United States Department of Agriculture

Final Environmental Impact Statement

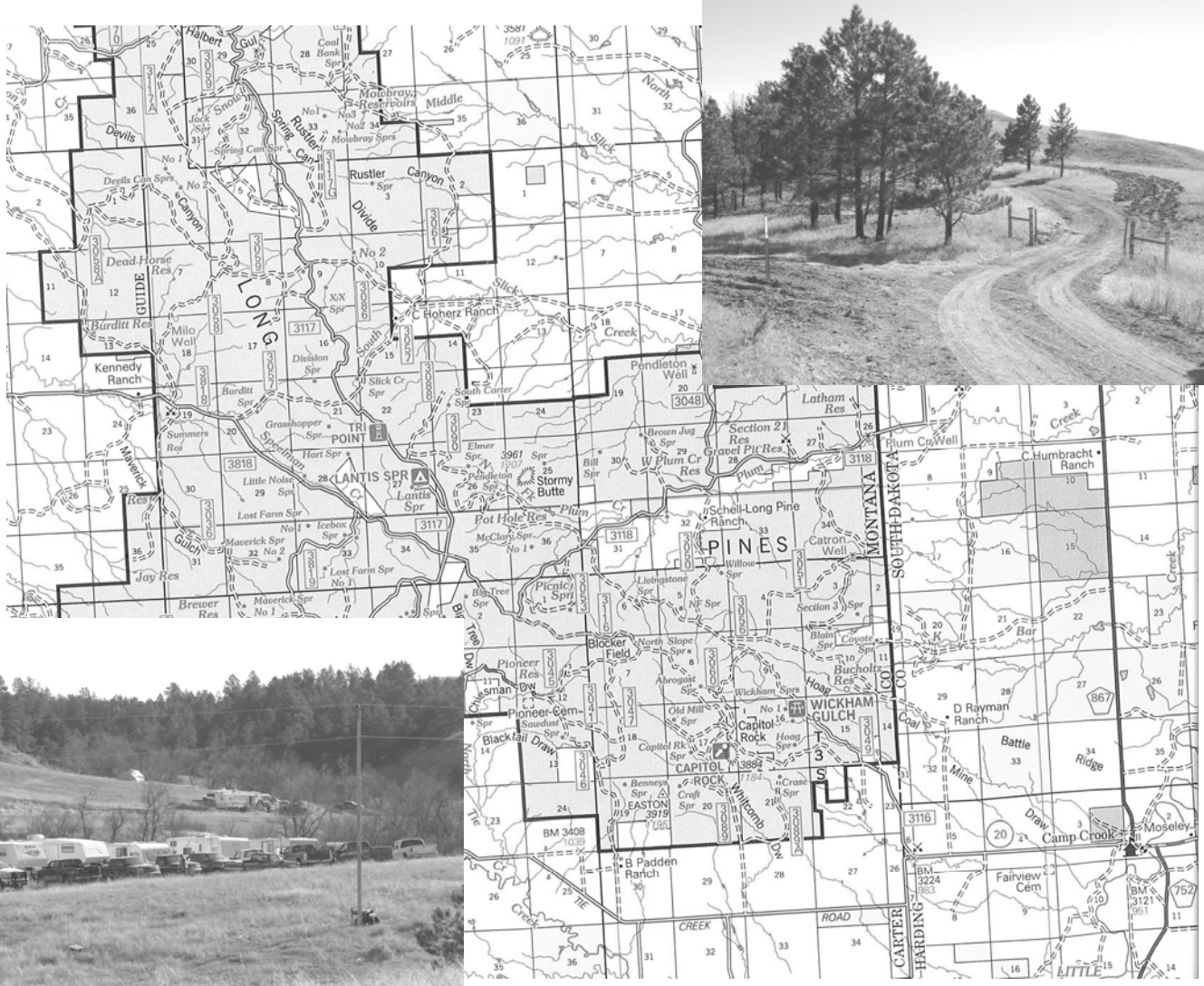
Forest Service

Sioux Travel Management

Sioux Ranger District
Custer National Forest

Carter County of Montana and Harding County of South Dakota

June 2009



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SIOUX RANGER DISTRICT
TRAVEL MANAGEMENT
Final Environmental Impact Statement

Custer National Forest - Sioux Ranger District

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Abstract: The Forest Service is proposing to designate routes for public motorized use within the Sioux Ranger District of the Custer National Forest. The new travel management decision would designate system roads and trails for public motorized uses and specify the type of vehicle and season of use for each route. Motorized off-route travel would be prohibited, except where designated for access to dispersed vehicle camping. Over-snow vehicle use is not part of the decision to be made in this analysis. The two action alternatives considered in this EIS represent a broad range of public sentiment regarding road and motorized trail management, and frame the significant issues related to the decision to be made. The alternative of taking no action is also considered in this EIS. The preferred alternative is Alternative B.

Comments on this FEIS. Public review and comment was solicited on the "draft" environmental impact statement (DEIS), and utilized in the preparation of this final environmental impact statement (FEIS). No further public review nor public comment is being sought on this "final" EIS.

Appeal of Decisions. Reviewers whom disagree with information presented in this FEIS may appeal any decision based upon it. Decisions based upon this FEIS are described in separate documents. It is the reviewer's responsibility to obtain those decision documents and follow procedures described in them to appeal the decision(s).

TABLE OF CONTENT

Chapter 1: Purpose and Need, and Proposed Action

1.1 OVERVIEW OF CHANGES FROM THE DRAFT TO THE FINAL EIS 1-1

1.2 BACKGROUND 1-1

1.2.1 AGENCY TRAVEL MANAGEMENT PLANNING 1-1
1.2.2 DISTRICT TRAVEL MANAGEMENT SYSTEM AND PLANNING 1-2
1.2.3 FOUR THREATS TO FOREST AND GRASSLAND HEALTH 1-2
1.2.4 ROADS ANALYSIS 1-2
1.2.5 GENERAL LOCATION AND GEOGRAPHIC SETTING 1-3
1.2.6 DOCUMENT STRUCTURE 1-4

1.3 PURPOSE AND NEED 1-4

1.4 PROPOSED ACTION 1-5

1.5 SCOPE OF DECISION TO BE MADE 1-5

1.5.1 DECISIONS TO BE MADE 1-5
1.5.2 DECISIONS THAT WILL NOT BE MADE 1-5

1.6 LEGAL FRAMEWORK 1-5

1.6.1 AUTHORITY FOR TRAVEL MANAGEMENT PLANNING 1-6
1.6.2 EXECUTIVE ORDER 11644 AS AMENDED BY EXECUTIVE ORDER 11989 1-6
1.6.3 EXECUTIVE ORDER 13443 1-6
1.6.4 2005 MOTORIZED TRAVEL RULE 1-6
1.6.4.1 Designation Criteria 1-6
Access Needs 1-8
Accessibility 1-8
Conflicts Among Uses of National Forest System Lands 1-8
Safety 1-9
Montana State Law 1-9
South Dakota State Law 1-10
Operator Responsibilities 1-10
1.6.4.2 Administrative Use 1-11
1.6.4.3 Public Rights-Of-Way Access 1-12
1.6.4.4 Revised Statute (R.S.) 2477 Rights-Of-Way 1-12
1.6.5 MINIMUM ROAD SYSTEM (36 CFR 212.5(B)(1)) 1-12
1.6.6 REGIONAL TRAVEL MANAGEMENT PLANNING GUIDANCE 1-13
1.6.6.1 Motorized Game Retrieval 1-13
1.6.6.2 Motorized Cross-Country Areas 1-13
1.6.7 1986 CUSTER NATIONAL FOREST LAND AND RESOURCES MANAGEMENT PLAN 1-14

Chapter 2: Public Participation, Issues and Alternatives

2.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS 2-1

2.2 INTRODUCTION 2-1

2.3 PUBLIC PARTICIPATION SUMMARY 2-1

2.3.1 PUBLIC SCOPING 2-1
2.3.2 NOTICE OF INTENT 2-2
2.3.3 PUBLIC INVOLVEMENT FOR THE DEIS 2-2

TABLE OF CONTENT

2.4 SIGNIFICANT ISSUES 2-3

2.4.1 RECREATION 2-3
2.4.2 CULTURAL RESOURCES 2-4
2.4.3 WILDLIFE 2-4

2.5 OTHER ISSUES 2-4

2.5.1 WATER QUALITY, FISHERIES, AND AQUATICS 2-5
2.5.2 SOILS 2-5
2.5.3 VEGETATION 2-5
2.5.4 ECONOMICS 2-5
2.5.5 AIR QUALITY 2-6
2.5.6 CLIMATE CHANGE 2-6

2.6 ALTERNATIVES CONSIDERED IN DETAIL 2-6

2.6.1 ALTERNATIVE A (EXISTING CONDITION) 2-7
2.6.2 ALTERNATIVE B (PREFERRED ALTERNATIVE) 2-8
2.6.3 NO ACTION ALTERNATIVE 2-9
2.6.4 ELEMENTS COMMON TO ALL ALTERNATIVES 2-12
2.6.4.1 Administrative Exemptions 2-12
2.6.4.2 Administrative Sites 2-12
2.6.4.3 System Roads with Forest Service Maintenance Obligations 2-12
2.6.4.4 Roads Under Permit 2-12
2.6.4.5 No Legal Right-of-Way for Public Access 2-12
2.6.4.6 Designated Routes Required to be Part of the National Forest System 2-12
2.6.4.7 Dispersed Vehicle Camping Authorized Only on National Forest System Lands 2-12
2.6.4.8 Implementation 2-12
2.6.4.9 Enforcement 2-13

2.7 ALTERNATIVES CONSIDERED BUT DROPPED FROM DETAILED ANALYSIS 2-15

2.7.1 MOTORIZED DESIGNATED AREAS 2-15
2.7.2 DESIGNATE GAME RETRIEVAL USE FROM 10:00 AM TO 2:00 PM ON ROUTES NOT OTHERWISE DESIGNATED FOR PUBLIC MOTORIZED USE 2-16
2.7.3 A MOTORIZED RECREATION ALTERNATIVE WITH A RECREATION OPPORTUNITY SPECTRUM (ROS) COMPARABLE TO THE SURROUNDING ROS AVAILABLE FOR NON-MOTORIZED RECREATIONISTS 2-16
2.7.4 THE FOREST SERVICE SHOULD CONSIDER CLOSING THE LOWER SECTION OF ROUTE #381612..2-16
2.7.5 IMPLEMENT A 100 FOOT FIXED LIMIT FOR DISPERSED VEHICLE CAMPING 2-17
2.7.6 IDENTIFY WHERE PARKING ALONG ROUTES WOULD BE UNSAFE OR CAUSE RESOURCE DAMAGE AND DO NOT DESIGNATE 2-17
2.7.7 SEASON OF USE DESIGNATIONS RATHER THAN NO DESIGNATION, ESPECIALLY TO ADDRESS WILDLIFE NEEDS 2-17
2.7.8 SEASON OF USE DESIGNATION FOR ROUTES WITHIN 200 FEET OF RAPTOR NESTS 2-17
2.7.9 DO NOT DESIGNATE DISPERSED VEHICLE CAMPING IN AREAS WITH STEEP TOPOGRAPHY AND SENSITIVE RESOURCES TO AVOID POTENTIAL ADVERSE IMPACTS 2-17
2.7.10 FURTHER REDUCE MOTORIZED USE TO MINIMIZE THE POTENTIAL FOR SPREAD OF NOXIOUS WEEDS 2-18
2.7.11 IMPROVE ENFORCEABILITY BY DESIGNATING ONLY SYSTEM ROADS SO THAT ALL MOTORIZED VEHICLES HAVE LICENSE PLATES FOR IDENTIFICATION 2-18
2.7.12 ROAD #38161 SHOULD BE CLOSED OR NOT DESIGNATED AS A SYSTEM ROAD OR TRAIL TO PREVENT NEW ROUTES FROM BEING CREATED AND IMPACTING FIGHTING BUTTE 2-18
2.7.13 THERE SHOULD BE NO NET LOSS OF MOTORIZED OPPORTUNITIES TO COUNTER THE CUMULATIVE LOSS OF OTHER MOTORIZED OPPORTUNITIES 2-18

TABLE OF CONTENT

2.7.14 PROVIDE ADDITIONAL MOTORIZED OPPORTUNITIES BY DESIGNATING ROUTES CLOSED BECAUSE THEY CANNOT ACCOMMODATE A FULL-SIZE VEHICLE FOR 50 INCH WIDE OR LESS VEHICLES 2-19
2.7.15 CONSIDER ALL IDENTIFIED MOTORCYCLE TRACK FOR DESIGNATION AS MOTORIZED TRAILS .. 2-19
2.7.16 THE FOREST SHOULD HAVE AN EQUAL NUMBER OF MOTORIZED AND NON-MOTORIZED TRAILS TO PROVIDE EQUAL AMOUNTS OF OPPORTUNITIES 2-19
2.7.17 USE A ONE MILE BUFFER (RATHER THAN .5 MILES) TO SCREEN OUT PARALLEL ROUTES TO PROVIDE ADDITIONAL NON-MOTORIZED OPPORTUNITIES AND WILDLIFE SECURITY 2-19
2.7.18 THERE SHOULD BE NO NET GAIN OF SYSTEM ROUTES 2-19
2.7.19 FURTHER REDUCE MILES OF ROUTES IN SOIL MAPPING UNITS IDENTIFIED AS HAVING A HIGH RISK OF SOIL EROSION TO REDUCE WATER QUALITY IMPACTS 2-20
2.7.20 DO NOT ADD ROUTES OR FURTHER REDUCE MILES OF ROUTES IN MODERATE AND HIGH RISK SOILS AND THAT HAVE WATER QUALITY IMPACTS IN HIGH RISK WATERSHEDS, TO REDUCE IMPACTS IN THOSE WATERSHEDS. 2-20

2.8 COMPARISON OF EFFECTS 2-20

2.8.1 ROUTE MAINTENANCE NEEDS 2-20

2.9 MONITORING 2-23

2.9.1 IMPLEMENTATION MONITORING 2-24
2.9.2 EFFECTIVENESS MONITORING 2-24
2.9.3 MONITORING PLAN 2-25

2.10 FOREST SERVICE PREFERRED ALTERNATIVE 2-25

Chapter 3: Affected Environment and Environmental Consequences

3.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS 3-1

3.2 INTRODUCTION 3-1

3.2.1 DIRECT AND INDIRECT EFFECTS 3-1
3.2.2 CUMULATIVE EFFECTS 3-1
3.2.2.1 Past, Present, and Reasonably Foreseeable Activities 3-1
3.2.3 ENVIRONMENTAL JUSTICE 3-3
3.2.4 NATIVE AMERICAN TREATY RIGHTS 3-3
3.2.5 UNAVOIDABLE ADVERSE EFFECTS (40 CFR 1502.16) 3-3
3.2.6 RELATIONSHIP BETWEEN SHORT TERM USE AND LONG TERM PRODUCTIVITY (40 CFR 1502.16) 3-3
3.2.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES (40 CFR 1502.16) 3-4
3.2.8 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL (40 CFR 1502.16) 3-4

3.3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES – SIGNIFICANT ISSUES ... 3-4

3.3.1 RECREATION 3-4
3.3.1.1 Affected Environment – Recreation 3-4
3.3.1.2 Environmental Consequences - Recreation 3-10
3.3.1.3 Conclusion - Recreation 3-18
3.3.2 CULTURAL RESOURCES 3-19
3.3.2.1 Affected Environment – Archaeological Resources and Tradition Cultural Properties 3-21
3.3.2.2 Environmental Consequences – Archaeological Resources and Tradition Cultural Properties 3-29
3.3.2.1 Conclusion – Archaeological Resources and Traditional Cultural Properties 3-36
3.3.3 WILDLIFE 3-37
3.3.3.1 Affected Environment – Threatened And Endangered Species Black-footed Ferret 3-42

TABLE OF CONTENT

3.3.3.2 Environmental Consequences – Threatened And Endangered Species: Black-footed Ferret 3-43
3.3.3.3 Affected Environment – Sensitive Species: Bat Species 3-44
3.3.3.4 Environmental Consequences – Sensitive Species: Bat Species 3-45
3.3.3.5 Affected Environment – Management Indicator Species: Big Game Species 3-47
3.3.3.6 Environmental Consequences – Management Indicator Species: Elk 3-49
3.3.3.7 Affected Environment – Migratory Birds 3-51
3.3.3.8 Environmental Consequences – Migratory Birds 3-53
3.3.3.9 Affected Environment – General Wildlife 3-55
3.3.3.10 Environmental Consequences – General Wildlife 3-59
3.3.3.11 Conclusion - Wildlife 3-61

3.4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES – OTHER ISSUES 3-63

3.4.1 WATER QUALITY, FISHERIES, AND AQUATICS 3-63
3.4.1.1 Introduction 3-63
3.4.1.2 Affected Environment – Water Quality 3-63
3.4.1.3 Environmental Consequences – Water Quality 3-76
3.4.1.4 Conclusion - Water Quality 3-81
3.4.1.5 Affected Environment – Fisheries and Aquatics 3-82
3.4.1.6 Environmental Consequences – Fisheries and Aquatic 3-92
3.4.1.7 Conclusion - Fisheries and Aquatics 3-96
3.4.2 SOILS 3-97
3.4.2.1 Introduction 3-97
3.4.2.2 Affected Environment – Soils 3-97
3.4.2.3 Environmental Consequences - Soils 3-101
3.4.2.4 Conclusion - Soils 3-104
3.4.3 VEGETATION 3-105
3.4.3.1 Introduction 3-105
3.4.3.2 Affected Environment – Vegetation 3-105
3.4.3.3 Environmental Consequences – Vegetation 3-108
3.4.3.4 Conclusion - Vegetation 3-110
3.4.3.5 Affected Environment – Weeds 3-111
3.4.3.6 Environmental Consequences – Weeds 3-114
3.4.3.7 Conclusion - Weeds 3-116
3.4.3.8 Affected Environment – Sensitive Plants 3-116
3.4.3.9 Environmental Consequences – Sensitive Plants 3-119
3.4.3.10 Conclusion - Sensitive Plants 3-122

Chapter 4: Consultation, References, and Glossary

4.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS 4-1

4.2 CONSULTATION 4-1

4.2.1 PUBLIC PARTICIPATION SUMMARY 4-1
4.2.2 CONSULTATION WITH OTHERS 4-1

4.3 DISTRIBUTION 4-2

4.4 LIST OF PREPARERS 4-2

4.5 REFERENCES 4-4

4.5.1 CHAPTER 1: PURPOSE AND NEED, AND PROPOSED ACTION 4-4
4.5.2 CHAPTER 2: PUBLIC PARTICIPATION, ISSUES AND ALTERNATIVES 4-5
4.5.2.1 Air Quality 4-5
4.5.2.2 Alternatives Considered in Detail 4-5

TABLE OF CONTENT

4.5.3 CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES *4-5*
4.5.3.1 Recreation 4-5
4.5.3.2 Cultural Resources 4-6
4.5.3.3 Wildlife 4-7
4.5.3.4 Water Quality 4-11
4.5.3.5 Fisheries and Aquatics 4-12
4.5.3.6 Soils 4-14
4.5.3.7 Vegetation 4-14
4.5.3.8 Weeds 4-15
4.5.3.9 Sensitive Plants 4-15

4.6 GLOSSARY 4-17

Chapter 5: Response to Comments

5.1 PUBLIC COMMENT ANALYSIS PROCESS 1

5.2 RESPONSE TO COMMENTS 2

CULTURAL RESOURCES 2
ECONOMICS 2
FISHERIES AND AQUATICS 3
MANAGEMENT 4
MISCELLANEOUS 5
RECREATION 7
SOILS 10
VEGETATION 11
WATER QUALITY 12
WILDLIFE 14

Appendices

Appendix A: 2005 Motorized Travel Rule
Appendix B: Forest Plan Direction
Appendix C: Alternative Details by Route
Appendix D: Opportunities
Appendix E: Agency Letters
Appendix F: Catalog of Past, Present, and Reasonably Foreseeable Activities
Appendix G: Biological Assessment

Index

Map Section

Alternative A – Chalk Buttes, Ekalaka Hills, and Long Pines
Alternative A – West Short Pines, East Short Pines, North Cave Hills, South Cave Hills, and Slim Buttes
Alternative B – Chalk Buttes, Ekalaka Hills, and Long Pines
Alternative B – West Short Pines, East Short Pines, North Cave Hills, South Cave Hills, and Slim Buttes
No Action Alternative – Chalk Buttes, Ekalaka Hills, and Long Pines
No Action Alternative– West Short Pines, East Short Pines, North Cave Hills, South Cave Hills, and Slim Buttes

Chapter 1: Purpose and Need, and Proposed Action

1.1 OVERVIEW OF CHANGES FROM THE DRAFT TO THE FINAL EIS

- General edits were made throughout the chapter.
- Table 1-2 was updated to include references to Climate Change.
- The Revised Statute 2477, Motorized Game Retrieval, and Motorized Cross-Country Areas were updated with new information based on updated Forest Service Manual and Handbook, and Regional guidance.
- The South Dakota State Law section was clarified to better describe the relationship between route designations and state motor vehicle law.
- The Maintenance discussion was moved to Chapter 2.

1.2 BACKGROUND

1.2.1 AGENCY TRAVEL MANAGEMENT PLANNING

Travel management planning, or management of roads and trails, has received increasing attention in the last decade within the Forest Service. This increased attention is largely the result of increased use of National Forests for recreation purposes. Increased forest visitation has led to concerns that much of this increased use is unmanaged and may be causing undesirable resource and social impacts.

One of the initial activities on the Custer National Forest (Forest) related to travel management planning was inventorying system and non-system routes. This inventory, conducted during 1999 and 2000, established a baseline for future analyses. This effort was specifically in preparation of the Northern Region (Region) of the Forest Service analysis of cross-country vehicle use. That analysis resulted in the Tri-State Off-Highway Vehicle Decision (2001 Tri-State OHV Decision) in 2001. The primary focus of the decision was restricting motorized vehicles to the use of existing motorized routes.

During this time, the Forest Service developed a national framework for conducting roads analyses. The Forest Scale Roads Analysis for the Custer National Forest (see Project Record) was completed in January, 2003 based on the above framework. The report highlighted potential impacts of roads and/or motorized access on wildlife, water quality, cultural resources; right-of-way issues; and potential changes to road management objectives. The key findings in the Forest Scale Roads Analysis report were considered in the development of this proposal.

In 2005, the Forest Service finalized the Motorized Travel Rule which outlined a process for motorized travel management planning to be used by all National Forests. The Rule requires distribution of a Motor Vehicle Use Map to the public for implementation of travel management decisions, which the Forest Service has committed to completing by the end of 2009. The Forest Service Manual and Handbook amendments that reflect implementation of the 2005 Motorized Travel Rule went into effect on January 7, 2009.

1.2.2 DISTRICT TRAVEL MANAGEMENT SYSTEM AND PLANNING

The Sioux Ranger District (District) contains a network of system and unauthorized (non-system) routes. The District's system roads are generally a result of: (1) historic routes determined to be needed for management of the District; (2) roads developed or improved in conjunction with specific agency activities such as timber harvesting; (3) and access needs associated with permits.

> **National Forest System road or trail** – A forest road or trail that the Forest Service has determined is necessary for the protection, administration, or utilization of the National Forest System and the use and development of its resources, and identified in the forest transportation atlas.
> **Unauthorized route** – A route that is not a National Forest System road or trail or a temporary road or trail and that is not included in a forest transportation atlas.

The District initiated the current travel management planning effort in late summer 2007, distributed a scoping letter for the proposed action on October 22, 2007, and distributed a draft environmental impact statement (DEIS) for public review on September 26, 2008. A Notice of Availability in the Federal Register was published on October 3, 2008, which initiated a 45-day comment period. The proposald was developed in compliance with the 2005 Motorized Travel Rule, the Custer National Forest Land and Resource Management Plan (Forest Plan), and other related guidance. This Final Environmental Impact Statement (FEIS) incorporates information gained from past planning efforts, current agency guidance, specialist's input, and comments received from the public on the proposed action.

1.2.3 FOUR THREATS TO FOREST AND GRASSLAND HEALTH

Former Forest Service Chief Dale Bosworth identified four key threats to maintaining and restoring the health of America's forests and grasslands: fuels and fire, invasive species, unmanaged recreation, and habitat fragmentation. The Chief noted specific concerns related to unmanaged motorized recreation and the creation of unplanned motorized routes, and the potential for these to have adverse impacts on natural resources. The 2005 Motorized Travel Rule was developed to address this concern. Chief Bosworth committed to implementing this rule by the end of December, 2009. Gail Kimball, current Forest Service Chief, affirmed the agencies commitment to meeting this timeline. This project is a part of that commitment.

1.2.4 ROADS ANALYSIS

The Forest completed the *Forest Scale Roads Analysis* in January, 2003. The report indicated that route density (system and non-system) on the District may be of concern in terms of impact on wildlife secure habitat (see Wildlife section of Chapter 3 for information on this topic). The report also highlighted cultural resource concerns with maintenance level 3, 4, and 5 roads on the District (see Cultural Resource section of Chapter 3 for information on this topic).

> **Maintenance Level (ML) 1** – A system road in "storage" for future use.
> **ML 2** – Typically a low speed, single-lane, native-surfaced, high-clearance vehicle road.
> **ML 3 –** Typically a low speed, single-lane, gravel-surfaced, passenger vehicle road.
> **ML 4 –** Typically a double-lane, gravel-surfaced road.
> **ML 5 –** Typically a double-lane paved road.

1.2.5 GENERAL LOCATION AND GEOGRAPHIC SETTING

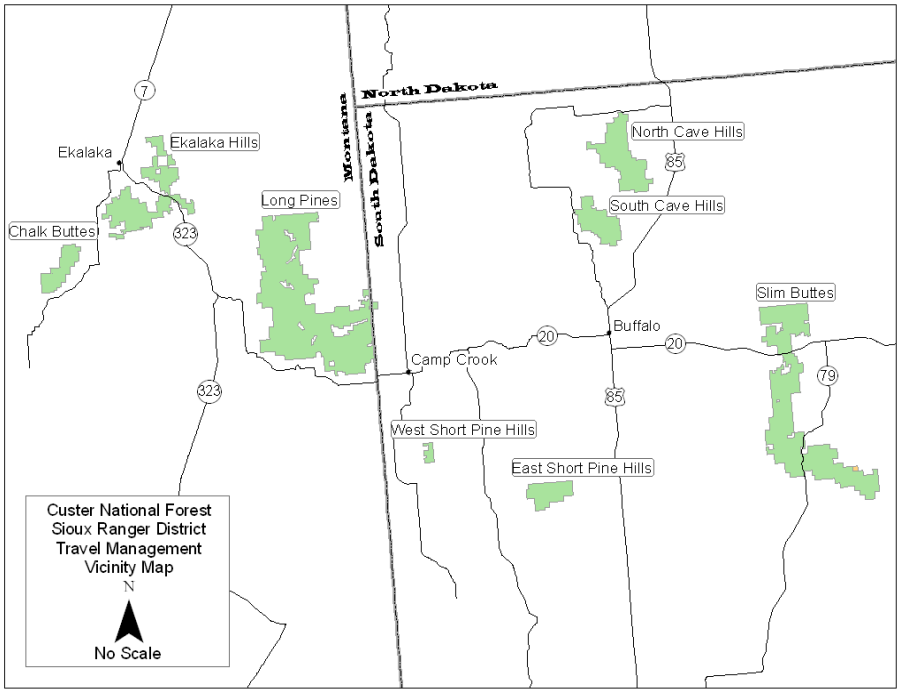
The District, situated in southeast Montana and northwest South Dakota, is composed of eight separate geographic units, which are also separate from any other National Forest System lands (see vicinity map below). These land units are often referred to as, "islands of green in a sea of rolling prairie". This is an appropriate description as the District lands are hills or mesas of ponderosa pine rising above rolling grasslands. The District consists of approximately 163,107 acres of National Forest System land. The following table provides the names and acres for each of the land units.

Table 1-1. Sioux Ranger District land units and acreages.

Land Unit	Acres
South Dakota	
Slim Buttes	47,139
North Cave Hills	14,557
South Cave Hills	8,865
West Short Pines	1,269
East Short Pines	6,135
Montana	
Long Pines	70,969
Ekalaka Hills	22,707
Chalk Buttes	5,975

The District's land units primarily border private lands, but also share a small portion of boundary with State of South Dakota, State of Montana, and Bureau of Land Management administered lands. Some private inholdings within the District exist, but are limited. The land units in South Dakota are within Harding County, while the land units in Montana are within Carter County.

Figure 1-1. Vicinity map.



1.2.6 DOCUMENT STRUCTURE

This Environmental Impact Statement (EIS) discloses the potential environmental, cultural, social, and economic consequences of implementing alternatives to manage travel management within the Sioux Ranger District, Custer National Forest, Montana. The consequences of taking no action are also disclosed. This EIS, in conjunction with public comments, legal requirements, and existing management direction, will be used to establish travel management direction for the District.

Chapter 1 – Purpose and need for the project, and the proposed action.
Chapter 2 – Public involvement, issues, and alternatives.
Chapter 3 – Description of the affected environment and environmental impacts of the alternatives.
Chapter 4 – Project coordination, references, and those involved in preparation of the document.
Chapter 5 – Response to comments.

This analysis is organized into five chapters and an appendices section. Chapter 1 identifies the reasons that the project is being conducted, legal requirements, and analysis parameters. Chapter 2 describes the public involvement, issues, and alternatives, including those not analyzed in detail. Chapter 3 presents the applicable affected environment and environmental consequences for each of the significant and other issues identified for this project. Chapter 4 describes the coordination conducted for this process and the individuals responsible for preparing the document. Chapter 5 displays the Forest's response to public and agency comments to the Draft EIS. The Appendices incorporate additional material needed to more fully understand the analyses and alternatives.

This EIS has been prepared in compliance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing NEPA provisions (40 CFR 1500), the National Forest Management Act and its accompanying regulations, Forest Service Manuals and Handbooks, and applicable Department of Agriculture and agency guidance.

1.3 PURPOSE AND NEED

In December 2005, the 2005 Motorized Travel Rule took effect for all National Forest System lands (Appendix A). The new rule directs National Forests to designate roads, trails, and areas suitable for public motorized travel. The actions described in this document are part of the planning process to select routes for designation under the new regulation. National Forests are expected to complete the planning and designation process by the end of 2009. This commitment is displayed in the Chief's Schedule for Implementation of the Travel Management Rule for National Forests and Grasslands available on the internet at http://www.fs.fed.us/recreation/programs/ohv/. The Forest needs to complete travel management for the District to fulfill this commitment.

The purpose of travel management planning is to: 1) identify routes for public motorized use on the District, 2) provide for a mix of motorized and non-motorized opportunities, 3) minimize impacts on natural and cultural resources, and 4) have enforceable travel management decisions that meet the direction of the 2005 Motorized Travel Management Rule.

1.4 PROPOSED ACTION

The Forest Service is proposing to designate roads and trails available for public motorized use on the District in compliance with the 2005 Motorized Travel Rule. The existing *system* roads are considered the starting point for this analysis. Consequently, this proposal consists of proposed changes to system roads (also known as actions) that the Forest Service is considering. The proposal includes the following types of actions:

- Designate a system of roads and trails on the District for motorized public use.
- Designate the type of vehicle and season of use for each system road and motorized system trail.
- Change certain system roads to motorized trails or mixed motorized use roads.
- Change certain non-system routes to system roads or system motorized trails.
- Identify those system roads and non-system routes to be used for administrative use only.
- Designate dispersed vehicle camping along system roads and motorized trails.
- Change system roads for which there is no identified administrative, utilization, or protection need to Maintenance Level 1 system roads available for potential decommissioning in the future.

1.5 SCOPE OF DECISION TO BE MADE

1.5.1 DECISIONS TO BE MADE

The decision to be made is to designate a road and trail system on the District for public motorized use. In addition, some unauthorized (non-system) routes could be converted to system roads and motorized trails, and some system roads may be changed to system motorized trails. The type of vehicle and season of use would also be designated for each system road and motorized system trail. Dispersed vehicle camping distances or site specific restrictions would also be determined.

Existing Forest Orders that are not consistent with the decision made in the ROD would be rescinded and any new ones that are necessary for implementation of the decision would be issued.

1.5.2 DECISIONS THAT WILL NOT BE MADE

There were several subjects that commenters thought should be decided through this process, including cross-country game retrieval, exemptions for accessibility, changes to rights of access, decommissioning or obliterating routes, construction of motorized and non-motorized routes, and over-snow vehicle use. The Deciding Official has determined that these actions are outside the scope of the analysis for this process. Specific rationale related to the determination for cross-country game retrieval, exemptions for accessibility, and changes to rights of access determination can be found in section 1.6 Legal Framework.

1.6 LEGAL FRAMEWORK

The Forest Service must comply with laws, regulations, and policies in the management of the District. The Forest Plan is a part of the policy framework within which the Forest Service must conduct the analysis of District travel management planning. This framework also includes the laws, regulations, and policies that relate to travel management.

1.6.1 AUTHORITY FOR TRAVEL MANAGEMENT PLANNING

The Secretary of Agriculture's authority for travel management rulemaking, and regulating the use and occupancy of National Forest System lands are set forth in 16 U.S.C. 551; 23 U.S.C. 205; 7 U.S.C. 1011(f); 16 U.S.C. 551; E.O. 11644; E.O. 11989 (42 FR 26959); 7 U.S.C. 1011(f); 16 U.S.C. 460*l*– 6a, 460*l*–6d, 472, 497b, 497c, 551, 580d, 1134, 3210; 30 U.S.C. 185; 43 U.S.C. 1740, 1761–1771; 7 U.S.C. 1011(f); 16 U.S.C. 460*l*– 6d, 472, 551, 620(f), 1133(c)–(d)(1), 1246(i).

1.6.2 EXECUTIVE ORDER 11644 AS AMENDED BY EXECUTIVE ORDER 11989

Executive Order (EO) 11644 required federal land management agencies to establish policies and procedures for management of motorized vehicles on public lands to protect resources, promote safety of users, and minimize conflicts among uses. Executive Order 11989 amended EO 11644 with additional guidance on protecting resources when establishing policies related to motorized travel on public lands. The 2005 Motorized Travel Rule is the agency's implementation of these executive orders.

1.6.3 EXECUTIVE ORDER 13443

EO 13443 requires federal land management agencies to consider the effects of agency actions on hunting, hunter participation, and wildlife habitat; work cooperatively with State and tribal entities on wildlife management; and consider programs and recommendations of comprehensive wildlife planning efforts. Chapter 3 discloses the effects of the proposed action on hunting, hunting participation, and wildlife habitat, and compliance with applicable species-specific and comprehensive wildlife management plans. Chapter 4 discloses consultation with State and tribal agencies regarding the proposed action.

1.6.4 2005 MOTORIZED TRAVEL RULE

1.6.4.1 *Designation Criteria*

The 2005 Motorized Travel Rule requires consideration of the effects of designating roads, trails and areas on specific resources and components of travel management. The Rule states, "In designating National Forest System roads, National Forest System trails, and areas on the National Forest System lands for motor vehicle use, the responsible official shall consider effects on National Forest System natural and cultural resources, public safety, provision of recreation opportunities, access needs, conflicts among uses of National Forest System lands, the need for maintenance and administration of roads, trails, and areas that would arise if the uses under consideration are designated; and the availability of resources for that maintenance and administration." (36 CFR 212.55 (a))

The Rule also contains specific criteria related to designating trails and roads. For trails, it states, "In addition to the criteria listed in paragraph [a] of this section, in designating National Forest System trails and areas on National Forest System lands, the responsible official shall consider effects on the following, with the objective of minimizing: (1) Damage to soil, watershed, vegetation, and other forest resources; (2) Harassment of wildlife and significant disruption of wildlife habitats; (3) Conflicts between motor vehicle use and existing or proposed recreation uses of National Forest System lands or neighboring Federal lands; and (4) Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring Federal lands. In addition, the responsible

official shall consider: (5) Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and others factors." (36 CFR 212.55 (b))

For roads, the Rule states, "In addition to the criteria in paragraph [a] of this section, in designating National Forest System roads, the responsible official shall consider: (1) Speed, volume, composition, and distribution of traffic on roads; and (2) Compatibility of vehicle class with road geometry and road surfacing." (36 CFR 212.55 (c))

The effects associated with resources listed in the criteria identified above, are disclosed in this document for consideration by the responsible official. This disclosure of effects, in many cases, coincides with the disclosure of effects necessary for compliance with NEPA. However, the requirements of the 2005 Motorized Travel Rule do not supplant compliance with NEPA, rather the effects disclosure required by the Rule are in addition to that required by NEPA. The location of the effects disclosures for each of the criteria are listed in the following table. Because no designated motorized areas are proposed in any of the action alternatives, there is no discussion of criteria related to designation of areas.

Table 1-2. Guide to Locating Criteria Considerations Identified in the 2005 Motorized Travel Management Rule

Rule Criteria	Location in Document
General	
Natural Resources	Soils, Water, Vegetation, and Wildlife sections of Chapter 3; Air Quality and Climate Change in the Issues section of Chapter 2.
Cultural Resources	Cultural Resources section of Chapter 3.
Public Safety	Refer to Safety section below.
Provision of Recreation Opportunities	Recreation section of Chapter 3.
Access Needs	Refer to Access section below.
Conflicts Among Uses of National Forest System Lands	Recreation and Cultural Resource sections of Chapter 3; also refer to discussion below.
Need for Maintenance and Administration of Roads, Trails and Areas That Would Arise As a Result of Designation	Refer to Maintenance section in Chapter 2.
Availability of Resources for Maintenance and Administration	Refer to Maintenance section in Chapter 2.
Trail Specific	
Damage to Soil, Watershed, Vegetation and Other Forest Resources	Soils, Water, Vegetation, and Wildlife sections of Chapter 3; Air Quality and Climate Change in the Issues section of Chapter 2.
Harassment of Wildlife and Significant Disruption of Wildlife Habitats	Wildlife section of Chapter 3.
Conflicts Between Motor Vehicle Use and Existing or Proposed Recreation Uses of National Forest System Lands or Neighboring Federal Lands	Recreation section of Chapter 3.
Conflicts Among Different Classes of Motor Vehicle Uses of National Forest System Lands or Neighboring Federal Lands	Recreation section of Chapter 3.
Compatibility of Motor Vehicle Use with Existing Conditions in Populated Areas, Taking Into Account Sound, Emissions, and Others Factors	Generally not a concern - designated routes are generally not adjacent to populated areas on this District; also see Recreation section of Chapter 3 and Air Quality and Climate Change in Issues section of Chapter 2.
Road Specific	
Speed, Volume, Composition, and Distribution of Traffic on Roads	Refer to Safety section below.
Compatibility of Vehicle Class with Road Geometry and Road Surfacing	Refer to Safety section below.

Access Needs

As required by the 2005 Motorized Travel Rule, access to National Forest lands was considered. The 1986 Forest Plan access objective is to provide at least one access point per five miles of administrative boundary where it has been determined that there is not adequate access from National Forest System land. There are some areas on the District that are not easily accessible by the general public, because private lands adjacent to the Forest as well as topographic features preclude access or roads/trails do not exist. Some additional access points have been identified outside of this process and, over time, access to the Forest may increase. However, the intent will not be to provide road/trail access to all areas on the Forest. Any access needs identified will be evaluated in a separate analysis from this project.

Accessibility

Special provisions aimed at providing people with disabilities motorized opportunities not available to all forest users have not been included in this proposal. In the comments and responses on the 2005 Motorized Travel Rule published on November 9, 2005 in the Federal Register, the agency states, "Under section 504 of the Rehabilitation Act of 1973, no person with a disability can be denied participation in a Federal program that is available to all other people solely because of his or her disability. In conformance with section 504, wheelchairs[1] are welcome on all National Forest System lands that are open to foot travel and are specifically exempt from the definition of motor vehicle in § 212.1 of the final rule, even if they are battery-powered. However, there is no legal requirement to allow people with disabilities to use OHVs or other motor vehicles on roads, trails, and areas closed to motor vehicle use because such an exemption could fundamentally alter the nature of the Forest Service's travel management program (7 CFR 12e.103). Reasonable restrictions on motor vehicle use, applied consistently to everyone, are not discriminatory".

Similarly, in the comments and responses on the updated Forest Service Manual and Handbook travel management planning guidance published on December 9, 2008 in the Federal Register, the agency states, "Consistent with section 504, FSM 2353.05, and Title V, Section 507(c), of the Americans With Disabilities Act, wheelchairs and mobility devices, including those that are battery powered, that are designed solely for use by a mobility-impaired person for location and that are suitable for use in an indoor pedestrian area are allowed on all NFS lands that are open to foot travel. There is no legal requirement to allow people with disabilities to use motor vehicles on roads, on trails, or in areas that are closed to motor vehicle use. Restrictions on motor vehicle use that are applied consistently to everyone are not discriminatory. Generally, granting an exemption from designations for people with disabilities would not be consistent with the resource protection and other management objectives of designation decisions and would fundamentally alter the nature of the Forest Service's travel management program (29 U.S.C. 794; 7 CFR 15e.103)."

The relative effects of the alternatives on forest visitors are addressed in the Recreation section of Chapter 3.

Conflicts Among Uses of National Forest System Lands

The 2005 Motorized Travel Rule requires consideration of conflicts among uses of National Forest System lands. The Recreation and Cultural Resources sections of Chapter 3 each address aspects of conflicts among uses, primarily among users, including effects of motorized activities on non-

[1] A wheelchair is, "a device designed solely for use by a mobility impaired person for locomotion that is suitable for use in an indoor pedestrian area" (ADA, Title V Section 507 (c)).

motorized forest visitors and effects of motorized activities on uses associated with traditional religious and cultural practices. Conflict among other uses that may result from designation of system roads and trails, such as conflicts between motorized recreation and timber harvest activities, range management, and permit administration, were considered, but no substantive conflicts between these uses were identified.

Safety

The primary focus of public safety associated with route designation is mixing licensed and unlicensed vehicle use on District roads and trails. Commenters expressed an interest in having opportunities to operate unlicensed vehicles, while others have expressed safety concerns with permitting this activity. The 2005 Motorized Travel Rule lists public safety as one of the general criteria to be considered during the designation of roads, trails, and areas. The Forest Service believes that both mixed motorized use roads and motorized trails are legitimate and appropriate uses of the National Forests.

Public safety on Forest roads and trails depends on many factors including the condition of the facility, speed traveled, type of vehicles, human factors like driver expectations, and environmental factors such as weather, noise, and/or visual distractions. National Forest System roads are designed primarily for use by highway-legal vehicles (motor vehicles that are licensed or certified for general operation on public roads within the State) such as a passenger car or log truck. Motorized mixed use is defined as designation of a National Forest System road for use by both highway-legal and non-highway-legal motor vehicles. Currently all roads on the District require the use of highway-legal vehicles. No roads are currently designated as motorized mixed use.

Designating National Forest System roads for motorized mixed use involves safety and engineering considerations. A motorized mixed use analysis must be completed by a qualified engineer. The level of analysis is to be based on personal knowledge, expertise, and experience. During the analysis, the engineer will review crash probability and crash severity.

Designating system trails for motorized use does not require a motorized mixed use analysis. Trail use and characteristics, such as slower vehicle speeds than roads, generally indicate that crash severity and crash frequency are expected to be lower than for roads. Although the District does not have any motorized trails at this time, they are under consideration in this analysis. Motorized trails are common on many National Forests and nationally the Forest Service estimates that it has approximately 47,000 miles of motorized trails (USDA Forest Service, 2008).

It should be noted that designation of roads or trails for motor vehicle use by a particular class of vehicle under 36 CFR 212.51 should not be interpreted as encouraging or inviting use, or to imply that the road, trail, or area is passable, actively maintained, or safe for travel. Designation only indicates the types of vehicles that are permitted to be used on that route.

Montana State Law

The Forest Service defers to state laws in regard to operation of vehicles on roads and trails. Montana laws related to roads fall under: Montana Code Annotated, Title 61. Motor Vehicles. Montana laws related to trails fall under: Montana Code Annotated, Title 23 Parks, Recreation, Sports, and Gambling, Chapter 2 Recreation.

To operate a motor vehicle (highway-legal) on National Forest System roads, the vehicle must be registered with a valid license plate and the operator must possess a state drivers license and when operating a motorcycle must have a "motorcycle endorsement" on the license.

Montana state law does provide exemptions for use of non-highway-legal (aka off-highway or unlicensed) vehicles on National Forest System roads if the forest has designated and approved that road for such use (i.e. designated for motorized mixed use). The exemptions allow the operator of a non-highway-legal vehicle to be *under 16 years of age but at least 12 years of age* if at the time of driving the vehicle the operator has in their *possession a certificate* showing the successful completion of an off-highway vehicle safety education course approved by the State of Montana Department of Fish, Wildlife, and Parks and is in the *physical presence of a person who possesses a drivers license*.

Montana state law does not require that motor vehicles be licensed to operate on system trails, but if they are not licensed they must have an OHV sticker.

South Dakota State Law

South Dakota laws related to public roads fall under: South Dakota Codified Laws Title 32, Motor Vehicles (SDCL 32-20). The State of South Dakota has determined that state motor vehicle laws apply to all Forest Service system roads open to the public. To operate a motor vehicle on National Forest System roads in South Dakota, the vehicle must be highway legal, i.e. the vehicle must be registered with a valid license plate. Operators must also be licensed.

The Code of Federal Regulations states that traffic on Forest System roads is subject to state traffic laws where applicable, except when in conflict with travel management designations (36 CFR 212.5(a)(1)). Consequently, mixed motorized use road designations, if included in the Record of Decision for this project, would "preempt" South Dakota state motor vehicle law.

South Dakota state law does not require that motor vehicles be licensed to operate on system trails.

Operator Responsibilities

Operating a motor vehicle on National Forest System roads, National Forest System trails, and in areas on National Forest System lands carries a greater responsibility than operating a vehicle in a city or other developed setting. Not only must the motor vehicle operators know and follow all applicable traffic laws, but they need to show concern for the environment and other forest users. The misuse of motor vehicles can lead to the temporary or permanent closure of any designated road, trail, or area.

Users need to be aware of and comply with the following standard language found on the Motorized Vehicle Use Map per Forest Service policy: *"Operators of motor vehicles are subject to State traffic law, including State requirements for licensing, registration, and operation of the vehicle in question. Motor vehicle use, especially off-highway vehicle use, involves inherent risks that may cause property damage, serious injury, and possibly death to participants. Riders should drive cautiously and anticipate rough surfaces and features, such as snow, mud, vegetation, and water crossings common to remote driving conditions. Participants voluntarily assume full responsibility for these damages, risks, and dangers. Motor vehicle operators should take care at all times to protect themselves and those under their responsibility."*

Much of the Custer National Forest is remote, and medical assistance may not be readily available. Cellular telephones do not work in many areas of the Custer National Forest. Operators should take

adequate food, water, first aid supplies, and other equipment appropriate for the conditions and expected weather.

1.6.4.2 *Administrative Use*

In some situations, it is necessary and/or prudent for the Forest Service to identify a route for administrative use only. The most common situation on the District occurs when no right-of-way for public access exists, but access is needed to conduct administrative activities. In other cases, administrative use routes may be identified to reduce the potential for vandalism of facilities or to protect the public from health and safety concerns, such as potentially harmful mine waste.

Several scoping respondents expressed concerns about how travel management planning might impact their permitted use, or asked that exemptions or similar measures be included in this analysis for their permit activities. The 2005 Motorized Travel Rule Section 212.51(a) states that:

> Motor vehicle use on National Forest System roads, on National Forest System trails, and in areas on National Forest System lands shall be designated by vehicle class and, if appropriate, by time of year by the responsible official on administrative units or Ranger Districts of the National Forest System, provided that the following vehicles and uses are exempted from these designations:
> (1) Aircraft;
> (2) Watercraft;
> (3) Over-snow vehicles (see § 212.81);
> (4) Limited administrative use by the Forest Service;
> (5) Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
> (6) Authorized use of any combat or combat support vehicle for national defense purposes;
> (7) Law enforcement response to violations of law, including pursuit; and
> (8) Motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulations.

In other words, motorized use associated with permitted activities is exempt from the route designation process that is the subject of this analysis. Authorization for motor vehicle use for permitted activities, through a permit or another mechanism, is to be addressed separate from the designation process. That authorization must be "a written authorization issued under Federal law or regulations."

Some scoping commenters were concerned that routes identified for administrative use only will provide permittees motorized access not available to the general public. These commenters would prefer that routes that are available for permittee use be designated for public motorized use so that everyone has the same motorized access. This approach is generally neither practical (i.e. the public may not have legal access) nor desirable (i.e. use of administrative routes to reduce the potential for vandalism) from a management perspective. However, motor vehicle use of administrative use routes is intended to be infrequent and only for specific, agency-approved activities required for administration, utilization, or protection of National Forest System resources.

Motor vehicle use may occur by personnel from the Forest Service or other agencies, such as state law enforcement or game management agencies, or those authorized to use the route "under a written authorization issued under Federal law or regulations." Permit holders, such as utility companies, grazing permit holders, or outfitter/guides, are not automatically granted access to administrative use only routes. Their use of administrative routes must be specifically authorized in writing, must be necessary to conduct the activities authorized in their permit, must be for specific administrative routes, and may be limited to certain times of the year, as appropriate.

1.6.4.3 *Public Rights-Of-Way Access*

The 2005 Motorized Travel Rule states that, "In making designations pursuant to this subpart, the responsible official shall recognize: (1) Valid existing rights; and (2) The rights of use of National Forest System roads and National Forest System trails under § 212.6(b)" (36 CFR 212.55 (d)). This proposal is consistent with this direction. Furthermore, this proposal would not alter any existing authorizations for the use of routes on the District including, rights-of-way, road special use permits, operating plans, or special use permits. For example, this proposal does not contain actions that would alter the Forest Service's commitment made in a road use permit authorizing a property owner to use National Forest System roads to access their private property.

1.6.4.4 *Revised Statute (R.S.) 2477 Rights-Of-Way*

Commentors indicated an interest in the role of R.S. 2477 rights-of-way in this process. The 2005 Motorized Travel Rule exemption for legally documented rights-of-way held by State, county, or other local public road authorities covers rights-of-way under R.S. 2477 that have been adjudicated through the Federal court system or otherwise formally established. However, Congress has placed a moratorium on rulemaking concerning recognition of any unresolved R.S. 2477 rights-of-way claims. In addition, identification of unresolved R.S. 2477 rights-of-way is outside the scope of this project.

However, the Forest Service may, outside of this project, make a non-binding administrative determination as to the potential validity of an R.S. 2477 right-of-way claim for land use planning and management purposes. If the Forest Service identifies a potentially valid R.S. 2477 right-of-way claim through a non-binding determination, the agency will encourage the claimant to accept jurisdiction pursuant to an easement granted by the U.S. Department of Transportation (23 U.S.C. 317) or by the Forest Service under Section 2 of the National Forest Roads and Trails Act (FRTA) (16 U.S.C. 533) or to adjudicate the claim pursuant to the Quiet Title Act (28 U.S.C. 2409a).

1.6.5 MINIMUM ROAD SYSTEM (36 CFR 212.5(B)(1))

This travel management planning process is expected to result in identification of the minimum road system necessary to meet the utilization (including recreation), protection, and administration needs of the District. Consistent with 36 CFR 212.5(b)(1), this process will involve the "science-based roads analysis" and "broad spectrum of interested and affected citizens, other state and federal agencies, and tribal governments" necessary for determining the minimum road system needed (see Chapters 2 and 3 of the EIS). In addition, the process is expected to result in the minimum "road system determined to be needed to meet resource and other management objectives adopted in the relevant land and resource management plan (36 CFR part 219), to meet applicable statutory and regulatory requirements, to reflect long-term funding expectations, to ensure that the identified system minimizes adverse environmental impacts…." Chapters 1 and 3 of the EIS identify consistency with the Forest's land management plan and other statutory and regulatory requirements. EIS chapters 1, 2, and 3 disclose measures proposed to minimize adverse resource impacts and disclose the long-term funding expectations.

1.6.6 REGIONAL TRAVEL MANAGEMENT PLANNING GUIDANCE

1.6.6.1 *Motorized Game Retrieval*

The District is not proposing to designate any motorized game retrieval. In a June 30, 2006 letter to Forest and Grassland Supervisors, the Regional Forester for Region One of the Forest Service provided guidance that stated, "Travel off route for big game retrieval is not recommended and must have Regional Forester approval prior to initiating any proposals that consider off route use for this purpose". No extraordinary circumstances were identified that warranted proposing motorized cross-country game retrieval on the District, consequently designation of motorized big game retrieval was not proposed in the DEIS.

Subsequent to distribution of the DEIS, the Forest Service issued a new Travel Management Manual (January, 2009) and issued a January 16, 2009 Regional Forester's memo replacing the June 30, 2006 memo. The new Travel Management Manual states that, "The responsible official may include in a designation the limited use of motor vehicles within a specified distance of certain forest roads and forest trails where motor vehicle use is allowed, and if appropriate within specified time periods, solely for the purposes of dispersed camping or retrieval of a downed big game animal by an individual who has legally taken the animal (big game retrieval). The subsequent January 16, 2009 memo from the Regional Forester stated, "Decisions that include the use of motorized vehicles within a specified distance of designated routes for the purpose of big game retrieval should only be made after consulting with the Regional Forester."

Big game retrieval on the District was reviewed following the issuance of this new guidance. Again, no extraordinary circumstances were identified that warranted proposing motorized cross-country game retrieval on the District, consequently designation of motorized big game retrieval is not proposed in the FEIS.

The use of non-motorized game carts for game retrieval would not be affected by this proposal.

1.6.6.2 *Motorized Cross-Country Areas*

In a June 30, 2006 letter to Forest and Grassland Supervisors, the Regional Forester for Region One of the Forest Service provided guidance that stated, "Designated areas should have natural resource characteristics that are suitable for cross-country motor vehicle use or should be so significantly altered by past actions that motor vehicle use might be appropriate". Similar language was included in the January 8, 2007 Forest Service Travel Management Manual, "Areas should have natural resource characteristics that are suitable for cross-country motor vehicle use or should be so altered by past events that motor vehicle use might be appropriate. Examples might include sand dunes, quarries, the exposed bed of draw-down reservoirs, and other small places with clear geographic boundaries."

The Forest Service did not identify any areas suitable for motorized cross-country use on the Sioux Ranger District based on this guidance. As a result, designated cross-country motorized areas are not being proposed as a part of this project.

1.6.7 1986 CUSTER NATIONAL FOREST LAND AND RESOURCES MANAGEMENT PLAN

The Forest Plan directs management of all Forest Service administered lands within the Custer including the District. The Forest Plan provides both Forest-wide Management direction and direction for specific management areas. Forest Plan direction related to travel management is listed in Appendix B.

- End of Chapter 1 -

Chapter 2: Public Participation, Issues, and Alternatives

2.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS

- The Alternatives Considered But Dropped From Detailed Analysis was expanded to include additional alternatives identified in comments on the DEIS.
- Minor changes to Alternative B were made to address new information and make corrections.
- The Public Participation Summary was updated with information on public involvement for the DEIS.
- The discussion on route maintenance was moved from Chapter 1 to this chapter and expanded.

2.2 INTRODUCTION

This chapter reviews the public involvement process, identifies issues, and describes and compares three alternatives considered for management of motorized and non-motorized travel. A summary of effects by alternative is also displayed at the end of this chapter.

2.3 PUBLIC PARTICIPATION SUMMARY

Sioux Ranger District Travel Management EIS public participation is summarized in this section. The summary describes public involvement, identifies persons and organizations contacted during preparation of the EIS, and specifies time frames for accomplishing goals in accordance with 40 CFR 1506.6

Public involvement includes the steps necessary to identify and address public concerns and needs. The public involvement process assists agencies in: (1) broadening the information base for decision making; (2) informing the public about the Proposed Action and the potential impacts that could result from the project; and (3) ensuring that public needs are understood by the agencies.

Public participation is required by NEPA at three specific points: the scoping period, review of the Draft EIS, and receipt of the Record of Decision.

Table 2-1 lists the public meetings conducted in conjunction with the process to date.

2.3.1 PUBLIC SCOPING

Scoping is a process used to help identify specific areas of concern related to the proposal during the early portion of the detailed environmental analysis. The initial scoping document (see Project Record) for this project was distributed on October 22, 2007 to approximately 287 individuals, government agencies, tribal governments, news media, businesses, and organizations that have shown interest in projects on the Custer National Forest, and in particular on the Sioux Ranger District. The scoping document was also posted on the Forest's web page.The scoping document provided information on the purpose and need for the project, described the proposed action, and asked for comments. A news release advertisement inviting comments was placed in the Billings Gazette (Billings, MT) on October 29, 2007. News releases were sent to local newspapers including the

Billings Gazette, Ekalaka Eagle, Fallon County Times in Montana, the Bowman County Pioneer in North Dakota, and the Nation's Center News and Rapid City Journal in South Dakota, and radio stations in Rapid City, Bowman, Buffalo, Baker, and Sturgis. These media efforts helped to publicize the proposal and comment period. Interested parties were asked to comment within 30 days, which ended November 26, 2007.

Public scoping meetings were held in Camp Crook and Buffalo, South Dakota, and Ekalaka, Montana in November 2007 to discuss the proposal (see Table 2-1).

Table 2-1. Summary of Public Meetings

Location	Date/Time	Number of Attendees
Proposed Action Scoping Meetings		
Camp Crook, SD	November 5, 2007, 6:00-8:00 pm	9
Ekalaka, MT	November 7, 2007, 6:00-8:00 pm	8
Buffalo, SD	November 8, 2007, 6:00-8:00 pm	13
DEIS Public Meetings		
Ekalaka, MT	October 22, 2008, 6:00 pm	7
Buffalo, SD	October 23, 2008, 6:00 pm	4

In response to these efforts, 22 letters, personal comments, emails, or phone calls were received. The analysis of electronic, written, and verbal comments preliminarily identified several potential issues. Three of these issues were identified as significant issues and were used to formulate elements of the alternatives (see Issues section below).

2.3.2 NOTICE OF INTENT

A Notice of Intent (NOI) was published in the Federal Register on September 5, 2008. The NOI stated that when the Draft Environmental Impact Statement was distributed, the public would have a 45-day comment period from the date when the Environmental Protection Agency publishes the Notice of Availability in the Federal Register. Also, a news release will be provided to local news media at the beginning of the 45-day comment period on the Draft EIS. The Draft EIS will be made available to interested parties identified in the updated District Travel Management Planning EIS mailing list.

2.3.3 PUBLIC INVOLVEMENT FOR THE DEIS

The Notice of Availability for the Draft EIS was published in the Federal Register October 3, 2008 which began a 45-day comment period. News releases were provided to local news media at the beginning of the comment period. The DEIS was distributed to the public on September 26, 2008 and posted on the Forest's web page. The Forest conducted two public open houses to provide information and encourage input on the DEIS (see Table 2-1). The public open house meetings provided the public with the opportunity for one-on-one discussions with interdisciplinary team members. In response to the comment period, the Forest received 11 comment letters, e-mails, and documented phone conversations on the DEIS. Three of the 11 letters were received after the comment period deadline. Further information on commenters, substantive comments identified in the letters, e-mails, and phone conversations, and agency responses to comments can be found in Chapter 5.

2.4 SIGNIFICANT ISSUES

One purpose of scoping is to identify the significant issues that should be analyzed in depth within an EIS (40 CFR 1501.7). The significant issues become the focus of the analysis and guide alternative development. All public scoping comments were considered by the interdisciplinary team and Responsible Official, and are documented in the project record.

The IDT used the public comments on the scoping document, along with internal scoping, to develop a list of issues related to potential effects of this project. The IDT and the District Ranger went through a process to identify the significant issues to be analyzed in depth in the EIS versus those which are not significant and therefore only warrant brief discussion of why they are not considered significant. In general, the significant issues identified through that process represent those resources with the greatest potential to be significantly impacted by the project. Significant issues pertain to resources or other components of the environment that are of public value or interest and that are sensitive to potential changes in travel management. The Forest Supervisor concurred with the list of significant and other than significant issues. These issues were used to develop the range of alternatives and are analyzed in detail in Chapter 3. The list of other than significant issues are addressed in Section 2.4

No additional significant issues were identified during the comment period for the Draft EIS.

2.4.1 RECREATION

Concern about motorized recreation opportunities. Reductions in the amount of routes available for motorized use could reduce the opportunities available for motorized recreation, diminish the ability to retrieve big game using motorized routes, and reduce dispersed camping opportunities. Alternative A was developed to respond to this issue.

Indicators:

- Acres in rural, roaded natural, and semi-primitive motorized ROS settings within the District.
- Miles of motorized system roads and trails to be designated on the District.

Concern about non-motorized recreation opportunities. Increases in the amount of routes designated for motorized use could reduce the quality of non-motorized recreation experiences, reduce opportunities for non-motorized big game hunting opportunities, and reduce opportunities for solitude, away from noise generated by motorized vehicles. Elements of Alternative B were developed in response to this issue.

Indicators:

- Acres in semi-primitive non-motorized and primitive ROS settings within the District.

Concern about opportunities for off-highway vehicle operation. The use of unlicensed off-highway vehicles on roads is not consistent with State of Montana and South Dakota motor vehicle laws. Designating roads (as opposed to motorized mixed use roads or motorized trails) would limit opportunities for off-highway vehicle use. This issue was used in designing Alternatives A and B.

Indicators:

- Miles of mixed use system roads in the project area.
- Miles of motorized system trails in the project area.

Concern about impacts on personal recreation experiences. The Forest Service and commenters recognized the potential for travel management changes to not only impact individual's personal experiences and connection to forest lands, but it also has the potential to increase or decrease conflict between forest users, particularly between motorized and non-motorized uses. Alternative B was developed in part to address concerns such as these.

2.4.2 CULTURAL RESOURCES

Concern about protection of archeological sites, traditional cultural properties, and traditional practices. Actions associated with designation, such as converting non-system routes to system routes, have the potential to adversely impact the scientific, traditional, cultural, and intrinsic values of archeological, cultural, and historic sites. In addition, proposed actions could have an adverse effect to certain areas of traditional importance to local tribes.

Indicators:

- Total number of cultural resource sites within the Area of Potential Effect (APE).
- Number of priority asset sites within the APE.
- Number of culturally sensitive sites within the APE.

2.4.3 WILDLIFE

Concern about disturbance of wildlife and impacts to wildlife habitat. Human use associated with system and non-system road and trail designation has the potential to disturb wildlife through noise and visual effects. Human use can disrupt activities such as foraging habits, resting location selection and duration, nesting, and denning. In addition, changes in road densities can affect the quality of wildlife habitat. The Forest Service identified and analyzed the effects of travel management alternatives on federally threatened, Forest Service sensitive, big-game, and other wildlife species and their habitat.

Indicators:

- Effects determinations for federally listed threatened or endangered species, Forest Service sensitive species, Custer National Forest management indicator species, and other species of concern.
- Deer and Elk – Motorized Route Density and Percent secure habitat within deer and elk habitat on the District.
- General wildlife – Percent of land unit that is core wildlife habitat based on motorized and non-motorized routes on the District.

2.5 OTHER ISSUES

The Council on Environmental Quality Regulations Implementing the National Environmental Policy Act states that agencies should discuss, "only briefly issues other than significant ones" (40 CFR 1500.4[c]). The following issues were determined to not be significant issues because they did not

drive development of alternatives or major components of alternatives, there were no significant effects associated with the proposed actions, or both.

2.5.1 WATER QUALITY, FISHERIES, AND AQUATICS

The action of adding routes to the system has the potential to influence water quality indirectly through on-site erosion and sediment delivery to streams. Actions can also influence water quality and channel processes as a result of improper route location.

Indicators:

- Miles of actions that decrease risks on routes within the project area.
- Miles of actions that increase risks on routes within the project area.
- Effects determinations for listed Forest Service sensitive species and other species of concern.

2.5.2 SOILS

Adding routes to the transportation system on high and medium risk soils could increase the potential to compact, displace, or erode soils such that there is a loss of soil productivity.

Indicator:

- Miles of motorized and non-motorized routes by high/very high and medium erosion hazard rating on the District.

2.5.3 VEGETATION

Concerns have been expressed about the effects of designating routes on native and rare vegetation found on the District. Designation of additional system roads and trails, along with the associated dispersed vehicle camping, has the potential to cause ground disturbance that could lead to noxious weed establishment and/or encouraging spreading.

Indicators:

- Acres and Percent of potential vegetation impacts by moderate risk category for motorized routes on the District.
- Weed susceptible Acres within designated road corridors within the project area.
- Total weed infested Acres within motorized route potentially affected corridor.
- Effects determinations for listed Forest Service sensitive species and other species of concern.

2.5.4 ECONOMICS

The functional economic area that surrounds the District consists of Carter County in Montana and Harding County in South Dakota and the immediate surrounding counties. For the two-county functional economic area evaluated, the total economic effects of recreation overall, and specifically recreation tied to motorized and non-motorized activities, are very small compared to the total economic activity in the area. Though changes in use attributable to the alternatives outlined in the economic report are difficult to estimate (see Project Record), the dominance of hunting as a recreation choice and the expectation that the number of hunters using the District is not expected to

change as a result of the alternatives (see Chapter 3 Recreation) means that the proposed travel management changes would have little effect on the overall economy of the two-county area.

Given this information, no further discussion of this issue is included in the EIS.

2.5.5 AIR QUALITY

There is concern that the addition of routes to the transportation system may lead to an adverse impact on air quality. Encountering motorized use emissions and fugitive dust on Forest roads and trails could have an undesirable effect on the quality of a recreational experience. These effects are typically transitory in nature and not long lasting. There are typically good air dispersion characteristics and low inversion potential across the District. In addition, traffic is generally at lower speeds that result in less dust generation.

Air quality across the District is considered good to excellent. All areas within and immediately adjacent to the District currently meet all state and federal air quality standards (MTDEQ, 2008 and SD DENR, 2008). There are no non-attainment areas in South Dakota. The nearest Montana non-attainment area for particulate matter is Lame Deer, MT (approx. 150 miles west) and Laurel, MT (approx. 300 miles west) with sulfur dioxide concerns.

Implementation of any of the alternatives is expected to maintain air quality conditions due to 1) good dispersion characteristics across the District, 2) low inversion potential across the District, 3) low emissions from vehicles relative to other potential sources, and 4) reduced or equivalent route miles open to motorized vehicles under all alternatives compared to the existing condition. Compliance with State and Federal air quality standards would occur under all alternatives. Given this information, no further discussion of this issue is included in the EIS.

2.5.6 CLIMATE CHANGE

A January 13, 2009 Forest Service document titled *Climate Change Considerations in Project Level NEPA Analysis* states, “It is not currently feasible to quantify the indirect effects of individual or multiple projects on global climate change and therefore determining significant effects of those projects or project alternatives on global climate change cannot be made at any scale.” (USDA Forest Service, 2009) This project only has the potential to have indirect effects on global climate change, if any, and will not have any direct effects, because the scope of the project is limited to designating routes for motor vehicle use. Given this information, no further discussion of this issue is included in the EIS.

2.6 ALTERNATIVES CONSIDERED IN DETAIL

In response to agency and public issues, two action alternatives were developed. Alternatives A and B were analyzed in detail along with the No Action Alternative. A general description of each of the alternatives is provided below.

Table 2-4 summarizes important features and rationale for each of the alternatives. Detailed information on the alternatives is displayed on the comparison maps (see Map Package) and in the route specific tables provided in Appendix C.

Tables 2-2, 2-3, and 2-9 are intended to provide readers with comparative information about the alternatives that is not strictly focused on changes from no action. For the action alternatives, the figures in the tables represent the total miles available under each table category if that alternative is implemented. The figures used for the No Action Alternative represent the current miles for each of the categories listed.

2.6.1 ALTERNATIVE A (EXISTING CONDITION)

Alternative A was developed in response to multiple public comments expressing a desire to designate most or all of the motorized routes identified in the 1999-2000 inventory of the District for public motorized use. This alternative consists of all routes identified during the 1999-2000 inventory, excluding:

1. Routes that have been decommissioned, obliterated, or are otherwise unavailable for public motorized use based on documented decisions since 2000.
2. Routes for which the Forest Service has no legal right-of-way for public use. This is necessary to be in compliance with the 2005 Motorized Travel Rule guidance and to make this alternative viable for implementation. These routes were either identified as candidates for decommissioning/obliteration or, if an administrative need was identified, they were proposed for administrative use only. This affects 31 miles of routes.
3. Two miles of existing administrative routes that would remain administrative use only.

Consequently, Alternative A includes designating the majority of both system and non-system routes on the District for public motorized use. Primary motorized travelways would either be designated as roads, or where appropriate, as mixed motorized use roads. For the most part, all other routes would be designated as motorized trails. To maximize motorized opportunities, no season of use would be designated on any routes, and motorized trails would be designated for use by all motor vehicles. This alternative approximates the existing condition (e.g. motorized use of existing system and non-system routes).

Designation of motorized trails under this alternative is intended to: 1) expand opportunities for motorized recreation opportunities, and 2) more accurately describe the characteristics and nature of these routes. In other words, routes proposed to be motorized trails do not display characteristics typically associated with roads, such as surfacing, engineering, and prescribed clearing widths. In many cases, the routes were not engineered, do not have any surfacing which has resulted in rutting and no defined drainage, and they may become impassable when wet.

This alternative includes the following actions (see Appendix C for route specific actions and rationale):

- Add 101 miles of non-system routes to the transportation system as either roads or motorized trails; 91 miles for public motorized use and 10 miles for administrative use.
- Identify 0.40 miles of system roads (two roads) as candidates for decommissioning.
- Identify 24 miles of existing system roads for administrative use.
- Convert 210 miles of system roads to system motorized trails open to all motor vehicles.
- Designate 116 miles of system roads for mixed motorized use.
- Remove season of use designations on 148 miles of system roads.

- Eliminate dispersed vehicle camping along 10 miles of system routes.

The 2001 Tri-State OHV Decision authorized dispersed vehicle camping within 300 feet of motorized routes on the District. During the past eight years, the District has not observed unacceptable adverse impacts from this activity that warrants proposing a change to this activity under this alternative. However, due to safety and health concerns related to past mining activities, 10 miles of motorized routes would not be designated for dispersed vehicle camping in the North Cave Hills.

The tables at the end of this section provide a summary of the elements associated with this alternative (Table 2-4) and a summary of alternative mileages (Tables 2-2 and 2-3). Appendix C provides a list of the route specific actions proposed under this alternative.

2.6.2 ALTERNATIVE B (PREFERRED ALTERNATIVE)

Alternative B consists of designating a system of motorized routes that provides the public with motorized recreation opportunities, while addressing resource concerns and recreation opportunity concerns. Primary travelways included in this alternative would be designated as roads, or where appropriate, as mixed motorized use roads, and, for the most part, all other routes would be designated as motorized trails. Designation of motorized trails under this alternative is intended to: 1) expand opportunities for motorized recreation opportunities, and 2) more accurately describe the characteristics and nature of these routes. In other words, routes proposed to be motorized trails do not display characteristics typically associated with roads. They are in many cases very primitive.

The Forest Service followed this general screening process to develop this alternative:

1. System and non-system routes for which the Forest Service did not have a legal right-of-way for public motorized use were evaluated to determine if administrative use was needed. If needed, the routes were proposed for administrative use, if they were not needed they were identified as candidates for decommissioning or obliteration.
2. Recent decisions on actions within the District were reviewed to determine if there were any new circumstances that would prompt proposing changes, and if not, then to insure that information about these decisions were incorporated.
3. The remaining system and non-system routes were evaluated to determine if there was an administrative, utilization (including recreation), resource, or protection need for the route. If a need existed, system routes were proposed for designation and non-system routes were proposed to be added to the system and designated. If no need was identified, system routes were identified as candidates for decommissioning and non-system routes were identified as candidates for obliteration.
4. At the same time, the Forest Service also assessed whether routes were parallel with each other, i.e. routes that were within ½ mile of each other. Where parallel routes existed, only one route was generally selected for public motorized designation.
5. Finally, based on public input, a season of use that limited motorized travel on some of the land units was developed. The purpose of this measure was to provide additional wildlife security and increase opportunities for non-motorized hunting. Forest Service personnel identified adjacent routes that would create consolidated areas accessible by primary travelways and proposed restricting motorized travel within those areas during rifle big-game hunting seasons – October 15 to November 30.

This alternative includes the actions shown in Table 2-4 (see Appendix C for route specific actions and rationale).

- Add 66 miles of non-system routes to the transportation system as either roads or motorized trails; 23 miles for public motorized use and 43 miles for administrative use.
- Identify 22 miles of system roads as candidates for decommissioning.
- Identify 100 miles of existing system roads for administrative use.
- Convert 72 miles of system roads to system motorized trails open to all motor vehicles.
- Designate 57 miles of system roads for mixed motorized use.
- Designate a season of use on 37 miles of system roads and motorized trails.
- Remove season of use designations on 4 miles of system roads.
- Eliminate dispersed vehicle camping along 10 miles of system routes.

The 2001 Tri-State OHV Decision authorized dispersed vehicle camping within 300 feet of motorized routes on the District. During the past eight years, the District has not observed unacceptable adverse impacts from this activity, such as moderate to severe vegetation denuding or rutting that would cause water quality issues that warrant proposing a change to this activity under the alternative. However, due to safety and health concerns related to past mining activities, 10 miles of motorized routes would not be designated for dispersed vehicle camping in the North Cave Hills.

Alternative B includes the designation of a combination of roads, mixed motorized use roads, and motorized trails.

The tables at the end of this section provide a summary of the elements associated with this alternative (Table 2-4) and a summary of alternative mileages (Tables 2-2 and 2-3). Appendix C provides a list of the route specific actions proposed under this alternative.

2.6.3 NO ACTION ALTERNATIVE

The No Action Alternative consists of designation of the existing system roads[1] on the District. This is different from Alternative A (existing condition) which proposes to designate both existing system and non-system routes. The No Action Alternative also includes the existing vehicle types and seasons of use currently in force on the District (see Table 2-4 for details).

Designation of the existing network of system roads would not require any further NEPA and represents the starting point for any proposed changes to the routes or areas available for public motorized use. Based on this information, no action was determined to be designation of the existing system roads and trails.

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[1] The decision to use existing system roads as the foundation for no action stems from 2005 Motorized Travel Rule guidance, including the following:

- The *Travel Management: Designated Routes and Areas for Motorized Use* (USDA Forest Service, 2005) guide prepared by the Forest Service to aid in implementing the 2005 Motorized Travel Rule affirms that the starting point for travel analyses is the current network of system roads.
- The *Motor Vehicle Route and Area Designation Guide* (version 111705) (USDA Forest Service, 2005) states, "There is no need to initiate a NEPA process to designate those NFS roads, NFS trails, and areas on NFS lands that are already managed for motor vehicle use where that use will continue unchanged, or to retain existing restrictions on motor vehicle use."

System roads that the Forest Service does not have legal right-of-way for public access to use will be included in this alternative, unlike the action alternatives. This is because not designating these system roads would constitute an action, which would be inconsistent with the premise of the No Action Alternative.

Table 2-2. Summary of miles[2] of roads and trails by alternative.

Route Designation			Alternative A	Alternative B	No Action
National Forest System Roads and Trails	**Public motorized use**	Road: All types allowed (motorized mixed use)	116	57	0
		Road: Highway legal vehicles	70	159	399
		Trail: All types allowed	280	84	0
		Subtotal	***466***	***300***	***399***
	Administrative use		***36***	***145***	***2***
	Total miles of system routes		***502***	***445***	***401***
	System roads not designated for public motorized or administrative use		**0**	**23**	**0**
Non-System Routes	**Non-system routes not converted to system roads or trails**		**3**	**37**	**104**
	Total Miles of Routes not designated or not converted for public motorized or administrative use		***3***	***60***	***104***
	Total		**505**	**505**	**505**

Table 2-3. Miles of system roads and trails designated for public motorized use by proposed season of use designation for each alternative.

Season of Use	Alternative A	Alternative B	No Action
Yearlong	466	184	251
December 1 – October 15 (Provide Non-Motorized Hunting)	0	116	148
Total	***466***	***300***	***399***

[2] Mileage comparison between tables may not be exact due to rounding differences.

Table 2–4. Summary of Elements for Each Alternative

Element	Alternative A (Existing Condition)	Alternative B (Preferred Alternative)	No Action Alternative
Type of Vehicle Designations	Roads: In general, primary travelways would be designated as system roads available for use by highway-legal vehicles. Motorized Trails: A significant portion of high clearance vehicle roads (Maintenance Level 2) would be converted to system trails open to all motor vehicles. Mixed Use Roads: A limited number of roads would be designated as mixed motorized use where connections between proposed motorized trails were important. (The map package displays the type of vehicle designation for each route.)	Same as Alternative A.	System roads would be designated for use by highway legal vehicles.
Season of Use Designations	Season of use for all designated routes is yearlong.	Season of use for all designated routes is yearlong except for the following seasons of use. **December 1-October 14** – A portion of the motorized trails on several of the land units would have this season of use designation to provide additional wildlife security and to increase opportunities for non-motorized hunting. See Appendix C and the map package for the specific routes involved.	Season of use for all designated routes is yearlong except for the following seasons of use. **December 1-October 14** – A portion of the roads in the Long Pines land unit would have this season of use designation to provide additional wildlife security and to increase opportunities for non-motorized hunting. See Appendix C and the map package for the specific routes involved.
Dispersed Vehicle Camping Designations	Access for dispersed vehicle camping would be allowed within 300 feet of all designated system roads and motorized trails on the District, except for 10 miles of motorized routes in the North Cave Hills.	Same as Alternative A.	Same as Alternative A.
Administrative Use	Roads identified for administrative use would not be designated for public motorized use for the following reasons: 1) the lack of legal right-of-way for public access, 2) to protect the public from hazardous situations, 3) existing administrative use roads at administrative sites, 4) prior decisions. Appendix C includes all non-system roads that would be converted to system roads and identified for administrative use, as well as any additional system roads that would be identified for administrative use.	Same as Alternative A.	Roads identified for administrative use would not be designated for public motorized use for the following reasons: 1) existing administrative use roads at administrative sites, and 2) prior decisions. This alternative includes only those roads currently identified for administrative use.

2.6.4 ELEMENTS COMMON TO ALL ALTERNATIVES

2.6.4.1 Administrative Exemptions

Exemptions for off road travel as described in 36 CFR 212.51(a) would be allowed. Exemptions include administrative activities such as law enforcement, fire, emergencies, military operations, noxious weed control, permit activities, and other official business purposes. All such use requires authorization from or coordination with the appropriate Line Officer, detailing when, where, who, and under what circumstances motorized travel would be allowed.

2.6.4.2 Administrative Sites

System roads associated with administrative sites will not be designated for public motorized use, except those roads that provide access to visitor services.

2.6.4.3 System Roads with Forest Service Maintenance Obligations

System roads that the FS has a legal obligation to maintain will not be removed from the system, but may or may not be designated for public motorized use.

2.6.4.4 Roads Under Permit

In instances of special use permits for ingress/egress to private inholdings, a road will generally be designated for public motorized use when the Forest Service has road maintenance responsibilities. In instances of road use permits, a road may be closed to public use when the permit holder is assigned road maintenance responsibilities.

2.6.4.5 No Legal Right-of-Way for Public Access

Routes that the Forest Service has no legal right-of-way to access will not be designated for public motorized use.

2.6.4.6 Designated Routes Required to be Part of the National Forest System

In accordance with the 2005 Motorized Travel Rule, only system routes can be designated for public motorized use. If motorized routes that are currently non-system routes are desired for public motorized use, an action is required to add them to National Forest transportation system.

2.6.4.7 Dispersed Vehicle Camping Authorized Only on National Forest System Lands

Under alternatives that allow access for dispersed vehicle camping within 300 feet of a motorized route, access is only authorized on NFS lands, not on private, state, or other federal lands that may be within 300 feet of designated routes.

2.6.4.8 Implementation

In order to implement this project, the 2005 Motorized Travel Rule requires the Forest to make a Motor Vehicle Use Map available to the public, free of charge. The Forest also expects to install signs

on all designated routes, undertake an estimated two year education campaign regarding new travel management direction and rules, and patrolling. These activities, other than publishing the MVUM, may vary in extent subject to the availability of funding.

Until the Record of Decision (ROD) for this project is implemented, the current decisions for the existing network of system roads remain in effect. The ROD and its implementation will supersede the existing network of motorized system roads when the Motor Vehicle Use Map is published and any associated orders are in place.

Sign purchase and installation is a one time cost, but the remaining costs such as patrolling and Motor Vehicle Use Map production would be incurred annually. Annual funding levels may vary.

2.6.4.9 Enforcement

Public comment related to law enforcement issues focused on enforcing regulations, providing more law enforcement presence, and providing the public with signing and education. These comments tended to concentrate on motorized activities on the forest, and were raised by both motorized and non-motorized recreationists. A number of comments highlighted impacts associated with the lack of enforcement, such as resource damage and diminished recreation experience for other forest visitors. Some comments suggested that there was a need for additional law enforcement personnel to handle the increase of motorized use on the forest.

Background

2005 Motorized Travel Management Rule. Until recently, travel restrictions could only be enacted through two means on National Forests: the 36 Code of Federal Regulations (CFR) 261 Subpart A (restrictions or general prohibitions), and the 36 CFR 261 Subpart B (prohibitions that are created through special order).

The Subpart A prohibitions that apply to the use of roads and trails have historically dealt primarily with violations of applicable state laws that regulate licensing, noise, safe operation of vehicles, damaging roads or trails, interfering with road or trail use, under the influence of alcohol or drugs, careless or reckless operation or in a manner in which damages resources or wildlife (36 CFR 262.12[a.]-[d.] and 36 CFR 261.13 [a.]-[i.]). These general prohibitions of the CFRs are considered "strict liability" prohibitions. This means that it is the user's responsibility to know and adhere to these regulations without any additional notification or posting on the part of the agency. Recent changes to CFR regulations have added off-route motor vehicle travel to the Subpart A restrictions. (See further discussion below on this subject.)

Most travel restrictions that historically prohibited some sort of travel on National Forest were implemented through the 36 CFR subpart B authority for special orders, specifically 36 CFR 261.53 (special closures), 36 CFR 261.54 (use of Forest development roads), 36 CFR 261.55 (use of Forest development trails), and 35 CFR 261.56 (use of vehicles off Forest development roads). These specific sections of the CFRs permit the agency to prohibit certain uses of roads and trails to limit use to specific vehicle types and to prohibit off road travel.

The situation that especially hampers enforcement of these special order restrictions is the 36 CFR 261.51 (a) and (b) requirement for posting of these prohibitions. 36 CFR 261.51 (a) states, "Placing a

copy of the order imposing each prohibition in the Offices of the Forest Supervisor and District Ranger, or equivalent Officer who has jurisdiction over the lands affected by the order AND (emphasis added)," 36 CFR 261.51 (b) states, "Displaying each prohibition imposed by an order in such locations and manner as to reasonably bring the prohibition to the attention of the public." The latter requirement becomes very problematic when attempting to post area closure or trail restrictions on the ground across large areas. The simple issue is that without adequate posting on the ground, special order restrictions are less enforceable. Lack of maintenance and vandalism of posted prohibition signing creates ongoing issues, and has the effect of negating or jeopardizing the effectiveness of special order closures.

In 2005, the Motorized Travel Rule changed the legal authority for regulating off-route travel of motor vehicles. The final rule modified regulations in 36 CFR 295 which historically governed the management of OHVs on National Forests. In addition, the rule changed the enforcement authority for motor vehicle restrictions from 36 CFR 261 Subpart B: Special Orders to the Subpart A: General Prohibitions section, making motor vehicle violations in the future a strict liability infraction. This change relieves the Agency of the posting and signing requirements of 36 CFR 261 Subpart B and authorizes map notification to be the enforcement tool in the future. The decision mandates that Districts and administrative units complete a travel management review with public involvement to designate motorized roads, trails, and areas and produce Motor Vehicle Use Map that identifies these designations (36 CFR 212.56). Once this is completed, travel management restrictions may be enforced under Subpart A without being required to post and maintain prohibition signs in the field.

The Forest Service's Washington Office has established the format and the majority of the text that will appear on all MVUM maps prepared by the Forest Service. The text on these maps will include standardized information on the purpose and content of the map as well as a statement about motorized vehicle operator's responsibilities and fines. The text states, "It is prohibited to possess or operate a motor vehicle on National Forest System lands on the Sioux Ranger District other than in accordance with these designations (36 CFR 261.13). Violations of 36 CFR 261.13 are subject to a fine of up to $5,000 or imprisonment for up to 6 months or both (18 U.S.C. 3571(e))."

Staffing. There is one full-time Law Enforcement Officer (LEO) stationed on the Custer National Forest. The District also has five permanent staff trained as Forest Protection Officers (FPO). FPOs have limited law enforcement authority and responsibilities compared to LEOs, but are capable of issuing citations for travel management violations associated with the prohibition created under the 2005 Motorized Travel Rule found at 36 CFR 261.13. Increasing the number of LEOs or FPOs is primarily a function of Forest and District budget and priorities. Changes in the budget to facilitate increases in law enforcement capability can be accomplished through changes in allocations within Forest and District budgets, securing additional budget funding from within the Northern Region, or supplementing budgets with grants and similar funds. Based on past practices, additional funding would most likely be used to hire additional seasonal FPOs, rather than full-time FPOs or LEOs.

