effects on historic resources. The Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, identified Alternative 6–Blended Emphasis as the preferred alternative.

This Draft Environmental Impact Statement is open to public comment and review until July 29, 2002, 45 days after the Notice of Availability was published in the *Federal Register*. Comments concerning this Draft Environmental Impact Statement should be sent to:

Mr. Richard J. Cushing (HFHD-16)
Federal Highway Administration
555 Zang Street, Room 259
Lakewood, CO 80228
Phone: (303) 716-2138

In addition, comments can be submitted via the Internet. The Draft Environmental Impact Statement is available for review at <http://www.cflhd.gov/projects/wy/beartooth/index.htm>. To submit electronic comments, please follow the directions provided at this site.

A CD is inserted in an envelope at the end of this document. The CD contains visual simulations of various segments of the proposed project. Instructions for CD use are on the inside of the back cover.

The Federal Highway Administration completed numerous engineering and environmental studies for the proposed project. These studies are documented in technical reports, which are listed on page 76. Copies of the Draft Environmental Impact Statement and technical reports can be reviewed at the following locations:

Federal Highway Administration
Central Federal Lands Highway Division
555 Zang Street, Room 259
Lakewood, Colorado

Wyoming Dept. of Transportation
218 West C
Basin, Wyoming

Shoshone National Forest
203A Yellowstone Avenue
Cody, Wyoming

Wyoming Dept. of Transportation
5300 Bishop Boulevard
Cheyenne, Wyoming

Shoshone National Forest
808 Meadow Lane
Cody, Wyoming

Yellowstone National Park
Park Headquarters
Mammoth, Wyoming

Park County Library
1057 Sheridan Avenue
Cody, Wyoming

Federal Highway Administration
2880 Skyway Drive
Helena, Montana

Custer National Forest
6811 Highway 212 South
Red Lodge, Montana

Federal Highway Administration
1916 Evans Avenue
Cheyenne, Wyoming

Carnegie Library
3 West 8th Street
Red Lodge, Montana

Cooke City Chamber of Commerce
Cooke City, Montana

The Draft Environmental Impact Statement also is available for review at the Top of the World Store along the Beartooth Highway.

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Summary

THIS Draft Environmental Impact Statement for the Beartooth Highway Reconstruction Project documents an analysis of the potential environmental consequences of a proposed road reconstruction project. This summary briefly describes the proposed project, its purpose and need, and potential environmental effects. In addition to the No Action Alternative, five build alternatives have been developed and analyzed. The Federal Highway Administration is the lead agency for the project and is responsible for project development, environmental evaluation, preparation of this document and a Record of Decision, and construction contract management.

SEE Team and Cooperating Agencies

When the Federal Highway Administration starts an environmental review process for a major road project, it convenes a Social, Economic and Environmental (SEE) study team consisting of federal, state or local agencies with project involvement. The SEE team assists in identifying major issues associated with the proposed project, developing project alternatives, and assessing environmental impacts.



The Beartooth Highway is one of the most scenic routes in America.

The SEE team is comprised of representatives from the following six agencies:

- Federal Highway Administration
- U.S. Forest Service
(Shoshone National Forest)
- National Park Service
(Yellowstone National Park)
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Wyoming Department of Transportation

Under the National Environmental Policy Act, the Federal Highway Administration can request assistance from other federal and state agencies in preparing the Environmental Impact Statement. The U.S. Forest Service, National Park Service, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service have agreed to become cooperating agencies for the project.

Proposed Project

The Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, proposes to reconstruct a 30-km (18-mi.) portion of U.S. 212 in Park County, Wyoming in accordance with the standards of the Wyoming Department of Transportation. The proposed project would begin at kilometer post 39.5, just west of the Clay Butte Lookout turnoff, traverse over Beartooth Pass, and end at the Montana/Wyoming state line at kilometer post 69.4. This segment of the road is referred to as segment 4 (Figure S-1). Kilometer post 39.5 and kilometer post 69.4 are logical ends or termini for the project because the Beartooth Highway has been reconstructed up to both ends of the proposed project. Construction would begin in 2004 and last 6 years, if a build alternative is approved and selected in a Record of Decision in early 2003.

Location and History

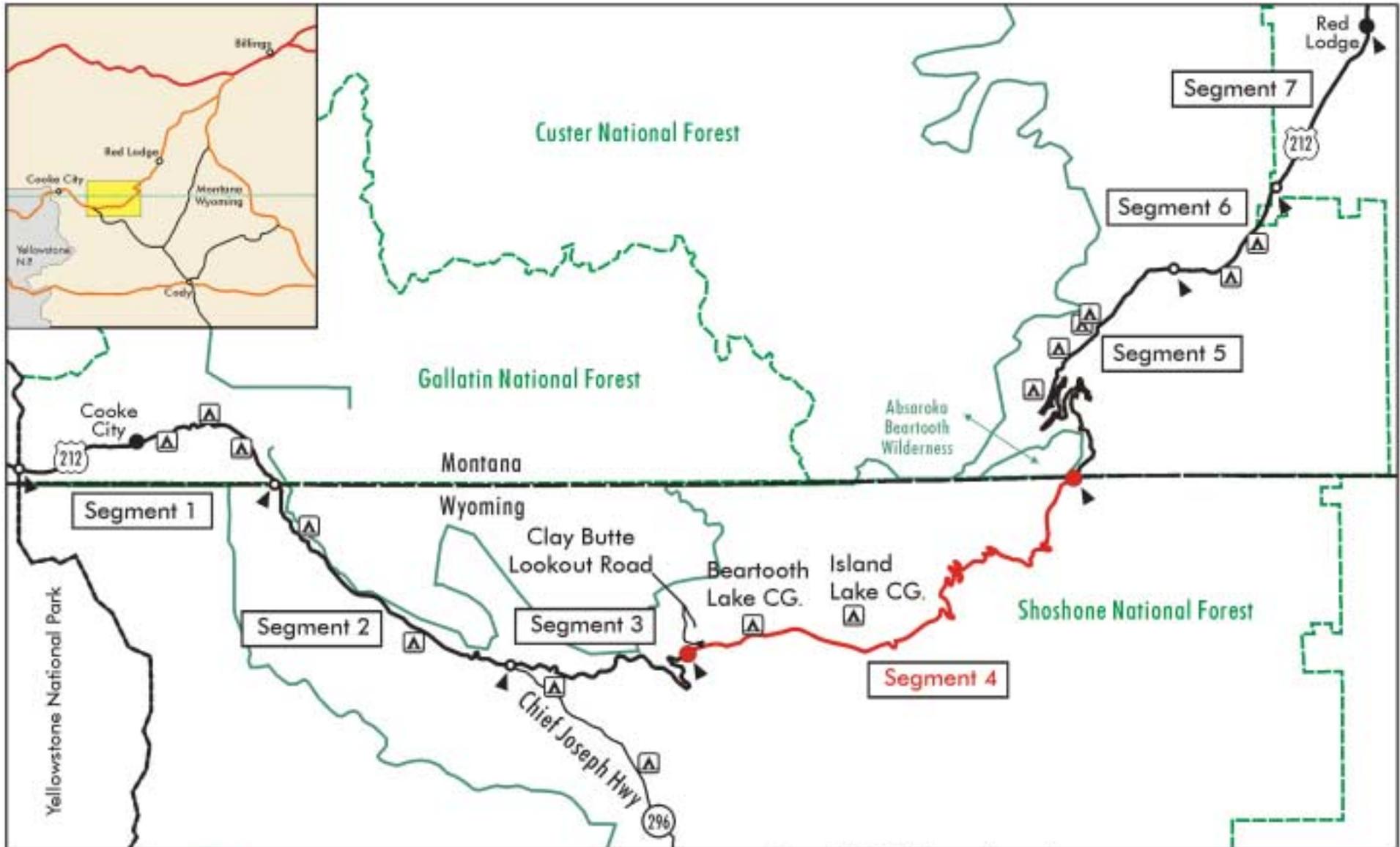
The Beartooth Highway is a 108-km (67-mi.) route that begins at the northeast entrance to Yellowstone National Park and ends in Red Lodge, Montana. The Beartooth Highway also is known as the Red Lodge-Cooke City Highway and is designated as U.S. 212 over its entire length. The portion of the road in Wyoming is designated as Wyoming Forest Highway 4. In addition to being a Forest Highway, the road also is a National Park Approach Road.

The Beartooth Highway was built between 1931 and 1936 as an access road to Yellowstone National Park, and opened to traffic in 1936. In 1968, segment 4 was resurfaced, and many paved ditches were added. In 1994, a Federal Highway Administration needs assessment was completed for the Beartooth Highway in cooperation with the Forest Service and the National Park Service. It concluded that many road components of segment 4 were inadequate and substandard, and the segment should be reconstructed.

The pavement preservation project that the Federal Highway Administration completed in 2000 temporarily repaired the roadway surface. The project was designed to provide a driveable surface on segment 4 for about 5 to 10 years while the environmental review process for the reconstruction project progressed.

Existing Road Use and Traffic Conditions

The Beartooth Highway is primarily a recreational road that connects the northeast entrance of Yellowstone National Park to Red Lodge, Montana and Cody, Wyoming. The Beartooth Highway connects with WY 296, the Chief Joseph Scenic Byway, which provides a link to Cody, Wyoming. The road also provides access between the communities of Silver Gate, Cooke City, and Red Lodge. The road provides access to campgrounds, trailheads, vista points, pullouts, and recreation facilities in the Shoshone National Forest, the Custer National Forest, and the Gallatin National Forest. The road has been designated a U.S. Forest Service Scenic Byway, a Wyoming State Scenic Byway, and the portion in Wyoming is designated an All-American Road under Federal Highway Administration's Scenic Byway Program. Segment 4 opens by Memorial Day and closes by Columbus Day (about October 15). The road sometimes is



Source: 1:100,000 BLM topographic maps

Figure S-1
Project Location

ERO
 ERO Resources Corp.
 1842 Clarkson Street
 Denver, CO 80218
 (303) 830-1188
 Fax: 830-1199

- Segment 4 of the Beartooth Highway
- Project Start and End
- Other segments of the Beartooth Highway
- Forest Boundary
- ▲ Existing Forest Service campground

1 Inch = 4 Miles



S21-PROJECT location 4-02.cdr

accessible by car up to the road closure gate east of Long Lake before Memorial Day, depending on snow conditions.

The Seasonal Average Daily Traffic, the average number of vehicles that travel the road each day over a set period of time or season, is 942 vehicles. The Seasonal Average Daily Traffic in 2025 is estimated to be 1,972 vehicles.

PURPOSE AND NEED

The three reasons to reconstruct segment 4 are:

- Maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that safely accommodates projected traffic in 2025
- Provide a roadway that can be reasonably maintained by a maintaining agency
- Support management of National Forest lands adjacent to the road, including maintaining the Scenic Byway/All-American Road intrinsic qualities

Needs Associated With Accommodating Projected Traffic

Since segment 4 was constructed in the 1930s, the type and level of traffic on the road has changed



The narrow travel lanes, lack of shoulders, and substandard guardrails present a safety hazard to motorists, pedestrians, and bicyclists.

substantially. It does not safely accommodate current vehicle types, such as recreational vehicles or trucks with trailers. Projected future traffic volumes will exacerbate the current situation. Without reconstruction, the road will continue to deteriorate. Reconstruction would address seven primary deteriorating or deficient elements that contribute to safety concerns of the existing road: roadway surface; road alignment; travel lane width; shoulder width; drainage facilities; pullouts and parking areas; and bridges.



The four bridges are structurally deteriorated, too narrow and do not meet current safety standards or hydraulic requirements.

Needs Associated with Maintenance

The Beartooth Highway was built as an approach road from Red Lodge, Montana to Yellowstone National Park under the National Park Approaches Act of 1931. The National Park Approaches Act allowed the Secretary of the Interior to construct, reconstruct, and improve national-park approach roads, and to enter into agreements for the maintenance of the roads by State or County authorities, or to maintain them when otherwise necessary. Since the road was built, the Secretary of the Interior has been unable to interest either Montana or Wyoming in a maintenance agreement for the portion of the road from Yellowstone

National Park to the Montana/Wyoming state line at KP 69.4.

In 1932, an Executive Order withdrew a 75-m (250-ft.) wide corridor on each side of segment 4 from settlement, sale, mineral entry or other disposal, and reserved the corridor for a National Park Approach Road. No federal or state agency claims ownership of the road. Ownership of the land adjacent to segment 4 remains with the Federal Government, and the Shoshone National Forest manages the National Forest land adjacent to the road.

In its current condition, segment 4 is very difficult to maintain. Consequently, neither Montana nor Wyoming has put the portion of the road from Yellowstone National Park to the Montana/Wyoming state line on its State Transportation Plan. When a road is on a State Transportation Plan, the state assumes responsibility for the road's jurisdiction and maintenance. If the Wyoming portion of the Beartooth Highway was on Wyoming's State Transportation Plan, it would be maintained in a similar manner as other area roads, such as WY 296 or WY 120.

The National Park Service has maintained segment 4 historically. In light of the current road condition, road maintenance costs are high. Under 16 USC Section 17j-2(a), appropriations for the National Park Service are authorized for "maintenance of the roads in the national forests leading out of Yellowstone National Park." Although Congress is authorized to appropriate funds for maintenance, the National Park Service is not allocated funding for maintenance. Because the National Park Service is not allocated regular funding for snowplowing or maintenance, the road occasionally is not adequately snowplowed or maintained. For example, in the mid-1990s, the

National Park Service did not open the road by Memorial Day because of a lack of funding.

In the 1998 Department of the Interior and Related Agencies Appropriation Act, the U.S. Forest Service was given the responsibility and funding for snowplowing of the Beartooth Highway from KP 0 in Yellowstone National Park, into and through Wyoming, to KP 69.4 on the Wyoming/Montana state line. The U.S. Forest Service contracts with the National Park Service to meet this required snowplowing responsibility. The Forest Service also provided funding to the Federal Highway Administration for the 1999-2000 pavement preservation project. While the Forest Service was provided funding for these recent activities, it is not prepared to assume long-term maintenance responsibility because of insufficient funding, personnel, and equipment to plow and maintain a paved highway.

In 1997, a Steering Committee was established to provide oversight of funding, maintenance, and ownership issues of the Beartooth Highway. Steering Committee members consist of representatives from the Federal Highway Administration, the U.S. Forest Service, the National Park Service, the Wyoming Department of Transportation, and the Montana Department of Transportation. In 1999, the Steering Committee established long-term goals concerning ownership and responsibility for the improved roadway (see letter to Representative Rick Hill, Appendix A). The target date for achieving the goals is 2008, when the entire Beartooth Highway is expected to be reconstructed to appropriate standards and all ownership and responsibility issues resolved. The Steering Committee identified these long-term goals:

State Ownership: The Steering Committee's first preference is that the States of Wyoming and Montana will accept shared ownership and

responsibility for the Beartooth Highway in the following manner:

- Segments 2, 3, 4 would be owned and maintained by the State of Wyoming.
- Segments 1, 5, 6, 7 would be owned and maintained by the State of Montana (Segments 5, 6 and 7 are currently maintained by the State of Montana).

