

Appendix O: Billings Field Office Travel Management Plan

A section of the draft Billings and Pompeys Pillar National Monument Resource Management Plan 2013

UNITED STATES DEPARTMENT OF THE INTERIOR, BUREAU OF LAND MANAGEMENT

The Bureau of Land Management (BLM) manages travel and transportation on public lands in accordance with existing laws, regulations and policies. This Travel Management Plan addresses 434,154 surface acres of BLM administered public lands located in south central Montana which are managed by the Billings Field Office.

This page left intentionally blank

Table of Contents

O.	Billings Field Office Travel Management Plan	1
O.1	Introduction.....	1
O.2	Background.....	1
O.3	Management Considerations and Assumptions	2
O.4	Route Designation Process – Overview.....	4
O.4.1	Developing and Defining Travel Management Areas (TMAs)	4
O.4.2	Route Inventory.....	4
O.4.3	Route Evaluation/Assessment.....	5
O.5	Impact Analysis	7
O.5.1	Resource Management Plan Level Analysis.....	8
O.5.2	Implementation Level Impacts from Trails and Travel Management.....	29
O.5.3	Cumulative Impacts from Travel and Transportation	176
O.5.4	Irreversible and Irrecoverable Commitment of Resources	177
O.5.5	Unavoidable Adverse Impacts	178
O.6	Implementation-Level Travel/Transportation Plans	180
O.7	Preliminary Route Network – outside of TMAs.....	180
O.8	Plan Maintenance and Changes to Route Designations.....	181
O.9	Implementation Process	182

List of Tables

Table 1: Alternative A Route Designations for All TMAs	8
Table 1(a): Alternative A Route Designations for Specific TMAs.....	9
Table 2: Alternative A Routes In/Thru Route Proliferation Area of Concern for All TMAs.....	10
Table 3: Alternative A Routes with Public Safety Concerns for All TMAs.....	12
Table 4: Alternative B Route Designations for All TMAs (compared to Alt. A).....	12
Table 5: Alternative B Route Designations for TMAs (compared to Alt. A).....	14
Table 6: Alternative B Routes In/Thru Route Proliferation Area of Concern for All TMAs	17
Table 7: Alternative B Routes with Public Safety Concerns for All TMAs	17
Table 8: Alternative C Route Designations for All TMAs (compared to Alt. A).....	20
Table 9: Alternative C Route Designations for Specific TMAs (compared to Alt. A).....	21
Table 10: Alternative C Routes In/Thru Route Proliferation Area of Concern for All TMAs	23
Table 11: Alternative C Routes with Public Safety Concerns for All TMAs	24

Table 12: Alternative D Route Designations for All TMAs (compared to Alt. A).....	26
Table 14: Alternative D Routes In/Thru Route Proliferation Area of Concern for All TMAs.....	27
Table 15: Alternative D Routes with Public Safety Concerns for All TMAs.....	28
Table 16: Alternative A Route Designations in Big Game General Winter Range.....	70
Table 17: Alternative A Route Designations within ¼-mile of Sage-Grouse Leks.....	73
Table 18: Alternative A Route Designations within 0.6 miles of Sage-Grouse Leks.....	74
Table 19: Alternative A Route Designations in Sage-Grouse Nesting Habitat (2 miles from Leks).....	75
Table 20: Alternative A Route Designations in Sage-Grouse Nesting Habitat (3 miles from Leks).....	77
Table 21: Alternative A Route Designations in Sage-Grouse Nesting Habitat (4 miles from Leks).....	78
Table 22: Alternative A Route Designations in Sage-Grouse PPAs.....	81
Table 23: Alternative A Route Designations in Sage-Grouse RAs.....	82
Table 24: Alternative A Route Designations in Sage-Grouse General Habitat.....	84
Table 25: Alternative A Route Designations within 1/2-mile of White-tailed Prairie Dog Habitat.....	85
Table 26: Alternative A Route Designations within 1/2-mile of Black-tailed Prairie Dog Habitat.....	87
Table 27: Alternative B Route Designations for Big Game Winter Range (compared to Alt. A).....	89
Table 28: Alternative B Route Designations within ¼-mile of Sage-Grouse Leks (compared to Alt. A)..	92
Table 30: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 2 miles from Leks (compared to Alt. A).....	95
Table 31: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 3 miles from Leks (compared to Alt. A).....	97
Table 32: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 4 miles from Leks (compared to Alt. A).....	99
Table 33: Alternative B Route Designations in Sage-Grouse PPAs (compared to Alt. A).....	102
Table 34: Alternative B Route Designations in Sage-Grouse RAs (compared to Alt. A).....	103
Table 35: Alternative B Route Designations in Sage-Grouse General Habitat (compared to Alt. A).....	105
Table 36: Alternative B Route Designations within 1/2-mile of White-tailed Prairie Dog Habitat (compared to Alt. A).....	106
Table 37: Alternative B Route Designations within 1/2-mile of Black-tailed Prairie Dog Habitat (compared to Alt. A).....	108
Table 38: Alternative C Route Designations for Big Game Winter Range (compared to Alt. A).....	110
Table 39: Alternative C Route Designations within ¼-mile of Sage-Grouse Leks (compared to Alt. A)	113
Table 40: Alternative C Route Designations within 0.6 miles of Sage-Grouse Leks (compared to Alt. A)	115
Table 41: Alternative D Route Designations for Big Game Winter Range (compared to Alt. A).....	119