Changes in Forest priorities to increase law enforcement capability would most likely occur through two options. First, the Forest can determine which programs, such as developed recreation, travel management enforcement, wildlife, etc., should be emphasized and allocate the funds to accomplish objectives related to those priorities. Another method is to prioritize the work of existing permanent and seasonal employees so that more than the current number of staff have the training and supervisory support to enforce violations of travel management decisions.

Post-Motor Vehicle Use Map Enforcement

This analysis will fulfill the 2005 Motorized Travel Rule requirements of review and public involvement for each of the action alternatives and no action. Upon publishing the MVUM for the selected alternative, the new 2005 Motorized Travel Rule regulations will become enforceable on the District (36 CFR 261.13). The MVUM would display those routes open to motorized travel by the public, along with the types of vehicles and seasons of use. The District intends to post route number signs on the open routes to correspond with numbers shown on the MVUM. These actions are expected to greatly enhance the ability to enforce travel management decisions. The regulatory requirements for posting prohibitions will no longer be applicable, and the problems associated with implementing and maintaining extensive prohibition posting will be eliminated. Hard-copy and electronic versions of the MVUM will be available to forest users and will identify those roads and trails available for motorized use by the public. This is expected to reduce confusion about where motorized vehicle use is legal. In addition, LEOs and FPOs will have clear authority for issuing citations for violations of motorized travel management decisions.

Although new travel restrictions may be less complex, the changes would require a period of adjustment for Forest visitors. Inadvertent violation of new travel restrictions is expected initially, but is also expected to diminish over the first several years after implementation. Enforcement of new travel restrictions would require additional emphasis by the Custer National Forest, with assistance from the South Dakota Department of Game, Fish and Parks and Montana Department Fish, Wildlife and Parks, and the public.

Having a clear, enforceable travel plan will facilitate being able to involve groups and individuals that have expressed interest in assisting the District with volunteer “patrols” to provide an additional presence in-the-field. Volunteers can provide District visitors with information about legal motorized use, avoiding activities that have adverse impacts on natural and cultural resources, and report violations when they are observed.

2.7 ALTERNATIVES CONSIDERED BUT DROPPED FROM DETAILED ANALYSIS

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the Proposed Action provided suggestions for alternative methods for achieving the purpose and need. Some of these alternatives may have been outside the scope of travel management, duplicative of the alternatives considered in detail, incorporated into alternatives considered in detail, determined to be components that would cause unnecessary environmental harm, or are already addressed by law, regulation or policy. Therefore, a number of alternatives were considered, but dismissed from detailed consideration for the reasons summarized below.

2.7.1 MOTORIZED DESIGNATED AREAS

The preamble to the 2005 Motorized Travel Rule indicates that designated areas “would have natural resource characteristics that are suitable for motorized vehicle use or would be so significantly altered by past actions that motor vehicle use might be appropriate.” (Federal Register, Vol. 70, No. 216, p.

68274) This language was included in the January 2009 Forest Service Manual and Handbook. (FSM 7715.73 (2))

The Forest Service considered lands within the Sioux Ranger District, but did not identify any areas that "have natural resource characteristics that are suitable for motorized vehicle use". No naturally-occurring tract of land on the District that does not possess natural resources that would be adversely impacted by long-term cross-country vehicle travel designation was identified.

The Forest Service also reviewed District lands for areas "significantly altered by past actions", including mining, vegetation management, natural disasters, or other activities such that they are suitable for motorized cross-country vehicle travel. There are some lands that meet this definition in the Cave Hills land unit. These areas are the result of past mining. However, these areas contain health and safety hazards in the form of radioactive soils exposed or deposited during mining activities. The Forest Service has taken measures to limit human exposure within these areas (i.e. area and road closures, silt catchments, water testing). Designating cross-country vehicle travel in these areas would be counter to these activities and pose a health and safety hazard. No other tracts of land that met this definition were identified.

2.7.2 DESIGNATE GAME RETRIEVAL USE FROM 10:00 AM TO 2:00 PM ON ROUTES NOT OTHERWISE DESIGNATED FOR PUBLIC MOTORIZED USE

This alternative is indirectly addressed by Alternative A, since all routes would be available for game retrieval under that alternative. Applying this approach to Alternative B was not considered practical or suitable. Affected routes would require additional signing, could create enforce issues, and could potentially confuse users. Furthermore, proposals in Alternative B to not designate a route for public motorized use or to have a season of use on a route were done to avoid resource impacts and enhance non-motorized recreation opportunities. Including this proposal to allow use of these routes would undermine several of these objectives.

2.7.3 A MOTORIZED RECREATION ALTERNATIVE WITH A RECREATION OPPORTUNITY SPECTRUM (ROS) COMPARABLE TO THE SURROUNDING ROS AVAILABLE FOR NON-MOTORIZED RECREATIONISTS

Initial ROS mapping for Alternatives A and B indicates that there are more acres in motorized ROS settings than there are in non-motorized settings. This appears to address the concern that there are more non-motorized ROS settings than motorized ROS settings in the project area.

In addition, prescribing that a specific amount of ROS settings be provided is often not practical or prudent management. Limitations such as legal rights-of-way for public access and guidance associated with the Forest Plan are just two examples of circumstances that can (and should) drive the type and location of recreation activities that are appropriate on National Forest System lands.

2.7.4 THE FOREST SERVICE SHOULD CONSIDER CLOSING THE LOWER SECTION OF ROUTE #381612

The lower section of route #381612 (i.e. the portion below the top of the butte) provides the only legal access to the state land in adjacent Section 36, and there are no identified resource concerns with this section of the route.

2.7.5 IMPLEMENT A 100 FOOT FIXED LIMIT FOR DISPERSED VEHICLE CAMPING

The Custer National Forest has allowed dispersed vehicle camping within 300 feet of motorized routes since the July, 2001 Forest Order that implemented the 2001 Tri-State OHV Decision. Impacts observed in association with dispersed vehicle camping, if any, have been minor - limited to very localized, short-term effects. Consequently, it is not evident that there is a need to change the existing dispersed vehicle camping policy based on biophysical resource impacts.

2.7.6 IDENTIFY WHERE PARKING ALONG ROUTES WOULD BE UNSAFE OR CAUSE RESOURCE DAMAGE AND DO NOT DESIGNATE

Parking is not an activity that is required to be authorized separately from designation of routes. Parking within a vehicle length of a route is considered inherent with designation of motorized routes. Cross-country travel for dispersed vehicle camping does require designation. Initial scoping indicated areas in the North Cave Hills where dispersed vehicle camping could have human health and safety hazards. These areas would not be designated for dispersed vehicle camping in either action alternative. If any additional areas with either safety or resource impact issues are identified during the process, additional measures will be considered to address the issue.

2.7.7 SEASON OF USE DESIGNATIONS RATHER THAN NO DESIGNATION, ESPECIALLY TO ADDRESS WILDLIFE NEEDS

This alternative proposal was dropped because there were no routes that were not designated in either Alternative A or Alternative B due to wildlife needs. In Alternative B, route designation was based on specific objectives. Where those objectives could be achieved with a season of use designation, such designation was proposed. Alternative B includes all existing routes except those that the Forest Service does not have a legal right-of-way for public access. This alternative proposal appears to be addressed by Alternative A, and does not appear to be appropriate for Alternative B.

2.7.8 SEASON OF USE DESIGNATION FOR ROUTES WITHIN 200 FEET OF RAPTOR NESTS

The District will continue to manage and evaluate species of concern in compliance with the Custer National Forest Land and Resource Management Plan identifies. The effects of the alternatives on raptors was analyzed and no significant impacts were identified, and therefore no mitigation measures were proposed.

2.7.9 DO NOT DESIGNATE DISPERSED VEHICLE CAMPING IN AREAS WITH STEEP TOPOGRAPHY AND SENSITIVE RESOURCES TO AVOID POTENTIAL ADVERSE IMPACTS

This concern was indirectly considered when developing Alternative B. No site-specific areas of concern with dispersed vehicle camping were identified. In determining whether to designate dispersed vehicle camping, the IDT did consider: 1) that there have not been any specific issues identified during the last 8 years of this activity that indicate the 300 foot allowance has been an issue; 2) the period of highest use on the District is during the fall, when conditions are at their driest reducing the potential for soil, water quality and similar resource impacts; 3) many sensitive areas are

not desirable for dispersed vehicle camping (wetlands, grades greater than 6%, etc.); 4) terrain tends to limit where visitors tend to camp; 5) typically, heavy use occurs in same location every year and these locations have not been in sensitive areas.

2.7.10 FURTHER REDUCE MOTORIZED USE TO MINIMIZE THE POTENTIAL FOR SPREAD OF NOXIOUS WEEDS

Alternative B would not designate routes that bisect the most problematic weed infestations. Weeds will continue to spread as a result of motorized and non-motorized resource management activities, recreational use, wildlife, and natural processes. In compliance with the 2006 Custer National Forest Weed EIS and ROD, the Forest Service will monitor routes for early detection of new weed infestations and treat them, and will treat road corridors to reduce the effects of weed spread.

2.7.11 IMPROVE ENFORCEABILITY BY DESIGNATING ONLY SYSTEM ROADS SO THAT ALL MOTORIZED VEHICLES HAVE LICENSE PLATES FOR IDENTIFICATION

Motor vehicle enforcement will be improved simply by having a Motor Vehicle Use Map - i.e. an enforceable travel plan, which does not presently exist. The Forest does not believe that eliminating opportunities for motorized trails and mixed motorized use roads in an attempt to ensure that every vehicle may potentially be identifiable by a license plate at the time an illegal act is committed is not warranted. By and large, the majority of forest visitors are law abiding – the percentage of violation notices is very small compared to the total number of forest visitors. When taken into consideration together, the above items suggest that the trade-off in lost recreation opportunities compared to the gain in potential enforceability by only designating system roads open to highway legal vehicles (i.e. licensed vehicles) is not desirable or warranted.

2.7.12 ROAD #38161 SHOULD BE CLOSED OR NOT DESIGNATED AS A SYSTEM ROAD OR TRAIL TO PREVENT NEW ROUTES FROM BEING CREATED AND IMPACTING FIGHTING BUTTE

There are no identified resource impacts associated with route #38161 and this route is known to access an area with traditional camping and picnicking. Assuming that designation of the route for public motorized use will result in the creation of new routes onto Fighting Butte is speculative.

2.7.13 THERE SHOULD BE NO NET LOSS OF MOTORIZED OPPORTUNITIES TO COUNTER THE CUMULATIVE LOSS OF OTHER MOTORIZED OPPORTUNITIES

No net loss of motorized opportunities is assumed to mean no net loss in the current miles of system and non-system motorized routes on the District. Crafting an alternative that yielded no net loss of motorized opportunities would require construction of new motorized routes to offset routes that cannot legally be designated (no legal public right-of-way) or are irresponsible to designate (human health and safety or resource concerns). Construction of routes is outside the scope of this process; therefore technically it is not feasible under this proposal to create an alternative that will result in no net loss of motorized opportunities as defined above. However, the addition of nearly all of the non-system motorized routes on the District is considered in Alternative A.

2.7.14 PROVIDE ADDITIONAL MOTORIZED OPPORTUNITIES BY DESIGNATING ROUTES CLOSED BECAUSE THEY CANNOT ACCOMMODATE A FULL-SIZE VEHICLE FOR 50 INCH WIDE OR LESS VEHICLES

In Alternative B, routes that were not designated were done so because of resource concerns; human health and safety concerns; the route has naturally re-vegetated; the route is parallel to another motorized route; or because there was no legal public right-of-way. Designating these routes for motorized use would be counter to the rationale used to develop Alternative B. In Alternative A, only a limited number of routes were not designated, which would not be designated regardless of vehicle type (i.e. no legal public right-of-way).

2.7.15 CONSIDER ALL IDENTIFIED MOTORCYCLE TRACK FOR DESIGNATION AS MOTORIZED TRAILS

The Tri-State OHV considered game and livestock trails with motorized "regular use and continuous passage over a period of years" as motorized routes. No single track routes of this nature have been identified on the Sioux RD.

2.7.16 THE FOREST SHOULD HAVE AN EQUAL NUMBER OF MOTORIZED AND NON-MOTORIZED TRAILS TO PROVIDE EQUAL AMOUNTS OF OPPORTUNITIES

Forest Service policy is to provide a range of recreation opportunities in compliance with the Forest's Land and Resource Management Plan. The Custer NF Land and Resource Management Plan does not mandate that equal quantities of recreational opportunities be provided across the Forest. Furthermore, balancing the miles of motorized and non-motorized trail would be arbitrary because it would not be a decision based on considerations such as resource availability and suitability, demand, agency policy, laws, and regulations.

2.7.17 USE A ONE MILE BUFFER (RATHER THAN .5 MILES) TO SCREEN OUT PARALLEL ROUTES TO PROVIDE ADDITIONAL NON-MOTORIZED OPPORTUNITIES AND WILDLIFE SECURITY

All of the land units achieve the minimum 30% during the critical big-game hunting season, except for one land (South Cave Hills) unit which is unlikely to achieve 30% even if one mile buffers were used given the size of the unit and proximity of the access routes. In addition, the .5 mile buffer used for determining wildlife security is based on established, peer-reviewed protocol. There is no scientific basis for using different protocol.

It would be extremely costly to gather user information to determine if there is a need for more non-motorized opportunities. It is questionable if there is a need for additional non-motorized opportunities given the limited amount of observed motorized use in much of the area outside of the fall hunting seasons.

2.7.18 THERE SHOULD BE NO NET GAIN OF SYSTEM ROUTES

The 2005 Motorized Travel Rule permits the addition of non-system routes to the Forest transportation system. It does not require maintaining the existing miles of routes on a District or

Forest, but rather requires designation of system routes based on consideration of a number of criteria including, such as natural and cultural resource impacts.

2.7.19 FURTHER REDUCE MILES OF ROUTES IN SOIL MAPPING UNITS IDENTIFIED AS HAVING A HIGH RISK OF SOIL EROSION TO REDUCE WATER QUALITY IMPACTS

In compliance with NEPA, this EIS includes sufficient analysis of these two "other issues", water quality and soils, to substantiate that the proposed actions would not have significant impacts to these resources. This proposal was not intended to resolve all issues with existing routes, nor was the analysis for soils and water quality intended to pinpoint what effect specific routes proposed to be added to the system may have on individual watersheds. It was used to indicate if the proposal moved water quality and soils impacts in a beneficial or adverse direction on a watershed basis. Opportunities to further reduce risks and/or mitigate impacts that are outside the scope of this analysis are identified in Appendix D.

2.7.20 DO NOT ADD ROUTES OR FURTHER REDUCE MILES OF ROUTES IN MODERATE AND HIGH RISK SOILS AND THAT HAVE WATER QUALITY IMPACTS IN HIGH RISK WATERSHEDS, TO REDUCE IMPACTS IN THOSE WATERSHEDS.

In compliance with NEPA, this EIS includes sufficient analysis of these two "other issues", water quality and soils, to substantiate that the proposed actions would not have significant impacts to these resources. This proposal was not intended to resolve all issues with existing routes, nor was the analysis for soils and water quality intended to pinpoint what effect specific routes proposed to be added to the system may have on individual watersheds. It was used to indicate if the proposal moved water quality and soils impacts in a beneficial or adverse direction on a watershed basis. Opportunities to further reduce risks and/or mitigate impacts that are outside the scope of this analysis are identified in Appendix D.

2.8 COMPARISON OF EFFECTS

Table 2-9 (found at the end of the chapter) provides a summary of the effects of implementing each alternative. Information in Table 2-9 is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively among alternatives. Detail effects analysis for each alternative is found in Chapter 3.

2.8.1 ROUTE MAINTENANCE NEEDS

Introduction

Commentors indicated concerns that adding system roads and trails could increase the need for maintenance. Commentors also questioned whether converting a road to a trail would mean the route would receive less maintenance. The 2005 Motorized Travel Rule also includes a criterion related to maintenance needs that must be considered. This section is intended to address that criterion by considering the maintenance of motorized routes.

Regulatory Framework

Road Maintenance guidelines are prescribed in Forest Service Handbook 7709.59 Road System Operations and Maintenance Handbook and Forest Service Manual 7730 -Road Operation and

Maintenance. Trail Maintenance guidelines are prescribed in Forest Service Handbook 2309.18 Trails Management Handbook and Forest Service Manual 2300 – Recreation, Wilderness, and Related Resource Management, Chapter 2350 – Trail, River, and Similar Recreation Opportunities. The Forest's road and trail activities are conducted in compliance with these directives.

The Forest is required to maintain National Forest System roads in a condition to safely accommodate intended use in accordance with the maintenance objective for that road. Trail maintenance is intended to preserve the trail and related facilities to meet established objectives for that trail.

Maintenance Standards

The Forest Service has established national maintenance standards/criteria for both roads and trails. The standards/criteria establish the corporate level of quality the Forest Service expects to provide. These standards/criteria include key measures related to health; safety; facility conditions; and compliance with laws, regulations, and policies. The trail standards also identify critical standards that if not met would pose "a high probability of immediate or permanent loss to people or property." Immediate actions must be taken to correct or mitigate the problem if one arises, such as closing the route to the public until the issue is addressed.

Each route is assigned a maintenance level or trail class which reflects the routes operation and maintenance standards/criteria. The higher the maintenance level or trail class number (1-5) the higher the standard of maintenance.

Maintenance Funding Overview

Based on past funding levels, the Forest is unlikely to have sufficient funding to maintain to standard all of the routes necessary for the administration, utilization, and protection of the District for the foreseeable future. As a result, the Forest prioritizes maintenance work and routinely applies for additional/supplemental funding to increase the number of miles of road and trail maintenance completed.

Road and trail maintenance funding can only be applied to system roads and trails. Similarly, road funding can only be used for road maintenance, and trail funding can only be used for trail maintenance. Because the District does not currently have any system trails, trail maintenance funds have not been expended on the District in the past. The Forest receives an annual trail maintenance allocation, which would be the source for any trail maintenance conducted on the District, in addition to any supplemental funding (ex: state trails grants) that can be secured.

Maintenance does not occur on every mile of road or trail every year. As mentioned above, maintenance is prioritized across the Forest and accomplished based on the funding received. Over the past 6 years, the Forest annual road maintenance accomplishment ranges any where from 0 to 4% of high clearance vehicle roads (Maintenance Level 2), 21 to 39% of passenger vehicle suitable roads (Maintenance Level 3) on the District. The following table displays the miles of road receiving annual maintenance on the District from 2001 to 2007.

Table 2-5. Summary of Road Miles Receiving Annual Maintenance[3] by Maintenance Level.							
Sioux District	Fiscal Year (October 1 – September 30)						
	2001	2002	2003	2004	2005	2006	2007
2 - High Clearance Vehicles	-	-	12	6	1	-	10
3 - Suitable For Passenger Cars	39	21	31	22	35	30	27

Evaluation Methodology

There are many factors to consider when determining maintenance needs such as volume, type, class, and composition of traffic. For this evaluation, the miles of system routes by maintenance level/trail class and route designation was used to determine the relative maintenance needs for each alternative.

Evaluation of Route Maintenance Needs

The following table displays the miles of motorized system routes by the proposed road maintenance level/trail class and the proposed route designation for each alternative.

Table 2-6. Miles of System Routes by Maintenance Level/Trail Class and Route Designation for Each Alterative					
Maintenance Level or Trail Class	Trail Class 2	Road Maintenance Level 2		Road Maintenance Level 3	
Route Designation	Open to Public Motorized Use	Open to Public Motorized Use	Administrative Use	Open to Public Motorized Use	Administrative Use
Alternative A	283	78	36	105	0
Alternative B	84	111	146	105	0
No Action	0	288	2	111	0

Routes designated for administrative use would only be used by Forest Service personnel, or by permit holders, contractors, etc. through a written authorization issued under federal law or regulation. These routes have extremely low traffic volumes and are controlled by the authorizing permit which in some cases also requires the permittee or contractor to provide route maintenance. For these reasons, route maintenance needs for routes designated for administrative use are typically much less than comparable routes designated for public motorized use.

The miles of Maintenance Level 3 routes designated for public motorized use are the same for Alternatives A and B. The No Action Alternative includes 6 more miles than the action alternatives.

In general, Trail Class 2 and Maintenance Level 2 routes have similar maintenance needs based on the roads and trails maintenance handbooks (FSH 7709.59 and FSH 2309.18).

Given the above information, comparison of maintenance needs by alternative will be based on miles of routes available for public motorized use. Miles of administrative use routes is not included because generally these routes require less maintenance and maintenance costs are in some cases offset.

[3] Based on data specific to maintenance that were readily available.

Table 2-7. Summary of Miles of Maintenance Level 2 and Trail Class 2 System Routes Open to Public Motorized Use for each Alterative.

Maintenance Level/Class	Trail Class 2	Road Maintenance Level 2	Total
Alternative A	283	78	361
Alternative B	84	111	195
No Action	0	288	288

By combining Trail Class 2 and Maintenance Level 2 routes designated for public motorized use, a comparison of alternatives can be made. As the above table indicates, Alternative A has the most miles designated for public motorized use (361 miles) and therefore the most potential maintenance need. The No Action Alternative falls between the two action alternatives at 288 miles. Alternative B would be roughly half the amount of Alternative A (195 miles) and two-thirds that of No Action Alternative.

2.9 MONITORING

Monitoring is one of the cornerstones of contemporary adaptive management. Without monitoring, it is difficult to evaluate whether or not management actions are effective or determine how actions might be modified to improve effectiveness. Monitoring is vital to inform the Forest Service whether or not there is a need to change or make new travel management decisions. Changes to the system of designated routes may include new routes, removing designations, or changing designated vehicle classes or seasons of use. Revisions to designations are governed by 36 CFR 212.54. In most cases, these changes (including connected actions and cumulative effects) can be addressed on a site-specific basis and may not trigger reconsideration of decisions governing the entire system of designated roads, trails and areas on an administrative unit or a ranger district.

Travel management monitoring would help answer questions, such as:

- Are the motorized travel designations having unanticipated impacts, adverse or beneficial, on water quality, soils, fisheries, aquatic species, and vegetation?
- Are the motorized travel designations having impacts, adverse or beneficial, on cultural resources?
- Are the motorized travel designations effective and therefore resulting in the anticipated effects on wildlife and recreation opportunities?

There are two principal sources of new information that the Forest Service may consider in determining if there is a need to modify travel management decisions: 1) monitoring – formal and informal monitoring, including resource specialist's field observations, and 2) public feedback. Formal and informal monitoring is addressed further below. Public feedback may either be solicited by the agency or initiated by the public. Public input on the travel management program of work, designations, and route proposals is encouraged and welcomed.

Travel management monitoring will be tiered to Forest Plan monitoring activities. The level and intensity of monitoring will be adapted as needed based on changing needs, findings, and budget levels. The results of monitoring and public feedback will be reviewed annually, at a minimum, during preparation of the MVUM for the subsequent year. If the District Ranger determines that a change to District travel management should be investigated, the process outlined under Forest

Service Handbook 1909.15, Chapter 10, Section 18 (40 CFR 1502.9(c)(1)(ii)) will be used to review the new information and determine what type of documentation, if any, or other compliance would be appropriate to address any proposed change.

Travel management monitoring will primarily focus on two types of monitoring activites: implementation monitoring and effectiveness monitoring.

2.9.1 IMPLEMENTATION MONITORING

This monitoring activity will focus on compliance with Forest Service travel management implementation requirements, namely (1) producing the annual MVUM and (2) installing and maintaining route markers (road and trail numbers) that are consistent with the MVUM.

Monitoring would consist of: (1) reviewing whether or not the annual MVUM was produced and made available to the public in both hardcopy and web-based formats in a timely manner, and (2) reviewing whether or not route signing markers have been installed and are reasonably being maintained, i.e. deferred route marker maintenance is not accumulating.

2.9.2 EFFECTIVENESS MONITORING

This monitoring activity will focus on evaluating the effectiveness of management and enforcement in achieving the desired outcomes from this decision, including success at restricting motor vehicle use to designated routes.

The following table contains the travel management enforcement monitoring measure identified in the Forest Plan, which is anticipated to be a primary source of monitoring information used to determine if there is a need for change in the future.

Table 2-8. Forest Plan Travel Management Effectiveness Monitoring

Monitoring Item	Data Source	Monitoring Objective	Variability Which Would Initiate Further Evaluation	Corrective Measures
Off-road-vehicle use and damage and Travel Plan effectiveness. (A-3)	Travel Plan (violation and incident reports, number of variances granted).	To determine compliance with travel plan direction (and, therefore, effectiveness in achieving resource protection objectives). To assist in determination of effectiveness of restriction methods, public understanding of travel plan direction.	Conflicts with Forest Management Area goals.	Review situation for change in implementation techniques such as signing, barriers, public contacts, etc.

Compliance with the National Historic Preservation Act through the Montana Programmatic Agreement (PA) and the South Dakota PA established with each State Historic Preservation Office (SHPO) is required, and includes monitoring of sites for travel management effects. Cultural resource monitoring will be implemented within the Project Area in order to assess the effectiveness of this project relative to the protection and preservation of significant heritage resources. This cultural resource monitoring program will be based upon an adaptive management approach that may

necessitate specific changes if site disturbances are observed. Should detrimental effects occur, site evaluative testing and formal consultation with the Montana SHPO or the South Dakota SHPO to identify measures to reduce, remove or mitigate these effects will be necessary. These monitoring results will be presented in the Annual Heritage Reports required by the MT PA and SD PA.

Additional effectiveness monitoring information is expected to be generated through other ongoing monitoring efforts such as the Forest's annual weed monitoring program and the periodic Best Management Practices audits.

2.9.3 MONITORING PLAN

The District Ranger will develop an implementation and effectiveness monitoring plan within one year of the date of the decision for this project. The monitoring plan will identify monitoring items that are most critical to determining if implementation of the decision is satisfactory and if the decision has been effective. The plan may include criteria similar to the Forest Plan, such as potential data sources/measures, monitoring objectives, thresholds or indicators that change may be needed, and potential corrective measures.

2.10 FOREST SERVICE PREFERRED ALTERNATIVE

The Forest Service preferred alternative is Alternative B. Alternative B is the "preferred" alternative based on Responsible Official and interdisciplinary team deliberations. This alternative provides the road system necessary for the administration, utilization, and administration of the District. It appears to respond best to the significant issues related to providing motorized and non-motorized recreation opportunities, reduced wildlife disturbance and impacts on habitat, and protection of heritage resources based on the analysis in Chapter 3. In particular, Alternative B would provide more non-motorized hunting opportunities than Alternative A or the No Action Alternative while still maintaining ample opportunities for motorized recreation. Other environmental impacts, such as water quality, soils, and fisheries, would also generally be reduced under Alternative B when compared to Alternative A and the No Action Alternative.

The Responsible Official (the Custer Forest Supervisor) may select any combination of travel management actions as presented and analyzed within this document.

Table 2-9. Comparison of Effects by Alternative

Feature		Alternative A	Alternative B	No Action Alternative
Recreation				
Motorized Recreation Opportunity				
Acres of Rural ROS (During SOU[4]/Outside SOU)		2,986/NA[5]	2,986/2,986	2,986/2,986
Acres of Roaded Natural ROS (During SOU/Outside SOU)		54,512/NA	53,213/53,253	55,222/55,222
Acres of Semi-Primitive Motorized ROS (During SOU/Outside SOU)		109,312/NA	110,510/59,768	119,488/76,668
Miles of motorized roads and trails (During SOU/Outside SOU)		466/NA	300/184	399/251
Non-Motorized Recreation Opportunity				
Acres of Semi-Primitive Non-Motorized ROS (During SOU/Outside SOU)		10,948/NA	10,948/61,690	0/42,820
Opportunity for Off-Highway Vehicle Operation				
Miles of Mixed Use System Roads		116	57	0
Miles of Motorized System Trails		280	84	0
Total Miles available for Off-Highway Vehicle Operation		396	141	0
Cultural Resources				
Total Number of Cultural Resource Sites within the APE		346	252	311
Number of Priority Assets Sites within the APE		38	35	76
Number of Culturally Sensitive Sites within the APE		97	68	30
Wildlife				
Threatened or Endangered Wildlife Species				
Number of species with No Jeopardy		1	1	1
Number of species with potential to effect, but not likely to adversely affect.		1	1	1
Number of species with potential to effect, and likely to adversely affect		0	0	0
Sensitive Wildlife Species				
Number of Species with Beneficial Impact		0	0	0
Number of Species with No Impact		13	13	13
Number of Species with potential to effect individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species		9	9	9
Number of Species likely to result in a trend to Federal listing or loss of viability		0	0	0
Management Indicator Species				
Number of Species with Positive Effects		0	0	0
Number of Species with Neutral Effects		16	16	16
Number of Species with Negative Effects		0	0	0
Deer & Elk				
Motorized Route Density in miles per square mile (During SOU/Outside SOU)	Chalk Buttes	1.16/NA	0.70/0.70	0.99/0.99
	Ekalaka Hills	2.21/NA	1.27/0.90	1.83/1.83
	Long Pines	1.93/NA	1.11/0.44	1.74/0.40
	East Short Pines	1.19/NA	0.69/0.69	1.22/1.22
	West Short Pines	1.76/NA	1.76/1.76	1.76/1.76
	North Cave Hills	1.60/NA	1.14/0.85	1.42/1.42
	South Cave Hills	1.95/NA	1.25/1.25	1.55/1.55
	Slim Buttes	1.12/NA	0.94/0.66	0.82/0.82

[4] SOU = Season of Use
[5] NA = Not Applicable

Table 2-9. Comparison of Effects by Alternative

Feature		Alternative A	Alternative B	No Action Alternative
Percent secure habitat within elk habitat (During SOU/Outside SOU)	Chalk Buttes	50/NA	57/57	36/36
	Ekalaka Hills	11/NA	26/43	8/8
	Long Pines	6/NA	28/65	8/64
	East Short Pines	34/NA	44/44	13/13
	West Short Pines	0/NA	0/0	0/0
	North Cave Hills	7/NA	24/35	11/11
	South Cave Hills	7/NA	17/17	7/7
	Slim Buttes	30/NA	34/48	32/32
General Wildlife				
Percent of Land Unit that is core wildlife habitat (based on motorized routes)	Chalk Buttes	45	52	31
	Ekalaka Hills	10	21	7
	Long Pines	5	21	6
	East Short Pines	28	37	8
	West Short Pines	2	2	2
	North Cave Hills	8	19	9
	South Cave Hills	6	14	7
	Slim Buttes	27	30	26
Water Quality, Fisheries, and Aquatics				
Water Quality				
Miles of actions that reduce risks on routes within the project area		24	122	0
Miles of actions that increase risks on routes within the project area		101	67	0
Sensitive Aquatic Species				
Number of Species with No Impact or Beneficial Impact		3	5	3
Number of Species with potential to effect individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species		2	0	2
Number of Species likely to result in a trend to Federal listing or loss of viability		0	0	0
Recreational Fish Species				
Alternatives with No Impact or Beneficial Impact		No	Yes	No
Alternatives with potential to effect individuals or Habitat but will not Likely Contribute to a Loss of Viability to the Population or Species		Yes	No	Yes
Soils				
Severe Erosion Hazard Rating				
Miles of Motorized Routes designated for public use		263	153	223
Moderate Erosion Hazard Rating				
Miles of Motorized Routes designated for public use.		176	137	150
Vegetation				
Moderate Risk Areas - Motorized Routes				
Acres Potential Frequent Use Areas (% of Project Area)		128 (Trace)	90 (Trace)	98 (Trace)
Acres Potential Infrequent Use Areas (% of Project Area)		2,191 (1%)	1,380 (1%)	1,634 (1%)
Miles in Moderate Risk Area		24	13	17
Weeds Susceptibility				
Weed Susceptible Acres within designated route corridor		34,572	21,874	30,604
Weed Infestation				
Total Infested Acres within motorized route potentially affected corridor		209	149	201

Table 2-9. Comparison of Effects by Alternative

Feature	Alternative A	Alternative B	No Action Alternative
Sensitive Plants			
Number of Species with No Impact	4	4	4
Number of Species with potential to effect individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species	2	2	2
Number of Species likely to result in a trend to Federal listing or loss of viability	0	0	0

Table 2-10. Summary of Changes in Effects *Compared to the No Action Alternative*

Feature		Alternative A	Alternative B
Recreation			
Motorized Recreation Opportunity			
Acres of Rural ROS (During SOU[6]/Outside SOU)		No change	
Acres of Roaded Natural ROS (During SOU/Outside SOU)		Reduced by 710 acres/ Reduced by 710 acres	Reduced by 2009 acres/ Reduced by 1,969 acres
Acres of Semi-Primitive Motorized ROS (During SOU/Outside SOU)		Reduced by 10,176 acres/ Increased by 32,644 acres	Reduced by 8,978 acres/ Reduced by 16,900acres
Miles of motorized roads and trails (During SOU/Outside SOU)		Increased by 67 miles/ Increased by 215 miles	Reduced by 99 miles/ Reduced by 67 miles
Non-Motorized Recreation Opportunity			
Acres of Semi-Primitive Non-Motorized ROS (During SOU/Outside SOU)		Increased by 10,948 acres/ Reduced by 31,872 acres	Increased by 10,948 acres/ Increased by 18,870 acres
Opportunity for Off-Highway Vehicle Operation			
Miles of Mixed Use System Roads		Increased by 116 miles	Increased by 57 miles
Miles of Motorized System Trails		Increased by 280 miles	Increased by 84 miles
Total Miles available for Off-Highway Vehicle Operation		Increased by 396 miles	Increased by 141 miles
Cultural Resources			
Total Number of Cultural Resource Sites within the APE		Increase of 35 sites	Decrease of 59 sites
Number of Priority Assets Sites within the APE		Decrease of 38 sites	Decrease of 41 sites
Number of Culturally Sensitive Sites within the APE		Increase of 67 sites	Increase of 38 sites
Wildlife			
Threatened or Endangered Wildlife Species			
Number of species with No Jeopardy		No change; no species jeopardized	
Number of species with potential to effect, but not likely to adversely affect.		No change; Actions are not likely to adversely affect the single species analyzed	
Sensitive Wildlife Species			
Change from the No Action Alternative		No Change	
Management Indicator Species			
Change from the No Action Alternative		No Change	
Deer & Elk			
Motorized Route Density in miles per square mile (During SOU/Outside SOU)	Chalk Buttes	Density increases by 17% / Density increases by 17%	Density decreases by 29% / Density decreases by 29%
	Ekalaka Hills	Density increases by 21% / Density increases by 21%	Density decreases by 36% / Density decreases by 51%
	Long Pines	Density increases by 11% / Density increases by 383%	Density decreases by 36% / Density increases by 10%

[6] SOU = Season of Use

Table 2-10. Summary of Changes in Effects *Compared to the No Action Alternative*

Feature		Alternative A	Alternative B
	East Short Pines	Density decreases by 2% / Density decreases by 2%	Density decreases by 43% / Density decreases by 43%
	West Short Pines	No changes/No change	No changes/No change
	North Cave Hills	Density increases by 13% / Density increases by 13%	Density decreases by 20% / Density decreases by 12%
	South Cave Hills	Density increases by 26% / Density increases by 26%	Density decreases by 19% / Density decreases by 19%
	Slim Buttes	Density increase by 37% / Density increase by 37%	Density increases by 15% / Density decreases by 20%
Percent secure habitat within elk habitat (During SOU/Outside SOU)	Chalk Buttes	Increase of 14% / Decrease of 36%	Increase of 18% / Increase of 35%
	Ekalaka Hills	Increase of 3% / Decrease of 8%	Increase of 17% / Increase of 29%
	Long Pines	Decrease of 2% / Decrease of 54%	Increase of 20% / Increase of 1%
	East Short Pines	Increase of 21% / Increase of 21%	Increase of 31% / Increase of 31%
	West Short Pines	No change	No change
	North Cave Hills	Decrease of 4% / Decrease of 11%	Increase of 13% / Increase of 24%
	South Cave Hills	No change / Decrease of 7%	Increase of 10% / Increase of 10%
	Slim Buttes	Decrease of 2% / Decrease of 32%	Increase of 2% / Increase of 16%
General Wildlife			
Percent of Land Unit that is core wildlife habitat (based on motorized routes)	Chalk Buttes	Increase of 14%	Increase of 21%
	Ekalaka Hills	Increase of 3%	Increase of 14%
	Long Pines	Decrease of 1%	Increase of 15%
	East Short Pines	Increase of 20%	Increase of 29%
	West Short Pines	No change	
	North Cave Hills	Decrease of 1%	Increase of 10%
	South Cave Hills	Decrease of 1%	Increase by 7%
	Slim Buttes	Increase of 1%	Increase of 4%
Water Quality, Fisheries, and Aquatics			
Water Quality			
Miles of actions that reduce risks on routes within the project area		24 miles	122 miles
Miles of actions that increase risks on routes within the project area		101 miles	67 miles
Sensitive Aquatic Species			
Change from No Action Alternative		No change	Change 2 species from May Impact to No Impact
Recreational Fish Species			
Change from No Action Alternative		No change	Change from May Impact to No Impact
Soils			
Severe Erosion Hazard Rating			
Miles of Motorized Routes designated for public use		Increase of 40 miles	Decrease of 70 miles
Moderate Erosion Hazard Rating			
Miles of Motorized Routes designated for public use.		Increase of 25 miles	Decrease of 13 miles
Vegetation			
Moderate Risk Areas - Motorized Routes			
Acres Potential Frequent Use Areas		Increase of 30 acres	Decrease of 8 acres

Table 2-10. Summary of Changes in Effects *Compared to the No Action Alternative*

Feature	Alternative A	Alternative B
Acres Potential Infrequent Use Areas	Increase of 557 acres	Decrease of 254 acres
Miles in Moderate Risk Area	Increase of 7 miles	Decrease of 4 miles
Weeds Susceptibility		
Weed Susceptible Acres within designated road corridor	Increase of 3,968 acres	Decrease of 8,730acres
Weed Infestation		
Total Infested Acres within Motorized Route potentially affected corridor	8 additional acres	52 fewer acres
Sensitive Plants		
Change from No Action Alternative	No change; ; Actions are not likely to result in a trend to Federal listing or loss of viability	

- End of Chapter 2 -

Chapter 3: Affected Environment and Environmental Consequences

3.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS

- The tables of past, present, and reasonably foreseeable activities were updated.
- Changes in resource analyses are noted at the beginning of each resource section.

3.2 INTRODUCTION

This chapter describes the affected environment, methodology for analysis, and the direct, indirect and cumulative effects of the alternatives. The resource summaries focus on those aspects of the physical, biological, and human environment most likely to be affected by the alternatives. More detailed information on certain resources can be found in the resource specialist's reports in the project record.

3.2.1 DIRECT AND INDIRECT EFFECTS

Direct effects are caused by an action and occur at the same time and place. Indirect effects are caused by an action and occur later in time or farther removed in distance, but are still reasonably foreseeable (40 CFR 1500-1508). Direct and indirect effects analysis for each alternative and each resource area are based on the factors outlined in alternative descriptions of the alternatives provided in Chapter 2.

3.2.2 CUMULATIVE EFFECTS

Cumulative impacts on the environment result from the incremental impact of actions when added to other past, present, and reasonably foreseeable future actions. For each resource, an analysis area was identified and used to adequately measure cumulative effects of the proposed alternative. Unless otherwise stated, the cumulative effects area, or the geographic scope, is the District.

3.2.2.1 Past, Present, and Reasonably Foreseeable Activities

Past Actions are addressed by the Council on Environmental Quality[1] (CEQ) in the following manner, "Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions."[2] Past actions include activities such as grazing, timber harvest, mining and exploration, recreational camping, prescribed burning, and small product removal (i.e., post and poles, and firewood).

Present Actions are typically ongoing activities and are treated similarly to past actions. Anticipated future changes in these activities are included under reasonably foreseeable actions.

Reasonably Foreseeable Actions are those which are formal proposals or decisions not yet implemented at the time of the analysis. Activities that add to the effects of designated travel routes

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[1] CEQ is the agency responsible for promulgation of regulations and guidance for the National Environemental Policy Act.
[2] CEQ's June 24, 2005 Memo

include wildfires, timber harvesting, fuel reduction, livestock grazing, and recreational uses (hunting, hiking, motorized recreation, etc.). These activities will continue to influence the landscape.

Past, present, and reasonably foreseeable activities with the most potential to cumulatively impact resources are shown in the following two tables and are considered in various manners within each of the resource analyses in this chapter. An extensive catalog of past, present, and reasonably foreseeable activities for the Sioux Ranger District can be found in Appendix F.

Table 3-1. Reasonably Foreseeable Activities[3]

Project Name	Type of Project
Mid-Rivers Special Use Permit Amendments #1 and #2	Special Use Management
Grand Electric Co-Op Special Use Permit Re-Issuance	Special Use Management
Carter County Radio Equipment Building Special Use Permit	Special Use Management
Butte Pipeline Radio Equipment Special Use Permit	Special Use Management
West River Telephone Special Use Permit Re-Issuance	Special Use Management
Wickham Gulch Campground Toilet Replacement	Recreation Management
Slim Buttes Integrated Vegetation Management	Vegetation Management
Reva Gap, Ekalaka Park, and Macnab Pond Toilet Replacement	Recreation Management
Black Hills Travel Management Planning	Travel Management
Dakota Prairie Grasslands Travel Management Planning	Travel Management
Ashland Travel Management Planning	Travel Management
Geothermal Leasing Analysis	Minerals Management

Table 3-2. Past and Present Activities Considered in Cumulative Effects

Project Name	Type of Project
Riley CERCLA	Mineral Management
Recreational Use – hunting, camping, viewing, etc.	Recreation Management
Weed Treatment – District-wide	Weed Management
Vegetative and Fuels Treatments	Fuels Management
Permitted Grazing (~125,500 suitable acres)	Grazing Management
1992 Sioux Ranger District Fuels Management Project	Fuels Management
2002 Kraft Springs Fire	Fire Management
2003 Kraft Springs Fire Hazard Abatement and Restoration Project	Fuels Management
2004 Ekalaka Hazardous Fuels Project	Fuels Management
South Dakota Fish, Wildlife, and Parks Walk-In Areas	Recreation Management
South Dakota Fish, Wildlife, and Parks Controlled Hunting Access Program	Recreation Management
Montana Fish, Wildlife, and Parks Block Management	Recreation Management
2001 Tri-State OHV Decision	Recreation Management

Use of travel routes will continue on privately-owned and public lands within and adjacent to the Custer National Forest. Government agencies and local municipalities of Montana and South Dakota all use travel routes, and to varying degrees, manage them to different standards and restrictions.

[3] Source: July 2008 Quarterly Schedule of Proposed Actions (SOPA), Custer National Forest.

3.2.3 ENVIRONMENTAL JUSTICE

Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low Income Populations" requires all Federal agencies to incorporate environmental justice into their mission. No effects to the well-being and the health of minorities and low income groups were identified during scoping and the proposed action would not disproportionately affect minority or low-income populations. Three Indian Reservations are located within the region. No issues of disproportionate distribution of project impacts were found regarding any racial minorities or impoverished populations within the project area that might be affected by implementation of this project. Minority and low income populations will be treated the same as all with respect to travel opportunities.

3.2.4 NATIVE AMERICAN TREATY RIGHTS

Many tribes have aboriginal ties and use area within the Custer National Forest, including the Three Affiliated and the Great Sioux Nation, Northern Cheyenne, Crow, Assiniboine, Shoshone, Arapahoe, and Shoshone-Bannock. The Sioux, Crow, and Gros Ventre have treaty rights under the Fort Laramie Treaties to use the National Forests for hunting and gathering. None of the alternatives would affect treaty rights.

3.2.5 UNAVOIDABLE ADVERSE EFFECTS (40 CFR 1502.16)

Chapter 3 of this EIS addresses the potential environmental consequences of the alternatives for Travel Management on the District. In general, any adverse "environmental" effects can be avoided through increased restrictions on human use. However, increased restrictions also limit recreation opportunities. The alternatives were created, in part, to address issues and provide a clear basis for comparison. Adoption of Sioux Ranger District Travel Management direction does not necessarily mean that adverse environmental effects cannot be avoided. However, some resource impacts may be determined to be acceptable in light of providing for a variety of recreation uses. No unavoidable adverse effects to the various resources that are located within or adjacent to the project area were found. Implementation of any of the alternatives is not expected to move any sensitive wildlife species toward federal listing or threatened/endangered species to be in jeopardy.

3.2.6 RELATIONSHIP BETWEEN SHORT TERM USE AND LONG TERM PRODUCTIVITY (40 CFR 1502.16)

Chapter 3 of this EIS discusses the potential resource impacts of each of the alternatives including the potential consequences to soil, vegetation, water quality and biological diversity. Otherwise human travel within the Sioux Ranger District would not be considered a short-term consumptive use such as timber harvest or mining. In general travel would not affect the ability of the land to produce continuous supplies of other Forest resources. Selection of any of the alternatives considered in this analysis is expected to affect the long term productivity of the soil and vegetation resources within system route prisms while they are in use. Soil and vegetation function and productivity on roads and trails can be recovered if at some future time it is deemed as a need.

3.2.7 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES (40 CFR 1502.16)

An "irreversible" commitment of resources results from a decision to use or modify resources that are renewable only over a long period of time. Non-renewable resources, such as minerals, are an irreversible commitment if used. An "irretrievable" commitment of resources refers to resources, resource production or the use of renewable resources that are lost because of land allocation or scheduling decisions. Proposed actions can result in certain effects to various resources which are described throughout Chapter 3 of this EIS. The decision for Sioux District Travel Management would not result in any irreversible commitment of resources. The decision for Sioux District Travel Management could result in irretrievable commitment of soil and vegetation resources for as long as the road or trail exists.

3.2.8 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL (40 CFR 1502.16)

The Forest determined that the action alternatives would not affect energy consumption. People will continue to recreate on the District and consume energy for that purpose. The alternatives are not anticipated to change the amount of motorized or non-motorized use of the District, and therefore there would be no change in the amount of energy consumption due to the alternatives. Use on the District is anticipated to increase based on other factors, such as increases in population, but these factors would not be influenced by the alternatives.

3.3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES – SIGNIFICANT ISSUES

The affected environment and environmental consequences (direct, indirect, and cumulative effects) for each alternative are organized by issue topic area and are addressed below.

3.3.1 RECREATION

Overview of Changes from Draft to Final EIS

- ROS acreages were updated based on refined mapping of the ROS settings.
- Cumulative effects portion was expanded to include additional present and reasonably foreseeable activities.
- A limited amount of minor edits were made in this section.

This topic addresses general recreation, which focuses on opportunities for recreational activities and potential for travel planning to impact these activities.

3.3.1.1 Affected Environment – Recreation

Introduction

Comments related to recreation on the Sioux Travel Management proposed action could generally be categorized as issues associated with the loss of recreation opportunities or activities. Losses of opportunities were typically portrayed as loss of opportunities for motorized recreation, hunting, OHV use opportunities, non-motorized recreation, and dispersed vehicle camping.

Regulatory Framework

The Custer Forest Plan identifies both Forest-wide and management area-specific direction for recreation management. The Forest-wide goal "is to provide a broad spectrum of recreation experience opportunities". The more specific guidance provided in the management area direction of the Plan reflects this goal and represents providing a broad range of differing recreation opportunities.

Effects Analysis Methodology

The analysis area for the recreation analysis direct and indirect effects contains all Forest Service administered lands within the Sioux Ranger District.

Motorized and non-motorized recreation opportunities were evaluated based on the acres available in each Recreation Opportunity Spectrum (ROS) setting by season of use, as well as the miles of motorized routes available by alternative.

The ROS under this analysis includes the following settings: rural, roaded natural, semi-primitive motorized, and semi-primitive non-motorized. (Full definitions of each of the ROS settings are provided later in this section.) For this analysis, the Forest Service began by assigning ROS classifications using the National ROS Inventory Mapping Protocol (USDA Forest Service 2003a). The protocol assigns a one half mile width along each side of motorized wheeled vehicle routes to include in the total acres as the area utilized by motorized activities primarily due to noise. Areas that are more than ½ mile from roads or motorized trails are suitable for a semi-primitive non-motorized ROS setting as long as an individual area is equal to or greater than 2,500 acres in size. Areas less than 2,500 acres in size are added in with adjacent semi-primitive motorized or roaded natural settings, as appropriate.

This ROS information was used to determine differences between the alternatives in terms of opportunities for motorized and non-motorized recreation.

The miles of designated motorized routes available by alternative were also used to evaluate relative differences in the motorized and non-motorized recreation opportunities provided by each alternative.

The Recreation Setting

The majority of recreation activities occur in conjunction with the motorized travel corridors on the District. The majority of the activity occurs during fall and spring hunting seasons. District staff field observations indicate that OHV use, and in particular ATV use, is relatively low outside of hunting seasons.

Public feedback and staff input during the Forest's Recreation Facilities Analysis, finalized in May 2008, indicated that local communities have a strong connection to recreation opportunities provided by the District. This connection appears to include a general connection with the District as well as site-specific connections with locations such as Ekalaka Park Campground, Macnab Pond, and Reva Gap.

There are no areas identified in the Forest Plan that are dedicated to non-motorized use and there are no non-motorized or motorized trails on the District.

District staff experience and public input did not indicate any significant conflicts exist between types of recreational activities on the District. Those seeking non-motorized hunting experiences did

indicate some difficulty in finding these opportunities. They indicated that escaping from motorized disturbances could be challenging on the District.

Motorized Recreation

Existing system road mileages by type of restriction are shown in Chapter 2, Tables 2-1 and 2-2. The table shows there are 399 miles of system road open at least part or all of the year in the analysis area.

National Forest system roads are only open to highway legal vehicles. Currently, Forest staff have observed unlicensed off-highway vehicle use on forest system roads by recreation visitors and permittees. While riding on forest system roads with unlicensed vehicles is not uncommon, it is not consistent with state and federal regulations. Under specific circumstances, system roads can be designated as motorized mixed use to all use by both licensed and unlicensed vehicles. However, there are currently no motorized mixed use routes on the District.

There are currently no motorized system trails on the District. Motorized system trails allow operation of all off-highway vehicles, licensed or unlicensed.

Implementation of the 2001 Tri-State OHV decision restricted motor vehicles to existing routes (USDA Forest Service 2001), whether system or non-system routes. Some OHV opportunities on the District are located on existing non-system routes. Non-system routes are those that were not designed, constructed, identified, or managed as a part of the forest transportation system. State motor vehicle laws do not address vehicle licensing requirements for non-system routes.

Off-Route Motorized Travel

There are no designated cross-country vehicle areas on the District.

Dispersed Vehicle Camping

The 2001 Tri-State OHV decision and subsequent regulations implemented in 2001 allow motorized travel up to 300 feet off existing motorized routes but only to access dispersed campsites. Dispersed vehicle camping occurs along routes throughout the District. Heaviest use occurs during the fall hunting seasons.

Hunting

Big-game hunting is the primary recreation activity on the District. Turkey hunting is also an important activity on the District, but because the use numbers are highest during big-game hunting, this season will be used as the indicator for determining if there are potentially significant effects.

The primary hunting seasons for the Montana portion of the District are archery deer/elk (early Sept. to mid-October) and general deer/elk (late October to November 30); and archery deer/antelope (mid-August to October 31), general antelope (early to mid-October), and West River deer (November) in South Dakota portion. The State of South Dakota Game, Fish, and Parks (GFP) administer hunting within South Dakota, while the State of Montana Fish, Wildlife, and Parks (MTFWP) administer hunting within Montana. Motorized routes provide hunters with access, with some hunters using this access to seek areas more removed from motorized influences, while other hunters may choose to hunt along or near motorized routes.

The South Dakota portion of the District falls within the 35A, 35B, and 35C West River deer hunting units and antelope hunting units, which coincides with the Harding County administrative boundaries.

This area also includes private, state, and other Federal lands. The District is a relatively small percent of the hunting units.

The Montana portion of the District is within FWP's hunting district 705. This hunting district is generally bounded by the Powder River on the west, Montana/Wyoming state line on the south, Montana/South Dakota state line on the east, and Highway 12 on the north. This area also includes private, state, and other Federal lands. The District is a relatively small percent of the hunting units.

Recreation Opportunity Spectrum

Forest Service recreation management is guided by the Recreation Opportunity Spectrum (ROS), which models outdoor recreation opportunities and activities by natural resource setting. The Forest Service published an ROS Users Guide in 1981 along with an updated Primer and Field Guide in 1990. A National ROS Inventory Mapping Protocol was implemented in 2003. ROS has been used by the Forest Service nationwide for recreation planning and management to provide opportunities and settings consistent with public expectations to realize a desired set of experiences.

Within the District, ROS settings vary from areas dominated by roads classified for highway vehicle use (Rural and Roaded Natural), to areas through which high clearance roads and motorized trails pass (Semi-primitive Motorized), to areas away from the sights and sounds of civilization (Semi-primitive Non-motorized). The following are definitions and examples of each setting on the District:

"Rural" settings are characterized by a highly modified natural environment where the sights and sounds of humans are readily evident. This ROS setting is available to both non-motorized and motorized recreation. Quiet trails and opportunities for solitude would be hard to find during much of the year.

"Roaded Natural" settings extend about one-half mile on each side of a road used by standard highway-type vehicles. All roads used by the public or permittees, and all roads used by private landowners outside the Forest boundary were considered as affecting the recreation setting. Non-motorized recreation is available within this setting. Quiet areas and opportunities for solitude would be hard to find during the summer and fall. Forest development roads and well-used private roads typically are examples of roaded-natural corridors.

"Semi-Primitive Motorized" settings extend about one-half mile on each side of a road or trail where high clearance vehicles or motor vehicles are legal to be used. The lack of vegetative screening or the influence of intervening ridges may allow the zone to be wider or narrower than one-half mile. This ROS setting is available to both non-motorized and motorized recreation. By definition, quiet areas and the opportunity for solitude would not occur in this setting during the time of year the routes are open to motorized travel.

"Semi-Primitive Non-Motorized" settings denote areas where stock, hiking, and/or bicycling are the predominant modes of travel (motor vehicles would not be legal to operate in this setting and motorized travel corridors would be at least one half mile in distance). The lack of terrain screening or vegetative screening may occasionally allow the sights and sounds of humans within three miles to influence the setting. The area does not meet the size, distance, or lack of human disturbance criteria established for "primitive" settings. By definition, this would be a primary area for quiet areas and an appropriate setting to provide opportunities for solitude.

District ROS Settings

Added together, the data in the following table shows that 100% of the analysis area is influenced by motorized use based on ROS settings under the No Action Alternative during the current season of use. Outside of the season of use (SOU), the analysis area has 76% motorized settings and 24% non-motorized settings.

Table 3-3. No Action ROS Settings by Acres and Percent[4]

ROS Setting	Acres (Percent)	
	Season of Use 12/1 to 10/15	Outside Season of Use 10/16-11/30
Rural	2,986 (2%)	2,986 (2%)
Roaded Natural	55,222 (31%)	55,222 (31%)
Semi-Primitive Motorized	119,488 (67%)	76,668 (43%)
Semi-Primitive Non-Motorized	0 (0%)	42,820 (24%)

Recreational Use

Recreation Activities – National Visitor Use Monitoring

The Custer National Forest conducted a National Visitor Use Monitoring (NVUM) survey in 2001-2002 with the data resulting from the survey compiled and made available in 2003. The NVUM protocol is designed to be repeated every 5 years. Locations for surveys are established by the Forest based on field observation of potential sites to interview visitors about their activities as they exit the forest, a trail, or developed recreation site. The survey dates, times and places are assigned on a random basis and capture a range of use levels at different sites and areas across the Forest. The schedule is assigned to the Forest by the national NVUM working group.

The relatively high recreational use on the Beartooth Ranger District resulted in selection of only a handful of NVUM surveys on the Sioux and Ashland Districts. The result is that the data generated from this effort is relatively representative for the Beartooth District, but does not appear to be representative of recreational activities on either the Sioux or Ashland Ranger Districts. Consequently, NVUM data is not helpful in conducting site-specific analysis for the District, but can be useful in identifying national and regional trends.

Hunting

It is difficult to determine exactly how many hunters use the District during big-game hunting season, or how many may be on the District at any one time. FWP issues unlimited permits for general and archery deer in the area. In the past three years, hunter surveys estimate that there were 4,500-5,200 deer hunters in hunting unit 705 (MTFWP 2008). They issue 300 general permits for elk for the 705 hunting district. The actual number of hunters on the District is presumably some fraction of the total permits issued, because District lands are only a portion of the hunting unit.

South Dakota Game, Fish, and Parks staff believes that the current number of hunting license in 35A, B, and C are the maximum number of licenses that can be issued without degrading hunter experience (SDGFP 2008a). The current number of licenses (2008) for deer is 1,188 in 35A, 756 in 35B, and 1,728 in 35C. For antelope, the number of licenses is 1,512 in 35A/E and 1,566 in 35B/F. They also estimate that approximately 60-70% of the licensed deer hunters use the South Dakota portion of the

[4] Calculations were based on National Forest system lands within the District boundary. Acres were derived from GIS mapping. All numbers were rounded to the nearest whole percent.

District, or 2,203 to 2,570 hunters (SDGFP 2008b). Similarly, they estimate that only a small fraction of the antelope hunters use the District, preferring to use adjacent grassland prairie settings on private land for hunting.

The opening weekend of big-game hunting seasons typically have the highest number of hunters on the District. Deer hunters typically camp and hunt on the District, while antelope hunters typically just camp on the District.

Recreation Trends

Recreational OHV use in Montana grew by 40% in the last decade and is expected to continue to grow (MTFWP 2000). Similarly, the analysis area in both Montana and South Dakota has experienced additional use over the last decade based on District staff field observations.

The Forest Service produced a national report on OHV use titled *Off- Highway Vehicle Use on National Forests: Volume and Characteristics of Visitors, Special Report to the National OHV Implementation Team - 5 August 2004*. Data used in this analysis came from the National Visitor Use Monitoring (NVUM) program. The research methodology for this program is documented in a General Technical Report (English et al 2002). The first sampling cycle occurred from January 1, 2000 to September 30, 2003. During that period, on-site surveying occurred on nearly 23,000 sample days around the country. Over 90,000 visitors finishing a recreation visit were interviewed about their activities, experiences, length of stay, and demographic characteristics. The survey data shows that OHV use is a specialized use of forests and not a major recreational use for most forests. Slightly more than 2,000 of surveyed visitors indicated OHV use was a primary activity, and a little less than 5,400 indicated participation in OHV activity during their visit.

Nationally, about 2.5% (5.2 million visits) of the 205 million recreational visits to National Forest have OHV use as their primary activity[5]. A slightly larger percentage (3.1%) has OHV use as a secondary activity. That is, about 6.3 million visitors reported participating in OHV use, but not as their primary activity. These would include people who engaged in OHV riding during their visits, but who came to the forest primarily for some other activity.

The total numbers of National Forest visits that have OHV use as either a primary or secondary activity is about 11.5 million. The estimates of primary OHV use visitation are similar for most National Forest regions (range 12 – 16% of the national total), except Region 1 (includes the Custer National Forest) and 10 (Alaska). Only 5% (about 274,000 visits) of the total primary OHV use for all National Forests occurs on forests in Region 1. None of the visitors surveyed in Region 10 indicated that OHV use was their primary recreational activity.

Trends in Other Recreation Activities

Recently, a decline in overall participation in outdoor activities has been noted, attributed partially to the growth of leisure choices now available such as the Internet and satellite TV (Roper 2003).

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[5] Percentages presented here include visitors who did not provide information on their primary and/or secondary recreation activities. Using just those who did provide that information as a base yields primary OHV use at 3.0%, and those listing OHV as a secondary activity at 3.5%. (English: Off- Highway Vehicle Use on National Forests: Volume and Characteristics of Visitors, Special Report to the National OHV Implementation Team - 5 August 2004)

Despite this recent trend, with increasing population and growth in income, outdoor recreation participation is expected to grow (Cordell et al 1999).

A U.S. Fish and Wildlife Service (2004) report indicates that overall hunting participation decreased nationally between 1991-2001, although big-game hunting participation generally remained level and turkey hunting increased. Big-game hunting in Montana reflected this trend, but in South Dakota the report indicates that big-game hunting increased.

Studies sponsored by FWP and the Forest Service concur with these trends (USDA Forest Service, 2005). However, they also indicate that demand for big-game hunting opportunities is expected to exceed supply for opportunities beginning in 2010. This suggests that current hunting levels in Montana are expected to level off in the near future (since supply will be at maximum). As indicated previously, South Dakota hunting on the District is expected to be level (permits are at the maximum) for the foreseeable future.

Motorized Congestion
The Forest is unaware of any existing data that specifically assess whether motorized congestion on the District is impacting recreation experience. Motorized congestion has not been viewed by the Forest or District personnel as a particular problem in the past. Throughout the District, the highest use occurs on weekend days during fall hunting seasons. Since motorized use of the District is anticipated to continue to increase in the future, primarily as a result of population growth, the quality of future motorized experiences may potentially be affected by motorized congestion in the future, but it has not been identified or perceived as an issue at this time.

3.3.1.2 Environmental Consequences - Recreation

The following tables provide a summary of the ROS settings by acres and miles for each alternative. These are used to form the analytical basis for comparing the alternatives.

Table 3-4. ROS Setting by Alternative (Percent/Acres)

ROS Setting	Alternative A	Alternative B		No Action	
	Yearlong	Season of Use 12/1-10/14	Outside Season of Use 10/15-11/30	Season of Use 12/1-10/14	Outside Season of Use 10/15-11/30
Rural	2% (2,986)	2% (2,986)	2% (2,986)	2% (2,986)	2% (2,986)
Roaded Natural	31% (54,512)	30% (53,213)	30% (53,253)	31% (55,222)	31% (55,222)
Semi-Primitive Motorized	61% (109,312)	62% (110,510)	33% (59,768)	67% (119,488)	43% (76,668)
Semi-Primitive Non-Motorized	6% (10,948)	6% (10,948)	35% (61,690)	0% (0)	24% (42,820)

Table 3-5. Summary of Miles[6] of System Roads and Motorized Trails Designated for Public Motorized Use by Alternative

Route Designation	Alternative A	Alternative B		No Action	
	Yearlong	Season of Use 12/1-10/15	Outside Season of Use 10/16-11/30	Season of Use 12/1-10/15	Outside Season of Use 10/16-11/30
Road – Highway legal vehicles only	70	159	109	399	251
Road – All types allowed (motorized mixed use)	116	57	45	0	0
Motorized Trail – All motor vehicles allowed	280	84	27	0	0
Total	466	300	184	399	251

Direct and Indirect Effects - Recreation

Alternative A

Recreation Opportunity Spectrum
The above table indicates the District would primarily be in motorized settings, year-round - 94% - under this alternative.

There is no season of use associated with this alternative, so there would not be an annual change in ROS settings under this alternative.

Motorized Recreation Miles
There would be 466 miles of roads and trails available for motorized recreation opportunities.

Motorized Opportunities
Implementation of this alternative would maximize the opportunities for motorized recreation on the District. It provides the greatest number of miles of routes designated for public motorized use, and includes the greatest number of miles of motorized trail. This would be expected to increase the opportunities for motorized recreationists compared the other alternatives. In addition, this alternative would be attractive to users that are seeking semi-primitive motorized types of experiences given the number of motorized trails.

Motorized users have the greatest opportunity to be able to find the type of motorized experience they are seeking under this alternative than either Alternative B or No Action Alternative, based on the miles of routes available, variety of vehicle use designations available, and absence of any season of use.

This alternative would provide a considerable amount of opportunities to operate licensed and unlicensed motor vehicles on the District. Families and those desiring to operate unlicensed motor vehicles would find opportunities for extended day trips and motorized loop experiences.

[6] Comparison between tables may not be exact due to rounding error.

Based on miles of routes, this alternative would be expected to provide more opportunities for persons with disabilities or limited mobility to access the District than the other alternatives.

Non-Motorized Opportunities
The quality of the outdoor experience for those seeking non-motorized recreational activities would have the greatest potential to be diminished under this alternative. However, District staff field observations indicate that recreational use is low during the majority of year, so finding non-motorized experiences may not be a cause for concern other than during big-game hunting seasons – the season of heaviest visitor use.

Dispersed Vehicle Camping
This alternative would provide more dispersed vehicle camping opportunities than the other alternatives being analyzed. Compared to no action, there would be an additional 67 (12/1-10/15) to 215 (10/16-11/30) more miles of motorized routes that would provide potential dispersed vehicle camping locations.

Hunting
This alternative provides the maximum opportunity to hunters who desire to scout, access, and retrieve their game by motorized means. Big-game hunters who prefer this approach would not be expected to be displaced under this alternative.

Hunters seeking opportunities to hunt without disturbance by motorized vehicles could expect to have more difficulty doing so under this alternative when compared to the No Action Alternative or Alternative B. This alternative would have the most potential to displace hunters interested in non-motorized hunting opportunities. If displaced, the ROS settings suggest that there is a low probability of hunters finding non-motorized hunting opportunities anywhere else on the District under this alternative.

Alternative B

Recreation Opportunity Spectrum
The motorized settings under this alternative would be in essentially the same amounts as the Alternative B for the majority of the year. The notable difference between Alternative A and B is the proposed season of use in Alternative B. From October 16 to November 30, the main big-game hunting season, ROS settings on the District would shift more towards non-motorized settings. The District would consist of 61,690 acres in semi-primitive non-motorized settings, nearly 20,000 more acres in semi-primitive non-motorized settings than the No Action Alternative during this same time period. These acres are distributed across the Long Pines, North Cave Hills, and Ekalaka Hills land units.

Motorized Recreation Miles
There would be 300 miles of roads and trails available for motorized recreation opportunities. During the big game hunting season, motorized season of use designations would reduce the number of miles of roads and trails available for public use to 184 miles.

Motorized Opportunities
Implementation of this alternative would provide the least amount of miles for motorized recreation of all the alternatives. However, unlike the No Action Alternative, this alternative would provide many miles of motorized trails and mixed motorized use roads for the operation of unlicensed vehicles.

Because of the lack of specific user information and numbers, it is difficult to say if the reduced number of miles would result in displacement of motorized users. District staff field observations indicate that visitor use is low outside of big-game hunting seasons. Consequently, it is likely that the only real potential to displace motorized users is during the big-game hunting season.

Based strictly on miles of routes, this alternative would be expected to provide fewer opportunities for persons with disabilities or limited mobility to access the District than the other alternatives. It is difficult to assess the degree of this impact given the absence of user data for the District.

This alternative would provide considerable opportunities to operate both licensed and unlicensed motor vehicles on the District. Families and those desiring to operate unlicensed motor vehicles would find opportunities for extended day trips and motorized loop experiences, although not as many as would be provided under Alternative A.

Non-motorized Opportunities
The quality of non-motorized experiences has the greatest potential to be improved under this alternative, especially for those interested in non-motorized recreation opportunities during big-game hunting seasons. The areas created by the season of use designation will give visitors several new areas to seek out non-motorized opportunities.

District staff field observations of low visitor use outside of the big-game hunting seasons suggests that opportunities for non-motorized experiences for the majority of the year are readily available. Thus the change in miles of roads and motorized trails proposed under this alternative, and the resulting change in ROS settings, may end up enhancing non-motorized experiences during a portion of the year when those opportunities are already relatively abundant, although not necessarily reflected in ROS mapping.

Dispersed Vehicle Camping
This alternative would provide fewer dispersed vehicle camping opportunities than the other alternatives being analyzed. Compared to no action, there would be 99 fewer miles of motorized routes that would provide potential dispersed vehicle camping locations during the season of use, and 67 fewer miles outside of the season of use.

There is uncertainty about how this may actually impact recreational use, since there is limited visitor use information for the District. Those individuals accustomed to using a dispersed vehicle camping site adjacent to a route that is proposed to not be designated may feel a sense of loss. It is difficult to ascertain whether visitors may or may not find, or perceive to find, it harder to locate a dispersed vehicle camping location.

Hunting
Hunters seeking opportunities to hunt without disturbance by motorized vehicles would have the best chance of doing so under this alternative, when compared to Alternative A and the No Action Alternative.

This alternative provides the fewest opportunities for hunters who desire to scout, access, and retrieve their game by motorized means. This alternative would have the highest potential to displace hunters interested in these hunting opportunities. If hunters are displaced, they may be able to find similar opportunities elsewhere on the District since 65 percent of the District would remain in motorized settings under this alternative.

South Dakota Game, Fish, and Parks staff generally believes that changes proposed in this alternative may not result in a net loss of hunters. Their impression is that if some hunters are displaced by the proposed actions in this alternative, they are likely to be replaced by other hunters looking for the opportunities created by the proposed actions (SDGFP 2008a). Recreation trend information for Montana and South Dakota, cited in the *Trends in Other Recreation Activities* section above, supports the assumption that the types of changes proposed would not be likely to affect the overall total hunter numbers given the strong demand for big-game hunting opportunities.

No Action Alternative

Recreation Opportunity Spectrum
The above table indicates the District would be entirely in motorized settings during the season of use on the District.

From October 16 to November 30, the main big-game hunting season, ROS settings on the District are 76% motorized (134,876 acres) and 24% non-motorized (42,820 acres). The non-motorized setting acres are all found within the Long Pines land unit in Montana.

Motorized Recreation Miles
There would be 399 miles of roads and trails available for motorized recreation opportunities. During the big game hunting season, motorized season of use designations would reduce the number of miles of roads and trails available to 251 miles.

Motorized Opportunities
The miles designated for public motorized use include routes for which the Forest Service has no legal right-of-way for public access. This could have a couple of implications. First, the actual miles of roads available to the public may in effect be less, since some of these system roads may not be accessible. There are 21 miles of routes with no legal right-of-way for public access included in this alternative. The public may or may not be able to access them with motor vehicles, and would need to have permission from landowners to be able to use them. This could lead to confusion and may encourage inadvertent motorized trespassing on private lands.

Under this alternative, motorized users may not find opportunities for the types of motorized experiences they are accustomed to on the District. This is primarily because there would be no opportunities to operate unlicensed motor vehicles on the District; all motor vehicles would need to be licensed to operate on District roads.

Individuals may find that routes they had grown accustomed to using over the last few years are no longer available for motorized use since only existing system roads would be designated for public motorized use and no non-system routes would be designated. However, it is likely, based on the total miles to be designated, that visitors could find similar motorized experiences and opportunities on the

District. The situation would be expected to be similar for District visitors with disabilities or limited mobility seeking motorized opportunities.

Non-motorized Opportunities
The District has no non-motorized ROS settings during the majority of the year, but the low visitor use observed by District staff suggests that visitors may still be able to find non-motorized opportunities. The season of use designation on the Montana portion of the District provides non-motorized recreation opportunities during the big game season.

Dispersed Vehicle Camping
There would be 67 to 215 fewer miles of roads available under no action, than under Alternative A, but 67 to 99 more miles than under Alternative B, depending on the time of year. Visitors are generally believed to be able to find adequate dispersed vehicle camping locations to meet their needs under the existing condition, and most likely would still be able to find ample opportunities under no action. However, individuals that have a connection to a particular dispersed camping location may feel a sense of loss.

Hunting
This alternative provides numerous opportunities to hunters who desire to scout and retrieve their game by motorized means. Hunters in South Dakota seeking opportunities to hunt without disturbance from motorized vehicles may have difficulty doing so under this alternative given the limited number of acres in non-motorized ROS settings on land units in that state.

Cumulative Effects - Recreation

Past, Present, and Reasonably Foreseeable Activities
The Forest Service reviewed recent travel management and other decisions that have potential to impact motorized and non-motorized users of the Sioux Ranger District, along with past and ongoing activities. Field observations by District staff indicate that the predominant users of the South Dakota portion of the District are from South Dakota. Similarly, the majority of users of the Montana portion of the District are from Montana. Discussions with attendees at the public meetings and field contacts during hunting season indicate that primary users of the District, hunters, largely come from western South Dakota and eastern Montana. Based on this information, it is reasonable to assume that activities that impact either travel management or the recreation opportunities provided on the District or other public and private lands in the vicinity of the District, i.e. northwestern South Dakota and southeastern Montana, have the greatest potential to cumulatively impact the primary District visitors' motorized and non-motorized recreation opportunities.

The following are past, present, or reasonably foreseeable activities that have affected or have the potential to affect motorized and non-motorized recreation opportunities on or in the vicinity of the District.

2001 Tri-State OHV Decision (Forest Service)
The 2001 Tri-State OHV Decision prohibited cross-country vehicle use on Forest Service lands within Montana, North Dakota, and parts of South Dakota. The ROD for the 2001 Tri-State OHV Decision indicates that cross-country motor vehicle travel for the Custer National Forest and Dakota Prairie Grasslands was reduced by 64% and 100%, respectively.

2003 Tri-State OHV Decision (Bureau of Land Management)
The 2003 Tri-State OHV Decision prohibited cross-country vehicle use on Bureau of Land Management lands within Montana, North Dakota, and South Dakota. The ROD for the 2003 Tri-State OHV Decision indicates that cross-country motor vehicle travel for the Miles City and South Dakota Field Offices was reduced by 40% and 98%, respectively.

Blackhills National Forest
The Blackhills National Forest is currently conducting forest-wide travel management planning. They have distributed a proposed action, but have not distributed a draft environmental document. Since the Blackhills has not yet identified a preferred alternative for their proposal, it would be speculative to attempt to identify what their final decision regarding travel management may be. Therefore, information for the Blackhills National Forest will not be considered in this cumulative effects analysis.

Dakota Prairie Grasslands
The Dakota Prairie Grasslands (DPG) completed travel management planning for the Grand River and Cedar River National Grasslands in September, 2007. This portion of the DPG contains those lands in South Dakota. The decision resulted in a net reduction of 6 miles of system roads or approximately a 1.5% reduction in motorized routes compared to their existing system miles before the decision.

Large Fire Events
The 2002 Kraft Springs Fire in the Long Pines land unit and subsequent timber salvage harvest resulted in the loss of a significant amount of wildlife cover. A Forest Order was executed that closed certain roads in the Long Pines during the big-game hunting season, October 15 to November 30, for wildlife security due to the loss of wildlife cover. This affected 148 miles of routes.

Ashland Ranger District Travel Management Planning
Motorized travel management planning is currently being evaluated on the Ashland Ranger District. The Forest expects a May 2009 decision on Ashland travel management planning. The preferred alternative would result in approximately 117 fewer miles (17% less) of system roads designated for public motorized use for the majority of the year compared to no action, and an additional 27 fewer miles during big-game hunting season. In terms of motorized ROS settings, 82% of the Ashland District would be in motorized ROS settings for the majority of the year and 78% during big-game hunting season under the preferred alternative versus 90% in motorized ROS settings year-round under the No Action Alternative.

South Dakota Game, Fish, and Parks Walk-In Management and Controlled Hunting Access Program
The GFP has two programs for contracting with private landowners to obtain hunter access on private lands. The Walk-In Management program allows walk-in hunting access only, and includes as many or more acres in Harding County as there are National Forest land acres. The Controlled Hunting Access Program (CHAP) allows the hunting access to be prescribed in more detail by the landowner. There is only one CHAP area in Harding County. All of these areas receive frequent hunter use. Hunters generally tend to prefer National Forest lands for deer hunting, although they do also make use of the private lands for deer hunting, and tend to prefer the private lands in the State's programs for antelope hunting since they usually provide better antelope habitat. The specific lands under these programs can vary from year to year, but the acreage under contract generally stays about the same from year to year.

Montana Fish, Wildlife, and Parks Block Management
FWP works with private landowners to obtain hunter access on private lands, known as the Block Management Program. FWP Region 7 contained approximately 3.5 million acres under Block Management in 2008. Carter County, the county containing all of the District's lands in Montana, contained approximately 230,000 acres under Block Management. Lands enrolled in the Block Management Program can vary from year to year, but generally do not tend to fluctuate dramatically. The type of access permitted on lands under Block Management is determined by the landowner. Generally, landowners restrict motor vehicle use to existing routes on the property or require hunters to use designated parking areas and then access the property on foot. In some cases, the number of hunters is controlled in addition to the access. All of the areas are receive considerable hunter use, and many hunters have indicated that they hunt on both Block Management areas and National Forest lands.

Timber Harvest Activities
There have been a number of timber harvests or vegetative management activities on the District in the past. Most of these activities included creation of temporary roads that were only used during the project and then closed. Some of these projects also included construction and/or decommissioning of system roads.

The Forest identified 21 timber harvest/vegetative management activities dating back to 1982 on the District. It was clear that the older the activity was, the less influential the activity appeared to be in terms of potential cumulative effects. For example, the older a project was the more potential there was for subsequent activities, decisions, and forest use to have altered the network of routes on the landscape envisioned in these earlier decisions.

The IDT used the three most recent decisions for this assessment, and determined that decisions prior to this appeared to have little, if any, identifiable influence on the current transportation system. The three decisions are the 2004 Ekalaka Hazardous Fuels Project, the 2003 Kraft Springs Fire Hazard Abatement and Restoration Project, and the 1992 Sioux Ranger District Fuels Management project. The Kraft Springs project did not include any new road construction elements or any road decommissioning. The Ekalaka Hazardous Fuels and District Fuels Management projects both included road construction and road decommissioning. Each of the projects resulted in essentially equal amounts of road additions (construction) and road deletions (decommissioning). The result is that there was no substantive change to the transportation system mileage as a result of these activities.

Net Cumulative Effects
The above information suggests that the 2001 Tri-State OHV Decision substantially changed motor vehicle use with respect to cross country vehicle travel in the area evaluated for cumulative effects (see above for description). The alternatives under consideration in this analysis do not include any actions that would further change cross-country vehicle use; therefore no cumulative effects from the proposed alternatives are anticipated specifically related to cross-country vehicle use. However, in terms of overall motorized and non-motorized opportunities, the 2001 Tri-State OHV Decision had a significant impact on reducing motorized opportunities and increasing non-motorized opportunities.

The above information also indicates that three activities contribute to or may potentially contribute to the majority of changes in recreation opportunities available to visitors that use the District: the 2001 Tri-State OHV Decision, the post-Kraft Springs Fire seasonal road closure in the Long Pines, and the

proposed travel management changes on the Ashland Ranger District. All other identified activities appear to only consist of minor, largely negligible, changes to motorized and non-motorized recreation opportunities.

The alternatives in this analysis represent the following changes in miles of motorized routes compared to the No Action Alternative, a key measurement in determining opportunities:

- Alternative A would increase motorized route miles by 67 miles (17%) during the majority of the year and by 215 miles (86%) during the big-game hunting season compared to no action.
- Alternative B would decrease motorized route miles by 99 miles (24%) during the majority of the year and by 67 miles (27%) during the big-game hunting season, compared to no action.

Alternative A would cumulatively lessen the impact of the above activities on motorized recreation opportunities, while decreasing the non-motorized opportunities that they would create. The most dramatic gain in motorized opportunities would occur during the big-game hunting season since all designated roads would remain available for public motorized use. In addition, a number of other routes would be added to the system expanding the network of motorized routes available for public motorized use.

Alternative B would contribute to the cumulative decrease in miles of routes/motorized opportunities when taken in combination with the 2001 Tri-State OHV decision, seasonal road closure in the Long Pines, and the Ashland Ranger District preferred alternative. Conversely, non-motorized recreation opportunities would cumulatively expand.

3.3.1.3 Conclusion - Recreation

The following conclusions are based on the indicators identified in Chapter 2 related to Recreation resources and the analysis in this section.

1) Concerns related to the loss of motorized recreation opportunities.

Alternative A best responds to concerns related to opportunities for motorized recreation and motorized hunting access, including providing the most miles of system road and motorized trails (466 miles), and yielding 94% of the District in motorized settings, year-round.

The remaining alternatives respond to this issue to lesser and varying degrees than Alternative A. The No Action Alternative ranks second most responsive. This alternative provides the second most miles of motorized routes, and unlike Alternative A, a season of use would make several motorized routes unavailable during big-game hunting season, reducing opportunities for motorized hunting scouting, access, and retrieval. Alternative B would provide both the fewest miles of motorized routes and fewest acres in motorized ROS settings.

2) Concerns related to the loss of non-motorized opportunities.

Alternative B best responds to concerns related to opportunities for non-motorized recreation, especially non-motorized hunting experiences in South Dakota. During the fall hunting season, this alternative would provide the most acres in semi-primitive non-motorized ROS settings

(61,690 acres or 35% of the District) and there would only be 184 miles of routes designated for public motorized use.

The remaining alternatives respond to this issue to a lesser degree than Alternative B. The No Action Alternative has several more miles of roads than Alternative B, but does provide non-motorized ROS settings during big-game hunting season (42,820 acres or 24% of the District). Alternative A would provide the least amount of non-motorized acres in ROS settings – only 6% compared to 35 % for Alternative B and 24% for no action, during the big-game hunting season.

3) Concerns related to opportunities for off-highway legal vehicle operation.

Alternative A best responds to concerns related to opportunities for unlicensed off-highway vehicle operation, including providing the most miles of motorized mixed use roads and motorized trails. There would be 396 combined miles of motorized mixed use roads and motorized trails on the District.

The remaining alternatives respond to this issue to a lesser degree than Alternative A. In descending order of responsiveness, they are:

Alternative B	(72 to 141 miles, depending on the time of year)
No Action	(0 miles)

Consistency with Laws, Regulations, and Policy

The recreation goal in the Custer National Forest Management Plan is to "provide a broad spectrum of recreation experience opportunities". All alternatives are consistent with the Custer National Forest Management Plan direction.

3.3.2 CULTURAL RESOURCES

Overview of Changes from the Draft to the Final EIS

- Refined effects analysis based on WO direction and final alternative descriptions.
- Added the no action alternative to the Summary table..
- Results of the historic road analysis have been included.

Regulatory Framework

This section contains information on Archaeological Resources and Traditional Cultural Properties. Cultural resource is a broad term that refers to cultural properties and traditional life way values. A cultural property may be the physical remains of archeological, historical and architectural sites and/or a place of traditional cultural use. Traditional life way values refer to the connection between the landscape and a groups' traditional beliefs, religion or cultural practice.

Since these resources are nonrenewable and easily damaged, laws and regulations exist to help protect them. These include the National Historic Preservation Act (NHPA), the Archeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA) and the Native American Graves Protection and Repatriation Act (NAGPRA). Sacred and culturally important places fall under this purview of the NHPA, AIRFA and the Sacred Lands Executive Order (Executive Order 13007). Native American graves are protected under NAGPRA.

The NHPA and its implementing regulations require that federal agencies take into account the effects of their undertakings on historic properties and provide the Advisory Council on Historic Preservation with an opportunity to comment on those undertakings. The term "historic property" refers to any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion on, the National Register of Historic Places (NRHP).

The Forest Service has been directed to satisfactorily address the National Environmental Policy Act (NEPA) and other related statutes involving cultural resource management and historic preservation which apply for such projects. As stated in the Custer National Forest (CNF) Management Plan "The goal of cultural resource management is to maintain and enhance historic and prehistoric cultural resource values." (USDA Forest Service 1986: 4). In 1995, the CNF became a participant in the Montana Programmatic Agreement (MTPA) between the Montana State Historic Preservation Office (MTSHPO), the Advisory Council for Historic Preservation and the Northern Region of the Forest Service regarding the management of cultural resources on National Forest lands in Montana. Goals of the MTPA are to extend beyond the narrow-scoped management perspective of the 1970s and 1980s that focused upon "site identification/recordation and avoidance or mitigation" to a more informative approach of "cultural resources stewardship". A similar programmatic agreement (SDPA) was negotiated and signed with the South Dakota State Historic Preservation Office (SDSHPO) Both agreements were updated in 2001 to reflect the changes in National Historic Preservation Act Section 106 regulations.

Compliance with the NHPA is being conducted as directed in the *USDA Forest Service Policy for NHPA compliance in Travel Management: Designated Routes for Motor Vehicle Use* prepared by the Forest Service in consultation with the Advisory Council on Historic Preservation (USDA Forest Service 2005). Under this direction, three specific travel management proposals are considered undertakings: 1) construction of a new road or trail; 2) authorization of motor vehicle use on a route currently closed to vehicles; and 3) the formal recognition of a user-developed (unauthorized) route as a designated route open to motorized vehicles. Existing system roads, including those used only for administrative use, are described under the No Action Alternative. This alternative is presented for comparative purposes since the effects of their current designation on cultural resources is not considered an undertaking under this policy. Category three applies to the Sioux Travel Management undertaking. The terms and conditions of the MTPA and the SDPA will be followed when user-created (unauthorized) routes are designated as routes open to motorized vehicles.

American Indians and Alaskan Natives are recognized as people with distinct cultures and traditional values. They have a special and unique legal and political relationship with the Government of the United States as defined by history, treaties, statues, executive orders, court decisions and the U.S. Constitution. There is an emphasis on government-to-government relationships with federally recognized tribes, including consultation in order to identify rights and concerns during the development of plans, projects, programs and activities (USDA Forest Service 1997).