Federal Ownership: If Wyoming and Montana do not agree to assume responsibility for the highway, then legislation should be considered to determine federal ownership, responsibility and funding. The National Park Service has the workforce but not the funds and the U.S. Forest Service has neither the funds nor the workforce to properly maintain the pavement and structures. In the meantime, the National Park Service would be left with the status quo, a band-aid approach to maintenance and operation, sacrificing funds needed for work in the Park.

The Wyoming Transportation Commission has discussed ownership of the Wyoming portion of the Beartooth Highway on several occasions. In October 1998, the Commission passed the following motion:

“When the entire section within Wyoming is reconstructed to current standards, Wyoming will **consider** assuming ownership of U.S. 212 in northwestern Wyoming. Because of the time frame required to accomplish the reconstruction, Wyoming will not make a definite commitment that encumbers future transportation commissions and could possibly encumber a different Governor.” (Meeting minutes, Transportation Commission of Wyoming, October 14, 1998) [bolded emphasis in original].

If the State of Wyoming does not agree to accept jurisdiction and maintenance responsibility after

reconstruction, the maintenance responsibility will remain with the Department of the Interior. A goal of the proposed reconstruction is to provide a roadway with design features compatible with current maintenance equipment and techniques, affording safe and efficient maintenance practices.

Needs Associated With Land Management Goals

Segment 4 of the Beartooth Highway traverses Forest System lands managed by the Shoshone National Forest. The Shoshone National Forest’s Land and Resource Management Plan established a forest-wide goal of managing activities along travel routes to maintain and enhance recreation and scenic values (Shoshone National Forest 1986). The Plan also established Management Areas. The Beartooth Highway corridor is in a Management Area that emphasizes rural and roaded natural recreation opportunities. Motorized and non-motorized recreation activities such as driving for pleasure, viewing scenery, picnicking, fishing, camping, hiking, snowmobiling, and cross-country skiing are emphasized.

Although the entire road corridor is in the same Management Area, the Shoshone National Forest manages segment 4 for two distinct types of road



The Shoshone National Forest manages the segment west of Long Lake for more intensive recreational activity.

use. Many travelers come to the Beartooth Highway to experience the drive and continue on to destination communities or Yellowstone National Park. Other travelers come to the Beartooth Plateau as a recreation destination and either stay overnight or engage in day use of the area, with short trips to and from local roadside and off-road destinations. Winter use, from October through early June, is concentrated primarily on groomed snowmobile routes between Top of the World Store and Long Lake.

Generally, more recreational activity, including pedestrian and bicycle use, occurs west of Long Lake. All of the developed recreation sites along the road are found west of Long Lake. Two campgrounds found west of Long Lake, Beartooth Lake and Island Lake, are popular camping locations and provide access to area lakes. Wilderness trails originate at both campgrounds. Because of their proximity to the road, Beartooth Lake and Long Lake are frequent stopping spots for tourists. Top of the World Store, the only location offering supplies, is between Island Lake and Beartooth Lake. Several jeep trails, such as the Morrison Jeep trail and the Sawtooth Lake trail, originate between Long Lake and Island Lake.



The existing road does not accommodate bicyclists.

The Shoshone National Forest manages the segment west of Long Lake for more intensive recreational activity. Travelers are more likely to park along the road shoulder, use bicycles, motorcycles and all-terrain vehicles in family groups, and engage in roadside viewing and related activities. These activities involve frequent stops, slow-moving motorized and non-motorized vehicles and a variety of user ages. A shoulder 1.2-m (4-ft.) or wider is needed to accommodate these uses safely in combination with through traffic use of the roadway.

Winter recreational use also is important because the highway from Cooke City to Long Lake is a popular snowmobile destination. Low snow years and the “shoulder” seasons (early June and early October) of snowmobiling cause a mix of snow craft and full-size vehicles on portions of the road. A wider shoulder width would address the potential safety hazards of this vehicle mix.

East of Long Lake, the road enters the alpine zone where the dominant recreational activity is scenic driving and viewing. No campgrounds are present east of Long Lake, and the Forest Plan either prohibits or discourages off-road motorized activity.

The incidence of family group activities, bicycles and road-side stops, and other day-use activities diminishes significantly east of Long Lake. The steep terrain, lack of trees for shelter, steep road grade, lack of camping facilities and frequent, severe weather at all times of the year, limit road use primarily to driving and viewing. The Shoshone National Forest discourages over-snow recreation east of Long Lake due to frequent hazardous weather events. Because of the more limited roadside activities in the eastern portion of the project, there is less need for a wider shoulder width.



The Wyoming portion of the road is an All-American Scenic Byway because of its scenic and natural qualities.

The designation of the Wyoming portion of the road as an All-American Road under Federal Highway Administration's Scenic Byway Program indicates the road has one-of-a-kind features that do not exist elsewhere. As an All-American Road, it provides an exceptional traveling experience so recognized by travelers that they would make a drive along the highway a primary reason for their trip. A Corridor Management Plan has been prepared for the All-American Road segment of the road. The plan describes management and protection strategies, and provides recommendations for interpretation.

Reconstructing the road would improve its deteriorating condition, safely accommodate current and projected recreational use, allow the Shoshone National Forest to continue to manage activities along the road, and enhance recreation and scenic values in accordance with the Forest Plan.

CONSULTATION AND COORDINATION

Public, Agency, and Tribal Contacts

The Federal Highway Administration held several meetings with the cooperating agencies to solicit

their issues and concerns about the proposed project. The Federal Highway Administration held a meeting in May 1998 to discuss a proposed rehabilitation project for segment 4. Later in 1998 after Congress authorized reconstruction of segment 4, the Federal Highway Administration developed the current proposal to reconstruct the road. The Federal Highway Administration held a meeting in September 1998 to discuss the proposed reconstruction project. Immediately after the September 1998 meeting, the agencies reviewed the road corridor in the field. The Federal Highway Administration held a wetlands field review in September 1999 with representatives from the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Park Service, and the Shoshone National Forest. A SEE team meeting also was held in September 1999. The SEE team reviewed possible realignments and the Corps of Engineers reviewed the wetland delineation. In 2000 and 2001, alternative development continued and the SEE team met to review the alternative plans and preliminary designs.

The Wyoming State Historic Preservation Office reviewed the cultural resources survey reports and the preliminary Draft Environmental Impact Statements. The Federal Highway Administration held a site visit with the Wyoming State Historic Preservation Office in July 2000 to discuss the proposed project and alternatives under consideration. Another meeting was held in November 2001 to discuss the effects determination and comments on the preliminary Draft Environmental Impact Statement. The State Historic Preservation Office attended several SEE team meetings to discuss the preliminary Draft Environmental Impact Statement, avoidance alternatives, and possible mitigation.

The Federal Highway Administration contacted several Native American tribes in 1998 and 1999 to

solicit their concerns about Traditional Cultural Properties associated with the project. Tribes and groups notified were the Medicine Wheel Coalition for Sacred Sites in North America, Crow, Northern Arapaho, Confederated Tribes of the Umatilla, Northern Cheyenne, Shoshone-Bannock, and Eastern Shoshone. Response to these contacts indicated that there were no Traditional Cultural Property issues associated with the proposed project if the work is conducted within the area surveyed for cultural resources, and work is halted immediately if any potential sacred sites are located during construction-related activities.

Major Issues

Based on comments received during the public scoping meetings and in consultation with the cooperating agencies, the Federal Highway Administration identified ten major issues that were used to develop alternatives. The cooperating agencies reviewed these issues in June 1999. The issues are:

1. Changes in amount, function, and value of waters of the U.S., including wetlands
2. Changes in cultural resources along the road that are eligible for listing on the National Register of Historic Places
3. Changes in wildlife habitat and population, particularly the grizzly bear and lynx, both listed as threatened with extinction
4. Changes in vegetation along the road, and the ability to revegetate alpine areas
5. Compliance with Forest Service land management plan
6. Changes in the road's visual quality
7. Changes in the recreation experiences along the road corridor
8. Changes in the area's economy

9. Changes in safety and traffic operations of segment 4
10. Changes in maintenance costs and responsibilities of segment 4

Each of these issues is described briefly in the following sections. The Federal Highway Administration used these issues as the focus of the analysis in the Environmental Impact Statement.

Changes in Amount, Function, and Value of Waters of the U.S., Including Wetlands. Along the road corridor, waters of the U.S. consist of large perennial streams with riffle and pool complexes; small perennial drainages commonly supported by ground water seeps; springs; seeps and ephemeral drainages; small ponds; and



Area wetlands provide important wildlife habitat.

jurisdictional wetlands. Wetlands are found throughout the area. A particular type of wetland with soils high in organic matter, called a fen, is found in some locations along the road. There is a concern that road reconstruction activities may affect wetlands and their functions. In locations where the road was built in wetlands, there is an opportunity to restore wetlands by moving the road away from wetlands.

Changes in Cultural Resources. The road and the four associated bridges were constructed in the early 1930s and are considered eligible for inclusion on the National Register of Historic Places. There is a concern that the reconstruction project may affect historic properties, including the road itself, by widening and realigning the road, and replacing the bridges.

Changes in Wildlife Habitat and Population. The area surrounding the road provides suitable habitat for four threatened or endangered species—the grizzly bear, gray wolf, lynx, and bald eagle. Road reconstruction would remove and modify habitat for the grizzly bear, lynx, and other species. There is concern that road improvements may fragment habitat, reduce wildlife habitat use, and increase mortality of wildlife prey. There also is a concern that recreational use may increase, which could displace wildlife or increase mortality. Another concern is increased loss of habitat connectivity.

Changes in Vegetation. Several rare plant species are found along the road corridor. There is a concern that road reconstruction may affect the populations of these species. Another concern is that the revegetation of the road's sideslopes and abandoned segments in areas proposed for realignment, particularly in alpine areas, may not be successful.



The road and the four associated bridges were constructed in the early 1930s and are considered eligible for inclusion on the National Register of Historic Places.

Compliance with Forest Service Land Management Plan. The road corridor is located on National Forest lands managed by the Shoshone National Forest. The Shoshone National Forest has a land management plan that provides guidance on managing the road corridor and resources adjacent to it. There is a concern that the proposed project may not comply with the land management goals and objectives for the road corridor.

Changes in the Road's Visual Quality. The road is part of the scenic Beartooth Plateau, with several peaks above 3,660 m (12,000 ft.) elevation and numerous alpine lakes. The road corridor is visible from area lakes and streams used for recreation. The road also can be seen from the Absaroka-Beartooth Wilderness. There is a concern that a wider road may alter the scenic quality along the road, and cuts and fills may be visible from key viewing locations. Another concern is the visual effect of revegetation of the abandoned road and bridges in realignment areas.

Changes in Recreation Experience. The Beartooth Highway is considered one of the most beautiful drives in the country and is used primarily for recreational purposes. Trails into the Absaroka-



Trails into the Absaroka-Beartooth Wilderness and other adjacent National Forest lands originate from the corridor.

Beartooth Wilderness and other adjacent National Forest lands originate from the corridor. There is concern that during road reconstruction activities, access to recreational facilities may decrease and noise may increase.

Changes in the Area's Economy. The road is a nationally significant destination and transportation artery serving the adjacent communities in Wyoming and Montana. There is concern that the road's continued deterioration may decrease recreation and tourism in the area, affecting the area's economy. A similar concern is that reconstruction activities may create difficult or uncomfortable driving conditions, delays, and closures that may affect the economic livelihood of businesses in the area during construction.

Changes in Safety and Traffic Operations of Segment 4. The reported accident rate along segment 4 is lower than that of similar roads. Because of the area's remoteness, however, minor accidents may not be reported. There is a concern that the road's safety may deteriorate further if improvements are not made. Another concern is that road improvements may accommodate or encourage an increased speed of the typical road

user, and increase the accident rate or severity along the road.

The road is used by tourists enjoying the road's scenery and by people traveling to Beartooth Plateau destinations between Yellowstone National Park and Red Lodge. Because of conflicting uses (sightseeing versus destination-oriented traffic use), there are safety and traffic operation concerns that could be addressed by reconstruction. For example, recreational users may drive slower and stop more frequently than destination-oriented traffic. Increased traffic may increase the possibility of accidents between the two user types. Unless the road is properly designed with a consistent alignment, shoulders, and pullouts, there is a safety and liability concern associated with the ownership of the road by a potential maintaining agency.

Changes in Maintenance Costs and Responsibilities of Segment 4. No federal or state agency has assumed ownership of the portion of the Beartooth Highway in Wyoming, including segment 4. The road was constructed under the Park Approaches Act, which authorized the Secretary of the Interior to construct and reconstruct such roads, and to enter into agreements for the maintenance by State or county authorities, or to maintain them when otherwise necessary. The National Park Service has maintained the road historically, but has only been allocated funding for snowplowing from the Forest Service through 2007. Although the Forest Service has short-term funding for snowplowing, it is not prepared to assume long-term maintenance. There is a concern that unless the road is reconstructed to a condition that can be reasonably maintained, the present uncertainty about jurisdiction and maintenance may continue.

ALTERNATIVES ANALYZED IN THE ENVIRONMENTAL IMPACT STATEMENT

The National Environmental Policy Act and other laws and regulations require agencies to reduce or avoid environmental effects where possible. This entails developing and evaluating a range of reasonable alternatives that address the project's purpose and need while minimizing environmental effects. There are various issues and concerns (often competing or conflicting) that the various alternatives would address to a differing degree. The No Action Alternative also must be evaluated to provide an environmental baseline and give the decision maker a full range of options to consider. As lead agency, the Federal Highway Administration has the responsibility to select an alternative that balances providing safe and efficient transportation with minimizing environmental impacts.

Under the proposed action, the Federal Highway Administration would reconstruct segment 4 of the Beartooth Highway, improving alignment, grade, and width to current standards, as required in Federal Highway Administration's regulations (23 CFR 625). The reconstruction goals are to maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that safely accommodates projected 2025 traffic, to provide a roadway that can be reasonably maintained by a maintaining agency, and to support management of National Forest lands adjacent to the Beartooth Highway, including maintaining the Scenic Byway/All-American Road intrinsic qualities. To meet these goals, the project would include:

- Widening the road to accommodate current and projected vehicular use and necessary maintenance activities
- Installing adequate drainage structures
- Installing sub-surface drainage features and subgrade stabilization measures

- Removing existing historic bridges where necessary and building new bridges
- Constructing a new road surface composed of crushed aggregate base and asphalt concrete pavement
- Improving parking areas and pullouts adjacent to the road
- Upgrading signs, striping, guardrails, and other safety-related features
- Implementing environmental commitments to reduce or mitigate environmental impacts

Five build alternatives and the No Action Alternative are analyzed in detail in this Draft Environmental Impact Statement. The alternatives are:

- Alternative 1—No Action (No Road Reconstruction)
- Alternative 2—Recreation and Cultural Resource Emphasis
- Alternative 3—Wildlife Resource Emphasis
- Alternative 4—Highway Operations, Safety, and Maintenance Emphasis
- Alternative 5—Biological Resource Emphasis
- Alternative 6—Blended Emphasis (preferred)

The Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, developed the alternatives to provide a full range of alternatives and a clear distinction between alternatives. All build alternatives would include reconstructing and widening the entire road, and, except for Alternative 2, removing four historic bridges and building new ones. Alternative 2 would remove three of the four bridges, leaving Little Bear Creek bridge #2 in place. The new alignments in all build alternatives would closely follow the existing alignment throughout most of the route. Realignment is being considered in five locations: Beartooth Ravine, Top of the World

Store, Frozen Lake, Bar Drift, and Albright Curve. Two different roadway widths are proposed for the project—8.4 m (28 ft.) and 9.6 m (32 ft.).