Table 43: Alternative D Route Designations within 0.6 miles of Sage-Grouse Leks (compared to Alt. A) 124

Table 44: Alternative A: Number of Routes Associated with Yellowstone cutthroat trout habitat..... 128

Table 45: Alternative B: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)..... 130

Table 46: Alternative C: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)..... 132

Table 47: Alternative D: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)..... 133

This page intentionally blank.

O. Billings Field Office Travel Management Plan

O.1 Introduction

Comprehensive travel management addresses all resource use aspects, such as recreational, traditional, casual, agricultural, commercial and educational) and accompanying modes and conditions of travel on public lands. During the development of the Resource Management Plan (RMP), the Billings Field Office (BiFO) of the Bureau of Land Management (BLM) utilized a systematic process to collect and compile data necessary for the thorough evaluation, analysis and/or designation of motorized and non-motorized routes (using the Route Evaluation Tree Process©). The process included a combination of utilizing resource data, geospatial analysis, route inventories and interdisciplinary team assessments/evaluations.

Stakeholder input was sought at the beginning of the route designation process through a series of public travel management workshops. The BLM also worked with Cooperating Agencies and a Resource Advisory Council (RAC)-appointed sub-committee.

O.2 Background

The BLM manages travel and transportation on public lands in accordance with existing laws, regulations and policies. Program policy guidance provides direction to the field for management and administration of all aspects of the travel management program. This guidance is developed at the National, State and District Office level, and includes regulations, manuals, handbooks, Strategic Action Plans, Instruction Memorandums and Information Bulletins. The Billings Field Office Travel Management program will support the accomplishment of management objectives for all resource programs. Within this context, the Billings Field Office will identify a transportation system that supports the agency's mission, management of land and resource programs and their goals and objectives, and provides for appropriate public and administrative access. The BLM's present transportation network is largely inherited, created from past resource uses and public access patterns.

The Billings Field Office will use a systematic process that considers the unique resource issues and social environments within each individual Travel Management Area (TMA) and integrate concepts of habitat connectivity into OHV planning to minimize habitat fragmentation.

O.3 Management Considerations and Assumptions

In general, the Billings Field Office will manage access to balance public use, protect public land resources, promote safety for all public land users, and minimize conflicts among OHV users and other uses of public lands. It will accomplish this by *the use of partnerships with other land-managing agencies, local governments, communities, and interest groups through a balanced approach, so as to protect public lands by minimizing impacts and resources while providing opportunities for the safe use and enjoyment of OHVs. Specific considerations include the following:*