The 1992 amendments to NHPA specify that properties of traditional religious and cultural importance to an ethnic group referred to as traditional cultural properties (TCPs) may also be determined eligible for inclusion on the NRHP. Under NHPA, effects to "cultural resources of traditional religious and cultural importance" must be considered. A location or site has cultural value if its' significance to American Indian beliefs or customs "has been ethnohistorically documented and if the site can be clearly defined" (Parker and King 1990:15-27). Locations of natural features significant in the mythology, cosmology, and history of a Native American group are

potentially eligible to the National Register. Sites "where Native American religious practitioners have historically gone, and are known or thought to be today, to perform ceremonial activities in accordance with traditional rules of practice"(Parker and King 1990:1) are also potentially eligible properties. In carrying out its responsibilities under Section 106, a federal agency is required to consult with any Indian tribe that attaches religious and cultural significance to such properties (16 USC 470a(d)(6)(A) and (B)) when any federal undertaking might affect them.

Federal agencies must also consider American Indian traditional use, belief system, religious practices and lifeway values as directed by the Archeological Resources Protection Act of 1979 (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA) and the American Indian Religious Freedom Act (AIRFA). Contemporary use sites for traditional or cultural purposes are provided protection under AIRFA. When management activities might limit current religious activities, restrict access to important ethnographic resources, alter sacred sites, or affect Indian burials, AIRFA stipulates the need for consultation with Indian tribes. Additionally, rights reserved under treaties may possess an inherent measure of resource protection. The Fort Laramie Treaties of 1851 and 1868 apply to the Sioux District. Reserved resource rights and privileges associated with these treaties and other Indian agreements include activities such as hunting and gathering access to forest resources.

Under the USDA Forest Service Policy for NHPA compliance in Travel Management (2005), Forests are to consider roads, trails or areas that may be associated with TCPs that are important to tribes, or to other ethnic and social groups. Forests are to cooperate with tribes or other ethnic and social groups that ascribe traditional use to a property or area and this cooperation and consideration is to extend throughout the NHPA compliance process for this undertaking.

The study area is located within territories used and still used by a number of tribes, including the Crow, the Assiniboine, the Hidatsa, Mandan, Arikara, the Northern Cheyenne, and the Great Sioux Nation. The Standing Rock Sioux Tribe, Lower Brule Sioux, the Cheyenne River Sioux Tribe, and the Rosebud Sioux Tribe have issued tribal resolutions identifying sacred lands under Executive Order 13007 for the Slim Buttes, North Cave Hills, and South Cave Hills.

Coordination with pertinent Tribes has been ongoing through public meetings, agency meetings, letter correspondences and meetings which outlined the proposed project specifics and requested any concerns that they may have regarding cultural resources or traditional cultural properties. This coordination effort is intended to insure that any tribal concerns or comments are addressed throughout the NEPA process in regards to ARPA, AIRFA, NAGPRA , NHPA and/or Bulletin 38 issues.

3.3.2.1 Affected Environment – Archaeological Resources and Tradition Cultural Properties

The CNF is developing a management plan for motorized public access on the Sioux District (District) in Carter County, Montana and Harding County, South Dakota. The District consists of approximately 163,107 federally administered acres composed of eight isolated "island" land units—the Chalk Buttes, Ekalaka Hills and Long Pine Hills in Montana and the East and West Short Pine Hills, the North and South Cave Hills, the Slim Buttes and a small portion of the Long Pine Hills in South Dakota.

The District is located on the eastern periphery of the Ponderosa Pine Parkland which is part of the Northwestern Plains Region. The Montana units are part of the Little Missouri River and the Powder River watersheds while the South Dakota units are part of the Grand River and the Moreau River watersheds. The District has been described in general as "…land parcels that rise above the surrounding prairies like islands in the ocean." (USDA Forest Service 1976: 1). The units themselves are characterized as a "…severe landscape of deep, narrow canyons, massive shale, limestone, and sandstone cliffs, and isolated flat-topped mesas capped with ponderosa pine forests" (Beckes and Keyser 1983: 211). Grassland parks, woody draws and numerous springs are scattered throughout the units.

Human occupation within and around the District spans over 10,000 years and the eight District units may be considered "oases" in their attractive character that offered food, habitat, shelter and water to humans and animals alike. Three cultural periods—including Paleo-Indian, Plains Archaic and Late Prehistoric—are represented within the prehistoric time period.

The earliest time period, the Paleo-Indian, is characterized by a human population heavily dependent on hunting of now extinct fauna such as giant bison and mammoth. Large lanceolate projectile points are common diagnostic indicators of this period. Evidence of Paleo-Indian occupation on the District is limited.

The Archaic Period, saw a warming trend referred to as the Altithermal Climatic Episode which was related to modern flora and fauna and saw a shift to a more diversified economy. Big game hunting was supplemented with the processing of plant resources. A variety of large projectile points, including both lanceolate and notched, are diagnostic indicators of this period. The Archaic Period is well represented on the District by surface collected and excavated site recovered artifacts.

The Late Prehistoric Period is marked by the appearance of the bow and arrow on the Northwestern Plains. An increased specialization toward upland living and the utilization of open prairie resources, most importantly bison, characterizes this period. A variety of smaller projectile points, along with the presence of pottery, are diagnostic indicators of this period. The Late Prehsitoric Period is well represented on the District, both as surface collected and excavated site recovered artifacts.

The Historic Period is usually associated with Euro-American activities such as exploration, military excursions, mining, ranching, trapping and homesteading but occupation by Native American tribes predates the Euro-Americans influx into the area. Arapaho, Arikara, Crow, Cheyenne, Hidatsa, Kiowa, Kiowa-Apache, Mandan, Eastern Shoshone and Sioux lived or traveled through the area long before contact with Euro-Americans and considered the area encompassing the District as their territory.

Not only did the area offer a variety of sustenance resources—such as food, water and shelter—to Native Americans but specific units on the District held special traditional significance for certain tribes. All five units in South Dakota are considered connected as "…traditional landmarks for hunting and gathering, a focal point for eagle trapping ceremonies that are central to the traditional practices of the Mandan, Hidatsa and Arikara: a part of a seasonal traditional round as one of the buffalo home buttes; connected to the Wind Cave in the sacred Black Hills, and a wintering ground and safe haven for the Sioux." (USDA Forest Service 2004: 3.3-8). The rock art of the North Cave Hills Unit is attributed to spiritual power, oracles to predict the future, depictions of traditional ceremonies or vision quest activities (USDA Forest Service 2004: 3.3-9).

The Slim Buttes have been culturally important to the Sioux, Hidatsa and other tribes as sources for plant and mineral pigments and are considered especially sacred due to the proximity of the 1876 Slim Buttes Battle site. Sioux tribal members still visit the area, to honor those who lost their lives, and believe many of their people may have been buried in the nearby Slim Buttes following the battle.

A possible burial and eagle-trapping pit, cairns, stone circles and rock art in the East and West Short Pine Hills Units and the South Cave Hills Unit are considered TCP.

The Chalk Buttes/Blue Earth Hills, are called "where the white stone stands" (Tallbull et al. 1996) and have long been considered "…a gathering place for spirits and a place for prayer, fasting and vision quests." to the Northern Cheyenne and Sioux (Deaver 1996: 1, 42). These opportunities for eagle trapping, fasting, blue clay and red paint procurement and the solitude for a variety of ceremonial events were only a few unique qualities the area offered and are only a few of the reasons they are considered TCP.

Concurrent with early 1900s homesteading era within and around the District the Cave Hills, Ekalaka, Long Pines, Short Pines and Slim Buttes Forest Reserves were created in between 1904-06. In 1908 these forest reserves were consolidated and became the Sioux National Forest of Region 2. Shortly afterward this forest was reassigned to Region 1. In 1920 the Sioux National Forest became the Sioux District of the Custer National Forest. The Forest Service brought a whole new realm of government sponsored activities including logging, livestock grazing, building/road development, fire suppression and recreation.

The Civilian Conservation Corps (CCC) played a significant role on the District during the 1930s, especially in the construction or improvement of the road infrastructure. Capitol Rock, Foster, Old Exie, Plum Creek, Riley Pass, Rimrock-Carter, Snow Creek, Speelmon Creek, Stagville Draw and Wickham Gulch are only a few of the roads constructed or reconstructed by the CCC on the District. In addition to the establishment of two CCC camps—one in the Ekalaka Hills Unit and one in the Long Pine Hills Unit—the CCC constructed Ekalaka Park Campground in the Ekalaka Hills Unit, Wickham Gulch Campground in the Long Pine Hills Unit, Picnic Spring Campground in the North Cave Hills and Deer Draw Campground in the Slim Buttes. Tri Point Lookout Tower, the only steel-frame fire lookout on the District, was assembled and erected by the CCC on a ridge in the Long Pine Hills Unit. The CCC were responsible for reconstructing the Camp Crook Ranger Station and were involved with fenceline, range improvement (dams, springbox headworks/cedar tanks and reservoirs) and telephone line construction.

Previous Investigations

One of the first archaeological investigations conducted on the District occurred in 1908, the same year as the creation of the Sioux National Forest. Ethnographer George F. Will, from the Harvard University Peabody Museum, visited and described cairns and conical timber lodges in the Slim Buttes Unit and described in detail the character of Ludlow Cave in the North Cave Hills Unit (Will 1909: 257-265). In 1920 William H. Over, director of the South Dakota State Museum, conducted excavations in Ludlow Cave and, although his methods were primitive, the artifact collection represents one of the most unique assemblages of personal Native American offerings left at a sacred place that has since been determined a TCP.

Ludlow Cave has been well known by the local, and distant, public and has been a visitor destination point for over one hundred years. Vandalism to the cave interior—consisting of date, figure, initial and name inscriptions—is a common problem that has been ongoing since the late 1800s and continues up through the present. On occasion, screens have been observed in the cave—evidence of illegal digging into the cave floor.

A long-term investigation of a cairn complex site located near a main road in the Long Pine Hills was conducted by an amateur archaeologist and members of the Carter County Geological Society from 1934-1940. This research documented nearly eighty cairns, long considered to be Indian graves. Their final conclusions stated that the cairns were definitely man-made and of considerable age but were not human graves, caches, fireplaces or tipi circles. The possibility of a ceremonial significance was offered but not proven (Nielsen 1941: 87). Unfortunately, even during this early history of the District these researchers observed vandalism that had occurred to this site and remarked that "…we were some fifty odd years too late to get authentic information for quite a number of the mounds or graves showed evidence of having been tampered with." (CCGS 1940: 2). Monitoring at this site within the past ten years has observed continued vandalism of the cairns in the form of dismantling.

Formal cultural resource investigation on the District began in 1977 and has continue to the present in support of Facility/Road, Fuels, Heritage, Land, Mineral, Range and Range Recission, Special Use Permit, Timber and Vegetation Projects.

Rock art investigations on the District began in the late 1970s with an intensive reconnaissance of the North Cave Hills Unit. Forty-two petroglyph sites were recorded (Keyser and Sundstrom 1984: 3) which set the stage for additional investigations involving CNF archaeologists, rock art experts and Passport-In-Time (PIT) volunteers during the past thirty years. Over seventy rock art sites, containing several hundred figures, have been recorded in the North Cave Hills Unit. Many of these rock art panels have been interpreted as to their possible age, ethnicity and meaning. A draft district nomination—identifying 212 archaeological sites—is currently in preparation for the North Cave Hills Archaeological and Traditional Use District. At least 75 sites listed on the NRHP or considered contributing resources within this nomination are rock art sites. Investigations have extended beyond the North Cave Hills Unit to reveal the presence of Native American rock art in the Ekalaka Hills Unit and in the Long Pine Hills Unit.

A comprehensive prehistoric overview of the District was completed in 1983 (Beckes and Keyser 1983) followed by a broader prehistoric cultural resource overview of southeastern Montana completed in 1988 (Deaver and Deaver 1988) that included the three units in Carter County.

Documentation of CCC structures on the District began in the early 1980s but their historic significance was not acknowledged until almost fifteen years later. Camp Needmore, presently a public recreational facility in the Ekalaka Hills Unit, was constructed by the CCC and served as one of two main camps on the District during the 1930s. Within the past ten years the other CCC camp, a fire lookout tower, several roads, reservoirs, campgrounds and stocktanks have been located and recorded. In addition to these structure types, several CCC inscriptions have been located on the District. Most of these inscriptions were carved into sandstone cliffs, but one consists of pencil or dark marker written on the surface inside a galvanized steel culvert along one of the main roads in the Long Pine Hills Unit. The contribution made to the District by the workforce members of the CCC is evident in the number of structures still present and functioning.

Lightning Spring—a stratified, multi-component site located in the North Cave Hills Unit and dating to the McKean Phase of the Archaic Period—was tested in 1980 and again in 1991. This site has provided one of the most complete prehistoric records of the Middle Archaic through Late Prehistoric Period on the District.

In 1984 a Tongue River Silicified Sediment (TRSS) quarry, known as the East Short Pines Quarry, was investigated. Results of this study provided insight into this Late Prehistoric Period TRSS procurement site and its role in a broader utilization overview on the Northwestern Plains.

In 1995 an ethnographic overview of the District was completed. This overview identified culturally sensitive sites defined as "Cultural resources associated with traditional Indian ceremonies, cultural practices and important events in tribal history…" and include "…burials, rock art, stone circles of greater than 7m in diameter, monumental rock features, fasting structures, eagle catching pits, sweat lodges, wooden structures, Sun Dance lodges and grounds, offering and prayer locales and historic battle sites." Ninety-seven culturally sensitive sites were identified on the District by this 1995 overview (Deaver and Kooistra-Manning 1995: 4.80-4.88). Additional culturally sensitive sites have been recorded on the district since this overview was completed.

A cultural assessment of the Chalk Buttes Unit and surrounding area was conducted in 1996 involving traditional Elders from the Assiniboine, Northern Cheyenne and Sioux Tribes in order to "…document the cultural and continuing significance of the Chalk Buttes area for the tribes and for the Custer National Forest that has stewardship responsibilities for the area." (Deaver 1996: 1). This week-long encampment allowed the Elders to visit, reconnect with and share stories about the area through traditional activities such as fasting, blue clay and plant collecting, offerings, sweats and blessing ceremonies. The isolated character of the Chalk Buttes, with few access roads, has been a factor in retaining its original integrity and promotes a ceremonial and spiritual tie with the Elders. As a Traditional Cultural Property, the Chalk Buttes should be "…preserved, taken care of and respected…" and public access should be limited (Deaver 1996: 43).

At least two large-scale wildfires have occurred in the Long Pine Hills Unit within in the past twenty years. The 1988 Brewer Fire consumed over 51,000 acres and at least 44 new historic or prehistoric sites were recorded during inventory of over 5300 acres. The 2002 Kraft Spring Fire consumed over 40,000 acres and at least 74 new historic or prehistoric sites were recorded during inventory of over 4200 acres. Both of these wildfires resulted in improved ground surface visibility and exposure of many cultural sites.

During the late 1990s Dr. Linea Sundstrom began compiling an "ethnogeographic gazetteer" that lists places across the landscape that were recognized as sacred or otherwise of special significance. This gazetteer, which includes the entire District, provides basic information about places that may need special consideration during land use decisions.

As mentioned above, several PIT projects have been conducted on the District for over ten years. While most of these volunteer investigations have focused on rock art inventories and monitoring, several other archaeological site types have been recorded and tested. In addition, interviews with local ranchers have provided insight into the history of the area. A site stewardship program was initiated several years ago that brought in the assistance of local interested individuals to monitor conditions of rock art site in the North Cave Hills Unit and to document changes, due to natural or human causes, as well as to document the locations of new sites.

In 2004 the Sioux Ranger District Oil & Gas Leasing EIS was released. This document, representing a multi-year endeavor of research gathering in Harding County, focused on the identification of "…federal lands with federal mineral rights and determining whether or not they should be made available for oil and gas exploration, development, and production…" (USDA Forest Service 2004: 1-1). Through research and consultation meetings, the project area was found to contain historic properties, traditional cultural properties, a proposed National Historic District for the North Cave Hills Archeological and Traditional Use Area, culturally sensitive sites and three sacred sites/cultural landscapes—the North Cave Hills, South Cave Hills and Slim Buttes Units.

Methodology

At present, there are over 1000 recorded prehistoric or historic sites on the District represented by bison kills, cairns, recreational campgrounds, prehistoric campsites (containing bone, ceramic, fire-cracked rock and/or stone artifacts), drive lines, fasting beds, fire lookouts, historic and prehistoric petroglyphs, homesteads, lithic artifact scatters, a medicine wheel, quarries, ranger stations, range improvements (livestock tanks, reservoirs), roads, rock shelters, stone circles, and many sites associated with the CCC.

Following the direction provided in the 2005 *USDA Forest Service Policy for NHPA Compliance in Travle Management Designated Routes for Motor Vehicle Use*, the effects analysis focused on the three specific categories: 1) the construction of a new road or trail; 2) the authorization of motor vehicle use on a route currently closed to motorized vehicles; and 3) the formal recognition of a user-developed (unauthorized or non-system) route as a designated route open to motor vehicles. Under this direction existing or formally established system roads and trails that are already open to motor vehicles will not be evaluated since their current designation is not considered an undertaking. Upon comparison of the categories with the proposed changes in the Sioux Travel Management plan, category three was found to apply and will be addressed as the undertaking. The terms of the MTPA and the SDPA will be followed when designating motor vehicle use on user-developed (unauthorized) routes.

To determine the number of historic properties within the Area of Potential Effect (APE) as defined by each alternative, existing system and non-system roads and trails proposed to be converted to system roads and trails were intersected with the GIS site database of recorded and known cultural resource sites located within a 600 foot wide corridor (300 feet on either side of the route centerline). This 600 foot wide corridor is in accordance with the 2001 decision to allow motorized wheeled cross-country travel to access dispersed vehicle camping sites (USDA Forest Service 2001) and it defines the Area of Potential Effect when analyzing both direct and indirect effects under each alternatives.

In addition, a historic map of the District dating to 1957 was compared with the APE maps in an effort to define roads and trails that may be historic and deserving of further analysis as potential historic properties. A sample of these potentially historic roads were ground truthed and no structural features (bridges, culverts, stonework) or association was found. Any future proposals to change these routes would be evaluated in terms of their potential historic significance. Historic reference material, on file at the CNF, was also used to identify roads that had been constructed or reconstructed by the CCC during the 1930s.

In 1999, the Custer National Forest identified sites that met the national criteria for "priority heritage assets. Priority asset sites are those sites that have had a significant value investment; and/or are eligible for nomination to the National Register of Historic Places (NRHP); and/or are considered "at risk" due to substantial effects to site integrity. Presently on the District, there are 133 sites on this list that are monitored on a five-year cycle. Fifty-five sites within the APEs for the alternatives A and B were identified as priority asset sites (Table 3.6).

Table 3-6. Priority Asset Sites Within the APE for Alternative A and Alternative B

Site ID	Site Type
24CT0010	stone features
24CT0275	lithic scatter
24CT0309	stone feature
24CT0411	Tri Point Lookout
24CT0429	cemetary
24CT0556	cairn, lithic scatter
24CT0559	Camp Needmore CCC Camp
24CT0562	historic homestead
24CT0631	CCC road (Dugan Draw)
24CT0634	CCC road (Rimrock-Carter)
24CT0713	CCC road (Capitol Rock)
24CT0714	CCC road (Plum Creek)
24CT0715	CCC road (Snow Creek)
24CT0716	CCC road (Speelmon Creek)
24CT0792	Wickham CCC Campground, road, petroglyphs
24CT1320	Ekalaka Campground
24CT1342	CCC road (J P Smith)
24CT1344	CCC road (Stagville-Ekalaka Park)
24CT1346	CCC road
24CT1348	lithic scatter, pottery
39HN0027	stone circle
39HN0030	Riley Pass
39HN0055	lithics, bone FCR
39HN0056	stone circle
39HN0153	stone circle
39HN0157	lithic scatter
39HN0158	stone circle
39HN0163	lithic scatter
39HN0167	petroglyph
39HN0182	stone circle
39HN0192	lithic scatter, stone circle
39HN0221	lithic scatter
39HN0225	stone circle
39HN0314	lithic scatter
39HN0315	lithic scatter
39HN0320	quarry
39HN0436	ranger station
39HN0447	Red Cross homestead
39HN0448	historic grave
39HN0461	lithic scatter
39HN0516	petroglyph, rock shelter
39HN0569	Summit Spring
39HN0595	lithic scatter

Table 3-6. Priority Asset Sites Within the APE for Alternative A and Alternative B

Site ID	Site Type
39HN0598	lithic scatter
39HN0776	petroglyph
39HN0778	Petroglyph
39HN0790	Petroglyph
39HN0792	Petroglyph
39HN0793	Petroglyph
39HN0794	Petroglyph
39HN0842	Petroglyph
39HN0882	CCC Camp
39HN2168	CCC road (Plum Creek)

There are at least 24 CCC constructed or reconstructed roads within the APE for all alternatives. Ten roads have been formally recorded and are recommended for nomination to the NRHP These CCC roads are summarized in the following table.

Table 3-7. CCC Constructed Roads Located Within The APE

Land Unit	Road ID	Name (site number)
Long Pine Hills	3116	Capitol Rock Road (24CT713)
	3117	Snow Creek Road (24CT715)
	3118	Plum Creek Road (24CT714/39HN2168)
	31181/3118A	Long Pines CCC Camp Road (39HN882)
	3818	Speelmon Creek Road (24CT716)
Ekalaka Hills	3104	Rimrock - Carter Road (24CT631)
	3108	Oliver Springs Road (24CT1346)
	3811	Dugan Draw Road (24CT634)
	3813	Stagville – Ekalaka Park Road (24CT1344)
	3814	J T Smith Road (24CT1342)

At least 72 recorded cultural resource sites within the APEs could be identified as cultural resources of traditional religious and cultural importance, referred to here as culturally sensitive sites. Few of these sites have been formally evaluated for site eligibility for nomination to the NRHP. Culturally sensitive sites and TCPs often consist of, or include, archaeological sites. Specific classes of sites identified as culturally sensitive require the protection of site setting as well as the visible remains. These sites include vision quest markers, cairns, eagle trapping pits, rock imagery, and certain types of stone circles. While specific sites within the APE have not been identified by the tribes as culturally sensitive or TCPs for this analysis all recorded culturally sensitive sites are treated as if they are potentially TCPs.

Along with the recorded culturally sensitive sites described above are four traditional cultural property/ethnographic “landscapes” described earlier which include the Chalk Buttes, the North Cave Hills, the South Cave Hills, and the Slim Buttes. The characteristics of the ethnographic landscape that contribute to the use of a traditional cultural property (TCP) may include visual setting, qualities of spiritual reflection, renewal and sanctuary; natural setting; and unique ecosystem. The physical environment provides a basis upon which the integral relationships to the TCPs depend. Maintenance of the setting and its relationship with the surrounding lands become vital to the preservation of these sites and to the cultural landscape.

With the final selection of one of the alternatives any potential adverse effects to sites may require review in order to determine what actions are needed that will reduce, remove or mitigate the effects. Where appropriate, cooperation with interested tribes will occur during these site reviews. Under the protocol of the Montana and South Dakota Programmatic Agreements, all of these sites will be monitored for change in site condition and the results of these monitors will be reported to the Montana and South Dakota SHPO as part of the annual report.

3.3.2.2 Environmental Consequences – Archaeological Resources and Tradition Cultural Properties

Direct and Indirect Effects

Effects Common to All Alternatives

Prehistoric and historic cultural resources are a nonrenewable resource. Significant cultural resources have many values including their potential to provide scientific information on human cultural history, interpretive and educational value, values associated with important people and events of significance in our history, and often an aesthetic value such as a prehistoric petroglyph or a historic landscape. Information present at a site, in the form of artifacts, features or simply its intact, undisturbed character can be used to increase our knowledge and understanding of past life ways, but only if this information is retrieved under controlled methods. For Native American groups and other traditional culture groups archaeological and historic sites often have importance for religious and ceremonial purposes or simply as locations for traditional uses significant in a particular group's ongoing cultural identity.

An effect, according to 36 CFR 800.9(a) of the NRHP, may include an alteration to the historic property's characteristics of location, setting or use. Adverse effects are defined as those that may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association and include but are not limited to 1) physical destruction, damage or alteration of all or part of the property; 2) alteration of the character of the setting when that character contributes to the property's qualification for the National Register and 3) introduction of visual, audible or atmospheric elements that are out of character with the property or that alters its setting. The number of historic properties that may potentially be adversely affected by each alternative is the measure used to compare the alternatives.

Recreational motorized use, especially that of four-wheel drive and other off-highway-vehicles (OHV) has seen an ever-increasing trend since the 1960s. Numerous studies beginning during the early 1970s have documented the detrimental impacts of OHV use on archaeological sites by means of direct or indirect effects (Lyneis et al. 1980: 14; USDA Forest Service 2001: 55; USDA Forest Service 2002: 33). According to the studies, more roads result in more access to areas and increased effects to cultural resources. In comparing the motorized travel system on the District from 1957 there are only a few recognized road additions during a span of nearly thirty years. Since the 1980s the number of roads has at least tripled on some of the units.

A direct effect occurs when the action of the undertaking itself affects the cultural resource. Direct effects may be described as the breaking, crushing and scattering of cultural material when motorized vehicles are driven across or through sites. Soil compaction from wheel pressure and soil erosion processes may occur following removal of protective ground cover (i.e. vegetation and ground litter). Not only is there soil compaction and erosion as the ground surface becomes exposed, but the ground

surface may become deflated. These types of site damage are especially apparent where concentrated and/or repeated vehicle travel occurs that causes rutting. Sites that consist of surface artifacts or features, or that contain intact subsurface cultural materials, are especially prone to damage and losses of valuable information due to motorized vehicle travel (ASPPN I-18 1992).

Actions associated with travel management which could have the potential to adversely affect prehistoric and historic cultural properties include increases in the type, intensity and duration of trail, road or land use. Of particular concern is the increase through the years of non-system roads and trails. The majority of these travel ways has been, and continues to be, created without engineering design and without input from a variety of other resource specialists, including archaeologists. Attempts to use these roads during inclement weather or when the roads are impassible may result in either deep/severe rutting or in the creation of parallel tracks along the initially established road. This action exposes buried cultural material and often churns up the matrix so that artifacts loose their context. Often, sites associated with these non-system travel ways are discovered by chance, exposing them to archaeologists and public visitor alike. Site damage has already occurred or is ongoing. Visually, as these non-system routes increase in number they become unsightly and may become permanent scars on the landscape.

Actions that have the potential to benefit cultural properties include decreases (but not necessarily closure or obliteration) in the type, intensity or duration of trail and road use where cultural properties are present or where the character of the historic route can be maintained or restored through a travel management decision. Motorized use on, and its effects to, roads must also consider the age of roads and whether or not they represent cultural resources. For example, in the 1930's the CCC workforce built and/or improved at least 24 roads on the District. Ten of these roads are considered historic properties because most of the original alignments and stone work is still intact and in use. In many cases continued use and maintenance of these and other historic roads have a favorable effect to the property, preserving the qualities that make the road eligible for the NRHP. Discontinued use of the road could result in less maintenance and could threaten the preservation of the road. Any proposed changes by the Forest Service to the historic CCC roads would require evaluation and consultation with the MT and SD SHPO.

In accordance with the MTPA and SDPA, all non-system routes proposed to be designated as system roads or trails will require inventory This additional inventory will add to the historical record on the District and provide new information on the recent past.

An indirect effect is not caused by the action itself but is the secondary result of the undertaking. Increased site access may result in a greater chance for looting. Soil compaction, soil erosion and artifact displacement could result from foot, horse and motor vehicle traffic associated with dispersed camping.

An example of an indirect effect to sites involves the improved or increased access that a road may offer to a motorized vehicle user. In the past, where vehicle access to sites may have been non-existent or limited, so too was the degree of site damage, artifact theft and vandalism. Studies have shown that increased access to public lands display a concurrent increase in the amount of vandalism of cultural resources (ASPPN I-13, 1989). The ability to access distant areas, relatively quickly and with relative ease, via motorized vehicles can result in subsequent looting or vandalism. Highly visible structures are more prone to visits due to their attractive nature as destination points. Large numbers of people, along with inappropriate behavior, can alter or damage the very attributes that

make the structure important or attractive as a destination. These behaviors include trampling (leading to erosion or feature damage), theft, wall or feature damage and other types of vandalism.

Sites that contain features, such as cairns, stone circles or historic buildings, may become damaged through acts of theft or vandalism. Motorized vehicles can easily transport equipment (i.e. shovels, screens, hammers, crowbars, high-powered rifles) used to damage or vandalize sites, especially rock art. These same vehicles can be used in theft to remove large items of value, whether this is weathered logs or lumber from a historic building or old mining equipment. These types of damage lessen the sites' integrity and are irreversible.

Vandalism at two sites—Ludlow Cave in the North Cave Hills Unit and at a cairn complex site in the Long Pine Hills Unit—has been mentioned above but there are other indirect effect examples of site vandalism near roads on the District. At a rock shelter near Ludlow Cave an inscribed shield figure was hacked out of the sandstone wall with an axe during the 1980s, destroying at least three adjacent shield figures in the process. In 2000 an individual with a Colorado mule team organization inscribed a logo next to a Native American rock art panel and nearby artifact collectors have dug and screened at two lithic and bone artifact scatters. A site discovered in 2002 near a road in the Long Pine Hills Unit contained a large, low-profile cairn that had been recently vandalized. Several sandstone nodules had been removed and a large hole had been dug in the center of the cairn.

Dispersed vehicle camping may result in indirect effects to cultural resources possibly due to inadvertent activity by recreationists. Campers may not recognize cultural features such as low-profile cairns, alignment features or stone circles and may displace feature stones without knowing the difference. This may be the case in the South Cave Hills Unit where a stone circle located near a road was recently dismantled to construct a nearby campfire ring. A low-profile cairn near a road in the Slim Buttes Unit may be threatened with the same type of vandalism due to the fact that it is located in an area commonly used for dispersed vehicle camping activity. However, recent monitoring of this location has not detected any disturbance.

Beneficial indirect effects may include reduction in type and amount of traffic into the more remote areas through a decision to not designate certain routes for motorized use. Should cultural properties, and especially culturally sensitive sites, be located along a road or be crossed by a road, reducing the type and amount of traffic to the site may limit additional site disturbance and help preserve the site.

Designating new roads and/or trails would require more archaeological inventory and environmental assessments which may result in the identification of more TCPs and/or more information on the distribution of culturally significant plant, animal, mineral and fossil resources. This information could be useful to traditional Indian Communities. It is possible that non-system routes converted to system roads and trails can increase or ease access to traditionally significant ceremonial or gathering places. However, increasing or easing of access to traditionally significant ceremonial or gathering areas would make them available for all. There is the potential to decrease the seclusion and quiet necessary for many traditional cultural practices.

Alternative A

Direct Effects

Under this alternative, at least 346 recorded cultural resource sites are located within the APE corridor, of which 150 cultural resources are located along and within the routes covered by the

specific travel management proposals for Alternative 3. As described above, some of these proposals have the potential to cause detrimental effects, such as designating routes that may increase the type, intensity and duration of trail, road or land use where significant cultural resources may occur. This may be the case for the designation of non-system routes proposed to be system roads or motorized trails. Other proposals may beneficially affect some cultural resources by decreasing the type, intensity or duration of trail and road use. This may be the case for proposals to add non-sytem routes for administrative use only. For this alternative, removal of dispersed camping oppurtunities along some routes in the North Cave Hills is considered a beneficial effect.

Most of these sites consist of lithic artifact scatters with intact subsurface cultural material and the direct effects consist of vehicle-caused rutting or down-cutting of the routes that pass through the sites, exposure of cultural deposits, and loss of valuable archaeological information. Table 3-8 further describes the cultural resources that may be affected, and which action may affect these resources. Appendix C further describes the number and locations of routes considered under this alternative.

Table 3-8. Alternative B Effects on Cultural Resources by Type of Action.

Type of Proposed Action For Alternative A	Cultural Resources within APE	Priority Asset Sites	Culturally Sensitive Sites
Number of cultural resources within the 600 foot corridor of all designated motorized routes	346	38	97
Actions with Potential to Increase Effects			
Number of sites located within the 600 foot corridor for Non System routes Proposed to be System Roads or Motorized Trails	81	19	20
Actions with Potential to Decrease Effects			
Number of cultural resources located within the 600 foot corridor for Non-System Routes Proposed for Administrative Use	0	0	0
Number of cultural resources located within the 600 foot corridor for System Roads proposed for Administrative Use	31	8	10
Number of cultural resources located within the 600 foot corridor for System Roads Not proposed to be Designated for Public Motorized Use	0	0	0
Number of cultural resources located within the 600 foot corridor for Dispersed Vehicle Camping Proposed Changes	38	5	9

Nineteen priority asset sites are located within the APE corridor that could be physically damaged by the addition of non-system routes Twenty sites are considered culturally sensitive sites and, while the direct effects include the same for lithic scatters, the possibility of dislodging stones from cairns, stone circles, and stone features would damage their physical character as well as their traditional qualities. Permitting dispersed vehicle camping within 300 feet of designated roads and trails may affect some of these sites identified if this activity occurs frequently at the same locations. However, monitoring during the past seven years has not revealed any adverse effects to cultural resources as a result of dispersed vehicle camping. The removal of dispersed camping along several of the routes in

the North Cave Hills may reduce the effects to 38 sites, five of which are priority assets and nine of which are culturally sensitive sites.

Under this alternative, six cultural resource complexes may be threatened by the proposed addition of motorized roads and trails. The Molstad Complex consists of several culturally sensitive sites, a historic homestead and a cemetery that could be affected by adding and designating routes for public motorized use. In the Long Pine Hills Unit a unique concentration of cairns, at least one fasting bed, and several stone circles could be affected by adding and designating routes for public motorized use. The Burditt Spring and North Slick Creek areas contain lithic artifact scatter sites that are near, or are bisected by, roads. A large cairn adjacent to Road 3049 and northwest of the Wickham Campground was vandalized six years ago and a nearby spur road courses directly through a stone circle site. Proposed motorized vehicle access into an area near the Plum Creek Road could threaten to disturb a unique complex of 21 stone circle sites, consisting of over 70 features. In the North Cave Hills Unit proposed motorized use of FS 38500 could promote increased public access and threaten a variety of sites, several of which have already suffered irreparable vandalism.

Four CCC roads would be added to the motorized trail system. No change in maintenance and standard for these CCC roads is anticipated based upon maintenance guidance for roads and trail found in FSH 7709.59 and FSH 2309.18. Nine historic roads would also be converted to the motorized trail system and 3 historic roads would be added to the road system. These historic roads would be formally recorded and evaluated, adding to our knowledge of the historic road system on the District.

The conversion of several system routes to administrative use may reduce effects to thirty-one sites.

Indirect Effects

By adding numerous non-system routes to the system, access to the more remote areas of the district would increase. As studies have shown, increased access often leads to increased vandalism and theft to cultural resources. The 81 sites located along the non system routes proposed for conversion to system roads or motorized trails could be exposed to vandalism and illegal artifact collection. Designating dispersed vehicle camping within 300 feet of these routes could also affect these sites. Effects include discovery of sites and illegal collection of artifacts or possibly the dismantling of sensitive site features—such as cairns or stone circles—as intentional acts of vandalism or for the construction of campfire rings.

Overall, Alternative A increases access to a number of remote areas within the Chalk Buttes, North Cave Hills, and Slim Buttes cultural landscapes. Increased access or ease in access to formerly remote traditionally significant ceremonial or gathering areas will then be available to all, potentially decreasing the privacy, seclusion and quiet necessary for many traditional cultural practices. Designation of non-system routes to system roads and/or trails may increase accessibility to remote areas which have been used for prayer and fasting activities where seclusion is required**.** Increased access often increases the opportunity for site vandalism and illicit artifact collection. Due to the relative remoteness of the units, development of roads near the units opens up large areas for this illicit activity. Increased access may also affect the twenty culturally sensitive sites by infringing on the isolated character surrounding these sites.

In certain instances, adding routes to the road or trail system would provide interpretation opportunities to the public for certain types of cultural resources such as CCC camps and roads, ranger

stations and historic cemeteries. Designating several non-system routes under this alternative provides an oppurtunity for interpretation of the many CCC built roads, reservoirs and camps in the APE.

Alternative B

Direct Effects
Under this alternative, at least 252 recorded cultural resource sites are located within the APE corridor, of which 106 cultural resources are located along and within the routes covered by the proposed actions. As with Alternative A, some of the proposals may be considered to have detrimental effects on cultural resources such as the designation of non-system routes to system routes or motorized trails, while others, such as the designation of non-system routes for administrative use, may be considered to have a beneficial effect on cultural resources. Most of these cultural resources consist of lithic artifact scatters with intact subsurface cultural material which could be affected by vehicle-caused rutting or down-cutting from use of the routes. Six priority asset sites are located within the APE corridor and could be physically damaged by the addition of nonsystem routes. No sites considered culturally sensitive would be adversely affected by the actions proposed under this alternative. Table 3-9 further describes the cultural resources and effects by the proposed actions.

Table 3-9. Alternative B Effects on Cultural Resources by Type of Action.

Type of Proposed Action For Alternative B	Cultural Resources within APE	Priority Asset Sites	Culturally Sensitive Sites
Number of cultural resources within the 600 foot corridor of all designated motorized routes	252	35	68
Actions with Potential to Increase Effects			
Number of sites located within the 600 foot corridor for Non System routes Proposed to be System Roads or Motorized Trails	8	6	0
Actions with Potential to Decrease Effects			
Number of cultural resources located within the 600 foot corridor for Non-System Routes Proposed for Administrative Use Only	1	1	0
Number of cultural resources located within the 600 foot corridor for System Roads proposed for Administrative Use Only	58	13	24
Number of cultural resources located within the 600 foot corridor for System Roads Not proposed to be Designated for Public Motorized Use	0	0	0
Number of cultural resources located within the 600 foot corridor for Dispersed Vehicle Camping Proposed Changes	39	7	9

One historic road is proposed for addition to the motorized trail system and will require inventory and evaluation. Three CCC roads, Plum Creek, Snow Creek and Speelmon Creek, will be converted to system trails; however no change in maintenance and standard is anticipated based upon maintenance guidance for roads and trail found in FSH 7709.59 and FSH 2309.18. Three historic roads would be

added to the road system. These historic roads would be formally recorded and evaluated, adding to our knowledge of the historic road system on the District.

Effects from dispersed vehicle camping within 300 feet of designated roads and trails could affect a number of sites identified within the APE under Alternative B. These effects include vehicle rutting on sites or damage to artifacts or features due to being driven over. However, monitoring during the past seven years has not revealed any adverse effects to cultural resources as a result of dispersed camping. The removal of dispersed camping along several of the routes in the North Cave Hills may reduce the effects to 39 sites, seven of which are priority assets and nine of which are culturally sensitive sites.

Under this alternative, effects to the Molstad Complex sites; the Long Pine Hills concentration of cairns, fasting beds, and stone circles complexes; North Slick Creek areas lithic artifact scatter sites; Plum Creek complex; and sites along FS 38500 in the North Cave Hills may be reduced since the system designation has been changed to administrative use only and no addition of non-system (unauthorized) motorized routes are to be designated.

Indirect Effects
Eight recorded sites would potentially be adversely affected by adding non-system routes to the system for public motorized use. The addition of non-system motorized routes to the system opens up access to areas previously considered somewhat remote and, as studies have found, could increase the occurrence of vandalism and site theft. This can have detrimental effects to culturally sensitive sites where site integrity and setting are important values to protect.

The proposed action under Alternative B would reduce or eliminate effects to 97 recorded cultural resource sites. Not only would individual sites be protected and preserved under Alternative B but surrounding pristine cultural landscapes would indirectly benefit. In the Chalk Buttes Unit cultural landscapes—including the Molstad Complex consisting of several culturally sensitive sites, a historic homestead and a cemetery; a concentration of cairns, at least one fasting bed, and several stone circles—would be protected. In the Long Pine Hills Unit cultural landscapes—including the North Slick Creek lithic artifact scatter; a large vandalized cairn adjacent to Road 3049, a spur road coursing through a stone circle site and a unique complex of 21 stone circle sites consisting of over 70 features—would be protected. In the North Cave Hills Unit a cultural landscape near road 38500—containing cairns, lithic artifact scatters, petroglyphs, rock shelters and stone circles would be protected.

In certain instances, adding routes to the road and trail system may provide interpretation opportunities to the public for certain types of cultural resources such as CCC camps and roads, ranger stations and historic cemeteries. Even with fewer CCC related sites within the APE for Alternative B, there remains the opportunity to interpret the CCC system roads.

No Action Alternative

The No Action Alternative sets a baseline by considering the existing system road and trail system as defined by the CNF Forest Plan, Plan amendments, and all existing Forest Orders. There are currently 311 cultural resources recorded within the 600 foot corridor along the system roads. The CCC built at least 10 system roads on the District that are still in use. Maintenance of these historic properties as roads has added years to their preservation and protection. Monitoring of the priority assets within the

corridor has not revealed any significant detrimental effects from road use or dispersed camping activities.

Direct Effects
Under this alternative, no new historic information would be gained since no non-stystem routes would be designated. The CCC built system roads would continue to be maintained and protected through their identification as system roads. No new potential CCC routes or historic roads would be recorded, however, and added to the system.

Indirect Effects
The remote location for three of the NRHP prehistoric locations and limited access under this alternative minimizes the potential disturbance of the sites. The culturally sensitive sites would not be subjected to increased access since non-system routes would not be added to the system.

Cumulative Effects

There are a number of ongoing and reasonably foreseeable activities on the District that have the potential to effect cultural resources, such as the Riley Pass CERCLA effort, geothermal leasing, fuels treatments, and special use permitting. Mitigation of the potential effects associated with these activities and site protective measures will continue to be employed in consultation with Montana and South Dakota SHPOs. Monitoring site conditions will continue in support of travel management as well as these other Forest undertakings.

Additional inventory in response to this and future undertakings will add to the understanding of the area prehistory and history.

3.3.2.1 Conclusion – Archaeological Resources and Traditional Cultural Properties

In overall comparisons, Alternative A consists of the highest count of cultural resource sites that may be affected due to the designation of non-system routes to system roads or motorized trails, and the increase of dispersed vehicle camping activities. Alternative B strikes a balance between adding to our knowledge of the area through additional inventory, while protecting and preserving the highest number of recorded cultural resource sites, culturally sensitive sites, priority asset sites, historic and CCC roads and cultural landscapes. The following table compares the action alternatives.

Table 3-10. Summary of Cultural Resource Sites, Priority Asset Sites, and Culturally Sensitive Sites within the APE by Alternative.

Type of Resource	Alternative A	Alternative B	No Action Alternative
Total Number of Cultural Resource Sites within the APE	346	252	311
Number of Priority Assets Sites within the APE	38	35	76
Number of Culturally Sensitive Sites within the APE	97	68	30

For all alternatives, compliance with the NHPA through the MT PA and the SD PA is required, and includes monitoring of sites for travel management effects. Cultural resource monitoring will be

implemented within the Project Area in order to assess the effectiveness of this project relative to the protection and preservation of significant heritage resources. This cultural resource monitoring program will be based upon an adaptive management approach that may necessitate specific changes if site disturbances are observed. Should detrimental effects be identified, site evaluative testing and formal consultation with the Montana SHPO or the South Dakota SHPO to identify measures to reduce, remove or mitigate these effects will be necessary. These monitoring results will be presented in the Annual Heritage Reports required by the MT PA and SD PA.

3.3.3 WILDLIFE

Overview of Changes from the Draft to the Final EIS

- Changes made reflect minor mileage changes to Alternative B.
- Additional narrative was added to clarify analysis results and address comments received on the DEIS.

Introduction

Public concerns relative to wildlife can be summarized into two primary issues: 1) changes to habitat quality, and 2) effects to wildlife behavior. Habitat concerns include fragmentation, loss, connectivity, and availability of security habitat. Wildlife behavior effects include disturbance, displacement, and responses to noise. Effects for both issues are discussed in general terms in the General Wildlife section as well as in specific species sections relative to those species. Winter over-the-snow travel (i.e. snowmachines, cross-country skiing, etc.) is not part of the current District travel plan process and thus is not discussed. However, winter wheeled motorized vehicle use was considered during analysis.

The District provides habitat for a variety of wildlife species including federally threatened species, ungulates, carnivores, small mammals, resident and migratory birds, amphibians, and reptiles. Travel routes can affect the way many animals use an area because they may bring humans and their associated disturbances into wildlife habitat. The following table displays threatened, endangered, sensitive, and management indicator species on the District, plus other species identified during the public scoping process.

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
Threatened, Endangered, and Proposed Species				
Black-footed Ferret (*Mustela nigripes*)	Live within large complexes (6,000 to 7,500 acres) of occupied prairie dog colonies (>100 acres) and complexes. Ferrets depend on prairie	Analysis in EIS.	Species does not occur in project area and an adequate preybase of black-tailed prairie dogs is not	NE

[7] Options for effects determinations are: For federally listed species **NE** = No effect; **NLAA** = May effect – not likely to adverse affect; **LAA** = May effect – likely to adversely affect; and **BE** = Beneficial effect. For Forest Service sensitive species **NI** = No impact; **MIIH** = May impact individuals but is not likely to cause a trend to Federal listing or loss of viability; **WIFV** = Likely to result in a trend to Federal listing or loss of viability; and **BI** = Beneficial impact. For management indicator species: + = Positive effect; 0 = Neutral effect; and - = Negative effect. For other species of concern: NE = No effect.

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
(Endangered)	dog colonies for food, shelter and denning. The Montana side of the Sioux Ranger District does not support any Prairie dog colonies and the South Dakota side has about 1 acre of black-tailed prairie dog colonies. Black-footed ferrets are not known to be present.		located in or near the project area.	
Forest Service Sensitive Species				
American peregrine falcon *(Falco peregrinus anatum)*	Cliff habitat over 200' high with suitable ledges for nest construction. Not known to occur in the project area.	No further analysis will be conducted.	Not in project area	NI
Baird's sparrow *(Ammodramus bairdii)*	Prefers native prairie but structure is more important so may nest in tame grasses. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	NI
Bald Eagle *(Haliaeetus leucocephalus)*[8]	Riparian habitats, forested areas along rivers and lakes, wetlands, and major water bodies. May use uplands and game winter range during winter. Nesting sites usually in large forested areas near large water bodies. The project area used primarily as winter foraging habitat. No known nest sites.	No further analysis will be conducted.	Little nesting habitat and no known nests in project area. Bald eagle presence on District is primarily during winter, and winter over-the-snow travel is not part of the current District travel plan process.	NI
Black-backed woodpecker *(Picoides arcticus)*	Primary habitat is recently burned forested areas, secondary habitat is spruce/fir forests. Habitat present in project area and species is known to be present.	Analysis in EIS.	Included in Migratory Birds discussion	NI
Blue-gray gnatcatcher *(Polioptila)*	Open stands of juniper and limber pine with intermixed sagebrush. Habitat is not present in the project area.	No further analysis will be conducted	Not in project area.	NI
Burrowing owl *(Athene cunicularia)*	Open grasslands, nesting and roosting in burrows dug by mammals or owls. Species is associated with prairie dogs burrows in the project area. Habitat present in project area and species is known to be present.	No further analysis will be conducted.	No increased access to occupied black-tailed prairie dog habitat is proposed in any alternative. The District supports less than 1 acre of prairie dogs.	NI
Greater sage grouse *(Centrocercus urophasianus)*	Sagebrush with intermixed grasslands. No leks are located in project area. Brood-rearing and winter habitat maybe present but the species is not known to occur in the project area.	No further analysis will be conducted.	No increased access to habitat is proposed in any alternative.	NI

[8] Bald eagle delisted effective August 8, 2007 and subsequently managed as a Forest Service Sensitive Species.

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
Grizzly Bear (*Ursus arctos*)[9]	Remote, well connected forested generalist. Species is not present in the project area.	No further analysis will be conducted	Not in project area.	NI
Harlequin duck *(Histrionicus histrionicus)*	Inhabit fast moving, low gradient clear mountain streams. Species is not present in the project area.	No further analysis will be conducted	Not in project area.	NI
Loggerhead Shrike *(Lanius ludovicianus)*	Grassy pastures that are well grazed, nest in shrubs or small trees, preferably thorny such as hawthorn. Species and habitat are present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	NI
Long-billed curlew *(Numenius americanus)*	Open grasslands or prairie usually near water. No habitat in project area.	No further analysis will be conducted.	Not in project area.	NI
Long-eared myotis *(Myotis evotis)*	Use a variety of habitats but are strongly associated with coniferous forests. Species present in project area.	Analysis in EIS.	Included in Bats discussion. Primary concern is disturbance at roosting sites and hibernacula.	MIIH
Long-legged myotis *(myotis volans)*	Primarily a coniferous-juniper forest bat found at moderate elevations (≥6000ft) but may also inhabit riparian cottonwood bottoms and desert areas. Species present in project area.	Analysis in EIS.	Included in Bats discussion. Primary concern is disturbance at roosting sites and hibernacula.	MIIH
Pallid bat *(Antrozous pallidus)*	Arid deserts and grasslands with rock outcrops. Species may be present in project area.	Analysis in EIS.	Included in Bats discussion. Primary concern is disturbance at roosting sites and hibernacula.	MIIH
Spotted bat *(Euderma maculatum)*	Desert to montane coniferous forests. Species present in project area.	Analysis in EIS.	Included in Bats discussion. Primary concern is disturbance at roosting sites and hibernacula.	MIIH
Townsend's big-eared bat *(Corynorhinus townsendii)*	Cave and cave-like structures along with forested foraging habitat. Species present in project area.	Analysis in EIS.	Included in Bats discussion. Primary concern is disturbance at roosting sites and hibernacula.	MIIH
Black-tailed prairie dog *(Cynomys ludovicianus)*	Relatively flat grasslands with diggable soils, throughout the central plains. Species present in project area.	See black-footed ferret analysis, no further analysis for prairie dogs will	No increased access to habitat is proposed in any alternative.	NI

[9] Grizzly bear delisted effective April 30, 2007 and subsequently managed as a Forest Service Sensitive Species as directed in "Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem, Interagency Grizzly Bear Study Team, March 2003."

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
		be conducted.		
White-tailed prairie dog *(Cynomys leucurus)*	Xeric sites with mixed stands of shrubs and grasses from the Bighorn Basin in Montana to Utah. Species is not present in project area.	No further analysis will be conducted.	Not in project area.	NI
Wolverine *(Gulo gulo)*	Remote subalpine and spruce/fir forested areas. Species is not present in project area.	No further analysis will be conducted.	Not in project area.	NI
Greater short-horned lizard *(Phrynosoma hernandesi)*	Areas with short, sparse grass or sagebrush; flats with pebbly or stony soil; and rock outcrops. Species may be present in project area.	Analysis in EIS.	Included in General Wildlife Species discussion. Primary concern is direct mortality while crossing roads.	MIIH
Milk Snake *(Lampropeltis triangulum)*	Open sagebrush/grasslands, usually in or near rocky areas. Species may be present in project area.	Analysis in EIS.	Included in General Wildlife Species discussion. Primary concern is direct mortality while crossing roads.	MIIH
Western hog-nosed snake *(Heterodon nasicus)*	Sagebrush/grassland; arid areas with gravelly or sandy soil. Species present in project area.	Analysis in EIS.	Included in General Wildlife Species discussion. Primary concern is direct mortality while crossing roads.	MIIH
Management Indicator Species[10]				
Northern Goshawk *(Accipiter gentilis)* (H)	Mature forest generalist. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
White-tailed deer *(odocoileus virginianus)* (H, K)	Grassland to montane conifer forest. Species present in project area.	Analysis in EIS under elk section.	Analysis for elk serves as surrogate for white-tailed deer because they occupy the same habitats in the project area and elk have more restrictive habitat requirements. Impacts of travel are expected to be similar for the two species.	0
Ruffed grouse *(Bonasa umbellus)* (H)	Primary habitat includes dense early seral staged forests dominated by aspen, secondary habitat includes other dense deciduous or conifer woodland areas. Species is not present in project area.	No further analysis will be conducted.	Not in project area.	0
Western kingbird *(Tyrannus verticalis)* (H)	Open or partially open country with scattered trees, including agricultural lands. Habitat not present in project area.	No further analysis will be conducted.	Not in project area.	0

[10] H = Habitat Indicator Species; K = Key Species

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
Bullock's (Northern) oriole *(Icterus bullockii)* (H)	Open deciduous woodland and riparian areas. Habitat present in project area. Species presence unknown.	Analysis in EIS.	Included in Migratory Birds discussion	0
Yellow warbler *(Dendroica petechia)* (H)	Brushy riparian especially with willows. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Ovenbird *(Seiurus aurocapillus)* (H)	Mid-late successional, closed-canopied deciduous or deciduous/conifer forests with limited understory. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Spotted (Rufous-sided) towhee *(Pipilo maculatus)* (H)	Shrubby riparian areas, woody draws, and woodland undergrowth. Species present in Pryors Unit.	Analysis in EIS.	Included in Migratory Birds discussion	0
Brewer's sparrow *(Spizella Breweri)* (H)	Strongly associated with sagebrush, but also uses other areas with scattered shrubs and short grasses. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Sharp-tailed grouse *(Tympanuchus phasianellus)* (H, K)	Mosaic of dense grass and shrubs with forbs for nesting, woody riparian areas in winter. Species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Yellowstone Cutthroat trout (*Oncorhynchus clarkii bouvieri)* (H, K)	Upper Yellowstone and Upper Snake River drainages. Species is not present in project area.	No further analysis will be conducted.	Not in project area.	0
Elk *(Cervus canadensis)*(K)	Grassland to forested alpine areas. Species present in project area.	Analysis in EIS.	Main concerns are potential for displacement due to recreational travel, and vulnerability during hunting season.	0
Golden eagle *(Aquila chrysaetos)*(K)	Open hilly to mountainous areas. Habitat and species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Merlin *(Falco columbarius)*(K)	Patchy shrub/grassland habitats with large trees to support nesting (secondary nester). Habitat and species present in project area.	Analysis in EIS.	Included in Migratory Birds discussion	0
Mule deer *(Odocoileus hemionus)* (K)	Rugged grassland to forested alpine areas. Species present in project area.	Analysis in EIS under elk section.	Analysis for elk serves as surrogate for mule deer because they occupy the same habitats in the project area and elk have more restrictive habitat requirements. . Impacts of travel are expected to be similar for the two species.	0
Bighorn sheep	Remote, steep, rugged terrain, such	No further	Not in project area.	0

Table 3-11. Wildlife Analysis Table

Species Name	Basic Habitat Description and Occurrence in Project Area	Included in EIS	Rationale and Other Information	Effects Determination for Alternative B[7]
(Ovis Canadensis) (K)	as mountains, canyons, and escarpments where precipitation is low and evaporation is high. Species is not present in project area.	analysis will be conducted.		
Pronghorn antelope *(Antilocapra Americana)* (K)	Rolling grasslands to mixed sagebrush shrublands. Species present in project area.	No further analysis will be conducted.	No increased access to habitat is proposed in any alternative.	0

Potential effects of the alternatives on the following species and/or their habitats are analyzed in detail: black-footed ferret; bats (includes long-eared myotis, long-legged myotis, Pallid bat, spotted bat, and Townsend's big-eared bat); big game (includes elk, white-tailed deer and mule deer); migratory birds (includes Baird's sparrow, black-backed woodpecker, loggerhead shrike, golden eagle, merlin, Northern goshawk, Bullock's oriole, yellow warbler, ovenbird, spotted Towhee, Brewer's sparrow and sharp-tailed grouse); and general wildlife species (includes greater short-horned lizard, milk Snake, Western hog-nosed snake and other focal species).

The list of federally Threatened and Endangered species for the Custer National Forest and counties encompassed by the Sioux Ranger District was verified through the U.S. Fish and Wildlife Service in July 2008 (USFWS 2008). The bald eagle was delisted effective August 8, 2007. The only listed species for the Sioux Ranger District is the black-footed ferret.

Applicable background information regarding specific species biological requirements, and general effects including effects of roads and recreation on wildlife, were taken from the Beartooth Travel Management FEIS, Gallatin National Forest Travel Plan FEIS, the Helena National Forest North Belts Travel Plan Wildlife Report, Effects of Recreation on Rocky Mountain Wildlife – A Review for Montana, and other literature as cited.

3.3.3.1 Affected Environment – Threatened And Endangered Species Black-footed Ferret

Regulatory Framework – Black-footed Ferret

The black-footed ferret was listed as a federally endangered species under the Endangered Species Act (ESA) in March 1967. The recovery plan for the black-footed ferret (USFWS 1988) established the national recovery objectives where are to: increase the captive population of ferrets to 200 breeding adults by 1991; establish a prebreeding census population of 1,500 free-ranging breeding adults in 10 or more different populations with no fewer than 30 breeding adults in each population by the year 2010; and encourage the widest possible distribution of reintroduced animals throughout their historic range (Federal Register Vol. 61, No. 55, March 1996). So far, reintroduction attempts have occurred in Wyoming, Montana, South Dakota, Colorado, and Utah. In January 2002, the Conservation Plan for Black-tailed and White-tailed Prairie Dogs in Montana was approved and implemented in Montana (MTFWP 2002). The overall goal of the plan is to "provide for management of prairie dogs populations and habitats to ensure long-term viability of prairie dogs and associated species" which included black-footed ferrets (MTFWP 2002). In 2003 an annual rule regulating prairie dog shooting on public lands was implemented by the State where prairie dogs could not be shot on public lands from March 1 thru May 31 (MTFWP 2003). The no shooting rule was permanently remanded in 2007

so prairie dog shooting on most public land remains open. On January 24, 2008, the U.S. Fish and Wildlife Service reintroduced 8 black-footed ferrets on the Northern Cheyenne Indian Reservation. The nearest release site was about 80 miles from the Sioux Ranger District in Montana and over 100 miles from the closest release site in South Dakota (Cheyenne River Indian Reservation).

Affected Environment – Black-footed ferret

Black-footed ferrets are intimately tied to prairie dog colonies throughout their range. Research from ferret-occupied prairie dog colonies indicates that the most important attribute of ferret habitat is the distribution and abundance of prairie dogs. Ferrets are therefore limited to the same open habitat used by prairie dogs: grasslands, steppe, and shrub steppe (MTNHP 2008). To support a viable population of ferrets, a prairie dog colony complex of 2500-3000 ha (6,200-7,400 acres) composed of individual colonies at least 12 ha (30 acres) in size, with the majority 50 ha (125 acres) or larger, is needed (Forrest et al., 1988, p. 28). Miller et. al. (1996) found that females with young have never been found on prairie dog colonies less than 49 ha (121 acres). No black-footed ferrets have been documented on the Ranger District since the 1930s.

Currently there is one known active black-tailed prairie dog (*Cynomys ludovicianus*) colony (< 1 acre) on the Sioux Ranger District. The distribution of prairie dog colonies and acreages on adjacent lands is unknown but is thought to be limited based on the Conservation Plan for Black-tailed and White-tailed Prairie Dogs in Montana (2002).

The colony acreage on NFS lands is grossly inadequate to support black-footed ferrets. As of August 12, 2004 the USFWS removed the black-tailed prairie dog as a candidate for listing under the Endangered Species Act. The black-tailed prairie dog is considered as a USFS Northern Region Sensitive species.

3.3.3.2 Environmental Consequences – Threatened And Endangered Species: Black-footed Ferret

Direct and Indirect Effects – Black-footed Ferret

The presence of roads and trails represents a direct loss of habitat that has already occurred, and their use can pose a direct threat of black-footed ferret mortality from vehicles. However, black-footed ferrets are not known to occur in the area and the project area does not support an adequate preybase of prairie dogs to support ferrets. Indirectly, the impacts of roads include increased access for prairie dog shooters that could have a negative impact on prey density.

Effects Common to All Alternatives.

Direct habitat loss would not increase under any alternative because construction of new routes is not proposed. None of the alternatives analyzed in detail propose increased access to potential black-footed ferret or black-tailed prairie dog habitat. All of the alternatives provide the same amount of access to the one active prairie dog town

Vehicle-related black-footed ferret mortality is unlikely given the relatively low speeds and traffic volumes on National Forest system roads and the lack of ferrets and adequate habitat.

No vegetation treatment is proposed with this analysis and the components of available habitat would not change.

Alternative A, Alternative B and No Action Alternative.
The availability of black-footed ferret habitat would be effectively the same under Alternatives A, B, and the No Action.

Cumulative Effects – Black-footed Ferret
Based on the past and current vegetation management on the District, including timber harvest, livestock grazing, prescribed fire, the invasive species program, and other vegetation projects, grassland/shrub steppe vegetation conditions provide some habitat for black-footed ferret and their preferred prey species, black-tailed prairie dogs. The impacts of different types of dispersed recreation including the outfitter/guide program; hunting; recreational shooting; fire suppression; and the lands, minerals, and non-recreation special use programs on the District have been minor. Given that anticipated direct and indirect effects to black-footed ferrets and their habitats from any of the alternatives is small, cumulative effects of past, present, and reasonably foreseeable future activities is also expected to be small.

Consistency with Laws, Regulations, and Policy
All alternatives are consistent with the laws, regulations, policy, the Custer National Forest Land and Resource Management Plan, Federal, Regional, and state direction in Montana and South Dakota, and the conservation Plan for Black-tailed and White-tailed Prairie dogs in Montana (2002).

Determination of Effects – Black-footed Ferret
Implementation of the proposed Federal Action would have *No Effect On The Black-Footed Ferret Or Their Habitat.* This determination is based on the following rationale: 1) black-footed ferrets are not known to occur in the area; 2) the project area does not support an adequate preybase to support ferrets; 3) the amount of occupied black-tailed prairie dog habitat will not grow to an adequate level in the near future; 4) direct habitat loss would not increase under any alternative because construction of new routes is not proposed; and 5) none of the alternatives propose increased access to potential black-footed ferret or black-tailed prairie dog habitat. Implementation of the proposed Federal Action *May Impact Individuals Or Habitat But Is Not Likely To Cause A Trend To Federal Listing Or Loss Of Viability For Black-Tailed Prairie Dogs.* This determination is based on the above rationale for ferrets along with the fact that prairie dogs will continue to be killed by recreational shooting until the States of Montana and South Dakota impose anti-shooting rules. Recommendations for removing, avoiding, or compensating adverse effects are not necessary.

3.3.3.3 Affected Environment – Sensitive Species: Bat Species

Five Forest Service sensitive bat species (Long-eared myotis, long-legged myotis, Pallid bat, Spotted bat, and Townsend's big-eared bat), occur or are thought to occur on the District.

Although different bat species have specific habitat needs, some generalizations can be made. During summer, which is the reproductive season, bats may use various roost sites such as rock crevices, caves, talus slopes, snags, buildings, and bridges. Hibernacula are located in underground caverns with temperatures above freezing. Deep limestone caverns are particularly important for hibernating bats in the Rocky Mountains (Adams 2003). Hibernating bats are especially vulnerable to disturbance because when aroused from hibernation, they use winter fat needed to support them until insects are available in the spring. A single arousal most likely costs a bat as much energy as it would normally

expend during two to three weeks of hibernation. Thus, frequently aroused hibernating bats may starve before spring (Harvey et al. 1999).

Most bats are very sensitive to disturbance (Schmidt 2003). Human-caused adverse impacts to bats include habitat destruction, direct mortality, vandalism, and disturbance of hibernating and maternity colonies. Disturbance to hibernacula and maternity colonies is a major factor in the decline of many bat species. Human-caused arousal from hibernation costs bats energy that may lead to starvation before spring (Harvey et. al. 1999). The body warmth from a person standing 10 feet below a hibernating bat may be enough to stimulate the bat's arousal (Adams 2003). Disturbance to summer maternity colonies may cause parents to drop or abandon their dependent young (Harvey et. al. 1999). Activities such as rock climbing or caving may take a toll on nursery colonies (Adams 2003).

Surveys for hibernacula, colonial roosts, and maternity colonies have not been conducted on the District. However, potential habitat for hibernacula and colonial roosting is present on the Unit. In addition, documentation of post-lactating females suggests that maternity colonies are also likely to be present. Potential effects of the alternatives on bats in the project area were analyzed in terms of miles of open motorized routes. The reason for using this method is that the presence of motorized routes can facilitate access to caves, thus potentially leading to adverse indirect effects by disturbance of bats at hibernacula, roosting, and maternity sites. Miles of open motorized routes are displayed in the following table.

Table 3-12. Public Motorized Use Route Miles by Alternative – Sioux RD

Alternative	Motorized Route Miles
Alternative A	466
Alternative B	300
No Action Alternative	399

Hibernacula are not expected to be present on the District due to lack of caves. For the same reason, colonial roosts and maternity colonies are also not expected to occur. Non-colonial roosting and maternity sites are more likely to occur in rock crevices in sandstone, siltstone, and mudstone outcrops scattered throughout the District, as well as in tree snags and other habitats. Effects to bats in these settings are more likely to be caused by loss of habitat than by human disturbance at any particular site.

3.3.3.4 Environmental Consequences – Sensitive Species: Bat Species

Direct and Indirect Effects – Bat Species

The presence and use of roads and trails are not expected to directly affect bats or their habitat. However, the presence of motorized routes can facilitate access to bat habitat, particularly to roosting or maternity sites, thus leading to adverse indirect effects by disturbance of bats at these sites.

Alternative A

Alternative A would have the highest number of open motorized route miles (466) in the project area. This alternative would provide the least protection to bat roosting and maternity sites because these sites may be more easily accessible than under the other alternatives. Hibernacula are not likely to occur on the District so no direct or indirect effects are expected on bats during this period of their life cycle when they are most vulnerable.

Alternative B

Alternative B would have the lowest open motorized route miles (300) and thus would provide the most protection to bat roosting and maternity sites overall because these sites would be less easily accessible than under the other alternatives. This alternative also has 116 route miles with seasonal restrictions from December 1 thru October 13. Hibernacula are not likely to occur on the District so no direct or indirect effects are expected on bats during this period of their life cycle when they are most vulnerable.

No Action

This alternative would have 399 miles of open motorized routes and thus would protect bat roosting and maternity sites overall more than Alternative A and less than Alternative B. This alternative also has 148 route miles with seasonal restrictions from December 1 thru October 13. Hibernacula are not likely to occur on the District so no direct or indirect effects are expected on bats during this period of their life cycle when they are most vulnerable.

Cumulative Effects - Bat Species

Several factors have likely contributed to cumulative effects to bats in the project area which include past wildfires and timber harvest. Effects of past timber harvest and fires are hard to assess. Most bat species tend to avoid large open habitats when possible. However, many species forage along forest edges. Heterogeneous habitats containing open, brushy, and forested areas provide optimal foraging conditions because of the presence of extensive habitat edge (Adams 2003). Vegetation across the District is comprised of about 50% ponderosa pine forest and 50% grassland/shrub so forest edge ecotones dominant the landscape. Since 1988 over 75% of the Long Pines land unit has burned in high intensities wildfires where the majority of the fire killed trees were salvage logged. Little of the remaining seven land units that make up the Sioux District have been burned in wildfires since 1988. Timber harvest has occurred on the District over the last couple of decades in the Ekalaka Hills, Long Pines and Slim Buttes land units. The extent that cutting units have regenerated is variable, with some naturally regenerated to dense shrub cover, others to seedling and sapling ponderosa pine of varying degrees of canopy cover. The combination of vegetative structure and forest edge likely provides suitable foraging conditions for bats.

Current and future cattle grazing can damage sensitive habitats, particularly riparian systems. Shoreline damage can lead to erosion that lowers water quality and changes stream flow dynamics. Soil damage, particularly along stream and pond shorelines, can suppress vegetation growth and thus lower the diversity of insect prey (Adams 2003). Cattle grazing occurs across most of the District and will continue in the future. One goal of livestock management on the District is to bring non-functioning and functional-at-risk riparian systems up to properly functioning condition. Improvement over time of degraded riparian systems would improve foraging and water quality conditions for bats and thus reduce adverse cumulative effects.

Consistency with Laws, Regulations, and Policy

The National Forest Management Act (36 CFR 219.19) directs federal agencies to manage habitat to provide for viable populations of all native and desired non-native fish and wildlife species. The five bat species analyzed are native to this area, and are classified as Forest Service sensitive species. Sensitive species are those for which population viability is of concern. Direction for management of sensitive species is contained in the Forest Service Manual (FSM 2672.1), which states that these species must receive special management emphasis to ensure their viability and to preclude trends toward endangerment that would result in the need for Federal listing. This analysis considered

potential for alternative scenarios to have adverse impacts on bats and thus is consistent with the above direction.

Determination of Effects - Bat Species

Implementation of the proposed Federal Action *May Impact Individuals Or Habitat But Is Not Likely To Cause A Trend To Federal Listing Or Loss Of Viability For Bat Species.* This determination is based on the following rationale: 1) hibernacula for the five bat species does not occur in the project area; 2) public access to potential roosting and maternity sites is most likely low across the project area; 3) the preferred alternative reduces open motorized routes by 205 miles (41% reduction); 4) direct habitat loss would not increase under any alternative because construction of new routes is not proposed; and 5) none of the alternatives propose increased access to sensitive bat species habitat. Recommendations for removing, avoiding, or compensating adverse effects are not necessary.

3.3.3.5 Affected Environment – Management Indicator Species: Big Game Species

The elk analysis serves as a surrogate for mule deer and white-tailed deer. The rationale for this is based on the large amount of overlap in habitat use and needs between deer and elk on the District; the amount of scientific literature available for elk and the effects of roads; and impacts of travel management on the District are expected to be very similar for these three species.

Big Game Habitat Use and Travel

Many studies have shown that motorized access influences elk habitat use (Lyon 1983,, Frederick 1991, Lyon and Christensen 2002, Rumble et al. 2005, Stubblefield et al. 2006). Elk have repeatedly been shown to avoid habitat adjacent to open roads (Lyon et al. 1985, Millspaugh et al. 2000). Declines in habitat use have been reported within 0.25-1.8 miles of open roads (Lyon and Christensen 2002), but substantial reductions in habitat use are normally confined to <0.5 miles of an open road. Many variables influence elk habitat use relative to open roads.

Observed declines in habitat use adjacent to roads have led to the development of elk habitat effectiveness models. Habitat effectiveness refers to the percentage of available habitat that is usable by elk outside the hunting season (Lyon and Christensen 1992). The literature contains several recommendations for managing open roads within summer elk habitat. Using Lyon's model for habitat effectiveness based entirely on road density (Lyon 1983), Christensen et al. (1993) recommended that in areas where elk are one of the primary resource considerations should have habitat effectiveness of 50% or greater (open road density <1.9 mi/sq mi). Areas with <50% habitat effectiveness (>1.9 mi/sq mi) were expected to make only minimal contributions to elk management goals (Christensen et al. 1993). However, the 2005 Montana Elk Management Plan does not contain objectives or recommendations for management of open road density within summer elk habitat.

Most studies involving the effects of motorized uses on elk involved roads with passenger vehicle use rather than motorized trails where ATVs and/or motorcycles are used. Therefore, there is very little data available to use in assessing the impacts of motorized trails on elk. Wisdom et al. (2004) discussed preliminary findings from a controlled experimental study evaluating the effects of ATVs, mountain bikes, hiking, and horseback riding on elk and mule deer. Their initial results indicate that elk exhibited much higher rates of movement (or greater displacement) and probability of flight response from ATVs and mountain bikes compared to horses and hikers. Canfield et al. (1999) and Toweill and Thomas (2002) both state that the effects of open motorized trail use are likely similar to those resulting from open roads. The two uses are similar in that both allow easier access to areas that

would otherwise be inaccessible without considerable effort using non-motorized transportation. Therefore, travel route densities incorporating motorized trails cannot be compared to published habitat effectiveness models, but they can be used to compare Travel Plan effects among alternatives. As with open road density and habitat effectiveness values, the existing literature does not identify a clear link between open motorized route densities and elk population demographics. Therefore, conclusions on expected travel management planning impacts will only address disturbance and displacement of elk (big game) from suitable habitat and not population responses.

Big Game Vulnerability and Travel

Studies have been conducted to determine factors influencing elk vulnerability to hunting and management solutions to the problem of low mature bull elk numbers. One of the conclusions was that motorized access is one of the major factors influencing elk vulnerability, along with hunter numbers, availability of security cover, topography, hunting season structure and length, hunting equipment technology and others. Data have consistently shown that elk mortality rates increase with increasing open road density, because the number of hunters and their distribution both tend to increase with increasing road density (Skovlin et al. 2002, Millspaugh et al. 2000). This is especially true for bulls because hunting regulations have traditionally allowed greater opportunity for harvesting them compared to cows (Vore and Desimone 1991).

Motorized access is one of the few factors affecting elk vulnerability that the Forest Service has management authority for. Hillis et al. (1991) provided guidelines for managing elk habitat to limit elk vulnerability. The key concept was to provide security areas for elk during the hunting season where they are less vulnerable to harvest. They defined secure areas as >250 acres in size and >0.5 mile from an open road, and recommended that they comprise >30% of the analysis unit. Although open roads have the largest effect on elk vulnerability, restricted roads also have an impact because they provide easier access for hunters using non-motorized transportation (Skovlin et al. 2002). Lyon and Burcham (1998) found that elk hunters are likely to use closed roads to access areas farthest from open roads. The Hillis guidelines for secure areas included a recommendation to minimize closed roads within elk security areas, but did not provide standards for accomplishing this (Hillis et al. 1991). The 30% secure habitat level should be viewed as the minimum necessary to avoid excessive bull elk mortality during the hunting season, realizing that more may be necessary in some districts due to variables such as topography, vegetation cover, and hunting pressure. Elk security habitat and open motorized route density by alternative are displayed in the following table.

The Montana Final Elk Management Plan gives population objectives and general habitat management strategies for each Elk Management Unit (EMU) (MTFWP 2005). Habitat objectives stated in the plan for the Custer Forest EMU (the EMU encompassing all of the District in Montana) are to work cooperatively with private and public land managers to maintain and improve existing elk habitat. The Custer Forest EMU is located in Big Horn, Treasure, Rosebud, Custer, Fallon, Powder River, and Carter Counties in southeastern Montana. The Custer Forest EMU encompasses 14,378 square miles of land where about 45% (6,400 square miles) provides elk habitat. About 25% of the EMU falls on public land with the rest falling on private property. Approximately 2.4% of the suitable elk habitat in the EMU falls within the Sioux Ranger District. About 63% of the current elk distribution is on private lands. State big game managers estimate that approximately 800 to 1000 elk are present in the EMU. Elk numbers are currently managed based on the level of landowner tolerance to elk depredation on private lands. The State is currently trying to maintain 500 post-hunting season elk in the EMU.

3.3.3.6 Environmental Consequences – Management Indicator Species: Elk

Direct and Indirect Effects – Big Game Species

Effects Common to All Alternatives

All alternatives meet the access management recommendations (see Big Game Habitat Use and Travel section above) for elk in the project area, except for the Ekalaka Hills, Long Pines, and South Cave Hills land units under Alternative A. Open motorized route densities, in all of the other land units would range from 0.40 to 1.83 mi/sq mi which are below Christensen et al's.(1993) recommendation to manage roads at <1.9 mi/sq mi for areas where elk are one of the primary resource considerations. Secure elk habitat in the project area (see Big Game Vulnerability and Travel section above) would range from 0% to 65%, where most of the land units would be below the 30% minimum recommended by Hillis et al. (1991). Elk habitat within the project area for all alternatives would be categorized as year-round habitat with no distinct areas for seasonal use (e.g. winter range).

Table 3-13. Percent Elk Security Habitat and Vulnerability by Alternative.

Land Unit	Alternative A		Alternative B		No Action	
	Elk Security (Security during Seasonal Route Closures) in Percent	Open Motorized Route Density (Open Route Density during Seasonal Route Closures) in Mi. / Sq. Mi.	Elk Security (Security during Seasonal Route Closures) in Percent	Open Motorized Route Density (Open Route Density during Seasonal Route Closures) in Mi. / Sq. Mi.	Elk Security (Security during Seasonal Route Closures) in Percent	Open Motorized Route Density (Open Route Density during Seasonal Route Closures) in Mi. / Sq. Mi.
Chalk Buttes	50 (NA)	1.16 (NA)	57 (57)	0.70 (0.70)	36 (36)	0.99 (0.99)
Ekalaka Hills	11 (NA)	2.21 (NA)	26 (43)	1.27 (0.90)	8 (8)	1.83 (1.83)
Long Pines	6 (NA)	1.93 (NA)	28 (65)	1.11 (0.44)	8 (64)	1.74 (0.40)
East Short Pines	34 (NA)	1.19 (NA)	44 (44)	0.69 (0.69)	13 (13)	1.22 (1.22)
West Short Pines	0 (NA)	1.76 (NA)	0 (0)	1.76 (1.76)	0 (0)	1.76 (1.76)
North Cave Hills	7 (NA)	1.60 (NA)	24 (35)	1.14 (0.85)	11 (11)	1.42 (1.42)
South Cave Hills	7 (NA)	1.95 (NA)	17 (17)	1.25 (1.25)	7 (7)	1.55 (1.55)
Slim Buttes	30 (NA)	1.12 (NA)	34 (48)	0.94 (0.66)	32 (32)	0.82 (0.82)

NA=Not Applicable

Since elk analysis is used as a surrogate for mule deer and white-tailed deer, effects described for elk would also apply to deer.

Alternative A

Alternative A would have the highest open motorized route density and would provide the lowest elk security cover by land unit. Overall, recommendations for access management and for elk vulnerability would not be met by this alternative.

Alternative B

Alternative B would have the lowest open motorized route density and would provide the highest elk security cover by land unit. Four of the eight land units that provide the majority of the big game habitat on the District would have road closures during the hunting season. By limiting the season of use, big game vulnerability would be lowered (see previous table). Overall, recommendations for access management and for elk vulnerability would be met by this alternative.

No Action

This alternative would have open motorized route densities and security cover in between Alternative A and B. Overall, recommendations for access management would be met for elk under this alternative. Management recommendations for elk vulnerability would not be met by this alternative except in the Chalk Buttes and Slim Buttes land units; and also in the Long Pines during the hunting season.

Cumulative Effects – Big Game Species

Several past and ongoing habitat enhancement activities on the District have improved habitat for elk. These activities include thinning and prescribed burning on elk range to improve forage quality and availability, and to increase the acreage of available habitat by reducing conifer species that have gradually encroached onto year-round range. The long-term aspen regeneration program benefits elk by improving forage and cover. Spraying of invasive plant species reduces competition with native plants that provide forage for elk.

Current and future cattle grazing can damage sensitive habitats, particularly riparian systems. Cattle grazing occurs across most of the District and will continue in the future. One goal of livestock management on the District is to improve vegetative condition in areas that have been degraded by past grazing practices. Improvement in the health of native vegetation may benefit elk in the short and long term time frames.

Housing developments on private land adjacent to the Forest are not an issue, at least for the near future, because most private lands are large blocks with few owners.

Density of motorized non-Forest Service roads within the Forest boundary is 0.50 mi/sq mi. for all of the alternatives. Contributions of these roads to adverse cumulative effects within the Forest boundary are expected to be minimal.

Consistency with Laws, Regulations, and Policy

The Custer National Forest Management Plan contains relevant direction for management of big game populations. The mitigation measure for key wildlife species, including big game species, relative to travel management planning states, “Where necessary to protect wildlife values, access and/or traffic will be restricted in key wildlife habitats during critical periods.” In addition, the 2005 Montana Final Elk Management Plan provides relevant management direction for elk habitat. This analysis considered guidance from the above documents as well as from pertinent literature.

Determination of Effects – Big Game Species

Implementation of the proposed Federal Action will have a *Neutral Impact On Big Game Species***.** This determination is based on the following rationale: 1) the preferred alternative meets recommendations for access management and elk vulnerability; 2) the preferred alternative would have the lowest open public motorized use route densities and would provide the highest level of elk security cover by land unit; 3) the preferred alternative reduces open motorized routes by 205 miles (41% reduction); 4) direct habitat loss would not increase under any alternative because construction of new routes is not proposed; 5) limiting the season of use during the hunting season will benefit big game species; and 6) the alternatives are consistent with the Montana Statewide Elk Management Plan (2005). Recommendations for removing, avoiding, or compensating adverse effects are not necessary.

3.3.3.7 Affected Environment – Migratory Birds

Regulatory Framework
Migratory bird species are protected under the Migratory Bird Treaty Act (16 USC 703-711). A January, 2001 Executive Order requires agencies to ensure that environmental analyses evaluate the effects of federal actions and agency plans on migratory birds, with emphasis on species of concern. Species of concern include those listed under the Endangered Species Act, Forest Service Sensitive Species, and those identified as species of concern by the Montana Natural Heritage Program and the Montana Department of Fish, Wildlife and Parks (MNHP 2007, MFWP 2007). This discussion addresses potential effects of the Travel Plan alternatives on migratory bird species in general, including Forest Service Sensitive Species and Management Indicator Species.

Affected Environment - Migratory Birds
The following avian Forest Service Sensitive Species are present on the District: Baird's sparrow, Black-backed woodpecker, and Loggerhead shrike. The following birds are Management Indicator Species on the District: Golden eagle, Merlin, Northern goshawk, Bullock's oriole, Yellow warbler, Ovenbird, Spotted Towhee, and Brewer's sparrow. It is difficult to address effects to migratory bird species collectively, since travel management actions can have adverse effects on some species, while being neutral or benefiting others. However, it would not be practical to attempt to address all migratory bird species separately. Therefore, the migratory bird discussion addresses effects of travel management actions on bird species and habitat in general, including that for sensitive and management indicator species, and resident species Northern goshawk.

Migratory bird species are a very diverse group and thus occupy all types of habitat available on the District, including ponds, streams, wetlands, riparian areas, grasslands, shrub lands, deciduous forest, coniferous forest, mixed forest, recently burned forest, rock outcrops, talus, and sheer cliff walls. Many migratory bird species use habitat on the District as breeding grounds, while others breed in more northern climes and winter here. Some species are habitat specialists and are relatively restricted to certain cover types such as wetlands, riparian, forest interior or cliff habitat. Others are habitat generalists and can occupy a wide variety of cover types. Some bird species are extremely sensitive to habitat modifications and human disturbance, particularly in breeding areas, while others are much more tolerant of human intrusions, and might actually benefit from habitat modifications resulting from human activities.

Habitat Alteration
Travel management can affect habitat fragmentation by dissecting contiguous vegetation types with road and trail corridors. Fragmentation effects have been reported to impact bird species in riparian habitat and grass/shrub lands (Joslin and Youmans 1999), but most of the attention to this issue has been focused on fragmentation of forest habitat.

Road and trail corridors through continuous forest habitat can lead to increased nest predation rates since smaller forest patches may be easier for predators to penetrate, and roads and trails provide travel corridors for predators to access forest interior from nearby open habitat (Joslin and Youmans 1999, Askins 1994).

Road and trail corridors are relatively permanent features on the landscape, and can result in forest fragmentation by creating permanent openings in the forest canopy. Since road and trail corridors

remain in the same location for many years, they can become learned features used by multiple generations of predatory and/or parasitic species (Askins 1994).

Rich et al (1994) studied the impacts of forest fragmentation associated with cleared road corridors on bird species in southern New Jersey. They found significantly greater relative abundance of forest interior bird species in edge habitat along narrow (approximately 8 m or 26 ft wide) unpaved forest roads than along wider (16 m or 53 ft wide) paved secondary roads. No significant differences in forest interior bird species abundance was found between narrow unpaved Forest road edges and forest interior habitat. Based on these findings, they concluded that forest interior nesters did not perceive a difference between forest interior habitat and edge habitat along unpaved forest roads. However, although most forest interior nesting species did not appear to avoid edge habitat along paved or unpaved forest road corridors, there were differential rates of nest predation and brood parasitism along varying widths of road corridors, suggesting that some corridors, particularly wider corridors with mowed edges, may be creating ecological traps for some migratory species of forest interior nesting songbirds.

Hutto et al. (1995) examined the rate of bird detections between on-road and off-road point counts in Montana. The majority of all species detected were found in both on-road and off-road points. However, points along roads less than 10 m (33 ft) wide did not show a difference in number of species detected from off-road points, whereas point counts along wider roads detected significantly more bird species than found in corresponding off-road points. Most species detected in the on-road points were those that typically forage in forest openings and shrubby habitat often present along road corridors. Those species detected in greater proportions in off-road points were forest interior associates. The most notable differences in number of species detected for on-road and off-road points occurred in forested cover types, with closed canopy forest showing the greatest difference, followed by open forest, and then early succession forest types.

Corridor width appears to influence bird species composition and associated nest predation and parasitism rates along roadways. Studies that specifically addressed the fragmentation impacts of road corridors on bird species (Rich et al. 1994, Askins 1994 and Hutto et al. 1995) generally reported that narrow (8-10 m, 26-33 ft) road corridors had few notable impacts on nesting bird species, whereas wider corridors, particularly where shoulders were maintained with mowing, had more notable effects associated with nest predation and brood parasitism. Roadside vegetation on the Forest is periodically managed through brush removal, but only the high use roads receive treatment, and only when the need arises (i.e., there is no set schedule for brush removal). Unpaved Forest road edges are rarely ever mowed, and therefore do not typically provide the type of grassy roadside vegetation preferred by cowbirds and some edge-associated nest predators.