Fox Creek Campground, located 11 km (7 mi.) southeast of Cooke City, is the preferred workcamp location in all build alternatives. The campground would be closed to the public during the 6-year construction period. To be available for construction crews starting in 2004, the campground would be rebuilt to current standards during 2003. Another workcamp location being considered is at the junction of U.S. 212 and WY 296.

In Alternative 1, No Action, the Federal Highway Administration would not reconstruct segment 4 of the Beartooth Highway, and road funds would not be expended on this project. The road would remain 5.5 m (18 ft.) wide and in its existing alignment. The historic bridges would not be dismantled. The maintenance needed on the bridges is unlikely to be completed. Existing pull-outs would remain in their same location and condition. Maintenance responsibilities would remain with the Department of the Interior. The Department of the Interior would be left with a deteriorating road that is increasingly difficult to maintain. Alternative 1 would not fulfill the needs for the project.

Alternative 2 has a recreation and cultural resource emphasis; the roadway width would be 9.6 m (32 ft.) to accommodate larger recreation vehicles, pedestrians and bicyclists. With Alternative 2, the road would deviate from the existing alignment in the Top of the World Store area and preserve Little Bear Creek bridge #2. Alternative 3 has a wildlife emphasis; the new alignment would closely follow the existing alignment. The roadway width would be 8.4 m (28 ft.). Alternative 4 has a highway operations, safety, and maintenance emphasis. The roadway width would be 9.6 m (32 ft.). The

alignment options selected would have the highest design speeds. Alternative 5, with a biological resource emphasis, would have a road width of 8.4 m (28 ft.), and the alignment options would minimize disturbance to wetlands and fens, riparian areas, sensitive plants, and wildlife species that depend on these habitats. Alternative 6, the preferred alternative, balances highway operations, safety and maintenance needs with minimization of environmental impacts. The roadway width would be 9.6 m (32 ft.) in the western portion of the project and 8.4 m (28 ft.) in the alpine areas of the eastern portion. Estimated construction cost of the build alternatives would range from \$44.4 million for Alternative 3 to \$50.8 million for Alternative 4. Estimated construction costs for all alternatives are shown in Table S-2. The preferred alternative is shown in Figure S-2.

The *Purpose and Need* section identified three needs that would be addressed by segment 4 reconstruction:

- Maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that safely accommodates projected 2025 traffic
- Provide a roadway that could be reasonably maintained by a maintaining agency
- Support management of National Forest lands adjacent to the road, including maintaining the Scenic Byway/All-American Road intrinsic qualities

The build alternatives carried forward for detailed analyses were considered initially to meet all of these needs based on preliminary studies. However, subsequent analyses revealed that some of the alternatives would meet these needs better than others, and that two of the alternatives did not adequately address one or more of these needs. The No Action Alternative (Alternative 1) would not address any of the three project needs, and

would not be a practicable alternative. All build alternatives would maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that would accommodate projected 2025 traffic. However, three of the build alternatives, Alternatives 2, 4, and 6, would safely accommodate the mix of local recreational users, such as pedestrians and bicyclists, and through trip purposes between Red Lodge, Montana and Yellowstone National Park. Alternatives 3 and 5, which have a narrower roadway in the western portion of the project, would not accommodate this traffic mix safely.

All build alternatives would provide a roadway that could be reasonably maintained by a maintaining agency. Alternatives 2, 4 and portions of Alternative 6, however, could be maintained in a more cost effective and safe manner (maneuverability of equipment, snow storage, reduced traffic conflicts, etc) because they would have a wider roadway.

A 9.6-m (32-ft.) wide road in the western portion of the project in Alternatives 2, 4, and 6 would accommodate the existing and future recreational uses of the road and would support the Shoshone National Forest's management goals for the area. Alternatives 3 and 5, which have a narrower roadway in the western portion of the project, would not support the Shoshone National Forest's management goals in this area and are not practicable alternatives.

DECISIONS, PERMITS, OR APPROVALS

The Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, has issued the Draft Environmental Impact Statement for public comment. The agencies selected Alternative 6–Blended Emphasis as the preferred alternative. Comments on the Draft Environmental Impact Statement will be

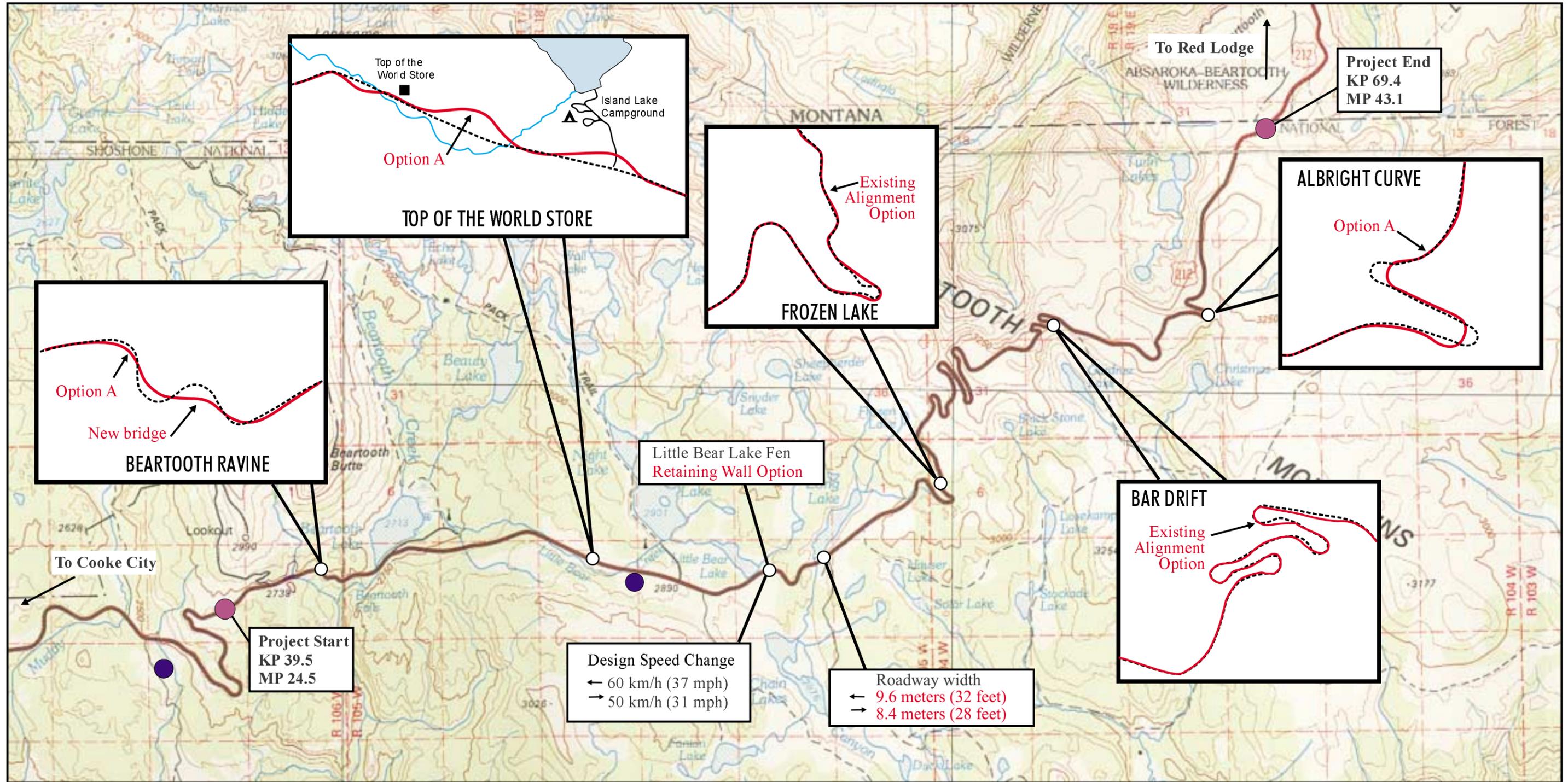
considered in the Final Environmental Impact Statement. After the Final Environmental Impact Statement is issued, the Federal Highway Administration, in cooperation with the U.S. Forest Service and the National Park Service, will select one or a combination of the build alternatives studied in detail in the Final Environmental Impact Statement, or the No Action Alternative. The Federal Highway Administration will document the final selection in a Record of Decision issued no sooner than 30 days after publication of the Final Environmental Impact Statement.

The Federal Highway Administration will need to obtain permits or approvals (Table S-1) from federal and state agencies before implementing a build alternative. Additional permits associated with refinements in final design and construction techniques also may be needed.

REASONABLY FORESEEABLE ACTIVITIES

Reasonably foreseeable future activities analyzed in the Draft Environmental Impact Statement are those actions and activities independent of the proposed project that could result in cumulative effects when combined with the effects of the proposed project. These activities are anticipated to occur regardless of which alternative is selected. The effects of these activities are described in the *Cumulative Effects* section under each resource in Chapter 3. The Federal Highway Administration identified four categories of reasonably foreseeable future activities:

- Future road projects
- On-going New World Mine District cleanup
- Future Shoshone National Forest projects
- Future area growth



ERO Resources Corp.
1842 Clarkson Street
Denver, CO 80218
(303) 830-1188
Fax: 830-1199

- Existing road
- Proposed alignment
- Materials source
- Project start and end

The existing alignment option is the option that most closely follows the existing road alignment.

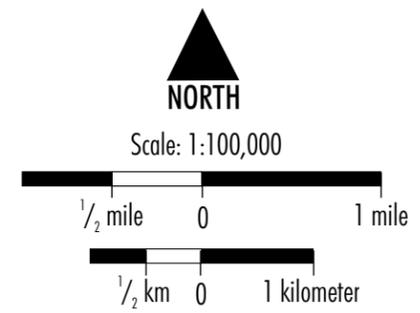


Figure S-2
Major Components of
Alternative 6
Blended Emphasis (Preferred)

Table S-1. Permits, stipulations, or approvals required for the Beartooth Highway Reconstruction Project.

Permits, Stipulations, or Approvals	Purpose
U.S. Forest Service	
Letter of Consent (Federal Land Policy and Management Act 36 CFR 251)	To allow the FHWA to use National Forest lands for road purposes.
Special Use Permit	To allow activities, such as a workcamp, on National Forest lands outside an approved corridor.
Mineral Material Permit	To allow the FHWA to take construction material from National Forest lands.
Timber Settlement Agreement	To allow the FHWA to harvest commercial timber on National Forest lands before disturbance. Harvesting would be conducted only to clear the area necessary for road construction, or materials sources.
U.S. Fish and Wildlife Service	
Section 7 Consultation (Endangered Species Act 50 CFR 402)	To ensure that the proposed project would not jeopardize the continued existence of threatened or endangered species, or result in the destruction or modification of critical habitat.
U.S. Army Corps of Engineers	
404 Permit (Clean Water Act 33 CFR 320)	To allow the FHWA to discharge dredged or fill material into waters of the U.S., including wetlands.
Wyoming Department of Environmental Quality	
401 Certification (Clean Water Act 40 CFR 121)	To certify that any activity requiring a federal license or permit that may result in any discharge into waters of the U.S. would not cause or contribute to a violation of state surface water quality standards.
National Pollutant Discharge Elimination System Permit	To allow FHWA to discharge pollutants from a point source into a water of the U.S., such as storm water or construction dewatering.
Authorization for temporary increase in turbidity	To allow FHWA to temporary increase surface water turbidity due to road work, including road and bridge construction.
Small Wastewater Permit	To allow FHWA to construct a septic leach field at a workcamp.
Wyoming State Engineer's Office	
Permit to temporarily divert water for construction	To allow FHWA to temporarily reduce stream flow for road construction, including dust suppression activities.
Advisory Council on Historic Preservation	
Section 106 Review (National Historic Preservation Act 36 CFR 800)	To consult with the Wyoming State Historic Preservation Office, Native American tribes, and the Advisory Council on Historic Preservation.

Some of these projects, such as future road projects, would involve decisions by federal agencies. A decision on these projects would be made separate from the decision on the Beartooth Highway Reconstruction Project.

Future Road Projects

Yellowstone National Park Road Improvements

For the past 5 years, the National Park Service has been implementing a 20-year road improvement plan for Yellowstone National Park. The plan calls for rehabilitation and/or reconstruction of all park roads over a 20-year period. Either an environmental assessment or an environmental impact statement will be prepared on each project before it starts. The east entrance road in Yellowstone National Park, which begins at the western end of U.S. 14/16/20 leading from Cody, Wyoming, has been under construction for the past 5 years. The fourth phase of reconstructing the road is scheduled to be awarded in 2002, and the final phase is planned to be awarded in 2006. The road is expected to be reconstructed completely by 2009. The northeast entrance road from the northeast entrance of Yellowstone National Park to Tower Junction was rehabilitated in the late 1990s.

U.S. 212 Reconstruction

The Federal Highway Administration is proposing to reconstruct a 13.5-km (8.4-mi) segment of U.S. 212 from Yellowstone National Park to the Montana/Wyoming state line east of Cooke City, Montana. This segment of the road in Montana remains in much the same condition since its original construction in the 1930s. The Federal Highway Administration completed an environmental assessment of the proposed project. The construction will begin in 2003 and is expected to last 3 years, through 2005.

On-going New World Mine District Cleanup

The New World Mine District is a historical mining district about 1.6 km (1 mi.) north of U.S. 212 near Colter Pass. Mining disturbances have affected water quality in a tributary of the Clarks Fork Yellowstone River. The mine district is undergoing cleanup by the U.S. Forest Service. The cleanup is expected to continue until 2006. Heavy equipment and materials are brought to the site using WY 296 and U.S. 212. During peak construction periods, up to 15 loads per day may use U.S. 212 west of WY 296.

Future Shoshone National Forest Projects

The Shoshone National Forest has planned several projects in the vicinity of the road over the next 5 years. Proposed projects include trail reconstruction of short trail segments, minor campground maintenance and facility replacement, special use permit authorizations for recreation-related activities for a period of 5 years or less, maintenance of the access road to Clay Butte Lookout, and renewal of the Red Lodge Race Camp ski permit.

Future Area Growth

Growth in the project area has increased over the past 20 years, and growth is expected to continue over the next 25 years. Population and employment, especially in the retail and service sectors of the economy, will increase. The demand for housing and government services will parallel the population increase.

The Shoshone National Forest anticipates that recreational uses on the forest will continue to grow. Over the past decade, for instance, campground receipts for National Forests surrounding Yellowstone National Park have doubled. Recreational

uses in Yellowstone National Park also are anticipated to grow.

Future transportation growth is expected to continue. The amount of growth on area roads varies depending on the particular road. Traffic volumes on area roads (U.S. 212 and WY 296) are expected to increase at a 3 percent annual rate or double over the next 20 years. The traffic volume on segment 4 is projected to be 1,972 vehicles (Seasonal Average Daily Traffic) in 2025.