Disturbance

The presence of travel facilities on the landscape generally affects bird species through habitat modification and associated impacts discussed above. The presence of humans using travel facilities typically affects birds through disturbance mechanisms. Knight and Gutzwiller (1995) stated: *"human occupation and activity are clearly and directly correlated with declines in breeding populations of birds."* Human disturbance associated with travel management can elicit both physiological and behavioral responses from birds, which can affect reproductive success and survival.

Forman et al. (2003) reported that breeding birds seem to be affected by noise disturbance associated with traffic on roads and trails. Songbirds appear to be sensitive to very low noise levels. The noise level that population densities of woodland birds declined at averaged 42 decibels (dB), with a density decline occurring at 35 dB for the most sensitive woodland species. For grassland species, population densities declined when noise levels reached an average of 48 dB, with a decline occurring at 43 dB for the most sensitive species (Foreman and Alexander 1998). While most studies have shown grassland and forest birds to appear adversely affected by traffic noise, other studies have found most species to be neutral or to increase in numbers (Kaseloo and Tyson 2004).

Although noise associated with human travel is certainly a disturbance factor that can influence bird behavior, birds are able to adapt and habituate more quickly to mechanical (or motorized) noise than to human presence (Knight and Gutzwiller 1995). Therefore, non-motorized use on and off trails may be a more severe disturbance factor for some birds than motorized travel restricted to designated routes.

3.3.3.8 Environmental Consequences – Migratory Birds

Direct and Indirect Effects

Effects Common to All Alternatives
Most of the habitat alteration (e.g. modification, loss and fragmentation) associated with District travel management has already occurred. The consequences of past habitat change are likely beneficial for some bird species and detrimental to others.

Alternative A
Of the three Alternatives considered, Alternative A represents a maximum for both habitat alteration effects and disturbance impacts to migratory bird species. At an average route density across the land units of 1.62 mi/sq mi, Alternative A would contain an overall higher motorized travel route density as well as total motorized route miles on the District. Adverse effects would be greatest on bird species susceptible to changes in habitat and to human disturbance.

Alternative B and No Action
Average motorized route densities across the land units under these alternatives would range from1.13 to 1.42 mi/mi sq. The total number of motorized route miles would be 303 for Alternative A and 399 for the No Action alternative. Adverse affects to susceptible bird species would therefore be essentially the same, but slightly less than under Alternative B.

Cumulative Effects – Migratory Birds
It is difficult to address cumulative effects to migratory bird species collectively since various management actions can have adverse effects on some species, while having no effect or benefiting others. It would not be practical to attempt to address all species individually. Therefore, this section summarizes cumulative effects of land uses to bird species in general, focusing on activities considered to have the greatest impacts on birds.

Timber harvest and fuel reduction projects on the District have involved removal of understory vegetation such as shrubs, young conifers and lower tree branches, as well as removal of mature trees. Such manipulation of habitat components can influence survival and reproductive rates of migratory bird species by altering cover, forage and predator/prey relationships. Changing habitat structure

through fuel reduction projects could ultimately influence bird species composition in treated areas (USDA Forest Service. 2006.)

Large-scale wildfires and human-caused fires have altered bird habitat. Most bird species native to this area are adapted to our fire dependent ecosystem. Large-scale high intensity burns are largely responsible for maintaining natural forest succession patterns and providing habitat diversity. Lightning-caused fires typically occur mid to late summer when most young birds are fledged and are capable of rapid and prolonged flight to escape wild fire. Human-caused fire can occur any time of year, and prescribed fires on the District are often planned for spring-time ignition in order to use high fuel moisture levels, standing water and/or snow to help contain fire within prescribed burn units. Spring burns occur during the nesting season when birds are vulnerable, and could result in reproductive failure for some individuals.

Fire suppression has increased the proportion of mature forest on the landscape, potentially to the detriment of some grass and shrub nesting bird species. Natural fire regimes are responsible for maintaining forest succession patterns and providing habitat diversity. However, past fire suppression efforts have resulted in unnatural levels of fuel buildup, which is now having the effect of producing proportionately more catastrophic wild fires, and consequently having severe impacts on native habitat.

Livestock grazing can affect migratory birds in a number of ways, such as destruction or disturbance of ground and shrub nests, removal of ground cover, and attraction of cowbirds. Grazing on the District has lead to degradation of bird habitat in some areas, particularly in certain riparian habitats. However, improved grazing standards are helping reduce negative effects.

Construction, maintenance, and use of campgrounds, picnic areas, and other developed recreation sites have altered the vegetation at those sites. Reduction in vegetation, particularly riparian shrubs, has likely reduced key nesting habitat for some bird species. Dispersed recreation sites have likely resulted in similar impacts as developed campgrounds.

Projected effects of reasonably foreseeable programs and activities have potential for both positive and negative cumulative effects to migratory birds and their habitat. Unmanaged recreation, invasive species, unnatural fuel buildup, and loss of open space are four major ecological threats recognized by public land management entities. Generally speaking, traditional land management practices are trending toward more ecologically sensitive programs. Accordingly, management practices are being redesigned to have less negative impacts on the land, while still allowing for the maximum spectrum of land uses within the capability of resources. On the other hand, private development is occurring adjacent to the Forest boundary, resulting in permanent habitat loss and greater potential for direct mortality than most actions predicted to occur on public land (USDA Forest Service. 2006).

Consistency with Laws, Regulations, and Policy

Management of migratory bird species and their habitats are governed by a wide variety of authorities. Most direction regarding conservation of these species falls under the umbrella of the Migratory Bird Treaty Act (16 USC 703-712) and an associated Presidential Executive Order. Under this Act, which implements various treaties and conventions for the protection of migratory birds, it is unlawful to take, kill or possess any migratory birds, except as regulated by authorized hunting programs. Executive Order 13186 directs Federal agencies whose actions have a measurable negative impact on migratory bird populations to incorporate migratory bird conservation into planning processes and

take reasonable steps that include restoring and enhancing habitat. The proposed District Travel direction has taken migratory bird conservation issues into account through effects analyses, and thus is consistent with the above direction.

Determination of Effects – Migratory Birds

Implementation of the proposed Federal Action will have a *Neutral Impact On Migratory Bird Species***.** This determination is based on the following rationale: 1) the preferred alternative would have the lowest open motorized route densities by land unit; 2) the preferred alternative reduces open motorized routes by 205 miles (41% reduction); and 3) direct habitat loss would not increase under any alternative because construction of new routes is not proposed. Recommendations for removing, avoiding, or compensating adverse effects are not necessary.

3.3.3.9 Affected Environment – General Wildlife

Focal species are species used as surrogates in assessing ecological integrity (Federal Register Vol 65 No 218, November 2000). The distribution and abundance of focal species can indicate the integrity of the larger ecosystems that they belong to. They also can "play key roles in maintaining community structure and processes" (Gaines et al, 2003) and thus can be indicators of species diversity. Focal species associated with each wildlife group (as selected by Gaines et al 2003) that are relevant to this analysis are shown in the following table.

Table 3-14. Focal Wildlife Species

Wildlife Group	Focal Species
Wide-ranging carnivore	Mountain lion
Ungulates	Mule deer, elk
Late-successional-forest associated species	Northern goshawk, brown creeper, white-breasted nuthatch
Riparian-associated species	Bald eagle, black-capped chickadee
Primary cavity nesters	Three-toed woodpecker
Grassland/Shrub-Steppe-associated species	Greater short-horned lizard, Milk Snake, Western hog-nosed snake

Gaines et al (2003) conducted a literature review to document the effects of roads, motorized trails, non-motorized trails, and other linear recreation routes on focal wildlife species. The most common interaction identified in the literature relative to motorized roads and trails was displacement and avoidance, where animals altered their use of habitats in response to the motorized routes. Disturbance at a specific site was also commonly identified and was usually associated with wildlife nesting, breeding, or rearing of young. Other frequently reported interactions associated with roads or road networks included collisions between animals and vehicles, and edge effects.

The interactions associated with non-motorized trails were similar to that of motorized trails and include displacement, avoidance, and disturbance at a specific site during a critical period. The interaction varied depending upon wildlife species, with some more sensitive to motorized trail use and others more sensitive to non-motorized trail use. Although both forms of recreation have effects on wildlife, motorized trails showed a greater magnitude of effects, such as longer wildlife-displacement distances, for a larger number of focal species (Gaines et al. 2003). The following table details documented effects of roads and trails on wildlife habitat or populations.

Table 3-15. Documented Effects Associated with Roads and Trails

Road- and trail-associated factors	Effects of factors	Wildlife group affected
Hunting & trapping	Mortality from hunting or trapping as facilitated by road and trail access	Wide-ranging carnivores Ungulates
Poaching	Increased illegal take of animals as facilitated by trails and roads	Wide-ranging carnivores Ungulates
Collisions	Death or injury resulting from a motorized vehicle running over or hitting an animal	Wide-ranging carnivores Late successional Riparian associated Ungulates
Negative human interactions	Increased mortality of animals owing to increased contact with humans, as facilitated by road and trail access	Wide-ranging carnivores Late successional Ungulates
Movement barrier or filter	Alteration of dispersal or other movements as posed by a road or trail itself or by human activities on or near a road or trail or network	Wide-ranging carnivores Late successional Riparian associated Ungulates
Displacement or avoidance	Spatial shifts in populations or individual animals from a road or trail or network in relation to human activities on or near a road or trail or network.	Wide-ranging carnivores Late successional Riparian associated Ungulates
Habitat loss and fragmentation	Loss and resulting fragmentation of habitat owing to the establishment of roads and trails, road and trail networks, and associated human activities	Wide-ranging carnivores Late successional Riparian associated Ungulates
Edge effects	Changes to habitat microclimates associated with the edge induced by roads or trails	Late successional
Snag or downed log reduction	Reduction in density of large snags and downed logs owing to their removal near roads or campsites, as facilitated by road access	Late successional Riparian associated Primary cavity excavators
Route for competitors or predators	A physical human-induced change in the environment that provides access for competitors or predators that would not have existed otherwise	Wide-ranging carnivores Late successional Riparian associated Primary cavity excavators
Disturbance at a specific site	Displacement of individual animals from a specific location that is being used for reproduction and rearing young	Wide-ranging carnivores Late successional Riparian associated Ungulates
Physiological response	Changes in heart rate or level of stress hormones as a result of proximity to a road or trail	Ungulates Late successional

For this analysis, road and trail factors will be grouped and discussed under the topics of Mortality and Habitat Modification/Changes to Behavior.

Mortality

Large numbers of animals are killed annually on roads. The rate of mortality is directly related to vehicle speed (Lyon 1985), although road width and traffic volume also affect roadkill rates (Forman and Alexander 1998). Since forest roads are not designed for high-speed traffic, direct mortality on forest roads is usually not important relative to large mammals (Lyon 1985). Forest carnivores are an exception because their large home ranges make them especially vulnerable to road mortality (Baker and Knight 2000). Amphibians and reptiles are particularly susceptible on two-lane roads with low to moderate traffic (Forman and Alexander 1998).

A study that analyzed over 100 bird and mammal species in England concluded that roadkill rates may not affect population size on a national scale (Forman and Alexander 1998). However, rates of roadkill mortality can be high enough to reduce population densities at the local level (Forman et al. 2003).

The presence of roads can lead indirectly, as well as directly, to wildlife mortality. Roads provide human access that can result in hunting, trapping, and poaching. The numbers of miles of designated motorized routes on the District are as follows:

Table 3-16. Public Motorized Use Route Miles by Alternative – Sioux RD

Alternative	Motorized Route Miles
Alternative A	466
Alternative B	300
No Action Alternative	399

Since small, slow-moving animals are susceptible to mortality even on narrow roads, motorized trails were included in the above road mileages.

Habitat Modification/Changes to Behavior

Animals may respond either positively or negatively to the presence of a road. Response can occur through the mechanisms of shifts in home range, altered movement patterns, altered reproductive success, altered escape response, and altered physiological state (Trombulak and Frissell 1999).

Trombulak and Frissell reference numerous studies that document behavioral changes due to roads. Both black bears and grizzly bears shifted their home ranges away from areas with high road densities (Brody and Pelton 1989, McLellan and Shackleton 1988). Elk in Montana preferred spring feeding at sites away from visible roads (Grover and Thompson 1986). Mountain lion home ranges are in areas with lower densities of improved dirt roads (Van Dyke, et al. 1986). In contrast, turkey vultures preferentially establish home ranges in areas with greater road densities (Coleman and Frasier 1989), probably because of increased carrion resulting from roadkill.

Roads may also act as barriers to movement, particularly for small mammals and wetland species such as amphibians and turtles. Road width and traffic density are major factors contributing to barrier effect, whereas road surface is generally a minor factor. Some large mammals, such as wolverine, appear to not be affected by the presence of roads as far as home range size and shape is concerned (Forman and Alexander 1998). Others including pronghorn antelope (Bruns 1977) and mountain lions (Van Dyke et al 1986) seem reluctant to cross roads.

Knight and Cole (1995a) presented specific effects of recreational activities typically associated with roads and trails on wildlife. Backpacking, hiking, and horseback riding elicited flight and/or elevated heart rates, and displacement. Motorized vehicles including motorcycles, ATVs, quadricycles, dune buggies, amphibious vehicles, and air-cushion vehicles potentially cause disturbance (flight and/or stress) and redistribution.

Noise is one of the major factors in wildlife displacement and habitat loss. Noise can be defined as any “human-made sound that alters the behavior of animals or interferes with their normal functioning” (Bowles 1995). Some sounds are either higher or lower than what humans and some terrestrial animals can hear. Characteristics such as a species hearing ability, ability to escape sound,

habituation to noise, and other factors need to be considered when assessing effects of noise on wildlife (Finegold, et al 2004). Kaseloo and Tyson (2004) discuss numerous studies of effects of noise on specific species and species groups. Review of the results indicates that apparent affects of specific noise levels is quite variable between on species.

Decibel levels (dB) of some vehicles commonly used on the National Forest include: 1) automobile from a distance of 25 feet – 80 dB (Truax 1999); 2) diesel truck from 50 feet – 84 dB (Federal Interagency Committee on Noise 1992); 3) motorcycle - 88 to 100 dB (Galen 2007, Truax 1999); and 4) truck without muffler – 90 dB (Earthlink 2008) Decibel levels for other vehicles pertinent to the Sioux Travel Management, including ATV's, were not found.

A number of studies have shown that wild ungulates and carnivores increase movement in response to aircraft, snowmobiles, construction noise, road traffic, and walking visitors. Large mammals alter habitat use for 1-2 days after being disturbed by noise. Large mammals are able to adapt to predictable disturbance by avoiding an area during this time period. Mammals will habituate to noises without negative consequences, but do not habituate to being hunted, which actually amplifies their responses. Mammals can track noise and respond to noise that is approaching directly rather than to noise approaching them tangentially. Mammals may also abandon newborn young in response to noise. Startled carnivores may kill and eat their own young. Short-term aversive responses in mammals vary from mild reactions such as becoming alert to more severe activity such as running away while urinating or defecating (Bowles 1995).

In general, with repeated exposures to either motorized or non-motorized activity, animals habituate or adapt both physiologically and behaviorally. Unfamiliar noise is more likely to arouse an animal than a harmless, familiar noise. Animals may have one of three responses to noise: attraction, tolerance or aversion. Mild responses may be difficult to detect. If mammals are repeatedly exposed to the same noise stimulus without negative associations, responses decline rapidly. Vertebrates can track the direction of movement and typically respond more strongly to direct approaches than to tangential passes (Knight and Gutzweiler 1995).

Some species do respond positively to the presence of roads and trails. Routes may increase habitat for some species that prefer edges. New microhabits may be created along roads, such as at bridges that bats may use for roosting. Habitat enhancements may occur along roads, such as perches for raptors, increased forage from planted species, and carrion from road kills (Forman et al 2003).

To analyze the general effects of motorized routes on wildlife, a one kilometer buffer on each side of a route was used as suggested by Ruediger (1996). This is considered the "virtual footprint" (Forman et al. 2003) of the route on the land. This is an average, but the true impacts of routes vary significantly with terrain, vegetation, amount and types of use on the route, species-specific behavior, and other factors. Only Forest Service motorized routes on the District were analyzed. The percent of the District untouched by the two kilometer cooridor along motorized routes is referred to as "core". The results are shown in the following table. The percent of the District outside the two km footprint is the area where wildlife generally is undisturbed by travel routes and the activities that accompany them. Research has been conducted on the specific response of some wildlife species to motorized routes. Refer to other analyses for species such as black-footed ferrets and elk. These analyses are tailored to the species, with reviews of species-specific research, while the analysis presented here is very general.

Table 3-17. Percent of Sioux Ranger District That is Core Habitat for Wildlife

Land Unit	Alternative A	Alternative B	No Action
Chalk Buttes	45	52	31
Ekalaka Hills	10	21	7
Long Pines	5	21	6
East Short Pines	28	37	8
West Short Pines	2	2	2
North Cave Hills	8	19	9
South Cave Hills	6	14	7
Slim Buttes	27	30	26

In general, effects of motorized roads and trails on most wildlife species are negative (Boyle and Samson 1985). The effects may vary by wildlife species and by individual. Effects also vary by the type of activity occurring on the road or trail. Seasonal closures of routes may offer some benefit to wildlife. Some routes were selected for seasonal closures during important times of year for a particular species, particularly big game. If motorized routes are closed when and where these activities occur, animals can function with less energy expenditure and more efficiency.

3.3.3.10 Environmental Consequences – General Wildlife

Direct and Indirect Effects

Effects Common to All Alternatives

Mortality: Approximately 57 miles of higher speed unpaved roads (maintenance level 3) are on the District. These roads are rated for passenger vehicles with speeds up to 35 miles per hour. No changes are proposed for higher speed unpaved roads. The potential for animal mortality caused by collision with vehicles on maintenance level three roads would be the same under all alternatives.

Habitat Modification /Changes to Behavior: Ruediger (1996) estimates that displacement of some species, or indirect habitat loss due to roads, may average 1 km on each side of a highway in a forested area and up to 3 km on each side in open habitats. For the affected area for general wildlife, we assumed a 1 km buffer on each side of both motorized and non-motorized routes, recognizing that this is probably an overestimate of some effects and an underestimate of others in all alternatives.

The percent of the project area available as core habitat varies by alternative and land unit (see previous table.

Alternative A

Mortality: This alternative has the highest number of open motorized route miles and thus the greatest potential for mortality, particularly of small, slow moving animals such as reptiles.

Habitat Modification /Changes to Behavior: The potential for habitat modification and changes to behavior would mostly likely be the highest for this alternative since 466 miles of public motorized routes are available.

Alternative B

Mortality: With the lowest open motorized route miles (300), this alternative has the lowest potential for leading to wildlife mortality and supports the highest percentage of core habitat.

Habitat Modification /Changes to Behavior: The potential for habitat modification and changes to behavior would mostly likely be the lowest for this alternative since it provides the lowest amount, 300 miles, of public motorized routes.

No Action

Mortality: The open motorized route miles, and thus the potential for mortality, would be less than Alternative A but higher than Alternative B. This alternative provides the lowest amount of Core Habitat.

Habitat Modification/Changes to Behavior: The potential for habitat modification and changes to behavior would mostly likely be the second highest for this alternative since 399 miles of public motorized routes are available.

Cumulative Effects – General Wildlife

Mortality: Most of the mortality that occurs to wildlife species occurs on high speed, paved routes such as highways. Mortality on these types of roads can be significant for some species at some times of year. This is a cumulative effect that adds to effects on National Forest System routes.

Habitat Modification /Changes to Behavior: The analysis of indirect habitat loss or displacement was presented for public Forest Service motorized routes on the Sioux Ranger District only. There is also a cumulative effect of private, county, state and federal roads on the National Forest or adjacent lands that were not considered in this analysis. The impacts to wildlife on private land and displacement of wildlife from private land are a cumulative effect that is likely to continue to increase.

There are cumulative effects of the human activity associated with the use of roads and trails. There are also effects of the activities that humans do when they use roads and trails, including hunting, fishing, trapping, firewood cutting, viewing wildlife, etc. All of these activities can potentially disturb wildlife, and some can cause direct mortality (Knight and Cole 1995). Hiking, biking, fishing, ATV use, horseback riding, dispersed camping, and other recreational activities are projected to increase sizably over the next ten to twenty years. This will gradually add to cumulative impacts over time.

Dispersed recreation has increased on the Forest, and the appreciation for nonconsumptive uses of wildlife has also increased. Increased human use of the Forest displaces wildlife and can degrade habitat. Recreational residence sites remove wildlife habitat and may displace wildlife in those areas. Outfitter/guides offer non-consumptive wildlife activities as well as take many hunters into the Forest. Outfitter/guiding is regulated and probably is less impact to wildlife than non-outfitted activities (USDA Forest Service 2006). Conservation easements on private lands outside the Forest protect habitat and are beneficial to wildlife.

The presence of hiking and riding areas has led to the availability of habitat that is non-motorized and where wildlife is relatively undisturbed by large numbers of people.

Livestock grazing will continue on the District. Improved range management practices and monitoring of range condition are expected to improve wildlife habitat. Control of noxious weeds is important for maintaining high quality wildlife habitat and will continue in the future. Efforts to restore native vegetation to the landscape or enhance species that are declining are beneficial to wildlife.

Future improvements of FS roads and motorized routes may increase the impact of these facilities to wildlife by encouraging greater use. Other routes would be closed to public use, which would benefit wildlife in general.

An increase in dispersed recreation in which many of the dispersed users are interested in wildlife may actually be somewhat detrimental to the resource they wish to see, photograph, or hunt. Additional education of the public on their wildlife resource is important so that wildlife habitat is protected as are the animals that use it. Increasing public use will decrease the ability of wildlife to fully occupy available habitat, and some species are more likely to be affected than others.

Consistency with Laws, Regulations, and Policy

The wildlife goal in the Custer National Forest Management Plan is to "manage and/or improve key wildlife and fisheries habitats, to enhance habitat quality and diversity, and to provide wildlife and fish-oriented recreation opportunities." Forest Service Manual 2672.4 requires review of "all Forest Service planned, funded, executed, or permitted programs and activities for possible effects on endangered, threatened, proposed, or sensitive species." All alternatives are consistent with the Custer National Forest Management Plan and Forest Service Manual direction.

Determination of Effects – General Wildlife

Implementation of the proposed Federal Action will have a *Neutral Impact On General Wildlife Species And May Impact Individuals Or Habitat But Is Not Likely To Cause A Trend To Federal Listing Or Loss Of Viability For Reptile Species.* This determination is based on the following rationale: 1) the preferred alternative would have the lowest number of open motorized routes (303); 2) the preferred alternative reduces open motorized routes by 205 miles (41% reduction); 3) direct habitat loss would not increase under any alternative because construction of new routes is not proposed; 4) the preferred alternative supports the highest percentage of core habitat; and 5) even with the proposed travel plan modifications some wildlife mortality will continue to occur across the District's road system. Recommendations for removing, avoiding, or compensating adverse effects are not necessary.

3.3.3.11 Conclusion - Wildlife

Wildlife effects analysis was conducted based on regulatory framework for threatened, endangered, sensitive, management indicator, and other species of concern. Conservation strategy standards and guidelines and literature-based recommended guidelines were also considered. Analysis for black-footed ferret was based on motorized route density and potential effects on black-tailed prairie dog colonies. Analysis for elk was based on both motorized route density and secure habitat. Relative comparisons of available habitat and/or motorized route density were also conducted between alternatives for species and groups lacking conservation strategies, standards, or guidelines. The following outlines effects determinations for wildlife species.

Table 3-18. Wildlife Effects Determinations [11]

Species Name	Alternative A	Alternative B	No Action
Threatened, Endangered, and Proposed Species			
Black-footed Ferret (*Mustela nigripes*) (Endangered)	NLAA	NLAA	NLAA
Forest Service Sensitive Species			
American peregrine falcon *(Falco peregrinus anatum)*	NI	NI	NI
Baird's sparrow *(Ammodramus bairdii)*	NI	NI	NI
Bald Eagle *(Haliaeetus leucocephalus)* [12]	NI	NI	NI
Black-backed woodpecker *(Picoides arcticus)*	NI	NI	NI
Blue-gray gnatcatcher *(Polioptila)*	NI	NI	NI
Burrowing owl *(Athene cunicularia)*	NI	NI	NI
Greater sage grouse *(Centrocercus urophasianus)*	NI	NI	NI
Grizzly Bear (*Ursus arctos*) [13]	NI	NI	NI
Harlequin duck *(Histrionicus histrionicus)*	NI	NI	NI
Loggerhead Shrike *(Lanius ludovicianus)*	NI	NI	NI
Long-billed curlew *(Numenius americanus)*	NI	NI	NI
Long-eared myotis *(Myotis evotis)*	MIIH	MIIH	MIIH
Long-legged myotis *(myotis volans)*	MIIH	MIIH	MIIH
Pallid bat *(Antrozous pallidus)*	MIIH	MIIH	MIIH
Spotted bat *(Euderma maculatum)*	MIIH	MIIH	MIIH
Townsend's big-eared bat *(Corynorhinus townsendii)*	MIIH	MIIH	MIIH
Black-tailed prairie dog *(Cynomys ludovicianus)*	MIIH	MIIH	MIIH
White-tailed prairie dog *(Cynomys leucurus)*	NI	NI	NI
Wolverine *(Gulo gulo)*	NI	NI	NI
Greater short-horned lizard *(Phrynosoma hernandesi)*	MIIH	MIIH	MIIH
Milk Snake *(Lampropeltis triangulum)*	MIIH	MIIH	MIIH
Western hog-nosed snake *(Heterodon nasicus)*	MIIH	MIIH	MIIH
Management Indicator Species [14]			
Northern Goshawk *(Accipiter gentilis)* (H)	0	0	0
White-tailed deer *(Odocoileus virginianus)*(H, K)	0	0	0
Ruffed grouse *(Bonasa umbellus)* (H)	0	0	0
Western kingbird *(Tyrannus verticalis)* (H)	0	0	0
Bullock's (Northern) oriole *(Icterus bullockii)* (H)	0	0	0
Yellow warbler *(Dendroica petechia)* (H)	0	0	0

[11] Options for effects determinations are: For federally listed species: NE = No effect; NLAA = May effect – not likely to adverse affect; LAA = May effect – likely to adversely affect; and BE = Beneficial effect. For Forest Service sensitive species: NI = No impact; MIIH = May impact individuals but is not likely to cause a trend to Federal listing or loss of viability; WIFV = Likely to result in a trend to Federal listing or loss of viability; and BI = Beneficial impact. For management indicator species: + = Positive effect; 0 = Neutral effect; and - = Negative effect. For other species of concern: NE = No effect.

[12] Bald eagle delisted effective August 8, 2007 and subsequently managed as a Forest Service Sensitive Species.

[13] Grizzly bear delisted effective April 30, 2007 and subsequently managed as a Forest Service Sensitive Species as directed in "Final Conservation Strategy for the Grizzly Bear in the Yellowstone Ecosystem, Interagency Grizzly Bear Study Team, March 2003."

[14] H = Habitat Indicator Species; K = Key Species

Table 3-18. Wildlife Effects Determinations [11]

Species Name	Alternative A	Alternative B	No Action
Oven bird *(Seiurus aurocapillus)* (H)	0	0	0
Spotted (Rufous-sided) towhee *(Pipilo maculatus)* (H)	0	0	0
Brewer's sparrow *(Spizella Breweri)* (H)	0	0	0
Sharp-tailed grouse *(Tympanuchus phasianellus)* (H, K)	0	0	0
Elk *(Cervus canadensis)* (K)	0	0	0
Golden eagle *(Aquila chrysaetos)* (K)	0	0	0
Merlin *(Falco columbarius)* (K)	0	0	0
Mule deer *(Odocoileus hemionus)* (K)	0	0	0
Bighorn sheep *(Ovis Canadensis)* (K)	0	0	0
Pronghorn antelope *(Antilocapra Americana)* (K)	0	0	0

3.4 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES – OTHER ISSUES

3.4.1 WATER QUALITY, FISHERIES, AND AQUATICS

Overview of Changes from the Draft to the Final EIS

- Changes involved additional narrative to clarify analysis results and address comments received on the DEIS.
- Changes were also made in a few watershed risk categories and action risk categories. Two low risk watersheds were changed to moderate; South Fork Grand River- Sand Creek and Snow Creek. The action risk category for season of use changed from an action that decreases risk to an action that does not change risk. The action risk category for addition of non-system roads for public and administrative use changed and is now relative to whether this action is compared to the existing condition or the no-action condition. See Table 3-22 and discussion under the section Relative Route Risks by Action.

3.4.1.1 Introduction

This section outlines affected environment and environmental effects of travel management to water resources. This section also addresses the impacts of motorized uses on Forest Service Region 1 sensitive fish and amphibian species, management indicator aquatic species, and aquatic habitat.

3.4.1.2 Affected Environment – Water Quality

Applicable Laws, Regulations, and Policy

Federal Clean Water Act requires Federal Agencies to comply with all federal, state, and local requirements, administrative authority, process and sanctions related to the control and abatement of water pollution (CWA, Sections 313(a) and 319(k)). The Act gives authority to individual States to develop, review, and enforce water quality standards under Section 303. This section also requires the States to identify existing water bodies that do not meet water quality standards, and develop plans to meet them. These plans are commonly called TMDLs, an acronym for total maximum daily load.

Federal Multiple Use Sustained Yield Act of 1960 sets policy to define why the national forests were established and how they should be administered relative to outdoor recreation, range, timber, watershed, and wildlife and fish purposes. [T]hat some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output (16 USC 2 (I); Sec 528).

The Montana Department of Environmental Quality (MTDEQ) has classified all waters within the Montana portion of the analysis area as C-3 waters. The beneficial uses associated with this classification include; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers. The quality of these waters is naturally marginal for drinking, culinary and food processing purposes, agricultural and industrial water supply. Degradation which will impact established beneficial uses will not be allowed. (Administrative Rules of Montana (ARM) 17.30.611 2008).

The Montana Surface Water Quality Standards require that land management activities must not generate pollutants in excess of those that are naturally occurring, regardless of the stream's classification. Under ARM 17.30.623 (2) (f) "No increases are allowed above naturally occurring concentrations of sediment, settleable solids, oils, or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife." Naturally occurring is defined in ARM 17.30.602 (19) as: "the water quality condition resulting from runoff or percolation, over which man has no control, or from developed lands where all reasonable land, soil and water conservation practices have been applied". Reasonable land, soil and water conservation practices are similar to Best Management Practices (BMPs). BMPs are considered reasonable only if beneficial uses are fully supported. BMPs are further discussed under the section Soil and Water Conservation Practices.

Riparian and stream conditions are assessed by MTDEQ to determine the level of beneficial uses support. Streams that do not fully support their uses do not fully meet water quality standards. The status of water quality assessment and Total Maximum Daily Load (TMDL) development of streams are identified in a biennial report from MTDEQ (2006). The 2006 Montana 305(b)/303(d) Water Quality Assessment Database lists three streams within the analysis area where one or more uses are impaired and a TMDL is required (Category 5). Refer to Table 3-21 for more detail on these streams.

The State of Montana has the authority to develop TMDLs. On streams with multiple ownerships, the Forest Service cooperates with the State and other adjacent landowners in the development process. Additionally, the fact that a particular stream is listed does not preclude management activities from occurring. Montana Code Annotated (MCA) 75-5-703(10)(c), states: (10) Pending completion of a TMDL on a water body listed pursuant to MCA 75-5-702: (c) new or expanded non-point source activities affecting a listed water body may commence and continue their activities provided those activities are conducted in accordance with reasonable land, soil, and water conservation practices (MCA 2008).

Beneficial use classification for all streams in the South Dakota portion of the analysis area is fish and wildlife propagation, recreation, and stock watering waters (category 9, South Dakota Administrative Rules (SDAR), Surface Water Quality Standards, 74:51:03:01 (SDAR 2008)). The criteria of

parameters for fish and wildlife propagation, recreation, and stock watering waters and their allowable variations that are provided in the following table:

Table 3-19. Criteria for Fish and Wildlife Propagation, Recreation, and Stock Watering Waters (74:51:01:52)

Parameter	Criteria	Unit of Measure	Special Conditions
Total alkalinity as calcium carbonate	< 750	mg/L	30-day average
	< 1313	mg/L	daily maximum
Total dissolved solids	< 2,500	mg/L	30-day average
	< 4,375	mg/L	daily maximum
Conductivity at 25°C	< 4,000	micromhos/cm	30-day average
	< 7,000	micromhos/cm	daily maximum
Nitrates as N	< 50	mg/L	30-day average
	< 88	mg/L	daily maximum
pH	> 6.0 - < 9.5	units	see § 74:51:01:07
Total petroleum hydrocarbon	< 10	mg/L	see § 74:51:01:10
Oil and grease	< 10	mg/L	see § 74:51:01:10

The most applicable surface water quality standards for streams in South Dakota include: "*Compliance with criteria for beneficial use.* A person may not discharge or cause to be discharged into surface waters of the state pollutants which cause the receiving water to fail to meet the criteria for its existing or designated beneficial use or uses" (SDAR 74:51:01:02). "*Biological integrity of waters.* All waters of the state must be free from substances, whether attributable to human-induced point source discharges or nonpoint source activities, in concentrations or combinations which will adversely impact the structure and function of indigenous or intentionally introduced aquatic communities" (SDAR 74:51:01:12). "*Antidegradation of waters of the state.* The antidegradation policy for this state is as follows (SDAR 74:51:01:34): (1) The existing beneficial uses of surface waters of the state and the level of water quality that is assigned by designated beneficial uses shall be maintained and protected; (2) Surface waters of the state in which the existing water quality is better than the minimum levels prescribed by the designated beneficial use shall be maintained and protected at that higher quality level; (3) The board, or secretary, may allow a lowering of the water quality to levels established under the designated beneficial use if it is necessary in order to accommodate important economic or social development in the area in which the waters are located; (4) Surface waters of the state which do not meet the levels of water quality assigned to the designated beneficial use shall be improved as feasible to meet those levels; (5) No further reduction of water quality may be allowed for surface waters of the state that do not meet the water quality levels assigned to their designated beneficial uses as a result of natural causes or conditions, and all new discharges must meet applicable water quality standards; and (6) The secretary shall assure that regulatory requirements are achieved for all new and existing point sources and that non-point sources are controlled through cost effective and reasonable best management practices."

Larger stream systems are assessed by the South Dakota Department of Environment and Natural Resources to determine the level of beneficial use support. Streams that do not fully support their uses do not fully meet water quality standards. These streams are identified in a report by the Department of Environment and Natural Resources as impaired waterbodies in need of TMDL development. The 2008 South Dakota Integrated Report - Surface Water Quality Assessment (SD-DENR, 2008) does not identify any streams within the Forest as impaired, but does identify one stream immediately adjacent to the north end of the Slim Buttes; the South Fork Grand River.

2005 Travel Management Final Rule provides the following direction related to water quality: (b) Specific criteria for designation of trails and areas. [C]onsider effects on the following, with the objective of minimizing: (1) Damage to soil, watershed, vegetation and other forest resources. (36 CFR 212.55).

Custer National Forest Land and Resources Management Plan identifies management goals for soil, water and riparian resources under Chapter II - Forest Wide Management Direction and Chapter III – Management Area Direction. The Forest Plan goal for watershed management is to: [E]nsure that soil productivity is maintained and that water quality is maintained at a level which meets or exceeds state water quality standards (page 4). The objectives for soil and water resources are: Continue to produce water that meets State water quality standards. National Forest System lands will be managed so that the soil and watershed conditions are in a desirable condition and will remain in that condition for the foreseeable future. Soil and water quality objectives are designed to assure that these resources meet State water quality objectives and BMPs (Best Management Practices) are incorporated to assure this (page 5). The goal for riparian areas include: [M]anage for water quality, provide diverse vegetation, and protect key wildlife habitat in these areas from conflicting uses and uses and activities that adversely impact these areas will be mitigated (page 3). The objectives for riparian areas include recognition of their unique values, and management direction is to be designed to protect these key wildlife habitats and improve water quality: [T]hese areas will be managed in relation to various legally mandated requirements including, but not limited to, those associated with floodplains, wetlands, water quality, dredged and fill material, endangered species, and cultural resources (page 5). The goals for Management Area M (Riparian) are: Manage to protect from conflicting uses in order to provide healthy, self-perpetuating plant and water communities that will have optimum diversity and density of understory and overstory vegetation (page 80).

Soil and Water Conservation Practices (or BMPs) are the primary mechanism to comply with state and federal water quality law by minimizing water quality impacts from non-point source pollution while still allowing dispersed land management activities to occur on National Forest System land. To reach these objectives the Forest Service developed the R1/R4 Forest Service Soil and Water Conservation Practices Handbook (USDA Forest Service 1995). This handbook is not available on the Region 1 internet website, but is available from the project file. A revised handbook is anticipated from the Washington Office in 2009 or 2010.

Practices specific to travel management include: 11.01 - Determination of Cumulative Watershed Effects, 11.09 - Management by Closure to Use, 12.10 - Management of Off-Road Vehicle Use, 12.11 - Protection of Water Quality Within Developed and Dispersed Recreation Areas, 12.12 - Location of Pack and Riding Stock Facilities in Wilderness, Primitive, and Backcountry Areas, 15.01 - General Guidelines for Transportation Planning, 15.02 - General Guidelines for the Location and Design of Roads and Trails, 15.03 - Road and Trail Erosion Control Plan, 15.21 - Maintenance of Roads, 15.23 - Traffic Control During Wet Periods, and 15.27 - Trail Maintenance and Rehabilitation. The effectiveness of these BMPs and other road maintenance and construction BMPs can be found in Logan (2001), Seyedbagheri (1996), and USDA-FS (2002).

Introduction - Water Quality

Both natural events and human activities have the potential to impact soil, water and riparian resources across both forest and range land. Significant natural events include wildfire and floods, while the most significant human activities include mining, livestock grazing, roads/trails, floodplain development, timber harvest and recreation. The degree of impact depends upon the soil and

hydrologic characteristics of the watershed and how sensitive and resilient they are to these disturbances. Soil and hydrologic characteristics vary extensively across the landscape and are dictated by local landform, geologic material and climate.

Natural Characteristics and Processes

Watersheds, undisturbed by human influences, are not static systems. Deep snow packs and heavy spring rains can cause substantial flooding, landslides and instream erosion. Wildfire, wind, or insect and disease mortality can drastically alter the vegetative composition of a watershed. Depending on the extent of mortality and rate of stand decomposition, impacts to stream systems can also be substantial. Beneficial uses, including fisheries habitat, can be negatively affected by these natural events. However, watersheds left undisturbed after natural events, can and do recover rapidly, and ultimately provide conditions that fully support all beneficial uses within a relatively short period of time. These natural disturbances occur infrequently, which allows for significant and generally rapid recovery of hydrologic and erosional processes prior to the next major disturbance event. This results in pulse effects to water resources, which are moderate to high in magnitude, but low in frequency. Within the current climatic regime and prior to significant human influence, stream systems have developed under pulse type disturbances.

Geology, Landform, Erosion and Sediment

The underlying geology within the project area is intermixed sedimentary beds of clay, silt and sand. These structures have weathered to form steep cliff features along portions of the perimeter of most land units, while landforms along the remaining perimeter are less steep and more convex in nature.

Erosion is a natural process of geologic decomposition that occurs in all watersheds. The rate at which it occurs is a function of soil and stream characteristics, precipitation and flow regimes, and vegetative cover. There are three basic types of erosion; 1) detachment and routing of individual soil particles from the land surface; 2) mass wasting such as landslides and slumps; and 3) detachment and mobilization of stream channel banks or bottom material, i.e., instream erosion. All of these processes produce “sediment,” and all stream systems transport sediment. Sediment is a loosely used term that can refer to a wide range of channel substrate particle sizes, i.e., silt, sand, gravel, cobble, boulder, etc. The larger particle sizes are generally produced through instream erosion or mass wasting and are commonly referred to as bedload. The finer particles that are suspended in flowing water can be produced through all of the erosion processes mentioned above.

Geology and landforms within the analysis area have produced soils that are generally stable and not highly erodible when adequately vegetated. MacDonald and Stednick (2003) suggest that undisturbed forested watersheds typically have very low erosion rates because of high infiltration rates and limited surface runoff. Erosion rates have been estimated at less than 0.1 tons per acre per year for most forested areas in the interior western U.S. (Patric et al. 1984). Stednick (2000) summarized research concerning timber management in the Northern Rockies which also suggests that erosion rates for undisturbed forested landscapes (control watersheds, no harvest/roads) are very low (0 - 0.09 t/ac/yr). Therefore, in the absence of wildfire, hillslope surface erosion within undisturbed areas across the analysis area is considered to be nearly non-existent. The exception to this occurs on steep, high energy (south facing) landforms composed of fine textured material. Due to dry site conditions and steep slopes, vegetation can be sparse. Episodic precipitation events that saturate these soils can result in landslides (mass wasting) that release substantial amounts of sediment downslope. However, at the broad scale, instream erosion is considered the dominant erosion process across the analysis area.

Precipitation and Flow Regimes

Elevations across the land units range from under 3400 to over 4300 feet. Based on a 30 year period of record, the average annual precipitation associated with these elevations range from 14 to 20 inches (MT-NRIS 2008). The majority of the precipitation falls as spring snow or rain from April through June.

Precipitation levels and geologic formations result in the ephemeral flow regimes for the majority of the drainages within the land units. Short perennial streams do however, occur below many spring sites. Spring (groundwater) discharge results in relatively constant flow throughout the year, although infrequent but significant peaks can occur during heavy spring snow and rain events that produce overland flow.

Historically, beaver played a significant role throughout the project area through the development of extensive dam/pond networks. Beaver populations have been reduced relative to historic levels. Although temporary, beaver dams and ponds are an important component of riparian systems. They help to trap and store both sediment and water. A reduction in beaver populations over the years has likely resulted in lower water tables and lower late season streamflows along most streams.

Vegetative composition is largely defined by climate and soils, but natural agents including fire, insects or disease, and wind can drastically alter vegetative cover. Over the last three decades, timber stands have been affected by wildfire on just under 70,000 acres across the District. Wildfire events have likely resulted in substantial increases in localized surface erosion although sediment delivery to perennial streams has not been quantified. Surface erosion and sediment transport subsides to back ground levels generally within five years as ground vegetation recovers. Recent wind events in the Ekalaka Hills caused substantial damage to timber stands, some of which is planned for salvage operations.

Human Influences

Humans have influenced watersheds and water quality for centuries. Prior to European settlement, Native Americans used fire to manipulate vegetation which influenced hydrologic processes at the local scale. As European settlement occurred, so did uncontrolled beaver harvest, timber harvest and forage harvest through livestock grazing. All of these activities had long term impacts to watershed characteristics and hydrologic processes.

Currently, many activities influence water quality and natural channel processes including historical mining, livestock grazing, crop production, timber harvest and transportation systems. Some of these activities are constant or occur on an annual basis, e.g., transportation systems or livestock grazing. The effects from these types of activities are considered chronic. Although chronic effects are generally low to moderate in magnitude, they occur with moderate to high frequency. In contrast to pulse effects discussed previously, chronic effects may not allow for significant recovery of the soil and water resource over time.

Historical Uranium Mining

Uranium exploration has occurred throughout all land units on the District since the mid 50's, while extractive mining of uranium was concentrated in the Cave Hills and specifically in the area of Riley Pass. Mining occurred between 1962 and 1964, and under federal legislation at the time, no reclamation of mining activities were required. Approximately 250 acres were disturbed in the North Cave Hills either through excavation of overburden to expose ore deposits, or off-site deposition of

waste material. Currently, under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), approximately 80 percent of this disturbance is under contract for reclamation (USDA-FS 2007). Depending on the concentration of hazardous substances in the mine waste (mainly arsenic and uranium), reclamation actions range from basic site stabilization and revegetation, to removal of contaminated waste to on-site repositories that are stabilized, capped and revegetated. This work is anticipated to be completed within five to six years. The remaining reclamation needs will be accomplished through contract as funding opportunities arise.

Livestock Grazing

Livestock grazing has occurred within the analysis area since the late 1800s. Livestock numbers have decreased over the years; in some allotments quite substantially. Currently there are 63 allotments providing 58,043 animal unit months (AUMs) on 126,000 acres of suitable range on the District. Recent range analyses have identified issues concerning livestock grazing impacts to riparian systems and water quality. In general, livestock grazing can impact riparian systems through overuse of streamside vegetation and destabilization of streambanks. Water quality impacts can occur by increasing levels of fine sediment, increasing water temperature or changing flow regimes. The 2006 Slim Buttes and 2008 Long Pines Range Analysis Decisions proposed changes in range management to address these issues on the District. Range management planning across the remainder of the analysis area is ongoing.

Timber Harvest and Prescribed Fire

Timber harvest over the last three decades encompasses just under 19,000 acres on the District. Prescribed fire over the last two decades encompasses approximately 5000 acres on the District. On a watershed basis, neither harvest nor prescribed burn activities are substantial enough to be detrimental to water resources. Both of these activities have helped to reduce fuel loads and potential for future catastrophic wildfires.

Transportation Systems- General Influences on Water Resources

Roads modify natural drainage networks and accelerate erosion processes. These changes can alter physical processes in streams, leading to changes in streamflow regimes, sediment transport and storage, channel bank and bed configurations, substrate composition, and stability of slopes adjacent to streams (Furniss et al. 1991). Numerous studies have identified unpaved roads as a major source of sediment in streams (Elliot 2000). Sudgen and Woods (2007) measured 20 unsurfaced road plots in western Montana and found average annual sediment yields to be 5.4 Mg/ha/yr (14.7 tons/ac/yr). In relation to other transportation systems (single or two-track motorized/non-motorized trails), roads open to full size vehicles pose the greatest risk of impact to water resources due to 1) largest tread width, 2) largest weight, size and force of vehicle, and 3) generally higher use levels.

Motorized two-track trails can also negatively affect streams. Meadows (2007) suggests that ATV trails are high-runoff, high-sediment producing strips on low-runoff, low-sediment producing landscapes. For six study sites across six states, he found that sediment concentrations generally tended to increase with increasing disturbance levels. Although runoff did not appear to increase for the Montana site, sediment increased by approximately 625%, compared to the undisturbed, pre-traffic forest floor.

Motorized and non-motorized single track trails can also negatively affect streams, but the degree of affect is determined by the mode of travel. Deluca et al. (1998) found a substantial increase in sediment supply from horse traffic when compared to foot or llama traffic. Wilson and Seney (1994)

documented similar conclusions concerning horse traffic. They also suggest that two-wheeled cycle traffic (motor/bi-cycle) results in less sediment than either horse or foot traffic, although the actual data appears to suggest foot traffic produces the least sediment. These two studies documented opposite results concerning sediment production on wet trails. Wilson and Seney (1994) documented increased sediment production on wetted trails, whereas Deluca et al. (1998) found no increase. Cole (1991) found, in a study of three trails in the Selway-Bitterroot Wilderness of Montana, that although most individual trail segments experienced change, there was no net erosion over an 11 year period.

Unplanned (non-system) routes have the potential to be the most detrimental to water quality because of improper location of the route in relation to adjacent streams. Incorporating adequate BMPs into the design, construction and maintenance phases of all routes can minimize negative effects to the greatest extent feasible and still provide a long-term transportation network.

Transportation route impacts on wetlands were identified where routes are known to intersect wetlands, or narrow riparian/stream corridors. Six routes with unimproved crossings occur on the District, three in the Long Pines (3036, 3057W and 3089), and three in the South Cave Hills (3137, 3113, and 31133). Appendix D provides observations and recommendations for these sites. Anticipated effects on these wetland sites from the proposed actions are disclosed in the Environmental Consequences section.

Individual route risks have not been evaluated from site specific GIS spatial data or field data as this data has not been generated or collected across the District. Additionally, cumulative impacts of individual routes at the watershed scale have also not been quantified on-ground or instream. Instead, existing route networks were evaluated cumulatively at the watershed scale through GIS to determine relative risks to water resources. Since impacts to water quality generally occur from concentrated road surface flows routed directly to streams at crossing locations (bridges, culverts or fords), stream crossings were a key variable in the evaluation. All routes, regardless of ownership were included in the evaluation, although routes with Forest Service jurisdiction were also summarized separately as these are the routes potentially affected by the proposed actions. Refer to the next section for the results of this evaluation.

Affected Environment Summary

The water resource affected environment analysis is a broad scale, risk based assessment. Risks are determined at the 6 HUC (hydrologic unit code) watershed scale from GIS spatial data. A summary of selected natural characteristics and human activities are provided in Table 3-20. Quantifiable Forest Service activities include past timber harvest, fire (prescribed fire and wildfire), and existing transportation system attributes (route miles and number of stream crossings). All watersheds have some level of past and present agricultural activity (crop production and/or livestock grazing). Other than the information provided above on Forest Service range allotments, the effects of agricultural activities to water resources have not been assessed. Six HUC watersheds were used as the analysis area for the affected environment because the area encompassed (10,000 to 40,000 acres) provides a reasonable and manageable number of analysis units across the District (53). Smaller or larger watersheds would not provide better information for the deciding officer concerning water resource effects.

Watersheds were assigned a risk level to help focus cumulative effects analysis for water resources. The risk level is based on 1) perennial stream crossings by FS routes, 2) total perennial stream miles, 3) intermittent stream crossings by FS routes, 4) TMDL listed streams, and 5) exceptionally high fire

acres. **High** risk watersheds have Forest Service roads with perennial stream crossings, exceptionally high number of intermittent crossings on Forest Service Roads, or are TMDL category 5 streams with intermittent crossings on Forest Service roads. **Moderate** risk watersheds have more than one mile of Forest Service roads and more than one mile of perennial stream downslope, are TMDL category 5 streams without any stream crossings on Forest Service roads, or have exceptionally high fire acres and intermittent stream crossings. The remaining watersheds are **Low risk** and were not carried forward to the direct and indirect effects analysis, but are included in cumulative effects. Of the 53 watersheds on the District, 11 are rated high risk, 18 moderate and 24 low.

As mentioned previously, riparian and stream conditions are also assessed by the MTDEQ and SDDENR to determine the level of beneficial use support. Impaired streams with known pollutant related sources require a TMDL (Category 4A and 5 streams). Category 4A streams have all necessary TMDLs in place, while category 5 streams still need TMDLs developed. Impaired streams with no known pollutant related sources do not require a TMDL (Category 4C streams). Category 1 streams fully support all beneficial uses, while category 3 streams have not had all beneficial uses assessed. This assessment provides the best information on current stream conditions below the Forest boundary. A summary of streams identified on the 2006 303(d) List are provided in Table 3-21. Watersheds with Category 5 streams are also identified in Table 3-20.

The 2006 Montana 305(b)/303(d) Water Quality Report lists one mainstem reach immediately below the analysis area that requires a TMDL: Little Missouri River (MTDEQ 2006). Impaired uses include aquatic life and warm water fisheries. Probable causes for impairment of the Little Missouri are metals- cadmium, copper, iron, lead and zinc. Probable sources are natural sources and unknown. Intermittent tributaries to the Little Missouri headwater on National Forest System land. Transportation systems in these headwater areas have the potential to influence aquatic life and warm water fisheries downstream, but do not contribute to the causes identified.

The 2008 South Dakota Integrated Report for Surface Water Quality Assessment lists one stream adjacent to the analysis area that requires a TMDL: South Fork Grand River (SD-DENR 2008). Impaired uses include irrigation and warmwater semi-permanent fish. The probable cause for impairment of irrigation is salinity while the cause for impairment of fish is total suspended solids (TSS). Probable sources for TSS are crop production, grazing in riparian or shoreline zones and natural sources. No sources for salinity are listed. Intermittent tributaries to the South Fork Grand River headwater on National Forest System land. Management activities on National Forest System land have the potential to contribute to TSS in streams including transportation management.

Table 3-20. Summary of Watershed Characteristics and Watershed Scale Influences on the District

Watershed #	State	Watershed Name	Watershed Acres	Percent Watershed Forest Service	Total Perennial Stream Miles	FS Perennial Stream Miles	Harvest Acres	Fire Acres	Total Road Miles	FS Road Miles	Total Stream Crossings	FS Intermittent Crossings	FS Perennial Crossings	Watershed Risk
101102010704	MT	Upper Tie Creek	23220	35	9	3	2099	6854	65	24	82	18	7	HIGH
101102010705	MT	Lower Tie Creek	22935	11	13	1	350	3369	41	7	51	8	5	HIGH
101102020505	MT	Speelmon Creek	17718	63	6	6	2350	10355	57	36	99	44	4	HIGH
101303010104	SD	Upper Crooked Creek	18046	16	7	<1	0	2	37	10	35	3	3	HIGH
101102010802	MT	Plum Creek	12819	70	5	1	1943	10685	47	33	43	24	2	HIGH
101303020405	SD	Bull Creek- Campbell Creek	13471	48	17	2	0	1464	37	15	26	7	1	HIGH
101303020406	SD	Dry Creek	10396	42	5	2	0	60	31	14	28	7	1	HIGH
101102010803	MT	Slick Creek	37776	31	20	1	1709	12052	104	34	109	45	1	HIGH
101102010801	MT	Little Missouri River-K Bar Creek [15]	43315	4	27	0	12	2284	87	6	84	8	0	HIGH
101102011004	MT	Russell Creek	16090	41	13	0	5215	2425	82	30	107	44	0	HIGH
101102010706	MT	Little Missouri River-Waterhole Creek[15]	41162	9	16	0	9	4402	95	15	76	7	0	HIGH
101102010701	MT	Little Missouri River-Sand Creek[15]	24861	4	10	0	0	61	52	2	37	0	0	MOD
101303050406	SD	Gap Creek	24693	11	20	4	5	1	43	9	43	1	0	MOD
101303010105	SD	Middle Crooked Creek	14933	15	15	0	0	0	28	7	22	5	0	MOD
101102011005	MT	Little Beaver Creek-Terrell Creek	35999	8	15	0	698	2	87	12	125	11	0	MOD
101303020408	SD	Bull Creek- Hay Creek	12219	8	13	0	0	2	22	3	17	1	0	MOD
101303020403	SD	Bull Creek- Cottonwood Creek	13150	4	13	0	0	69	28	2	38	1	0	MOD
101303010106	SD	Petes Creek	13302	12	12	0	0	0	28	5	20	1	0	MOD
101102020510	MT	Boxelder Creek-Wood Gulch	21619	7	11	0	0	19	37	8	39	4	0	MOD
101102020506	MT	Boxelder Creek-Little Ramme Creek	32305	12	11	0	30	4622	81	9	63	5	0	MOD

[15] TMDL Category 5 listed stream.

Table 3-20. Summary of Watershed Characteristics and Watershed Scale Influences on the District

Watershed #	State	Watershed Name	Watershed Acres	Percent Watershed Forest Service	Total Perennial Stream Miles	FS Perennial Stream Miles	Harvest Acres	Fire Acres	Total Road Miles	FS Road Miles	Total Stream Crossings	FS Intermittent Crossings	FS Perennial Crossings	Watershed Risk
101303020504	SD	South Fork Grand River- Prairie Dog Creek[15]	17776	12	10	3	0	0	14	3	6	0	0	MOD
101102011006	MT	HS Creek	14229	18	9	0	752	107	47	10	60	7	0	MOD
101102011003	MT	Little Beaver Creek-Dugan Draw	23310	7	8	0	1602	6	59	10	82	18	0	MOD
101102020508	MT	Boxelder Creek-Devils Canyon	15205	24	6	0	0	3387	32	9	30	7	0	MOD
101102011002	MT	Headwaters Little Beaver Creek	22987	20	4	0	1165	51	72	10	80	16	0	MOD
101303020304	SD	Middle Jones Creek	13720	19	4	0	0	924	49	7	23	1	0	MOD
101303020505	SD	South Fork Grand River- Fisher Creek[15]	13257	26	3	3	0	0	22	4	16	0	0	MOD
101303020501	SD	South Fork Grand River- Sand Creek[15]	11013	13	3	0	0	0	12	3	4	0	0	MOD
101102020509	MT	Snow Creek	12658	89	0	0	494	10227	50	38	87	56	0	MOD
101102020504	MT	Boxelder Creek-Belltower	30302	2	22	0	0	225	81	0	88	0	0	LOW
101303050109	SD	Little Cowboy Creek- North Fork Moreau River	14958	2	10	0	0	0	15	0	10	0	0	LOW
101303020305	SD	Lower Jones Creek	17148	3	9	0	0	0	21	0	25	0	0	LOW
101303050101	SD	Chalk Butte Draw- North Fork Moreau River	17844	2	2	0	0	0	48	0	57	0	0	LOW
101303050106	SD	Red Butte Creek	12328	13	1	0	0	0	7	1	7	0	0	LOW
101303020206	SD	Sioux Creek	18077	35	0	0	0	2	30	12	21	2	0	LOW
101303040104	SD	Ash Coulee	21058	11	0	0	0	402	41	9	27	1	0	LOW
101303040401	SD	North Sand Creek- Sand Creek	20166	17	0	0	0	117	32	6	42	9	0	LOW
101102020403	MT	Buffalo Creek	29301	5	0	0	0	0	82	6	95	5	0	LOW
101303020205	SD	Lower Unnamed Tributary to Clarks Fork Creek	18336	12	0	0	0	0	18	1	11	0	0	LOW
101303050202	SD	Spring Creek	19909	13	0	0	0	20	28	4	24	1	0	LOW
101102020507	MT	Harmon Creek	14636	14	0	0	243	0	35	7	39	10	0	LOW
101303020407	SD	Jack Creek	11479	3	0	0	0	20	16	0	15	0	0	LOW

Table 3-20. Summary of Watershed Characteristics and Watershed Scale Influences on the District

Watershed #	State	Watershed Name	Watershed Acres	Percent Watershed Forest Service	Total Perennial Stream Miles	FS Perennial Stream Miles	Harvest Acres	Fire Acres	Total Road Miles	FS Road Miles	Total Stream Crossings	FS Intermittent Crossings	FS Perennial Crossings	Watershed Risk
101102020503	MT	Big Ramme Creek	17740	6	0	0	200	17	37	4	51	8	0	LOW
101303050401	SD	Jones Creek- Rabbit Creek	17037	65	0	0	0	464	45	27	32	8	0	LOW
101303050601	SD	Headwaters of Antelope Creek	19957	33	0	0	0	1	34	19	23	7	0	LOW
100902090601	MT	Upper Spring Creek	23702	19	0	0	0	342	55	12	75	11	0	LOW
101102020602	MT	Spring Creek	23745	13	0	0	0	1557	42	6	61	2	0	LOW
101303020601	SD	Headwaters of Big Nasty Creek	13438	7	0	0	0	170	35	4	39	1	0	LOW
101303050403	SD	Point Creek	17553	13	0	0	0	5	29	3	25	0	0	LOW
101303020204	SD	East Branch Unnamed Tributary to Clarks Fork Creek	16621	8	0	0	0	539	23	1	21	0	0	LOW
101102020401	MT	Fresh Water Draw	14827	5	0	0	0	10	38	1	37	0	0	LOW
101303050207	SD	Sheep Creek	16289	10	0	0	0	0	9	1	6	0	0	LOW
101303050205	SD	Ash Creek	10150	10	0	0	0	1	10	0	10	0	0	LOW
SUM			1030788	na	352	27	18876	77322	2258	500	2373	414	24	H-11, M-18, L-24

Table 3-21. Summary of TMDL Streams Within or Immediately Adjacent to the District

Stream/TMDL category	Probable Impaired Use* [16]	Probable Cause of Impairment	Probable Source of Impairment	Location
TMDL Category 5 Streams (TMDLs Required)				
Little Missouri River Category 5	Aquatic Life Support (P) Warm Water Fishery (P)	Cadmium, Copper, Iron, Lead, Zinc	Natural Sources, Sources unknown	Montana- Hwy 323 bridge to South Dakota border. Mainstem at least four miles below Forest boundary.
South Fork Grand River Category 5	Irrigation (N) Warmwater semi permanent Fish Life (N)	Salinity Total Suspended Solids	Crop Production Grazing in Riparian or Shoreline Zones, Natural Sources	South Dakota- Jerry Creek to Skull Creek. Mainstem at least four miles below Forest boundary.
TMDL Category 1 and 3 Streams (TMDLs Not Currently Required)				
Box Elder Creek Category 3	All uses not assessed			Montana- Headwaters to South Dakota border Mainstem at least one mile below Forest boundary.
Buffalo Creek Category 1	All uses fully supported			Montana- Headwaters to Box Elder Creek. Mainstem at least two miles below Forest boundary.

[16] P= partial use support, N= nonsupport.

3.4.1.3 Environmental Consequences – Water Quality

Effects Common to All Action Alternatives - Water Quality

Direct Effects
Relative to transportation systems, only the installation, reconstruction, or active removal and restoration of stream crossing structures result in direct effects to water quality, because the effect occurs during implementation of the action. For this analysis, fords are also considered a stream crossing structure. Since there are no actions proposed to actively change specific stream crossings under this analysis, there are no direct effects to evaluate.

Indirect Effects
Indirect effects occur at a later time or distance from the proposed action. For example, a non-system route upslope from a stream and proposed for public use could potentially result in sediment delivery to the stream during wet periods. However, this potential effect would likely occur at a later time than the decision to designate the route, and would be some distance downslope from the designated route, hence an indirect effect.

Only routes with proposed actions are evaluated for indirect effects. Existing system routes that are designated without further actions, or non-system routes not converted to system routes, are not considered actions under this analysis. However, these routes are incorporated into the cumulative effects analysis below as default actions. Proposed actions for individual routes under this analysis include designating non-system routes for public and administrative use, not designating existing system routes, designating system and non-system roads for administrative use only, converting system roads to trails, changing a fall season of use, or changing the mode of travel (vehicle).

Relative Route Risks By Action
Indirect and cumulative effects are based on whether the action for an individual route will increase, decrease or have no effect on route risk to water resources. For indirect effects, as presented in Table 3-24, the influence of the proposed action on risk is based on a comparison with the no-action condition. For cumulative effects, as presented in Table 3-25, the influence of the proposed and default actions on risk are based on a comparison with the existing condition. This rationale is displayed in the following table.

Table 3-22. Summary of Relative Route Risks by Action and Condition

Action	Change in Route Risk as Compared to Existing Condition	Change in Route Risk as Compared to No Action Condition
Proposed Actions Under Action Alternatives		
Add (designate non-system routes for public use)	No Change	Increase
Add (designate non-system routes for administrative use)	Decrease	Increase
Administrative (designate system routes for administrative use)	Decrease	Decrease
Do Not Designate (system routes)	Decrease	Decrease
Vehicle (change mode of travel)	No Change	No Change
Convert (from roads to trails)	No Change	No Change
Season (apply season of use 12/1-10/14 or yearlong)	No Change	No Change
No Camping	No Change	No Change
Default Actions Under No Action Alternative		
Do Not Designate (non-system routes)	Decrease	na
Designate (system routes)	No Change	na

The only action that would tend to increase risk to water resources is designating non-system roads for public or administrative motorized use. Designating non-system roads adds additional route miles to the landscape for the long-term, thereby maintaining the risk of indirect and cumulative effects to water resources. However, this is only an increase in risk when compared to the No-Action Alternative, because under the No-Action these routes would not be designated. Under the existing condition, these routes are already on the landscape and available for public use, and therefore designating them for public use is no change in risk. Additionally, designating them for administrative use only should reduce existing use and therefore risk.

Changing the mode of travel from highway legal vehicle to all motorized vehicles is not expected to change the type of vehicles that currently use these routes. Likewise, converting roads to trails is not expected to change the type of vehicle or level of use, nor the level or priority for maintenance along these routes. Changing the seasonal use period (yearlong to 12/1-10/14) related to the fall hunting season has the potential to reduce surface erosion, rutting and maintenance needs when roads are wet prior to freeze-up, but this time frame is considered too short for any meaningful risk reduction. A spring closure period during spring break-up would provide a much more substantial reduction in risk for water resources. Restricting camping along routes in the North Cave Hills is solely related to health and safety concerns with hazardous mine sites and will not influence water resources. Therefore, all of these actions would not substantially change risk to water resources.

The remaining actions would tend to decrease risk to water resources. Converting system routes to administrative use reduces traffic and allows revegetation of the road surface to occur, both of which reduce erosion over the long-term. Not designating system and non-system routes reduces route miles on the landscape over the long-term, thereby reducing potential erosion and risk to water resources.

Effects by Alternative - Water Quality

The proposed actions for individual routes are summarized for moderate and high risk watersheds by whether the actions increase or decrease risk. Refer to the following table. Low risk watersheds are not evaluated for indirect effects because they either do not contain perennial streams, or roads on National Forest System land, or are category 5 TMDL streams. They are however, accounted for under cumulative effects.

Alternative A - Indirect Effects

This alternative proposes actions that increase risk to water resources in 24 of the 29 moderate and high risk watersheds on the District, while actions that decrease risk are proposed in 14 watersheds. Overall, there is a net increase in risk in 20 (69%) watersheds, while net risk decreases in five watersheds. Nine of the 20 watersheds with a net increase are high risk watersheds. The sole reason for the increase is due to the addition of non-system roads to the transportation system. Risk remains unchanged in four watersheds

Under Alternative A, no routes previously identified with potential wetland concerns will have actions proposed to address these concerns. These routes and concerns are identified in Appendix D as future restoration opportunities.

One watershed that is a tributary to a category 5 TMDL stream has proposed actions that result in a net increase in risk, while two other watersheds with category 5 TMDL issues have actions that result in a net decrease in risk. Three other watersheds have no net change in risk.

Alternative B - Indirect Effects

This alternative proposes actions that increase risk to water resources in 20 of the 29 moderate and high risk watersheds on the District, while actions that decrease risk are proposed in 27 watersheds. Overall, there is a net increase in risk in only seven (24%) watersheds, while net risk decreases in 20 watersheds. The reason for the decrease in risk is due to designating system routes for administrative use only, and not designating some system routes. Risk remains unchanged in two watersheds.

Under Alternative B, one route previously identified with potential wetland concerns will have actions proposed to address these concerns. The portion of route 3089 that affects a wetland will not be designated for public or administrative use. The other routes and concerns are identified in Appendix D as future restoration opportunities.

Four watersheds that are tributaries to a category 5 TMDL stream have proposed actions that result in a net decrease in risk, while no watersheds result in a net increase in risk. Two watersheds have no net change in risk.

Table 3-23. Summary of Route Miles by Action Risk for Moderate and High Risk Watersheds When Compared to the No-Action Condition

Watershed Name	Alternative A		Alternative B	
	Increase Risk	Decrease Risk	Increase Risk	Decrease Risk
Boxelder Creek-Devils Canyon	0.3	0.8	0.0	2.1
Boxelder Creek-Little Ramme Creek	0.0	0.0	0.0	4.8
Boxelder Creek-Wood Gulch	0.4	0.0	0.0	3.9
Bull Creek- Campbell Creek	2.3	2.2	1.1	4.8
Bull Creek- Cottonwood Creek	1.5	0.0	1.5	0.1
Bull Creek- Hay Creek	0.5	0.0	0.5	0.0
Dry Creek	3.2	0.0	2.7	0.2
Gap Creek	4.0	1.4	3.4	1.5
Headwaters Little Beaver Creek	1.8	0.0	1.8	1.7
HS Creek	2.6	0.4	3.5	4.5
Little Beaver Creek-Dugan Draw	0.7	0.0	0.0	1.3
Little Beaver Creek-Terrell Creek	1.1	2.4	1.3	7.4
Little Missouri River-K Bar Creek	0.0	0.0	0.0	1.6
Little Missouri River-Sand Creek	0.0	0.0	0.0	0.0
Little Missouri River-Waterhole Creek	1.9	0.9	0.2	1.3
Lower Tie Creek	0.0	0.2	0.0	4.3
Middle Crooked Creek	1.4	0.0	1.1	0.2
Middle Jones Creek	0.4	0.1	0.2	3.9
Petes Creek	1.1	1.0	1.1	1.9
Plum Creek	3.0	0.0	2.7	8.1
Russell Creek	11.1	0.0	4.2	5.0
Slick Creek	9.1	0.0	4.7	11.7
Snow Creek	2.8	0.8	0.6	10.3
South Fork Grand River- Fisher Creek	1.6	1.6	1.6	1.6
South Fork Grand River- Prairie Dog Creek	0.5	1.6	0.5	2.1
South Fork Grand River- Sand Creek	0.0	2.4	0.0	2.4
Speelmon Creek	4.3	0.0	2.1	8.8
Upper Crooked Creek	3.6	0.7	1.9	0.7

Table 3-23. Summary of Route Miles by Action Risk for Moderate and High Risk Watersheds When Compared to the No-Action Condition

Watershed Name	Alternative A		Alternative B	
	Increase Risk	Decrease Risk	Increase Risk	Decrease Risk
Upper Tie Creek	3.0	0.0	0.5	8.6
Total Miles by Action Risk	**62.2**	**16.6**	**37.2**	**102.5**
Number of watersheds with a increase or decrease in risk	**24**	**14**	**20**	**27**
Number of watersheds with *net* increase or decrease in risk	**20**	**5**	**7**	**20**

Comparison of Indirect Effects

The following table provides a summary of indirect effects for all actions in all watersheds by risk category; increase, decrease or no change in risk. For all actions across the District, a net increase in risk occurs under Alternative A (+17%), while a net decrease in risk occurs under Alternative B (-16%).

Table 3-24. Summary of Route Miles *with* Proposed Actions Relative to the No Action Condition

Actions that Increase Risk	Alternative	
	A	B
Add (designate non-system routes for public and administrative use)	101.4	67.0
Total Miles that Increase Risk	**101.4**	**67.0**
Actions that Decrease Risk		
Administrative (designate system routes for administrative use only)	23.6	99.8
Do Not Designate (system routes)	0.4	22.4
Total Miles that Decrease Risk	**24.0**	**122.2**
Actions that Don't Change Risk		
Vehicle	97.4	52.9
Convert	210.2	72.3
Season	0.0	18.4
No Camping	9.6	9.6
Total Miles –Actions that Do Not Change Risk	**317.2**	**153.2**
Total Miles – All Actions	**442.6**	**342.4**
Percent Net Increase or Decrease in Risk ((increase miles – decrease miles)/total miles)	**+17%**	**-16%**

No Action Alternative

See discussion of No Action Alternative in the cumulative effects section below.

Cumulative Effects - Effects of All Routes Including Those Without Proposed Actions

All alternatives include routes *without* proposed actions. Actions for these routes are termed default actions and include some system routes that will be designated without further action, and some non-system routes that will not be designated without further action. These default actions are compared against the existing condition to determine risks. Designating system routes is not expected to change any characteristic of the route in terms of current use or impact and therefore this default action will not change risk to water resources. On the other hand, not designating non-system routes will remove the route from the landscape, thereby reducing any existing effects and future risks to water resources.

The following table summarizes miles of routes with default actions, and cumulatively by including routes with proposed actions.

Table 3-25. Summary of All Routes Across the District With and Without Proposed Actions

	Alternative		
	A	**B**	**No Action**
Designation Status/Risk Category for Routes *without* Actions			
NF System Road Miles – Designate/No Change In Risk	65.6	131.4	404.3
NF Non-system Road Miles – Do Not Designate/Decrease Risk	4.2	39.0	108.0
Total Miles for Routes *without* Actions	**69.8**	**170.4**	**512.3**
Indirect Effects - Risk Category for Routes *with* Actions			
Miles for Actions that Increase Risk (no actions increase risk when compared to the existing conditions- see Table 3-23)	0.0	0.0	0
Miles for Actions that Decrease Risk (designating system/non-system routes for administrative use only, and not designating system routes)	33.9	166.0	0
Miles for Actions that Don't Change Risk	408.7	176.4	0
Total Miles for Routes *with* Actions	**442.6**	**342.4**	**0**
Cumulative Effects - Risk Category for All Routes			
Total Miles for All Routes with Increased Risk	0.0	0.0	0
Total Miles for All Routes with Decreased Risk	38.1	205.0	108.0
Total Miles for All Routes with No Change in Risk	474.3	307.8	404.3
Total Miles - All Routes	**512.4**	**512.8**	**512.3**
Percent Net Increase or Decrease in Cumulative Risk ((increase miles – decrease miles)/total miles)	**-7%**	**-40%**	**-21%**

Action Alternatives

These alternatives designate varying levels of system routes without any additional actions to reduce risks to water resources. Both action alternatives designate substantially less miles than the No Action Alternative. Alternative B designates less non-system miles than Alternative A, thereby further reducing risks from these routes. Both action alternatives result in a net decrease in risk; -7 percent under Alternative A and -40 percent under Alternative B.

No Action Alternative

This alternative designates the most system routes without any additional actions to reduce risks to water resources. However, it also designates the least amount of non-system routes. Not designating these routes reduces risk over the long-term as the routes disappear from the landscape, either naturally or through active rehabilitation. Cumulatively across the District, a net decrease in risk occurs under the No Action Alternative (-21%).

Under this alternative, all routes previously identified with potential wetland concerns will have a seasonal use of 12/1-10/14. However, this action is not expected to provide substantial protection for these sites. These routes and concerns are identified in Appendix D as future restoration opportunities.

Effects Common to All Alternatives at the Watersheds Scale

Sediment modeling was not incorporated into the effects analysis for water quality for many reasons. First of all, natural erosion rates specific to the Custer National Forest have not been developed and extrapolating rates from other Forests would only increase errors associated with the model results. Additionally, except for wildfire, road construction and harvest of green timber stands, surface erosion

rates have not been developed for other frequent activities on the forest. Therefore, from a cumulative effects standpoint, existing sediment models are not adequate to quantify to a single cumulative value, the effects of all the diverse activities in individual watersheds including wildfire/prescribed fire, mining, dispersed camping, off-highway vehicle use, grazing, floodplain development, timber harvest, and transportation networks. Nor are they capable of distinguishing between all the different actions associated with this travel management analysis. A combination of individual models could prove useful, but a large amount of additional data (on-ground and spatial) would be necessary to obtain valid results. The only way to address these various activities cumulatively for this travel management analysis is to address each activity individually and then qualify, in general terms, the cumulative effects between specific activities where appropriate. Existing activities are discussed previously under the Affected Environment – Water Quality section.

Finally, existing models can have very high errors associated with their results. Elliot (2000) indicates that, at best, any predicted runoff or erosion value, by any model, will be within plus or minus 50 percent of the true value. The high degree of error associated with cumulative effects models make it difficult, if not impossible, to compare results between alternatives because confidence intervals overlap. Management decisions based on modeling results with this degree of error are not appropriate.

At the 6 HUC watershed scale, the proposed actions are not likely to be substantial enough to cause detectable changes in water quality, quantity or channel processes under any alternative. Although the effect of an individual action on a specific route could be detectable in the nearest watercourse immediately downslope, it is unlikely to be detectable at the mouth of 6 HUC watersheds that range in size from 10,000 to 40,000 acres. Additionally, the effects of all actions are indirect as previously discussed. They will occur at different times in different locations and at different magnitudes across these large watersheds. The effects are therefore diluted; temporally and spatially.

Natural disturbance events will continue to influence hydrologic and erosional processes across all watersheds. Given the current vegetative conditions and associated fuel accumulations in some watersheds, there is potential for wildfires to occur that may be outside the range of conditions (intensity and duration) that have occurred over the last few hundred years. Depending on the intensity and area burned, accelerated soil erosion is likely, particularly where hydrophobic soils may be formed. Significant channel adjustments could be expected in these watersheds, especially during years of average or higher precipitation/runoff conditions. Stream systems will however stabilize as vegetative recovery occurs during post-fire years. Transportation systems could compound the effects of post-fire flood events, especially where routes are not maintained to standard. It is reasonable to assume that current road conditions and maintenance needs will continue into the future for actions on routes that do not change risks.

Past and present timber harvest activities and prescribed fire will continue to be a minimal influence on water resources as described under the affected environment. However, other human influences including transportation systems, grazing, recreation, and floodplain developments are likely to continue to cause chronic effects to water resources as discussed previously.

3.4.1.4 Conclusion - Water Quality

From a District-wide cumulative summary, the preferred alternative would decrease net risk along 40 percent of the 513 total route miles evaluated. By comparison, Alternative A would decrease net risk

along only seven percent of the total route miles, while the no-action alternative would decrease net risk along 21 percent.

Currently, some routes have documented water quality impacts and therefore, may not comply with Forest Plan direction or state and federal water quality regulations. Compliance relative to the Decision to be made for this EIS, only pertains to those routes with a proposed action. These routes have actions proposed which are the first steps toward addressing water quality impacts. Additional activities, outside of this proposal, that would further reduce water quality impacts are identified in Appendix D - Opportunities. From a NEPA standpoint, routes with no proposed actions that have known water quality impacts are not a compliance issue relative to the Decision to be made, because this project is not the cause of those impacts (i.e. they are existing impacts). However, water quality impacts should still be addressed through measures outside this process and recommended actions for these routes are also identified in Appendix D - Opportunities. Full compliance with Forest Plan direction and state and federal water quality regulations under all alternatives would occur in the future as these actions or rehabilitation measures are implemented.

3.4.1.5 Affected Environment – Fisheries and Aquatics

Applicable Laws, Regulations, and Policy

The *Clean Water Act* requires States to identify existing water bodies that do not meet water quality standards, and develop plans to meet them. *Montana Water Quality Law,* as directed by the Clean Water Act, developed a water quality classification system, developed water quality standards to be applied to various water classes, and identified water bodies that do not meet standards.

The Montana Department of Environmental Quality (MTDEQ) has classified all waters within the Montana portion of the analysis area as C-3 waters. The beneficial uses associated with this classification include; bathing, swimming, and recreation; growth and propagation of non-salmonid fishes and associated aquatic life, waterfowl, and furbearers.

Beneficial use classification for all streams in the South Dakota portion of the analysis area includes fish and wildlife propagation, recreation, and stock watering waters (category 9, South Dakota Administrative Rules (SDAR), Surface Water Quality Standards, 74:51:03:01 (SDAR 2008)). The most applicable surface water quality standards for streams in South Dakota pertaining to aquatic species and their habitat include: "*Biological integrity of waters.* All waters of the state must be free from substances, whether attributable to human-induced point source discharges or nonpoint source activities, in concentrations or combinations which will adversely impact the structure and function of indigenous or intentionally introduced aquatic communities" (SDAR 74:51:01:12).

The *1995 Presidential Executive Order 12962* directs Federal agencies to "improve the quantity, function, sustainable productivity, and distribution of aquatic resources for increased recreational fishing opportunity by evaluating the effects of federally funded, permitted, or authorized actions on aquatic systems and recreational fisheries and document those effects relative to the purpose of this order."

As part of the *National Environmental Policy Act* (NEPA) decision-making process, proposed Forest Service programs or activities are to be reviewed to determine how an action will affect any sensitive species (FSM 2670.32). The goal of the analysis should be to avoid or minimize impacts to sensitive

species. Three sensitive amphibian species are present in the project area. These include the Great Plains Toad *Bufo cognatus*, Northern Leopard Frog *Rana pipiens*, and Plains Spadefoot *Spea bombifron*. Sensitive fish species considered in this analysis include the Northern Redbelly Dace *Phoxinus eos* and Sturgeon Chub *Macrhybopsis gelida*. Although the project area is within the historic distribution of these sensitive fish species, there has been no documented occurrence of either fish in the project area.

The 1987 *Custer National Forest Land and Resources Management Plan* directs that management activities should enhance habitat quality and diversity, and to provide fish-oriented recreation opportunities. Most of the critical habitat areas have been incorporated into management areas that maintain or improve these key habitats. Fisheries management is considered in all management areas and the level of habitat management is projected to increase over time.

Fish and Amphibian Distribution

The Sioux District Travel Management Plan project area spans across 53 individual watersheds (6th level hydrologic unit code). Custer National Forest system lands comprise about one-tenth (11.4 %) of the total acreage of the 53 watersheds (177,250 acres of 1,030,788 acres total). The project area encompasses headwater tributaries, springs, and impoundments that support diverse populations of endemic fish and amphibian species.

There are no sensitive fish species documented in the project area. However, waters on the Sioux Ranger District are within the historic distribution of the Northern Red Belly Dace and the Sturgeon Chub. These species are listed as *Sensitive* by Region 1 of Forest Service, although neither species has been observed or documented on the District.

Other fish species considered in this analysis include: 1) native nonsensitive species, including the Black Bullhead *Ameiurus melas*, Brook Stickleback *Cualea inconstans*, Fathead Minnow *Pimephales promelas*, and Lake Chub *Couesius plumbeus* and, 2) exotic recreational species, including Black Crappie *Pomoxis nigromaculatus*, Green Sunfish *Lepomis cyanellus*, Large Mouth Bass *Micropterus salmoides*, Rainbow Trout *Oncorhynchus mykiss*, and Yellow Perch *Perca flavescens*.

Sensitive amphibian species present in the project area include the Great Plains Toad, Northern Leopard Frog, and Plains Spadefoot. Common nonsensitive amphibian species found throughout the project area include the Boreal Chorus Frog *Pseudacris maculata*, Tiger Salamander *Ambystoma tigrinum*, and Woodhouse's Toad *Bufo woodhousii*.

Great Plains Toad (Bufo cognatus)

The Great Plains toad is recognized as a distinct species that ranges across the Great Plains from central Mexico to southeastern Alberta (Maxell 2000). In Montana, Great Plains Toads are found across the eastern plains, especially on the plateaus between and flanking the Yellowstone and Missouri Rivers, and have been documented east of Shelby, Great Falls, Lewiston, and Billings Montana (Maxell 2000; Werner et al. 2004). The Great Plains Toad is widespread throughout South Dakota, occurring in almost every county (Fischer et al. 1999).

The Great Plains Toad is found in headwater drainages and onto prairies, where they are seen around glacial potholes, stock reservoirs, irrigation ditches, and smaller coulees (Werner et al. 2004). The Great Plains toad is a rapid burrower when active and occupies shallow burrows during the day (Fischer et al. 1999, MTFWP 2008). This species enters water only to breed, and emergence and breeding periods are triggered by early summer thunderstorms after which the toads immediately

move to breeding areas (Fischer et al. 1999, MTFWP 2008). Breeding takes place anytime between mid-May and mid-July (Fischer et al. 1999). Females lay up to 45,000 eggs and communal egg laying is common; eggs hatch in two to three days and tadpoles metamorphose in three to six weeks (Werner et al. 2004). Sexual maturity is achieved at two to three years of age (Werner et al. 2004).

Great Plains toads have only been documented at about 30 localities across the plains east of the Rocky Mountains and their status across this region is largely unknown (Maxell 2000). Risk factors relevant to the viability of populations of this species are likely to include grazing, use of pesticides and herbicides, nonindigenous species, road and trail development, on- and off-road vehicle use, development of water impoundments, habitat loss/fragmentation, and metapopulation impacts (Maxell 2000). Although historic records document Great Plains Toads on land units of the Sioux Ranger District (Long Pines and Ekalaka Hills), there have been no recorded observations on the District since 1914 (Reichel 1995).

Northern Leopard Frog (Rana pipiens)

The Northern leopard frog historically ranged from Newfoundland and northern Alberta in the north to the Great Lakes region, the desert Southwest and the Great Basin in the south (Maxell 2000). A number of isolated populations historically existed in the Pacific Northwest and California (Stebbins 1985; as reported in Maxell 2000). In Montana they have been documented across the eastern plains and in many of the mountain valleys on both sides of the Continental Divide at elevations up to 6,700 feet (Werner et al. 2004).

The Northern leopard frog is found in, and adjacent to, permanent slow moving or standing water bodies with considerable vegetation, but may range widely into moist meadows, grassy woodlands and even agricultural areas (Nussbaum et al. 1983; as reported in Maxell 2000). Adults feed on invertebrates, but may cannibalize smaller individuals. Adults overwinter on the bottom surface of permanent water bodies, under rubble in streams or in underground crevices that don't freeze. Northern leopard frogs breed from mid-March to early June (Maxell 2000). Mating occurs when males congregate in shallow water and begin calling during the day (Maxell 2000). Eggs are laid at the water surface in large, globular masses of 150 to 500 (Maxell 2000). Juveniles may move as much as 8 kilometers from their natal ponds to their adult seasonal territories (Dole 1971; as reported in Maxell 2000). Young and adult frogs often disperse into marsh and forest habitats, but are not usually found far from open water (Maxell 2000).

Over the last few decades the Northern leopard frog has undergone declines across much of the western portion of their range (Stebbins and Cohen 1995; as reported in Maxell 2000). Most Northern leopard frogs in western Montana became extinct in the 1970's or early 1980's. The only 2 population centers known to exist in western Montana are near Kalispell and Eureka (Maxell 2000). However, the northern leopard frog is still abundant and widespread in southeastern Montana and northwestern South Dakota (Reichel 1995; as reported in Hendricks and Reichel 1996). Although this species is relatively common on the Sioux District of the Custer National Forest, in both Montana and South Dakota, they are considered a *Sensitive Species* due to population declines in the western portion of their historic range.

Plains Spadefoot (Spea bombifrons)

The Plains Spadefoot is documented only sparsely in central and eastern Montana, including sightings in the mountain valleys of the upper Missouri watershed at elevations up to 5,000 ft (Maxell 2000, Werner et al. 2004). They can be found in southeastern South Dakota and are also sporadically distributed throughout the western portion of the state (Fischer et al. 1999).

Spadefoots are a prairie species, associated with areas of sandy soil or gravel-loam (Werner et al. 2004). Their lifestyle associates them with large temporary wetlands easily flooded after heavy rains (Fischer et al. 1999). When conditions are such that adults retreat underground, the spades on the hind feet are used to dig backwards into the soil until pockets of moist soil are encountered, sometimes at depths of almost a meter (MTFWP 2008). Plains Spadefoots are seldom encountered outside the breeding season since they spend most daylight hours underground (Werner 2004). The Plains Spadefoot reaches sexually maturity at one to two years of age and breeding generally takes place from May to August following heavy rainfall at temperatures above 54° F (Fischer 1999, Werner et al. 2004). Females lay close to one thousand eggs, tadpoles develop in two to six days, and metamorphosis occurs from three to six weeks (Werner at al. 2004).

In the past 125 years, this species has been documented at about 40 localities across the plains and in the mountain valleys east of the Continental Divide and their status across this region is almost completely unknown (Maxell 2000). Risk factors relevant to the viability of populations of the Plains Spadefoot are likely to include grazing, road and trail development, on- and off-road vehicle use, use of pesticides and herbicides, development of water impoundments, habitat loss/fragmentation, and metapopulation impacts (Maxell 2000). Only two current records exist for the Plains Spadefoot on the Sioux Ranger District, one in the Ekalaka Hills and one in the Long Pines land unit.

Watershed Condition and Stream Habitat Characteristics

For the purpose of this analysis generalizations of watershed condition, and potential impacts to aquatic habitat and biota relative to travel routes, were inferred from: 1) perennial stream crossings by FS routes, 3) total perennial stream miles, 3) intermittent stream crossings by FS routes, 4) TMDL listed streams, and 5) exceptionally high fire acres. Sediment delivery and riparian habitat loss are generally positively related to the aforementioned route related variables, and generally but not universally are indicative of reduced aquatic habitat capability (e.g., Furniss et al. 1991, Dunham and Rieman 1999, Forman et al. 2003). Habitat quality within watersheds is variable, in part because of other land use activities and because the ultimate effects of travel routes also depend on location of those routes, geology and soils of the watershed, maintenance of the routes, and other factors (Furniss et al. 1991).

There is a distinction between travel route effects and the effects of various modes of travel. In some cases, the actual use, or mode of travel is inconsequential. Rather, it is the facility (road or trail) that has the potential to impact aquatic habitat and biota. Often, roads have more impacts than trails because of their wider prisms, larger cut-and-fill slopes and more extensive ditch routing systems. However, motorized and mixed use trails also hold potential to disturb soils and increase erosion. Sediment production from All Terrain Vehicle (ATV) use on 10 non-system route segments was reported to be six times higher than sediment production on 21 forest road segments in the Upper South Platte River watershed in Colorado (Welsh 2008). Deluca et al. (1998) found horses consistently produced more sediment than hikers or llamas, and horses have also been reported to produce higher sediment yields than hikers, mountain bikers, and motorcycles on similar trails (Wilson and Seney 1994). Although all transportation routes and uses (motorized and nonmotorized) can produce sediment, Best Management Practices (BMP), facility improvements, and scheduled maintenance can minimize potential for adverse effects to aquatic systems on all routes.

Influences of Transportation Systems on Aquatic Habitat and Biota

Potential effects of travel routes and various modes of travel on aquatic habitat and species are combined under one primary aquatics issue (effects to aquatic habitat and biota). However, the issue is segregated into various components of concern. Those components are: 1) Travel route impacts on stream channel form and function, including sediment delivery to streams and subsequent effects on aquatic habitat and biota; 2) Travel route impacts on riparian ecosystems; 3) Travel route impacts on habitat fragmentation; and 4) Travel route impacts on exploitation and modification of recreational and native fisheries.

Stream Channel Form and Function

Travel routes may affect stream channel form and function, including sediment delivery to streams and subsequent effects on aquatic habitat and biota. Roads and trails constructed for Forest travel disturb soils and increase the potential for erosion and sediment transport and deposition in streams (Furniss et al. 1991, Forman et al. 2003). Likewise, motorized and non-motorized uses (motorcycles, ATVs, horses, mountain bikes, and hikers) can further disturb soils and increase potential for erosion and sediment delivery. Sediment concerns are generally highest when roads and trails are not sufficiently drained (Furniss et al. 1991). Water and sediment can concentrate on roads and trails during spring snowmelt runoff or periods of intense rain and be delivered to streams. With sufficient drainage, water and sediment from upland segments of trails and roads can be diverted off trails or roads, filtered through forest vegetation, and not routed to streams (Furniss et al. 1991). As such, upland segments of roads and trails can generally be designed to mitigate sediment delivery concerns. One primary concern is erosion and sediment delivery from road and trail segments near stream crossings (Furniss et al. 1991, Forman et al. 2003).

Sediment entering stream channels can affect channel shape and form, stream substrates, and the structure of fish and amphibian habitats (Everest et al. 1987, Hicks et al. 1991, Waters 1995, McIntosh et al. 2000, Werner et al. 2004). To evaluate the effects travel routes and modes of travel have on sediment and aquatic habitats, one must project changes in erosion and sediment delivery against the structural framework of the channel. Streams are not similar in terms of their inherent sensitivity to changes in streamflow or sediment discharge, their inherent stability, or their ability to recover from sediment related change (Rosgen 1996, Hogan and Ward 1997). Furthermore, stream habitats described in terms of pools, riffles and spawning gravel are geomorphic entities that are selectively influenced or controlled by channel type, streamflows and sediment inputs (Rosgen 1996, Hogan and Ward 1997).

Pools are the result of local scour or impoundment induced by structural controls (e.g., boulders, large woody debris) in the channel or streambank (Rosgen 1996, Hogan and Ward 1997). Pools are areas of higher velocity during peak flows, but at low flows their depth creates a depositional environment for fine sediment. Increased sediment from roads and trails can influence the amount and quality of pool habitat if sediment increases are sufficient to alter channel morphology by filling in pools and increase width/depth ratios. For lower-gradient, more sensitive channel types with moderate sensitivity to increased sediment, excessive sediment loading can reduce maximum pool depth and residual pool volume thereby reducing the quality and availability of pool habitats important to fish and amphibians (Rosgen 1996, Hogan and Ward 1997, Werner 2004).

Riparian Ecosystems

Forest roads and trails constructed for travel activities within riparian corridors can alter or remove

riparian vegetative communities, with direct and indirect impacts on riparian and stream ecosystems (Furniss et al. 1991, Forman 2003). Riparian vegetation modification may directly remove security cover and reduce stream shading, resulting in increased water temperatures in summer and colder temperatures in winter. Removal of riparian vegetation may indirectly result in reduced streambank stability and sediment filtering capacity of vegetation, both of which can result in increased sediment delivery rates with effects as described above (e.g., Thornton et al. 1997). Riparian vegetation modification may also change stream channel form and function, and may modify aquatic food webs and nutrient cycles. Potential for changes in channel form and function is also related to the inherent stability of various channel types. Removal of riparian vegetation in amphibian breeding, incubating and rearing habitats may reduce its suitability for those functions and may increase vulnerability of the amphibians to predation (Maxell 2000, Forman et al. 2003).

Habitat Fragmentation

Roads and trails can fragment aquatic habitats where stream crossings create barriers for upstream movement of aquatic species (Furniss et al. 1991). This typically occurs where culverts and fords are not designed to allow for upstream fish and amphibian passage. Crossings with culverts can be barriers usually because of outfall barriers, excessive velocities, insufficient water depths, disorienting turbulent flow patterns, lack of resting pools below the barrier or a combination of these conditions. Aquatic organisms upstream of the barrier are then geographically and hence, reproductively isolated from the downstream population. Habitat fragmentation can reduce viability of fish populations by a variety of stochastic, deterministic and genetic mechanisms (e.g., Rieman et al. 1993). Based on field reviews and recent culvert replacement information, no existing, perennial stream/route crossings on the District are known to hinder aquatic organism passage.

Exploitation of Recreational and Native Fisheries

Travel routes that lead to popular fishing destinations may have an indirect effect on fish populations by over-exploiting fish stocks that are vulnerable to high angling pressure. Over-exploitation of fish stocks may result in population declines (e.g., Rieman and McIntyre 1993). Population declines in small fish populations may render them at higher risk of extinction (Rieman et al. 1993).

The Montana Department of Fish, Wildlife and Parks (MTFWP) manage fish and wildlife populations throughout Montana and South Dakota Game, Fish and Parks manage these resources in the state of South Dakota. Lake management plans have been developed for most lakes and reservoirs throughout the Custer National Forest in both states. These plans address recruitment potential and angling pressure effects. Where natural recruitment does not meet population goals, supplemental stocking is generally prescribed. Lake management plans and special regulations effectively mitigate the over-exploitation component of the aquatics issue. Thus, this component is dismissed from further detailed analysis.

Transportation Systems Analysis

Roads and trails were evaluated for impacts to water quality or natural channel processes (Water Quality Section). This analysis evaluates the subsequent potential impacts to aquatic habitat and biota in relation to those impacts. An in depth review of effects of roads and trails on fish and amphibians, and their habitats is provided by Furniss et al. (1991), Maxell (2000), and Forman et al. (2003).

The potential for routes to impact water quality was evaluated based on the number of perennial stream crossings by FS routes, total perennial stream miles, intermittent stream crossings by FS routes, TMDL listed streams, and exceptionally high fire acres. Values obtained from the analysis

provide an index of potential water quality impact, or route risk to water quality. The route value is not intended to predict an absolute value or level of impact to water quality, aquatic systems, or species, rather a hierarchical approach to prioritizing impact potential by category: Low, Moderate, and High Risk. A summary of selected natural characteristics, human activities, and aquatic species presence are provided in Table 3-26 by 6 HUC (hydrologic unit code) watersheds. Quantifiable Forest Service activities include past timber harvest, fire (prescribed fire and wildfire), and existing transportation system attributes. Potential effects to fish and amphibians and their habitats related to proposed actions are evaluated under indirect effects by action alternative.

Table 3-26. Summary of Watershed Characteristics, Watershed Scale Influences, Fisheries Resources, and Sensitive Amphibians on the Sioux Ranger District.

Watershed #	Watershed Name	Watershed Acres	Percent Watershed Forest Service	FS Perennial Stream Miles	Harvest Acres	Fire Acres	FS Road Miles	Total Stream Crossings	FS Intermittent Crossings	FS Perennial Crossings	Watershed (Road) Risk	Fisheries Resource[17]	Sensitive Amphibians**[18]
101102010704	Upper Tie Creek	23,220	35	3	2,099	6,854	24	82	18	7	HIGH	ER, NNS	NLF
101102010705	Lower Tie Creek	22,935	11	1	350	3,369	7	51	8	5	HIGH	--	--
101102020505	Speelmon Creek	17,718	63	6	2,350	10,355	36	99	44	4	HIGH	--	NLF
101303010104	Upper Crooked Creek	18,046	16	<1	0	2	10	35	3	3	HIGH	--	--
101102010802	Plum Creek	12,819	70	1	1,943	10,685	33	43	24	2	HIGH	--	NLF, PSF
101303020405	Bull Creek- Campbell Creek	13,471	48	2	0	1,464	15	26	7	1	HIGH	ER, NNS	NLF
101303020406	Dry Creek	10,396	42	2	0	60	14	28	7	1	HIGH	--	NLF
101102010803	Slick Creek	37,776	31	1	1,709	12,052	34	109	45	1	HIGH	--	--
101102010801	Little Missouri River-K Bar Creek[19]	43,315	4	0	12	2,284	6	84	8	0	HIGH	--	NLF
101102011004	Russell Creek	16,090	41	0	5,215	2,425	30	107	44	0	HIGH	--	NLF, PSF
101102010706	Little Missouri River-Waterhole Creek[19]	41,162	9	0	9	4,402	15	76	7	0	HIGH	--	NLF
101102010701	Little Missouri River-Sand Creek[19]	24,861	4	0	0	61	2	37	0	0	MOD	--	--
101303050406	Gap Creek	24,693	11	4	5	1	9	43	1	0	MOD	--	--
101303010105	Middle Crooked Creek	14,933	15	0	0	0	7	22	5	0	MOD	--	NLF
101102011005	Little Beaver Creek-Terrell Creek	35,999	8	0	698	2	12	125	11	0	MOD	--	--

[17] Fisheries Resources: ER - Exotic Recreational Species, NNS - Native Nonsensitive Species.
[18] Sensitive Amphibians Species: NLF – Northern Leopard Frog, PSF- Plains Spadefoot, GPT – Great Plains Toad.
[19] TMDL listed stream or tributary to

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101303020408	Bull Creek- Hay Creek	12,219	8	0	0	2	3	17	1	0	MOD	--	--
101303020403	Bull Creek- Cottonwood Creek	13,150	4	0	0	69	2	38	1	0	MOD	--	--
101303010106	Petes Creek	13,302	12	0	0	0	5	20	1	0	MOD	--	--
101102020510	Boxelder Creek-Wood Gulch	21,619	7	0	0	19	8	39	4	0	MOD	--	--
101102020506	Boxelder Creek-Little Ramme Creek	32,305	12	0	30	4,622	9	63	5	0	MOD	--	--
101303020504	South Fork Grand River-Prairie Dog Creek	17,776	12	3	0	0	3	6	0	0	MOD	--	--
101102011006	HS Creek	14,229	18	0	752	107	10	60	7	0	MOD	--	--
101102011003	Little Beaver Creek-Dugan Draw	23,310	7	0	1,602	6	10	82	18	0	MOD	--	NLF
101102020508	Boxelder Creek-Devils Canyon	15,205	24	0	0	3,387	9	30	7	0	MOD	--	--
101102011002	Headwaters Little Beaver Creek	22,987	20	0	1,165	51	10	80	16	0	MOD	--	NLF
101303020304	Middle Jones Creek	13,720	19	0	0	924	7	23	1	0	MOD	--	NLF
101303020505	South Fork Grand River-Fisher Creek	13,257	26	3	0	0	4	16	0	0	MOD	--	--
101303020501	South Fork Grand River- Sand Creek	11,013	13	0	0	0	3	4	0	0	MOD	--	--
101102020509	Snow Creek	12,658	89	0	494	10,227	38	87	56	0	MOD	ER	--
101102020504	Boxelder Creek-Belltower	30,302	2	0	0	225	0	88	0	0	LOW	--	--
101303050109	Little Cowboy Creek- North Fork Moreau River	14,958	2	0	0	0	0	10	0	0	LOW	--	--
101303020305	Lower Jones Creek	17,148	3	0	0	0	0	25	0	0	LOW	--	--
101303050101	Chalk Butte Draw- North Fork Moreau River	17,844	2	0	0	0	0	57	0	0	LOW	--	--
101303050106	Red Butte Creek	12,328	13	0	0	0	1	7	0	0	LOW	--	--
101303020206	Sioux Creek	18,077	35	0	0	2	12	21	2	0	LOW	--	--

Table 3-26. Summary of Watershed Characteristics, Watershed Scale Influences, Fisheries Resources, and Sensitive Amphibians on the Sioux Ranger District.

Watershed #	Watershed Name	Watershed Acres	Percent Watershed Forest Service	FS Perennial Stream Miles	Harvest Acres	Fire Acres	FS Road Miles	Total Stream Crossings	FS Intermittent Crossings	FS Perennial Crossings	Watershed (Road) Risk	Fisheries Resource[17]	Sensitive Amphibians**[18]
101102020509	Snow Creek	12,658	89	0	494	10,227	38	87	56	0	LOW	ER	--
101303040104	Ash Coulee	21,058	11	0	0	402	9	27	1	0	LOW	--	--
101303040401	North Sand Creek- Sand Creek	20,166	17	0	0	117	6	42	9	0	LOW	--	--
101102020403	Buffalo Creek	29,301	5	0	0	0	6	95	5	0	LOW	--	--
101303020205	Lower Unnamed Tributary to Clarks Fork Creek	18,336	12	0	0	0	1	11	0	0	LOW	--	--
101303050202	Spring Creek	19,909	13	0	0	20	4	24	1	0	LOW	--	--
101102020507	Harmon Creek	14,636	14	0	243	0	7	39	10	0	LOW	ER	NLF
101303020407	Jack Creek	11,479	3	0	0	20	0	15	0	0	LOW	--	--
101102020503	Big Ramme Creek	17,740	6	0	200	17	4	51	8	0	LOW	--	--
101303050401	Jones Creek- Rabbit Creek	17,037	65	0	0	464	27	32	8	0	LOW	ER, NNS	NLF
101303050601	Headwaters of Antelope Creek	19,957	33	0	0	1	19	23	7	0	LOW	--	--
100902090601	Upper Spring Creek	23,702	19	0	0	342	12	75	11	0	LOW	--	--
101102020602	Spring Creek	23,745	13	0	0	1,557	6	61	2	0	LOW	--	--
101303020601	Headwaters of Big Nasty Creek	13,438	7	0	0	170	4	39	1	0	LOW	--	--
101303050403	Point Creek	17,553	13	0	0	5	3	25	0	0	LOW	--	--
101303020204	East Branch Unnamed Tributary to Clarks Fork Creek	16,621	8	0	0	539	1	21	0	0	LOW	--	--
101102020401	Fresh Water Draw	14,827	5	0	0	10	1	37	0	0	LOW	--	--
101303050207	Sheep Creek	16,289	10	0	0	0	1	6	0	0	LOW	--	--
101303050205	Ash Creek	10,150	10	0	0	1	0	10	0	0	LOW	--	--
SUM		1,030,788	NA	27	18,876	7,7322	500	2,373	414	24	H-11 M-18 L-24	NA	NA

3.4.1.6 Environmental Consequences – Fisheries and Aquatic

Effects Common to All Action Alternatives – Fisheries and Aquatics

Direct Effects
Direct effects are those resulting in the direct mortality of fish or amphibians, or the destruction of fish or amphibian habitat. Direct effects occur at the same time and place as the proposed activity. Relative to transportation systems, only the installation, reconstruction or removal of stream crossing structures, and route construction or decommissioning could result in direct effects to fish and amphibians. The proposed actions in the project area do not include any route related construction activities that would result in direct effects to aquatic habitats or biota. Therefore, no direct effects are evaluated in this analysis.

Indirect Effects
Indirect effects occur at a later time or distance from the proposed action. Indirect effects are those resulting in changes to fish and amphibian habitat, individuals, or populations as a result of changes in the aquatic environment. Detrimental effects to aquatic species could result from increased sediment levels entering stream channels, wetlands, springs or impoundments, changes in streambank stability due to near-bank activities, and modification in water temperature regimes induced by a reduction in riparian vegetation.

Routes with proposed actions are evaluated for indirect effects to fisheries and amphibians. A summary of route related actions and the potential for these actions to reduce or not reduce the risk of impacting water quality can be found in the Water Quality Section, *Related Route Risk By Action* (Table 3-22). In general terms, the only actions that would tend to increase risk are designating non-system roads or trails (routes) for public or administrative motorized use. These actions, when compared to the No Action Alternative, add additional route miles to the landscape, and do not reduce the risk of indirect and cumulative effects to aquatic ecosystems. However, these routes already exist on the landscape and are currently available for public use. Therefore, there would be no change in risk when comparing non-system route designation actions to the existing condition. All other proposed actions would tend to decrease risk or not change risk for comparisons to both the No Action Alternative and the existing condition. Decreased risk actions include: 1) converting system roads to administrative use, and 2) not designating system and non-system routes.

Effects by Alternative – Fisheries and Aquatics

Indirect effects to fisheries resources and sensitive amphibians, for moderate and high risk watersheds are displayed in Table 3-27. Low risk watersheds are not evaluated for indirect effects to aquatic resources because they either do not contain perennial streams, or roads on National Forest System land, or both.

Alternative A - Indirect Effects
With the exception of the Little Missouri River-K Bar Creek watershed, all of the fisheries resource and/or sensitive amphibian occupied watersheds (referred to hereafter as *aquatic resource watersheds*) have a net increase in risk under Alternative A (Table 3-27). The increased risk to aquatic resource watersheds is attributed to the addition of 35.9 miles of non-system roads to the transportation system

and only 4 miles of route related actions that reduce risk. Therefore, there is a net increase in risk of 31.9 miles under Alternative A.

Table 3-27. Summary of Route Miles by Risk for Moderate and High Risk Watersheds and for Fisheries Resource and Sensitive Amphibian Watersheds When Compared to the No Action Alternative

Watershed Name	Alternative A		Alternative B	
	Increase Risk	Decrease Risk	Increase Risk	Decrease Risk
Boxelder Creek-Devils Canyon	0.3	0.8	0.0	2.1
Boxelder Creek-Little Ramme Creek	0.0	0.0	0.0	4.8
Boxelder Creek-Wood Gulch	0.4	0.0	0.0	3.9
Bull Creek- Campbell Creek[A,F]	2.3	2.2	1.1	4.8
Bull Creek- Cottonwood Creek	1.5	0.0	1.5	0.1
Bull Creek- Hay Creek	0.5	0.0	0.5	0.0
Dry Creek[A]	3.2	0.0	2.7	0.2
Gap Creek	4.0	1.4	3.4	1.5
Headwaters Little Beaver Creek[A]	1.8	0.0	1.8	1.7
HS Creek	2.6	0.4	3.5	4.5
Little Beaver Creek-Dugan Draw[A]	0.7	0.0	0.0	1.3
Little Beaver Creek-Terrell Creek	1.1	2.4	1.3	7.4
Little Missouri River-K Bar Creek[A]	0.0	0.0	0.0	1.6
Little Missouri River-Sand Creek	0.0	0.0	0.0	0.0
Little Missouri River-Waterhole Creek[A]	1.9	0.9	0.2	1.3
Lower Tie Creek	0.0	0.2	0.0	4.3
Middle Crooked Creek[A]	1.4	0.0	1.1	0.2
Middle Jones Creek[A]	0.4	0.1	0.2	3.9
Petes Creek	1.1	1.0	1.1	1.9
Plum Creek[A]	3.0	0.0	2.7	8.1
Russell Creek[A]	11.1	0.0	4.2	5.0
Slick Creek	9.1	0.0	4.7	11.7
Snow Creek[F]	2.8	0.8	0.6	10.3
South Fork Grand River- Fisher Creek	1.6	1.6	1.6	1.6
South Fork Grand River- Prairie Dog Creek	0.5	1.6	0.5	2.1
South Fork Grand River- Sand Creek	0.0	2.4	0.0	2.4
Speelmon Creek[A]	4.3	0.0	2.1	8.8
Upper Crooked Creek	3.6	0.7	1.9	0.7
Upper Tie Creek[A,F]	3.0	0.0	0.5	8.6
Total Miles by Action Risk	**62.2**	**16.6**	**37.2**	**102.5**
Total Miles for Fisheries Resource and Sensitive Amphibian Watersheds	**35.9**	**4**	**17.2**	**55.8**

[A] Sensitive Amphibian Watershed
[F] Fisheries Resource Watershed

Alternative B - Indirect Effects

Alternative B proposes actions that result in a net decrease in risk in 10 of the 13 moderate and high risk aquatic resource watersheds (Table 3-27). The net decreased risk is attributed to 55.8 miles of route related actions that reduce risk and 17.2 that increase risk. The 3 aquatic resource watersheds

that have a net increase in risk include the Dry Creek, Headwaters Little Beaver Creek, and the Middle Crooked Creek watersheds. All of these 3 watersheds harbor sensitive amphibian species. However, the net increased risk of 3.5 total miles for these watersheds is related to 3.4 miles of actions that designate non-system routes to administrative use, and only 0.1 miles related to designating non-system routes to public use routes. Therefore, although these routes will remain on the landscape, all but 0.1 miles of the increased route risk miles will receive low levels of use and their designation should have negligible to nonexistent indirect effects to sensitive amphibian species.

No Action Alternative
See discussion of No Action Alternative in the cumulative effects section below.

Cumulative Effects
Cumulative effects are defined as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (CFR 40 1508.7). Past, present, and reasonably foreseeable events and activities that have and will likely continue to incrementally impact aquatic species and their habitats, in the 53 watersheds (on and off CNF) of the project area, include: wildfire/prescribed fire, mining, grazing, timber harvest, transportation networks**,** and recreation (camping, fishing, hunting, etc.).

Effects Determination by Alternative
No Federally listed threatened or endangered fish or amphibian species, designated critical habitat, fish or amphibian species proposed for Federal listing, or proposed critical habitat occur in the project area. Forest Service sensitive fish and amphibian species considered in this analysis include the Northern Redbelly Dace, Sturgeon Chub, Great Plains Toad, Northern Leopard Frog, and Plains Spadefoot. The table below summarizes the potential effects to aquatic species in the project area.

Table 3-28. Determination of potential impacts to sensitive fish and amphibian species and recreational fisheries resources

Aquatic Species Determination [20]			
Alternative	**Alternative A**	**Alternative B**	**No Action Alternative**
Northern Redbelly Dace *Phoxinus eos*	NI	NI	NI
Sturgeon Chub *Macrhybopsis gelida*	NI	NI	NI
Great Plains Toad *Bufo cognatus*	NI	NI	NI
Northern Leopard Frog *Rana pipiens*	MIIH	BI	MIIH
Plains Spadefoot *Spea bombifron*	MIIH	BI	MIIH

[20] **NI** = No Impact; **MIIH =** May Impact Individuals or Habitat but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species; **WIFV** = Likely to result in a trend to Federal listing or loss of viability; and **BI** = Beneficial impact.

Table 3-28. Determination of potential impacts to sensitive fish and amphibian species and recreational fisheries resources

Aquatic Species Determination [20]			
Alternative	**Alternative A**	**Alternative B**	**No Action Alternative**
Recreational Fish Species	MIIH	BI	MIIH

Cumulative Effects - Effects of All Routes Including Those Without Proposed Actions

Existing condition allows for motorized use of all routes on the Forest landscape unless signed otherwise, including system and non-system routes. Therefore, if the existing condition were to continue into the foreseeable future there would be no reduction in risk to aquatic species and habitat, and any existing impacts and risks in the 16 aquatic resource occupied watersheds (Table 3-26) would be expected to continue until route maintenance occurred. All alternatives, including the No Action Alternative, include routes without proposed actions. Under the action alternatives, actions would occur by default for these routes, whereby some system routes would be designated and some non-system routes would not be designated without further action. When these default actions are compared against the existing condition there is a marked difference among the action alternatives in the percent decrease in cumulative risk to water quality and consequently to aquatic biota and their habitats. Alternative B has a 40% decrease in risk to water quality in relation to existing condition, while Alternative A would have a 7% decrease, and the No Action Alternative a 21% decrease (Table 3-25).

Action Alternatives

The cumulative effects of the individual action alternatives (A and B) when combined with past activities and natural processes, would result in minimal negative impacts to aquatic biota, including sensitive aquatic species, and their habitats throughout the project area. However, Alternative B provides greater protection for aquatic resources than Alternative A (net decrease in risk of 55.8 miles versus a net increase in risk of 31.9 miles; Table 3-27), and both action alternatives designate substantially less miles than the No Action Alternative.

No Action Alternative

Thirteen of 29 moderate and high risk watersheds and 3 of the 24 low risk watersheds on the Sioux District harbor fisheries and/or sensitive amphibian resources (Table 3-26). The No Action Alternative designates the most system routes without any additional actions to reduce risk to aquatic resources (404.3 miles; Table 3-25 Water Quality Section). Sedimentation produced from routes in these watersheds would likely impact aquatic habitat and localized fish and amphibian populations across the District.

Effects Common to All Alternatives at the Watersheds Scale

The cumulative effects of the individual alternatives when combined with past activities and natural processes would result in negligible negative impacts to aquatic biota, including sensitive aquatic species, and their habitats throughout the project area.

At the watershed scale, proposed actions are not considered to be substantial enough to cause measurable changes in water quality, quantity or channel processes under any action alternative. Consequently, cumulative effects to aquatic species and their habitats are not anticipated to result from any of the action alternatives. However, various actions proposed under the action alternatives

have the potential to reduce or not reduce the risk of impacts to aquatic habitats and species. Alternative B includes the most route mile actions that would result in beneficial impacts (reduce risk) to aquatic systems.

3.4.1.7 Conclusion - Fisheries and Aquatics

Proposed actions with site specific effects that potentially increase risk of adverse impacts to aquatic habitat and species are negligible under Alternative B. Compliance relative to the Record of Decision for this EIS, only pertains to those routes with proposed actions. Under Alternative B, actions related to moderate and high risk routes are expected to benefit or maintain aquatic habitats, and fish and amphibian species. Only minimal indirect effects to sensitive aquatic species are anticipated under Alternative A and the No Action Alternative. Therefore, the Sioux District is anticipated to move towards compliance with Forest Plan standards and state and federal water quality regulations under any action alternative. However, Alternative B initiates the most rapid rate of recovery and compliance should be achieved in the shortest timeframe under this alternative.

Appendix D includes opportunities to reduce impacts to water quality, aquatic habitat and biota where there are: 1) site specific impacts from existing routes not associated with the proposed action, and 2) proposed actions with potential to improve conditions but do not eliminate impacts. However, construction, reconstruction, maintenance and decommissioning proposals will require future and separate NEPA decisions.

Relative to sensitive fish and amphibian species, none of the alternatives are likely to result in a trend toward Federal listing or loss of viability. The following table summarizes the effects determinations for sensitive aquatic species and aquatic species of concern.

Table 3-29. Fisheries and Aquatics Effects Summary

Indicator	Alt. A	Alt. B	No Action
Sensitive Fish and Amphibian Species			
Number of Species with No Impact or Beneficial Impacts	3	5	3
Number of Species with potential to effect individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species	2	0	2
Number of Species likely to result in a trend to Federal listing or loss of viability	0	0	0
Recreational Fish Species			
Alternatives with No Impact or Beneficial Impact	No	Yes	No
Alternatives with potential to effect individuals or Habitat but will not Likely Contribute to a Loss of Viability to the Population or Species	Yes	No	Yes

3.4.2 SOILS

Overview of Changes from the Draft to the Final EIS

- Changes involved additional narrative to clarify analysis results and address comments received on the DEIS.
- Changes made reflect minor mileage changes to Alternative B.

3.4.2.1 Introduction

Adding routes to the system and designating motorized uses on roads and trails could increase soil compaction and soil erosion leading to a decrease in soil productivity, and soil quality.

3.4.2.2 Affected Environment – Soils

The project area is located in southeast Montana and northwest South Dakota on the Sioux Ranger District. The Sioux Ranger District falls in the Northwestern Great Plains Section of the Great Plains-Palouse Dry Steppe province. The area includes gently sloping to rolling, moderately dissected shale plains. There are some steep, flat topped buttes, badland like topography, and eroded escarpments. The Soil Survey of Carter County, Montana (USDA NRCS, 2003) and The Soil Survey of Harding County, South Dakota (USDA SCS, 1988) were used to determine erosion hazards ratings, suitability of the landscape for natural surfaced roads, and describe landforms. Soil survey information can be downloaded from the soil data mart on the world wide web at http://soildatamart.nrcs.usda.gov/. (Montana soil survey information is also available at (http://nris.state.mt.us/nrcs/soils/datapage.html or http://www.mt.nrcs.usda.gov/soils/mtsoils/official.html). Soil survey information reports can also be accessed directly from the web using Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/).

Erosion risk ratings are provided from the county soil survey data. They are estimates of the potential for erosion after soil disturbance and are based on the inherent soil resistance to erosion and the erosive forces acting upon them. Slight hazard implies little to no potential for erosion; moderate hazard indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion control measures are needed; and a severe hazard implies that considerable erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion control measures are needed. Of the current Forest Service routes approximately 1% are classified in the slight hazard rating, 40% in moderate, 59% in severe, and a trace amount are not rated.

The ratings for the suitability for natural surface roads interpretation indicate the suitability for using the natural surface of the soil for roads. The ratings are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified Classification of the soil, depth to a water table, ponding, flooding, and the hazard of soil slippage. The soils are described as well suited, moderately suited, or poorly suited to this use. Well suited indicates the soil has features that are favorable for the specified kind of roads and has no limitations. Good performance can be expected, and little or no maintenance is needed. Moderately suited indicates the soil has features that are moderately favorable for the specified kind of route. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. Poorly suited indicate the soil has one or more properties that are unfavorable for the specified kind of route. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. Not rated is used for those map units that do

not have soil components that can be rated for the particular use. For example, rock outcrop would be not rated. Of the current Forest Service routes approximately <1% are classified as well-suited for using the natural surface of the soil for roads, 44% are moderately suited, 56% are poorly suited, and a trace amount are not rated.

Soil Map units may contain one or more ratings based on soil components of the map unit. Since the locations of the different components are not mapped, the map unit ratings depict the most severe rating for the soils within the map unit. For example, if one soil component has a moderate rating while another soil component in the same map unit has a slight rating, the map unit was given a moderate rating. In some map units the most severe or limiting rating may comprise the lowest percentage of the map unit, for example in Carter County, on the Sioux District, the Busby-Blacksheep-Twilight fine sandy loams, 8 to 25 percent slopes, map unit 170D, is rated as having severe erosion hazard and is poorly suited to native surface roads, but only 15% of the map unit actually has that rating, while 70% of the unit has a more favorable rating. These ratings do not mean that management (i.e. roads and trails) should not occur or exist on soils with a specific rating but rather what types of mitigation and management are needed to minimize the impact, and are used as a comparison in the analysis of effects.

The interpretations for the suitability for natural surface roads and trails are very similar to the erosion hazard rating. Discussion will focus on the erosion hazard as that has the most direct effect on soil productivity. Data presented show the miles of roads and trails in soil map units that have at least one soil component that has a specific hazard rating, and depicts the most limiting rating for the soil map unit. These interpretations are a guide to how soils identified in these map units might respond to management. In most cases, on site investigation is needed to accurately identify soils and hazard ratings. It is highly likely that the miles of routes on high erosion hazard soils is less than that identified.

Regulatory Framework

Forest and Rangeland Renewable Resource Planning Act of 1974 and National Forest Management Act of 1976

In response to requirements set forth in these two Acts, final rules on National Forest System Land and Resource Management Planning established specific minimum management requirements to be met in accomplishing the goals and objectives for National Forest System lands. These requirements were intended to guide the development, analysis, approval, implementation, monitoring, and evaluation of forest plans. Requirements specific to soils are found in 36 CFR 219.27, volume 47, #190, 09/30/82 (Federal Register 1982) as follows:

> (a) Resource protection. All management prescriptions shall:
>
> > (1) Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land;
> > (2) Consistent with the relative resource values involved, minimize serious or long-lasting hazards from flood, wind, wildfire, erosion.
>
> (f) Soil and Water Conservation.
>
> > Conservation of soil and water resources involves the analysis, protection, enhancement, treatment, and evaluation of soil and water resources and their responses

under management and shall be guided by instructions in official technical handbooks. These handbooks must show specific ways to avoid or mitigate damage, and maintain or enhance productivity on specific sites. These handbooks may be regional in scope or, where feasible, specific to physiographic or climatic provinces.

Multiple Use Sustained Yield Act of 1960

It is the policy of the Congress that the national forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes (16 USC 2 (I); Sec 528). The terms multiple use and sustained yield are defined as:

> Multiple use: The management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.
>
> Sustained yield: The achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land.

Regional Direction

The most recent soil quality standards were adopted by the Northern Region Regional Office effective November 12, 1999. (Forest Service Manual (FSM) 2500 - WATERSHED AND AIR MANAGEMENT, R-1 SUPPLEMENT 2500-99-1). The objectives are: To meet direction in the National Forest Management Act of 1976 and other legal mandates. To manage National Forest System lands under ecosystem management principles without permanent impairment of land productivity and to maintain or improve soil quality.

Custer National Forest Land and Resources Management Plan

Management goals for soil, water and riparian resources are identified in the Forest Plan under Chapter II - Forest Wide Management Direction and Chapter III – Management Area Direction.

The Forest Plan goal for watershed management is to:

> "[E]nsure that soil productivity is maintained and that water quality is maintained at a level which meets or exceeds state water quality standards." (page 4)

Forest Plan objectives for soil and water resources are:

> "National Forest System lands will be managed so that the soil and watershed conditions are in a desirable condition and will remain in that condition for the foreseeable future. Soil and water quality objectives are designed to assure that these resources meet State water quality objectives and BMP's (Best Management Practices) are incorporated to assure this." (page 5)

Soil Productivity

The Region 1 soil quality standards apply to lands where vegetation and water resource management are the principal objectives, that is, timber sales, grazing pastures or allotments, wildlife habitat, and riparian areas (USDA Forest Service, 1999). Roads and trails are a "dedicated use" for lands that comprise the route prism and right of way. The affected land is managed for transportation uses and is not managed for vegetation production or water resources. Therefore, the R1 soil quality standards are not relevant to this analysis. However, the decision made in this project will affect the amount of land committed to dedicated use. By adding routes to the system and designating or not designating a route for specific use might have an impact on other projects and that project's ability to meet Regional policy regarding soil quality.

Roads and trails do have an impact on soil productivity, especially when users veer off the established travelway to bypass wet or muddy sections of the road or trail, bypass switchbacks, and create shortcuts. Non-system routes eliminates the protective vegetative cover, compacts the exposed soil surface, generates and concentrates runoff, and causes accelerated soil erosion

Some impacts to soils and soil productivity are normally accepted as a necessary cost to provide access to public lands, as long as most impacts are limited to the immediate area of disturbance, the road or trail can be maintained at a reasonable cost, and permits use as long as it's needed. Implementing Best Management Practices (BMPs) are intended to meet these objectives. There are some non-system roads and trails that are not on the transportation system, as well as those that are on the system that are causing soil impacts beyond what is normally accepted because they fail to meet the standards of BMPs. Some of the reasons they may not meet standards is they are improperly located, do not have adequate drainage to prevent accelerated erosion and deposition, and are difficult to maintain for long term use. Often this leads to pioneering new routes or trails to get around sections that are difficult to traverse. This leads to more soil that is exposed, compacted, and eroded. The end result is an increasing amount of soil disturbance and associated impacts, both to the road and off-site.

Soil Crusts

Information on distribution and extent of soil crusts in the area is generally lacking. There are no references to soil crusts in the Soil Surveys of the project area. Soil crusts are commonly found in more arid regions where vegetative cover is generally sparse, typically in semiarid and arid environments throughout the world. Areas in the United States where crusts are a prominent feature of the landscape include the Great Basin, Colorado Plateau, Sonoran Desert, and the inner Columbia Basin. (http://www.soilcrust.org/crust101.htm). Because of the environmental factors soil crusts are probably very limited in the Sioux Ranger Districts.

Soil crusts most likely do not occur on existing roads and trails due to type and level of existing disturbance. Off-road travel by motor vehicle is currently prohibited except for dispersed camping within 300 feet of the road. The majority of dispersed campsites currently have some level of disturbance; soil crusts are probably not very prevalent in these areas. These dispersed campsites are most likely not located in the drier open areas in the area but are more generally found in areas with higher vegetative cover, some shade, and at higher elevations. (Also, see the section on vegetation for additional discussion on dispersed campsite availability.) Generally, soil crusts will not be affected by designating roads and trails, since no new construction is being considered at this time.

3.4.2.3 Environmental Consequences - Soils

Direct and Indirect Effects

Effects Common to All Alternatives
Soil effects resulting from development and use of forest roads and trails have been fairly well documented (Gucinski et al 2001, Wilson and Seney, 1994, Weaver and Dale, 1978). Effects from roads and trails can vary by standard and condition.

Soil effects from roads and trails include removal of vegetative cover, compaction, degradation of soil structure, decreased infiltration and water holding capacity, reduction in soil organic material, accelerated erosion, and potential mass failure including landslides or slumps. These types of impacts can occur on motorized or non-motorized roads and trails. Erosion tends to be least on roads and trails with flat grades and more severe on roads and trails with steeper gradients.

Soil crusts probably do exist in the project area though the extent and distribution are not well known. There might be impacts to soil crusts mainly due to cross-country travel. Cross-country travel by stock, foot and motorized travel could have a negative impact on soil crusts where they exist.

For roads identified as Administrative use only, the less use they get the more vegetation will become established and potential erosion reduced. Some roads may be used consistently throughout the year while others may be used periodically, or maybe not at all some years. This should lead to an overall reduction in compaction, runoff, potential erosion and sediment generation from these roads.

Effects Common to All Action Alternatives
Effects on soils from routes vary by standard and condition. The areas that routes and their associated disturbance occupy are removed from the productive soil base. Runoff from routes affects soil productivity by eroding soil from and adjacent to the route, and by depositing sediment on areas below the route. These effects are slight on well maintained, high standard routes. Other routes have more serious effects that tend to be localized on route segments where surface drainage is inadequate.

Routes that are not designated for public motorized use and for which no administrative use has been identified may be considered candidates for decommissioning or rehabilitation. These routes, with the exclusion of motorized traffic, should begin to revegetate and over time, continue to have improved soil productivity and eventually be brought back to the productive soil base.

Roads and trails impact and disrupt the natural function of the soil resource, and are long-term commitments to that specific use. This is considered an irretrievable commitment of the soil resource for as long as the road or trail exists. Soil function and productivity on roads and trails can be recovered and the Forest Service has considerable experience in rehabilitating old roads with fairly successful results (Kolka and Smidt, 2004).

An indirect effect from the action alternatives would take place as roads and trails identified as system routes (including conversion from non-system routes) are reconstructed, relocated, or maintained to meet standards and incorporate BMPs, which would reduce soil effects from these roads and trails.

Comparisons of erosion hazard ratings by alternative are found in the following table.

Table 3-30. Miles[21] of Routes by Erosion Hazard Rating and Designation for Each Alternative

Road Erosion Hazard Rating	Alternative A	Alternative B	No Action Alternative
Administrative Use			
Slight	1	2	0
Moderate	14	62	0
Severe	21	81	2
Subtotal	36	145	2
Not Designated			
Slight	0	0	1
Moderate	2	26	49
Severe	1	34	54
Subtotal	3	60	104
Public Motorized Use			
Slight	6	6	5
Moderate	176	137	150
Severe	263	153	223
Subtotal	445	296	378

Alternative A

Direct Effects

This alternative would have the greatest impact on soils for the action alternatives. This alternative would have approximately 19 more miles of routes for administrative use and 40 more miles of routes for public motorized use on landforms with severe erosion hazard compared to the No Action Alternative. This includes adding routes to the system and changes in designation.

This alternative would prohibit motorized travel on 3 miles of routes (1 mile on landforms with severe erosion hazard, see table above), allowing vegetation to reestablish. This would reduce erosion and concentrated runoff from these sites. These areas would eventually be returned to productive capability.

This alternative would add 101 miles of non-system roads and trails to the Forest transportation system. Of this, 52 miles (45 miles Public use and 7 miles Administrative use) would be on landscapes that have a severe erosion hazard rating.

This alternative would provide the greatest miles of roads and trails to be available for public use, and would also provide the most miles of roads available for administrative use.

[21] Small differences in mileage figures between this and other tables are due to GIS analysis and rounding errors.

Indirect Effects
Off-site deposition of eroded material, soil erosion from roads and trails, and concentrated runoff would be reduced over time as more of the road and trail system is revegetated or is brought up to standard and BMPs are implemented.

Alternative B

Direct Effects
This alternative would have 79 more miles of routes for administrative use and 70 less miles available for public motorized use on landforms with severe erosion hazard compared to the No Action Alternative. This includes adding routes to the system and changes in designation.

This alternative would prohibit motorized travel on 60 miles of routes (34 miles on landscapes with severe erosion hazard, see table above), allowing vegetation to reestablish. This would reduce erosion and concentrated runoff from these sites.

There are approximately 66 miles of non-system roads and trails being added to the transportation system. Of this, 37 miles (12 miles public use and 25 miles administrative use) would be on landscapes that have a severe erosion hazard rating.

This alternative would provide the fewest miles of roads and trails to be available for public use, and would also provide the most miles of roads available for administrative use.

Indirect Effects
Off-site deposition of eroded material, soil erosion from roads and trails, and concentrated runoff would be reduced over time as more of the road and trail system is revegetated or is brought up to standard and BMPs are implemented.

No Action Alternative

Direct Effects
This alternative only includes those routes that are currently in the transportation system. There are 399 miles of routes that would be available for public motorized use. There are approximately 104 miles of non-system roads that would not be designated (motor vehicle use prohibited) and would be available for rehabilitation and return of natural vegetation and eventually be returned to the productive land base. Concentrated runoff and erosion would be reduced from these sites.

Existing low standard roads and trails would continue to erode and concentrate runoff and erosion at present rates. Existing sites where soil erosion is a concern will continue to erode and contribute sediment. The area of soil productivity effects would continue to expand as new trail segments are developed to get around areas that are eroded.

Indirect Effects
Off-site deposition of eroded material, soil erosion from roads and trails, and concentrated runoff would be reduced over time as more of the road and trail system is revegetated or is brought up to standard and BMPs are implemented.

Cumulative Effects

Cumulative effects occur when past present or foreseeable activities overlap in both time and space with the proposed activities. Thus, cumulative effects are limited to the areas where the proposed activities would occur. In other words, cumulative effects would occur only where proposed activities would occur where previous management has affected soil conditions. Activities outside of the locations of proposed management are not subject to cumulative effects because they do not overlap spatially with the lands being proposed for management in the Sioux Ranger District Travel Management Project. Soil effects do not extend off of the piece of ground where they occur.

Past, Present, and Reasonably Foreseeable Activities

The current vegetative treatment and mining activities that do occur in the analysis area incorporate BMPs and produce relatively few soil impacts relating to roads and trails. There is a possibility that new routes will be constructed and added to the system in the future. These could be designated for public use or for administrative use only. If these routes were to be added to the transportation system, it would increase the compaction and potential runoff and erosion for the specific route. The location and analysis of the proposed route would be determined based on site specific analysis to reduce the potential impacts on soils. Timber sales are audited for compliance with BMPs and are monitored to see that design features that reduce soil effects are implemented.

The continuation of livestock grazing activities will overlap with the proposed action in both time and space. They could potentially contribute to the effects. A possibility exists that new routes will be constructed and/or added to the transportation system in the future. This might occur if new range infrastructure is identified as a need for continued management. These could be designated for public use or for administrative use only. If these routes were to be added to the transportation system, it would increase the compaction and potential runoff and erosion for the specific route. The location and analysis of the proposed route would be determined based on site specific analysis to reduce the potential impacts on soils. Another impact might occur if livestock grazing occurs where vegetation is beginning to reestablish, either naturally or through reclamation activities, on routes that are not designated. Continued grazing might reduce the vegetative cover, slowing reclamation.

The decision made in this project will affect the amount of land committed to a dedicated use. By adding routes to the system or designating/not designating a route for specific use, this project might have an impact on other projects and that project's ability to meet Regional policy regarding soil quality.

3.4.2.4 Conclusion - Soils

Roads and trails impact and disrupt the natural function of the soil resource, and are long-term commitments to that dedicated use. Routes not designated for public motorized used will begin to revegetate and improve soil productivity.

Alternative A would provide the greatest number of miles of routes available for public use and the least number of miles of routes to return to productive capability over time.

Alternative B would provide an intermediate number of miles compared to Alternatives A and No Action. Alternative B would have fewer miles of routes available to the public for motorized use on landforms with severe erosion hazard compared to Alternative A and the No Action Alternative.

Alternative B would decrease the miles of roads and trails designated for public motorized use on soils that have severe erosion rating by 70 miles compared to the No Action Alternative.

Alternative A would increase by 40 miles the roads and trails designated for public motorized use, on soils having severe erosion hazard compared to the No Action Alternative.

Soil crusts most likely do not occur on existing roads and trails due to type and level of existing disturbance. Generally, soil crusts will not be affected by designating roads and trails, since no new construction is being considered at this time.

Consistency with Laws, Regulation, and Policy
All Forest Plan management direction would be met by the proposed action.

3.4.3 VEGETATION

Overview of Changes from the Draft to the Final EIS
- Changes made reflect minor mileage changes to Alternative B.

3.4.3.1 Introduction
Analysis of associated travel disturbances on vegetation, weed spread, and sensitive plants are addressed under the general heading of Vegetation.

3.4.3.2 Affected Environment – Vegetation

Introduction
There is a concern that designation of travel routes allows for disturbance of native vegetation by vehicles, camping, hiking, mountain biking, and pack and saddle stock. Vegetation has various abilities to recover from disturbance depending upon frequency, duration, and timing of disturbance and species ability to resist disturbance.

Regulatory Framework
36 CFR 219.20 outlines direction regarding ecological sustainability. Plans should provide for maintenance or restoration of ecosystems at appropriate spatial and temporal scales determined by the responsible official. The spatial scale for this analysis is the project area and the temporal scale is the planning horizon of the decision resulting from this analysis, identified as ten years.

Overview-Vegetation
Vegetation of the Sioux Ranger District is floristically rich and diverse. The diversity is composed of many community types including ponderosa pine (5), aspen (1), paper birch (1), green ash woodland (3), cottonwood (6), Rocky Mountain juniper (1), silver sage shrubland (1), big sage shrubland (4), skunkbush sumac shrubland (2), buffaloberry (1), western snowberry (1), horizontal juniper (1), grasslands (22), and herbaceous riparian (19).

Factors Influencing Area Impacted and Severity of Impact
The overall impact of a travel use on vegetation is a function of both the area impacted and the severity of impact within the disturbed area. Within the scope of this analysis, travel related impacts

to vegetation include disturbances from camping and vehicle use. Factors that influence the severity of vegetation impact include duration and frequency of use, vegetation resistance and resilience, and season of use.

Duration and Frequency of Use

It is recognized that impacts might occur anywhere along designated travel routes. However, there is a higher probability of more severe vegetation impacts in areas where people tend to frequent repeatedly. These areas are typically near water, vistas, shade, and other areas on gentle terrain suitable for camping (usually 0 to 4% slopes). Sites that are used infrequently and sites that are capable of resisting deterioration will usually be less impacted than those that are used frequently and those that are readily disturbed. For example, in long-established campsites, the magnitude of vegetation impact is determined as much by the ability of vegetation to recover from disturbance as by the ability to resist disturbance.

Resistance and Resilience

Aspects of vulnerability of vegetation having impacts and ability to recover include attributes of resistance and resilience. Resistance refers to the ability of vegetation to resist change when trampled. Resilience refers to the ability of vegetation to recover following the cessation of trampling and tolerate a cycle of disturbance and recovery.

Resistant vegetation types, such as sedges, are able to absorb 25 to 30 times as much trampling as the least resistant type, such as ferns (Cole 1993 and Cole 1993b). Plant characteristics, notably the position of the plants' perennating bud and physiological characteristics such as reproductive capacity and growth rates, also influence resilience (Cole 1995a,b,c). Morphological characteristics are primary factor influencing plant resistance to trampling. Grasses and sedges have flexible stems growing in mats or tufts. More fragile are woody plants and taller herbs. Complete loss of vegetation cover occurs quickly in shady forested areas, less quickly in open areas with resistant grassy vegetation (Leung & Marion, 1996). The resilience of plants, their ability to recover following trampling disturbance, varies substantially by habitat, with higher recovery in the most productive environments such as those with higher soil fertility and moisture. For example, recovery rates are high in riparian and grassland areas. Recovery in forested systems is typically moderate to high. In contrast, trampling impacts in less resilient environments, such as arid environments, require a long time to recover (Leung & Marion, 1996).

Effects Analysis Methodology-Vegetation

General potential effects to vegetation are based on literature reviews. Geographical Information System (GIS) methods were used to assess the magnitude of area potentially impacted and potential risk categories based on various elements of frequency and duration of trampling, and vegetation resistance and resilience.

Duration and Frequency of Use

Potential Infrequent Use Areas – Potential Use Corridors

Impacts might occur within each Alternative's potential impact corridor along designated travel routes. Sites that are used infrequently and sites that are capable of resisting deterioration will usually be less impacted than those that are used frequently and readily disturbed

The following buffers from designated routes were used to describe the Potential Use Corridor by Alternative. For designated motorized routes with an allowance for dispersed vehicle camping access, a 300 foot buffer was applied to all alternatives. For designated motorized routes without an allowance for dispersed vehicle camping access in the North Cave Hills, a 50 foot buffer was applied to Alternative B to account for potential vehicle turn arounds. It is recognized that not all estimated acreage will be affected and therefore results will be on the conservative side.

Potential Frequent Use Areas – 0 to 4% Slopes
There is a higher probability for more severe vegetation impacts in areas where people tend to visit repeatedly or with longer duration of use. These areas are typically near water, vistas, shade, and other areas on gentle terrain suitable for camping (usually 0 to 4% slopes).

Zero to 4% slopes were used to represent potential frequent use areas, found within each Alternative's potential use corridors, and are intersected with elements outlined in the resistance and resilience section below. The 0 to 4% slope class was used because people tend to concentrate for longer durations of use at campsites or areas in gentle terrain. It is recognized that not all estimated acreage will be affected and therefore results will be on the conservative side.

Resistance and Resilience
All vegetation cover types from satellite imagery (SILC3 post-large wildfires) are addressed within the following two risk groupings based on degree of vulnerability to resist impacts (resistance) and ability to recover (resiliency). The two groups are intersected with the frequent and infrequent use areas outlined above.

Because grasslands, shrub/grass, and open woodland vegetation types tend to have higher resistance (lower vulnerability to trampling) and resilience (higher resiliency to recover) elements, these cover types are used to represent areas of low risk for impacts.

Because forested vegetation types (greater that 65% canopy cover) tend to have lower resistance to impacts and moderate to high resiliency to recover, these cover types are used to represent areas of moderate risk for impacts.

High risk category (alpine / subalpine and desert / semi-desert) is not considered in this analysis since these areas do not occur in the analysis area.

Measurable Attributes
Based on the above discussion, the magnitude of area potentially impacted is stratified by risk of impacts in low and moderate risk categories. Where vehicle access for dispersed camping is allowed, potential use within each Alternative's corridor is projected to have less frequency of use (not all the area within the corridor will be traveled since one must use the most direct route to a campsite). These areas were identified through the intersection of cover type resistance / resilience groupings in each of the two risk categories with each of the Alternative's use corridors. These areas were further intersected with the risk category cover type groups within a 0 to 4% slope class. The 0 to 4% slope class represents the area with higher probability for concentrated use and severity of impact such as camping. The measurement is in acres and percent of potentially impacted acres compared to total

project area acres. It is recognized that not all estimated acreage will be affected and therefore results will be on the conservative side.

3.4.3.3 Environmental Consequences – Vegetation

Direct and Indirect Effects-Vegetation

General Effects Common to All Alternatives

Trampling
Crushing or treading upon vegetation, either by foot, hoof, or tire, contributes to a wide range of vegetation impacts, including damage to plant leaves, stems, and roots, reduction in vegetation height, change in the composition of species, and loss of plants and vegetative cover. Trampling can quickly break down vegetation cover and create a visible route that attracts additional use. Complete loss of vegetation cover occurs quickly in shady forested areas, less quickly in open areas with resistant grassy vegetation. Regardless, studies have consistently revealed that impacts can occur with initial or low use, with a diminishing increase in impact associated with increasing levels of traffic (Hammit & Cole, 1998; Leung & Marion, 1996). Once trampling occurs, the rate of vegetative recovery can vary, depending on the site's resistance and resilience to disturbance.

Soil compaction from repeated trampling can affect plant growth by reducing moisture availability and precluding adequate taproot penetration to deeper soil horizons. In turn, the size and abundance of native plants may be reduced. Above-ground portions of plants also may be reduced through breakage or crushing, potentially leading to reductions in photosynthetic capacity, poor reproduction, and diminished litter cover. Likewise, blankets of fugitive dust raised by motorized traffic can disrupt photosynthetic processes, thereby suppressing plant growth and vigor, especially along motorized routes. In turn, reduced vegetation cover may permit invasive and/or non-native plants—particularly shallow-rooted annual grasses and early successional species capable of rapid establishment and growth—to spread and dominate the plant community, thus diminishing overall local biodiversity.

Compositional changes in the vegetation along trail corridors can have both beneficial and adverse effects. Trampling-resistant plants provide a durable groundcover that reduces soil loss by wind and water runoff, and root systems that stabilize soils against displacement by heavy traffic. Many of introduced species are disturbance-associated and are naturally limited to areas where the vegetation is routinely trampled or cut back. However, a few invasive non-native species, once introduced to trail corridors, are able to out-compete native plants and spread away from the trail corridor in undisturbed habitats. Some of these species form dense cover that crowd out or displace native plants (see Weeds Section).

Camping
Vegetation composition of campsites is not changed by infrequent camping for short periods. However, aerial plant parts will be broken and flowering in the season of impact may be affected. Long-term or frequent camping, even for one season, results in the destruction of vegetation, leaving barren compacted areas.

The creation of fire-rings impacts vegetation through burning, and the covering of vegetation with rocks. Revegetation is likely to be slow, because of changes in soil characteristics from such as loss of

nitrogen, phosphorus, sulphur, and organic matter. The firewood used in campfires often comes from dead trees, but living trees have also been used, often to an extent which exceeds their capacity for regeneration.

Minor impacts associated with camping include the death of vegetation covered with garbage, partly-burned wood, or rocks removed from campsites. Digging of pits for garbage disposal and the removal of rocks from campsites -result in the creation of small bare areas, which are often enlarged by erosional processes and trampling.

Vehicles
The overall impact of a vehicle on vegetation is a function of both the area impacted and the severity of impact within the disturbed area. The severity of vegetation impact within a disturbed area can be higher than hiking, mountain biking, and stock use based on weight (a dirt bike weighs 100-200 pounds, whereas typical ATV can weigh up to 900 lbs, or up to several tons for 4x4 Off Road Vehicles), power, tire-surface area (tire footprint), and wheel slip that can cause greater compression on soils and vegetation as well as vegetation shearing. Vehicle impacts to vegetation can be exacerbated by rutting during wet periods due to low bearing capacity of soft soils (Affleck. 2005).

Direct impacts of vehicle activities on vegetation include reduced vegetation cover and growth rates, and increased potential for non-native and pioneering species to become established, thus altering vegetation communities. In certain instances, however, the impervious nature of compacted routes could result in runoff that generates greater moisture availability immediately along motorized routes. In turn, this would promote increased vegetation cover and plant abundance farther away. Repeated off-route activity results in the crushing, breaking and overall reduction of vegetative cover. Detours around snowbanks or mud holes are sometimes made by vehicles, and parallel motorized routes can become widely spaced.

Indirect effects of vehicle activities on vegetation are tied to soil properties altered by vehicle traffic, as soil properties typically influence vegetation growth. Motorized roads and trails also create edge habitats, which can generate conditions that promote the encroachment of non-native and invasive plant species. Other indirect effects include increased amounts of airborne dust raised by traffic. Fugitive dust on plant foliage can inhibit plant growth rate, size, and survivorship. Vehicle passes can also result in indirect effects including damaging germinating seeds, and weakening plants making them more susceptible to disease and insect predation. Vehicles can result in changes in plant species composition.

Weeds
An effect of travel and trampling can be the establishment and spread of weeds. These effects are further described in the Weed portion of the Vegetation section.

Magnitude and Settings of Potential Effects on Vegetation
The following table summarizes potential amount of vulnerability for vegetation impacts for each Alternative by risk categories based on various elements of frequency and duration of trampling, and vegetation resistance and resilience. It is recognized that not all estimated acreage will be affected and therefore results will be on the conservative side.

Table 3-31. Potential Vegetation Impacts by Risk Category - Sioux

Attributes	Alternative A	Alternative B	No Action
Moderate Risk Areas			
Acres Potential Frequent Use Areas [22] (% of Project Area)	128 (Trace)	90 (Trace)	98 (Trace)
Acres Potential Infrequent Use Areas [23] (% of Project Area)	2,191 (1%)	1,380 (1%)	1,634 (1%)
Miles in Moderate Risk Area	24	13	17
Low Risk Areas			
Acres Potential Frequent Use Areas [24] (% of Project Area)	3,839 (3%)	2,528 (2%)	3,315 (2%)
Acres Potential Infrequent Use Areas [25] (% of Project Area)	21,164 (13%)	14,586 (9%)	20,387 (12%)
Miles in Low Risk Area	412	251	352

Cumulative Effects-Vegetation

Fuels reduction, prescribed burning, livestock grazing, and timber management projects are currently planned and will continue to be planned for the District. These projects and any associated road use or construction have potential to impact vegetation. Projects are designed to minimize impacts to vegetation.

Use of existing designated routes and associated 300 foot allowance for access to vehicle camping, in combination with the proposed actions, have potential to impact vegetation within the project area.

Implementation of any of the alternatives considered in this analysis would not be expected to contribute to significant cumulative effects associated with vegetation. Anticipated future projects or activities are fewer in number and less disruptive from a resource extraction point of view than those projects or activities that have taken place in the past.

3.4.3.4 Conclusion - Vegetation

Because it is seldom possible to control or even document the past use or predict future use, estimates of the impacts caused by different use frequencies are imprecise. The ability to predict the effects of different intensities of various uses is low. However, the amounts of potentially affected area, projected within the context of moderate risk categories based on various elements of frequency, duration, timing, and vegetation resistance and resilience are displayed in the Potential Vegetation Impacts by Risk Category table above. It is recognized that not all estimated acreage will be affected and therefore results are on the conservative side.

Under all alternatives, when compared against similar vegetation types, potential impacts from *frequent* use within the 0 to 4% slopes of the route's corridor in moderate and low risk areas could occur in about 2-3% of the project area. Potential impacts from *infrequent* use within the route's corridor in moderate and low risk areas could occur in about 10% and 14% of the project area, respectively.

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[22] Frequent Use Areas with Moderate Risk: Areas of 0-4% slopes within 300' of motorized routes in Ponderosa pine types with greater than 65% canopy cover.
[23] Infrequent Use Areas with Moderate Risk: Areas of greater than 4% slopes within 300' of motorized routes in Ponderosa pine types with greater than 65% canopy cover.
[24] Frequent Use Areas with Low Risk: Areas of 0-4% slopes within 300' of motorized routes in community types with less than 65% canopy cover.
[25] Infrequent Use Areas with Low Risk: Areas of greater than 4% slopes within 300' of motorized routes in Ponderosa pine types with less than 65% canopy cover.

Moderate risk category potential impact ranges from 1,470 (Alternative B) to 2,319 acres (Alternative A). This is about one percent of the project area. Low risk category potential impact ranges from 17,114 (Alternative B) to 25,003 acres (Alternative A). This is about 7 to 11% of the project area.

Table 3-32. Potential Vegetation Impacts by Risk Category - Sioux

Attributes	Alternative A Change from No Action	Alternative B Change from No Action
Moderate Risk Areas		
Acres Potential Frequent Use Areas	Increases by 30 Acres	Decreases by 8 Acres
Acres Potential Infrequent Use Areas	Increases by 557 Acres	Decreases by 254 Acres
Miles in Moderate Risk Area	Increases by 7 Miles	Decreases by 4 Miles
Low Risk Areas		
Acres Potential Frequent Use Areas	Increases by 524 Acres	Decreases by 787 Acres
Acres Potential Infrequent Use Areas	Increases by 777 Acres	Decreases by 5,801 Acres
Miles in Low Risk Area	Increases by 60 Miles	Decreases by 1 Miles

While impacts resulting from camping and vehicles can be locally very significant, the total area of impact is small when compared to various ecosystems of the project area. The level of acceptable impact over a given area is within the discretion of the deciding official for this project as outlined in the regulatory framework for this section. Selection of any alternative would be consistent with the regulatory framework relative to vegetation sustainability at the level of this project's scale.

3.4.3.5 Affected Environment – Weeds

Introduction

There is concern that travel management can influence the spread of noxious weeds and invasive plants. Also, the Forest Service has identified invasive species as one of the top threats to the health of National Forests. In this document, the terms "weeds", "noxious weeds' and "invasive plants" are used synonymously. Invasive weeds are defined as any non-native plant, which when established is or may become destructive and difficult to control by ordinary means of cultivation or other control practices. "Noxious" weeds are those non-native plants that are legally listed as weeds by the state or county.

Use of motorized routes contributes to the spread of weeds. Weeds can significantly alter the composition of native plant communities resulting in decreases in habitat quality for wildlife, reduced forage for livestock, increased erosion and increased sediment levels in streams, and decreases in aesthetic/recreational quality of wild lands (Sheley, R and J. Petroff. 1999).

The District follows many strategies to reduce populations of weeds and to prevent further infestation. For instance: best management practices are followed (Forest Service Manual Section 2080 (FSM2080)); standard and special provisions are included in timber sale contracts; a Forest-wide special order requiring weed-free hay and feed for stock has been implemented; weed-free gravel in road construction projects is required, and competitive seeding of disturbed sites is done with native vegetation. All districts on the Forest have implemented integrated weed management programs that include prevention through public education, along with biological, mechanical and chemical weed suppression.

Regulatory Framework

Nearly all users and interested parties desire complete prevention and eradication of noxious weeds on the Forest, but not necessarily at the expense of their use and enjoyment of the Forest. Neither are there sufficient resources or technology available to completely eradicate existing weed infestations within the planning horizon. The 1987 Custer National Forest Plan (USDA Forest Service. 1986) directs control of noxious weeds as a priority item (FP Page II-3) where the goal is to implement an "integrated pest management program aimed at controlling new starts, priority areas of minor infestations. Holding actions will be implemented on areas of existing large infestations." Additionally, the Forest Service Manual 2080 (1. b. (5)) requires a weed risk assessment be conducted for all projects that could spread weeds. Additional regulatory framework for integrated weed management is found in the 2006 Custer NF Weed Management FEIS (USDA Forest Service. 2006), which is incorporated by reference into this analysis. The overall goal of is to maintain or restore healthy plant communities that are relatively weed resistant, while meeting other land-use objectives such as forage production, wildlife habitat maintenance, or recreational land maintenance.

Overview - Weeds

An extensive scientific literature review was recently conducted for the 2006 Custer NF Weed Management EIS (project file). Weeds have many vectors for dispersal, such as people, wind, water, and animals. Although wind and water contribute to weed dispersal, travel management does not influence these forms of seed dispersal; consequently, they are not addressed in this analysis.

Research has shown that motorized vehicles tend to have a greater capacity for spreading weeds than non-motorized travel (Tyser and Worley, 1992). The current weed inventory for the Custer National Forest shows this same correlation; more weeds are present along motorized routes than along non-motorized routes. The bulk of the remaining Sioux District infestations occur in areas that have been burned by wildfire. According to the Custer weed survey data as of 2006, of the infestations occurring near motorized routes, about 70 percent of the infestations occur within the first 100 feet of motorized routes.

Current Weed Conditions

Some weed species are extremely hardy, competitive, and have the ability to displace native plant species and permanently alter the structure, composition and function of native plant communities. These species are considered very invasive and are typically listed as noxious by States. Of the 2000 plus vascular plant species that have been documented on the Custer National Forest, seven are considered noxious weeds on the District. Currently there are approximately 494 recorded acres infested with noxious weeds in the District boundary. Sites are generally small and widely scattered with many populations occurring along main National Forest System roads. Canopy density averages between 5-35 percent. Canada thistle, spotted knapweed, leafy spurge, and some houndstongue are the predominant noxious weed species on the District.

Human Influence

Human activities of grazing, timber harvest, road construction, recreation (camping, fishing, hunting, trail riding, back packing) and forest administration contribute, to various degrees, to the introduction and spread of weeds. Motorized vehicles and equipment contribute the most to introduction and spread of noxious weeds because of vehicle mobility and size, and/or distance of travel within a given time. Weed seeds become stuck in tire tread and in under carriage mud, pulled off and lodged in the

framework, drug out upon unloading from passenger and cargo compartments or deposited with contaminated cargo (e.g., gravel, hay, straw).

Trend

Nationally, National Forest System lands have an estimated six to seven million acres that are infested with noxious weeds. This figure is increasing at an exponential rate of 8-12 percent per year. An increase in inventoried infestations has occurred over the past 20 years due, in large part, to large scale wildfires and better inventory. In addition to annual appropriations, various grants and partnerships have been successful in adding resources to annual control measures. Treatment priority criteria are used because resources are generally not sufficient to treat all infestations (USDA Forest Service, 2006). Spread vector areas such as motorized routes are high in priority for treatment. The Custer National Forest could experience further invasion in the very near future, especially in light of some of the large scale wildfires that have occurred and will likely continue to occur.

To counter the continuing spread, the Forest has had an active prevention and control program to reduce the impacts of invasive noxious weeds for over 25 years. Chemical weed control has historically been the primary tool for noxious weed control in the analysis area.

Effects Analysis Methodology

The degree of risk from some of the most threatening species can be evaluated when completing project weed risk assessments. The probability of exposure of each site to plant propagules affecting dispersal, the susceptibility of an area to species' establishment, and the level of threat to susceptible areas can be evaluated. Overlaying weed inventories and designated public motorized routes, with this susceptibility assessment can further identify areas that are potentially at risk from invasion. A spatially explicit analytic model using a Geographic Information System (GIS) was used to map and calculate the acres at risk to invasive weeds (Project Record).

Level of Risk

Susceptibility, threat, and probability of exposure can be combined to model the degree of risk across a project area from some of the most threatening weed species. A risk assessment (Mantas, 2003) was completed for several weeds occurring in the USFS Northern Region, East of the Continental Divide (http://www.fs.fed.us/r1/cohesive_strategy/datafr.htm). This information was referenced in determining area susceptibility and threat levels.

Weed Susceptibility.

Susceptibility is an estimate of the vulnerability of different habitats to colonization and establishment of a weed species. Even without any disturbance on the landscape, some areas are susceptible to the infestation by invasive plants. Because most of the weed species that occur on the District are considered aggressive in most non-forested and sparsely forested settings, these vegetation types are considered to be susceptible to weed invasion. Approximately 90% of the District is naturally susceptible to weed invasion. These areas are usually open areas with limited or no shade from tree overstory.

A 400 foot buffer from each side of a motorized route was used for each alternative and helps assess indirect effects. This accounts for allowable dispersed camping within 300 feet of a route, along with a 100 foot addition for potential weed spread beyond the 300 foot dispersed camping allowance. These specific Alternative buffers were intersected with areas rated as susceptible to weed infestation

Weed Threat

Threat refers to the estimated degree of change in structure, function or composition that a weed species would have on a potential natural vegetation type. Because the noxious weed species that occur on the District are considered aggressive, they all occur in the high threat class.

Weed Exposure

Exposure refers to the probability that an area would be exposed to seeds from noxious weeds. The exposure classes used in this analysis are high exposure (motorized routes designated for public use) and low to no exposure (motorized routes designated for administrative use only[26] and non-motorized travel). An average of 70% of a road related infestations on the Forest occur within the first 100 feet of the buffer, about 82% occurs within the first 300 feet, and 95% occurs within the first 400 feet of motorized routes.

Existing weed infestions within a 400 foot buffer from motorized routes was used to assess direct effects from exposure to weeds since most of the weed infestations, associated with motorized routes, are found within this distance. The effects analysis assumption used is that weed establishment in areas susceptible to weed infestation can spread within this 400 foot distance within the ten year planning horizon of the travel management decision if left untreated. However, road related infestations are given high priority for treatment since motorized routes are typically primary vectors for spread. Exposure to weed spread within 400 feet of a motorized route is less that that portrayed in the following table due to the likelihood of weed treatment and the fact that the bulk of road-related infestations occur within the first 100 feet. Therefore, the 400 foot buffer was used as a conservative approach for an analysis measurement.

3.4.3.6 Environmental Consequences – Weeds

Direct and Indirect Effects-Weeds

The direct effect of motorized travel routes within susceptible areas for weed invasion is an increase in weed density and distribution from vehicle and camping activities. The following table is used to make Alternative comparisons. The corridor associated with the Alternative A has the most acres currently infested with weeds (209 acres), and Alternative B has the least (149 acres). The motorized routes going through infested areas range from 30-42%.

Table 3-33. Weed Infestations and Public Motorized Routes – Sioux

	Alternative A	Alternative B	No Action Alternative
Total Infested Acres within 400' Buffer	209	149	201
Percent of Infested within 494 Inventoried Net Acres of Weeds[27]	42%	30%	41%
Miles of Designated Routes bisecting Weed Infestations	16	11	15

[26] Motorized routes designated for administrative use fall within a controlled setting either through permit with associated terms and conditions or use by Forest Service employees where best management practices are required. Also, these routes tend to have less frequent travel and low duration of use which also lessen impacts compared to more frequent use by the general public who always are not aware of protective measures to take in preventing and combating noxious weeds.

[27] Most of the remaining acreage not occurring adjacent to motorized routes are a result of wildfire effects or animal vectors.

The following table summarizes indirect effects. Indirect effects include the risk of vegetation becoming infested from vehicles carrying and dropping weed seeds into areas susceptible to weed growth. Once aggressive weeds are introduced into the susceptible area, it would continue to spread and displace native plants, even if the area is not disturbed.

The indirect effect for each alternative is based on the total number of acres susceptible to weeds that intersected the respective Alternative's buffer of motorized routes. For each Alternative, about 90% of the buffered areas are susceptible to weed infestations. Alternative A has the greatest area at high-risk of weed invasion near motorized travel routes (34,572 acres), while Alternative B has the least (22,136 acres). The areas of high susceptibility are summarized in the following table:

Table 3-34. Susceptibility to Weed Infestation by Alternative - Sioux

Susceptible Area within Route Corridor[28]	Alternative A	Alternative B	No Action
Susceptible Acres	34,572	21,874	30,604
Area, within Route Corridor, Infested with Weeds (Acres)	1	1	1

Cumulative Effects-Weeds

All of the activities identified as past and present activities in the beginning portion of this chapter, have influenced the spread of weeds. Future activities have the potential to spread weeds.

The common elements associated with most weed infestations are ground disturbance, wildfire, and use of motorized vehicles. Once the weeds are introduced into an area they generally continue to spread into adjacent areas. Weeds will continue to be spread as a result of resource management and other human activities. The mitigation measures that are addressed in the Forest Service Manual 2080 are being implemented and will help to slow the spread of weeds.

If a disturbance (such as a fire or timber harvest) occurred in a high-risk area with an existing weed problem and the area has motorized routes, the cumulative impact will exasperate the problem. In this situation the weeds may spread quickly to new areas and may rapidly increase in density. Having motorized travel in these areas may carry the weeds to new locations. The best management practices outlined in Forest Service Manual 2080 will help to reduce the spread rate but may not prevent the spread altogether.

Current on-going activities may have a cumulative negative effect by increasing the introduction and spread of noxious weeds. Livestock grazing may transport weed seed between private or other lands and the Forest, or from place to place on the Forest, by carrying seed in the hair or digestive tract. Livestock may also increase seed germination by reducing vegetation competition in areas of improper grazing and by ground disturbance in areas of excessive trailing. Wildlife and birds can similarly transport weed seed in hair, feathers and digestive tracts. Weed seeds are also transported by wind and water and wildfire provides improved germination.

[28] 400 foot buffer from motorized route under all alternatives except for those portions of routes under Alternative B that do not allow dispersed vehcile camping. A 100 foot buffer was used on those routes. See Methodology section.

3.4.3.7 Conclusion - Weeds

Since there is a high association with motorized routes and weed infestations, Alternatives A and No Action have a higher probability for weed spread than Alternative B.

Table 3-35. Summary of Changes in Effects *Compared to the No Action Alternative* - Sioux

Change from the No Action Alternative	Alternative A	Alternative B
Exposure to Current Weed Infestations		
Change in motorized route corridor exposure to weed infestation acreage from No Action (% change from No Action)	Motorized route corridor exposure to weed infestations increased by 8 acres (4%)	Motorized route corridor exposure to weed infestations reduced by 52 Acres (26%)
Weed Susceptibility		
Change in acreage of Weed Susceptible areas, within motorized route corridor, from No Action (% change from No Action)	Weed Susceptible Area increased by 3968 (17%) Acres	Weed Susceptible Area reduced by 8730 Acres (28%)

Many agents will continue to transport weeds and weed seeds, regardless of the decision on travel, but the fewer the agents, the less weed spread. However, removing all use would defeat the purpose of the public lands, and is not public policy, and still would not totally eliminate the spread of weeds. Therefore, noxious weed management requires a balance of use restriction, public education, implementation of best management practices (BMPs), and effective treatment measures. The more the public voluntarily accepts and implements weed prevention practices, less restrictions and expensive weed control will be required.

Per existing policy, a noxious weed risk analysis will be done for each project and appropriate BMP measures (FSM 2080, R1 Supplement 2000-2001-1) included in each environmental analysis, permit, and contract and will help reduce cumulative effects. Each project and public use area will be monitored for noxious weeds and the implementation and effectiveness of BMP mitigation measures, prioritized by the degree of risk. The Forest Service will continue prevention, public education and appropriate weed treatment measures.

All action alternatives are consistent with the Laws, Regulations, Policy, and Federal, Regional, State, and Custer Forest Plan. Of these regulatory directions, only the FSM 2080 addresses travel management with respect to weed management. A weed risk assessment is part of this analysis and meets this policy.

3.4.3.8 Affected Environment – Sensitive Plants

Introduction

Forest Service sensitive species are defined as “Those plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by: a) significant current or predicted downward trends in population numbers or density or b) significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution.

Regulatory Framework

The *1987 Custer National Forest Land and Resource Management Plan* (Forest Plan) and *Forest Service Manual 2670.22 Sensitive Species* provides direction for sensitive plants. *Forest Service*

policy regarding biological evaluations is summarized in Forest Service Manual (FSM) 2672.4. The intent of the biological evaluation process is to assess the potential impacts of proposed management activities, and ensure that such activities will not jeopardize the continued existence of species listed, or proposed to be listed, as Endangered or Threatened by the U. S. Fish and Wildlife Service and species designated as sensitive by the Regional Forester.

Affected Environment – Sensitive Plants

Only species with known locations or potential habitat on the District are addressed in the analysis and outlined in the following table. Five species are known to occupy habitat and have documented occurrences in the District. One sensitive species is suspected to be present on the District.

Table 3-36. R-1 Sensitive Plant Species - Sioux

Common & Scientific Name	Type [29]	Global Rank [30]	State Rank [31]	Habitat	Sensitive in		Closest known population	Flowering Period	Fruiting Period
					MT	SD			
BADLANDS / SPARSE TO DRY HILLSLOPES									
Dakota buckwheat (Known) *Eriogonum visheri*	2	G3	S3	Barren, often bentonitic badlands slopes and outwashes in the plains. Elev. 3,140-3,760		X	Slim Buttes - Irish Butte (S. of Mtn Ranch Sp. #1)	July - Sept	
Barr's milkvetch (Suspected) *Astragalus barrii*	2	G3	S3	Gullied knolls, buttes, and barren hilltops, often on calcareous soft shale and siltstone. Elev. 2,940 - 4,000	X	X	West of Ekalaka Hills	May-early June	May-June
SANDY, GRAVELLY, CLAYEY PRAIRIES AND WOODLANDS									
Ovalleaf milkweed (Known) *Asclepias ovalifolia*	3	G5?	S1	Sandy, gravelly or clayey soils of prairies and woodlands Elev. 3,760-3,840	X		Long Pines below Icebox Spring	July – Aug	Aug -Oct
MESIC CONDITIONS									
Mountain bluebells (Known) *Mertensia ciliata*	3	G5	S1	Forested slopes-damp thickets in course to medium textured soils. Valley bottoms associated with springs, seeps, and spring fed water courses; occasionally found in non-wetlands. Intermediate shade tolerance. Very drought intolerant. Its Slim		X	Known in Tepee Canyon of Slim Buttes; West Short Pines – 1912 Collection (land ownership unknown)	Late spring to summer	

[29] Scale of risk, per Region 1 Species at Risk Protocol: Type 1: Threatened, Endangered or Proposed (ESA); Type 2: Range-wide Imperilment; Type 3: Regional/State Imperilment

[30] and [30] The international network of Natural Heritage Programs employs a standardized ranking system to denote global (range-wide) and state status (Association for Biodiversity Information 2001). Species are assigned numeric ranks ranging from 1 (critically imperiled) to 5 (demonstrably secure), reflecting the relative degree to which they are "at-risk". 1 = Critically imperiled because of extreme rarity and/or other factors making it highly vulnerable to extinction; 2 = Imperiled because of rarity and/or other factors demonstrably making it vulnerable to extinction; 3 = Vulnerable because of rarity or restricted range and/or other factors, even though it may be abundant at some of its locations; 4 = Apparently secure, though it may be quite rare in parts of its range, especially at the periphery; 5 = Demonstrably secure, though it may be quite rare in parts of its range, especially at the periphery; T = Rank for subspecific taxon (subspecies, variety, or population); appended to the global rank for the full species, e.g. G4T3

Table 3-36. R-1 Sensitive Plant Species - Sioux

Common & Scientific Name	Type[29]	Global Rank[30]	State Rank[31]	Habitat	Sensitive in		Closest known population	Flowering Period	Fruiting Period
					MT	SD			
				Butte population is located on the lower slope of a steep north facing slope. Elev. 5,500 plus					
Pregnant sedge (Known) *Carex gravida var. gravida*	3	G5	S1	Open woods, often in ravines with deciduous trees, on the plains. Elev. 3,880 - 4,000.	X		Chalk Buttes		July
Prairie gentian (Known) *Gentiana affinis*	3	G5	S2	Wet meadows, shores, springs, seepage areas and low prairie. Elev. 5,870-9,740.		X	Collected in 1910 from "Cave Hills" & described as abundant. Spring fed springs (most in hardwood draws) in the N. and S. Cave Hills were extensively surveyed in 1994. No plants were found.	Aug - Sept	

The following table outlines routes where potential impacts could occur.

Table 3-37. Motorized Routes Adjacent to Sensitive Plant Populations - Sioux

Route Name	Route ID#	Sensitive Plant
Lost Farm / Belltower	3819	Ovalleaf milkweed
Trenk Pass	3816	Heavy sedge

Effects Analysis Methodology-Sensitive Plants

The analysis is based on known sensitive plant occurrences as provided by the Montana Natural Heritage Program (MNHP 2008), recent survey findings, and habitat potential or habitat/site characteristics (landtype, habitat type, aspect, and elevation). Information used came from data on file at the Custer National Forest, literature review (Heidel and Deholm 1995, Heidel and Deholm 1996, Heidel 2001, Heidel et. al. 2002, Heidel 2004, Barton and Crispin 2003, Hansen and Hoffman 1987, Mincemoyer 2006, MNHP 2008, NatureServe 2007, Ode 1987, Schmoller, 1993, Schmoller 1995, USDA Forest Service 2001, USDA 2008, USDI 2005, Vanderhorst et. al. 1998, SDNHP 2008, and WYNDD 2008).

The potential direct effects are direct mortality which may come from more frequent ground disturbing activities within or near sensitive plant populations, such as camping or infrequent disturbance from accessing dispersed campsites. To estimate frequent disturbance potential, a 0-4% slope was overlain in GIS within the motorized route access corridor for parking/vehicle access to dispersed camping (300 foot buffer for vehicle access to dispersed camping for each alternative).

Indirect effects may come from frequency and duration of camping use resulting in more difficult recovery due to soil compaction and vegetation composition change (including weeds) which may out-compete sensitive plants. A 400 foot buffer was applied to each alternatives' designated routes to address access to dispersed camping allowance (300 feet) and additional area for weed spread

potential (an additional 100 feet). Weed spread assumptions are found in the Weed section of this chapter.

Direct and indirect vulnerabilities and exposures are evaluated to make a biological assessment effects determination on each species.

3.4.3.9 Environmental Consequences – Sensitive Plants

Direct and Indirect Effects-Sensitive Plants
Actions proposed in all Alternatives have the potential to affect populations of sensitive plants. The potential direct effects from motorized routes are direct mortality of plants which may come from ground disturbing activities within sensitive plant populations, such accessing dispersed camping sites and dispersed camping.

Indirect effects may come from accessing dispersed camp areas and camping use. These uses can create more difficult plant recovery due to soil compaction and vegetation composition change (including weeds) which may out-compete sensitive plants.

Some activities associated with the roads and trails do have the potential to negatively affect individual plants, but should not cause population viability losses. Vehicle or human travel outside the road or trail prism could negatively impact plants through direct removal or damage. Weed establishment along roads and trails could out-compete desired vegetation and negatively affect sensitive plant species. Most road and trail maintenance activities that stay within the existing prism would not pose a direct threat to those plant populations that are established along roads or trails.

Vulnerability and Exposure
Two known species' populations are exposed (see table above) and moderately vulnerable to direct effects from travel management. All of the species habitats have potential for being susceptible to noxious weed spread as an indirect effect of travel management (see Weed section of this chapter). Population or habitat exposure and vulnerabilities to direct and indirect effects are displayed in the following table.