Affected Environment and Environmental Effects

Wetlands and Other Waters of the U.S.

Several types of wetlands, including grass, sedge, and rush-dominated wetlands, willow dominated wetlands, and fens (wetlands with peat-like soils) occur in the project area. Wetlands provide a variety of functions including: general wildlife habitat; general fish/aquatic habitat; production export/food chain support; ground water discharge/recharge; uniqueness; recreation/education potential; and dynamic surface water storage.

Wetland impacts would range from 2.5 to 3.2 ha (6.2 to 7.8 ac.). Direct impacts on fens would be avoided in all build alternatives except Alternative 4. Impacts on lakes and ponds would be about 0.1 ha (0.1 ac.) under all build alternatives. Wetland impacts would be mitigated through restoration, creation, protection, and an in-lieu fee arrangement.

Cultural Resources

Five resources determined to be eligible for listing on the National Register of Historic Places are found along the road. Segment 4 of the Beartooth Highway and four bridges are historic resources found in the project area. No other known historic

or prehistoric resources determined eligible for listing on the National Register of Historic Places were identified within the project area. Consultation with seven tribes and tribal groups indicated no Traditional Cultural Properties occur in the project area.

Impacts on historic resources would occur with all alternatives, including the No Action Alternative. In the No Action Alternative, there would be long-term deterioration of the road and historic bridges. Deterioration could result in design elements and details being compromised, and loss of existing stone masonry. Such deterioration would be an adverse effect. All build alternatives would alter the footprint and location of the roadway, and, except for Alternative 2, would remove four historic bridges. One bridge would not be removed in Alternative 2. The overall character of the bridges and culvert headwalls would be retained by salvage and reuse of original materials. The characteristics of setting, feeling, association, and location of the road would be preserved in all build alternatives.

Wildlife

The road transects several habitat types including alpine meadows, forests, mountain meadows, wet meadows, and shrubby grasslands. Each type provides shelter, forage, denning, and breeding habitat for a diversity of wildlife including federally threatened, endangered, and candidate species. Habitat for the grizzly bear and lynx is found in the project area. One gray wolf pack uses habitat along the road.

The No Action Alternative would not directly affect wildlife. In all build alternatives, road widening and realignments would temporarily and permanently disturb wildlife habitat. A wider road would increase habitat fragmentation slightly and

could increase road kills because of longer travel distances for wildlife crossing the road. Increased noise and activity during construction may lead to temporary wildlife displacement and avoidance of construction areas.

All of the build alternatives may affect the grizzly bear. Impacts on the grizzly bear would include the loss of grizzly bear habitat adjacent to the road, conversion of some whitebark pine habitat to mountain meadow habitat, a slight increase in the potential for vehicle/bear collisions, increased potential for bear/human conflicts, and a temporary displacement of bears during construction.

All build alternatives may affect the lynx. A widened roadway and clear zone would increase the crossing distance for lynx, and may present a barrier to lynx movement. The connectivity of suitable lynx habitat north and south of the road would not change substantially with proposed road improvements. The potential for direct mortality from vehicle collisions would increase slightly with a wider road and a likely increase in vehicle speeds. Most of the traffic would continue to occur during daylight hours when lynx are less active. In addition, projected traffic volumes and speeds are relatively low and would unlikely be a significant risk for lynx that potentially cross the road.

The gray wolf pack probably would avoid the road corridor during construction. Other wildlife species would not be adversely affected by road reconstruction activities. The Federal Highway Administration, the Shoshone National Forest, the U.S. Fish and Wildlife Service, and the Wyoming Game and Fish Department would develop a wildlife mitigation plan during final project design.

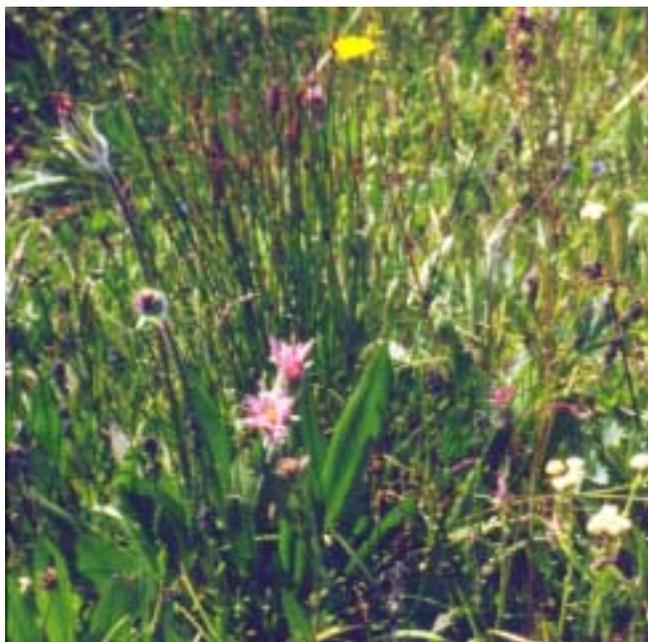
Vegetation, Timber, and Old Growth Forest

The project area includes alpine meadows above timberline on the eastern portion of the road corridor, and mountain meadows and subalpine and montane forests throughout the western portion of the road corridor. Most of the forests along the road are old growth. Wet meadows are present along drainages and below snowfields and seeps throughout the project area. Upland mountain meadows are found along the Little Bear Creek drainage and in scattered pockets within the forest. Shrub grasslands are found at lower elevations on the western end of the project area.

The No Action Alternative would not affect any vegetation communities. All build alternatives would have short-term and long-term impacts. A long-term loss of vegetation would occur within the footprint of the widened, surfaced road, shoulder, and pullouts. A temporary vegetation loss would occur within roadway cuts and fills. Unpaved disturbed areas would be revegetated. The alpine meadow community would be most affected, with 24 to 28 ha (60 to 68 ac.) disturbed during construction. Long-term effects on vegetation communities from paving range from 7 to 8 ha (17 to 22 ac.) All build alternatives would



Research is being conducted using native plant materials and collected seed to assist in revegetation planning.



Pink agoseris is a Forest Service sensitive species found extensively near Top of the World Store.

affect about 0.7 ha (1.8 ac.) of riparian areas. Most of the affected riparian areas would be along Little Bear Creek near the Top of the World Store.

The Federal Highway Administration would implement a Landscaping and Revegetation Plan to mitigate effects on vegetation. Temporary disturbances would be topsoiled and reseeded with native species. Abandoned roadway segments would be revegetated with native species.

No plant species listed as threatened or endangered by the U.S. Fish and Wildlife Service are known to occur in the project area. Three U.S. Forest Service Region 2 sensitive species of concern, twelve Wyoming species of concern, two species on the Wyoming plant watch list, and one species with uncertain status were identified in the project area. Only one species listed as sensitive by the Shoshone National Forest, pink agoseris, would be affected by the build alternatives. None of the build alternatives would cause a trend toward

federal listing or result in a loss of rangewide species viability for pink agoseris.

The project area includes areas of spruce/fir, lodgepole pine, and whitebark pine old growth forests. All build alternatives would affect old growth forest, ranging from 11 to 15 ha (27 to 37 ac.). All disturbances to old growth forest would be considered long term because of the time required for old growth forest to develop.

Land Use

The project area is located in and managed by the Shoshone National Forest. Recreation, wildlife habitat, and grazing are the primary land uses. No private land is found in the project area.

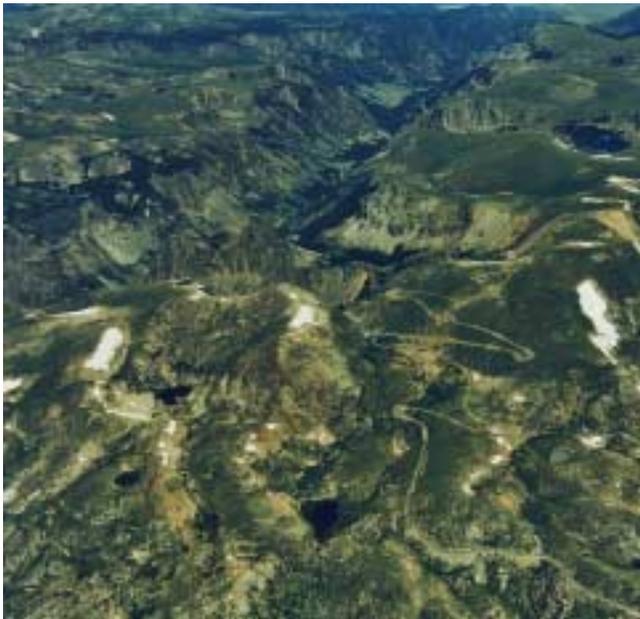
The No Action Alternative would not affect existing land uses along the road. In all build alternatives, construction activities along the road would temporarily disrupt recreation, grazing, and wildlife habitat. Some wildlife habitat would be lost permanently. All build alternatives would comply with the Shoshone National Forest Land and Resource Management Plan.

Visual Resources

The Wyoming portion of the road is a designated All-American Road and a U.S. Forest Service Scenic Byway, offering rare opportunities to view high mountain environments. Four distinct visual regions, montane forests, mountain meadows, subalpine forests, and alpine meadows, are present in the project area. Rock outcrops, lakes, and unobstructed views add to the visual interest. Generally, forested areas have the lowest scenic quality and visual sensitivity to disturbance, and alpine areas have the highest scenic quality and visual sensitivity. Short segments of the road are visible from area lakes, trails, and the Absaroka-Beartooth Wilderness. The Shoshone National

Forest's Visual Quality Objective for the area is Retention, meaning that activities must not be visually evident to the average observer traveling on the road.

The No Action Alternative would not affect the road's visual character. The build alternatives would have both long- and short-term effects on visual resources. During construction, visual quality would be adversely affected by dust, the presence of construction equipment, and nighttime lighting. All build alternatives would permanently alter the visual landscape because of a wider road and larger cuts and fills. Disturbed areas would be revegetated, but would have different lines, colors and textures than the adjacent landscape. Areas disturbed by the project would be confined primarily to areas immediately adjacent to the highway. The casual forest visitor would not be able to discern the effect of construction in the long term after revegetation is achieved. The highway is the primary viewing point and is considered neutral in assessing Visual Quality Objectives. The



The road offers a rare opportunity to view high alpine environments.

areas adjacent to the road would meet the Visual Quality Objective of Retention after construction.

Recreation Resources

Developed recreation sites along segment 4 include two campgrounds, picnic areas, trailheads with parking, a downhill ski racing camp, and the Top of the World Store. In addition to developed recreation sites, the project area is used for dispersed recreation, including hiking, horseback riding, fishing and hunting, camping, mountain biking, cross-county skiing, snowmobiling, snowshoeing, and use by off-road vehicles.

The No Action Alternative would not affect existing recreation opportunities along the road. During construction, activities such as traffic delays and construction noise may inconvenience bicyclists, hikers, and campground users near the road. Recreational use along the road may decrease during the 6-year construction period. Views of the road from lakes, trails and other sensitive viewing locations would be altered. The Fox Creek Campground would be closed to the public during the 6-year construction period and used to provide space for workers' recreational vehicles and trailers.

After construction, all build alternatives would enhance recreational opportunities. Alternative 2 would best accommodate recreation uses along the corridor, and would include wider shoulders, more and larger pullouts and parking areas, and the slowest design speeds. Alternatives 4 and 6 would accommodate all recreation uses, but to a lesser degree. Alternatives 3 and 5 would not accommodate recreation use west of Long Lake.

Socioeconomic Resources

The socioeconomic study area includes the project area, Cody and Park County, Wyoming; and Red

Lodge, Cooke City, Silver Gate, and Park and Carbon Counties, Montana. Red Lodge’s economy depends primarily on the business generated by tourism on the road, while the economies of Cooke City, Silver Gate and Cody are only partly dependent on road-related tourism.

In the No Action Alternative, economies in the project area would risk losing tourism because of the road’s continued deterioration. All build alternatives would have long- and short-term economic impacts. The population in Park and Carbon Counties would increase temporarily because of employment of about 80 seasonal construction workers. A workcamp at the Fox Creek Campground would provide a site for workers’ trailers. Local businesses providing lodging, meals, equipment, fuel, operating supplies and other consumer goods and services would benefit from increased expenditures associated with construction. In the short term, tourists traveling the road would experience delays and limited closures associated with construction. Business at the Top of the World Store may decrease. When combined with the proposed reconstruction of the segment near Cooke City, the proposed project would cause cumulative delays between Red Lodge and

Yellowstone National Park in 2004 and 2005. Some users of the road may choose an alternative route to avoid the successive delays.

Impacts would be mitigated by a public information program, which would include ads, signs, and brochures via radio, TV, and the Internet, to inform road users and local business owners about the construction schedule and progress. In the long term, the road would be significantly improved, which would provide a more enjoyable experience for the increasing number of tourists who travel the road each year.

Transportation

Three regional roads, U.S. 212, WY 296, and WY 120, provide access to the project area. The roads would be used to transport personnel, equipment and materials to the material sources sites, staging areas, workcamp and the work site. Currently, the three roads carry between 470 and 1,200 vehicles per day, and about 30 to 120 trucks.

Under the No Action Alternative, deteriorated road conditions would remain. The responsibility for maintenance would remain with the Department of the Interior. All build alternatives would improve the road surface, retaining walls, and bridges. Ease

Tourism associated with the road is important to the economies of Red Lodge and Cooke City, Montana.



Red Lodge, Montana



Cooke City, Montana

of maintenance would increase. The Wyoming Transportation Commission would consider assuming road ownership. In all build alternatives, operating speeds may increase in some locations by about 8 km/h (5 mph). Accident rates are expected to decrease by about 40 percent.

In all build alternatives, road construction would increase congestion and traffic delays during the construction season (April through October) of the 6-year construction period. Truck traffic is expected to increase by 10 to 20 truck trips per day on average during the construction period. During certain construction operations, truck traffic could increase to 80 to 100 truck trips per day. Workers traveling between the workcamp and the project area would increase traffic on U.S. 212 during the 6-year construction period.

In 2003, the Federal Highway Administration will begin reconstructing U.S. 212 from Yellowstone National Park to the Montana/Wyoming state line near Cooke City. Construction is expected to continue through 2005, possibly overlapping this proposed project's construction by 2 years. The two projects would cause cumulative delays between Red Lodge and Yellowstone National Park in 2004 and 2005. Travel times between Red Lodge and Yellowstone National Park in 2004 and 2005 may increase by 1 to 2 hours.

Water and Aquatic Resources

Four creeks drain the project area. The streams are generally perennial and most of the flow is from snowmelt runoff. All creeks are in the watershed of the Clarks Fork Yellowstone River. Along the road are numerous lakes, which formed in depressions created by glacial activity. Surface water quality in the project area is generally very high, and the major streams are classified as important trout waters with regional significance.

The No Action Alternative would not directly affect water and aquatic resources. Without construction, bridges and culverts may fail and some sections of the roadway would continue to be poorly drained. Potential impacts from all build alternatives on water and aquatic resources include sediment transport and atmospheric deposition of particulates into streams and lakes. Short-term increases in sediments and turbidity would not cause significant water quality degradation or loss of beneficial uses. Best Management Practices would be used to mitigate impacts associated with road and bridge construction, road widening, and realignments. Construction-related runoff and turbidity would decrease when construction is completed and revegetation becomes established.

Air Quality and Visibility

Existing air quality in the project area is excellent. Existing sources of emissions in the project area include vehicles (both automobile and snowmobile) and recreationists. Background particulate levels in the project area are very low. Dust from unpaved roads and wildfire activity are other sources of air pollution.

The No Action Alternative would not affect short-term existing air quality. All build alternatives would have similar short-term effects on air quality. During the 6-year construction period, construction activity, such as traffic, blasting, excavating, and loading, would increase dispersed dust and mobile exhaust emissions. Asphalt production would generate hydrocarbon emissions.

All alternatives, including the No Action Alternative, would have long-term effects on air quality. Increased emissions from increased traffic would occur, but applicable air quality standards would not be exceeded.

Soils, Geology, and Paleontology

The road is located on the Beartooth uplift, which consists of granite and metamorphic rock overlain in places by sedimentary rock. Soils in the project area typically are very rocky. In most parts of the project area, organic matter levels are high, and pH and fertility are low. Rock outcrops with limited soils are distributed throughout the project area. No paleontologic resources were identified.

The No Action Alternative would not affect soil, geologic, or paleontologic resources. Disturbance to soil resources from excavation, grading, and construction activities would be similar for all build alternatives. Some loss of soil material from wind and water erosion would occur during construction and until disturbed areas become revegetated. Best Management Practices would be implemented to control sediment and minimize soil erosion. Soils would be salvaged before disturbance and replaced on the cut and fill slopes after construction. Prompt revegetation of disturbed areas following construction would ensure long-term soil productivity.

Noise

Existing noise levels along the road are low. Sources of existing noise include vehicles using the road, human activity, streams, and wind. Noise from construction activity would not occur in the No Action Alternative. Increased traffic in all alternatives, including the No Action Alternative, would increase existing noise levels slightly. In all build alternatives, construction noise would be higher than existing noise levels at area campgrounds, at the Top of the World Store, and in adjacent wilderness and roadless areas. After the 6-year construction period, construction noise would cease.

Section 4(f) Properties

Section 4(f) properties are publicly owned parks, recreation areas, or wildlife and waterfowl refuges of national, state, or local significance, and historic resources eligible for listing on the National Register of Historic Places or are locally significant. Seven Section 4(f) properties are found along the road: the Beartooth Lake Campground, the Island Lake Campground, and the five resources determined to be eligible for listing on the National Register of Historic Places. The five historic resources are segment 4 of the road and the four bridges found in the project area.

The two campgrounds would not be affected in the No Action Alternative. Noise from construction would increase in the two campgrounds in all build alternatives. The increased noise would not substantially impair the use of the campgrounds and would not be a constructive use. In Alternatives 2, 5, and 6, the road would be about 100 m (330 ft.) closer to the Island Lake Campground than the existing road. The closer alignment in Alternatives 2, 5, and 6 would not substantially impair the use of the campground and would not be a constructive use.

The use of Fox Creek Campground as a workcamp would not be a Section 4(f) use because:

- Duration would be temporary and there would be no change in ownership of the land
- Scope of the work would be minor
- There would be no anticipated permanent adverse physical impacts, nor would there be interference with the activities or purpose of the resource, on either a temporary or permanent basis
- The land being used would be returned to a condition that would be at least as good as that which existed prior to the project

- There is documented agreement of the Shoshone National Forest with these conditions

In the short term, the No Action Alternative would not affect the five historic Section 4(f) properties. The long-term effects of a lack of maintenance of the properties in the No Action Alternative would lead to their deterioration, adversely affecting their integrity. The five historic properties would be adversely affected in all build alternatives. Except for avoiding one bridge in Alternative 2, no feasible and prudent alternatives to avoid adversely affecting the properties were identified. Measures to minimize harm to the properties would be implemented. A mitigation plan will be developed

in cooperation with the Shoshone National Forest, the Wyoming State Historic Preservation Office and interested Tribes.

Comparison of Alternatives

On the following pages, Table S-2 compares the effects of the alternatives relative to the major issues identified in Chapter 2. Summary statements in this table are abbreviated and taken out of context to provide a quick comparison by resource. The reader is encouraged to review the supporting analysis in Chapter 3 of the Environmental Impact Statement.

Table S-2. Comparison of the alternatives.

Resource	Alternative 1 No Action		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6 (Preferred)	
	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.
Estimated Construction Cost	\$0		\$45.7 million		\$44.4 million		\$50.8 million		\$47.6 million		\$48.3 million	
Disturbed Area Summary												
Total disturbed area	26	63	103	256	96	240	99	245	95	237	101	251
Existing disturbed area (road, etc.) w/in construction limits	0	0	25	62	26	64	25	62	23	57	25	62
New disturbed area	0	0	78	194	70	173	73	180	71	177	75	186
Abandoned road segments	0	0	6	14	4	9	6	14	7	16	7	18
New disturbed area is the area that would be disturbed that is not already disturbed by the road and material sources. In Alternative 2, 256 – 62 = 194 ac. of new disturbance. In Alternative 2, 14 ac. of existing road segments would be abandoned and subsequently reclaimed.												
Wetlands Impacts												
Jurisdictional wetlands	0.0	0.0	2.4	6.0	2.2	5.4	2.5	6.1	1.9	4.8	2.0	5.0
Non-jurisdictional wetlands	0.0	0.0	0.6	1.6	0.6	1.5	0.7	1.7	0.6	1.4	0.6	1.6
Fens	0.0	0.0	0.0	0.0	0.0	0.0	<0.1	<0.1	0.0	0.0	0.0	0.0
Total	0.0	0.0	3.0	7.6	2.8	6.9	3.2	7.8	2.5	6.2	2.6	6.6
Probable Wetland Mitigation												
High Priority Sites	0.0	0.0	1.4	3.4	0.3	0.7	0.3	0.6	1.4	3.6	1.3	3.2
Low Priority Sites	0.0	0.0	0.6	1.5	0.6	1.4	0.6	1.5	0.6	1.6	0.6	1.6
Total	0.0	0.0	2.0	4.9	0.9	2.1	0.9	2.1	2.0	5.2	1.9	4.8

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6 (Preferred)	
	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.
Vegetation, Timber, Old Growth Forest												
<i>Vegetation communities temporarily disturbed by road construction</i>												
Alpine meadow	0	0	28	68	26	63	26	66	24	60	27	66
Mountain meadow	0	0	15	38	13	34	15	37	16	40	17	43
Wet meadow	0	0	4	10	4	9	4	10	3	8	3	8
Forest	0	0	15	38	12	29	13	31	13	31	14	34
Shrub grassland	0	0	11	28	11	28	11	28	11	28	11	28
Rock outcrop/talus	0	0	4	10	4	9	4	10	4	9	4	10
Total	0	0	78	194	70	173	73	180	71	177	75	186
<i>Vegetation communities permanently affected by paved surfaces</i>												
Alpine meadow	0	0	8	20	7	18	8	22	7	18	7	17
Mountain meadow	0	0	4	9	3	6	3	8	4	9	4	11
Wet meadow	0	0	2	4	2	4	2	4	1	3	2	4
Forest	0	0	3	8	2	6	3	7	3	7	3	7
Shrub grassland	0	0	0	0	0	0	0	0	0	0	0	0
Rock outcrop/talus	0	0	1	4	1	3	2	4	1	3	1	3
Total Impact	0	0	18	45	15	37	18	45	16	40	17	42
<i>Rare plants affected by paved surfaces or vegetation clearing</i>												
U.S. Forest Service sensitive species	0.0	0.0	5.0	12.3	3.4	8.5	3.8	9.5	4.3	10.6	4.5	11.1
Wyoming species of concern or watch list species	0.0	0.0	1.3	2.9	0.9	2.6	2.1	4.9	0.9	2.6	1.1	2.8
<i>Old growth forest affected by paved surfaces or vegetation clearing</i>												
Old growth forest	0	0	15	37	11	27	12	30	12	30	13	32

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action		Alternative 2		Alternative 3		Alternative 4		Alternative 5		Alternative 6 (Preferred)	
	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.	ha	ac.
Wildlife												
<i>Whitebark pine habitat lost affected by paved surfaces or forest clearing</i>												
Total	0	0	7	18	5	12	5	13	5	13	6	14
Permanent grizzly bear habitat lost from road pavement												
Total (by season is below)	0	0	10	24	7	17	8	20	8	20	8	20
<i>Spring Season (March 1 to May 15)</i>												
Low	0	0	10	23	7	16	7	19	8	00	9	22
Medium	0	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
High	0	0	0	0	0	0	0	0	0	0	0	0
<i>Estrus (May 16 to July 15)</i>												
Low	0	0	8	20	7	14	6	17	7	17	8	19
Medium	0	0	2	4	1	3	2	3	1	3	1	3
High	0	0	0	0	0	0	0	0	0	0	0	0
<i>Early Hyperphagia (July 16 to August 31)</i>												
Low	0	0	8	20	6	13	6	16	6	16	7	18
Medium	0	0	2	4	2	4	2	4	2	4	2	4
High	0	0	0	0	0	0	0	0	0	0	0	0
<i>Late Hyperphagia (September 1 to November 30)</i>												
Low	0	0	5	12	4	9	4	10	4	12	5	12
Medium	0	0	3	6	2	4	2	5	3	5	3	7
High	0	0	2	4	1	4	2	4	2	4	2	4

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred)
Cultural Resources						
Length of new alignment outside areas of existing alignment in the five realignment areas						
	m ft.	m ft.	m ft.	m ft.	m ft.	m ft.
Total	0 0	4,371 14,340	1,705 5,594	3,077 10,096	5,150 16,897	4,587 15,048
Total centerline length	0 0	30,014 98,472	29,928 98,189	28,899 94,813	29,430 96,557	29,972 98,333
Other Cultural Resource Effects	Long-term deterioration and degradation of the road, bridges and culverts could cause a loss of function and integrity, adversely affecting five resources.	All build alternatives would alter the footprint and location of the roadway, and, except for Alternative 2, would remove four historic bridges and three culvert headwalls, adversely affecting the resources. One bridge would not be removed in Alternative 2. Although the bridges and culvert headwalls would be reconstructed using salvaged historic materials or using similar materials from the project area, such work would adversely affect them. The characteristics of setting, feeling, association, and location of the road would be preserved in all build alternatives.				
Socioeconomics	Economies in the project area would risk losing tourism because of the road's continued deterioration.	<p>The population in Park County, Wyoming and Carbon County, Montana would increase temporarily because of employment of about 80 seasonal construction workers.</p> <p>Local businesses providing lodging, meals, equipment, fuel, operating supplies, and other consumer goods and services would benefit from increased expenditures by construction workers.</p> <p>Traffic delays associated with construction activities on the road would adversely affect regional tourism in the short term.</p> <p>In the long term, the road would be significantly improved, which would increase a driver's sense of safety for the increasing numbers of tourists who travel the road each year.</p>				
Land Use	No effect.	Construction activities along the road would temporarily disrupt recreation, grazing, and wildlife habitat. Some grazing lands and wildlife habitat would be lost permanently. All build alternatives would comply with the Shoshone National Forest Land and Resource Management Plan.				
Soils, Geology, and Paleontology	No effect.	<p>All build alternatives would require rock blasting and larger cuts and fills, affecting the area's topography.</p> <p>Soil losses would be higher from wind and water erosion, particularly during construction. Erosion rates would decrease as vegetation on slopes would become established.</p> <p>Soil productivity would be lower on reclaimed areas than adjacent areas.</p>				

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred)
Air Quality	No direct effect. Increased traffic would increase vehicular emissions.	During the 6-year construction period, construction activity such as traffic, blasting, excavating, and loading, would increase dispersed dust and mobile exhaust emissions. Asphalt production would generate hydrocarbon emissions. Applicable air quality standards would not be exceeded. Long term, increased traffic would increase vehicular emissions, but would not exceed applicable air quality standards.				
Transportation	Inadequate road conditions would remain. Responsibility for maintenance would remain with the Department of the Interior.	All build alternatives would improve to the road surface, retaining walls, and bridges. Ease of maintenance would increase. The Wyoming Transportation Commission would consider assuming road ownership. In all build alternatives, road construction would increase congestion and traffic delays during the construction season (April through October) of the 6-year construction period. Truck traffic could increase up to 80 to 100 truck trips per day during peak construction periods. In all build alternatives, operating speeds may increase in some locations by about 8 km/h (5 mph). Accident rates are expected to decrease by about 40 percent.				
Water and Aquatic Resources	No direct effect on water and aquatic resources. Some bridges and culverts may fail.	Potential impacts from all build alternatives on water and aquatic resources include sediment transport and atmospheric deposition of particulates into streams and lakes. Short-term increases in sediments and turbidity would not result in significant water quality degradation or loss of beneficial uses.				
Visual Resources						
% of segments with high scenic quality	57	60	57	62	61	64
% of segments with high landscape sensitivity	28	28	27	24	26	24
% of segments with high external visibility	8	16	16	15	16	16
General Effects	No effect on the visual character of the road.	During construction, visual quality would be adversely affected by dust, the presence of construction equipment, and nighttime lighting. All build alternatives would permanently alter the visual landscape because of the wider road and larger cuts and fills. Disturbed areas would be revegetated, but would have different lines, colors and textures than the adjacent landscape.				

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred)
Recreation						
General Effects	No effect on existing recreation opportunities available along the Beartooth Highway.	<p>During construction of all build alternatives, activities such as temporary road closures and noise from construction equipment along the road may inconvenience recreationists such as bicyclists, hikers, and campers near the road.</p> <p>Alternative 2 would best accommodate recreation uses along the corridor, and would include wider shoulders, more and larger pullouts and parking areas, and the slowest design speeds. Alternatives 4 and 6 would accommodate all recreation uses, but to a lesser degree. Alternatives 3 and 5 would not accommodate recreation use west of Long Lake.</p> <p>Reconstruction of U.S. 212 from Yellowstone National Park to the Montana/Wyoming state line near Cooke City combined with the proposed project may displace recreation use along U.S. 212 in 2004 and 2005.</p>				
Shoulder width in m/ft. (wider better accommodates bicyclists and pedestrians)	0 0	1.2 4	0.6 2	1.2 4	0.6 2	1.2 m (4 ft.) west of Long Lake and 0.6 m (2 ft.) east of Long Lake
Number of pullouts	114	79	37	63	32	67
Noise						
General Effects	Slight increase in traffic noise over the long term.	<p>In all build alternatives, construction noise would be higher than existing noise levels at area campgrounds, at the Top of the World Store, and in adjacent wilderness and roadless areas. After the 6-year construction period, construction noise would cease. Slight increase in traffic noise over the long term.</p>				

Table S-2. Comparison of alternatives (continued).