Table 3-38. Sensitive Plant Exposure and Vulnerability - Sioux

Species	Direct Effects – Populations / Habitats Vulnerable to Direct Disturbance	Indirect Effects - Habitat Vulnerable to Weed Spread
Species with Known Populations		
Dakota buckwheat *Eriogonum visheri*	Low; known populations do not occur within 300 feet of designated routes under any alternative.	Moderate vulnerability - habitat can be vulnerable to weed spread, but Low exposure - populations not within 400 foot indirect effects corridor.
Ovalleaf milkweed *Asclepias ovalifolia*	Moderate; one route crosses through one known location – no known historic dispersed camping adjacent to the route.	Moderate vulnerability - habitat can be vulnerable to weed spread. Moderate exposure – habitat within 400 feet of designated routes under any alternative.

Table 3-38. Sensitive Plant Exposure and Vulnerability - Sioux

Species	Direct Effects – Populations / Habitats Vulnerable to Direct Disturbance	Indirect Effects - Habitat Vulnerable to Weed Spread
Mountain bluebells *Mertensia ciliata*	Low; known populations do not occur within 300 feet of designated routes under any alternative.	Moderate vulnerability - habitat can be vulnerable to weed spread, but Low exposure - populations not within 400 foot indirect effects corridor.
Pregnant sedge *Carex gravida var. gravida*	Moderate; one route crosses through one known location – no known historic dispersed camping adjacent to the route.	Moderate vulnerability - habitat can be vulnerable to weed spread. Moderate exposure – habitat within 400 feet of designated routes under any alternative.
Prairie gentian *Gentiana affinis*	Low; known populations do not occur within 300 feet of designated routes under any alternative.	Moderate vulnerability - habitat can be vulnerable to weed spread, but Low exposure - populations not within 400 foot indirect effects corridor.
Suspected Species		
Barr's milkvetch *Astragalus barrii*	Low; there are no known populations within the project area.	Moderate vulnerability - habitat can be vulnerable to weed spread, but Low exposure - populations not within 400 foot indirect effects corridor.

There are no direct or indirect effects to Barr's milkvetch, prairie gentian, mountain bluebells or Dakota buckwheat. There could be direct or indirect effects to individuals of the pregnant sedge and ovalleaf milkweed populations.

Direct and indirect vulnerabilities and exposures, outlined in previous tables, were given an adjective rating and evaluated to make a biological assessment effects determination for each species as displayed in the following table. Implementation of any alternative would not be anticipated to move any sensitive plant species within the project area toward federal listing.

Table 3-39. Effects Determination - Sioux

Species	Effects Components	Alternative A	Alternative B	No Action Alternative
Known Populations				
Dakota buckwheat *Eriogonum visheri*	Vulnerability - Direct	Low	Low	Low
	Exposure - Direct	Low	Low	Low
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Low	Low	Low
	Effects Determination	NI [32]	NI	NI

[32] NI = No Impact

Table 3-39. Effects Determination - Sioux

Species	Effects Components	Alternative A	Alternative B	No Action Alternative
Ovalleaf milkweed *Asclepias ovalifolia*	Vulnerability - Direct	Moderate	Moderate	Moderate
	Exposure - Direct	Moderate	Moderate	Moderate
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Moderate	Moderate	Moderate
	Effects Determination	MIIH [33]	MIIH	MIIH
Mountain bluebells *Mertensia ciliata*	Vulnerability - Direct	Low	Low	Low
	Exposure - Direct	Low	Low	Low
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Low	Low	Low
	Effects Determination	NI	NI	NI
Prairie gentian *Gentiana affinis*	Vulnerability - Direct	Low	Low	Low
	Exposure - Direct	Low	Low	Low
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Low	Low	Low
	Effects Determination	NI	NI	NI
Pregnant sedge *Carex gravida var. gravida*	Vulnerability - Direct	Moderate	Moderate	Moderate
	Exposure - Direct	Moderate	Moderate	Moderate
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Moderate	Moderate	Moderate
	Effects Determination	MIIH	MIIH	MIIH
Suspected Species Habitat				
Barr's milkvetch (Suspected *Astragalus barrii*	Vulnerability - Direct	Low	Low	Low
	Exposure - Direct	Low	Low	Low
	Vulnerability - Indirect	Moderate	Moderate	Moderate
	Exposure - Indirect	Low	Low	Low
	Effects Determination	NI	NI	NI

Cumulative Effects-Sensitive Plants

Fuels reduction and timber management projects are currently planned and will continue to be planned for the District. These projects and any associated road use or construction have the potential to detrimentally impact individual plants and/or populations through direct plant removal or damage, ground disturbance, forest vegetation successional shifts, or habitat alteration (e.g. shade reduction) within or adjacent to plant populations. Prescribed burning and/or wildfire (natural and human-caused) also have the potential to detrimentally impact sensitive plants. These actions, without mitigation, may kill individual plants or entire populations, modify habitat (understory and overstory vegetation) to an unsuitable condition, or remove the habitat entirely. Permitted grazing has potential to impact sensitive plants. However, prior to implementation of future management decisions, site-specific analysis and field surveys, where appropriate, would be completed to identify sensitive plant populations, determine potential effects to the populations from the actions, and design alternatives and/or prescribe mitigation measures to minimize impacts. Typically, adverse actions to plant populations would be avoided.

[33] MIIH: May Impact Individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species

Roadside low density infestations of various noxious weeds are found adjacent to routes, but none are known to exist near known populations of sensitive plant species that occur within 400 feet of motorized route corridor under any alternative.

Travel along these routes by Forest users increases the potential that weed seed will be spread to other portions of the motorized route system and may establish within or adjacent to sensitive plant populations. Invasive species pose a risk to sensitive plants through direct competition. Herbicide application to manage invasive species also has the potential to kill sensitive plants. To help protect sensitive species, the 2006 Custer Weed Management EIS and Record of Decision directs that periodic inspections of known populations for the presence of invasive weeds is done. Herbicide applications along roads and trails would comply with product label requirements and protection measures described in the 2006 Custer Weed Management EIS.

Implementation of any of the alternatives considered in this analysis would not be expected to contribute to significant cumulative effects. Anticipated future projects or activities are fewer in number and less disruptive from a resource extraction point of view than those projects or activities that have taken place in the past. Past activities or projects have not precluded the establishment and existence of known sensitive plant populations throughout the project area where appropriate habitats are found. Therefore, continuation of lower impact projects or activities would not be anticipated to contribute significantly to cumulative effects.

3.4.3.10 Conclusion - Sensitive Plants

Under all alternatives, four of the six species assessed are anticipated to have no impact. Any alternative may impact individuals or habitat but will not likely contribute to a trend towards Federal listing or loss of viability to the population or species relative to two known species.

Table 3-40. Effects Determination Summary - Sioux

Species	Alternative A	Alternative B	No Action Alternative
Known Populations			
Dakota buckwheat *Eriogonum visheri*	No Impact[34]	No Impact	No Impact
Ovalleaf milkweed *Asclepias ovalifolia*	MIIH[35]	MIIH	MIIH
Mountain bluebells *Mertensia ciliata*	No Impact	No Impact	No Impact
Prairie gentian *Gentiana affinis*	No Impact	No Impact	No Impact
Pregnant sedge *Carex gravida var. gravida*	MIIH	MIIH	MIIH
Suspected Species Habitat			
Barr's milkvetch *Astragalus barrii*	No Impact	No Impact	No Impact

[34] NI: No Impact
[35] MIIH: May Impact Individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species

Table 3-41. Summary of Number of Species by Effects Determination - Sioux

Effects Determination	Alternative A	Alternative B	No Action Alternative
Number of Species with No Impact	4	4	4
Number of Species with potential to effect individuals or Habitat but will not Likely Contribute to a trend towards Federal Listing or Loss of Viability to the Population or Species	2	2	2

All alternatives are consistent with the Laws, Regulations, Policy, and Federal, Regional, State, and Custer Forest Plan. Selection of any alternative would be consistent with the regulatory framework relative to sensitive plants.

- End of Chapter 3 -

Chapter 4: Consultation, Distribution, List of Preparers, References, and Glossary

4.1 OVERVIEW OF CHANGES FROM DRAFT TO FINAL EIS

- Public participation summary was updated to include Draft EIS notification and comment period.
- Climate Change, Wildlife and Fisheries references were updated.

4.2 CONSULTATION

4.2.1 PUBLIC PARTICIPATION SUMMARY

Chapter 2 details the public participation to date. The initial scoping document (Project Record) was sent on October 22, 2007 to approximately 287 individuals, government agencies, tribal governments, news media, businesses, and organizations that have shown interest in similar projects on the Custer National Forest. The public comment period ended on November 26, 2007. A news release was placed in the Billings Gazette (Billings, MT) on October 29, 2007, summarizing the information provided in the document. News releases were sent to local newspapers.

Public meetings were held in Camp Crook and Buffalo, South Dakota, and Ekalaka, Montana in November, 2007.

In response to these efforts, 22 letters, personal comments, or phone calls were received. Collaborative group session information was documented and reviewed. The analysis of electronic, written and verbal comments preliminarily identified several potential issues. Some of these issues were identified as significant issues and were used to formulate the alternatives.

The Draft EIS was published in the Federal Register October 3, 2008 which began a 45 day comment period. Also, a news release was provided to local news media at the beginning of the comment period. The Draft EIS was made available to interested parties identified in the updated EIS mailing list. In response to the comment period, 11 letters, personal comments, or phone calls were received. A content analysis of the comments was conducted and response to comments is found in Chapter 5.

4.2.2 CONSULTATION WITH OTHERS

The following agencies were consulted during preparation of the EIS:

U.S. Fish and Wildlife Service
Montana Department of Fish, Wildlife, and Parks
South Dakota Game, Fish, and Parks
Bureau of Land Management

Coordination with the affected Tribe has been ongoing in the form of the original project scoping letter, public meetings, agency meetings, letter correspondences and proposed/scheduled field trips which outlined the proposed project specifics and requested any concerns that they may have regarding cultural resources or traditional cultural properties. This coordination effort is intended to

insure that any tribal concerns or comments are addressed throughout the NEPA process in regards to ARPA, AIRFA, NAGPRA and/or Bulletin 38 issues.

4.3 DISTRIBUTION

This document has been distributed in hardcopy or electronic format to individuals that have expressed an interest in the project and receiving this document, and to the officials, agencies, firms, and organizations listed below.

U.S. Federal Officials
Honorable Denny Rehberg – Congressman
Honorable John Tester – Senator
Honorable Max Baucus – Senator

U.S. Federal Agencies
Burueau of Land Management
Bureau of Indian Affairs
Natural Resources Conservation Service
Advisory Council on Historic Preservation
USDA APHIS PPD/EAD
USDA National Agricultural Library
U.S. Army Corps of Engineers, Northwestern Division
Environmental Protection Agency
U.S. Department of Interior, Office of Environmental Policy and Compliance
Northwest Power Planning Council
Federal Aviation Administration
Federal Highway Administrator
U.S. Department of Energy

Native American Tribes
Crow Tribe
Northern Cheyenne Tribe
Rosebud Sioux Tribe
Ogalala Sioux Nation
Spirit Lake Sioux Tribe
Standing Rock Sioux Tribe
Yankton Sioux Tribe
Mandan-Hidatsa/Arikara Tribe
Lower Brule Sioux Tribe

Local Officials
Carter County Commissioner
Harding County Commissioner
Fallon County

Organizations and Firms
Audubon Society
American Wildlands
American Wilderness Alliance
Alliance for the Wild Rockies
Defenders of the Black Hills
Montana Fish, Wildlife and Parks
Montana Department of State Lands
Montana Wilderness Association
Treasure State ATV Association
North Dakota State Forester
Rapid City Sierra Club
South Dakota State Game and Fish
Capital Trail Vehicle Association
Families for Outdoor Recreation
Montana Wilderness Association

4.4 LIST OF PREPARERS

The following people prepared the EIS in an interdisciplinary manner.

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Experience: 10 years in Fisheries with USDA Forest Service; Fisheries Biologist since 2004

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Contribution: Wildlife
Education: B.S., M.S., Wildlife Biology
Experience: 22 years of land management and NEPA experience with the USDA Forest Service

4.5 REFERENCES

4.5.1 CHAPTER 1: PURPOSE AND NEED, AND PROPOSED ACTION

USDA Forest Service 1987. USDA, Forest Service, Record of Decision for Land and Resource Management Plan and Environmental Impact Statement for the Custer National Forest and National Grasslands. 1987.

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USDA Forest Service 2007. USDA, Forest Service, http://www.fs.fed.us/recreation/programs/ohv Travel Management Schedule.

4.5.2 CHAPTER 2: PUBLIC PARTICIPATION, ISSUES AND ALTERNATIVES

4.5.2.1 Air Quality

MT DEQ. 2008. Montana Dept. of Environmental Quality, Helena, MT. Online data: http://www.deq.mt.gov/airquality/aqinfo.asp

SD DENR, 2008. South Dakota Department of Environment and Natural Resources. Online data: http://www.state.sd.us/denr/DES/AirQuality/airprogr.htm

4.5.2.2 Alternatives Considered in Detail

USDA Forest Service 2009. USDA, Forest Service. Climate Change Considerations in Project Level NEPA Analysis, January 13, 2009.

USDA Forest Service 2005. USDA, Forest Service, National OHV Implementation Team. Motor Vehicle Route and Area Designation Guide v. 111705.

USDA Forest Service 2005. USDA, Forest Service, National OHV Training Cadre. Travel Management: Designated Routes and Areas for Motor Vehicle Use.

4.5.3 CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.5.3.1 Recreation

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4.6 GLOSSARY

Area – A discrete, specifically delineated space that is smaller, and in most cases much smaller, than a Ranger District.

Designated Road, Trail, or Area - A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to 36 CFR 212.51 on a motor vehicle use map. (36 CFR 212.1)

Designation – Motor vehicle use on NFS roads and trails, and in areas on NFS lands shall be designated by vehicle class and, if appropriate, by time of year.

Forest Road or Trail - A forest road or trail is a road or trail wholly or partly within, or adjacent to, and serving the National Forest System and which is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources. (23 USC 101)

Maintenance Level 1 - These are roads that have been placed in storage between intermittent uses. The period of storage must exceed 1 year. Basic custodial maintenance is performed to prevent damage to adjacent resources and to perpetuate the road for future resource management needs. Emphasis is normally given to maintaining drainage facilities and runoff patterns. Planned road deterioration may occur at this level. Appropriate traffic management strategies are "prohibit" and "eliminate" all traffic. These roads are not shown on motor vehicle use maps.

Roads receiving level 1 maintenance may be of any type, class, or construction standard, and may be managed at any other maintenance level during the time they are open for traffic. However, while being maintained at level 1, they are closed to vehicular traffic but may be available and suitable for nonmotorized uses.

Maintenance Level 2 - Assigned to roads open for use by high clearance vehicles. Passenger car traffic, user comfort, and user convenience are not considerations. Warning signs and traffic control devices are not provided with the exception that some signing, such as W-18-1 “No Traffic Signs,” may be posted at intersections. Motorists should have no expectations of being alerted to potential hazards while driving these roads. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Log haul may occur at this level. Appropriate traffic management strategies are either to:

a. Discourage or prohibit passenger cars, or

b. Accept or discourage high clearance vehicles.

Maintenance Level 3 - Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. The Manual on Uniform Traffic Control Devices (MUTCD) is applicable. Warning signs and traffic control devices are provided to alert motorists of situations that may violate expectations.

Roads in this maintenance level are typically low speed with single lanes and turnouts. Appropriate traffic management strategies are either "encourage" or "accept." "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users.

Maintenance Level 4 - Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. Manual on Uniform Traffic Control Devices is applicable. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

Maintenance Level 5 - Assigned to roads that provide a high degree of user comfort and convenience. These roads are normally double lane, paved facilities. Some may be aggregate surfaced and dust abated. Manual on Uniform Traffic Control Devices is applicable. The appropriate traffic management strategy is "encourage."

Motor Vehicle Use Map (MVUM**) – -** Map required by the 2005 Motorized Travel Rule that indicates designated roads, trails and areas.

National Forest System Road (System Road) - A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, *county* or other local public road authority. (36 CFR 212.1, 36 CFR 251.51, 36 CFR 261.2)

National Forest System Trail (System Trail) - A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county or other local public road authority. (36 CFR 212.1)

Off-highway Vehicle – Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, snow, ice, marsh, swampland or other natural terrain.

Road – A motor vehicle route over 50 inches wide, unless identified and managed as a trail.

Route Decommissioning – Activities that result in the stabilization and restoration of unneeded roads to a more natural state.

Season of Use - The time of year that a system road is designated for use.

Temporary road or trail – A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas.

Trail – A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.

Unauthorized road (non-system road) – A road or trail that is not a forest road or trail.

- End of Chapter 4 -

Chapter 5: Response to Comments

5.1 PUBLIC COMMENT ANALYSIS PROCESS

Content analysis of comments received on the DEIS was conducted. Public comments were received in the form of letters or postcards, electronic mail (e-mail), phone calls, and facsimiles. A Content Analysis Team reviewed all the comments on the DEIS. Substantive comments from each letter, e-mail, or form were identified. Each issue or topic was assigned to a subject area and a response number and the various comments dealing with that topic or issue were grouped under the response number heading. A response was written for each topic or issue that was identified. All of the responses are grouped by subject area and provided in this chapter.

Respondent's and agency names are listed below with response numbers to allow the reader to see how their comments were responded to or used. Persons wishing to find responses to their comments on the DEIS should locate their name and assigned codes below and the corresponding ID Team response. For example:

Capital Trail Vehicle Association	E-1, MISC-1, MISC-7, MISC-8, R-3,
Webster, Margaret	MGMT-1, MGMT-2, MGMT-3, MGMT-4,

The only agency comment letters received on the project were from the South Dakota Department of Game, Fish and Parks, U.S. Environmental Protection Agency, USDI Bureau of Land Management Miles City Field Office, and USDI-Office of Environmental Policy and Compliance. These letters are included in Appendix E.

Agency Names	DEIS Response Numbers
South Dakota Department of Game, Fish and Parks	F-4, MISC-3, R-1, WL-1, WQ-4
U.S. Environmental Protection Agency, Region 8 MT Office	F-1, F-2, F-3, MISC-1, MISC-2, S-1, V-1, WQ-1, WQ-2, WQ-3
USDI Bureau of Land Management Miles City Field Office	No Comment
USDI Office of Environmental Policy & Compliance	No Comment

Organization Names	DEIS Response Numbers
Capital Trail Vehicle Association	E-1, MISC-1, MISC-7, MISC-8, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, S-2, WQ-5

Individual Names	DEIS Response Numbers
Hunnes, Jeffery A.	C-1, MGMT-1, MGMT-2, MGMT-3, MISC-2, MISC-4, MISC-5, MISC-6, MISC-9, WL-2, WL-3
Webster, Margaret	MGMT-1, MGMT-2, MGMT-3, MGMT-4, MISC-2, MISC-4, MISC-5, R-2, WL-2
Weirick, Greg	No Substantive Comments identified during Content Analysis

The following comments were received after the closing date of the comment period. Comments were reviewed and are address in the FEIS; however, based on 36 CFR 215.13, commenter will have not have standing for appeal.	
Individual Names	**DEIS Response Numbers**
Huffman, Bradford L.	No Substantive Comments identified during Content Analysis

The following comments were received after the closing date of the comment period. Comments were reviewed and are address in the FEIS; however, based on 36 CFR 215.13, commenter will have not have standing for appeal.	
Individual Names	**DEIS Response Numbers**
Stark, Rudy	E-1, MISC-1, MISC-7, MISC-8, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, S-2, WQ-5
Stevens, Helen	No Substantive Comments identified during Content Analysis

5.2 RESPONSE TO COMMENTS

What follows are individual or summarized comments for each of the subject areas identified through the content analysis process, as well as the response to those comments. If numerous similar comments were received on a topic, they were summarized into a single comment. The response to comments may be a direct response to the comment, or will note whether the comment was addressed by adding analysis or discussion to the FEIS.

CULTURAL RESOURCES

Subject: Cultural Resources	***Response #:*** **C-1, Alternative that Protects**
Letter-Comment #: 8-2	Second the Forest Service should have included an action alternative that protects cultural resource sites, specifically in Areas of Potential Effect (APE). Alternative B allows motorized use in several problematic areas. "At least 138 recorded cultural resource sites are located within the APE corridor and could be adversely affected by new trail additions to the road and trail system or by conversions of roads to the trail system. ...A1lowing additional motorized use, either due to designation of previously undesignated routes or the addition of unlicensed vehicle use to licensed vehicle use on existing system routes, may further expose these deposits resulting in loss of valuable information." (DEIS p. 3-33).
Response: For the FEIS, under Alternative B several sensitive areas were dropped from consideration for proposed addition to the road and trail system or were proposed for administrative use only. Review of proposed non-system routes did not observe any direct effects to cultural resource sites. Monitoring during the past seven years has not revealed any adverse effects to cultural resources as a result of dispersed vehicle camping. Monitoring will continue within the APE where cultural resources are known to exist for evidence of adverse effects to cultural resources.	

ECONOMICS

Subject: Economics	***Response #:*** **E-1, Cumulative Effects**
Letter-Comment #: 7-9 and 9-9	Each route must include a socio-economic analysis that includes the impacts on the public owning OHVs and looking for opportunities to use them and landowners who purchased property with the intent of being able to access and recreate using motor vehicles.
Response: The Forest Service does not conduct economic analyses that isolate portions of the population based on their choices about purchases. The analysis in the EIS Chapter 3 Recreation section evaluates the relative motorized and non-motorized opportunities provided under each of the alternatives. The results of this analysis are used in the economics section to suggest that if any economic impacts occur, they would be very small compared to the total economic activity in the economic impact area.	

FISHERIES AND AQUATICS

Subject: Fisheries and Aquatics	***Response #:*** **F-1, Mode of Travel**
Letter-Comment #: 1-6	We do not concur entirely with the statement that in most cases, the actual use, or mode of travel (motorized versus non-motorized) is inconsequential in terms of watershed effects (page 3-81). We believe motorized uses in general are more likely to accelerate erosional processes and worsen poor road conditions, and increase stream sedimentation and degradation of fisheries habitat when compared to non-motorized uses. Sediment yields are generally higher from roads than from trails, and from motorized trails than from non-motorized trails. Roads/trails often tend to become wider and rutted with heavy motorized use, creating a greater need for monitoring of road/trail conditions, and for road and trail maintenance for repair and erosion control.
Response: The paragraph referred to was intended to imply that in most situations the scale of the infrastructure is directly related to the degree of impact. There is evidence to support both motorized and non motorized routes impacting watersheds at varying scales. However, for the purpose of the Sioux Ranger District TMP, the designation or conversion of roads to trails is from motorized roads to motorized trails only. Therefore, in both the Draft EIS and Final EIS, motorized trails were considered equal to roads in the watershed and fisheries risk analysis and were referred to as routes.	

Subject: Fisheries and Aquatics	***Response #:*** **F-2, Amphibians**
Letter-Comment #: 1-7	It is stated that Alternative B proposes actions that result in a net decrease in risk to aquatic resources in all 12 moderate and high risk watersheds with fish resources or sensitive amphibians on the District (page 3-88), however, Table 3-25 appears to show more miles with increase in risk than decrease in risk in the Gap Creek watershed. It would appear, therefore, that there would be a net increase in risk to aquatic resources in the Gap Creek watershed. We recommend that Alternative B be amended so that it results in a net decrease in risk in the Gap Creek watershed, similar to the net decrease in other watersheds.
Response: The Gap Creek watershed does not harbor fisheries resources or known sensitive amphibian populations. All 12 moderate and high risk watersheds that do harbor fisheries resources and/or sensitive amphibian species appear in bold print in Table 3-25 and as stated in the DEIS analysis (page 3-88), all of these have a net decrease in risk under Alternative B. For the FEIS, Alternative B proposes actions that result in a net decrease in risk in 10 of the 13 moderate and high risk aquatic resource watersheds (Table 3-25). The 3 aquatic resource watersheds that have a net increase in risk include the Dry Creek, Headwaters Little Beaver Creek, and the Middle Crooked Creek watersheds. All of these 3 watersheds harbor sensitive amphibian species. However, the net increased risk of 3.5 total miles for these watersheds is related to 3.4 miles of actions that designate non-system routes to administrative use, and only 0.1 miles related to designating non-system routes to public use routes. Therefore, although these routes will remain on the landscape, all but 0.1 miles of the increased route risk miles will receive low levels of use and their designation should have negligible to nonexistent indirect effects to sensitive amphibian species.	

Subject: Fisheries and Aquatics	***Response #:*** **F-3, Fish Passage**
Letter-Comment #: 1-8	Has the Custer NF and Sioux Ranger District evaluated or conducted a survey of fish passage on culverts on the District?
Response: All Forest Highway stream crossings on the Sioux District have been inventoried and evaluated for fish/aquatic organism passage. The remaining culverts in the analysis area are evaluated on a case by case basis. Few culverts on the Sioux District are associated with perennial waters and hold potential to affect fish passage. However, Aquatic Organism Passage (AOP) is a key factor in all culvert replacements and is incorporated whenever applicable. The scope of the travel plan is limited to the designation of roads and trails. Construction, reconstruction, maintenance and decommissioning proposals will require future and separate NEPA decisions.	

Subject: Fisheries and Aquatics	***Response #:*** **F-4, Roads and Trails**
Letter-Comment #: 4-6	The DEIS states that "In general, roads have more impacts than trails because of their wider prisms, etc., etc." We suggest this may not be a blanket truth as erosity and runoff depends on the type of road: paved, gravel, grassy and secure, soil type, precipitation events, use, location, etc. Also, a recent presentation of a Colorado study indicated that OHV trails created twice the sediment load to streams as dirt roads (Dr. Lee McDonald, Colorado State University, Dakota Society of Am. Foresters Fall Conference, Rapid City, SD). Not all roads and trails are created equal and we suggest caution at assuming trails are not as adverse to riparian systems as roads.
Response: The paragraph referred to was intended to imply that in most situations the scale of the infrastructure is directly related to the degree of impact. However, the Custer National Forest does agree with the rationale provided and did incorporate the same rationale in the Water Quality/ Fisheries and Aquatics analyses. Motorized trails were considered equal to roads in the watershed risk analysis, in both the Draft EIS and Final EIS. Combined, motorized trails and roads were referred to as "routes" for these analyses.	

MANAGEMENT

Subject: Management	***Response #:*** **MGMT-1, Funding**
Letter-Comment #: 5-3	Due to inadequate funding, National Forest road maintenance has suffered nationwide. This situation is not likely to change in the near future. The Forest Service must consider this reality, and should consider closing or not authorizing routes that cannot adequately be maintained.
8-7	Due to inadequate funding, National Forest road maintenance has suffered nationwide. This situation is not likely to change in the near future for the CNF. The Forest Service must consider this reality, and should consider closing or not authorizing routes that cannot adequately be maintained to Forest safety and engineering standards.
Response: Funding for maintenance of roads and trails is not anticipated to change significantly in the next 10 years. Based on past funding levels, the Forest is unlikely to have sufficient funding to maintain to standard all of the routes necessary for the administration, utilization, and protection of the District for the foreseeable future. As a result, the Forest prioritizes maintenance work and routinely applies for additional/supplemental funding to increase the number of miles of road and trail maintained. If issues arise, road closures will be considered to protect resources and/or user safety.	

Subject: Management	***Response #:*** **MGMT-2, Mixed Use**
Letter-Comment #: 5-8 and 8-11	Since the 2005 Motorized Travel Rule lists public safety as one of the general criteria to be considered during the designation of roads, trails, and areas, mixed use roads and trails should be examined extremely closely before such designation occurs.
Response: Forest Service regulations require that mixed motorized use road proposals undergo a formal mixed motorized use engineering analysis to determine if mixing licensed and unlicensed vehicles on the proposed road is suitable. This analysis has been completed for Alternative B. No extraordinary safety concerns with these designations were identified. During the process of identifying routes for potential motorized trails, the Forest Service considered whether the route had trail characteristics, such as rough surfaces, narrow widths, native soil surfaces, etc. In general, routes with trail characteristics require slower speeds, and are generally suitable for use by both licensed and unlicensed vehicles.	

Subject: Management	***Response #:*** **MGMT-3, Implementation and Enforcement**
Letter-Comment #: 5-9	The Forest Service should propose a travel plan that can reasonably be implemented and enforced. The Forest Service has not demonstrated how the changes in any of the Alternatives will increase the enforceability of the Plan. A reduction of motorized routes, appropriate signage, and a requirement that all motorized vehicles be licensed and street legal would make law would go a long way towards easing the law enforcement burden.
8-13	The DEIS states that one purpose and need for the project is to "...have enforceable travel management guidelines that meet the direction of the 2005 Motorized Travel Management Rule." (DEIS p. 1-4). However, it is unclear how the change in enforcement authority or the MVUM as outlined in the DEIS will lead to enforceable guidelines in the absence of adequate capacity to physically enforce the travel management decision.
Response: First, enforceability will be increased simply by having a Motor Vehicle Use Map - i.e. an enforceable travel plan, which does not presently exist. Second, Alternative B reduces the miles of routes available for public motorized use by nearly 100 miles or 25% compared to no action. Third, the Forest understands the importance of signing associated with travel management planning, and is committed to signing routes to make the MVUM useable and enforceable. Finally, the Forest Service defers to State law on vehicle licensing per 36 CFR 212.5(a)(1).	

Subject: Management	***Response #:*** **MGMT-4, Road #381612, 38161 and 38161A**
Letter-Comment #: 5-11	Road #38161 and #38161A should be closed or not designated as system roads or trails. These are user-created routes attempting to get a little closer to the base of Fighting Butte. Leaving them open to vehicles is an invitation to them to drive further and extend the route to attempt to reach the top of the butte. If and when this occurs, it will cause serious erosion problems on the steep slope of the butte.
Response: In response to this comment, Alternative B has been modified to change route #38161A (0.7 miles) from designated for public motorized use to administrative use because this would reduce potential impacts to cultural resources, no specific recreational need for the route has been identified, it is difficult to locate in the field, and portions are revegetated. There are no identified resource impacts associated with route #38161, and this route is known to access an area with traditional camping and picnicking. It is proposed to be remain designated for public motorized use in Alternative B.	

MISCELLANEOUS

Subject: Miscellaneous	***Response #:*** **MISC-1, Monitoring**
Letter-Comment #: 1-10	We also recommend that mechanisms for public disclosure of the monitoring analysis and the decisions for the Travel Plan be provided. The roles of the Forest Service, other Agencies, independent science, and the public should be identified. The FEIS should discuss the future decision points in this adaptive process that may require additional NEPA analysis. The FEIS should also discuss the funding is available for monitoring and adaptive management.
Response: The District Ranger will develop an implementation and effectiveness monitoring plan within one year of the date of the decision for this project. The monitoring plan will identify monitoring items that are most critical to determining if implementation of the decision is satisfactory and if the decision has been effective. The plan may include criteria similar to the Forest Plan, such as potential data sources/measures, monitoring objectives, thresholds or indicators that change may be needed, and potential corrective measures. Refer to Chapter 2 Monitoring for more detailed information related to monitoring.	

Subject: Miscellaneous	***Response #:*** **MISC-2, Dispersed Vehicle Camping**
Letter-Comment #: 1-12	We also recommend that special limitations should be considered to limit vehicle access even more if necessary to assure that motorized access does not damage ecologically sensitive resources….We believe motorized access to camping sites in ecologically sensitive areas should be restricted even if they are within 300 feet of designated routes. It would be helpful and appropriate to identify and designate camping sites that avoid sensitive areas, and/or to encourage camping or concentrated public use in areas that are more resilient and can more easily recover from impacts and/or accommodate public use with less impacts.
5-5 and 8-8	Allowing motorized vehicles to travel 300 feet to either side of every road universally is unwise, and application of this rule should be on a route-by-route basis taking into consideration the topography and resources along the route and the need, as required by the 2007 Travel Management Rule.
Response: In general, this concern was considered when developing Alternative B. No site-specific areas of concern were identified by the Forest Service. In addition, the Forest Service identified the following considerations: 1) many sensitive areas are not desirable for dispersed vehicle camping (wetlands, grades greater than 5%, etc.); 2) the highest use on the District is during the fall, when areas tend to be dry; 3) there have not been any specific issues identified during the last 8 years of this activity that indicate the 300 foot allowance has been an issue (i.e. since the 2001 Tri-State OHV Decision); 4) terrain tends to limit where folks tend to camp; 5) typically, heavy use occurs in same location every year and have not been in sensitive areas.	

Subject: Miscellaneous	***Response #:*** **MISC-3, Corrections and Additions**
Letter-Comment #: 4-2	Of note, the "Ashland" Ranger District was referenced on pages 1-13 and 2-13, rather than the Sioux.
4-3	Post-MVUM Enforcement (DEIS page 2-14) discusses how the new travel restrictions will require cooperation from various public entities. Page 3-83 discusses how Montana Dept. of Fish, Wildlife and Parks manages its wildlife and fish populations. Please include the South Dakota Department of Game, Fish and Parks in both references.
Response: Thank you for bringing these to our attention. These references have been updated to include South Dakota Department of Game, Fish and Parks. Changes have been made in the FEIS.	

Subject: Miscellaneous	***Response #:*** **MISC-4, Range of Alternatives**
Letter-Comment #: 5-6 and 8-9	The DEIS states that "during the past seven years, the District has not observed unacceptable adverse impacts from this activity that warrants proposing a change to this activity under the (B) alternative." What does the Forest Service define as unacceptable?
Response: This language has been clarified, by replacing it with, “during the past eight years, the District has not observed unacceptable adverse impacts from this activity, such as moderate to severe vegetation denuding or rutting that would cause water quality issues that warrant proposing a change to this activity under the [B] alternative.”	

Subject: Management	***Response #:*** **MISC-5, Definition of Road and Trail**
Letter-Comment #: 5-7 and 8-10	In the DEIS the Forest Service is converting a number of roads to trails in the Sioux District regardless of the width or condition of the route. This is confusing the definition of “road” and “trail”, and appears to be a convenience to the Forest Service to avoid "road" maintenance; to circumvent its own safety and engineering requirements, to blur the standards and guidelines of road-density as applied to elk security standards or wildlife habitat, or to bypass Executive order 11644 which limits “roads”, but not “trails”.
Response: The proposal to convert some roads to motorized trails open to all motor vehicles is for the purpose of providing recreation opportunities, and not for any of the reasons cited. First, the Forest Service has maintenance, safety and engineering standards for motorized trails open to all vehicles, just like it does for roads - the agency is not attempting to avoid these responsibilities. Second, the analysis includes motorized trails and roads in calculating the density of motorized routes related to elk security. This has consistently been how the calculations have been handled and the agency has never suggested "blurring" the methodology for calculating elk security by leaving motorized trails out of the equation. Finally, the 2005 Motorized Travel Rule, the guidance for this analysis, is the Forest Service's method for implementing Executive Order 11644. The Rule is consistent with the Executive Order and permits the designation of motorized trails open to all motor vehicles.	

Subject: Miscellaneous	***Response #:*** **MISC-6, User Created Routes**
Letter-Comment #: 8-6	Many of the routes within the District are user created and were developed without agency authorization, environmental analysis, or public involvement and should not be incorporated into the National Forest System…If unauthorized roads that meet the above requirements are to be added to the system, a like number of roads/miles should be removed from the system and obliterated.
Response: The 2005 Motorized Travel Rule permits the addition of non-system routes to the Forest transportation system. It does not require maintaining the existing miles of routes on a District or Forest.	

Subject: Miscellaneous	***Response #:*** **MISC-7, Cumulative Effects**
Letter-Comment #: 7-3 and 9-3	The cumulative effect of all motorized closures has been significant and is growing greater every day yet they have not been adequately addressed. Ignoring cumulative effects allows the agency to continue to close motorized routes unchecked because the facts are not on the table. CEQ guidance on cumulative effects was developed to prevent just this sort of blatant misuse of NEPA....[see table]
Response: The DEIS addressed the cumulative effects of loss of motorized opportunities. The analysis in the FEIS has been expanded to include the relevant information on cumulative effects in response to the comment.	

Subject: Miscellaneous	***Response #:*** **MISC-8, ATV Routes**
Letter-Comment #: 7-4 and 9-4	All roads to be closed to full-size vehicles should be converted to atv routes. This is a reasonable alternative for all existing roads.
Response: In Alternative B, routes that were not designated because of resource concerns; human health and safety concerns; the route has naturally re-vegetated; the route is parallel to another motorized route; or because there was no legal public right-of-way. Designating these routes for any motorized use would be counter to the rationale used to develop Alternative B. In Alternative A, only a limited number of routes were not designated, which would not be designated regardless of vehicle type (i.e. no legal public right-of-way).	

Subject: Miscellaneous	***Response #:*** **MISC-9, Licensed Vehicles**
Letter-Comment #: 8-12	EWC members have reported on numerous occasions encountering motorized vehicles in non-motorized areas, and have been told by both Forest Service and BLM law enforcement officials that without a license plate there is little law enforcement can do. By allowing unlicensed vehicles on public land, the Forest Service is encouraging the public to break the law. We ask that ALL vehicles be licensed and readily identifiable.
8-14	The Forest Service should propose a travel plan .that can reasonably be implemented and enforced. A reduction of motorized routes, appropriate signage, and a requirement that all motorized vehicles be licensed and street legal would go a long way towards easing the law enforcement burden.
Response: First, enforceability will be increased simply by having a Motor Vehicle Use Map - i.e. an enforceable travel plan, which does not exist presently. Second, Alternative B reduces the miles of routes available for public motorized use by nearly 100 miles or 25% compared to no action. Third, the Forest understands the importance of signing associated with travel management planning, and is committed to signing routes to make the MVUM useable and enforceable. Finally, the Forest Service defers to State law on vehicle licensing per 36 CFR 212.5(a)(1).	

RECREATION

Subject: Recreation	***Response #:*** **R-1, Hunting Use**
Letter-Comment #: 4-4	Page 3-6 states that the Sioux District is a relatively small percent of the hunting units in South Dakota. True acreage wise, but the District experiences a disproportionate high use during most hunting seasons.
Response: The text on DEIS Page 3-8 indicated that 60-70% of hunters in those particular units use District lands for deer hunting based on input from the South Dakota Game, Fish, and Parks Department. This information has been included in the FEIS.	

Subject: Recreation	***Response #:*** **R-2, Non-Motorized Trails**
Letter-Comment #: 5-1	While The DEIS does provide for road closures for non-motorized hunting, there is no provision for areas or trails permanently and specifically for non-motorized recreational opportunities in the DEIS. Without separately designation motorized and non-motorized areas, user conflict will increase between motorized and/or motorized user and will displace non-motorized users,. Thus is in conflict with Executive Order 11644.

Response: The purpose of this analysis is to designate motor vehicle use; construction of non-motorized trails is outside the scope of this analysis.

Zoning types of recreational uses is also outside the scope of travel management planning and is addressed at the land management planning level, such as The Custer National Forest and National Grasslands Land and Resource Management Plan (Forest Plan). The Forest Plan was developed through the long-term resource management planning efforts required by the National Forest Management Act, as amended. This public process set the goals, objectives, and standards for the Forest and provides the basis for management of the Forest's resources. Site-specific efforts such as travel management planning address a component of Forest management, but are not intended to be the more comprehensive planning effort associated with Forest-level land management planning. Site-specific efforts like travel management planning must be consistent with the Forest Plan.

The Department of Agriculture produced the 2005 Motorized Travel Rule, which this process follows, to be consistent with Executive Orders 11644 and 11989, and to serve as the means to implement the policy direction contained in those Executive Orders.

Subject: Recreation	***Response #:*** **R-3, No Net Loss**
Letter-Comment #: 7-1 and 9-1	The continual loss of motorized recreational opportunities is our primary concern. Because of the significant cumulative effect of motorized closures at this point in time, we feel strongly that there can be “no net loss” of motorized recreational opportunities with the Sioux Ranger District Travel Management Plan.

Response: Crafting an alternative that resulted in no net loss of motorized opportunities would require construction of new motorized routes to offset routes that cannot be designated (no legal public right-of-way) or are undesirable to designate (human health and safety or resource concerns). Construction of routes is outside the scope of this process.

Subject: Recreation	***Response #:*** **R-4, Motorcycles**
Letter-Comment #: 7-5 and 9-5	In order to recognize the different needs and impacts, the evaluation must be differentiated between ATV and motorcycle trails. Figure 2.2 and 2.7 on page 14 of Chapter 2 in the 3-State OHV EIS and Decision clearly shows that existing tracks used by motorcycles are to be considered as motorized trails (http://www.mt.blm.gov/ea/ohv/Chapter2.pdf). The evaluation must consider these routes in order to meet the requirements of the 3-State OHV agreement.

Response: The Tri-State OHV considered game and livestock trails with motorized "regular use and continuous passage over a period of years" as motorized routes. No single track routes of this nature have been identified on the Sioux Ranger District

Subject: Recreation	***Response #:*** **R-5, Value of Road or Trail to Motorized Recreationists**
Letter-Comment #: 7-6 and 9-6	The site specific analysis of each road or trail to be closed must address or identify where the public would go to replace the motorized resource proposed for closure. In other words, the analysis must adequately evaluate the site specific value of a road or trail proposed for closure to motorized recreationists.

Response: The Recreation analysis in Chapter 3 evaluates the direct, indirect, and cumulative effects that changes to the road system will have on opportunities for motorized and non-motorized activities. The analysis does not, and likely could not, identify where individuals may go if a specific route is designated or not designated, because the agency does not currently have this type of information and is unreasonable to try and collect such information.

Rather, the analysis indicates, based on the proposed changes, whether more or less opportunities are available under each alternative and how the quantity of opportunities may be affected by other recent actions on areas potentially frequented by recreational users of the District.

Subject: Recreation	***Response #*: R-6, Equal Opportunity (50/50)**
Letter-Comment #: 7-12 and 9-12	We request that this data be used to guide the decision-making to a preferred alternative that adequately meets the needs of the public by increasing motorized recreational opportunities in the project area….In order to bring equality to the allocation of non-motorized to motorized trails in the Custer National Forest must either convert 136 miles ((288/2)-8) of non-motorized trails to motorized trails or 272 miles (280-8) of new motorized trail must be constructed. The proposed Travel Plan does not adequately address this imbalance.
Response: Forest Service policy is to provide a range of opportunities in compliance with the Forest's Land and Resource Management Plan. The Custer NF Land and Resource Management Plan does not mandate that equal quantities of recreational opportunities be provided across the Forest. Furthermore, this suggested approach appears to be arbitrary because it assumes there is equal demand, and does not take into consideration route-specific characteristics such as suitability for motorized/non-motorized types of uses.	

Subject: Recreation	***Response #:* R-7, Popularity of Motorized Recreation**
Letter-Comment #: 7-14 and 9-14	The evaluation must adequately consider the growing popularity of motorized recreation, the aging population and their needs for motorized access, and the increased recreation time that the aging population has and looked forward to enjoying public lands in their motor vehicles.
Response: The analysis evaluates the effects each alternative will have on motorized and non-motorized opportunities, especially on hunting, the primary recreation activity on the District.	

Subject: Recreation	***Response #:* R-8, Dual-Purpose Roads**
Letter-Comment #: 7-16 and 9-16	We request that a system of dual-purpose roads, and OHV roads and trails that interconnect be one of the primary objectives of the travel management plan and that this objective be adequately addressed in the document and decision.
Response: This was one of the objectives used in developing both Alternative A and Alternative B. Screens or criteria that were unique to each alternative were used to identify the base set of motorized routes. Then, every route that was suitable for mixed motorized use or motorized trails was designated as such, and designations were reviewed to insure they formed an interconnected network. If needed, adjustments were made to the alternatives to provide connections.	

Subject: Recreation	***Response #:* R-9, Dual-Purpose Roads**
Letter-Comment #: 7-17 and 9-17	We request that all reasonable routes be designated for dual-use so that a system of roads and trails can be used by motorized recreationists.
Response: This was one of the objectives used in developing both Alternative A and Alternative B. Every route that was suitable for mixed motorized use or motorized trails was designated as such, and thought was given to making sure they were interconnected to form a network. Some areas were not suitable or desirable for motorized mixed use, most notably the Chalk Buttes and the Ekalaka Hills land units. In the Chalk Buttes, the traditional cultural practices in the area, small size of the land unit and limited motorized opportunities made it a poor candidate for a mixed motorized use road/motorized trail network. In the Ekalaka Hills, continuing commercial activity planned for this land unit and the safety concerns associated with mixing unlicensed vehicle operation with commercial vehicles made it a poor candidate for developing a mixed motorized use road/motorized trail network in this land unit.	

Subject: Recreation	***Response #:* R-10, Visitor Use Data**
Letter-Comment #: 7-18 and 9-18	An important note, agency planning staff has overlooked one important aspect of the visitor use data. The visitor use data cited above is based on a percent of the total population. However, the percent of the total population visiting our public lands is a fraction of the total population. Public lands should be managed for those people that actually visit them. We request that this adjustment be made in this evaluation.
Response: DEIS Page 3-8 stated that NVUM data collected for the Forest was not appropriate for use in this analysis, because the relatively high visitor use on the Beartooth District heavily influenced the NVUM results which are consequently not reflective of the Sioux Ranger District. This information has been included in the FEIS.	

Subject: Recreation	***Response #:*** **R-11, Revised Data**
Letter-Comment #: 7-19 and 9-19	Furthermore, we request that the data in the next two tables be updated to reflect the significant reduction in miles of roads and motorized trails that decisions have produced since this data was assembled. This revised data should be used to guide the decision-making to forest plan and travel plan alternatives that adequately meet the needs of the public by increasing motorized recreational opportunities in the national forest system.
Response: The majority of decisions and projects listed in the table are outside the impact area for cumulative effects defined in the EIS (see FEIS Chapter 3, Recreation, Cumulative Effects Section). The BLM's Tri-State OHV Decision was added to the list of projects considered in the cumulative effects analysis in response to the above comment.	

Subject: Recreation	***Response #:*** **R-12, Ravalii County Off-Road Users**
Letter-Comment #: 7-20 and 9-20	The Ravalli County Off-Road Users Association has found that "at the end of 2006, there were approximately 2500 "stickered" OHV's in Ravalli County. For the past five years, the growth rate of "stickered" OHV's has been about 20% per year. If this growth rate continues, the number of OHV's in the forest will double every four years. On the Bitterroot National Forest there have been no new OHV "system" routes designated for OHV travel since 1996. History, experience and common sense tell us that when adequate, responsible, sustainable routes with attractive destinations are provided, OHV enthusiasts will ride responsibly. On the Bitterroot National Forest this means more routes, not more restriction." The same analysis must be done for the Custer National Forest and it will find the same no growth trend and a lack of an adequate number of existing routes that is further made worse by a lack of new routes to address growth.
Response: The addition of nearly all of the unauthorized routes to the road and trail system is considered in Alternative A. The construction of new routes, which appears to also be suggested in this comment, is outside the scope of this analysis.	

SOILS

Subject: Soils	***Response #:*** **S-1, High Erosion Hazard Rating**
Letter-Comment #: 1-1	The DEIS states that Alternative B would include 24 miles of actions that would increase risks to water resources, and shows a net increase in risk in the Bull Creek-Cottonwood Creek, Dry Creek, and Gap Creek watersheds (i.e., more miles with increase in risk than decrease in risk). We note that the Dry Creek watershed with an increase in risk is also shown as a high risk watershed. Alternative B would have 165.5 miles of routes designated for public motorized uses on soils with "severe" erosion hazards, and 155.9 miles on soils "poorly suited" for roads and trails. Forty miles of roads and trails would be on landscapes that have a severe erosion hazard rating (14 miles Public use and 26 miles Administrative use). We do not support the addition of new routes with high risk of erosion and water quality impacts to the road system, especially when road maintenance is already inadequate to address resource impacts from existing roads.
1-3	However, we still recommend that Alternative B be revised or amended to include further reductions in motorized routes, particularly routes in areas with high hazard (erosive) soils. Table 2-6 indicates that Alternative B would increase water quality risks on 24 miles, and has 166 miles of routes on soils with high/very high erosion hazards. We note that Table 3-21 (page 3-74) showing route miles by moderate and high erosion risk watersheds for alternatives indicates that the preferred alternative would increase erosion hazard risks on 34.2 miles and decrease risk on 125 miles, and Table 3-22 (page 3-75) shows that Alternative B would add 23.9 miles of routes with increased erosion hazard risks. While Alternative B is clearly an improvement over no action and Alternative A, we still recommend additional reductions in motor vehicle route designations for and high/very high hazard soils and reduction of water quality impacts be included in the preferred alternative.
1-4	We believe it would be appropriate to revise or amend Alternative B to reduce erosion and watershed risks further, particularly reduction of motorized routes on soils with severe erosion hazards and in poorly suited areas and in high hazard watersheds (i.e., Upper and Lower Tie

Subject: Soils	***Response #:*** **S-1, High Erosion Hazard Rating**
	Creek, Speelmon Creek, Upper Crooked Creek, Plum Creek, Bull Creek-Campbell Creek, Dry Beaver, Slick Creek, Little Missouri-K-Bar Creek, Russell Creek, Little Missouri-Waterhole Creek), and do not support the net increases in water resources risks in high risk watersheds proposed with Alternative B (i.e., Dry Creek watershed, Table 3-21).
Response: As stated in Draft EIS (page 3-92) "*Soil Map units may contain one or more ratings based on soil components of the map unit. Since the locations of the different components are not mapped, the map unit ratings depict the most severe rating for the soils within the map unit. For example, if one soil component has a moderate rating while another soil component in the same map unit has a slight rating, the map unit was given a moderate rating. In some map units the most severe or limiting rating may comprise the lowest percentage of the map unit, for example in Carter County, on the Sioux District, the Busby-Blacksheep-Twilight fine sandy loams, 8 to 25 percent slopes, map unit 170D, is rated as having severe erosion hazard and is poorly suited to native surface roads, but only 15% of the map unit actually has that rating, while 70% of the unit has a more favorable rating.*" These interpretations are a guide to how soils identified in these map units respond to management. In most cases, on site investigation is needed to accurately identify soils and hazard ratings. These ratings are used as a comparison tool between the alternatives. It is highly likely that the miles of routes on high erosion hazard soils is less than that identified. In addition, Alternative B decreases the miles of roads on high erosion hazard soils compared to the No Action Alternative and Alternative A (see table titled *Miles of Roads and Trails by Erosion Hazard Rating by Designation for the Three Alternatives for the Sioux Ranger District* in the Soils section of the FEIS). It has been determined that these routes are needed to successfully manage National Forest System Lands for public recreation opportunities or for administrative purposes.	

Subject: Soils	***Response #:*** **S-2, Sediment Production**
Letter-Comment #: 7-10 and 9-10	A sense of magnitude must be used when making decisions about road closures based on indicators such as sediment production. For example, a route should not be closed because it is estimated to produce 10 cubic yards less sediment. The sediment yield must be compared to naturally occurring conditions which includes fires. The recent fires in the Custer National Forest discharged thousands of cubic yards of sediment to the area streams which is more than all of the motorized routes in the project area for the next 100 years.
Response: It is difficult to determine the exact amount of sediment generated by roads and trails, or the amount of sediment generated as a result of wildfires. The soils analysis does not try to quantify the erosion from roads and trails but describes the hazard of potential erosion and suitability of the soils for natural surface roads and trails. We do recognize that many factors contribute to erosion and sedimentation. Determining which roads and trails are designated for public use, administrative use, and which ones are not designated was based on many factors, not only soils and erosion hazard.	

VEGETATION

Subject: Vegetation	***Response #:*** **V-1, Weed**
Letter-Comment #: 1-13	Table 3-32 (page 3-108) evidences that Alternative B has the lowest risk of weed invasion, although 149 acres are still shown with risk of weed invasion under Alternative B. We encourage additional limitations of motorized uses to reduce threat of weed spread….Weed free seed forage should be required for backcountry users.
Response: There is potential for weed spread along motorized routes, just as there is potential for weed spread in some areas that are not disturbed, or areas that could be disturbed by other elements such as wildfire. Although 149 acres were identified in Alternative B as being low density weed infestations within a 400 foot buffer from route centerline, access to dispersed vehicle camping is unlikely due to steep slopes and terrain features. The routes that bisect these areas are annually monitored and treated as necessary. When compared to No Action, Alternative B reduces risk of vehicle related potential weed impacts by 8,468 acres, while Alternative A increases risk of impacts by 3,968 acres. Weeds will continue to be spread as a result of motorized and non-motorized resource management, recreational use, other human activities, wildlife, and natural processes. To reduce the effects of weed spread, the Forest Service will monitor routes for early detection of new weed infestations and treat when they are still small. The impacts of weed management were analyzed in the 2006 Custer National Forest Weed Management EIS and were incorporated into this analysis by reference. Weed free seed forage is required for backcountry users.	

WATER QUALITY

Subject: Water Quality	***Response #:*** **WQ-1, High Risk Watershed**
Letter-Comment #: 1-1	The DEIS states that Alternative B would include 24 miles of actions that would increase risks to water resources, and shows a net increase in risk in the Bull Creek-Cottonwood Creek, Dry Creek, and Gap Creek watersheds (i.e., more miles with increase in risk than decrease in risk). We note that the Dry Creek watershed with an increase in risk is also shown as a high risk watershed. Alternative B would have 165.5 miles of routes designated for public motorized uses on soils with "severe" erosion hazards, and 155.9 miles on soils "poorly suited" for roads and trails. Forty miles of roads and trails would be on landscapes that have a severe erosion hazard rating (14 miles Public use and 26 miles Administrative use). We do not support the addition of new routes with high risk of erosion and water quality impacts to the road system, especially when road maintenance is already inadequate to address resource impacts from existing roads.
1-4	We believe it would be appropriate to revise or amend Alternative B to reduce erosion and watershed risks further, particularly reduction of motorized routes on soils with severe erosion hazards and in poorly suited areas and in high hazard watersheds (i.e., Upper and Lower Tie Creek, Speelmon Creek, Upper Crooked Creek, Plum Creek, Bull Creek-Campbell Creek, Dry Beaver, Slick Creek, Little Missouri-K-Bar Creek, Russell Creek, Little Missouri-Waterhole Creek), and do not support the net increases in water resources risks in high risk watersheds proposed with Alternative B (i.e., Dry Creek watershed, Table 3-21).
Response: The water resource affected environment analysis is a broad scale, risk based assessment. Risks to water resources from the existing transportation system are determined at the 6 HUC watershed scale from GIS spatial data concerning stream length, route length and number of stream crossings. Presence of TMDL streams and exceptionally high fire acres and intermittent stream crossings also elevates watershed risk ratings. Direct, indirect or cumulative route risk is based on whether the proposed action for the individual route will increase, decrease or have no effect on risk. Individual route risks have not been evaluated from site specific GIS spatial data or field data as this data has not been generated or collected. Additionally, cumulative impacts of individual routes at the watershed scale have also not been measured on-ground and quantified. The preferred alternative proposes actions that increase net risk to water resources in only seven (24%) of the 29 moderate and high risk watersheds on the District, while actions that decrease net risk are proposed in 20 watersheds (69%). Risk remains unchanged in two watersheds. The reasons for the decrease in risk are due to changing system routes to administrative use only, and not designating some system routes. From a District-wide cumulative summary, the proposed actions could be expected to result in a net reduction in risk along 40 percent of the 513 total route miles evaluated (See Chapter 3, Water Resources).	

Subject: Water Quality	***Response #:*** **WQ-2, TMDL**
Letter-Comment #: 1-2	The Plan should also be consistent with Total Maximum Daily Loads (TMDLs) and Water Quality Plans that may be developed to restore water quality and beneficial use support in impaired 303(d)-listed waters in the area (e.g., Little Missouri River, Thompson Creek). The Custer National Forest, Sioux Ranger District should coordinate their travel management planning with the Montana DEQ and South Dakota Dept. of Environment and Natural Resources as well as EPA TMDL staff to assure travel plan consistency with TMDLs and water quality restoration plans being prepared by MDEQ.
1-5	We recommend that the FEIS clarify if any portions of the impaired segments of the Little Missouri River and Thompson Creek are located with the National Forest boundary.
Response: As mentioned in the DEIS, no TMDLs are located within the Forest boundary and only two are located immediately downstream; Little Missouri and South Fork Grand River. TMDLs for the Little Missouri basin in Montana have not yet begun, while the schedule for the SF Grand River is 2011 (total suspended solids) and 2018 (salinity). The Thompson Creek segment you mention is a tributary to the Little Missouri and located far upstream of the District near the Wyoming state line.	

Subject: Water Quality	***Response #:*** **WQ-3, Wetlands**
Letter-Comment #: 1-9	We did not see much other discussion, however, regarding potential impacts of travel management alternatives on wetlands, and if any impacts occur, how they will be mitigated (i.e., mitigation means sequence of avoidance, minimization, rehabilitation, and compensation for unavoidable impacts). We believe the FEIS should include some disclosure of potential travel management impacts upon wetlands, and if no impacts are expected, at least state that.
Response: A discussion of wetlands is now included in the FEIS in the Water Quality section under Human Influences, Transportation Systems and Environmental Consequences.	

Subject: Water Quality	***Response #:*** **WQ-4, HUC Tables**
Letter-Comment #: 4-5	We are pleased that CNF identified riparian areas and water quality as issues for roads and dispersed motorized camping. The watershed and HUC tables were detailed but land unit or location (ie: Slim Buttes) would have been helpful to quickly identify South Dakota watersheds.
Response: Watersheds are now differentiated by State in the table in the water quality section titled *Summary of Watershed Characteristics and Watershed Scale Influences on the District.*	

Subject: Water Quality	***Response #:*** **WQ-5, Sense of Magnitude**
Letter-Comment #: 7-10 and 9-10	A sense of magnitude must be used when making decisions about road closures based on indicators such as sediment production. For example, a route should not be closed because it is estimated to produce 10 cubic yards less sediment. The sediment yield must be compared to naturally occurring conditions which includes fires. The recent fires in the Custer National Forest discharged thousands of cubic yards of sediment to the area streams which is more than all of the motorized routes in the project area for the next 100 years.

Response: Sediment production from travel routes was not quantified for this analysis due to numerous issues associated with existing sediment models as relayed in the DEIS. Erosion and sediment transport was discussed in both general terms, and in specific terms in relation to various activities.

As stated in the DEIS, *"Watersheds, undisturbed by human influences, are not static systems. Deep snow packs and heavy spring rains can cause substantial flooding, landslides and instream erosion. Wildfire, wind, or insect and disease mortality can drastically alter the vegetative composition of a watershed. Depending on the extent of mortality and rate of stand decomposition, impacts to stream systems can also be substantial. Beneficial uses, including fisheries habitat, can be negatively affected by these natural events. However, watersheds left undisturbed after natural events, can and do recover rapidly, and ultimately provide conditions that fully support all beneficial uses within a relatively short period of time. These natural disturbances occur infrequently, which allows for significant and generally rapid recovery of hydrologic and erosional processes prior to the next major disturbance event. This results in pulse effects to water resources, which are moderate to high in magnitude, but low in frequency. Within the current climatic regime and prior to significant human influence, stream systems have developed under pulse type disturbances.* [The effects from recurring or continual human activities are considered chronic.] *Although chronic effects are generally low to moderate in magnitude, they occur with moderate to high frequency. In contrast to pulse effects, chronic effects may not allow for significant recovery of the soil and water resource over time."*

For this reason, human caused sediment is an issue and Montana Water Quality Law requires that human caused sediment loading to surface waters be minimized for all land management activities. Under ARM 17.30.623 (2) (f) (B1 waters) *"No increases are allowed above naturally occurring concentrations of sediment, settleable solids, oils, or floating solids, which will or are likely to create a nuisance or render the waters harmful, detrimental, or injurious to public health, recreation, safety, welfare, livestock, wild animals, birds, fish, or other wildlife." Naturally occurring is defined in ARM 16.20.603 as: "the water quality condition resulting from runoff or percolation, over which man has no control, or from developed lands where all reasonable land, soil and water conservation practices have been applied".* Reasonable land, soil and water conservation practices are similar to Best Management Practices (BMPs). BMPs are considered reasonable only if beneficial uses are fully supported. (DEIS/FEIS, Water Quality, Affected Environment)

WILDLIFE

Subject: Wildlife	***Response #:*** **WL-1, South Dakota References**
Letter-Comment #: 4-1	We suggested in our 2007 comments and reiterate, South Dakota references regarding wildlife and habitat disturbances (while not complete, see list at end of letter). We do not believe that these studies would change the analysis or preferred alternative but knowledge of them could strengthen the DEIS analysis should it be challenged.
Response: Thank you for your suggested wildlife references for South Dakota. The references have been reviewed and used where appropriate.	

Subject: Wildlife	***Response #:*** **WL-2, Road Density**
Letter-Comment #: 5-7 and 8-10	In the DEIS the Forest Service is converting a number of roads to trails in the Sioux District regardless of the width or condition of the route. This is confusing the definition of "road" and ·'trail", and appears to be a convenience to the Forest Service to avoid "road" maintenance; to circumvent its own safety and engineering requirements, to blur the standards and guidelines of road-density as applied to elk security standards or wildlife habitat, or to bypass Executive order 11644 which limits "roads", but not "trails".
Response: All open, motorized routes except for "administrative use only" were used to calculate open route densities.	

Subject: Wildlife	***Response #:*** **WL-3, Separated by at Least 1 mile**
Letter-Comment #: 8-5	However, while your proposal disallows parallel roads that are less than .5 mile apart, it would be much better to have all motorized travelways separated by at least 1 mile to provide secure wildlife cover and areas for quiet recreation.
Response: Parallel open motorized routes were not criteria for wildlife effects analysis. Parallel routes may limit wildlife use in some areas.	

- End of Chapter 5 -

Appendix A: 2005 Motorized Travel Rule

36 CFR Parts 212, 251, 261, and 295 Travel Management; Designated Routes and Areas for Motor Vehicle Use; Final Rule:

4. Text of the Final Rule

List of Subjects
36 CFR Part 212: Highways and roads, National Forests, Public lands—rights-of-way, and Transportation.

36 CFR Part 251: Administrative practice and procedure, Electric power, National Forests, Public lands rights-of-way, Reporting and recordkeeping requirements, Water resources.

36 CFR Part 261: Law enforcement, National Forests.

36 CFR Part 295: National Forests, Traffic regulations.

Therefore, for the reasons set out in the preamble, amend part 212, subpart B of part 251, and subpart A of part 261, and remove part 295 of title 36 of the Code of Federal Regulations as follows:

PART 212—TRAVEL MANAGEMENT

1. Amend part 212 by revising the part heading to read as set forth above.
1a. Remove the authority citation for part 212.
2. Designate §§ 212.1 through 212.21 as subpart A to read as set forth below:

Subpart A—Administration of the Forest Transportation System
2a. Add an authority citation for new subpart A to read as set forth below:

Authority: 16 U.S.C. 551, 23 U.S.C. 205.
3. Amend § 212.1 as follows:
a. In alphabetical order, add the following definitions: administrative unit; area; designated road, trail, or area; forest road or trail; forest transportation system; motor vehicle; motor vehicle use map; National Forest System road; National Forest System trail; off-highway vehicle; over-snow vehicle; road construction or reconstruction; temporary road or trail; trail; travel management atlas; and unauthorized road or trail; and
b. Revise the definitions for forest transportation atlas, forest transportation facility, and road; and
c. Remove the definitions for classified road, new road construction, road reconstruction, temporary road, and unclassified road.

§ 212.1 Definitions.
Administrative unit. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land Between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System.
Area. A discrete, specifically delineated space that is smaller, and in most cases much smaller, than a Ranger District.

Designated road, trail, or area. A National Forest System road, a National Forest System trail, or an area on National Forest System lands that is designated for motor vehicle use pursuant to § 212.51 on a motor vehicle use map.
Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.
Forest transportation atlas. A display of the system of roads, trails, and airfields of an administrative unit.
Forest transportation facility. A forest road or trail or an airfield that is displayed in a forest transportation atlas, including bridges, culverts, parking lots, marine access facilities, safety devices, and other improvements appurtenant to the forest transportation system.
Forest transportation system. The system of National Forest System roads, National Forest System trails, and airfields on National Forest System lands.
Motor vehicle. Any vehicle which is self-propelled, other than:
(1) A vehicle operated on rails; and
(2) Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion, and that is suitable for use in an indoor pedestrian area.
Motor vehicle use map. A map reflecting designated roads, trails, and areas on an administrative unit or a Ranger District of the National Forest System.
National Forest System road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.
National Forest System trail. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.
Off-highway vehicle. Any motor vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain.
Over-snow vehicle. A motor vehicle that is designed for use over snow and that runs on a track or tracks and/or a ski or skis, while in use over snow.
Road. A motor vehicle route over 50 inches wide, unless identified and managed as a trail.
Road construction or reconstruction. Supervising, inspecting, actual building, and incurrence of all costs incidental to the construction or reconstruction of a road.
Temporary road or trail. A road or trail necessary for emergency operations or authorized by contract, permit, lease, or other written authorization that is not a forest road or trail and that is not included in a forest transportation atlas.
Trail. A route 50 inches or less in width or a route over 50 inches wide that is identified and managed as a trail.
Travel management atlas. An atlas that consists of a forest transportation atlas and a motor vehicle use map or maps.
Unauthorized road or trail. A road or trail that is not a forest road or trail or a temporary road or trail and that is not included in a forest transportation atlas.
4. Amend § 212.2 by redesignating paragraphs (b) as (d), revising paragraph (a), and adding new paragraphs (b) and
(c) to read as follows:

§ 212.2 Forest transportation program.
(a) ***Travel management atlas.*** For each administrative unit of the National Forest System, the responsible official must develop and maintain a travel management atlas, which is to be available to the public at the headquarters of that administrative unit.

(b) ***Forest transportation atlas.*** A forest transportation atlas may be updated to reflect new information on the existence and condition of roads, trails, and airfields of the administrative unit. A forest transportation atlas does not contain inventories of temporary roads, which are tracked by the project or activity authorizing the temporary road. The content and maintenance requirements for a forest transportation atlas are identified in the Forest Service directives system.
(c) ***Program of work for the forest transportation system.*** A program of work for the forest transportation system shall be developed each fiscal year in accordance with procedures prescribed by the Chief.
5. Amend § 212.5 as follows:
a. Revise paragraphs (a)(1) and (a)(2)(ii);
b. Revise the heading for paragraph (c) introductory text to read as set forth below:
c. Revise the heading for paragraph (d) introductory text to read as set forth below:

§ 212.5 Road system management.
(a) ***Traffic rules.***
(1) ***General.*** Traffic on roads is subject to State traffic laws where applicable except when in conflict with designations established under subpart B of this part or with the rules at 36 CFR part 261.
(2) ***Specific.***
(ii) Roads, or segments thereof, may be restricted to use by certain classes of vehicles or types of traffic as provided in 36 CFR part 261. Classes of vehicles may include but are not limited to distinguishable groupings such as passenger cars, buses, trucks, motorcycles, all-terrain vehicles, 4-wheel drive vehicles, off-highway vehicles, and trailers. Types of traffic may include but are not limited to groupings such as commercial hauling, recreation, and administrative.
(c) ***Cost recovery on National Forest System roads.***
(d) ***Maintenance and reconstruction of National Forest System roads by users.***
6. Amend § 212.7 by revising the paragraph heading and text of paragraph
(a) to read as follows:

§ 212.7 Access procurement by the United States.
(a) ***Existing or proposed forest roads that are or will be part of a transportation system of a State, county, or other local public road authority.***
Forest roads that are or will be part of a transportation system of a State, county, or other local public road authority and are on rights-of-way held by a State, county, or other local public road authority may be constructed, reconstructed, improved, or maintained by the Forest Service when there is an appropriate agreement with the State, county, or other local public road authority under 23 U.S.C. 205 and the construction, reconstruction, improvement, or maintenance is essential to provide safe and economical access to National Forest System lands.
7. Amend § 212.10 by revising paragraph (d) to read as follows:

§ 212.10 Maximum economy National Forest System roads.
(d) By a combination of these methods, provided that where roads are to be constructed at a higher standard than the standard—consistent with applicable environmental laws and regulations—that is sufficient for harvesting and removal of National Forest timber and other products covered by a particular sale, the purchaser of the timber and other products shall not be required to bear the part of the cost necessary to meet the higher standard, and the Chief may make such arrangements to achieve this end as may be appropriate.

§ 212.20 [Removed and reserved]
8. Remove and reserve § 212.20.
9. Add a new subpart B to read as follows:

Subpart B—Designation of Roads, Trails, and Areas for Motor Vehicle Use
Sec. 212.50 Purpose, scope, and definitions.
212.51 Designation of roads, trails, and areas.
212.52 Public involvement.
212.53 Coordination with Federal, State, county, and other local governmental entities and tribal governments.
212.54 Revision of designations.
212.55 Criteria for designation of roads, trails, and areas.
212.56 Identification of designated roads, trails, and areas.
212.57 Monitoring of effects of motor vehicle use on designated roads and trails and in designated areas.

Authority: 7 U.S.C. 1011(f), 16 U.S.C. 551,
E.O. 11644, 11989 (42 FR 26959).

§ 212.50 Purpose, scope, and definitions.
(a) ***Purpose.*** This subpart provides for a system of National Forest System roads, National Forest System trails, and areas on National Forest System lands that are designated for motor vehicle use. After these roads, trails, and areas are designated, motor vehicle use, including the class of vehicle and time of year, not in accordance with these designations is prohibited by 36 CFR 261.13. Motor vehicle use off designated roads and trails and outside designated areas is prohibited by 36 CFR 261.13.
(b) ***Scope***. The responsible official may incorporate previous administrative decisions regarding travel management made under other authorities, including designations and prohibitions of motor vehicle use, in designating National Forest System roads, National Forest System trails, and areas on National Forest System lands for motor vehicle use under this subpart.
(c) For definitions of terms used in this subpart, refer to § 212.1 in subpart A of this part.

§ 212.51 Designation of roads, trails, and areas.
(a) ***General.*** Motor vehicle use on National Forest System roads, on National Forest System trails, and in areas on National Forest System lands shall be designated by vehicle class and, if appropriate, by time of year by the responsible official on administrative units or Ranger Districts of the National Forest System, provided that the following vehicles and uses are exempted from these designations:
(1) Aircraft;
(2) Watercraft;
(3) Over-snow vehicles (see § 212.81);
(4) Limited administrative use by the Forest Service;
(5) Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
(6) Authorized use of any combat or combat support vehicle for national defense purposes;
(7) Law enforcement response to violations of law, including pursuit; and
(8) Motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulations.
(b) ***Motor vehicle use for dispersed camping or big game retrieval***. In designating routes, the responsible official may include in the designation the limited use of motor vehicles within a specified distance of certain designated routes, and if appropriate within specified time periods, solely for the

purposes of dispersed camping or retrieval of a downed big game animal by an individual who has legally taken that animal.

§ 212.52 Public involvement.
(a) General. The public shall be allowed to participate in the designation of National Forest System roads, National Forest System trails, and areas on National Forest System lands and revising those designations pursuant to this subpart. Advance notice shall be given to allow for public comment, consistent with agency procedures under the National Environmental Policy Act, on proposed designations and revisions. Public notice with no further public involvement is sufficient if a National Forest or Ranger District has made previous administrative decisions, under other authorities and including public involvement, which restrict motor vehicle use over the entire National Forest or Ranger District to designated routes and areas, and no change is proposed to these previous decisions and designations.
(b) ***Absence of public involvement in temporary, emergency closures.*** (1) General. Nothing in this section shall alter or limit the authority to implement temporary, emergency closures pursuant to 36 CFR part 261, subpart B, without advance public notice to provide short-term resource protection or to protect public health and safety.
(2*) Temporary, emergency closures based on a determination of considerable adverse effects*. If the responsible official determines that motor vehicle use on a National Forest System road or National Forest System trail or in an area on National Forest System lands is directly causing or will directly cause considerable adverse effects on public safety or soil, vegetation, wildlife, wildlife habitat, or cultural resources associated with that road, trail, or area, the responsible official shall immediately close that road, trail, or area to motor vehicle use until the official determines that such adverse effects have been mitigated or eliminated and that measures have been implemented to prevent future recurrence. The responsible official shall provide public notice of the closure pursuant to 36 CFR 261.51, including reasons for the closure and the estimated duration of the closure, as soon as practicable following the closure.

§ 212.53 Coordination with Federal, State, county, and other local governmental entities and tribal governments.
The responsible official shall coordinate with appropriate Federal, State, county, and other local governmental entities and tribal governments when designating National Forest System roads, National Forest System trails, and areas on National Forest System lands pursuant to this subpart.

§ 212.54 Revision of designations.
Designations of National Forest System roads, National Forest System trails, and areas on National Forest System lands pursuant to § 212.51 may be revised as needed to meet changing conditions. Revisions of designations shall be made in accordance with the requirements for public involvement in § 212.52, the requirements for coordination with governmental entities in § 212.53, and the criteria in § 212.55, and shall be reflected on a motor vehicle use map pursuant to § 212.56.

§ 212.55 Criteria for designation of roads, trails, and areas.
(a) ***General criteria for designation of National Forest System roads, National Forest System trails, and areas on National Forest System lands.*** In designating National Forest System roads, National Forest System trails, and areas on National Forest System lands for motor vehicle use, the responsible official shall consider effects on National Forest System natural and cultural resources, public safety, provision of recreational opportunities, access needs, conflicts among uses of National Forest System lands, the need for maintenance and administration of roads, trails, and areas that would arise if the

uses under consideration are designated; and the availability of resources for that maintenance and administration.

(b) ***Specific criteria for designation of trails and areas.*** In addition to the criteria in paragraph (a) of this section, in designating National Forest System trails and areas on National Forest System lands, the responsible official shall consider effects on the following, with the objective of minimizing:

(1) Damage to soil, watershed, vegetation, and other forest resources;

(2) Harassment of wildlife and significant disruption of wildlife habitats;

(3) Conflicts between motor vehicle use and existing or proposed recreational uses of National Forest System lands or neighboring Federal lands; and

(4) Conflicts among different classes of motor vehicle uses of National Forest System lands or neighboring Federal lands.

In addition, the responsible official shall consider:

(5) Compatibility of motor vehicle use with existing conditions in populated areas, taking into account sound, emissions, and other factors.

(c) ***Specific criteria for designation of roads.*** In addition to the criteria in paragraph (a) of this section, in designating National Forest System roads, the responsible official shall consider:

(1) Speed, volume, composition, and distribution of traffic on roads; and

(2) Compatibility of vehicle class with road geometry and road surfacing.

(d) ***Rights of access***. In making designations pursuant to this subpart, the responsible official shall recognize:

(1) Valid existing rights; and

(2) The rights of use of National Forest System roads and National Forest System trails under § 212.6(b).

(e) ***Wilderness areas and primitive areas.*** National Forest System roads, National Forest System trails, and areas on National Forest System lands in wilderness areas or primitive areas shall not be designated for motor vehicle use pursuant to this section, unless, in the case of wilderness areas, motor vehicle use is authorized by the applicable enabling legislation for those areas.

§ 212.56 Identification of designated roads, trails, and areas.

Designated roads, trails, and areas shall be identified on a motor vehicle use map. Motor vehicle use maps shall be made available to the public at the headquarters of corresponding administrative units and Ranger Districts of the National Forest System and, as soon as practicable, on the website of corresponding administrative units and Ranger Districts. The motor vehicle use maps shall specify the classes of vehicles and, if appropriate, the times of year for which use is designated.

§ 212.57 Monitoring of effects of motor vehicle use on designated roads and trails and in designated areas.

For each administrative unit of the National Forest System, the responsible official shall monitor the effects of motor vehicle use on designated roads and trails and in designated areas under the jurisdiction of that responsible official, consistent with the applicable land management plan, as appropriate and feasible.

10. Add a new subpart C to read as follows:

Subpart C—Use by Over-Snow Vehicles

Sec. 212.80 Purpose, scope, and definitions.

212.81 Use by over-snow vehicles.

Authority: 7 U.S.C. 1011(f), 16 U.S.C. 551,
E.O. 11644, 11989 (42 FR 26959).

§ 212.80 Purpose, scope, and definitions.
The purpose of this subpart is to provide for regulation of use by over-snow vehicles on National Forest System roads and National Forest System trails and in areas on National Forest System lands. For definitions of terms used in this subpart, refer to § 212.1 in subpart A of this part.

§ 212.81 Use by over-snow vehicles.
(a) ***General.*** Use by over-snow vehicles on National Forest System roads and National Forest System trails and in areas on National Forest System lands may be allowed, restricted, or prohibited.
(b) ***Exemptions from restrictions and prohibitions.*** The following uses are exempted from restrictions and prohibitions on use by over-snow vehicles:
(1) Limited administrative use by the Forest Service;
(2) Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
(3) Authorized use of any combat or combat support vehicle for national defense purposes;
(4) Law enforcement response to violations of law, including pursuit; and
(5) Use by over-snow vehicles that is specifically authorized under a written authorization issued under Federal law or regulations.
(c) ***Establishment of restrictions and prohibitions.*** If the responsible official proposes restrictions or prohibitions on use by over-snow vehicles under this subpart, the requirements governing designation of National Forest System roads, National Forest System trails, and areas on National Forest System lands in §§ 212.52, 212.53, 212.54, 212.55, 212.56, and 212.57 shall apply to establishment of those restrictions or prohibitions. In establishing restrictions or prohibitions on use by over-snow vehicles, the responsible official shall recognize the provisions concerning rights of access in sections 811(b) and 1110(a) of the Alaska National Interest Lands Conservation Act (16 U.S.C. 3121(b) and 3170(a), respectively).

PART 251—LAND USES

Subpart B—Special Uses
11. Revise the authority citation for part 251, subpart B, to read as follows:

Authority: 7 U.S.C. 1011(f); 16 U.S.C. 460*l*– 6a, 460*l*–6d, 472, 497b, 497c, 551, 580d, 1134, 3210; 30 U.S.C. 185; 43 U.S.C. 1740, 1761–1771.
12. Amend § 251.51 by revising the definitions for ‘‘forest road or trail’’ and ‘‘National Forest System road’’ to read as follows:

§ 251.51 Definitions.
Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.
National Forest System road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

PART 261—PROHIBITIONS

13. The authority citation for part 261 continues to read as follows:

Authority: 7 U.S.C. 1011(f); 16 U.S.C. 460*l*– 6d, 472, 551, 620(f), 1133(c)–(d)(1), 1246(i).
14. Amend § 261.2 to revise the definitions for ‘‘motor vehicle,’’ ‘‘forest road or trail,’’ ‘‘National Forest System road,’’ and ‘‘National Forest System trail,’’ and add definitions in alphabetical order for ‘‘administrative unit’’ and ‘‘area,’’ to read as follows:

Subpart A—General Prohibitions

§ 261.2 Definitions.
Administrative unit. A National Forest, a National Grassland, a purchase unit, a land utilization project, Columbia River Gorge National Scenic Area, Land Between the Lakes, Lake Tahoe Basin Management Unit, Midewin National Tallgrass Prairie, or other comparable unit of the National Forest System.
Area. A discrete, specifically delineated space that is smaller, and in most cases much smaller, than a Ranger District.
Forest road or trail. A road or trail wholly or partly within or adjacent to and serving the National Forest System that the Forest Service determines is necessary for the protection, administration, and utilization of the National Forest System and the use and development of its resources.
Motor vehicle means any vehicle which is self-propelled, other than:
(1) A vehicle operated on rails; and
(2) Any wheelchair or mobility device, including one that is battery-powered, that is designed solely for use by a mobility-impaired person for locomotion and that is suitable for use in an indoor pedestrian area.
National Forest System road. A forest road other than a road which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.
National Forest System trail. A forest trail other than a trail which has been authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

§§ 261.13 through 261.21 [Redesignated as §§ 261.15 through 261.23]
15. Redesignate §§ 261.13 through 261.21 as §§ 261.15 through 261.23.
15a. Add new § 261.13 and § 261.14 to read as follows:

§ 261.13 Motor vehicle use.
After National Forest System roads, National Forest System trails, and areas on National Forest System lands have been designated pursuant to 36 CFR 212.51 on an administrative unit or a Ranger District of the National Forest System, and these designations have been identified on a motor vehicle use map, it is prohibited to possess or operate a motor vehicle on National Forest System lands in that administrative unit or Ranger District other than in accordance with those designations, provided that the following vehicles and uses are exempted from this prohibition:
(a) Aircraft;
(b) Watercraft;
(c) Over-snow vehicles;
(d) Limited administrative use by the Forest Service;
(e) Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
(f) Authorized use of any combat or combat support vehicle for national defense purposes;

(g) Law enforcement response to violations of law, including pursuit;
(h) Motor vehicle use that is specifically authorized under a written authorization issued under Federal law or regulations; and
(i) Use of a road or trail that is authorized by a legally documented right-of-way held by a State, county, or other local public road authority.

§ 261.14 Use by over-snow vehicles.
It is prohibited to possess or operate an over-snow vehicle on National Forest System lands in violation of a restriction or prohibition established pursuant to 36 CFR part 212, subpart C, provided that the following uses are exempted from this section:
(a) Limited administrative use by the Forest Service;
(b) Use of any fire, military, emergency, or law enforcement vehicle for emergency purposes;
(c) Authorized use of any combat or combat support vehicle for national defense purposes;
(d) Law enforcement response to violations of law, including pursuit;
(e) Use by over-snow vehicles that is specifically authorized under a written authorization issued under Federal law or regulations; and
(f) Use of a road or trail that is authorized by a legally documented right-of-way held by a State, county, or other local public road authority.
16. Amend § 261.55 by revising the introductory text to read as follows

§ 261.55 National Forest System trails.
When provided by an order issued in accordance with § 261.50 of this subpart, the following are prohibited on a National Forest System trail:

PART 295—USE OF MOTOR VEHICLES OFF NATIONAL FOREST SYSTEM ROADS [REMOVED]

17. Remove the entire part 295.
Dated: October 19, 2005.

Mark Rey,
Undersecretary of Agriculture for Natural Resources and Environment.
[FR Doc. 05–22024 Filed 11–8–05; 8:45 am]
BILLING CODE 3410–11–P

- End of Appendix A -

Appendix B: Forest Plan Direction

B.1 RELATIONSHIP TO FOREST PLAN

The 1986 Custer National Forest Land and Resources Management Plan (Forest Plan) directs management of all Federal lands within the Sioux Ranger District. The Forest Plan provides both Forest-wide Management direction and direction for specific management areas. Forest Plan forest-wide goals, objectives, and standards are found in chapter II, pages 3-39. Management Area direction is found in chapter III page 41-99 of the Forest Plan. Forest Plan direction related to travel management is listed in the following Table.

Table B.1. Forest Plan management direction related to travel management.

Management Area: Goal Description **Acres[1]** **(% of District Total Acres)**	**Current FP Management Direction**
Forest-wide Management Direction	
Forest-wide	The goal of providing for public access to and within the Forest is to provide at least an access point per five miles of administrative boundary where there is not adequate access from inside Nation Forest System land. However, the intent will not be to provide road/trail access to all areas on the Forest (pages 3-4).
Forest-wide	The goal of recreation management is to provide a broad spectrum of recreation experience opportunities for the benefit and enjoyment of the public, with due consideration for other forest uses and resources (page 4).
Forest-wide	The Forest transportation system required by this plan will be constructed and managed to minimize adverse impacts on the resources, while providing access to public lands for the public and for the management of the resources (page 5).
Forest-wide	Travel restrictions will be developed and maintained to meet land management objectives. These restrictions will provide reasonable access for public recreation, hunting and range maintenance/administration, but will confine motorized vehicles to specific roads, trails, or areas identified on a map. Vehicular access of these designated locations will be prohibited, except by permit. A map and information showing closures, restrictions, and opportunities on the Forest for motorized and non-motorized use will be provided to the public (page 13).
Management Area Direction	
B: To provide for continuation of *livestock grazing…* 119,524Ac (~67%)	**C. Management Standards** **1. Recreation** **a.** Semi-primitive motorized, and roaded natural recreation opportunities will be provided (page 45). **7. Facilities** **a.** The arterial and collector system will be maintained for public use (page 47).

[1] Acres are base on the currently available GIS information.

Table B.1. Forest Plan management direction related to travel management.

Management Area: Goal Description **Acres[1]** **(% of District Total Acres)**	**Current FP Management Direction**
C: Manage key *wildlife habitat* areas for optimum quality and diversity that the land can offer. Not Mapped	**C. Management Standards** **1. Recreation** **a.** No specific dispersed campsites will be established or maintained. Minimum impact camping will continue to be emphasized. **7. Facilities** **a.** Roads will be routed to minimize loss of wildlife and fish habitat. At the end of their use period, the roads will be obliterated and rehabilitated or put to bed for future use. **c.** Existing county and Forest Service arterial and collector roads will be maintained and reconstructed/upgraded as necessary. This may include realignment or relocation to meet public safety requirements, reduce erosion or reduce/eliminate conflicts with wildlife and fish habitat (page 51).
D: Maintain or improve long-term diversity and quality of *habitat for elk, bighorn sheep, black bear, and moose...* 37,113 Ac (~21%)	**C. Management Standards** **1. Recreation** **a.** The travel plan for these areas will provide reasonable access for public recreation, hunting, and range maintenance and administration, but will confine motorized vehicles to specific roads and trails during critical periods to protect wildlife and other resources (page 53). **7. Facilities** **a.** Access roads needed to meet legal obligations will be provided as required, but roads will be routed to minimize loss of wildlife habitat. **c.** Existing county and Forest Service arterial and collector roads will be maintained and reconstructed/upgraded as necessary. This may include realignment or relocation to meet public safety requirements, reduce erosion or reduce/eliminate conflicts with wildlife and fish habitat (page 56).
E: Encourage and facilitate the exploration, development, and production of *mineral and energy* resources. 14525 Ac (~8%)	**C. Management Standards** **1. Recreation** **a.** The recreation setting will generally be roaded natural and rural, although small areas of semiprimitive motorized will occur through the area (page 58). **6. Facilities** **b.** Arterial and collector roads when constructed will be maintained for public use (page 60).
F: Provide a spectrum of *recreation* opportunities… 258 Ac (< 1%)	**C. Management Standards** **9. Facilities** **a.** Roads will be maintained for safety, soil and water protection, and to provide for travel of passenger carrying vehicles. **b.** If specific campgrounds are closed, the roads within them will also be closed (page 63).