Resource	Alternative 1 No Action	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred)
Section 4(f)						
General Effects	<p>No effect on campgrounds.</p> <p>Long-term deterioration and degradation of the road, bridges and culverts could result in a loss of function and integrity, adversely affecting five resources.</p>	<p>Noise from construction would increase in the two campgrounds in all build alternatives. The increased noise would not substantially impair the use of the campgrounds and would not be a constructive use. In Alternatives 2, 5, and 6, the road would be about 100 m (330 ft.) closer to the Island Lake Campground than the existing road. The closer alignment in Alternatives 2, 5, and 6 would not substantially impair the use of the campground and would not be a constructive use.</p> <p>The five historic properties would be adversely affected in all build alternatives. Except for avoiding one bridge in Alternative 2, no feasible and prudent alternatives to avoid adversely affecting the properties were identified. Measures to minimize harm to the properties would be implemented.</p> <p>Fox Creek Campground, located 11 km (7 mi.) southeast of Cooke City, is the preferred workcamp location in all build alternatives. The use of this campground as a workcamp would not be a Section 4(f) use.</p>				

Chapter 1. Purpose and Need

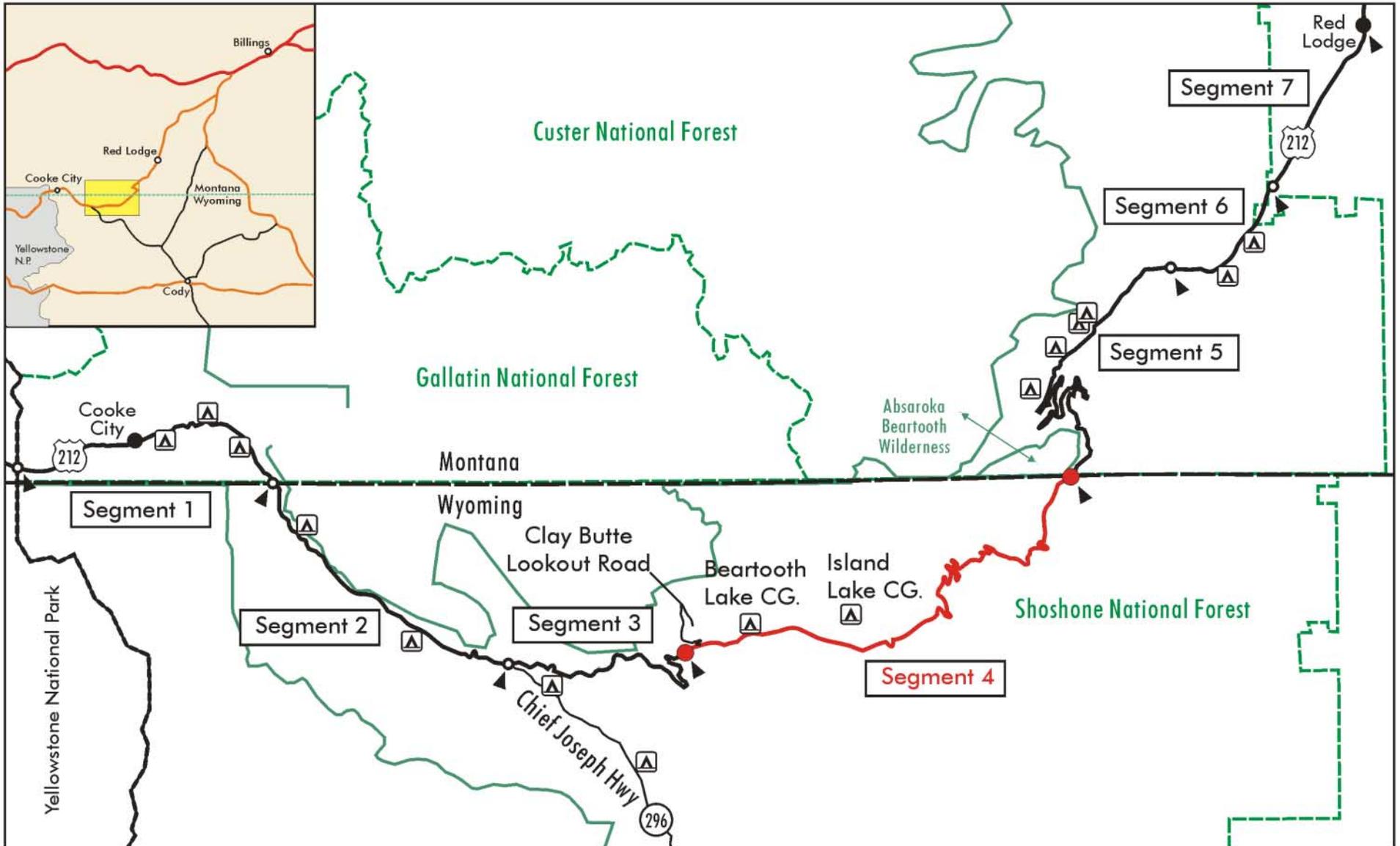
THIS Draft Environmental Impact Statement (EIS) for the Beartooth Highway Reconstruction Project documents an analysis of the potential environmental consequences of a proposed road reconstruction project. In addition to the No Action Alternative, five build alternatives have been developed and analyzed (see Chapter 2). The Federal Highway Administration (FHWA) is the lead agency for the project and is responsible for project development, environmental evaluation, preparation of this EIS and a Record of Decision, and construction contract management.

The analysis in this EIS complies with the provisions of the National Environmental Policy Act (NEPA). Based on a review of the proposed project, the FHWA determined that the project may likely “significantly affect the quality of the human environment” and, therefore, an EIS should be prepared. This EIS also has been prepared in compliance with FHWA’s Environmental Impact and Related Procedures (23 CFR 771), the Forest Service Environmental Policy and Procedures Handbook (Forest Service Handbook, 1909.15),

and the U.S. Army Corps of Engineers’ NEPA implementation procedures for its regulatory program (Appendix B of 33 CFR 325).

1.1 THE PROPOSED PROJECT

Under the proposed action, the FHWA, in cooperation with the U.S. Forest Service (USFS) and the National Park Service (NPS), proposes to reconstruct a 30-km (18-mi.) portion of U.S. 212 in Park County, Wyoming. The proposed project would begin at kilometer post (KP) 39.5, just west of the Clay Butte Lookout turnoff, traverse east over Beartooth Pass, and end at the Montana/Wyoming state line at KP 69.4 (Figure 1). Reconstruction would be along the existing road corridor with an improved alignment, grade, and width to standards of the Wyoming Department of Transportation (WYDOT), as required by FHWA’s regulations (23 CFR 625). These regulations require that federally funded roads not on the National Highway System, such as the Beartooth Highway (U.S. 212), be designed, constructed, and maintained to WYDOT standards.



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- Segment 4 of the Beartooth Highway
- Project Start and End
- Other segments of the Beartooth Highway
- Forest Boundary
- ▲ Existing Forest Service campground

Source: 1:100,000 BLM topographic maps

1 Inch = 4 Miles

Figure 1
 Project Location

521-PROJECT location 4-02.cdr

In 1994, the FHWA evaluated the condition and repair needs of the Beartooth Highway from Red Lodge to Yellowstone National Park (YNP) (FHWA 1994). The road was divided into seven segments for study purposes. The segment between KP 39.5, just west of the Clay Butte Lookout turnoff and the Montana/Wyoming state line at KP 69.4 was designated as segment 4. This EIS addresses segment 4, the segment proposed for reconstruction. KP 39.5 and KP 69.4 are logical ends or termini for the project because the Beartooth Highway has been reconstructed up to both ends of the proposed project. Construction would begin in 2004 and last 6 years, if a build alternative is approved and selected in the Record of Decision in early 2003.

The project would include:

- Widening the road to accommodate current and projected vehicular use and necessary maintenance activities
- Installing adequate drainage structures
- Installing sub-surface drainage features and subgrade stabilization measures
- Removing existing historic bridges where necessary and building new bridges
- Constructing a new road surface composed of crushed aggregate base and asphalt concrete pavement
- Improving parking areas and pullouts adjacent to the road
- Upgrading signs, striping, guardrails, and other safety-related features
- Implementing environmental commitments to reduce or mitigate environmental impacts

The road would be reconstructed generally along the existing corridor. For the most part, the alignment of the reconstructed road would incorporate the footprint of the existing road. The new road would be wide enough to accommodate current and

projected vehicular use, and necessary maintenance activities. Several sections may be realigned to minimize environmental effects, or to enhance safety. Major intersections, such as campground turnoffs, would be upgraded to improve sight distance where needed. The reconstructed road surface would have a design life of 20 years, and structural elements, such as retaining walls and bridges, would have a design life of 75 years. The project also would include:

- Developing material sources to be used in the reconstruction and possible future maintenance
- Using National Forest lands for storing materials and staging equipment (called staging areas)
- Using roads outside the project area for transporting materials
- Using National Forest lands for work crew accommodations and offices near the project site

Purpose

The three reasons to reconstruct segment 4 are to:

- Maintain an efficient transportation link between Red Lodge, Montana and Yellowstone National Park that safely accommodates projected traffic in 2025
- Provide a roadway that could be reasonably maintained by a maintaining agency
- Support management of National Forest lands adjacent to the road, including maintaining the Scenic Byway/All-American Road intrinsic qualities

Needs Associated With Accommodating Projected Traffic

Since segment 4 was constructed in the 1930s, the type and amount of traffic on the road has changed substantially. It does not safely accommodate

current vehicle types, such as recreational vehicles or trucks with trailers. Projected future traffic volumes will exacerbate the current situation. The 1994, the FHWA concluded:

“Segment 4 clearly has the worst conditions of any portion of the route. The narrow width of the road is a major deficiency, but the conditions of the surface, inadequate subsurface drainage, lack of adequate roadside ditches and culverts, substandard signing and guardrail, lack of defined roadside pullouts, lack of snow storage area, and increasing bicycle use all indicate that serious consideration should be given to upgrading the road.” (FHWA 1994)

Reconstruction would address seven primary deteriorating or deficient elements that contribute to safety concerns of the existing road:

- Roadway surface
- Road vertical and horizontal alignment
- Travel lane width
- Shoulder width
- Drainage facilities
- Pullouts and parking areas
- Bridges

Roadway Surface

The FHWA analyzed the pavement condition in 1994 (FHWA 1994). The road had a Pavement Condition Index of 40 in an index that ranges from a low of 0 to a high of 100. A Pavement Condition Index of 40 indicates the pavement was in need of major reconstruction.

A pavement preservation project that the FHWA completed in 2000 temporarily repaired the roadway surface. The project was designed to provide a driveable surface for about 5 to 10 years while the environmental review process for the



The narrow travel lanes cause the edge of the pavement to break apart.

reconstruction project progressed. Because of the resurfacing, some of the deficiencies in the roadway structure may not be readily apparent. For example, subsurface moisture and inadequate drainage have caused the pavement to crack and break-up in many locations. Many of these cracks were filled during the 1999-2000 pavement preservation project, but the underlying conditions that caused the cracks have not been corrected. Consequently, a distressed roadway surface will develop again under current and future traffic volumes, and maintenance costs will increase. Permanent repair and adequate structural capacity can only be accomplished by reconstruction of the roadbed and the entire base and pavement structure.

Due to the road’s narrow width, traffic driving on the edges of the road has caused the pavement edges to ravel (break away from the road). The resurfacing project did not widen the road or add shoulders. Consequently, future traffic will continue to cause the road to ravel.

Road Vertical and Horizontal Alignment

The current alignment and gradient of the road is irregular and has numerous sharp curves and abrupt transitions, with sudden dips and crests. For exam-

ple, the series of eight curves east of Frozen Lake (KP 53.4 to 54.6) has six different curve radii, ranging from 55 m (180 ft.) to 200 m (660 ft.). The inconsistent curve radii cause sudden reductions in speed and do not conform to driver expectations, which can adversely affect vehicle operation and safety. The superelevation (the cross-slope or bank of the road on curves) is excessive in many areas and insufficient in others, causing vehicles to veer into the oncoming lane or off the roadway. The sharp curves and sudden dips and crests restrict the sight distance and cause unsafe driving conditions. As traffic volumes increase, the alignment deficiencies will become more prominent, increasing the potential for erratic vehicular maneuvers and accidents. The alignment deficiencies can only be corrected through reconstruction of the road with a consistent alignment.

Travel Lane Width

Segment 4 currently consists of two 2.75-m (9-ft.) wide travel lanes for a total width of about 5.5 m (18 ft.). In most locations, there is little or no shoulder. About 5 percent of the vehicles (projected 100 vehicles per day in 2025) that use the road are over 6.1 m (20 ft.) long. Vehicles of this length typically are 2.6 m (8.5 ft.) wide without mirrors, and 3.2 m (10.5 ft.) wide with mirrors. The current roadway width does not accommodate these vehicles without encroachment into the oncoming lane or leaving the pavement, particularly on curves. The substandard alignment, coupled with the narrow travel lanes, makes this problem particularly hazardous at restricted sight distance curves. Vehicles leaving the pavement because of the narrow travel lane width contribute to the pavement edge raveling. Future traffic volumes will exacerbate the width deficiencies. A wider road can only be achieved through reconstruction.

Shoulder Width

The roadway's lack of shoulders is a deficiency that restricts pedestrian and bicyclist use. In most locations, cyclists cannot use the road without causing vehicles to cross over into the adjacent, oncoming travel lane to avoid hitting the cyclists. Because of the road's narrow width, bicycle use of the road is limited and pedestrian use is unsafe in many locations. The FHWA and the Shoshone National Forest (SNF) anticipate the number of cyclists and pedestrians using the road would increase if the road had shoulders to accommodate such use.

At a minimum width of 0.6 m (2 ft.), shoulders provide protection of the travel lane pavement. On roads without shoulders, the edge of the pavement is prone to breaking off when vehicles travel outside the travel lane. Shoulders reduce maintenance by preserving the travel lane pavement. The lack of shoulders would be addressed by reconstructing the road with shoulders of an adequate width.

The lack of shoulders also is a safety concern for vehicular use. When shoulders are an adequate width, they provide a space to escape potential



The narrow travel lanes, lack of shoulders, and substandard guardrails present a safety hazard to motorists, pedestrians, and bicyclists.



The existing road does not accommodate bicyclists.

accidents or reduce their severity. Shoulders also provide a location for stopped vehicles, enforcement, or those involved in accidents or mishaps. As the *Needs Associated with Maintenance* section discusses, the road's narrow width and lack of shoulders does not provide room for snow removal or storage.

Drainage Facilities

Existing drainage facilities, such as ditches and culverts, throughout segment 4 provide inadequate drainage. Snow drifts in the segment typically average from 3.7 to 6.1 m (12 to 20 ft.), and up to 11 m (36 ft.) in some locations. Much of the runoff from melting snow occurs over a 4- to 6-week period in June and July. During runoff periods, the narrow ditches and undersized culverts cannot convey the volume of runoff water, resulting in water flowing over the road. Consequently, ice can develop during cold spells after the road opens in June. Many locations along the road have poorly drained ditches and subgrades. Water seeps underneath the road, saturating and weakening the subgrade.

The road's vertical alignment is the same as when it was built in the 1930s, and is too low to provide adequate drainage and protection from moisture

and freezing and thawing. As a result, the road's subgrade and base have failed, leading to pavement cracking and deterioration. For example, the road is constructed in wetlands in the vicinity of Top of the World Store. Before the 1999-2000 pavement preservation project, the pavement had failed because the road is too low and the pavement is subjected to freezing and thawing of subsurface moisture (FHWA 1994). Along the current alignment, the grade of the road in the vicinity of Top of the World Store needs to be raised up to 1 m (3 ft.) to elevate it above the wet conditions and improve drainage and structural capacity. If not corrected, poor drainage will continue to affect the roadway surface and drainage-related maintenance costs will increase. Only reconstructing the road could improve all the drainage facilities and the road's vertical alignment.