Table B.1. Forest Plan management direction related to travel management.

Management Area: Goal Description Acres[1] (% of District Total Acres)	Current FP Management Direction
G: Manage these areas for the maintenance and improvement of a healthy diverse forest and as a source of *wood products*… 4746 Ac (~ 3%)	**C. Management Standards** **1. Recreation** **a.** The recreation setting will primarily be roaded-natural and rural. Small areas of semi-primitive nonmotorized/motorized will occur, particularly where key wildlife habitat areas are protected from other resource activities (page 64). **6. Facilities** **a.** Roads within this management area are generally multiple use roads, exceptions may be some of those constructed for minerals development. **b.** Road management will be determined by the long-term needs of mineral and timber management. Locations will serve long-term uses for all resources. Use and travel restrictions will be considered to benefit or reduce adverse impacts to wildlife. The roads will be part of the Forest Transportation System and may be closed when not needed (page 65).
L: Existing and proposed *Research Natural Areas* 195 Ac (< 1%)	**C. Management Standards** **1. Recreation** **a.** Recreation use will not be encouraged. **g.** Trails will not be constructed within these areas (page 78). **8. Facilities** **a.** Roads and other facilities will not be constructed in these areas. **b.** Existing public roads may be retained. Reconstruction will be allowed for public safety and protection of the soil and water resource (page 79).
M: [*Riparian area*] Manage to protect from conflicting uses in order to provide healthy, self-perpetuating plant and water communities…. Not Mapped	**C. Management Standards** **1. Recreation** **b.** Motorized use will be restricted to existing roads and trails (page 80). **7. Facilities** **b.** Road closures will be implemented as necessary to be compatible with the adjacent management area direction or protect riparian or wildlife and fishery habitat values, other resources, or public safety. **c.** Existing roads may be retained if necessary for resource management and reconstructed as needed for public safety and resource protection. **f.** Minimize the number of roads and/or pipelines crossing this management area to minimize disturbance of this ecosystem (page 81).
N: [*Wood draws*] To provide healthy, self-perpetuating plant and water communities…. Not Mapped	**C. Management Standards** **1. Recreation** **c.** Motorized use will be restricted to existing roads and trail (page 83). **7. Facilities** **b.** Road closures will be implemented as necessary to be compatible with the adjacent management area direction or to protect woody draws, wildlife habitat, and other resources, or public safety. **c.** Existing roads may be retained if necessary for resource management and reconstructed as needed for public safety and resource protection (page 84).
O: To protect the unique geological and scenic features of the *National Natural Landmarks* and provide a recreation opportunity. 1068 Ac (1%)	**C. Management Standards** **1. Recreation** **c.** As use warrants, opportunities for dispersed recreation use will be developed to enhance use of the area and provide for public safety (page 86). **7. Facilities** **a.** Roads and trails may be permitted if they enhance the recreation opportunity (page 87).

Table B.1. Forest Plan management direction related to travel management.

Management Area: Goal Description Acres[1] (% of District Total Acres)	Current FP Management Direction
P: Provide adequate facilities for forest administration 197 Ac (<1%)	**1. Recreation** **a.** Interpretive facilities may be used at these sites to inform the public (page88).

- End of Appendix B -

Appendix C: Alternative Details by Route

Tables C-1.1 to C-1.9 and C-2.1 to C-2.9 display the specific changes or *actions* to roads and trails proposed under each of the action alternatives. The *actions* have been grouped into the following categories; not all alternatives have *actions* in every category.

- Non-System Routes Proposed to be System Roads
- Non-System Routes Proposed to be Motorized System Trails
- Non-System Routes Proposed for Administrative Use Only
- System Roads Proposed for Administrative Use Only
- System Roads Proposed to be Motorized System Trails
- System Roads *Not* Proposed to be Designated for Public Motorized Use
- Season of Use Proposed Changes
- Dispersed Vehicle Camping Proposed Changes
- System Roads Proposed for Mixed Use

Table C-3.1 to C-3.3 reflects the existing system roads, trails, administrative use, and seasons of use. It includes the following categories:

- System Roads Available to be Designated for Motorized Public Use – Highway Legal Vehicles
- Administrative Use
- Seasons of Use

Table C – 1.1 Actions Associated with Alternative A

Non-System Routes Proposed to be System Roads				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
30711	30711	0.13	Ekalaka Hills	**Recreation.** These non-system routes or portions of routes would be added as system roads to provide the public with motorized recreation and/or dispersed vehicle camping opportunities.
31041	31041	0.51	Ekalaka Hills	
31042	31042	0.25	Ekalaka Hills	
31043	31043	0.20	Ekalaka Hills	
31044	31044	0.24	Ekalaka Hills	
31045A	31045A	0.36	Ekalaka Hills	
31046	31046	0.87	Ekalaka Hills	
31046A	31046A	0.06	Ekalaka Hills	
31046B	31046B	0.88	Ekalaka Hills	
31046C	31046C	0.64	Ekalaka Hills	
31047	31047	1.76	Ekalaka Hills	
31047A	31047A	0.27	Ekalaka Hills	
31047B	31047B	0.11	Ekalaka Hills	
31048	31048	0.22	Ekalaka Hills	
3104A	Camp Needmore 1	0.25	Ekalaka Hills	
3104B	Camp Needmore 2	0.06	Ekalaka Hills	
3104C	Camp Needmore 3	1.05	Ekalaka Hills	
3108A	3108A	0.16	Ekalaka Hills	

Table C – 1.1 Actions Associated with Alternative A

Non-System Routes Proposed to be System Roads				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3108B	3108B	0.22	Ekalaka Hills	
3108C	3108C	0.17	Ekalaka Hills	
3401B	Mc Nab Pond Backside	0.65	Ekalaka Hills	
38113	38113	0.71	Ekalaka Hills	
3812A1	3812A1	1.78	Ekalaka Hills	
38131	38131	0.39	Ekalaka Hills	
38131A	38131A	0.86	Ekalaka Hills	
38132	38132	0.34	Ekalaka Hills	
38133	38133	0.22	Ekalaka Hills	
38134	38134	0.08	Ekalaka Hills	
3813B1	3813B1	0.38	Ekalaka Hills	
3813B2A	3813B2A	0.24	Ekalaka Hills	
3813B3	3813B3	0.07	Ekalaka Hills	
31144	31144	0.38	North Cave Hills	
31145	31145	0.25	North Cave Hills	
312410	312410	0.43	Slim Buttes	
312410A	312410A	0.14	Slim Buttes	
312411	312411	0.12	Slim Buttes	
312412	312412	0.10	Slim Buttes	
312414	312414	0.17	Slim Buttes	
312416	312416	0.11	Slim Buttes	
312417	312417	0.62	Slim Buttes	
312418	312418	0.20	Slim Buttes	
312419	312419	0.30	Slim Buttes	
312421	312421	0.96	Slim Buttes	
31245B	31245B	0.52	Slim Buttes	
31248	31248	0.53	Slim Buttes	
31249	31249	0.59	Slim Buttes	
3124A1	3124A1	0.16	Slim Buttes	
31261B	31261B	0.13	Slim Buttes	
31262	31262	0.40	Slim Buttes	
31281	31281	0.06	North Cave Hills	
31304	31304	0.68	North Cave Hills	
31304A	31304A	0.18	North Cave Hills	
38201	Peadbody Well	0.12	Ekalaka Hills	
31162	Capital Rock Access	0.04	Long Pines	

Table C – 1.2 Actions Associated with Alternative A

Non-System Routes Proposed to be Motorized System Trails				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
30363	30363	0.01	Long Pines	**Non-System Routes Added as System Trails Open to All Motor Vehicles.** These non-system routes or portions of
30364	30364	0.58	Long Pines	
30365	30365	0.19	Long Pines	

Table C – 1.2 Actions Associated with Alternative A

Non-System Routes Proposed to be Motorized System Trails				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3036C1	3036C1	0.20	Long Pines	routes would be added as system trails and designated for use by all motorized vehicles. This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
3038	3038	0.72	Long Pines	
30402	30402	0.22	Long Pines	
30451	30451	1.14	Long Pines	
30471	30471	0.49	Long Pines	
30482	30482	0.28	Long Pines	
30483	30483	0.18	Long Pines	
30502	30502	0.61	Long Pines	
30521	30521	0.34	Long Pines	
30531	30531	0.11	Long Pines	
30561A	30561A	0.21	Long Pines	
30561B	30561B	0.08	Long Pines	
30562	30562	0.21	Long Pines	
30563	30563	0.09	Long Pines	
3057E1	3057E1	0.22	Long Pines	
30582	30582	0.48	Long Pines	
3058A1	3058A1	0.20	Long Pines	
3058A2	3058A2	0.21	Long Pines	
3058A3	3058A3	0.35	Long Pines	
30593	30593	0.15	Long Pines	
30593A	30593A	0.15	Long Pines	
30601	30601	0.08	Long Pines	
30602	30602	0.65	Long Pines	
30612	30612	1.38	Long Pines	
30613	30613	0.43	Long Pines	
30614	30614	0.14	Long Pines	
30632	30632	0.27	Long Pines	
30641	30641	0.24	Long Pines	
3067B1	3067B1	0.12	Long Pines	
30861	30861	0.49	Long Pines	
30881	30881	0.36	Long Pines	
30882	30882	0.16	Long Pines	
30901A	30901A	0.05	Long Pines	
3090A1	3090A1	0.36	Long Pines	
3101E1A	3101E1A	0.29	Ekalaka Hills	
3101E2	3101E2	0.20	Ekalaka Hills	
3101E3	Gundlach Well	0.05	Ekalaka Hills	
3101E4	3101E4	0.75	Ekalaka Hills	
31022	Murphy Spring	0.23	Ekalaka Hills	
3102A1	3102A1	0.16	Ekalaka Hills	
3102A2	3102A2	0.14	Ekalaka Hills	
3102A3	3102A3	0.41	Ekalaka Hills	
31061	31061	0.20	Ekalaka Hills	
31131A	31131A	0.63	South Cave Hills	
31131A1	31131A1	1.32	South Cave Hills	
31131A2	31131A2	0.71	South Cave Hills	

Table C – 1.2 Actions Associated with Alternative A

Non-System Routes Proposed to be Motorized System Trails				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31133A	31133A	0.50	South Cave Hills	
31134	31134	0.20	South Cave Hills	
31135	31135	0.20	South Cave Hills	
31136	31136	0.30	South Cave Hills	
31137	31137	0.54	South Cave Hills	
31152	31152	0.26	Slim Buttes	
31153	31153	0.97	Slim Buttes	
31161	31161	0.31	Long Pines	
31175	31175	1.14	Long Pines	
31177	31177	0.26	Long Pines	
31178	31178	0.19	Long Pines	
31179	31179	0.22	Long Pines	
3117B	Big Tree Spring	0.50	Long Pines	
3117D	3117D	0.40	Long Pines	
3117G1	3117G1	0.20	Long Pines	
3117G2	3117G2	0.93	Long Pines	
3117G3	3117G3	0.68	Long Pines	
3117G4	3117G4	0.08	Long Pines	
3117G5	3117G5	0.29	Long Pines	
31181A	31181A	0.66	Long Pines	
31181B	31181B	0.28	Long Pines	
31181B1	31181B1	0.05	Long Pines	
31181B1A	31181B1A	0.07	Long Pines	
311821	311821	0.16	Long Pines	
31184	31184	0.45	Long Pines	
31185	31185	0.11	Long Pines	
3118B	3118B	0.70	Long Pines	
3118E	Pendleton Reservoir	0.80	Long Pines	
3119C	3119C	0.28	Long Pines	
31211	31211	0.86	South Cave Hills	
31211A	31211A	0.42	South Cave Hills	
31221	Jesse Eliot Cabin	0.13	Slim Buttes	
312310	312310	1.46	North Cave Hills	
312310A	312310A	0.29	North Cave Hills	
31233A	31233A	0.73	North Cave Hills	
31233B	31233B	0.40	North Cave Hills	
31233C	31233C	0.25	North Cave Hills	
31233D	31233D	0.53	North Cave Hills	
31233E	31233E	0.15	North Cave Hills	
31235	31235	0.37	North Cave Hills	
31235A	31235A	0.32	North Cave Hills	
31236	31236	0.30	North Cave Hills	
31237	31237	0.09	North Cave Hills	
31238	31238	0.80	North Cave Hills	
31239A	31239A	0.69	North Cave Hills	
31252	31252	0.45	Slim Buttes	

Table C – 1.2 Actions Associated with Alternative A

Non-System Routes Proposed to be Motorized System Trails				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31253	31253	0.89	Slim Buttes	
31271	31271	0.16	North Cave Hills	
31452	31452	0.40	Slim Buttes	
31453	31453	0.60	Slim Buttes	
31481	31481	1.17	Slim Buttes	
31482	31482	1.10	Slim Buttes	
31483	31483	1.00	Slim Buttes	
31484	Summer Spring 1	0.62	Slim Buttes	
31485	Summer Spring 2	0.20	Slim Buttes	
31501	31501	0.33	Slim Buttes	
315010	315010	2.60	Slim Buttes	
315011	Twin Spring	1.27	Slim Buttes	
31502	31502	0.23	Slim Buttes	
31503	31503	3.66	Slim Buttes	
31503A	31503A	0.30	Slim Buttes	
31503B	31503B	2.00	Slim Buttes	
31503B1	Finger Butte 1	0.30	Slim Buttes	
31503B2	Finger Butte 2	0.13	Slim Buttes	
31503C	Thybo Spring	0.64	Slim Buttes	
31504	31504	0.56	Slim Buttes	
31504A	31504-A	0.48	Slim Buttes	
31505	31505	0.37	Slim Buttes	
31505A	31505A	0.53	Slim Buttes	
31507	31507	2.30	Slim Buttes	
31507A	Fuller Spring	1.06	Slim Buttes	
31508	31508	0.61	Slim Buttes	
31509	31509	0.29	Slim Buttes	
3154	Upper Antelope	0.13	Slim Buttes	
3159A	Spring No 4	0.34	East Short Pines	
31602	31602	1.35	East Short Pines	
381610	Birch Spring	0.11	Chalk Buttes	
381611	381611	0.25	Chalk Buttes	
381612	381612	1.35	Chalk Buttes	
381613	381613	0.09	Chalk Buttes	
38161A	38161A	0.70	Chalk Buttes	
38163A	Foster Spring	0.22	Chalk Buttes	
38164	Windmill South	0.59	Chalk Buttes	
38165	Molstad	0.41	Chalk Buttes	
38166	38166	0.18	Chalk Buttes	
38167	Molstad Dump	0.11	Chalk Buttes	
38169	Trenk Reservoir	0.37	Chalk Buttes	
38172	38172	0.48	Long Pines	
3817A1	3817A1	1.05	Long Pines	
3817A2	3817A2	0.35	Long Pines	
3818A1	3818A1	0.19	Long Pines	
3819E1	3819E1	0.97	Long Pines	

Table C – 1.3 Actions Associated with Alternative A

Non-System Routes Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31303	31303	0.17	North Cave Hills	**Mining Reclamation, and Health and Safety.** These non-system roads are within a past mining area or an area with documented high radiation levels. It is undesirable to have vehicle use in the area during and upon completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation.
31305	31305	0.10	North Cave Hills	
31306	31306	0.16	North Cave Hills	
30000A	30000A	0.12	East Short Pines	**Administrative Use with No Legal Right-of-Way.** The Forest Service has no legal public right-of-way to these non-system routes or portions of routes being added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders. Per agency guidance associated with the 2005 Motorized Travel Rule, system roads without Forest Service legal right-of-way are not to be designated for public use.
30363	30363	0.62	Long Pines	
3108D	Shady Spring	1.32	Ekalaka Hills	
31091	31091	0.14	Ekalaka Hills	
31093	31093	0.11	Ekalaka Hills	
31094	31094	0.08	Ekalaka Hills	
31095	31095	0.90	Ekalaka Hills	
31096	31096	0.23	Ekalaka Hills	
31393	31393	2.15	Slim Buttes	
38154	38154	0.53	Chalk Buttes	
38154B	Bronco Sam Spring	0.16	Chalk Buttes	
38154C	Parks	0.90	Chalk Buttes	
38162A	Windmill North	0.25	Chalk Buttes	
31071	31071	0.55	Ekalaka Hills	**Access for Existing Administrative use.** These non-system routes would be added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders.
31072	31072	1.40	Ekalaka Hills	

Table C – 1.4 Actions Associated with Alternative A

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3120A	3120A O/G	0.19	North Cave Hills	**Mining Reclamation, and Health and Safety.** These system roads or portions of road are within a past mining area or an area with documented high radiation levels. It is undesirable to have vehicle use in the area during and upon completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation.
3130	Uranium Road	1.39	North Cave Hills	
31301	31301	0.42	North Cave Hills	
31302	31302	0.28	North Cave Hills	
3131	Craig Pass (Odell Creek)	0.46	North Cave Hills	**Gravel Pit.** This segment of system road is within the Craig Pass Gravel Pit. This route would not be designated for public motorized use to reduce the potential for vandalism.
30000	Lone Mountain	1.00	East Short Pines	**Administrative Use with No Legal Right-of-Way.** The Forest Service has no legal public
30701	30701	0.53	Long Pines	

Table C – 1.4 Actions Associated with Alternative A

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3089A	Crase Spring	1.04	Long Pines	right-of-way to these non-system routes or portions of routes being added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders. Per agency guidance associated with the 2005 Motorized Travel Rule, system roads without Forest Service legal right-of-way are not to be designated for public use.
3109	3109	2.49	Ekalaka Hills	
31092	31092	0.29	Ekalaka Hills	
31176	31176	1.13	Long Pines	
3124	Redcross	1.38	Slim Buttes	
31242	31242	0.21	Slim Buttes	
31243	31243	0.92	Slim Buttes	
31244	31244	1.37	Slim Buttes	
3125	Bobcat	0.02	Slim Buttes	
31313	31313	1.09	North Cave Hills	
3139	Burning Mine	1.79	Slim Buttes	
31391	31391	0.57	Slim Buttes	
3144	Five Bar	1.55	Slim Buttes	
3146	Doc Hodge Draw	1.32	Slim Buttes	
31601	31601	0.97	East Short Pines	
3797B	3797B O/G Well 34-26	0.13	South Cave Hills	
3813D	Cline	0.22	Ekalaka Hills	
3815	Elmore	2.32	Chalk Buttes	
38151	38151	0.49	Chalk Buttes	

Table C – 1.5 Actions Associated with Alternative A

System Roads Proposed to be Motorized System Trail				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31012	31012	0.66	Ekalaka Hills	**System Routes Converted to System Trails Open to All Motor Vehicles.** These system roads or portions of road would be converted to system trails and designated for use by all motorized vehicles. This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
31013	31013	0.17	Ekalaka Hills	
31015	Carter Spring	1.04	Ekalaka Hills	
3101A	3101A	0.24	Ekalaka Hills	
3101B	3101B	1.16	Ekalaka Hills	
3101C	3101C	2.16	Ekalaka Hills	
3101D	3101D	0.37	Ekalaka Hills	
3101E	Heggen Carter East	1.86	Ekalaka Hills	
3101E1	3101E1	1.10	Ekalaka Hills	
3101F	3101F	1.52	Ekalaka Hills	
3101W	Heggen Carter West	0.80	Ekalaka Hills	
3102A	3102A	1.94	Ekalaka Hills	
3111	3111 Box Springs	1.95	East Short Pines	
31111	31111	0.73	East Short Pines	
3111G	Spring #2	0.78	East Short Pines	
31131	31131	0.28	South Cave Hills	
31132	31132	1.58	South Cave Hills	
31133	31133	3.22	South Cave Hills	
3113A	3113A	2.14	South Cave Hills	

Table C – 1.5 Actions Associated with Alternative A

System Roads Proposed to be Motorized System Trail				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3122	Jesse Elliot	1.39	Slim Buttes	
31233	31233	2.07	North Cave Hills	
31239	Devils Canyon	2.86	North Cave Hills	
3125A	Basin Valley Spring	0.90	Slim Buttes	
3125B	3125B	1.23	Slim Buttes	
3127	Doane Springs	0.91	North Cave Hills	
3135	Johnny Pocket Spring	2.40	South Cave Hills	
3137	Peterson Canyon	3.29	South Cave Hills	
3145	Blarney Castle	2.10	Slim Buttes	
3148	Deer Draw	5.38	Slim Buttes	
3150	Summit Divide	10.79	Slim Buttes	
3152	Ana Spring	1.58	Slim Buttes	
3159	Ward Gulch	2.25	East Short Pines	
3160	Moreau Peak	1.60	East Short Pines	
3816	Trenk Pass	4.28	Chalk Buttes	
38161	38161	0.55	Chalk Buttes	
38162	38162	0.64	Chalk Buttes	
38163	38163	0.75	Chalk Buttes	
3816A	Molstad Cemetery	0.23	Chalk Buttes	
38500	38500	0.10	North Cave Hills	
3036	Maverick Cr	4.32	Long Pines	
30361	30361	0.30	Long Pines	
3036A	Maverick Spring	0.60	Long Pines	
3036B	Maverick Spur	0.95	Long Pines	
3036C	Jay Reservoir	1.31	Long Pines	
3037	3037	2.04	Long Pines	
3040	Bell Tower Divide	2.59	Long Pines	
30401	30401	0.70	Long Pines	
3041	Cheeseman Rd	1.42	Long Pines	
3042	Double F Road	2.62	Long Pines	
3045	Foster Road	3.41	Long Pines	
30452	30452	0.93	Long Pines	
3045A	3045A	0.16	Long Pines	
3045B	3045B	0.21	Long Pines	
3047	Blacktail Divide	2.60	Long Pines	
3049	Wickham Gulch	5.03	Long Pines	
30491	30491	0.12	Long Pines	
3049A	North Slope Spring	0.40	Long Pines	
3050	3050	1.07	Long Pines	
3051	Flathers	4.38	Long Pines	
30511	30511	2.04	Long Pines	
30512	30512	0.08	Long Pines	
30513	30513	0.47	Long Pines	
3053	McClary Road	1.82	Long Pines	
3056	Hoag Coal Mine Draw	2.94	Long Pines	
30561	30561	0.39	Long Pines	

Table C – 1.5 Actions Associated with Alternative A

System Roads Proposed to be Motorized System Trail				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3057A	Grasshopper Spring	0.40	Long Pines	
3057B	3057B	0.40	Long Pines	
3057E	3057E	1.20	Long Pines	
3057W	Burditt Springs Rd	1.80	Long Pines	
3058	Deadhorse	2.60	Long Pines	
3058A	Dead Horse Divide	6.72	Long Pines	
3058B	Deadhorse Reservoir	1.10	Long Pines	
3059	Devils Canyon	5.41	Long Pines	
30591	30591	0.54	Long Pines	
3059A	3059A	0.59	Long Pines	
3060	Abrogast	1.68	Long Pines	
3061	Mowbry	4.72	Long Pines	
30611	30611	0.83	Long Pines	
3061A	Abel Reservoir	1.67	Long Pines	
3062	Iron Spring	4.90	Long Pines	
30621	30621	0.75	Long Pines	
3063	Black Spring	3.06	Long Pines	
3064	Ward	2.67	Long Pines	
3064A	Lo Reservoir	0.40	Long Pines	
3064B	Patton Spring #2	0.52	Long Pines	
3064C	Patton Spring	0.25	Long Pines	
3065	Sand Rock	1.38	Long Pines	
3066	Gross	0.35	Long Pines	
3067	Red Bluff	8.08	Long Pines	
30671	30671	0.30	Long Pines	
30672	30672	0.32	Long Pines	
3067A	Lathan Well	1.00	Long Pines	
3067B	Wood Gulch	2.18	Long Pines	
3069	Gross Ranch	0.30	Long Pines	
3070	Horse Killer Reservoir	1.10	Long Pines	
3086	North Slick Creek	1.30	Long Pines	
3088	Carter Spring Divide	2.49	Long Pines	
3089	Lindsay Gulch	2.44	Long Pines	
3089B	Craft Spring	0.70	Long Pines	
3089C	3089C	0.60	Long Pines	
3089D	Old Mill Spring	0.40	Long Pines	
3090	Pot Hole	4.56	Long Pines	
30901	30901	1.65	Long Pines	
30902	30902	0.57	Long Pines	
3090A	3090A	0.66	Long Pines	
31171	31171	1.32	Long Pines	
31172	31172	0.94	Long Pines	
3117C	3117C	1.26	Long Pines	
3117E	Iron Spring	0.67	Long Pines	
3117F	Tarter Well	0.90	Long Pines	
3117G	Rustler Divide	2.70	Long Pines	

Table C – 1.5 Actions Associated with Alternative A

System Roads Proposed to be Motorized System Trail				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31181	31181	0.87	Long Pines	
31182	31182	1.52	Long Pines	
31183	31183	0.21	Long Pines	
3118A	3118A	0.20	Long Pines	
3118C	3118C	0.67	Long Pines	
3118D	Brown Jug Spring	1.05	Long Pines	
31191	31191	0.09	Long Pines	
3119A	3119A	0.48	Long Pines	
3161	Lower Devils Canyon	2.01	Long Pines	
3817	Lampkin Gulch	5.02	Long Pines	
38171	38171	0.86	Long Pines	
3817A	Halbert Gulch Crossover	1.41	Long Pines	
3818A	3818A	1.03	Long Pines	
3819B	3819B	0.50	Long Pines	
3819C	3819C	0.30	Long Pines	
3819D	3819D	0.60	Long Pines	
3819E	3819E	1.30	Long Pines	

Table C – 1.6 Actions Associated with Alternative A

System Roads *Not* Proposed to Be Designated for Public Motorized Use				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31312	31312	0.32	North Cave Hills	**Duplicate access to Private Land or Inholding.** Consistent with ANILCA, one route to private inholdings is provided.
3130	Uranium Road	0.10	North Cave Hills	**Parallel Roads.** These system roads would not be designated for public motorized use because they provide access to the same locations as other parallel routes.

Table C – 1.7 Actions Associated with Alternative A

Season of Use Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3819	Lost Farm/Belltower Divide	4.31	Long Pines	**Remove Existing Season of Use.** To maximize motorized recreation opportunities yearlong.
3036	Maverick Cr	4.32	Long Pines	
30361	30361	0.30	Long Pines	
3036A	Maverick Spring	0.60	Long Pines	
3036B	Maverick Spur	0.95	Long Pines	
3036C	Jay Reservoir	1.31	Long Pines	
3037	3037	2.04	Long Pines	
3040	Bell Tower Divide	2.59	Long Pines	

Table C – 1.7 Actions Associated with Alternative A

Season of Use Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
30401	30401	0.70	Long Pines	
3041	Cheeseman Rd	1.42	Long Pines	
3042	Double F Road	2.62	Long Pines	
3045	Foster Road	3.41	Long Pines	
30452	30452	0.93	Long Pines	
3045A	3045A	0.16	Long Pines	
3045B	3045B	0.21	Long Pines	
3047	Blacktail Divide	2.60	Long Pines	
3049	Wickham Gulch	5.03	Long Pines	
30491	30491	0.12	Long Pines	
3049A	North Slope Spring	0.40	Long Pines	
3050	3050	1.07	Long Pines	
3051	Flathers	4.38	Long Pines	
30511	30511	2.04	Long Pines	
30512	30512	0.08	Long Pines	
30513	30513	0.47	Long Pines	
3053	McClary Road	1.82	Long Pines	
3056	Hoag Coal Mine Draw	2.94	Long Pines	
30561	30561	0.39	Long Pines	
3057A	Grasshopper Spring	0.40	Long Pines	
3057B	3057B	0.40	Long Pines	
3057E	3057E	1.20	Long Pines	
3057W	Burditt Springs Rd	1.80	Long Pines	
3058	Deadhorse	2.60	Long Pines	
3058A	Dead Horse Divide	6.72	Long Pines	
3058B	Deadhorse Reservoir	1.10	Long Pines	
3059	Devils Canyon	5.41	Long Pines	
30591	30591	0.54	Long Pines	
3059A	3059A	0.59	Long Pines	
3060	Abrogast	1.68	Long Pines	
3061	Mowbry	4.72	Long Pines	
30611	30611	0.83	Long Pines	
3061A	Abel Reservoir	1.67	Long Pines	
3062	Iron Spring	4.90	Long Pines	
30621	30621	0.75	Long Pines	
3063	Black Spring	3.06	Long Pines	
3064	Ward	2.67	Long Pines	
3064A	Lo Reservoir	0.40	Long Pines	
3064B	Patton Spring #2	0.52	Long Pines	
3064C	Patton Spring	0.25	Long Pines	
3065	Sand Rock	1.38	Long Pines	
3066	Gross	0.35	Long Pines	
3067	Red Bluff	8.08	Long Pines	
30671	30671	0.30	Long Pines	
30672	30672	0.32	Long Pines	
3067A	Lathan Well	1.00	Long Pines	

Table C – 1.7 Actions Associated with Alternative A

Season of Use Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3067B	Wood Gulch	2.18	Long Pines	
3069	Gross Ranch	0.30	Long Pines	
3070	Horse Killer Reservoir	1.10	Long Pines	
3086	North Slick Creek	1.30	Long Pines	
3088	Carter Spring Divide	2.49	Long Pines	
3089	Lindsay Gulch	2.44	Long Pines	
3089B	Craft Spring	0.70	Long Pines	
3089C	3089C	0.60	Long Pines	
3089D	Old Mill Spring	0.40	Long Pines	
3090	Pot Hole	4.56	Long Pines	
30901	30901	1.65	Long Pines	
30902	30902	0.57	Long Pines	
3090A	3090A	0.66	Long Pines	
31171	31171	1.32	Long Pines	
31172	31172	0.94	Long Pines	
3117C	3117C	1.26	Long Pines	
3117E	Iron Spring	0.67	Long Pines	
3117F	Tarter Well	0.90	Long Pines	
3117G	Rustler Divide	2.70	Long Pines	
31181	31181	0.87	Long Pines	
31182	31182	1.52	Long Pines	
31183	31183	0.21	Long Pines	
3118A	3118A	0.20	Long Pines	
3118C	3118C	0.67	Long Pines	
3118D	Brown Jug Spring	1.05	Long Pines	
31191	31191	0.09	Long Pines	
3119A	3119A	0.48	Long Pines	
3161	Lower Devils Canyon	2.01	Long Pines	
3817	Lampkin Gulch	5.02	Long Pines	
38171	38171	0.86	Long Pines	
3817A	Halbert Gulch Crossover	1.41	Long Pines	
3818A	3818A	1.03	Long Pines	
3819B	3819B	0.50	Long Pines	
3819C	3819C	0.30	Long Pines	
3819D	3819D	0.60	Long Pines	
3819E	3819E	1.30	Long Pines	

Table C – 1.8 Actions Associated with Alternative A

Dispersed Vehicle Camping Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3123	Picnic Spring Rd	4.05	North Cave Hills	**Dispersed Vehicle Camping will *Not* be Permitted Due to Mining Reclamation, and**

Table C – 1.8 Actions Associated with Alternative A

Dispersed Vehicle Camping Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
3128	High And Dry	2.14	North Cave Hills	**Health and Safety.** These system roads or portions of road are within a past mining area or an area with documented high radiation levels. It is undesirable to have dispersed vehicle camping use in the area during and upon completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation.
31281	31281	0.06	North Cave Hills	
3130	Uranium Road	1.35	North Cave Hills	
3138	Cobble Stone	2.04	North Cave Hills	

Table C – 1.9 Actions Associated with Alternative A

System Roads Proposed for Mixed Use				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
30711	30711	0.13	Ekalaka Hills	**These Roads or Segments of Road would be Designated for Use by all Motorized Vehicles.** This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
31041	31041	0.51	Ekalaka Hills	
31042	31042	0.25	Ekalaka Hills	
31043	31043	0.20	Ekalaka Hills	
31044	31044	0.24	Ekalaka Hills	
31045A	31045A	0.36	Ekalaka Hills	
31046	31046	0.87	Ekalaka Hills	
31046A	31046A	0.06	Ekalaka Hills	
31046B	31046B	0.88	Ekalaka Hills	
31046C	31046C	0.64	Ekalaka Hills	
31047	31047	1.76	Ekalaka Hills	
31047A	31047A	0.27	Ekalaka Hills	
31047B	31047B	0.11	Ekalaka Hills	
31048	31048	0.22	Ekalaka Hills	
3104A	Camp Needmore 1	0.25	Ekalaka Hills	
3104B	Camp Needmore 2	0.06	Ekalaka Hills	
3104C	Camp Needmore 3	1.05	Ekalaka Hills	
3108A	3108A	0.16	Ekalaka Hills	
3108B	3108B	0.22	Ekalaka Hills	
3108C	3108C	0.17	Ekalaka Hills	
3401B	Mc Nab Pond Backside	0.65	Ekalaka Hills	
38113	38113	0.71	Ekalaka Hills	
3812A1	3812A1	1.78	Ekalaka Hills	
38131	38131	0.39	Ekalaka Hills	
38131A	38131A	0.86	Ekalaka Hills	
38132	38132	0.34	Ekalaka Hills	
38133	38133	0.22	Ekalaka Hills	
38134	38134	0.08	Ekalaka Hills	
3813B1	3813B1	0.38	Ekalaka Hills	
3813B2A	3813B2A	0.24	Ekalaka Hills	
3813B3	3813B3	0.07	Ekalaka Hills	
3123	Picnic Spring Rd	4.05	North Cave Hills	
3071	Hidden Spring	1.66	Ekalaka Hills	
310410	310410	0.15	Ekalaka Hills	

Table C – 1.9 Actions Associated with Alternative A

System Roads Proposed for Mixed Use				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative A – Specific Rationale**
31049	31049	0.87	Ekalaka Hills	
3108	Oliver Springs	1.10	Ekalaka Hills	
3113	S Cave Hills	6.30	South Cave Hills	
31151	31151	0.25	Slim Buttes	
3123A	Picnic Springs Campground	0.90	North Cave Hills	
3125	Bobcat	9.31	Slim Buttes	
3401	Mc Nab Pond Campground	0.77	Ekalaka Hills	
3401A	Mc Nab Pond Cg Upper Loop	0.11	Ekalaka Hills	
3811	Dugan Draw	3.51	Ekalaka Hills	
38111	Butler Gulch	2.51	Ekalaka Hills	
38112	38112	0.50	Ekalaka Hills	
3811J	Stagville Divide	1.02	Ekalaka Hills	
3101	Opeeche Park	6.53	Ekalaka Hills	
3104	Rimrock Carter/Camp Needmore	6.74	Ekalaka Hills	
31045	Russell Spring	0.42	Ekalaka Hills	
3106	Carter Ridge	2.41	Ekalaka Hills	
3107	3107	0.50	Ekalaka Hills	
3111	3111 Box Springs	8.32	East Short Pines	
31133	31133	0.48	South Cave Hills	
3115	J B Pass	4.42	Slim Buttes	
3117	Snow Creek	18.19	Long Pines	
3119	Exie	0.81	Long Pines	
3812	Ridge Road	2.41	Ekalaka Hills	
38121	38121	0.17	Ekalaka Hills	
3812A	3812A	0.30	Ekalaka Hills	
3813	Stagville Draw	2.43	Ekalaka Hills	
3813A	Ekalaka Park Campground	0.18	Ekalaka Hills	
3813B	Plantation	3.44	Ekalaka Hills	
3813B2	3813B2	0.35	Ekalaka Hills	
3813C	Truely Hidden Spring	0.28	Ekalaka Hills	
3814	J T Smith	2.99	Ekalaka Hills	
3814A	3814A	0.30	Ekalaka Hills	
3814B	3814B	0.65	Ekalaka Hills	
3816	Trenk Pass	1.71	Chalk Buttes	
3818	Speelmon Cr.	0.14	Long Pines	
3819	Lost Farm/Belltower Divide	4.31	Long Pines	

Table C - 2.1 Actions Associated with Alternative B

Non-System Routes Proposed to be System Roads				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3104A	Camp Needmore 1	0.25	Ekalaka Hills	**Recreation.** These non-system routes or portions of routes would be added as system roads to provide the public with motorized recreation and/or dispersed vehicle camping opportunities. No key or critical resource concerns were identified that preclude consideration for route designation.
3104B	Camp Needmore 2	0.06	Ekalaka Hills	
3104C	Camp Needmore 3	0.03	Ekalaka Hills	
31042	31042	0.25	Ekalaka Hills	
31044	31044	0.24	Ekalaka Hills	
31153	31153	0.97	Slim Buttes	
31162	Capital Rock Access	0.04	Long Pines	
312310	312310	1.21	North Cave Hills	
312310A	312310A	0.29	North Cave Hills	
31248	31248	0.53	Slim Buttes	
312411	312411	0.12	Slim Buttes	
312412	312412	0.10	Slim Buttes	
312417	312417	0.62	Slim Buttes	
312419	312419	0.30	Slim Buttes	
312421	312421	0.96	Slim Buttes	
31281	31281	0.06	North Cave Hills	
31453	31453	0.60	Slim Buttes	
31481	31481	1.17	Slim Buttes	
31482	31482	1.10	Slim Buttes	
31483	31483	1.00	Slim Buttes	
31485	Summer Spring 2	0.20	Slim Buttes	
3812A1	3812A1	0.75	Ekalaka Hills	
381612	381612	0.52	Chalk Buttes	
38165	Molstad	0.20	Chalk Buttes	

Table C - 2.2 Actions Associated with Alternative B

Non-System Routes Proposed to be Motorized System Trails				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
31507	31507	2.30	Slim Buttes	**Non-System Routes Added as System Trails Open to All Motor Vehicles.** These non-system routes or portions of routes would be added as system trails and designated for use by all motorized vehicles. This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
315010	315010	2.60	Slim Buttes	
31503	31503	3.66	Slim Buttes	
31503B	31503B	2.00	Slim Buttes	
31504	31504	0.56	Slim Buttes	
31504A	31504A	0.48	Slim Buttes	

Table C - 2.3 Actions Associated with Alternative B

Non-System Routes Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
31303	31303	0.17	North Cave Hills	**Mining Reclamation, and Health and Safety.** These non-system roads are within a past mining area or an area with documented high radiation levels. It is undesirable to have vehicle use in the area during and upon completion of the Comprehensive Environmental Response,
31305	31305	0.10	North Cave Hills	
31306	31306	0.16	North Cave Hills	

Table C - 2.3 Actions Associated with Alternative B

Non-System Routes Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
				Compensation, and Liability Act (CERCLA) remediation.
30000A	30000A	0.12	East Short Pines	**Administrative Use with No Legal Right-of-Way.** The Forest Service has no legal public right-of-way to these non-system routes or portions of routes being added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders. Per agency guidance associated with the 2005 Motorized Travel Rule, system roads without Forest Service legal right-of-way are not to be designated for public use.
30363	30363	0.62	Long Pines	
3108B	3108B	0.22	Ekalaka Hills	
31091	31091	0.14	Ekalaka Hills	
31093	31093	0.11	Ekalaka Hills	
31094	31094	0.08	Ekalaka Hills	
31095	31095	0.90	Ekalaka Hills	
31096	31096	0.23	Ekalaka Hills	
31393	31393	2.15	Slim Buttes	
38154	38154	0.53	Chalk Buttes	
38154B	Bronco Sam Spring	0.16	Chalk Buttes	
38154C	Parks	0.90	Chalk Buttes	
38162A	Windmill North	0.25	Chalk Buttes	
31071	31071	0.55	Ekalaka Hills	**Access for Existing Administrative use.** These non-system routes would be added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders.
31072	31072	1.40	Ekalaka Hills	
30363	30363	0.01	Long Pines	**Administrative Use.** These non-system roads or portions of roads would not be designated for public use. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders.
30365	30365	0.19	Long Pines	
30471	30471	0.49	Long Pines	
30482	30482	0.28	Long Pines	
30502	30502	0.61	Long Pines	
30562	30562	0.21	Long Pines	
30582	30582	0.48	Long Pines	
3058A1	3058A1	0.20	Long Pines	
3058A3	3058A3	0.35	Long Pines	
30593A	30593A	0.15	Long Pines	
30612	30612	1.38	Long Pines	
30613	30613	0.43	Long Pines	
30881	30881	0.36	Long Pines	
3090A1	3090A1	0.36	Long Pines	
3101E1A	3101E1A	0.29	Ekalaka Hills	
3101E3	Gundlach Well	0.05	Ekalaka Hills	
3101E4	3101E4	0.75	Ekalaka Hills	
31022	Murphy Spring	0.23	Ekalaka Hills	
3104C	Camp Needmore 3	1.02	Ekalaka Hills	
3108D	Shady Spring	1.32	Ekalaka Hills	
31131A	31131A	0.63	South Cave Hills	
31131A1	31131A1	1.32	South Cave Hills	
31131A2	31131A2	0.71	South Cave Hills	
31135	31135	0.20	South Cave Hills	
31136	31136	0.30	South Cave Hills	
31137	31137	0.54	South Cave Hills	
31144	31144	0.38	North Cave Hills	
31145	31145	0.25	North Cave Hills	
31146	31146	0.45	North Cave Hills	
31175	31175	0.55	Long Pines	

Table C - 2.3 Actions Associated with Alternative B

Non-System Routes Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
31179	31179	0.22	Long Pines	
3117D	3117D	0.40	Long Pines	
3117G3	3117G3	0.68	Long Pines	
31181A	31181A	0.08	Long Pines	
31184	31184	0.45	Long Pines	
31185	31185	0.11	Long Pines	
3118B	3118B	0.70	Long Pines	
3118E	Pendleton Reservoir	0.80	Long Pines	
31211	31211	0.86	South Cave Hills	
31211A	31211A	0.42	South Cave Hills	
31221	Jesse Eliot Cabin	0.13	Slim Buttes	
31235	31235	0.37	North Cave Hills	
31236	31236	0.30	North Cave Hills	
31238	31238	0.80	North Cave Hills	
31239A	31239A	0.69	North Cave Hills	
312410	312410	0.43	Slim Buttes	
312410A	312410A	0.14	Slim Buttes	
31261B	31261B	0.13	Slim Buttes	
31262	31262	0.40	Slim Buttes	
31271	31271	0.16	North Cave Hills	
31484	Summer Spring 1	0.62	Slim Buttes	
315011	Twin Spring	1.27	Slim Buttes	
31503B1	Finger Butte 1	0.30	Slim Buttes	
31503B2	Finger Butte 2	0.13	Slim Buttes	
31503C	Thybo Spring	0.64	Slim Buttes	
31505	31505	0.37	Slim Buttes	
31505A	31505A	0.53	Slim Buttes	
31507A	Fuller Spring	1.06	Slim Buttes	
31508	31508	0.61	Slim Buttes	
3154	Upper Antelope	0.13	Slim Buttes	
3159A	Spring No 4	0.34	East Short Pines	
31602	31602	1.35	East Short Pines	
3812A1	3812A1	1.03	Ekalaka Hills	
38131A	38131A	0.50	Ekalaka Hills	
38134	38134	0.08	Ekalaka Hills	
381610	Birch Spring	0.11	Chalk Buttes	
38161A	38161A	0.70	Chalk Buttes	
381612	381612	0.82	Chalk Buttes	
38163A	Foster Spring	0.22	Chalk Buttes	
38164	Windmill South	0.59	Chalk Buttes	
38169	Trenk Reservoir	0.37	Chalk Buttes	
3817A2	3817A2	0.35	Long Pines	
3818A1	3818A1	0.19	Long Pines	

Table C - 2.4 Actions Associated with Alternative B

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3120A	3120A O/G	0.19	North Cave Hills	**Mining Reclamation, and Health and Safety.**

Table C - 2.4 Actions Associated with Alternative B

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3130	Uranium Road	1.39	North Cave Hills	These system roads or portions of road are within a past mining area or an area with documented high radiation levels. It is undesirable to have vehicle use in the area during and upon completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation.
31301	31301	0.42	North Cave Hills	
31302	31302	0.28	North Cave Hills	
3131	Craig Pass (Odell Creek)	0.46	North Cave Hills	**Gravel Pit.** This segment of system road is within the Craig Pass Gravel Pit. This route would not be designated for public motorized use to reduce the potential for vandalism.
30000	Lone Mountain	1.00	East Short Pines	**Administrative Use with No Legal Right-of-Way.** The Forest Service has no legal public right-of-way to these non-system routes or portions of routes being added as system roads. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders. Per agency guidance associated with the 2005 Motorized Travel Rule, system roads without Forest Service legal right-of-way are not to be designated for public use.
3109	3109	2.49	Ekalaka Hills	
31092	31092	0.29	Ekalaka Hills	
3124	Redcross	1.38	Slim Buttes	
31242	31242	0.21	Slim Buttes	
31243	31243	0.92	Slim Buttes	
31244	31244	1.37	Slim Buttes	
3125	Bobcat	0.02	Slim Buttes	
31313	31313	1.09	North Cave Hills	
3139	Burning Mine	1.79	Slim Buttes	
31391	31391	0.57	Slim Buttes	
3144	Five Bar	1.55	Slim Buttes	
3146	Doc Hodge Draw	1.32	Slim Buttes	
31601	31601	0.97	East Short Pines	
3797B	3797B O/G Well 34-26	0.13	South Cave Hills	
3813D	Cline	0.22	Ekalaka Hills	
3815	Elmore	2.32	Chalk Buttes	
38151	38151	0.49	Chalk Buttes	
30701	30701	0.53	Long Pines	
3089A	Crase Spring	1.04	Long Pines	
31176	31176	1.13	Long Pines	
3036A	Maverick Spring	0.60	Long Pines	**Administrative Use.** These system roads or portions of roads would not be designated for public use. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders.
3036B	Maverick Spur	0.95	Long Pines	
3036C	Jay Reservoir	1.31	Long Pines	
3037	3037	2.04	Long Pines	
30401	30401	0.70	Long Pines	
3041	Cheeseman Rd	1.42	Long Pines	
3042	Double F Road	2.62	Long Pines	
3049A	North Slope Spring	0.40	Long Pines	
3050	3050	1.07	Long Pines	
3051	Flathers	2.08	Long Pines	
30512	30512	0.08	Long Pines	
30513	30513	0.26	Long Pines	
3057A	Grasshopper Spring	0.40	Long Pines	
3057B	3057B	0.40	Long Pines	
3057E	3057E	1.20	Long Pines	
3058B	Deadhorse Reservoir	1.10	Long Pines	
30591	30591	0.54	Long Pines	
3059A	3059A	0.59	Long Pines	
3061	Mowbry	2.88	Long Pines	

Table C - 2.4 Actions Associated with Alternative B

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3061A	Abel Reservoir	1.67	Long Pines	
30621	30621	0.75	Long Pines	
3063	Black Spring	2.25	Long Pines	
3064A	Lo Reservoir	0.40	Long Pines	
3064B	Patton Spring #2	0.52	Long Pines	
3064C	Patton Spring	0.25	Long Pines	
3065	Sand Rock	1.38	Long Pines	
3066	Gross	0.35	Long Pines	
3067	Red Bluff	1.57	Long Pines	
3067A	Lathan Well	1.00	Long Pines	
3067B	Wood Gulch	2.18	Long Pines	
3069	Gross Ranch	0.30	Long Pines	
3070	Horse Killer Reservoir	0.48	Long Pines	
3086	North Slick Creek	0.27	Long Pines	
3088	Carter Spring Divide	2.38	Long Pines	
3089	Lindsay Gulch	1.84	Long Pines	
3089B	Craft Spring	0.70	Long Pines	
3089D	Old Mill Spring	0.40	Long Pines	
30902	30902	0.57	Long Pines	
3090A	3090A	0.66	Long Pines	
3117F	Tarter Well	0.90	Long Pines	
31182	31182	1.52	Long Pines	
31183	31183	0.21	Long Pines	
3118A	3118A	0.20	Long Pines	
3118C	3118C	0.67	Long Pines	
3118D	Brown Jug Spring	1.05	Long Pines	
3119A	3119A	0.48	Long Pines	
3161	Lower Devils Canyon	0.91	Long Pines	
38171	38171	0.86	Long Pines	
3818A	3818A	1.03	Long Pines	
3819E	3819E	1.30	Long Pines	
31015	Carter Spring	1.04	Ekalaka Hills	
3101B	3101B	1.16	Ekalaka Hills	
3101C	3101C	1.66	Ekalaka Hills	
3101E	Heggen Carter East	1.86	Ekalaka Hills	
3101E1	3101E1	1.10	Ekalaka Hills	
3101W	Heggen Carter West	0.80	Ekalaka Hills	
310410	310410	0.15	Ekalaka Hills	
31045	Russell Spring	0.42	Ekalaka Hills	
31049	31049	0.87	Ekalaka Hills	
3106	Carter Ridge	2.41	Ekalaka Hills	
31111	31111	0.73	East Short Pines	
3111G	Spring #2	0.78	East Short Pines	
31131	31131	0.27	South Cave Hills	
31132	31132	1.58	South Cave Hills	
3113A	3113A	2.14	South Cave Hills	
31141	31141 O/G	0.10	North Cave Hills	
31142	31142 O/G	0.05	North Cave Hills	
3125A	Basin Valley Spring	0.90	Slim Buttes	
3127	Doane Springs	0.91	North Cave Hills	
3160	Moreau Peak	0.50	East Short Pines	

Table C - 2.4 Actions Associated with Alternative B

System Roads Proposed for Administrative Use Only				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3811J	Stagville Divide	1.02	Ekalaka Hills	
3813	Stagville Draw	1.08	Ekalaka Hills	
3813B2	3813B2	0.35	Ekalaka Hills	
3813C	Truely Hidden Spring	0.28	Ekalaka Hills	
3814A	3814A	0.30	Ekalaka Hills	
3814B	3814B	0.65	Ekalaka Hills	
38163	38163	0.65	Chalk Buttes	
38500	38500	2.57	North Cave Hills	
3124A	3124A	0.16	Slim Buttes	**Communication Site.** These system roads or portions of roads would not be designated for public use to protect facilities and materials from potential vandalism. Use of these system roads or portions of system roads is needed for administrative purposes, and would be limited to Forest Service personnel, contractors, and permit holders.

Table C - 2.5 Actions Associated with Alternative B

System Roads Proposed to be Motorized System Trail				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3036	Maverick Cr	4.32	Long Pines	**System Routes Converted to System Trails Open to All Motor Vehicles.** These system roads or portions of road would be converted to system trails and designated for use by all motorized vehicles. This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
3040	Bell Tower Divide	2.59	Long Pines	
3049	Wickham Gulch	5.03	Long Pines	
3051	Flathers	2.30	Long Pines	
30511	30511	2.04	Long Pines	
3053	McClary Road	1.82	Long Pines	
3056	Hoag Coal Mine Draw	2.94	Long Pines	
3057W	Burditt Springs Rd	1.80	Long Pines	
3058	Deadhorse	2.60	Long Pines	
3059	Devils Canyon	5.41	Long Pines	
3062	Iron Spring	4.90	Long Pines	
3088	Carter Spring Divide	0.11	Long Pines	
3090	Pot Hole	4.56	Long Pines	
3111	3111 Box Springs	1.95	East Short Pines	
31133	31133	3.22	South Cave Hills	
3135	Johnny Pocket Spring	2.40	South Cave Hills	
3137	Peterson Canyon	3.29	South Cave Hills	
3150	Summit Divide	10.79	Slim Buttes	
3152	Ana Spring	1.58	Slim Buttes	
3159	Ward Gulch	2.25	East Short Pines	
3817	Lampkin Gulch	5.02	Long Pines	
3817A	Halbert Gulch Crossover	1.41	Long Pines	

Table C - 2.6 Actions Associated with Alternative B

System Roads *Not* Proposed to Be Designated for Public Motorized Use				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
31312	31312	0.32	North Cave Hills	**Duplicate access to Private Land or Inholding.** Consistent with ANILCA, one route to private inholdings is provided.
31241	31241	0.53	Slim Buttes	**Parallel Roads.** These system roads would not be designated for public motorized use because they provide access to the same locations as other parallel routes.
3819C	3819C	0.30	Long Pines	
3130	Uranium Road	0.10	North Cave Hills	
30361	30361	0.30	Long Pines	**No Administration, Protection, or Utilization Need.** These system roads or segments of road would not be designated for public motorized use. No reasonably foreseeable administrative, protection, or utilization need has been identified.
30452	30452	0.93	Long Pines	
3045A	3045A	0.16	Long Pines	
3045B	3045B	0.21	Long Pines	
30491	30491	0.12	Long Pines	
30513	30513	0.21	Long Pines	
30561	30561	0.39	Long Pines	
3058A	Dead Horse Divide	1.31	Long Pines	
30611	30611	0.83	Long Pines	
3067	Red Bluff	1.75	Long Pines	
30671	30671	0.30	Long Pines	
30672	30672	0.32	Long Pines	
3070	Horse Killer Reservoir	0.62	Long Pines	
3089	Lindsay Gulch	0.60	Long Pines	
3089C	3089C	0.60	Long Pines	
30901	30901	1.65	Long Pines	
3101A	3101A	0.24	Ekalaka Hills	
3101F	3101F	1.52	Ekalaka Hills	
31012	31012	0.66	Ekalaka Hills	
31013	31013	0.17	Ekalaka Hills	
31131	31131	0.01	South Cave Hills	
31171	31171	1.32	Long Pines	
31172	31172	0.94	Long Pines	
3117E	Iron Spring	0.67	Long Pines	
3117G	Rustler Divide	0.36	Long Pines	
31181	31181	0.87	Long Pines	
31191	31191	0.09	Long Pines	
3160	Moreau Peak	1.10	East Short Pines	
3161	Lower Devils Canyon	1.10	Long Pines	
38112	38112	0.50	Ekalaka Hills	
38121	38121	0.17	Ekalaka Hills	
3819B	3819B	0.50	Long Pines	
3819D	3819D	0.60	Long Pines	

Table C - 2.7 Actions Associated with Alternative B

Season of Use Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3053	McClary Road	1.82	Long Pines	**Remove Existing Season of Use.** To maximize motorized recreation opportunities yearlong.
3057W	Burditt Springs Rd	1.80	Long Pines	

Table C - 2.7 Actions Associated with Alternative B

Season of Use Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3102A	3102A	1.94	Ekalaka Hills	**December 1 – October 14**. This season of use is proposed to provide non-motorized hunting in key wildlife security habitat areas during big-game hunting seasons.
3104C	Camp Needmore 3	0.03	Ekalaka Hills	
31042	31042	0.25	Ekalaka Hills	
31044	31044	0.24	Ekalaka Hills	
3071	Hidden Spring	1.66	Ekalaka Hills	
3108	Oliver Springs	1.10	Ekalaka Hills	
31153	31153	0.97	Slim Buttes	
31162	Capital Rock Access	0.04	Long Pines	
3122	Jesse Elliot	1.39	Slim Buttes	
31233	31233	2.07	North Cave Hills	
31239	Devils Canyon	2.86	North Cave Hills	
312310	312310	1.21	North Cave Hills	
312310A	312310A	0.29	North Cave Hills	
3125B	3125B	1.23	Slim Buttes	
31281	31281	0.06	North Cave Hills	
3145	Blarney Castle	2.10	Slim Buttes	
31453	31453	0.60	Slim Buttes	
31481	31481	1.17	Slim Buttes	
31482	31482	1.10	Slim Buttes	
31483	31483	1.00	Slim Buttes	
31503	31503	3.66	Slim Buttes	
31503B	31503B	2.00	Slim Buttes	
31504	31504	0.56	Slim Buttes	
31504A	31504-A	0.48	Slim Buttes	
315010	315010	2.60	Slim Buttes	
3152	Ana Spring	1.58	Slim Buttes	
38111	Butler Gulch	2.51	Ekalaka Hills	
3812A	3812A	0.30	Ekalaka Hills	
3812A1	3812A1	0.75	Ekalaka Hills	
3813B	Plantation	3.44	Ekalaka Hills	
3814	J T Smith	1.12	Ekalaka Hills	

Table C - 2.8 Actions Associated with Alternative B

Dispersed Vehicle Camping Proposed Changes				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3123	Picnic Spring Rd	4.05	North Cave Hills	**Dispersed Vehicle Camping will *Not* be Permitted Due to Mining Reclamation, and Health and Safety.** These system roads or portions of road are within a past mining area or an area with documented high radiation levels. It is undesirable to have dispersed vehicle camping use in the area during and upon completion of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remediation.
3128	High And Dry	2.14	North Cave Hills	
31281	31281	0.06	North Cave Hills	
3130	Uranium Road	1.35	North Cave Hills	
3138	Cobble Stone	2.04	North Cave Hills	

Table C - 2.9 Actions Associated with Alternative B

System Roads Proposed for Mixed Use				
Route #	**Route Name**	**Length (Miles)**	**Land Unit**	**Alternative B – Specific Rationale**
3125B	3125B	1.23	Slim Buttes	**These Roads or Segments of Road would be Designated for Use by all Motorized Vehicles.** This provides an opportunity for users to operate licensed and unlicensed motor vehicles on these routes.
3113	S Cave Hills	6.30	South Cave Hills	
31133	31133	0.48	South Cave Hills	
3115	J B Pass	4.42	Slim Buttes	
31151	31151	0.25	Slim Buttes	
3117	Snow Creek	18.19	Long Pines	
3119	Exie	0.81	Long Pines	
3125	Bobcat	9.31	Slim Buttes	
3145	Blarney Castle	2.10	Slim Buttes	
3148	Deer Draw	5.38	Slim Buttes	
31453	31453	0.60	Slim Buttes	
31481	31481	1.17	Slim Buttes	
31482	31482	1.10	Slim Buttes	
31483	31483	1.00	Slim Buttes	
31485	Summer Spring 2	0.20	Slim Buttes	
3818	Speelmon Cr.	0.14	Long Pines	
3819	Lost Farm/Belltower Divide	4.31	Long Pines	

Table C - 3.1 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

System Roads Available to be Designated For Motorized Public Use – Highway Legal Vehicle				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative - Comments**
3815	Elmore	2.32	Chalk Buttes	**System Roads.**
38151	38151	0.49	Chalk Buttes	
3816	Trenk Pass	5.99	Chalk Buttes	
38161	38161	0.55	Chalk Buttes	
38162	38162	0.64	Chalk Buttes	
38163	38163	0.75	Chalk Buttes	
3816A	Molstad Cemetery	0.23	Chalk Buttes	
30000	Lone Mountain	1.00	East Short Pines	
3111	3111 Box Springs	10.27	East Short Pines	
31111	31111	0.73	East Short Pines	
3111G	Spring #2	0.78	East Short Pines	
3159	Ward Gulch	2.25	East Short Pines	
3160	Moreau Peak	1.60	East Short Pines	
31601	31601	0.97	East Short Pines	
3071	Hidden Spring	1.66	Ekalaka Hills	
3101	Opeeche Park	6.53	Ekalaka Hills	
31012	31012	0.66	Ekalaka Hills	
31013	31013	0.17	Ekalaka Hills	
31015	Carter Spring	1.04	Ekalaka Hills	
3101A	3101A	0.24	Ekalaka Hills	
3101B	3101B	1.16	Ekalaka Hills	
3101C	3101C	2.16	Ekalaka Hills	
3101D	3101D	0.37	Ekalaka Hills	
3101E	Heggen Carter East	1.86	Ekalaka Hills	
3101E1	3101E1	1.10	Ekalaka Hills	
3101F	3101F	1.52	Ekalaka Hills	
3101W	Heggen Carter West	0.80	Ekalaka Hills	
3102A	3102A	1.94	Ekalaka Hills	
3104	Rimrock Carter/Camp Needmore	6.74	Ekalaka Hills	
310410	310410	0.15	Ekalaka Hills	
31045	Russell Spring	0.42	Ekalaka Hills	
31049	31049	0.87	Ekalaka Hills	
3106	Carter Ridge	2.41	Ekalaka Hills	
3107	3107	0.50	Ekalaka Hills	
3108	Oliver Springs	1.10	Ekalaka Hills	
3109	3109	2.49	Ekalaka Hills	
31092	31092	0.29	Ekalaka Hills	
3401	Mc Nab Pond Campground	0.77	Ekalaka Hills	
3401A	Mc Nab Pond Cg Upper Loop	0.11	Ekalaka Hills	
3811	Dugan Draw	3.51	Ekalaka Hills	
38111	Butler Gulch	2.51	Ekalaka Hills	
38112	38112	0.50	Ekalaka Hills	
3811J	Stagville Divide	1.02	Ekalaka Hills	

Table C - 3.1 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

System Roads Available to be Designated For Motorized Public Use – Highway Legal Vehicle				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative - Comments**
3812	Ridge Road	2.41	Ekalaka Hills	
38121	38121	0.17	Ekalaka Hills	
3812A	3812A	0.30	Ekalaka Hills	
3813	Stagville Draw	6.23	Ekalaka Hills	
3813A	Ekalaka Park Campground	0.18	Ekalaka Hills	
3813B	Plantation	3.44	Ekalaka Hills	
3813B2	3813B2	0.35	Ekalaka Hills	
3813C	Truely Hidden Spring	0.28	Ekalaka Hills	
3813D	Cline	0.22	Ekalaka Hills	
3814	J T Smith	2.99	Ekalaka Hills	
3814A	3814A	0.30	Ekalaka Hills	
3814B	3814B	0.65	Ekalaka Hills	
3048	Pendleton	1.94	Long Pines	
3049	Wickham Gulch	1.17	Long Pines	
30501	30501	0.16	Long Pines	
3052	Wickham Gulch Picnic Area	0.11	Long Pines	
3116	Capital Rock	8.31	Long Pines	
3117	Snow Creek	19.54	Long Pines	
3117A	Lantis Spring Campground	0.71	Long Pines	
3118	Plum Creek	9.12	Long Pines	
3119	Exie	4.59	Long Pines	
3818	Speelmon Cr.	5.01	Long Pines	
3036	Maverick Cr	4.32	Long Pines	
30361	30361	0.30	Long Pines	
3036A	Maverick Spring	0.60	Long Pines	
3036B	Maverick Spur	0.95	Long Pines	
3036C	Jay Reservoir	1.31	Long Pines	
3037	3037	2.04	Long Pines	
3040	Bell Tower Divide	2.59	Long Pines	
30401	30401	0.70	Long Pines	
3041	Cheeseman Rd	1.42	Long Pines	
3042	Double F Road	2.62	Long Pines	
3045	Foster Road	3.41	Long Pines	
30452	30452	0.93	Long Pines	
3045A	3045A	0.16	Long Pines	
3045B	3045B	0.21	Long Pines	
3047	Blacktail Divide	2.60	Long Pines	
3049	Wickham Gulch	5.03	Long Pines	
30491	30491	0.12	Long Pines	
3049A	North Slope Spring	0.40	Long Pines	
3050	3050	1.07	Long Pines	
3051	Flathers	4.38	Long Pines	
30511	30511	2.04	Long Pines	
30512	30512	0.08	Long Pines	

Table C - 3.1 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

System Roads Available to be Designated For Motorized Public Use – Highway Legal Vehicle				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative - Comments**
30513	30513	0.47	Long Pines	
3053	McClary Road	1.82	Long Pines	
3056	Hoag Coal Mine Draw	2.94	Long Pines	
30561	30561	0.39	Long Pines	
3057A	Grasshopper Spring	0.40	Long Pines	
3057B	3057B	0.40	Long Pines	
3057E	3057E	1.20	Long Pines	
3057W	Burditt Springs Rd 3057W	1.80	Long Pines	
3058	Deadhorse	2.60	Long Pines	
3058A	Dead Horse Divide	6.72	Long Pines	
3058B	Deadhorse Reservoir	1.10	Long Pines	
3059	Devils Canyon	5.41	Long Pines	
30591	30591	0.54	Long Pines	
3059A	3059A	0.59	Long Pines	
3060	Abrogast	1.68	Long Pines	
3061	Mowbry	4.72	Long Pines	
30611	30611	0.83	Long Pines	
3061A	Abel Reservoir	1.67	Long Pines	
3062	Iron Spring	4.90	Long Pines	
30621	30621	0.75	Long Pines	
3063	Black Spring	3.06	Long Pines	
3064	Ward	2.67	Long Pines	
3064A	Lo Reservoir	0.40	Long Pines	
3064B	Patton Spring #2	0.52	Long Pines	
3064C	Patton Spring	0.25	Long Pines	
3065	Sand Rock	1.38	Long Pines	
3066	Gross	0.35	Long Pines	
3067	Red Bluff	8.08	Long Pines	
30671	30671	0.30	Long Pines	
30672	30672	0.32	Long Pines	
3067A	Lathan Well	1.00	Long Pines	
3067B	Wood Gulch	2.18	Long Pines	
3069	Gross Ranch	0.30	Long Pines	
3070	Horse Killer Reservoir	1.10	Long Pines	
30701	30701	0.53	Long Pines	
3086	North Slick Creek	1.30	Long Pines	
3088	Carter Spring Divide	2.49	Long Pines	
3089	Lindsay Gulch	2.44	Long Pines	
3089A	Crase Spring	1.04	Long Pines	
3089B	Craft Spring	0.70	Long Pines	
3089C	3089C	0.60	Long Pines	
3089D	Old Mill Spring	0.40	Long Pines	
3090	Pot Hole	4.56	Long Pines	
30901	30901	1.65	Long Pines	

Table C - 3.1 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

System Roads Available to be Designated For Motorized Public Use – Highway Legal Vehicle				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative - Comments**
30902	30902	0.57	Long Pines	
3090A	3090A	0.66	Long Pines	
31171	31171	1.32	Long Pines	
31172	31172	0.94	Long Pines	
31176	31176	1.13	Long Pines	
3117C	3117C	1.26	Long Pines	
3117E	Iron Spring	0.67	Long Pines	
3117F	Tarter Well	0.90	Long Pines	
3117G	Rustler Divide	2.70	Long Pines	
31181	31181	0.87	Long Pines	
31182	31182	1.52	Long Pines	
31183	31183	0.21	Long Pines	
3118A	3118A	0.20	Long Pines	
3118C	3118C	0.67	Long Pines	
3118D	Brown Jug Spring	1.05	Long Pines	
31191	31191	0.09	Long Pines	
3119A	3119A	0.48	Long Pines	
3161	Lower Devils Canyon	2.01	Long Pines	
3817	Lampkin Gulch	5.02	Long Pines	
38171	38171	0.86	Long Pines	
3817A	Halbert Gulch Crossover	1.41	Long Pines	
3818A	3818A	1.03	Long Pines	
3819	Lost Farm/Belltower Divide	4.31	Long Pines	
3819B	3819B	0.50	Long Pines	
3819C	3819C	0.30	Long Pines	
3819D	3819D	0.60	Long Pines	
3819E	3819E	1.30	Long Pines	
3114	Fuller Pass	2.77	North Cave Hills	
31141	31141 O/G	0.10	North Cave Hills	
31142	31142 O/G	0.05	North Cave Hills	
3120	Riley Pass	3.20	North Cave Hills	
3120A	3120A O/G	0.19	North Cave Hills	
3123	Picnic Spring Rd	4.05	North Cave Hills	
31233	31233	2.07	North Cave Hills	
31239	Devils Canyon	2.86	North Cave Hills	
3123A	Picnic Springs Campground	0.90	North Cave Hills	
3127	Doane Springs	0.91	North Cave Hills	
3128	High And Dry	2.14	North Cave Hills	
3130	Uranium Road	2.84	North Cave Hills	
31301	31301	0.42	North Cave Hills	
31302	31302	0.28	North Cave Hills	
3131	Craig Pass (Odell Creek)	2.18	North Cave Hills	
31312	31312	0.32	North Cave Hills	
31313	31313	1.09	North Cave Hills	

Table C - 3.1 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

System Roads Available to be Designated For Motorized Public Use – Highway Legal Vehicle				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative - Comments**
3138	Cobble Stone	2.04	North Cave Hills	
38500	38500	2.87	North Cave Hills	
3115	J B Pass	4.42	Slim Buttes	
31151	31151	0.25	Slim Buttes	
3122	Jesse Elliot	1.39	Slim Buttes	
3124	Redcross	6.33	Slim Buttes	
31241	31241	0.53	Slim Buttes	
31242	31242	0.21	Slim Buttes	
31243	31243	0.92	Slim Buttes	
31244	31244	1.37	Slim Buttes	
31245	31245	0.76	Slim Buttes	
3124A	3124A	0.16	Slim Buttes	
3125	Bobcat	9.42	Slim Buttes	
3125A	Basin Valley Spring	0.90	Slim Buttes	
3125B	3125B	1.23	Slim Buttes	
3126	Reva Campground	0.73	Slim Buttes	
31261	31261	0.37	Slim Buttes	
3139	Burning Mine	1.79	Slim Buttes	
31391	31391	0.57	Slim Buttes	
3144	Five Bar	1.55	Slim Buttes	
3145	Blarney Castle	2.10	Slim Buttes	
3146	Doc Hodge Draw	1.98	Slim Buttes	
3148	Deer Draw	5.38	Slim Buttes	
3150	Summit Divide	10.79	Slim Buttes	
3152	Ana Spring	1.58	Slim Buttes	
3113	S Cave Hills	6.30	South Cave Hills	
31131	31131	0.28	South Cave Hills	
31132	31132	1.58	South Cave Hills	
31133	31133	3.70	South Cave Hills	
3113A	3113A	2.14	South Cave Hills	
3135	Johnny Pocket Spring	2.40	South Cave Hills	
3137	Peterson Canyon	3.29	South Cave Hills	
3797B	3797B O/G Well 34-26	0.13	South Cave Hills	
3157	W Short Pines	0.69	West Short Pines	
3158	Olson	0.78	West Short Pines	
3158A	3158A	1.37	West Short Pines	
3158B	3158B	0.68	West Short Pines	

Table C - 3.2 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

Administrative Use				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative – Comments**
3HB	D3 Horse Barn	0.04	Camp Crook Compound	**Existing Administrative Use.** These system roads are currently identified for administrative use.
3RS	D3 Ranger Station	0.04	Camp Crook Compound	
3WH	D3 Ware House	0.10	Camp Crook Compound	
3107	3107	1.18	Ekalaka Hills	
31231	31231	0.66	North Cave Hills	
31232	31232	0.42	North Cave Hills	

Table C - 3.3 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

Season of Use				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative – Comments**
3036	Maverick Cr	4.32	Long Pines	**December 1 – October 14**. This existing season of use is to provide non-motorized hunting in key wildlife security habitat areas during big-game hunting seasons.
30361	30361	0.30	Long Pines	
3036A	Maverick Spring	0.60	Long Pines	
3036B	Maverick Spur	0.95	Long Pines	
3036C	Jay Reservoir	1.31	Long Pines	
3037	3037	2.04	Long Pines	
3040	Bell Tower Divide	2.59	Long Pines	
30401	30401	0.70	Long Pines	
3041	Cheeseman Rd	1.42	Long Pines	
3042	Double F Road	2.62	Long Pines	
3045	Foster Road	3.41	Long Pines	
30452	30452	0.93	Long Pines	
3045A	3045A	0.16	Long Pines	
3045B	3045B	0.21	Long Pines	
3047	Blacktail Divide	2.60	Long Pines	
3049	Wickham Gulch	5.03	Long Pines	
30491	30491	0.12	Long Pines	
3049A	North Slope Spring	0.40	Long Pines	
3050	3050	1.07	Long Pines	
3051	Flathers	4.38	Long Pines	
30511	30511	2.04	Long Pines	
30512	30512	0.08	Long Pines	
30513	30513	0.47	Long Pines	
3053	McClary Road	1.82	Long Pines	
3056	Hoag Coal Mine Draw	2.94	Long Pines	
30561	30561	0.39	Long Pines	
3057A	Grasshopper Spring	0.40	Long Pines	
3057B	3057B	0.40	Long Pines	
3057E	3057E	1.20	Long Pines	
3057W	Burditt Springs Rd 3057W	1.80	Long Pines	
3058	Deadhorse	2.60	Long Pines	

Table C - 3.3 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

Season of Use				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative – Comments**
3058A	Dead Horse Divide	6.72	Long Pines	
3058B	Deadhorse Reservoir	1.10	Long Pines	
3059	Devils Canyon	5.41	Long Pines	
30591	30591	0.54	Long Pines	
3059A	3059A	0.59	Long Pines	
3060	Abrogast	1.68	Long Pines	
3061	Mowbry	4.72	Long Pines	
30611	30611	0.83	Long Pines	
3061A	Abel Reservoir	1.67	Long Pines	
3062	Iron Spring	4.90	Long Pines	
30621	30621	0.75	Long Pines	
3063	Black Spring	3.06	Long Pines	
3064	Ward	2.67	Long Pines	
3064A	Lo Reservoir	0.40	Long Pines	
3064B	Patton Spring #2	0.52	Long Pines	
3064C	Patton Spring	0.25	Long Pines	
3065	Sand Rock	1.38	Long Pines	
3066	Gross	0.35	Long Pines	
3067	Red Bluff	8.08	Long Pines	
30671	30671	0.30	Long Pines	
30672	30672	0.32	Long Pines	
3067A	Lathan Well	1.00	Long Pines	
3067B	Wood Gulch	2.18	Long Pines	
3069	Gross Ranch	0.30	Long Pines	
3070	Horse Killer Reservoir	1.10	Long Pines	
30701	30701	0.53	Long Pines	
3086	North Slick Creek	1.30	Long Pines	
3088	Carter Spring Divide	2.49	Long Pines	
3089	Lindsay Gulch	2.44	Long Pines	
3089A	Crase Spring	1.04	Long Pines	
3089B	Craft Spring	0.70	Long Pines	
3089C	3089C	0.60	Long Pines	
3089D	Old Mill Spring	0.40	Long Pines	
3090	Pot Hole	4.56	Long Pines	
30901	30901	1.65	Long Pines	
30902	30902	0.57	Long Pines	
3090A	3090A	0.66	Long Pines	
31171	31171	1.32	Long Pines	
31172	31172	0.94	Long Pines	
31176	31176	1.13	Long Pines	
3117C	3117C	1.26	Long Pines	
3117E	Iron Spring	0.67	Long Pines	
3117F	Tarter Well	0.90	Long Pines	
3117G	Rustler Divide	2.70	Long Pines	
31181	31181	0.87	Long Pines	

Table C - 3.3 No Action Alternative – Existing System Roads, Administrative Use, and Seasons of Use

Season of Use				
Route #	**Route Name**	**Length (Miles)**	**Geographic Area**	**No Action Alternative – Comments**
31182	31182	1.52	Long Pines	
31183	31183	0.21	Long Pines	
3118A	3118A	0.20	Long Pines	
3118C	3118C	0.67	Long Pines	
3118D	Brown Jug Spring	1.05	Long Pines	
31191	31191	0.09	Long Pines	
3119A	3119A	0.48	Long Pines	
3161	Lower Devils Canyon	2.01	Long Pines	
3817	Lampkin Gulch	5.02	Long Pines	
38171	38171	0.86	Long Pines	
3817A	Halbert Gulch Crossover	1.41	Long Pines	
3818A	3818A	1.03	Long Pines	
3819	Lost Farm/Belltower Divide	4.31	Long Pines	
3819B	3819B	0.50	Long Pines	
3819C	3819C	0.30	Long Pines	
3819D	3819D	0.60	Long Pines	
3819E	3819E	1.30	Long Pines	

- End of Appendix C -

Appendix D: Opportunities

Several opportunities for improved water resource conditions and route decommissioning have been identified from public meetings and public comments. Other opportunities for route maintenance, new construction, easements, improved route design, and other recreational plans could be identified in the future. Although the following opportunities are outside the scope of this analysis, they may be considered for further review, prioritization, and NEPA analysis.

D.1 WATER RESOURCE OPPORTUNITIES

The following Table outlines opportunities to address water resource concerns.

Table D1-1. Water Resource Opportunities

Route ID	Miles	Watershed	Observations and Recommended Actions
3818	4.9	Speelmon Creek	Road drainage routed to perennial stream at crossings and cross drains. **Action: Install proper drainage and route to adequate filter zones.**
3086	1.0	NF Slick Creek	Road drainage routed to perennial stream at crossings. **Action: Install proper drainage and route to adequate filter zones.**
3036	4.3	Maverick Gulch	Road crossing of perennial stream with narrow riparian/wetland corridor by unimproved ford. **Action: Harden crossing or reroute.**
3057W	1.8	Tributary to Speelmon Creek	Road crossing of perennial stream and small riparian/wetland site by unimproved ford. **Action: Harden crossing or reroute.**
3089	0.6	Whitcomb Draw	Portion of route located in probable wetland and no longer passable. **Action: Decommission and rehabilitate.**
3137	3.3	Peterson Canyon, South Cave Hills	Road crossing of saline seeps/wetland by unimproved ford. **Action: Harden crossing or reroute.**
31133	3.0	South Cave Hills	Road crossing of probable wetland by unimproved ford. **Action: Harden crossing or reroute.**
3113	5.8	Hay Creek, South Cave Hills	Road crossing of perennial stream with narrow riparian/wetland corridor by unimproved ford. **Action: Harden crossing or reroute.**

D.2 ROUTE DECOMMISSIONING OPPORTUNITIES

The following is a list of routes which are candidates for decommissioning in the future based on Alternative B. Prior to ground disturbance, appropriate NEPA analysis would be conducted.

D2-1. Decommissioning Opportunities - System Roads

Route Number	Route Name	Segment Length
30361	30361	0.30
30452	30452	0.93
3045A	3045A	0.16
3045B	3045B	0.21
30491	30491	0.12
30513	30513	0.21
30561	30561	0.39
3058A	Dead Horse Divide	1.31
30611	30611	0.83
3067	Red Bluff	1.75
30671	30671	0.30
30672	30672	0.32
3070	Horse Killer Reservoir	0.62
3089C	3089C	0.60
30901	30901	1.65
31171	31171	1.32
31172	31172	0.94
3117E	Iron Spring	0.67
3117G	Rustler Divide	0.36
31181	31181	0.87
31191	31191	0.09
3161	Lower Devils Canyon	1.10
3819B	3819B	0.50
3819C	3819C	0.30
3819D	3819D	0.60
31012	31012	0.66
31013	31013	0.17
3101A	3101A	0.24

D2-1. Decommissioning Opportunities - System Roads

Route Number	Route Name	Segment Length
3101F	3101F	1.52
31131	31131	0.01
31241	31241	0.53
3130	Uranium Road	0.10
31312	31312	0.32
3160	Moreau Peak	1.10
38112	38112	0.50
38121	38121	0.17

D2-2. Decommissioning Opportunities - Non-System Routes

Route Number	Route Name	Segment Length
30364	30364	0.58
3036C1	3036C1	0.20
3038	3038	0.72
30402	30402	0.22
30451	30451	1.14
30483	30483	0.18
30521	30521	0.34
30531	30531	0.11
30561A	30561A	0.21
30561B	30561B	0.08
30563	30563	0.09
3057E1	3057E1	0.22
3058A2	3058A2	0.21
30593	30593	0.15
30601	30601	0.08

D2-2. Decommissioning Opportunities - Non-System Routes

Route Number	Route Name	Segment Length
30602	30602	0.65
30614	30614	0.14
30632	30632	0.27
30641	30641	0.24
3067B1	3067B1	0.12
30711	30711	0.13
30861	30861	0.49
30882	30882	0.16
30901A	30901A	0.05
3101E2	3101E2	0.20
3102A1	3102A1	0.16
3102A2	3102A2	0.14
3102A3	3102A3	0.41
31041	31041	0.51
31043	31043	0.20
31045A	31045A	0.36
31046	31046	0.87
31046A	31046A	0.06
31046B	31046B	0.88
31046C	31046C	0.64
31047	31047	1.76
31047A	31047A	0.27
31047B	31047B	0.11
31048	31048	0.22
31061	31061	0.20
3108A	3108A	0.16
3108C	3108C	0.17
31133A	31133A	0.50
31134	31134	0.20
31152	31152	0.26
31161	31161	0.31
31175	31175	0.59
31177	31177	0.26
31178	31178	0.19

D2-2. Decommissioning Opportunities - Non-System Routes

Route Number	Route Name	Segment Length
3117B	Big Tree Spring	0.50
3117G1	3117G1	0.20
3117G2	3117G2	0.93
3117G4	3117G4	0.08
3117G5	3117G5	0.29
31181A	31181A	0.58
31181B	31181B	0.28
31181B1	31181B1	0.05
31181B1A	31181B1A	0.07
311821	311821	0.16
3119C	3119C	0.28
312310	312310	0.25
31233A	31233A	0.73
31233B	31233B	0.40
31233C	31233C	0.25
31233D	31233D	0.53
31233E	31233E	0.15
31235A	31235A	0.32
31237	31237	0.09
312414	312414	0.17
312416	312416	0.11
312418	312418	0.20
31245B	31245B	0.52
31246	31246	0.25
31247	31247	0.33
31249	31249	0.59
3124A1	3124A1	0.16
31251	31251	0.44
31252	31252	0.45
31253	31253	0.89
31304	31304	0.68
31304A	31304A	0.18
31392	31392	0.60
31452	31452	0.40

D2-2. Decommissioning Opportunities - Non-System Routes

Route Number	Route Name	Segment Length
31501	31501	0.33
31502	31502	0.23
31503A	31503A	0.30
31509	31509	0.29
3401B	Mc Nab Pond Backside	0.65
38113	38113	0.71
38131	38131	0.39
38131A	38131A	0.36
38132	38132	0.34
38133	38133	0.22
3813B1	3813B1	0.38
3813B2A	3813B2A	0.24
3813B3	3813B3	0.07
38151A	38151A	0.42
38152	South Harkins Well	0.38

D2-2. Decommissioning Opportunities - Non-System Routes

Route Number	Route Name	Segment Length
38153	Susie Elmore Well	0.10
38154	38154	0.10
38154A	38154A	0.09
38155	38155	0.17
381611	381611	0.25
381613	381613	0.09
38165	Molstad	0.21
38166	38166	0.18
38167	Molstad Dump	0.11
38172	38172	0.48
3817A1	3817A1	1.05
3819E1	3819E1	0.97
38201	Peadbody Well	0.12

- End of Appendix D -

Appendix E: Agency Letters

E.1 INRODUCTION

The agency comment letters received on the project in response to the DEIS were from the South Dakota Department of Game, Fish and Parks, U.S. Environmental Protection Agency, USDI Bureau of Land Management Miles City Field Office, and USDI-Office of Environmental Policy and Compliance. These letters are included below.

E.2 AGENCY LETTERS

E.2.1 South Dakota Department of Game, Fish and Parks: Page E-2 to E-4

E.2.2 U.S. Environmental Protection Agency, Region 8 MT Office: Page E-5 to E-25

E.2.3 USDI Bureau of Land Management Miles City Field Office: Page E-26

E.2.4 USDI Office of Environmental Policy & Compliance: Page E-27

DEPARTMENT OF GAME, FISH AND PARKS
Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

Sioux Travel Management Planning
Doug Epperly, Project Leader
Custer National Forest
1310 Main Street
Billings, MT 59105

November 10, 2008

Re: Sioux Travel Management Draft EIS

Dear Mr. Epperly,

Thank you for the opportunity to comment on the draft EIS (DEIS) for travel management. Our comments pertain to the Sioux Ranger District of Custer National Forest within South Dakota.

Introduction:
Overall, we were highly impressed with the thorough analysis and in-depth coverage of the complexities of resource issues related to roads and motorized vehicles. The DEIS was readable, well organized and easy to follow. We appreciated the reference tables and maps. Most of our requests for resource considerations and how information is presented (such as road densities) were met. Also, many of our scoping comments were addressed when we met with Ranger Hansen and his staff. However, the DEIS did not include written responses to public comments and we would like to see the responses to our letter of 11-28-07 (letter page 1-2). Having written responses helps us to better understand the NEPA process and be more on point. Please send our request to me as the Department representative for this project: Shelly Deisch, South Dakota Department of Game, Fish and Parks, 3305 West South Street, Rapid City, SD 57702. (605) 394-2391 shelly.deisch@state.sd.us).

South Dakota Data and Information:
We found the wildlife, fisheries and botany sections excellent, including the use of surrogate wildlife species. Specific studies of wildlife responses to roads are not abundant for northwestern South Dakota but are available for similar habitats in western South Dakota. We suggested in our 2007 comments and reiterate, South Dakota references regarding wildlife and habitat disturbances (while not complete, see list at end of letter). We do not believe that these studies would change the analysis or preferred alternative but knowledge of them could strengthen the DEIS analysis should it be challenged. Extensive research has been conducted on effects of road types, uses, road densities, habitat effectiveness, zone of influence and human activities on elk behavior, distribution and habitat in the Black Hills of South Dakota, including state

and federal lands. Effects of roads on mt. lions (in reference to quality deer habitat) has also been researched.