Pullouts and Parking Areas

Most existing pullouts and parking areas are unpaved, undersized, poorly located, and cause traffic or safety problems. There are numerous locations along the road where poorly located pullouts endanger pedestrians and traveling vehicles (MK Centennial Engineering, Inc. 1998). For example, near Beartooth Falls, several pullouts



Many pullouts are unpaved, undersized or poorly located.

are located before and after the Falls, with one inadequately sized turnout that provides actual views of the Falls. As a consequence, vehicles stop in the roadway to view the Falls. Other locations where pullouts and parking areas lead to pedestrian-vehicular conflict are near Beartooth Lake, the switchbacks on the West Summit, and the switchbacks on the East Summit. The conflicts will increase with future increased traffic volumes. Reconstructing the road would provide the opportunity to enhance the visitor's experience and safety by properly locating and sizing pullouts and parking areas.

Bridges

The four bridges within the proposed project are too narrow for vehicle types that currently use the road, and do not provide adequate load carrying capacity. The Little Bear Outlet bridge is 6.8 m (22.2 ft.), the two bridges over Little Bear Creek are 6.2 m (20.2 ft.) wide, and the Long Lake outlet bridge, the widest bridge, is 6.9 m (22.6 ft.) wide (FHWA 1999). Two large recreational vehicles cannot pass each other on the bridges, and two full-size vehicles, such as two pickup trucks, can barely pass each other.

None of the bridges meet current acceptable safety standards. The bridge railing and guardrails are inadequate. The structural conditions of the bridges vary, with the Little Bear Creek bridge #1 (the western-most Little Bear Creek bridge, west of Top of the World Store) having a fair to poor condition rating, and the Beartooth Lake bridge having a good condition rating. The FHWA estimated the useful life of all bridges under current load limits and without major repairs to be 15 to 20 years (FHWA 1999).

The Little Bear Creek bridge #1 is not wide enough to handle the high runoff flows of the creek because of ice blockage. Often when the road first



The four bridges are too narrow and do not meet current safety standards.

opens in May, water flows across the road and freezes, creating ice up to 15 cm (6 in.) thick. Ice has caused the abutment wing wall of this bridge to fail completely. The bridges are not capable of handling current or projected traffic volumes and types. The bridges require reconstruction to safely accommodate future traffic volumes and to meet current design standards.

Needs Associated with Maintenance

Because no agency has assumed ownership of the Wyoming segments of the Beartooth Highway, including segment 4, and maintenance funding has been inconsistent, maintenance of the Beartooth Highway has been a significant issue for several decades. In its deteriorated condition, segment 4 has high maintenance requirements.

Lack of Jurisdiction

The Beartooth Highway was built as an approach road from Red Lodge, Montana to YNP under the National Park Approaches Act of 1931. (All legislation and other references in this section are in Appendix A). Under the Act, the approach roads had to cross lands of 90 percent Government ownership and had to be a part of or tributary to a Federal Aid Primary road system.

The National Park Approaches Act allowed the Secretary of the Interior to:

“...construct, reconstruct, and improve national-park approach roads so designated, inclusive of necessary bridges, and to enter into agreements for the maintenance thereof by State or county authorities, or to maintain them when otherwise necessary...” (Public Law 592, Ch. 79, 46 Statute 1053, 1931)

In 1932, an Executive Order withdrew a 75-m (250-ft.) wide corridor on either side of segment 4 from settlement, sale, mineral entry or other disposal, and reserved the lands as an approach road to YNP. No federal or state agency claims ownership of the road. Ownership of the land adjacent to segment 4 remains with the Federal Government, and the SNF manages the National Forest land adjacent to the road.

Since the road was built, the Secretary of the Interior has been unable to interest either Montana or Wyoming in a maintenance agreement for the portion of the road from YNP to the Montana/Wyoming state line at KP 69.4. The State of Montana has maintained the section from Red Lodge to Rock Creek since it was built. (Rock Creek is in Montana about 13.8 km [8.6 mi.] south of Red Lodge). Before 1945, the Bureau of Public Roads, FHWA’s predecessor, maintained the road to Rock Creek with funding from the NPS. After 1945, the NPS maintained the road from YNP to Rock Creek. In 1965, the Montana Department of Transportation began maintaining the segment between the Montana/Wyoming state line at KP 69.4 and Rock Creek.

In its current condition, segment 4 is very difficult to maintain. Consequently, neither Montana nor Wyoming has assumed ownership of the road. Neither state has put the portion of the road from YNP to the Montana/Wyoming state line on its

State Transportation Plan. When a road is on a State Transportation Plan, the state assumes responsibility for the road’s jurisdiction and maintenance. If the Wyoming portion of the Beartooth Highway was on Wyoming’s State Transportation Plan, it would be maintained in a similar manner as other area roads, such as WY 296 or WY 120.

The NPS has maintained segment 4 historically. In light of the current road condition, road maintenance costs are high. Under 16 USC Section 17j-2(a), appropriations for the NPS are authorized for “maintenance of the roads in the national forests leading out of Yellowstone National Park.” Although Congress is authorized to appropriate funds for maintenance, the NPS is not allocated funding for maintenance. Because the NPS is not allocated regular funding for snowplowing or maintenance, the road occasionally is not adequately snowplowed or maintained. For example, in the mid-1990s, the NPS did not open the road by Memorial Day because of a lack of funding. In the 1998 Department of the Interior and Related Agencies Appropriation Act, the USFS was given the responsibility and funding for snowplowing of the Beartooth Highway from KP 0 in YNP, into and through Wyoming, to KP 69.4 on the Wyoming/Montana state line. The USFS contracts with the NPS to meet this required snowplowing responsibility. The USFS also provided funding to the FHWA for the 1999-2000 pavement preservation project. While the USFS was provided funding for these recent activities, it is not prepared to assume long-term maintenance responsibility because of insufficient funding, personnel, and equipment to plow and maintain a paved highway.

In 1997, a Steering Committee was established to provide oversight of funding, maintenance, and

ownership issues of the Beartooth Highway. Steering Committee members consist of representatives from FHWA, NPS, USFS, WYDOT, and the Montana Department of Transportation. In 1999, the Steering Committee established long-term goals concerning ownership and responsibility for the improved roadway (see letter to Representative Rick Hill, Appendix A). The target date for achieving the goals is 2008, when the entire Beartooth Highway is expected to be reconstructed to appropriate standards and all ownership and responsibility issues resolved. The Steering Committee identified these long-term goals:

State Ownership: The Steering Committee's first preference is that the States of Wyoming and Montana will accept shared ownership and responsibility for the Beartooth Highway in the following manner:

- Segments 2, 3, 4 would be owned and maintained by the State of Wyoming.
- Segments 1, 5, 6, 7 would be owned and maintained by the State of Montana (Segments 5, 6, and 7 are currently maintained by the State of Montana).

Federal Ownership: If Wyoming and Montana do not agree to assume responsibility for the highway, then legislation should be considered to determine federal ownership, responsibility and funding. The NPS has the workforce but not the funds and the USFS has neither the funds nor the workforce to properly maintain the pavement and structures. In the meantime, the NPS would be left with the status quo, a band-aid approach to maintenance and operation, sacrificing funds needed for work in YNP.

The Wyoming Transportation Commission has discussed ownership of the Wyoming portion of the Beartooth Highway on several occasions. In

October 1998, the Commission passed the following motion:

“When the entire section within Wyoming is reconstructed to current standards, Wyoming will **consider** assuming ownership of U.S. 212 in northwestern Wyoming. Because of the time frame required to accomplish the reconstruction, Wyoming will not make a definite commitment that encumbers future transportation commissions and could possibly encumber a different Governor.” (Meeting minutes, Transportation Commission of Wyoming, October 14, 1998) [bolded emphasis in original].

If the State of Wyoming does not agree to accept jurisdiction and maintenance responsibility after reconstruction, the maintenance responsibility will remain with the Department of the Interior. A goal of the proposed reconstruction is to provide a roadway with design features compatible with current maintenance equipment and techniques, affording safe and efficient maintenance practices.

Continued Maintenance Requirements

The road's poor drainage and grade adversely affect the pavement condition, resulting in a continuing maintenance requirement. The raveling caused by vehicles driving on the road's edge adversely affects the travel lane pavement and increases maintenance requirements. The FHWA completed a 3R project (resurface, restore, and rehabilitate) on segment 4 in 1968 and a pavement preservation project in 2000. Although both projects temporarily restored the pavement, the drainage problems and travel lane width were not addressed. In contrast to segment 4, segment 3, which is west of the Clay Butte Lookout turnoff to the intersection of WY 296, was reconstructed between 1968 and 1977. In 1994, this segment had a Pavement Condition Index of 97 to 100, while segment 4 had a Pavement Condition Index of 40.

Until the road is reconstructed, the pavement will continue to deteriorate, and will require pavement repairs to maintain a driveable surface.

Snowplowing Difficulties

Snowplowing the road in its present condition is difficult. After the road is initially plowed open in late May, snowplowing operations continue through June due to frequent blowing and drifting conditions. Some snowplowing can occur every month of the year that the road is open. The road occasionally is closed for short periods when it becomes impassable due to severe drifting snow conditions. Currently, the road's edge is marked with tall, wooden-pole delineators, which break frequently or become buried with snow. When the wooden poles break or are buried under snow and are not visible, snowplow operators risk driving off the road due to the road's narrow width. Also the existing travel lanes are 0.6 m (2 ft.) narrower than standard snowplow blades, which makes it difficult and unsafe to plow the road. The road's narrow ditch width and lack of shoulders limit locations where plowed snow can be stored. Frequently in the spring and fall, snow stored in the narrow ditches melts at the pavement edge and causes substantial gullies along the pavement edge, further undermining and raveling the pavement. A reconstructed road would accommodate snowplowing equipment, and provide locations for snow storage.

Needs Associated With Land Management Goals

Segment 4 of the Beartooth Highway traverses National Forest lands managed by the SNF. The SNF's Land and Resource Management Plan (also called the Forest Plan) established a forest-wide goal of managing activities along travel routes to maintain and enhance recreation and scenic values (SNF 1986). The Plan also established

Management Areas. The Beartooth Highway corridor is in a Management Area that emphasizes rural and roaded natural recreation opportunities. Motorized and non-motorized recreation activities such as driving for pleasure, viewing scenery, picnicking, fishing, camping, hiking, snowmobiling, and cross-country skiing are emphasized.

Although the entire road corridor is in the same Management Area, the SNF manages segment 4 for two distinct types of road use. Many travelers come to the Beartooth Highway to experience the drive and continue on to destination communities or YNP. Other travelers come to the Beartooth Plateau as a recreation destination and either stay overnight or engage in day use of the area, with short trips to and from local roadside and off-road destinations. Winter use, from October through early June, is concentrated primarily on groomed snowmobile routes between Top of the World Store and Long Lake.

The SNF manages the segment west of Long Lake for more intensive recreational activity, including pedestrian and bicycle use. All of the developed recreation sites along the road are found west of Long Lake. The two campgrounds along segment 4, Beartooth Lake and Island Lake, are popular camping locations and provide access to area lakes. Wilderness trails originate at both campgrounds. Because of their proximity to the road, Beartooth Lake and Long Lake are frequent stopping spots for tourists. Top of the World Store, the only location offering supplies, is between Island Lake and Beartooth Lake. Several jeep trails, such as the Morrison Jeep trail and the Sawtooth Lake trail, originate between Long Lake and Island Lake. The road provides motorized and non-motorized access to the wilderness and jeep trails.

In the western segment, travelers are more likely to park along the road shoulder, use bicycles,



The SNF manages the corridor for rural and roaded natural recreational opportunities. More camping and bicycle use occurs west of Long Lake than in the alpine areas.

motorcycles and all-terrain vehicles in family groups, and engage in roadside viewing and related activities. These activities involve frequent stops, slow-moving motorized and non-motorized vehicles and a variety of user ages. A shoulder 1.2-m (4-ft.) or wider is needed to accommodate these uses safely in combination with through traffic use of the roadway.

Winter recreational use also is important because the highway from Cooke City to Long Lake is a popular snowmobile destination. Low snow years and the “shoulder” seasons (early June and early October) of snowmobiling cause a mix of snow craft and full-size vehicles on portions of the road. A wider shoulder width would address the potential safety hazards of this vehicle mix.

East of Long Lake, the road enters the alpine zone where the dominant recreational activity is scenic driving and viewing. No campgrounds are present east of Long Lake, and the Forest Plan either prohibits or discourages off-road motorized activity.

The incidence of family group activities, bicycles and road-side stops, and other day-use activities diminishes significantly east of Long Lake (SNF 2001a). The steep terrain, lack of trees for shelter,

steep road grade, lack of camping facilities and frequent, severe weather at all times of the year limit road use primarily to driving and viewing. The SNF management goal is to discourage over-snow recreation east of Long Lake due to frequent hazardous weather events. Because of the more limited roadside activities in the eastern portion of the project, there is less need for a wider shoulder.

The designation of the Wyoming portion of the road as an All-American Road under FHWA’s Scenic Byway Program indicates the road has one-of-a-kind features that do not exist elsewhere. The All-American Road segment in Wyoming has two intrinsic qualities of national significance—natural and scenic. As an All-American Road, it provides an exceptional traveling experience so recognized by travelers that they would make a drive along the highway a primary reason for their trip. A Corridor Management Plan has been prepared for the All-American Road segment of the road (Beartooth All-American Road Steering Committee 2002). The plan describes management and protection strategies, and provides recommendations for interpretation. The road corridor offers natural resources and scenic quality of national significance.

Throughout the corridor, informal pullouts have developed along the road. At numerous locations, poorly located pullouts endanger pedestrians and traveling vehicles, reducing the recreational benefits of driving for pleasure and viewing scenery. In some locations, visitor use away from the pullouts, such as near wetlands and fens or near lakes, has led to environmental degradation. A goal of the reconstruction is to support SNF’s management of the corridor with better-designed and located pullouts.

Previous sections discussed the road’s deficiencies in width, pavement condition, drainage facilities,



Segment 4 is a designated All-American Road under the Scenic Byway Program.

and poor maintainability. Reconstructing the road would improve its deteriorating condition, safely accommodate current and projected recreational use, allow the SNF to continue to manage activities along the road, and enhance recreation and scenic values in accordance with the Forest Plan.

1.2 LOCATION AND HISTORY

Location

The Beartooth Highway is a 108-km (67-mi.) route that begins at the northeast entrance to YNP and ends in Red Lodge, Montana (Figure 1). The first 13.5 km (8.4 mi.) and the last 38.1 km (23.7 mi.) of the route lie within Montana, and the remaining 55.8 km (34.7 mi.) of the route lie within Wyoming. The Beartooth Highway also is known as the Red Lodge-Cooke City Highway and is designated as U.S. 212 over its entire length. The portion of the road in Wyoming is designated as Wyoming Forest Highway 4. In addition to being a Forest Highway, the road also is a National Park Approach Road (see following *History* section).