Of note, the "Ashland" Ranger District was referenced on pages 1-13 and 2-13, rather than the Sioux.

Post-MVUM Enforcement (DEIS page 2-14) discusses how the new travel restrictions will require cooperation from various public entities. Page 3-83 discusses how Montana Dept. of Fish, Wildlife and Parks manages its wildlife and fish populations. Please include the South Dakota Department of Game, Fish and Parks in both references.

Page 3-6 states that the Sioux District is a relatively small percent of the hunting units in South Dakota. True acreage wise, but the District experiences a disproportionate high use during most hunting seasons.

Issue Identification:

A. *Habitats:* We are pleased that CNF identified riparian areas and water quality as issues for roads and dispersed motorized camping. The watershed and HUC tables were detailed but land unit or location (ie: Slim Buttes) would have been helpful to quickly identify South Dakota watersheds. We are anxious to review R1 Watershed Conservation Practices Handbook when it is available.

Page 3-81 discusses impacts to aquatic habitats and biota by roads and trails. The DEIS states that "In general, roads have more impacts than trails because of their wider prisms, etc., etc." We suggest this may not be a blanket truth as erosity and runoff depends on the type of road: paved, gravel, grassy and secure, soil type, precipitation events, use, location, etc. Also, a recent presentation of a Colorado study indicated that OHV trails created *twice* the sediment load to streams as dirt roads (Dr. Lee McDonald, Colorado State University, Dakota Society of Am. Foresters Fall Conference, Rapid City, SD). Not all roads and trails are created equal and we suggest caution at assuming trails are not as adverse to riparian systems as roads.

The core habitat tables and discussions in Chapter 3 were really helpful. Coupled with road density estimates, it appears that the Sioux Ranger District will have a high percentage of available habitats far enough away from motorized routes to provide certain wildlife species security and sanctuary without being constantly displaced by human activity.

B. *Enforcement:* The discussion on law enforcement was a realization that the Forest Service WO does not prioritize funding for all law enforcement duties across all FS Units. Typical discussions include hopes to use grants and volunteers, which are already available and generally not sustainable. Volunteers can assist in reporting violations and giving out information but reliance on them to perform duties that trained law enforcement specialists have is untenable, at best. With more and more designated trail systems across public lands, the same publics will be competing for limited grant dollars. We wish you the best on this.

Wildlife Division: 605/773-3381 Parks and Recreation Division: 605/773-3391 FAX: 605/773-6245 TTY: 605/773-3381

Travel Routes:
Thank you for considering our comments on designated travel routes. We best support Alternative B to meet the needs of our joint constituents and outdoor enthusiasts. We are willing to work with you, especially during the first few years of the new route designation.

Sincerely,

Shelly Deisch

Shelly Deisch

cc: Jeff Vonk, Secretary
Tony Leif, Division Director Wildlife
Doug Hofer, Division Director Parks and Recreation
John Kirk, Environmental Review Program Administrator
Mike Kintigh, Region 1 Supervisor
Nathan Wagner, CO Harding County
Kurt Hansen, Ranger, Sioux Ranger District, CNF

Additional Literature References

Fecske, Dorothy M. 2003. Distribution and abundance of American martens and cougars in the Black Hills of South Dakota and Wyoming. Ph.D. S.D. S.U., Brookings, SD. (http://wfs.sdstate.edu/wfsdept/Theses%20and%20Dissertations.htm)

Millspaugh, J.J. 1999. Behavioral and physiological responses of elk to human disturbances in the southern Black Hills, South Dakota. Ph.D. Dissertation. Univ. Washington, Seattle. 284 pp.

Millspaugh, J.J., G.C. Brundige, R.A. Gitzen, and K. J. Raedeke. 2000. Elk and hunter space use sharing in South Dakota. J. Wildl. Manage. 64(4):994-1003.

Rumble, M.A., L. Benkobi, G.C. Brundige and J.J. Millspaugh. In Press. Winter elk dispersion patterns relative to the predictions of a spatially explicit habitat model. Deer and Elk Workshop, Wilsonville, OR.

Rumble, M.A., L. Benkobi and R.S. Gamo. 2005. Elk responses to humans in a densely roaded area. Intermt. J. of Sciences. Vol.11, No.1-2:10-24.

Rumble, M.A., L. Benkobi and R.S. Gamo. 2007. A Different Time and Place Test of ArcHSI: A Spatially Explicit Habitat Model for Elk in the Black Hills. Research Paper RMRS-RP-64. Fort Collins, CO: U.S.D.A., Forest Service, Rocky Mountain Research Station. 16 p.

Stubblefield, C.H., K.T. Vierling and M.A. Rumble. 2006. Landscape-Scale Attributes of Elk Centers of Activity in the Central Black Hills of South Dakota. J. Wild. Manage. 70(4):1060–1069.

Wildlife Division: 605/773-3381 Parks and Recreation Division: 605/773-3391 FAX: 605/773-6245 TTY: 605/773-3381

#1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8, MONTANA OFFICE
FEDERAL BUILDING, 301 S. PARK, DRAWER 10096
HELENA, MONTANA 59626-0096

Ref: 8MO

October 27, 2008

Mr. Steve E. Williams, Forest Supervisor
Attn: Doug Epperly, Project Coordinator
Custer National Forest
1310 Main Street
Billings, MT 59105

Re: CEQ 20080395; Sioux Ranger District Travel Management Plan DEIS

Dear Mr. Williams:

The Environmental Protection Agency (EPA) Region VIII Montana Office has reviewed the Sioux Ranger District Travel Management Plan and Draft Environmental Impact Statement (DEIS) in accordance with EPA responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. Section 309 of the Clean Air Act directs EPA to review and comment in writing on the environmental impacts of any major federal agency action. EPA's comments include a rating of both the environmental impact of the proposed action and the adequacy of the NEPA document.

We appreciate the Custer National Forest's and Sioux Ranger District's effort in preparing a Travel Management Plan and DEIS. The EPA has been concerned about the effects of travel management, particularly roads and motorized uses on aquatic and terrestrial ecosystems. We support conduct of travel planning efforts that are intended to better manage and control recreational uses and reduce environmental impacts of such uses on National Forests.

Public recreational demand and access has increased significantly in recent years, and motorized uses and roads in many cases have caused increased damage to aquatic and terrestrial resources. We have been particularly concerned about the increasing use of off-highway vehicles (OHVs) and all-terrain vehicles (ATVs) that occur away from roads and trails, including steep slopes, fragile soils, wet meadows, and around water bodies. Newer motorized vehicles such as trail bikes and ATVs can access areas much further into the Forest than they could historically, forcing wildlife onto smaller and smaller patches of habitat, fragmenting habitat and migration corridors, and adversely affecting wildlife security, and causing soil erosion and adverse effects to water quality, aquatic habitat and fisheries, and spreading weeds. Demand for recreation opportunities on public land may be exceeding the capability of the land and resources to provide recreation in a manner that is consistent with resource and ecosystem protection.

It is important that motorized activities be properly managed and controlled so that they occur in a manner and location that is consistent with protection of the environment and other

resources in order to sustain and protect the environment, other resources, and ecosystems for use by future generations. The challenge is in providing adequate access for land management and public recreation while protecting and restoring aquatic and terrestrial ecosystems. Where there are conflicts between access and recreational use and long-term protection of resources and ecosystems, we believe resource/ecosystem protection must be given priority to sustain and protect resources and ecosystems for use by future generations. We very much support proposed efforts to restrict motorized vehicle use to designated roads and trails.

The preferred alternative, Alternative B, for the Sioux District appears to include more environmentally protective features than the other two alternatives evaluated, no action and Alternative A (i.e., protection of streams, water quality, fisheries, wildlife, etc.). Alternative B would have the highest potential reduction in miles of road with reduced water quality/fisheries risk (186 miles vs. 42 miles with Alternative A and 0 miles under no action); has a beneficial impact to two sensitive aquatic species over Alternative A and no action; has lowest mileage of roads with moderate or high erosion hazard (280 miles vs. 439 miles with Alternative A and 373 miles with no action); lowest weed susceptible acres within the designated road corridor 22,136 acres vs. 34,572 acres with Alternative A and 30,604 acres with no action); and results in greater decreases in road density and increases in wildlife core habitat than other alternatives.

Accordingly, the EPA supports Alternative B, the preferred alternative, over Alternative A and no action. We have the greater environmental concerns with No Action and Alternative A due to increased risk of adverse effects on watersheds, water quality, fisheries and wildlife habitat and security with these alternatives. We recommend, however, that you consider revising or amending Alternative B to include further reductions in motorized routes, particularly routes in areas with high hazard (erosive) soils and in high risk watersheds.

The DEIS states that Alternative B would include 24 miles of actions that would increase risks to water resources, and shows a net increase in risk in the Bull Creek-Cottonwood Creek, Dry Creek, and Gap Creek watersheds (i.e., more miles with increase in risk than decrease in risk). We note that the Dry Creek watershed with an increase in risk is also shown as a high risk watershed. Alternative B would have 165.5 miles of routes designated for public motorized uses on soils with "severe" erosion hazards, and 155.9 miles on soils "poorly suited" for roads and trails. Forty miles of roads and trails would be on landscapes that have a severe erosion hazard rating (14 miles Public use and 26 miles Administrative use). We do not support the addition of new routes with high risk of erosion and water quality impacts to the road system, especially when road maintenance is already inadequate to address resource impacts from existing roads.

We are also concerned about the minimal funding and resources available to properly maintain roads and keep them in fair to good condition to minimize erosion and water quality and fisheries impacts. The DEIS indicates that only a small percentage of roads on the District receive annual maintenance. We believe there is a need to address road conditions that contribute to degraded water quality and aquatic habitat. Reductions in sediment delivery from roads as well as improvements in road drainage and reductions in road density are important for improving watershed conditions and aquatic health in area streams.

2

The DEIS states that the Travel Plan is a first step in addressing water quality impacts, and that additional actions are needed to address water quality effects of roads and motorized uses We appreciate this recognition that additional actions are needed, but are concerned about the Forest's ability to implement the needed additional actions on anything close to a timely basis due to lack of resources. We believe it is important to provide adequate funding to carry out additional actions to address water quality effects of roads (some of which are identified in Appendix D). There should be a continuing road inspection, evaluation and maintenance program in place to identify road drainage and BMP needs, and adequate funds to correct road deficiencies. We encourage improved funding for road maintenance and emphasize the need for decommissioning of roads which cause resource damages and which cannot be adequately maintained. We believe road networks should be limited to those that are necessary for access and management, and which can be adequately maintained within agency budgets and capabilities.

We support the effort to have understandable travel maps (Motor Vehicle Use Map, MVUM), and clearer travel management rules for the public, and encourage improved road and trails signs to promote understanding of travel rules, and thus, improved voluntary compliance with the travel plan. We also believe the ability of the Forest to police and enforce restrictions on motorized uses that damage the environment in light of the expanded use off-road vehicles (trail bikes, all terrain vehicles, 4x4 vehicles, etc.) is an important aspect of travel management. Policing and enforcement of travel restrictions is necessary to promote compliance, and ensure protection of water quality, fisheries, wildlife, and other sensitive resources. The discussion of enforcement in the Sioux District Travel Management Plan is improved over that in the Ashland District Travel Management Plan. Although we still have concerns regarding the adequacy of resources to enforce travel restrictions necessary for protection of the environment. We support adding law enforcement personnel to handle the increases in motor vehicle uses that are occurring on the District.

The Plan should also be consistent with Total Maximum Daily Loads (TMDLs) and Water Quality Plans that may be developed to restore water quality and beneficial use support in impaired 303(d)-listed waters in the area (e.g., Little Missouri River, Thompson Creek). The Custer National Forest, Sioux Ranger District should coordinate their travel management planning with the Montana DEQ and South Dakota Dept. of Environment and Natural Resources as well as EPA TMDL staff to assure travel plan consistency with TMDLs and water quality restoration plans being prepared by MDEQ.

The EPA's more detailed questions, comments, and concerns regarding the analysis, documentation, or potential environmental impacts of the Sioux Travel Management Plan DEIS are included in the enclosure with this letter. Based on the procedures EPA uses to evaluate the adequacy of the information and the potential environmental impacts of the proposed action and alternatives in an EIS, the Sioux Travel Management Plan DEIS has been rated as Category EC-2 (Environmental Concerns - Insufficient Information). The EPA's environmental concerns regard potential effects to water quality, fisheries, wildlife and other resources from roads and motorized uses. A summary of EPA's DEIS rating criteria is attached.

3

If you have any questions you may contact Mr. Steve Potts of my staff in Helena at (406) 447-5022 or in Missoula at (406) 329-3313, or via e-mail at potts.stephen@epa.gov . Thank you for your willingness to consider our comments at this stage of the process.

Sincerely,

John F. Wardell
Director
Montana Office

Enclosures

cc: Larry Svoboda/Connie Collins, EPA, 8EPR-N, Denver
Mark Kelley/Robert Ray, MDEQ, Helena

4

EPA Comments on the Draft EIS for the Ashland Ranger District Travel Management Plan

Brief Project Overview:

The Sioux Ranger District of the Custer National Forest proposes to designate a system of roads and trails for public motorized use. In addition, some unauthorized (non-system) routes could be converted to system roads and motorized trails, and some system roads may be changed to system motorized trails. The type of vehicle and season of use would also be designated for each system road and motorized system trail. Dispersed vehicle camping distances or site specific restrictions would also be determined. The purpose of the project is to: 1) identify routes for public motorized use on the District, 2) provide for a variety of motorized and non-motorized opportunities, 3) minimize impacts on natural and cultural resources, and 4) have enforceable travel management guidelines that meet the direction of the 2005 Motorized Travel Management Rule. Forest Scale Roads Analysis was completed in 2003.

The Sioux District is located in southeast Montana and northwest South Dakota, and is composed of eight separate geographic units separate from any other National Forest System lands. The District consists of approximately 163,107 acres of National Forest System land, often referred to as, "islands of green in a sea of rolling prairie," with hills or mesas of ponderosa pine rising above rolling grasslands. No action and two action alternatives have been evaluated.

The No Action Alternative consists of designation of the existing system roads (different from Alternative A), and includes the existing vehicle types and seasons of use currently in force on the District. (401 miles of system routes with 399 miles designated for public motorized use, 2 miles for administrative use only, and 104 miles not designated).

Alternative A was developed in response to multiple public comments expressing a desire to designate most or all of the motorized routes identified in the 1999-2000 inventory of the District for public motorized use, and involves designating the majority of both system and non-system routes on the District for public motorized use. Alternative A designates an additional 91 miles of non-system routes for system roads or motorized trails for public motorized use and 10 miles for administrative use; 0.4 miles of existing system roads are not designated for public motorized use or administrative use; 21 miles are identified for administrative use due to no legal public right-of-way and 3 miles due to health and safety concerns with previous mining activities; converts 201 miles of system roads to motorized trail; designates 116 miles of system roads for mixed motorized use; remove existing season of use designations for 148 miles; and does not designate 10 miles due to dispersed vehicle camping due to health and safety concerns with previous mining activities; and continues the 2001 Tri-State OHV Decision for authorization of

5

vehicle camping within 300 feet of motorized routes (502 miles of system routes with 466 miles designated for public motorized use, 36 miles for administrative use only, and 3 miles not designated).

Alternative B consists of designating a system of motorized routes that provides the public with motorized recreation opportunities, while addressing resource concerns and recreation opportunity concerns. Primary routes included in this alternative would be designated as roads, or where appropriate, as mixed motorized use roads, and, for the most part, all other routes would be designated as motorized trails. This alternative designates an additional 24 miles of non-system routes for system roads or motorized trails for public motorized use and 42 miles for administrative use; 23 miles of existing system roads are not designated for public motorized use or administrative due to no legal public right-of-way; identifies 21 miles system roads for administrative use due to no legal public right-of-way and 76 miles for other resource or health and safety concerns; converts 73 miles of system roads to motorized trail; designates 57 miles of system roads for mixed motorized use; removes season of use designations on 4 miles; does not designate dispersed vehicle camping due to health and safety concerns with previous mining activities on 10 miles; and continues the 2001 Tri-State OHV Decision for authorization of vehicle camping within 300 feet of motorized routes (444 miles of system routes with 303 miles designated for public motorized use, 141 miles for administrative use only, and 38 miles not designated). The preferred alternative is Alternative B.

Comments:

1. Thank you for providing Summary Tables and Matrices including Tables 2-2 through 2-4 summarizing alternatives; Table 2-5 with forest plan monitoring items relevant for travel management; Tables 2-6 and 2-7 with comparisons of environmental effects of alternatives; as well as clear, large, maps of the alternatives. The summary tables, alternatives descriptions and maps help clarify alternatives, define issues, and provide a basis of choice among alternatives for the decisionmaker and the public as directed by the CEQ's regulations for implementing NEPA (40 CFR 1502.14).

Alternatives

2. Forest Travel Plans are critical elements in the management of National Forests, providing direction to manage road and trail networks for public recreation and conduct of land management activities. Public recreational demand and access has increased significantly in recent years, and motorized uses and roads in many cases have caused increased damage to aquatic and terrestrial resources. We have been concerned about environmental effects of roads and motorized uses, particularly increasing use of off-highway vehicles (OHVs) and all-terrain vehicles (ATVs) that occur away from roads and trails, including steep slopes, fragile soils, wet meadows, and around water bodies.

   Newer motorized vehicles such as trail bikes, ATVs and snowmobiles can access areas much further into the Forest than they could historically, forcing wildlife onto smaller

2

and smaller patches of habitat, fragmenting habitat and migration corridors, affecting wildlife behavior and life history functions and adversely affecting wildlife security and increasing wildlife mortality; and causing soil erosion and adverse effects to water quality, aquatic habitat and fisheries; increased dust emissions to air; and spreading weeds. Demand for recreation opportunities on public land may be exceeding the capability of the land and resources to provide recreation in a manner that is consistent with resource and ecosystem protection

The condition of forest road networks, inadequate funding for road maintenance, and environmental effects of motorized travel are also a significant concern of EPA in regard to land management. Roads are often a primary source of human-caused sediment increases, and sediment yields are generally higher from roads than from trails, and from motorized trails than from non-motorized trails.

It is important, therefore, that Travel Plans provide adequate limitations and restrictions on motorized uses to minimize road and motorized travel impacts to watersheds, water quality, fisheries, soil integrity, wildlife habitat/security, spread of weeds, air quality, and overall ecosystem functions. The Forest Service faces a great challenge in providing adequate access for land management and public recreation while protecting and restoring aquatic and terrestrial ecosystems. Where there are conflicts between access and recreational use and long-term protection of resources and ecosystems, we believe resource/ecosystem protection must be given priority to sustain and protect resources and ecosystems for use by future generations. We fully support efforts to restrict motorized vehicles to designated roads and trails, and better address resource concerns associated with roads and motorized uses.

We support the preferred alternative, Alternative B, over no action and Alternative A, since Alternative B appears to reduce adverse environmental impacts more than the other alternatives (e.g., 186 miles of actions reducing water quality risk, reduces impacts to fish and aquatic species, reduces motorized routes with very high and high erosion hazard ratings, etc., Table 2-7). We have greater environmental concerns with both No action and Alternative A due to increased adverse effects on watersheds, water quality, fisheries and wildlife habitat and security with these alternatives, and also consider Alternative B to be the environmentally preferred alternative.

However, we still recommend that Alternative B be revised or amended to include further reductions in motorized routes, particularly routes in areas with high hazard (erosive) soils. Table 2-6 indicates that Alternative B would increase water quality risks on 24 miles, and has 166 miles of routes on soils with high/very high erosion hazards. We note that Table 3-21 (page 3-74) showing route miles by moderate and high erosion risk watersheds for alternatives indicates that the preferred alternative would increase erosion hazard risks on 34.2 miles and decrease risk on 125 miles, and Table 3-22 (page 3-75) shows that Alternative B would add 23.9 miles of routes with increased erosion hazard risks. While Alternative B is clearly an improvement over no action and Alternative A, we still recommend additional reductions in motor vehicle route designations for and

3

high/very high hazard soils and reduction of water quality impacts be included in the preferred alternative.

Water Quality/Aquatics

3. Thank you for providing Table 3-19 (page 3-70) with information on watersheds and streams and effects of roads on streams in the District. Table 3-19 indicates that there are many road stream crossings, and 11 watersheds with "high" risk ratings and 16 watershed with "moderate" risk ratings in the analysis area; and shows that there appear to be 224 miles of FS roads and 239 crossings of perennial and intermittent streams in the 11 high risk watersheds.

   Motorized uses in general are more likely to accelerate erosional processes and worsen poor road conditions, and increase stream sedimentation and degradation of fisheries habitat when compared to non-motorized uses. Roads/trails often tend to become wider and rutted with heavy motorized use, creating a greater need for monitoring of road/trail conditions, and for road and trail maintenance for repair and erosion control. Sediment yields are generally higher from roads than from trails, and from motorized trails than from non-motorized trails. Travel management changes that will reduce motorized uses, particularly in areas more susceptible to erosion, are likely to reduce water quality impacts. Accordingly, actions that restrict motorized uses for routes with higher watershed risks and erosion hazards, and that address road drainage problems and reduce sediment delivery from roads help reduce the adverse effects to water quality.

   As we noted in our earlier comments, we support Alternative B over the other alternatives due to reductions in adverse effects of motorized uses on resources such as water quality. Alternative B proposes actions that result in a decrease in risk for 125 route miles in moderate and high risk watersheds and an increase in risk for 34.2 miles (Table 3-21, page 3-74). Table 3-22 shows that proposed actions in Alternative B would decrease risks on 186 miles, and increase risks on 23.9 miles of routes. It is not entirely clear to us how these risk ratings were developed, but the tables show that Alternative B would reduce risks to water resources more than Alternative A or no action.

   While we support Alternative B over no action and Alternative A due to such reductions in risks to water resources, we also believe that additional reductions in motorized routes in high risk watersheds and areas of severe erosion hazards would be warranted. Table 3-21 appears to show 34.2 miles of route miles with increased risks to water resources, and shows a net increase in risk in the Bull Creek-Cottonwood Creek, Dry Creek, and Gap Creek watersheds (more miles with increase in risk than decrease in risk), and the Dry Creek watershed is shown as a high risk watershed. Table 3-22 shows 23.9 miles of routes with increased risks would be added with Alternative B. Tables 3-28 and 3-29 (page 3-95) shows Alternative B would have 165.5 miles of routes designated for public motorized uses on soils with "severe" erosion hazards, and 155.9 miles on soils "poorly suited" for roads and trails. On page 3-96 it is stated that 40 miles of roads and trails (14 miles Public use and 26 miles Administrative use) would be on landscapes that have a

4

severe erosion hazard rating. We do not support the addition of new routes with high risk of erosion and water quality impacts to the road system, especially when funding for road maintenance is already inadequate to address resource impacts from existing roads and nearby campsites (page 1-11).

We believe it would be appropriate to revise or amend Alternative B to reduce erosion and watershed risks further, particularly reduction of motorized routes on soils with severe erosion hazards and in poorly suited areas and in high hazard watersheds (i.e., Upper and Lower Tie Creek, Speelmon Creek, Upper Crooked Creek, Plum Creek, Bull Creek-Campbell Creek, Dry Beaver, Slick Creek, Little Missouri-K-Bar Creek, Russell Creek, Little Missouri-Waterhole Creek), and do not support the net increases in water resources risks in high risk watersheds proposed with Alternative B (i.e., Dry Creek watershed, Table 3-21).

4. We thank you for providing a table (Table 3-20, page 3-71) identifying streams on Montana's Clean Water Act Section 303(d) list of impaired waters. We did a quick scan of impaired waters in Carter County and in addition to two segments of the Little Missouri River (shown in DEIS Table 3-20), Thompson Creek is also shown as impaired (http://cwaic.mt.gov/Default.aspx). It is not clear to us if any portion of Thompson Creek or the Little Missouri River impaired segments may be located on National Forest land. We recommend that the FEIS clarify if any portions of the impaired segments of the Little Missouri River and Thompson Creek are located with the National Forest boundary.

   The DEIS states that no South Dakota surface waters within the Forest boundary are designated as impaired by the South Dakota Dept. of Environment and Natural Resources. Portions of South Dakota's impaired South Fork Grand River and South Fork Moreau River are stated to be located well below the Forest boundary (page 3-64).

5. Stream segments designated as "water quality impaired" and/or "threatened" listed on State 303(d) lists require development of a Total Maximum Daily Load (TMDL). A TMDL:

   Identifies the maximum load of a pollutant (e.g., sediment, nutrient, metal) a waterbody is able to assimilate and fully support its designated uses; allocates portions of the maximum load to all sources; identifies the necessary controls that may be implemented voluntarily or through regulatory means; and describes a monitoring plan and associated corrective feedback loop to insure that uses are fully supported; Or can also be viewed as, *the total amount of pollutant that a water body may receive from all sources without exceeding WQS*; Or may be viewed as, *a reduction in pollutant loading that results in meeting WQS*.

   Montana's approach is to include TMDLs as one component of comprehensive Water Quality Plans (WQPs). TMDLs/WQPs contain eight principal components:

5

1. Watershed characterization (hydrology, climate, vegetation, land use, ownership, etc.)
2. Description of impairments and applicable water quality standards.
3. Pollutant source assessment and estimate of existing pollutant loads, including pollutant loads in tributaries to 303(d) listed waters.
4. Water quality goals/restoration targets.
5. Load allocations (i.e., TMDLs).
6. Restoration strategy
7. Monitoring Strategy
8. Public involvement (30 day public comment period, informational meetings, etc.)

The load allocations and targets established by TMDLs/WQPs inform land managers how much sediment, nutrient or other pollutant discharge may be too much (i.e., prevent support of beneficial uses). A WQP provides a means to track the health of a stream over time. If a WQP has not restored beneficial uses within five years, the Montana DEQ conducts an assessment to determine if:

* the implementation of new and improved BMPs are is necessary;
* water quality is improving but more time is needed to comply with WQS; or
* revisions to the plan will be necessary to meet WQS.

The Montana Dept. of Environmental Quality (MDEQ) and EPA are under a Court Ordered schedule to prepare TMDLs. Montana has divided the State into TMDL Planning Areas, grouping streams with similar water quality problems and land ownership as much as possible on a watershed basis. Each TMDL planning area may include 4 to 10 impaired watersheds that have specific TMDL preparation needs. See http://www.deq.state.mt.us/wqinfo/TMDL/index.asp for the latest schedule for preparation of TMDLs in Montana.

Pending completion of a TMDL in Montana, new and expanded nonpoint source activities may commence and continue, provided those activities are conducted in accordance with (MCA 75-5-703). The Administrative Rules of Montana (17.30.602) define these as "methods, measures, or practices that protect present and reasonably anticipated beneficial uses." "Reasonable soil, land and water conservation practices" include but are not limited to structural and nonstructural controls and operation and maintenance procedures. Appropriate practices may be applied before, during, or after pollution producing activities.

It is important to note that "reasonable soil, land and water conservation practices" are differentiated from BMPs, which are generally established practices for controlling nonpoint source pollution. BMPs are largely practices that provide a degree of protection for water quality, but may or may not be sufficient to achieve Water Quality Standards and protect beneficial uses. "Reasonable soil, land and water conservation practices" include BMPs, but may require additional conservation practices, beyond BMPs to

6

achieve Water Quality Standards and restore beneficial uses.

It is important that the Sioux District Travel Management Plan be consistent with the TMDLs and Water Quality Plans that may be developed by the States of Montana and South Dakota (should there be any impaired streams within the Forest boundary in South Dakota in the future) to restore water quality and beneficial use support in impaired 303(d)-listed waters on the District. We also note that sources of pollutant loading may also occur in unlisted tributaries to listed streams, and TMDLs must account for all sources of pollution, hence there is a need to also address road related pollution sources in watersheds of 303(d) listed waters.

The Sioux District Travel Management analysis area appears to be within the Little Missouri River TMDL Planning Area, where a TMDL has not yet been started by the Montana DEQ (http://deq.mt.gov/wqinfo/TMDL/2007TMDL%20Schedule.pdf). We recommend that the Sioux Ranger District stay in communication with the Montana DEQ as well as EPA TMDL staff to assure consistency of the travel management and land management as TMDLs and Water Quality Plans are initiated by MDEQ (contact Dean Yashan, Robert Ray or Mark Kelley of the MDEQ in Helena at 444-5317, 444-5319 and 444-3508, respectively; and Ron Steg, EPA TMDL Coordinator for Montana in Helena at 457-5024). Proposed travel management should also be discussed with any local watershed groups that may get involved in TMDL and Water Quality Plan preparation.

6. We appreciate the inclusion of the "water quality conclusion" discussion on page 3-77, and the inclusion of DEIS Appendix D that identifies opportunities outside of this travel management proposal for additional reductions of water quality impacts. This information helps address a concern that we have that the current Travel Management Plan has a limited scope that fails to comprehensively address environmental effects of travel management. These limited scope Travel Plans simply designate routes open and closed to motorized travel, but fail to address many resource impacts of travel management (e.g., inadequate road maintenance and resultant poor conditions of roads, roads and motorized uses in sensitive locations and associated adverse water quality effects). The discussion on page 3-77 and Appendix D at least acknowledges that the current travel management planning process is only a first step, and that additional actions in the future are needed to comprehensively address environmental effects.

   We appreciate this disclosure and encourage the Custer NF and Sioux District to conduct the additional actions identified in Appendix D to further reduce water quality impacts of roads and travel. We very much support improvements in road drainage and BMPs (i.e., installing waterbars, drain dips, and ditch relief culverts), relocating roads away from streams, reclaiming and decommissioning roads causing resource damages, removing and/or upgrading undersized culverts or culverts blocking fish passage, eliminating fords, and armoring stream channels at former road stream crossings, and reducing motorized uses in more erosive areas.

7

We are concerned, however, that adequate resources may not be available to implement the recommendations in Appendix D and other measures that may be necessary to address water quality impacts (page 1-11). It is known that prolonged under-funding of road maintenance on National Forests has resulted in degraded road conditions, and that there is a significant backlog of road maintenance needs on National Forests (Source: *"Rightsizing" the Forest Service Road System Part 1: Road Trend Analysis,* March 22, 2007). We believe it is important to provide adequate funding to implement measures needed to address water quality effects of roads and motorized uses. There should be a continuing road inspection, evaluation and maintenance program in place to identify road drainage and BMP needs, including an inspection, evaluation and road maintenance program, and adequate funds to correct road deficiencies.

We encourage improved funding for road improvements and maintenance and emphasize the need for decommissioning of roads which cause resource damages and which cannot be adequately maintained. We believe road networks should be limited to those that are necessary for access and management, and which can be adequately maintained within agency budgets and capabilities.

7. We do not concur entirely with the statement that in most cases, the actual use, or mode of travel (motorized versus non-motorized) is inconsequential in terms of watershed effects (page 3-81). We believe motorized uses in general are more likely to accelerate erosional processes and worsen poor road conditions, and increase stream sedimentation and degradation of fisheries habitat when compared to non-motorized uses. Sediment yields are generally higher from roads than from trails, and from motorized trails than from non-motorized trails. Roads/trails often tend to become wider and rutted with heavy motorized use, creating a greater need for monitoring of road/trail conditions, and for road and trail maintenance for repair and erosion control.

8. It is stated that Alternative B proposes actions that result in a net decrease in risk to aquatic resources in all 12 moderate and high risk watersheds with fish resources or sensitive amphibians on the District (page 3-88), however, Table 3-25 appears to show more miles with increase in risk than decrease in risk in the Gap Creek watershed. It would appear, therefore, that there would be a net increase in risk to aquatic resources in the Gap Creek watershed. We recommend that Alternative B be amended so that it results in a net decrease in risk in the Gap Creek watershed, similar to the net decrease in other watersheds.

9. Specific areas of EPA concern regarding roads, include road drainage and surface erosion, adequate numbers of ditch relief culverts to avoid drainage running on or along roads; interception and routing of sediment to streams; culvert sizing and potential for washout; culvert allowance of fish migration and effects on stream structure and seasonal and spawning habitats; supplies of large woody debris; road density, number of road stream crossings; and road encroachment on stream, riparian, and wetland habitats. For your information, EPA's general recommendations regarding roads are to:

8

* minimize road construction and reduce road density as much as possible to reduce potential adverse effects to watersheds;
* locate roads away from streams and riparian areas and away from steep slopes, landslide prone areas, or erosive soils; as much as possible (roads at or near ridgetops have far fewer failures and generate far less sediment for streams than roads in lower slope positions);
* minimize the number of road stream crossings;
* stabilize cut and fill slopes;
* provide for adequate road drainage and control of surface erosion with measures such as adequate numbers of waterbars, maintaining crowns on roads, adequate numbers of rolling dips and ditch relief culverts to promote drainage off roads avoid drainage or along roads and avoid interception and routing sediment to streams;
* ditch relief culverts should not be placed where they may discharge onto erodible slopes or directly into streams.
* where possible install cross-drainage above stream crossings to prevent ditch sediments from entering streams.
* consider road effects on stream structure and seasonal and spawning habitats;
* allow for adequate large woody debris recruitment to streams and riparian buffers near streams.
* construct road stream crossings during periods of low flow to avoid fish spawning and incubation periods, and/or dewater crossing stream segment prior to construction.
* obliterate temporary roads constructed for timber sales before termination of the timber sale contract (and revegetate within ten years after the contract), and require contractors or permittees to restore natural drainage patterns (i.e., remove culverts and fill from waters of the U.S., remove cross drains and install water bars, etc.) and stabilize slopes (e.g., outsloping or contouring).

Culverts should be properly sized to handle flood events, pass bedload and woody debris, and reduce potential for washout, and should be properly aligned with the stream channel and designed and placed to allow for fish migration. Undersized culverts should be replaced and culverts which are not properly aligned or which present fish passage problems and/or serve as barriers to fish migration should be adjusted. Bridges or open bottom culverts that simulate stream grade and substrate and that provide adequate capacity for flood flows, bedload and woody debris are recommended to minimize adverse fisheries effects of road stream crossings.

Road maintenance (e.g., blading) of unpaved roads in a manner that contributes to road erosion and sediment transport to streams and wetlands should be avoided. It is important that management direction assures that road maintenance be focused on reducing road surface erosion and sediment delivery from roads to area streams. Blading should only be conducted: 1) when the road surface becomes too rough for the designated vehicle use; 2) when the surface becomes a safety hazard; or 3) when it is needed to improve road drainage by reducing road surface erosion and sediment delivery from roads to area streams. Where possible do not remove vegetation growing in ditches draining in-sloped roads. Unpaved roads should not be graded (bladed) in a manner that

9

contributes to road erosion and sediment transport to streams and wetlands. Avoid routine general blading of ditch lines on in-sloped roads to maintain vegetative cover. Where necessary blade only the ditch segments where blockage problems occur. Graded material should not be sidecast over the shoulder, and shoulders should not be widened to encroach upon and have adverse effects upon streams, wetlands, and riparian areas adjacent to roads.

Road use during spring breakup conditions should also be avoided. Snow plowing of roads in a manner that adds sediment to streams and wetlands should be avoided. Snow plowing of roads when temperatures are above freezing should also be avoided to limit development of runoff created road ruts during thaws that increase road erosion (i.e., ruts channel road runoff along roads increasing erosion of the road surface, and sediment delivery from the road). The potential for snow plowing to cause runoff created ruts increases with snow plowing operations later in winter when there may be frequent thaws. Road maintenance staff should be aware of this concern, and limit late winter snow plowing to when it is absolutely necessary.

We are pleased that Forest Service Region 1 provides training for operators of road graders regarding conduct of road maintenance in a manner that protects streams and wetlands, (i.e., Gravel Roads Back to the Basics). If there are road maintenance needs on unpaved roads adjacent to streams and wetlands we encourage utilization of such training (contact Donna Sheehy, FS R1 Transportation Management Engineer, at 406-329-3312).

As you may know, there are also training videos available from the Forest Service San Dimas Technology and Development Center for use by the Forest Service and its contractors (e.g., "Forest Roads and the Environment"-an overview of how maintenance can affect watershed condition and fish habitat; "Reading the Traveled Way" -how road conditions create problems and how to identify effective treatments; "Reading Beyond the Traveled Way"-explains considerations of roads vs. natural landscape functions and how to design maintenance to minimize road impacts; "Smoothing and Reshaping the Traveled Way"-step by step process for smoothing and reshaping a road while maintaining crowns and other road slopes; and "Maintaining the Ditch and Surface Cross Drains"-instructions for constructing and maintaining ditches, culverts and surface cross drains).

10. Has the Custer NF and Sioux Ranger District evaluated or conducted a survey of fish passage on culverts on the District? Since culverts often impede fish passage we recommend that such a survey be conducted to identify culverts causing fish passage problems. A priority list of culverts requiring modification or replacement should then be developed.

11. Reductions in road density are important for improving watershed conditions and aquatic health in area streams. Areas with higher road density have been correlated with higher levels of stream sedimentation, and higher quality aquatic habitat and higher populations of fish are often associated with watersheds with low road density. We support

10

prioritizing decommissioning of roads close to streams rather than roads on upper slopes or ridges, and roads on sensitive soils or slopes or in landslide prone areas that have greater erosion potential, or roads within riparian areas to maximize water quality improvement benefits. We support as much road rehabilitation and road closure and decommissioning as possible, particularly removal of road stream crossings, and obliteration of illegally user created non-system roads causing resource damages. Where roads or trails are located in narrow valleys adjacent to streams where roads/trails cannot be decommissioned, we recommend consideration of use of vegetative plantings, silt fences, and/or rock or log placement along the stream banks and/or steep slopes to reduce sediment entry into the streams.

We also want to note that it is difficult to effectively restrict motorized access and protect public lands with simple gated road closures. Road rip-seed-slash (obliteration or full road recontour) is a more effective, and thus, preferred method of road closure. We advise removing and restoring stable drainage ways during road removal to address water quality concerns. It is important that adequate attention be directed to restoring natural drainages and culvert removal and revegetating natural landscapes by ripping, scarifying, and seeding disturbed areas with native seed.

Enforcement

12. Executive Orders 11644 and 11989, "Use of Off-Road Vehicles on Public Lands," require agencies to ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands. We support the effort to have understandable travel maps (Motor Vehicle Use Map, MVUM), and clearer travel management rules for the public, and encourage improved road and trails signs to promote understanding of travel rules, and thus, improved voluntary compliance with the travel plan.

    We also believe restrictions on motorized travel, however, will not be effective in protecting sensitive resources without adequate enforcement. Policing and enforcement is necessary to promote compliance, and better ensure protection of water quality, fisheries, wildlife, and other sensitive resources. The discussion of enforcement in the Sioux District Travel Management Plan (pages 2-12 to 2-14) is improved over that in the Ashland District Travel Management Plan.

    We have concerns regarding the adequacy of resources to enforce travel restrictions necessary for protection of the environment. The DEIS states that there is only one full time law enforcement officer stationed on the Custer NF (page 2-14), and that five permanent Forest Protection Officers (FPO) also have some limited law enforcement authority and responsibilities, and can issue citations for travel management violations.

    We support adding law enforcement personnel to handle the increases in motor vehicle uses that are occurring on the District. We particularly recommend increasing

11

enforcement officer contact with off-road vehicle users and those violating motorized access restrictions on closed roads and trails; and increasing enforcement staffing on holidays and weekends, when much illegal motor vehicle use occurs.

Wetlands

13. EPA considers the protection, improvement, and restoration of wetlands to be a high priority. Wetlands increase landscape and species diversity, and are critical to the protection of designated water uses. Possible impacts on wetlands include damage or improvement to: water quality, habitat for aquatic and terrestrial life, channel & bank stability, flood storage, ground water recharge and discharge, sources of primary production, and recreation and aesthetics. Roads and motorized uses in or near wetlands and riparian areas have potential to affect wetland integrity and function.

    Executive Order 11990 requires that all Federal Agencies protect wetlands. In addition national wetlands policy has established an interim goal of **No Overall Net Loss of the Nation's remaining wetlands**, and a long-term goal of increasing quantity and quality of the Nation's wetlands resource base (see "Presidential Wetland Policy of 1993" at website, http://www.usace.army.mil/inet/functions/cw/cecwo/reg/aug93wet.htm). Wetland impacts should be avoided, and then minimized, to the maximum extent practicable, and then unavoidable impacts should be compensated for through wetland restoration, creation, or enhancement.

    It is important that appropriate limitations and restrictions be placed on motorized vehicle use to protect against degradation of wetlands and other sensitive areas. The DEIS states that the Forest Plan includes objectives that recognize the unique values of key habitats including wetlands and riparian areas, and that management direction should be designed to protect these areas (page 3-64). We did not see much other discussion, however, regarding potential impacts of travel management alternatives on wetlands, and if any impacts occur, how they will be mitigated (i.e., mitigation means sequence of avoidance, minimization, rehabilitation, and compensation for unavoidable impacts). We believe the FEIS should include some disclosure of potential travel management impacts upon wetlands, and if no impacts are expected, at least state that.

Monitoring

There should be an effective program for monitoring, evaluation and adaptive management to assure that effects of travel management are identified and management modified where necessary to reduce adverse effects. As evidenced in our prior comments we are concerned about effects of roads and motorized uses on water quality, aquatic habitat and fisheries, as well as other resources such as wildlife habitat, sensitive plants. Given the acknowledged impact of roads/trails and motorized uses use on water quality and fisheries and other resources such as wildlife, sensitive plants, etc., it is important to monitor effects of travel and public recreation on these resources.

12

The DEIS states (page 2-17) that, "information collected through monitoring and through public user groups and individuals will be used in evaluating and revising travel management decisions," and that "designations identified on the motor vehicle use map are subject to revision based on this information," and Table 2-5 (page 2-18) shows Forest Plan monitoring items relevant for travel management.

We are pleased that the DEIS states that roads or trails will be closed if monitoring shows that motor vehicle use is causing or will cause considerable adverse effects on public safety or soil, vegetation, wildlife, wildlife habitat, or cultural or historic resources. This is exactly the type of monitoring, evaluation and adaptive management program for travel management that we believe is needed. Effects of travel need to be identified through monitoring, so that they can be mitigated. It is through the iterative process of setting goals and objectives, planning and carrying out travel management, monitoring impacts of travel management, and feeding back monitoring results to managers so they can understand effects and make needed adjustments to mitigate effects, that adaptive management works.

We also recommend that mechanisms for public disclosure of the monitoring analysis and the decisions for the Travel Plan be provided. The roles of the Forest Service, other Agencies, independent science, and the public should be identified. The FEIS should discuss the future decision points in this adaptive process that may require additional NEPA analysis. The FEIS should also discuss the funding is available for monitoring and adaptive management.

Recreation

14. We appreciate the discussion of outdoor recreation in the DEIS (beginning on page 3-4), including the tables Recreation Opportunity Spectrum (ROS) setting and classification and miles or road by alternative (Tables 3-3 through 3-5). While we recognize that a balance of motorized and non-motorized recreational opportunities need to be provided, we have concerns that motorized uses contribute more to resource and environmental damage than non-motorized uses. Motorized uses push wildlife onto smaller and smaller patches of habitat; reducing migration corridors; increasing adverse effects to wildlife habitat and security; causing soil erosion and adverse effects to water quality and aquatic habitat and fisheries; spreading weeds; and increasing opportunity for vandalism of historic properties.

    Motorized uses also have the potential to degrade the quality of experience and solitude desired by non-motorized uses (e.g., hiking, viewing natural features and wildlife). It appears that the no action alternative provides the greatest opportunity for motorized recreation, and least opportunity for non-motorized recreation without effects of motorized uses. Alternative B appears to provide the most opportunities for non-motorized recreation, but still none of the area appears to be designated for less damaging non-motorized uses from Dec 1 to Oct 15, and only 28% of the area is designated for less damaging non-motorized uses from Oct 16 to Nov 30 (Tables 3-4, 3-5, page 3-10).

13

We support increasing opportunities for non-motorized uses such as viewing wildlife or natural features in solitude. We believe motorized activities should be limited so that they only occur in a manner and location that minimize effects to other public uses, and are consistent with protection of natural features, wildlife, and other resources. This provides further reason for our recommendation to amend Alternative B, to provide greater limitations on motorized uses to allow greater levels of protection for wildlife, natural features, and other resources that are used by the public.

15. We support the limitation of vehicle access to dispersed campsites to only 300 feet from designated routes (pages 3-6). We also recommend that special limitations should be considered to limit vehicle access even more if necessary to assure that motorized access does not damage ecologically sensitive resources.

    EPA encourages locating campground facilities, and concentrated public recreational uses away from ecologically sensitive resources. We believe motorized access to camping sites in ecologically sensitive areas should be restricted even if they are within 300 feet of designated routes. It would be helpful and appropriate to identify and designate camping sites that avoid sensitive areas, and/or to encourage camping or concentrated public use in areas that are more resilient and can more easily recover from impacts and/or accommodate public use with less impacts.

Wildlife

16. We believe the Travel Plan should avoid adverse impacts upon species of special concern, and contribute to recovery of listed species, and should maintain and protect high quality wildlife habitat and linkage corridors for productive and diverse populations of wildlife species (species viability). Wildlife connectivity and security should be maintained or improved and wildlife fragmentation and displacement should be reduced.

    It is known that motorized use increases wildlife encounters with humans which can result in habitat degradation, displacement, increased wildlife mortality, changes in behavior, increased stress, and reduction of reproductive success. We support adequate limitations on motorized travel and road density for protection of wildlife habitat and security, and key corridors for wildlife migration.

    We are pleased that the DEIS states that the preferred alternative will have "no effect" on the threatened black-footed ferret (page 3-43). We are also pleased that the preferred alternative would have "no impact" on sensitive species (peregrine falcon, Baird's sparrow, Bald eagle, black-backed woodpecker and others).

    EPA recommends that the final EIS and Record of Decision include documentation of U.S. Fish & Wildlife Service concurrence with the biological assessment upon the threatened black-footed ferret. If the consultation process is treated as a separate process, the Agencies risk USFWS identification of significant impacts, perhaps additional

14

mitigation measures, or changes to the preferred alternative.

Vegetation

17. The DEIS indicates 14 miles of routes in areas of moderate vegetative risk with Alternative B, and 24 miles with Alternative A (Table 3-30, page 3-103). We are pleased that the DEIS indicates that the preferred alternative shows a decrease in risk to vegetation over no action and Alternative A. Damage to vegetation is more likely to occur from motorized uses or user-built access roads and associated campsites.

18. We are pleased that the DEIS includes discussion of travel management impacts on the spread of noxious weeds (beginning on page 3-104). Noxious weeds are a great threat to biodiversity. Weeds can out-compete native plants and produce a monoculture that has little or no plant species diversity or benefit to wildlife. Noxious weeds tend to gain a foothold where there is disturbance in the ecosystem, such as road construction and where off-road vehicles disturb soils.

    EPA supports the need to minimize noxious weed infestation, and we were very pleased with the Custer National Forest 2006 Weed Management EIS that described the Forest's Integrated Weed Management Program. We agree with the DEIS statement that use of motorized routes contributes to the spread of weeds (page 3-105). In fact, we believe motorized vehicles—cars, trucks, ATVs, motorcycles, and even snowmobiles- may be the greatest vector for spread of weeds. A single vehicle driven several feet through a knapweed site can acquire up to 2,000 seeds, 200 of which may still be attached after 10 miles of driving (Montana Knapweeds: Identification, Biology and Management, MSU Extension Service.)

    We believe an effective noxious weed control program must include restrictions on motorized uses, particularly off-road uses. Off-road vehicles are designed to, and do, travel off-trail, disturbing soil, creating weed seedbeds, and dispersing seeds widely. Weed seed dispersal from non-motorized travel is of lesser concern because of fewer places to collect/transport seed, and the dispersal rate and distances along trails are less with non-motorized travel.

    Table 3-32 (page 3-108) evidences that Alternative B has the lowest risk of weed invasion, although 149 acres are still shown with risk of weed invasion under Alternative B. We encourage additional limitations of motorized uses to reduce threat of weed spread. For your information, measures we often recommend for preventing spread from source areas to uninfested areas include:

- Ensure that equipment tracks and tires are cleaned prior to transportation to an uninfested site.
- Focus control efforts at trail heads and transportation corridors to prevent tracking of seed into uninfested areas.
- Attempt to control the spread from one watershed to another to reduce water as a

15

transport vector.

- If a localized infestation exists and control is not a viable option, consider rerouting trails/roads around the infestation to reduce available vectors for spread.
- Establish an education program for industrial and recreational users and encourage voluntary assistance in both prevention and control activities.
- Reseed disturbed sites as soon as possible following disturbance.

We also note that hay can be a source of noxious weed seed. Hay/straw is used as mulch to slow erosion and encourage seed germination, and used to feed horses in hunting and recreation camps, and as wildlife feed during harsh winters. The Federal Noxious Weed Act of 1974 prohibits the interstate transport of noxious weeds or weed parts, such as seed. Cattle that are released on grazing allotments or horses used on public lands can transport undigested weed seed and spread it in their manure. Weed free seed forage should be required for backcountry users.

Air Quality

19. Thank you for providing the brief discussion of air quality in Chapter 2 (page 2-5). We agree that compliance with State and Federal air quality standards is likely to occur due good air dispersion characteristics and low potential for inversions and reduced or equivalent route miles open to motorized vehicles under all alternatives compared to the existing condition.

16

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

17

#6

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Miles City Field Office
111 Garryowen Road
Miles City, Montana 59301-0940
http://www.blm.gov/mt

In Reply To:

TAKE PRIDE IN AMERICA

November 13, 2008

Doug Epperly, Project Lead
Custer National Forest
1310 Main St
Billings MT 59105

Dear Mr. Epperly:

The Bureau of Land Management, Miles City Field Office has reviewed the subject ER 08/1042, the Draft Environmental Impact Statement (EIS) for the Sioux Travel Management, Custer National Forest, Harding County, South Dakota and Carter County, Montana.

After review by the appropriate specialists in our office, the BLM has no comments to submit.

Sincerely,

Deborah K. Johnson

Deborah K. Johnson
Associate Field Manager

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
Denver Federal Center, Building 56, Room 1003
Post Office Box 25007 (D-108)
Denver, Colorado 80225-0007

November 3, 2008

9043.1
ER 08/1042

Steve E. Wilson, Forest Supervisor
Custer National Forest
1310 Main Street
Billings, MT 59105

Dear Mr. Wilson:

The Department of the Interior has reviewed the draft Environmental Impact Statement for the Sioux Ranger District Travel Management Plan, Custer National Forest, and has no comments.

Sincerely,

Robert F. Stewart
Regional Environmental Officer

cc: Doug Epperly, Project Leader

- End of Appendix E -

Appendix F: Catalog of Past, Present, and Reasonably Foreseeable Activities

Project Name	Decision Date/ Contract Award Date	Activity Description	NEPA Document Type
Speelmon Creek	September 1982	Timber Volume 1982 MBF. Road Credits: No.	
Belltower	September 1984	Timber Volume 1700 MBF. Road Credits: Yes.	
Little Big	September 1985	Timber Volume 80 MBF. Road Credits: No.	
Pioneer	September 1985	Timber Volume 60 MBF. Road Credits: No.	
Whitetail	September 1985	Timber Volume 160 MBF. Road Credits: No.	
Stagville	June 1986	Timber Volume 271 PAM. Road Credits: Yes.	
Ward	July 1988	Timber Volume 2432 MBF. Road Credits: Yes.	
Pioneer Salvage Unit 8	January 1989	Timber Volume 208 MBF. Road Credits: No.	
Pioneer Salvage Unit 15	February 1989	Timber Volume 203 MBF. Road Credits: No.	
Icebox 1 Fire Salvage	March 1989	Timber Volume 436 MBF. Road Credits: No.	
Icebox 2 Fire Salvage	July 1989	Timber Volume 260 MBF. Road Credits: No.	
Cone	August 1989	Timber Volume 85 MBF. Road Credits: No.	
OG Breaks	November 1992	Timber Volume 2882.61 MBF. Road Credits: Yes.	
Noxious Weed Program	March 1993	Control of noxious weeds across the District.	EIS
Cave Hill Land Exchange	September 1993	Multi-jurisdictional land exchange invovling BLM, Forest Service, and Private ownerships.	
Ozona Breaks	February 1994	Timber Volume 1518.51 MBF. Road Credits: Yes.	
EKA Breaks	October 1994	Timber Volume 1839.16 MBF. Road Credits: Yes.	
26 Range allotments permit issuance	March 1996		EA
Smokey Breaks	July 1996	Timber Volume 3509.71 MBF. Road Credits: Yes.	
Craig Pass Mineral Materials Permit	January 1998	Mineral materials permit	DM
Mineral Material	January 1998	T22n, R5E, S12	DM
Electric Transmission line (SUP?)	February 1998	T1N, R58E, Sec. 23, 24; T1N, R59E, S19	
South Snow Creek Analysis & Prescribed Burn	March 1998	fuels and fire	
North End Hazardous Fuels Removal	September 2002	T19N,R8E, S1, 6, 7 & 8	

Project Name	Decision Date/ Contract Award Date	Activity Description	NEPA Document Type
Camp Needmore Permit Issuance	September 2002	T1N, R58E, S24	DM
Brown's Pond Rehabilitation	October 2002		EA
Laka Breaks	November 2002	Timber Volume 4222.52 CCF. Road Credits: Yes.	
Kraft Springs Fuels Abatement and Restoration Project	March 2003	North Long Pines project was withdrawn and incorporated into the Kraft Springs Fuels Abatement and Restoration Project.	
North End Hazardous Fuels Removal	April 2003	T19N, R8E, S1, 6, 7, & 8.	DM
TriPoint Communication Site	May 2003		
Rustler Fire Salvage	June 2003	Timber Volume 14921.20 CCF. Road Credits: Yes.	
Plum Rock Fire Salvage	June 2003	Timber Volume 1607.72 CCF. Road Credits: No.	
Tri-Point Communication Site	September 2003	T2S, R61E, S22	DM
Mid-Rivers Telephone Coop. Inc.	October 2003		
Southeast Electric Coop. SUP - powerline & radio service	October 2003		
DOT FAA SUP Re-issuance	October 2003		
West River Telephone Coop SUP	November 2003		EIS
Camp Needmore Organization Camp Permit	March 2004		DM
Sioux RD Grazing Allotment Analysis	April 2004	North/South Cave Hills, East Short Pines land units	EA
Ekalaka Hazardous Fuel Project	September 2004		EA
Lost Farm Project	June 2005	T3S, R60E, S4-5; T1S, R60E, S32-33. Long Pines land unit. Project will thin and maticate activity generated fuels.	DM
Outfitter Guide SUP	August 2005	Issue outfit guide SUP to three permittees for activities in the Long Pines, Ekalaka Hills & Chalk Buttes land units.	DM
Helms Stockwater Pipeline SUP Re-issuance	October 2005	Issuance of SUP for continued use of existing stockwater pipeline.	
Charlie Verhulst Stockwater Pipeline SUP Re-Issuance	February 2006		DM
Rustle	April 2006	Timber Volume 10840.79 CCF. Road Credits: Yes.	
D3 Watershed Restoration Project	August 2006	Fence two reservoirs to pre-clude livestock and develop alternative stockwater sourses for permitted livestock.	DM
Zig Zag Salvage	September 2006	Timber Volume 4030.66 Ton. Road Credits: No.	
Slim Buttes Range Analysis	September 2006	Analysis of domestic livestock grazing on nine allotments located in Slim Buttes land unit.	EA
Sioux Oil and Gas Leasing EIS	March 2007	Oil and gas leasing across the South Dakota portion of the District	
Ponderosa Outfitters SUP	April 2007	Priority SUP for 10 tens to issue outfit guide in the Long Pines. 18.1 review to the 2005 Decision.	CE
Cox Stockwater Pipeline	May 2007	Installation of pipeline in the Cox grazing	CE

Project Name	Decision Date/ Contract Award Date	Activity Description	NEPA Document Type
		allotment to facilitate cattle dispersion.	
Antelope Stockwater Pipeline	June 2007	Pipeline to provide water to new tanks within the Antelope Allotment in the south Slim Buttes.	CE
Crooked Creek Outfitters Outfitter and Guide SUP	July 2007	Temp. 1 yr. SUP to Outfit Guide in SD	CE
Slim Buttes Intergrated Vegetation Management Project	November 2007	North end Slim Buttes 220 acre timber sale, piling and burning, slashing, thinning and aspen / woody draw restoration	CE
Crooked Creek Outfitters Outfitter and Guide SUP	April 2008	Temp. 1 yr. SUP to Outfit Guide in SD	CE
Long Pines Environmental Analysis	January 2009	Analysis of domestic livestock grazing on 10 allotments located in Long Pines land unit.	EA
Plains Pipeline SUP	February 2009	Oil and gas pipeline in the North Cave Hills to replace expired SUP permit.	CE
Wickham Gulch Toilet Replacement	March 2009	Replacing 2 old toliets with 1 SST style toilet within Wickham Gulch campground.	CE
Slim Buttes Stockwater Pipeline SUP Re-issuance	September 2009		
Butte Pipeline SUP	September 2009	To replace the expired permit #SIO4213-01 for private mobile, 2-way, radio equipment in the Tower Hill Communication Site, in the Ekalaka Hills land unit, Carter County, Montana on this District	CE
Grand Electric SUP	September 2009	Authorizes Grand Electric Cooperative, Inc. to operate and maintain their existing electric high voltage distribution and transmission power lines previously authorized in Special Use Permit #SIO401401, which has expired.	CE
Mid-Rivers Telephone Coop. Inc.-Amend.#1	September 2009	Amend an existing special use permit to provide and maintain telecommunication service to the local community by splicing in approximately 450 feet of underground copper telecommunications cable, connecting with the existing line, running parallel to Ponderosa Lane road in the Ekalaka Hills.	CE

- End of Appendix F -

Appendix G: Biological Assessment

G.1 INRODUCTION

The following is the biological assessment (BA), and cover letters to the USDI Fish and Wildlife Service, for Terrestrial Wildlife Species for the Custer National Forest Sioux Travel Management Final Environmental Impact Statement.

United States Department of Agriculture | Forest Service | Custer National Forest | 1310 Main Street Billings, MT 59105

File Code: 2670

Date: SEP - 9 2008

Mark Wilson
USFWS – Montana Field Office
585 Shepard Way
Helena, MT 59601

Dear Mr. Wilson:

Attached are the biological assessments (BAs) for the Ashland and Sioux Ranger Districts Travel Management Environmental Impact Statements for your review. Thomas Whitford, Forest Wildlife Biologist, has previously discussed these projects with Lou Hanebury from the US Fish, Wildlife Service, Billings Field Sub-Office. Lou verbally concurred with the BA effects determinations on July 24, 2008.

If you have questions or comments please contact Thomas Whitford at (406) 657-6205 ext 202. A written letter from your office for our project file would be appreciated.

Sincerely,

STEVE E. WILLIAMS
Forest Supervisor

Enclosure

Caring for the Land and Serving People

Printed on Recycled Paper

United States Department of Agriculture
Forest Service
Custer National Forest
1310 Main Street
Billings, MT 59105

RECEIVED
SEP 15 2008
U.S. FISH & WILDLIFE SERVICE

File Code: 2670

Date: SEP - 9 2008

Pete Gober
USFWS – South Dakota Field Office
420 S. Garfield Ave., Suite 400
Pierre, SD 57501-5408

Dear Mr. Gober:

Attached is the biological assessment (BA) for the Sioux Ranger Districts Travel Management Environmental Impact Statements for your review. Thomas Whitford, Forest Wildlife Biologist, has previously discussed this project with Lou Hanebury from the US Fish, Wildlife Service, Billings Field Sub-Office. Lou verbally concurred with the BA effects determinations for the Montana portion of the Sioux Ranger District on July 24, 2008. Based on US Fish, Wildlife Service South Dakota Field Office website, no threatened or endangered species are known to occupy the Harding County portion of the Sioux Ranger District.

If you have questions or comments please contact Thomas Whitford at (406) 657-6205 ext 202. A written concurrence letter from your office for our project file would be appreciated.

Sincerely,

STEVE E. WILLIAMS
Forest Supervisor

Enclosure

The U.S. Fish and Wildlife Service concurs with your conclusion that the described project will not adversely affect listed species. Contact this office if changes are made or new information becomes available.

9-24-08
Date

SD Field Supervisor
USFWS

Caring for the Land and Serving People

Printed on Recycled Paper

BIOLOGICAL ASSESSMENT

FOR

TERRESTRIAL WILDLIFE SPECIES

Sioux Travel Management

Sioux Ranger District
Custer National Forest

Prepared By:

____/s/ Thomas Whitford _____ _____9/3/2008_____
Thomas Whitford – Forest Biologist Date

Reviewed By:

_____/s/ Mark Slacks_____ _____9/8/2008_____
Mark Slacks – Environmental Coordinator Date

SUMMARY

Determination of Effects

Implementation of the proposed Federal action would be a ***may affect but is not likely to adversely affect*** the Black-footed Ferret.

Consultation Requirements

In accordance with the Endangered Species Act (ESA), its implementation regulations, and FSM 2671.4, the Custer National Forest is required to request written concurrence from the United States Fish and Wildlife Service (FWS) with respect to determinations of potential effects on Black-footed Ferrets on this area of the Forest.

Need For Re-Assessment Based on Changed Conditions

The Biological Assessment findings are based on best available data and scientific information available. A revised Biological Assessment must be prepared if: (1) new information reveals affects which may impact threatened, endangered, and proposed species or their habitats in a manner or to an extent not considered in this assessment; (2) the proposed action is subsequently modified in a manner that causes an affect which was not considered in this assessment; or (3) a new species is listed or habitat identified which may be affected by this action.

INTRODUCTION

The purpose of this Biological Assessment is to review the possible effects of the proposed federal action on threatened, endangered, and proposed species and their habitats. Threatened, endangered, and proposed species are managed under the authority of the Federal Endangered Species Act (PL 93-205, as amended) and the National Forest Management Act (PL 94-588). Under provisions of the Endangered Species Act (ESA), Federal agencies shall use their authorities to carry out programs for the conservation of listed species, and shall insure any action authorized, funded, or implemented by the agency is not likely to: (1) adversely affect listed species or designated critical habitat; (2) jeopardize the continued existence of proposed species; or (3) adversely modify proposed critical habitat (16 USC 1536).

This biological assessment analyses the potential effects of the proposed action on all threatened, endangered, and proposed species known or suspected to occur in the proposed action influence area (Table 1). This species list was verified in March 2008 (US Fish and Wildlife Service 2008).

Table 1. Threatened, Endangered, and Proposed Species Known or Suspected to Occur Within the Influence Area of the Proposed Action.

Species	Status	Occurrence
Black-footed Ferret *(Mustela nigripes)*	Endangered	Not Present

The bald eagle was determined to be recovered and was delisted effective August 8, 2007. Consultation on effects of proposed Federal actions on this species is therefore no longer required. Verbal concurrence with the effects determination for Black-footed Ferret was received from Lou Hanebury of the U.S. Fish and Wildlife Service on July 24, 2008. Copies of this BA will be sent to the USFWS Montana State Office and South Dakota State Office for written concurrence.

PROPOSED PROJECT

The Sioux Ranger District of the Custer National Forest proposes to designate a system of roads and trails on the District for motorized public use. The Proposed Action consists of designating a system of motorized routes that provides the public with motorized recreation opportunities, while addressing resource concerns, recreation opportunity concerns, and/or reducing the potential for vandalism of improvements. Each system and non-system route was evaluated based on administrative, utilization (including recreation), resource, and protection needs and concerns to determine the disposition of the route. In compliance with the 2005 Motorized Travel Rule guidance, this alternative does not include designation of any routes for which the Forest Service does not have a legal right-of-way for public use.

In general, primary travelways included in this alternative would be designated as roads, or where appropriate, as mixed motorized use roads, and all other routes would be designated as motorized trails or mixed motorized use roads.

A season of use would be designated on certain routes to provide increased opportunities for, and quality of, non-motorized hunting experiences.

Designation of motorized trails under this alternative is intended to: 1) expand opportunities for motorized recreation opportunities, and 2) more accurately describe the characteristics and nature of these routes. In other words, these routes do not display characteristics associated with roads, such as surfacing, engineering, and prescribed clearing widths. They are in many cases very primitive.

All routes currently exist on the ground and are either currently in the National Forest System or are unauthorized (non-system) routes. A total of 505 miles of routes were considered by the analysis. A total of 303 miles of routes would be designated for public motorized use. Another 141 miles would remain available for administrative use only. No cross-country travel areas or construction of new routes is proposed. The proposed action does not include winter over-the-snow activity.

SPECIES ASSESSMENT

Regulatory Framework – Black-footed Ferret

The black-footed ferret was listed as a federally endangered species under the Endangered Species Act (ESA) in March 1967. The recovery plan for the black-footed ferret (USFWS 1988) established the national recovery objectives where are to: increase

the captive population of ferrets to 200 breeding adults by 1991; establish a prebreeding census population of 1,500 free-ranging breeding adults in 10 or more different populations with no fewer than 30 breeding adults in each population by the year 2010; and encourage the widest possible distribution of reintroduced animals throughout their historic range (Federal Register 1996). So far, reintroduction attempts have occurred in Wyoming, Montana, South Dakota, Colorado, and Utah. In January 2002, the Conservation Plan for Black-tailed and White-tailed Prairie Dogs in Montana was approved and implemented in Montana (MTFWP 2002). The overall goal of the plan is to "provide for management of prairie dogs populations and habitats to ensure long-term viability of prairie dogs and associated species" which included black-footed ferrets (MTFWP 2002). In 2002 an annual rule regulating prairie dog shooting on public lands was implemented by the State where prairie dogs could not be shot on public lands from March 1 thru May 31. The no shooting rule was permanently remanded in 2007 so prairie dog shooting on most public land remains open. On January 24, 2008, the U.S. Fish and Wildlife Service reintroduced 8 black-footed ferrets on the Northern Cheyenne Indian Reservation. The nearest release site was about 80 miles from the Sioux Ranger District in Montana and over 100 miles from the closest release site in South Dakota (Cheyenne River Indian Reservation).

Affected Environment – Black-footed ferret

Black-footed ferrets are intimately tied to prairie dog colonies throughout their range. Research from ferret-occupied prairie dog colonies indicates that the most important attribute of ferret habitat is the distribution and abundance of prairie dogs. Ferrets are therefore limited to the same open habitat used by prairie dogs: grasslands, steppe, and shrub steppe (MTNHP 2008). To support a viable population of ferrets, a prairie dog colony complex of 2500-3000 ha (6,200-7,400 acres) composed of individual colonies at least 12 ha (30 acres) in size, with the majority 50 ha (125 acres) or larger, is needed (Forrest et al., 1985, p. 28). Miller et. al. (1996) found that females with young have never been found on prairie dog colonies less than 49 ha (121 acres). No black-footed ferrets have been documented on the Ranger District since the 1930s.

Currently there is one known active black-tailed prairie dog (*Cynomys ludovicianus*) colony (< 1 acre) on the Sioux Ranger District. The distribution of prairie dog colonies and acreages on adjacent lands is unknown but is thought to be limited based on the Conservation Plan for Black-tailed and White-tailed Prairie Dogs in Montana (2002).

The colony acreage on NFS lands is grossly inadequate to support black-footed ferrets. As of August 12, 2004 the USFWS removed the black-tailed prairie dog as a candidate for listing under the Endangered Species Act. The black-tailed prairie dog is considered as a USFS Northern Region Sensitive species.

ENVIRONMENTAL CONSEQUENCES – THREATENED AND ENDANGERED SPECIES: BLACK-FOOTED FERRET

Direct and Indirect Effects – Black-footed Ferret

The presence of roads and trails represents a direct loss of habitat that has already occurred, and their use can pose a direct threat of black-footed ferret mortality from vehicles. However, black-footed ferrets not know to occur in the area and the project area does not support an adequate preybase to support ferrets. Indirectly, the impacts of roads include increased access for prairie dog shooters that could have a negative impact on prey density.

Effects Common to All Alternatives. Direct habitat loss would not increase under any alternative because construction of new routes is not proposed. None of the alternatives analyzed in detail propose increased access to potential black-footed ferret or black-tailed prairie dog habitat. All of the alternatives provide the same amount of access to the one active prairie dog town

Vehicle-related black-footed ferret mortality is unlikely given the relatively low speeds and traffic volumes on National Forest system roads and the lack of ferrets and adequate habitat.

No vegetation treatment is proposed with this analysis and the components of available habitat would not change.

Alternative A, Alternative B and No Action Alternative. The availability of black-footed ferret habitat would be effectively the same under Alternatives A, B, and the No Action.

Cumulative Effects – Black-footed Ferret

Based on the past and current vegetation management on the District, including timber harvest, livestock grazing, prescribed fire, the invasive species program, and other vegetation projects, grassland/shrub steppe vegetation conditions provide some habitat for black-footed ferret and their preferred prey species, black-tailed prairie dogs. The impacts of different types of dispersed recreation including the outfitter/guide program; hunting; recreational shooting; fire suppression; and the lands, minerals, and non-recreation special use programs on the District have been minor. Given that anticipated direct and indirect effects to lynx and habitats from any of the alternatives is small, cumulative effects of past, present, and reasonably foreseeable future activities is also expected to be small.

Consistency with Laws, Regulations, and Policy

All alternatives are consistent with the laws, regulations, policy, and Federal, Regional, the Custer National Forest Management Plan, and State direction in Montana and South Dakota, and the Conservation Plan for Black-tailed and White-tailed Prairie dogs in Montana (2002).

Determination of Effects – Black-footed Ferret

I have determined implementation of the proposed Federal Action would have **NO EFFECT ON THE BLACK-FOOTED FERRET OR THEIR HABITAT.** My determination is based on the following rationale: 1) black-footed ferrets are not know to occur in the area; 2) the project area does not support an adequate preybase to support ferrets; 3) the amount of occupied black-tailed prairie dog habitat will not grow to an adequate level in the near future; 4) direct habitat loss would not increase under any alternative because construction of new routes is not proposed; and 5) none of the alternatives propose increased access to potential black-footed ferret or black-tailed prairie dog habitat. I have also determined implementation of the proposed Federal Action **MAY IMPACT INDIVIDUALS OR HABITAT BUT IS NOT LIKELY TO CAUSE A TREND TO FEDERAL LISTING OR LOSS OF VIABILITY FOR BLACK-TAILED PRAIRIE DOGS.** My determination is based on the above rationale for ferrets along with the fact that prairie dogs will continue to be killed by recreational shooting until the States of Montana and South Dakota impose anti-shooting rules.

Recommendations for Removing, Avoiding, or Compensating Adverse Effects

None necessary.

REFERENCES

Federal Register, Volume 61, Number 55, March 20, 1996. 50 CFR Part 17, Endangered and Threatened Wildlife and Plants: Establishment of a Nonessential Experimental Population of Black-footed Ferrets in Aubrey Valley, Arizona.

Forrest, S.C., D.E. Biggins, L. Richardson, T.W Clark, T.M. Campbell III, K.A. Fagerstone, and E.T. Thorne. 1988. Population attributes for the black-footed ferret (Mustela nigripes) at Meeteetse, Wyoming, 1981-1985. J. Mamm. 69(2):261-273.

Miller, B., R.P. Reading, and S. Forrest. 1996. Prairie Night. Smithsonian Institute Press. Washington D.C. 320 pp. Cited in Montana Field Guide. (http://fieldguide.mt.gov/detail_AMAJF02040.aspx)

MTFWP. 2002. Conservation Plan for Black-tailed and White-tailed Prairie Dogs in Montana. Montana Prairie Dog Working Group. 51 pp.

MTNHP. 2008. Species of Concern Report. Montana Natural Heritage Program website. (http://nhp.nris.state.mt.us/SpeciesOfConcern/Default.aspx)

USFWS. 1988. Black-footed Ferret Recovery Plan. U.S. Fish and Wildlife Service, Denver, CO. 154 pp.

U.S. Fish and Wildlife Service. March 2008. http://www.fws.gov/montanafieldoffice/Endangered_Species/Listed_Species.html

- End of Appendix G -

INDEX

2005 Motorized Travel Rule, 1-1, 1-2, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-11, 1-12, 2-7, 2-9, 2-12, 2-13, 2-14, 2-15, 2-19, 2-20, 3-66, 4-18, 5-4, 5-5, 5-6, 5-7, 5-8, A-1, C-6, C-7, C-16, C-18, G-4, G-4

Access Needs, 1-1, 1-2, 1-5, 1-6, 1-7, 1-8, 1-11, 1-12, 2-10, 2-11, 2-12, 2-16, 2-17, 2-18, 2-19, 3-6, 3-12, 3-13, 3-14, 3-16, 3-17, 3-18, 3-21, 3-25, 3-26, 3-29, 3-30, 3-31, 3-33, 3-35, 3-36, 3-38, 3-39, 3-42, 3-43, 3-44, 3-45, 3-47, 3-48, 3-49, 3-50, 3-51, 3-56, 3-57, 3-100, 3-107, 3-110, 3-118, 5-2, 5-5, 5-6, 5-9, 5-11, A-2, A-3, A-5, A-6, A-7, B-1, B-2, C-10, C-21, G- 6, G-7

Accessibility, 1-8

Administrative Use, 1-11, 2-11, 2-22, 3-32, 3-34, 3-102, C-1, C-6, C-15, C-16, C-17, C-18, C-24, C-29

Alternatives Considered, 2-1, 2-6, 2-15, 3-3, 3-110, 3-122, 4-5

Archeological, 3-19, 3-21, 4-2, 4-6

Comparison of Effects, 2-26

Cultural Resource, 1-7, 1-8, 2-4, 2-26, 2-28, 3-19, 3-32, 3-34, 4-2, 4-3, 4-6, 5-2

Cumulative Effects, 2-23, 3-1, 3-2, 3-4, 3-15, 3-16, 3-17, 3-36, 3-44, 3-46, 3-50, 3-53, 3-54, 3-60, 3-70, 3-76, 3-77, 3-79, 3-80, 3-81, 3-92, 3-94, 3-95, 3-104, 3-110, 3-115, 3-116, 3-121, 3-122 , 4-8, 5-2, 5-7, 5-8, 5-10, G-6

Decision, 1-1, 1-4, 1-5, 1-8, 1-10, 1-13, 2-1, 2-7, 2-8, 2-9, 2-11, 2-13, 2-14, 2-15, 2-17, 2-19, 2-23, 2-24, 2-25, 3-1, 3-2, 3-4, 3-6, 3-15, 3-16, 3-17, 3-18, 3-20, 3-25, 3-26, 3-30, 3-31, 3-69, 3-76, 3-81, 3-82, 3-96, 3-100, 3-104, 3-105, 3-114, 3-116, 3-121, 3-122, 4-4, 4-5, 4-7, 5-3, 5-5, 5-6, 5-8, 5-9, 5-10, 5-11, 5-13, A-4, A-5, F-1, F-2

Decommission, 1-5, 2-7, 2-8, 2-9, 3-17, 3-92, 3-96, 3-101, 4-18, 5-3, D-1, D-2

Direct and Indirect Effects, 3-1, 3-11, 3-29, 3-31, 3-33, 3-34, 3-35, 3-36, 3-43, 3-45, 3-49, 3-53, 3-59, 3-76, 3-77, 3-78, 3-79, 3-80, 3-92, 3-93, 3-101, 3-102, 3-103, 3-108, 3-114, 3-119,G- 6

Dispersed Vehicle Camping, 1-5, 2-5, 2-8, 2-9, 2-11, 2-12, 2-17, 3-4, 3-6, 3-12, 3-13, 3-15, 3-26, 3-31, 3-32, 3-33, 3-34, 3-35, 3-36, 3-107, 5-2, 5-6, 5-11, C-1, C-12, C-15, C-22

Endangered Species, 3-42, 3-43, 3-51, 4-16, G-3, G-4, G-5

Enforcement, 1-11, 2-12, 2-13, 2-14, 2-15, 2-18, 2-24, 5-5, 5-6, 5-7, A-1, A-4, A-7, A-8, A-9

Environmental Justice, 3-3

Executive Order 11644, 3-3, 3-19, 3-21, 3-51, 3-54, 3-82

Executive Order, 1-6, 3-3, 3-19, 3-21, 3-51, 3-54, 3-82, 5-6, 5-8

Fisheries and Aquatics, 1-10, 2-15, 2-27, 2-29, 3-2, 3-6, 3-8, 3-10, 3-14, 3-16, 3-17, 3-42, 3-43, 3-51, 3-65, 3-75, 3-82, 3-83, 3-87, 3-92, 3-95, 3-96, 3-117, 4-1, 4-2, 4-4, 4-5, 4-6, 4-8, 4-9, 4-10, 4-12, 4-13, 4-16, 5-1, 5-3, 5-4, 5-6, 5-7, G-3, G-4, G-5, G-7

Forest Plan, 1-2, 1-5, 1-8, 1-14, 2-16, 2-23, 2-24, 2-25, 3-5, 3-35, 3-66, 3-82, 3-83, 3-96, 3-99, 3-105, 3-112, 3-116, 3-123, 4-7, 4-8, 5-5, 5-8, B-1

Game Retrieval, 1-1, 1-5, 1-13, 2-16, A-4

Implementation, 1-1, 1-4, 1-5, 1-6, 2-6, 2-7, 2-12, 2-13, 2-15, 2-24, 2-25, 3-3, 3-6, 3-9, 3-11, 3-13, 3-44, 3-47, 3-50, 3-55, 3-61, 3-76, 3-98, 3-110, 3-116, 3-120, 3-121, 3-122, 4-4, 4-5, 5-5, G-3, G-7

Issues, 1-1, 1-4, 1-7, 2-1, 2-2, 2-3, 2-4, 2-6, 2-9, 2-13, 2-14, 2-16, 2-17, 2-20, 2-25, 3-3, 3-4, 3-8, 3-21, 3-37, 3-55, 3-63, 3-69, 3-77, 4-1, 4-2, 4-5, 5-4, 5-6, 5-13

Maintenance, 1-2, 1-6, 1-12, 2-1, 2-12, 2-14, 2-20, 2-21, 2-22, 2-23, 2-24, 3-30, 3-33, 3-34, 3-54, 3-59, 3-66, 3-70, 3-77, 3-81, 3-85, 3-95, 3-96, 3-97, 3-99, 3-105, 3-112, 3-119, 4-11, 4-12, 4-17, 5-3, 5-4, 5-6, 5-10, 5-12, 5-14, A-3, A-5, B-1, B-2, B-3, D-1

Management Indicator Species, 2-4, 2-26, 2-28, 3-37, 3-40, 3-47, 3-49, 3-51, 3-62

Migratory Birds, 3-38, 3-39, 3-40, 3-41, 3-51, 3-53, 3-55

Monitoring, 2-23, 2-24, 2-25, 3-8, 3-9, 3-24, 3-25, 3-31, 3-32, 3-35, 3-36, 3-60, 3-98, 4-5, 4-12, 5-2, 5-3, 5-5, A-4, A-6

Motorized Mixed Use, 1-9, 1-10, 2-3, 2-10, 2-11, 2-26, 2-28, 3-6, 3-11, 3-19, 4-4, 5-4, 5-9, C-1, C-13, C-23

Noise, 1-9, 2-3, 2-4, 2-13, 3-5, 3-37, 3-53, 3-57, 3-58, 4-7, 4-8, 4-9

Preferred Alternative, 2-8, 2-11, 2-25, 3-16, 3-18, 3-47, 3-50, 3-55, 3-61, 3-81, 5-9, 5-10, 5-12, 5-14, G-1

Public Participation, 2-1, 4-1

Recreation Opportunity Spectrum, 2-3, 2-16, 2-26, 2-28, 3-4, 3-5, 3-7, 3-8, 3-10, 3-11, 3-12, 3-13, 3-14, 3-15, 3-16, 3-18, 3-19

Recreation, 1-1, 1-2, 1-4, 1-6, 1-7, 1-8, 1-9, 1-12, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, -13, 2-14, 2-16, 2-18, 2-19, 2-21, 2-23, 2-25, 2-26, 2-28, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 3-14, 3-15, 3-17, 3-18, 3-19, 3-23, 3-42, 3-44, 3-54, 3-55, 3-60, 3-61, 3-64, 3-65, 3-66, 3-81, 3-82, 3-83, 3-94, 3-99, 3-112, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-11, 4-12, 4-15, 4-17, 5-2, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-13, 5-14, A-3, B-1, B-2, B-3, B-4, C-1, C-10, C-15, C-21, G-4, G-6

Rights-of-Way, 1-1, 1-11, 1-12, 2-7, 2-8, 2-10, 2-11, 2-12, 2-16, 2-17, 2-18, 2-19, 3-14, 4-18, 5-7, 5-8, A-1, A-2, A-3, A-7, A-8, A-9, C-6, C-16, C-18, G-4

INDEX

Safety, 1-6, 1-7, 1-9, 1-10, 1-11, 2-8, 2-9, 2-16, 2-17, 2-18, 2-19, 2-21, 3-64, 3-77, 4-3, 5-4, 5-6, 5-7, 5-8, 5-9, 5-13, 5-14, A-2, A-5, B-2, B-3, C-6, C-13, C-15, C-17, C-22

Sensitive Plants, 2-28, 2-30, 3-105, 3-116, 3-117, 3-118, 3-119, 3-121, 3-122, 3-123, 4-4, 4-15

Sensitive Species, 2-4, 2-5, 3-37, 3-38, 3-39, 3-44, 3-45, 3-46, 3-51, 3-53, 3-61, 3-62, 3-82, 3-84, 3-116, 3-117, 3-122

Snow, 1-5, 1-10, 1-11, 3-23, 3-27, 3-28, 3-34, 3-37, 3-38, 3-54, 3-63, 3-67, 3-68, 3-73, 3-78, 3-90, 3-91, 3-93, 4-18, 5-13, A-1, A-2, A-4, A-6, A-7, A-8, A-9, C-14, C-23, C-25, F-1, G-4

Soils, 1-7, 2-5, 2-16, 2-20, 2-23, 2-25, 2-27, 2-29, 3-39, 3-67, 3-68, 3-81, 3-85, 3-86, 3-97, 3-98, 3-100, 3-101, 3-102, 3-104, 3-105, 3-108, 3-109, 3-117, 4-3, 4-14, 5-10, 5-11, 5-12

Threatened and Endangered Species, G-6

Traditional Cultural Properties, 3-19, 3-36, 4-3, 4-6

Treaty Rights, 3-3

Tribes, 2-4, 3-3, 3-20, 3-21, 3-22, 3-23, 3-25, 3-28, 3-29, 4-1, 4-2

Vegetation, 1-6, 1-7, 1-10, 2-5, 2-9, 2-16, 2-20, 2-22, 2-23, 2-27, 2-29, 3-2, 3-3, 3-4, 3-24, 3-29, 3-43, 3-44, 3-46, 3-48, 3-50, 3-51, 3-52, 3-53, 3-54, 3-58, 3-60, 3-66, 3-67, 3-68, 3-69, 3-84, 3-86, 3-87, 3-92, 3-100, 3-101, 3-102, 3-103, 3-104, 3-105, 3-106, 3-107, 3-108, 3-109, 3-110, 3-111, 3-113, 3-114, 3-115, 3-118, 3-119, 3-121, 4-4, 4-12, 4-13, 4-14, 4-15, 4-16, 5-6, 5-11, A-5, A-6, F-3, G-6

Water Quality, 1-1, 1-7, 2-5, 2-9, 2-17, 2-20, 2-23, 2-25, 2-27, 2-29, 3-3, 3-46, 3-63, 3-64, 3-65, 3-66, 3-68, 3-69, 3-70, 3-71, 3-74, 3-75, 3-76, 3-77, 3-80, 3-81, 3-82, 3-86, 3-87, 3-91, 3-92, 3-95, 3-96, 3-98, 3-99, 4-3, 4-11, 4-12, 4-13, 4-15, 5-4, 5-6, 5-10, 5-12, 5-13, A-1, D-1

Weeds, 2-5, 2-12, 2-18, 2-25, 2-27, 2-30, 3-2, 3-60, 3-105, 3-108, 3-109, 3-111, 3-112, 3-113, 3-114, 3-115, 3-116, 3-118, 3-119, 3-120, 3-122, 4-4, 4-15, 5-11, F-1

Wildlife, 1-1, 1-2, 1-6, 1-7, 1-10, 2-4, 2-8, 2-11, 2-13, 2-14, 2-15, 2-17, 2-18, 2-19, 2-23, 2-25, 2-26, 2-27, 2-28, 2-29, 3-2, 3-3, 3-6, 3-10, 3-16, 3-17, 3-37, 3-40, 3-42, 3-43, 3-46, 3-50, 3-51, 3-55, 3-56, 3-57, 3-58, 3-59, 3-60, 3-61, 3-62, 3-64, 3-65, 3-66, 3-82, 3-87, 3-99, 3-100, 3-111, 3-112, 3-115, 3-117, 4-1, 4-2, 4-3, 4-4, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-13, 4-16, 5-6, 5-11, 5-13, 5-14, A-5, A-6, B-2, B-3, C-22, C-29, G-1, G-2, G-3, G-4, G-5, G-7