History

In the late 1800s, a mining area developed around Cooke City, Montana, about 32 km (20 mi.) west

of segment 4. Cooke City was accessed through what is now YNP. In 1925, the USFS and the U.S. Bureau of Public Roads (FHWA's predecessor) investigated a route over the Beartooth Plateau that could provide access to the Cooke City mines from Red Lodge, Montana. A route suitable for mining purposes was not identified.

Local interest in a road between Red Lodge and YNP continued, and eventually lead to the enactment of the National Park Approaches Act of 1931. Under the Act, certain roads could be built to provide access to National Parks. Because of the Act's requirements, few roads other than the Beartooth Highway could qualify for appropriations. After the Act was passed and the location work was completed, it was discovered that the distance from the Park boundary to Red Lodge was 108 km (67 mi.), some 11.4 km (7.1 mi.) longer than the Act permitted. To address this limitation, the Bureau of Public Roads, Montana State Highway Department, and USFS put the portion of road from Red Lodge southwest for 13.8 km (8.6 mi.) on the Federal-Aid Primary system and put the portion inside the Forest boundary on the Forest Highway system. The Beartooth Highway was built between 1931 and 1936 under the Bureau of Public Roads, and opened on June 14, 1936 with a ceremony and caravan of supporters.

By the late 1950s, the road had significantly deteriorated. In 1968, segment 4 was resurfaced, and many paved ditches were added. Segment 4 and a segment near Cooke City are the two segments of the road that have not been completely reconstructed. All of the other segments were reconstructed between 1963 and 1984.

In 1998, the Department of the Interior and Related Agencies Appropriation Act authorized rehabilitation and minor widening of segment 4. The FHWA held scoping meetings in 1998 on a project

proposal to complete the work. With the passage of the Transportation Efficiency Act for the 21st Century later in 1998, the Beartooth Highway was identified as a High Priority Project and additional funding became available for the environmental review, planning, design, and reconstruction of segment 4. This EIS is part of the environmental review process.

In 2000, the FHWA completed a pavement preservation project on segment 4. The purpose of the project was to provide a driveable surface for 5 to 10 years until a decision was made on the reconstruction project. The preservation project consisted of sealing cracks and applying a thin layer of micro-surfacing (asphalt-based surfacing material) to the road. The project also included cleaning plugged ditches and culverts, replacing destroyed guardrails, and performing minor repairs to the road's subgrade (soft areas directly under the pavement). The road's existing substandard align-



The Beartooth Highway was constructed between 1931 and 1936.

ment, grade, and width, as well as its underlying structural and drainage deficiencies, were not addressed due to the limited scope of the project.

1.3 EXISTING AND FUTURE ROAD USE AND TRAFFIC CONDITIONS

Existing Uses

The Beartooth Highway is primarily a recreational road that connects the northeast entrance of YNP to Red Lodge, Montana and Cody, Wyoming. The road provides access to campgrounds, trailheads, vista points, pullouts, and recreation facilities along the corridor in the SNF, the Custer National Forest (CNF), and the Gallatin National Forest (GNF).

The Beartooth Highway itself is a major recreational attraction. It is designated a Forest Service Scenic Byway and a Wyoming State Scenic Byway. The Wyoming portion of the road was designated an All-American Road under FHWA's National Scenic Byways Program in 2000. The State of Montana has submitted an application to the FHWA to have portions of Montana segments also designated as All-American. Many travelers take the road to enjoy the lakes and scenery along the route. The road has many undeveloped roadside pullouts to view alpine scenery, as well as informal recreational opportunities along the corridor. Two USFS campgrounds and a visitor contact station (a former fire lookout at Clay Butte) are located along segment 4. Several hiking and jeep trails originate from the road, but no pedestrian trails parallel the road. The *Recreation Resources* section of Chapter 3 provides additional information about the recreation uses along the road.

In 1999, the FHWA completed an origin and destination study of segment 4 users. East-bound motorists (towards Red Lodge) were stopped at the

western end of the project near the Clay Butte Lookout turnoff and west-bound motorists (towards YNP) were stopped at the eastern end of the project near the Montana/Wyoming state line. YNP, Cody, and Cooke City were the primary originating locations for east-bound motorists. The Beartooth Mountains, Red Lodge, and Billings were the dominant destinations. Most west-bound motorists started at Billings or Red Lodge and were going to YNP, Beartooth Mountains, or Cooke City. Over 90 percent of the motorists were recreational travelers, with about 70 percent of them making one or more trips per year (MK Centennial 1999a). The origin and destination study confirmed that the road is used for destination-related travel to the Beartooth Mountains and as an arterial for traffic between Red Lodge and Billings and Cooke City and YNP.

Segment 4 opens by Memorial Day and closes by Columbus Day (about October 15). The road sometimes is accessible by car up to the road closure gate east of Long Lake before Memorial Day and after Columbus Day, depending on snow conditions. Harsh winter conditions preclude keeping segment 4 open during the winter, and there are no plans to do so. West of segment 4, the Beartooth Highway connects with the Chief Joseph Highway (WY 296), which provides a link to Cody, Wyoming. The Beartooth Highway provides access between the communities of Silver Gate, Cooke City, and Red Lodge. Only one business, the Top of the World Store, is located along segment 4. This store supplies gasoline, motel facilities, and miscellaneous supplies. It usually stays open from Memorial Day until the road closes in mid-October.

Commercial tour buses and bicyclists use the road. Bicyclists use the travel lanes because the road has no shoulders or adjacent bike trails. Logging trucks and other commercial trucks are allowed on

segment 4 via WY 296. They are, however, prohibited on the segments between Red Lodge and the Montana/Wyoming state line. All commercial traffic also is prohibited through YNP, except by permit. Supplies to Cooke City in the winter come through YNP.

Traffic Volumes, Speeds and Accidents

Segment 4 typically is open between June and mid-October, or about 145 days. Seasonal Average Daily Traffic (SADT) is the average number of vehicles that travel the road each day over a set period of time or season. Traffic counts completed annually between 1998 and 2000 indicate the SADT averages 942 vehicles (Table 1). About 95 percent of the traffic was a mix of cars, motorcycles, and small trucks less than 6.1 m (20 ft.) in length. The remaining 5 percent of traffic was composed of medium-sized trucks, motor homes, buses, campers, or tractor-trailers greater than 6.1 m (20 ft.) in length. The steep, winding, and narrow nature of the road may discourage use by large vehicles.

Highway reconstruction projects typically are designed to carry traffic volumes for 20 years before substantial repairs, such as pavement

Table 1. Seasonal Average Daily Traffic for segment 4.

Month	1998-2000 Average SADT	2025 Projected SADT
June	822	1,721
July	1,111	2,326
August	1,151	2,410
September	682	1,428
Average	942	1,972

Construction would begin in 2004; 2025 would be the end of the 20-year design life of the proposed project, rounded to the nearest 5-year increment.

Source: MK Centennial Engineering, Inc. 2001a.

1.3. Existing and Future Road Use and Traffic Conditions

overlay or widening, are required. For this reason, future traffic volumes are used for design purposes. Future traffic volumes are estimated by applying an annual growth rate of the project area to current traffic volumes, and making adjustments for changes in traffic patterns that can be reasonably foreseen. Future increases in traffic volumes depend on a variety of factors, such as the economy, fuel prices, vacationing trends, road conditions, and federal regulations and policies.

To estimate the annual growth factor, the FHWA completed traffic studies that examined growth on area roads, changes in YNP visitation, and area population growth. (MK Centennial Engineering, Inc. 1998). The WYDOT provided the FHWA with projected traffic volumes on U.S. 212, WY 296, and WY 120. WYDOT's estimated annual growth rate on U.S. 212 and WY 120 was 2.6 percent and 4.5 percent on WY 296. The FHWA also used trends in recreational visitors to YNP, particularly the northeast entrance, at the west end of the Beartooth Highway. Between 1985 and 2001, the number of visitors using the northeast entrance increased by 3.8 percent per year. The FHWA examined population growth in Carbon County, Montana and Park County, Wyoming using 1990 census data. The population growth rate in both counties was 1.0 percent per year. Based on the various growth rates, the FHWA used 3 percent as a reasonable estimate of the future annual growth rate for traffic on segment 4 (Table 1). Future traffic volumes based on a growth rate of 2 to 4 percent would require the same design standards as those selected for the project. Design standards are discussed in detail in Chapter 2 and Appendix B.

The FHWA measured existing operating speeds at several locations along the road. Speeds were measured for both east- and west-bound traffic in

the morning and afternoon. Operating speeds are shown in Table 2.

From 1990 to 1999, 19 accidents were reported on segment 4—nine accidents were property damage only, nine accidents involved injuries, and one accident resulted in a fatality. Of the 19 accidents, 5 or about 25 percent of them occurred in the Beartooth Ravine area. Unsafe speed was cited as the cause of three of the five accidents in the ravine area (MK Centennial Engineering Inc. 1999b).

The accident rate for segment 4 was 0.95 accidents per million vehicle miles traveled. During the same period, the segment of U.S. 212 west of the project area had an accident rate of 0.72, the lowest rate on all of U.S. 212. The segment with the highest accident rate was near Cooke City, with an accident rate of 1.24. This segment is proposed for reconstruction beginning in 2003. Accident rates for segment 4 were lower than statewide accident rates for rural roads in Wyoming and Montana (MK Centennial Engineering, Inc. 2001a). Accident rates on segment 4 may be lower than statewide rates because minor accidents may go unreported, and because the road is closed during the winter. The lack of regular and cell phone

Table 2. Operating speeds along the road.

Location	Km/h	Mph
West end of project	67	42
Beartooth Campground	60	37
Top of the World Store	75	47
Near Long Lake	74	46
Switchbacks	33	20
Near Twin Lakes pullout	64	40
East end of project	66	41

Operating speeds are based on the cumulative 85th percentile speed averaged between east- and west-bound.

Source: MK Centennial Engineering, Inc. 2001a.

service makes accident reporting more difficult.

1.4 SEE TEAM AND COOPERATING AGENCIES

When the FHWA starts an environmental review process for a major road project, it convenes a Social, Economic and Environmental (SEE) study team consisting of federal, state and local agencies with project involvement. The SEE team assists in identifying major issues associated with the proposed project, developing alternatives for the project, and assessing environmental impacts.

The SEE team is comprised of representatives from the following six agencies:

- FHWA
- U.S. Forest Service
(Shoshone National Forest)
- National Park Service
(Yellowstone National Park)
- U.S. Fish and Wildlife Service
- U.S. Army Corps of Engineers
- Wyoming Department of Transportation

Under NEPA, the FHWA can request assistance from other federal and state agencies in preparing the EIS. The USFS, NPS, U.S. Army Corps of Engineers, and U.S. Fish and Wildlife Service have agreed to become cooperating agencies for the project. Copies of agency correspondence are included in Appendix C.

1.5 DECISIONS, PERMITS, OR APPROVALS

The FHWA, in cooperation with the USFS and the NPS, has issued this Draft EIS for public comment. Alternative 6–Blended Emphasis is identified as the preferred alternative. Comments on the Draft EIS will be considered in the Final EIS. After the

Final EIS is issued, the FHWA, in cooperation with the USFS and the NPS, will select one or a combination of the build alternatives studied in detail in the Final EIS, or the No Action Alternative. The FHWA will document the final selection in a Record of Decision issued no sooner than 30 days after publication of the Final EIS.

The FHWA will need to obtain permits or approvals from federal or state agencies before implementing an action alternative (Table 3). Additional permits associated with refinements in final design and construction techniques also may be needed.

1.6 REFERENCES

- Beartooth All-American Road Steering Committee. 2002. Beartooth All-American Road Corridor Management Plan. January.
- Federal Highway Administration. 1994. Beartooth Highway road inventory and needs study. October.
- Federal Highway Administration. 1999. Structure inspection reports–Beartooth Creek bridge, Little Bear Creek bridge #1, Little Bear Creek bridge #2, and Long Lake bridge. Prepared for Yellowstone National Park.
- MK Centennial Engineering Inc. 1998. Traffic Study–United States Highway 212, Beartooth Highway. Prepared for the Federal Highway Administration, Central Federal Lands Highway Division, Lakewood, CO. December.
- MK Centennial Engineering Inc. 1999a. Origin and Destination Study–United States Highway 212, Beartooth Highway. Prepared for the Federal Highway Administration, Central Federal Lands Highway Division, Lakewood, CO. December.

MK Centennial Engineering Inc. 1999b. Traffic Study Addendum A–United States Highway 212, Beartooth Highway. Prepared for the Federal Highway Administration, Central Federal Lands Highway Division, Lakewood, CO. December.

MK Centennial Engineering, Inc. 2001a. Traffic Study Addendum B. United States Highway 212, Beartooth Highway. Prepared for Federal Highway Administration, Central Federal Lands Highway Division, Lakewood, CO. June.

Shoshone National Forest. 1986. Land and Resource Management Plan. Cody, Wyoming.

Shoshone National Forest. 2001a. Letter from Rebecca Aus, SNF, to Richard Cushing, FHWA. November 29, 2001.

Table 3. Permits, stipulations, or approvals required for the Beartooth Highway Reconstruction Project.

Permits, Stipulations, or Approvals	Purpose
U.S. Forest Service	
Letter of Consent (Federal Land Policy and Management Act 36 CFR 251)	To allow the FHWA to use National Forest lands for road purposes.
Special Use Permit	To allow activities, such as a workcamp, on National Forest lands outside an approved corridor.
Mineral Material Permit	To allow the FHWA to take construction material from National Forest lands.
Timber Settlement Agreement	To allow the FHWA to harvest commercial timber on National Forest lands before disturbance. Harvesting would be conducted only to clear the area necessary for road construction, or materials sources.
U.S. Fish and Wildlife Service	
Section 7 Consultation (Endangered Species Act 50 CFR 402)	To ensure that the proposed project would not jeopardize the continued existence of threatened or endangered species, or result in the destruction or modification of critical habitat.
U.S. Army Corps of Engineers	
404 Permit (Clean Water Act 33 CFR 320)	To allow the FHWA to discharge dredged or fill material into waters of the U.S., including wetlands.
Wyoming Department of Environmental Quality	
401 Certification (Clean Water Act 40 CFR 121)	To certify that any activity requiring a federal license or permit that may result in any discharge into waters of the U.S. would not cause or contribute to a violation of state surface water quality standards.
National Pollutant Discharge Elimination System Permit	To allow FHWA to discharge pollutants from a point source into waters of the U.S, such as storm water or construction dewatering.
Authorization for temporary increase in turbidity levels	To allow FHWA to temporarily increase surface water turbidity due to road and bridge construction.
Small Wastewater Permit	To allow FHWA to construct a septic leach field at a workcamp.
Wyoming State Engineer's Office	
Permit to temporarily divert water for construction	To allow FHWA to temporary reduce stream flow for road construction, such as dust suppression activities.
Advisory Council on Historic Preservation	
Section 106 Review (National Historic Preservation Act 36 CFR 800)	To consult with the Wyoming State Historic Preservation Office, Native American tribes, and the Advisory Council on Historic Preservation.