- Motorized travel on BLM-administered land (outside of established TMAs) would be limited to existing roads and trails. Measureable limits of change that would occur to the resource as a result of these travel modes would include indicators based on Land Health Standards, accelerated soil erosion and/or other resource concerns and potential for natural rehabilitation. Site specific travel planning would be initiated if those limits are exceeded.
- Modifications to a transportation network (routes, re-routes or closures) in the planning area where travel is limited to existing roads and trails may be made through activity-level planning.
- Cooperatively develop public outreach programs to promote trail etiquette, environmental ethics and a responsible-use stewardship ethic (e.g., Tread Lightly, Leave No Trace, etc.).
- BLM would continue to coordinate with MFWP in the Block Management program, or other access agreements with other landowners, as appropriate. Designated motorized routes would conform with seasonal travel limitations, based on annual block management agreements, as determined by the authorized officer on a case-by-case basis
- Administrative access would limit motorized use to BLM-authorized use only. BLM employees, permittees, contractors, personnel from other agencies and other motorized access needs authorized by the authorized officer, would be allowed for resource management, maintenance, inventory, monitoring, or compliance purposes. Public use on administrative access routes would be limited to non-motorized access.
- Motorized wheeled cross-country travel to conduct BLM-authorized activities would require prior authorization
- Upon project completion, roads used for commercial or administrative access on BLM-administered lands would be reclaimed, unless the route provides specific benefits for public access, minimizes impacts to the resource and would be considered on a case-by-case basis.
- The BLM may close or restore unauthorized, user created roads and trails to prevent resource damage.

- Motorized off-road travel would be allowed for any military, fire, search and rescue, or law enforcement vehicle for emergency operations.
- Special recreation permits for motorized events, competitive events, or organized group activities would be considered and addressed through site-specific analysis.
- Non-motorized recreational trails would be considered during the development of SRMA management plans and travel management plans (refer to Recreation/Visitor Services section).
- Motorized off-road big game retrieval would be authorized by the Field Manager on a case-by-case basis for individuals with a disabled hunter access permit (issued by FWP). Stipulations or limitations would be included in the authorization.
- Oil and gas activities would comply with all motorized vehicle use and travel plan restrictions, including seasonal restrictions and areas closed to motorized travel. (CSU).
- By IMP, WSAs do not allow for new surface disturbances and there is no cross-country OHV use. Use is restricted to the actual tread width.
- BLM would manage to reduce open road densities in big game winter and calving ranges where they exceed 1.0 miles/square mile.
- Snowmobile use in the planning area would be allowed, except where restricted, and would be subject to the following restrictions: avoid locations where wind or topographic conditions may have reduced snow depth and create situations where damage to vegetation or soils would occur, or where vegetation is taller than the protective snow cover. Ecologically sensitive areas would be closed to snowmobiling if resource damage caused or exacerbated by snowmobile activity is found to be occurring in these areas.
- Where off-highway vehicles are causing or would cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability or other authorized uses, or other resources, the affected areas would be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence.
- Not all routes would be designated through the RMP. Some routes lie within 149352.6 acres of lands which are outside of the Travel Management Areas (282404.5 acres) and which are deferred until after the TMAs are acted on (within 5 years of the RMP being signed) since these have a lower priority in management concerns. These routes are managed as “existing” and will not be evaluated in this Resource management Plan. The discussion which follows addresses only the routes, areas, and impacts on the lands within the TMAs.

O.4 Route Designation Process – Overview

O.4.1 Developing and Defining Travel Management Areas (TMAs)

The purpose of delineating TMAs is to provide more locale-specific travel management guidance to be considered during the route evaluation, designation and implementation. This process is designed to improve the BiFO's ability to protect various resource values by minimizing impacts and provide a more balanced range of motorized and non-motorized opportunities throughout the planning area.

The RMP would establish 11 TMAs within the planning area. Specific management objectives were defined for each TMA, consistent with the overall desired outcomes for travel management. After evaluating routes within each TMA (see route evaluation/assessment section below), consistent with the management objectives, acceptable modes and conditions of travel for each TMA were identified in the RMP as allowable uses. However the travel-specific decisions (route designations) are implementation-level decisions. The decisions for each of the 11 individual Travel Management Areas are considered to be 11 separate decisions. Travel management outside of the 11 TMAs would continue to be limited to existing roads and trails and in accordance with the RMP ROD until specific designations of roads and trails can be made in these areas within five years of the ROD being signed.

In developing and defining the TMAs, the following components were addressed:

- a. Management units developed in the plan;
- b. Consistency with resource program goals and objectives;
- c. Primary modes of travel;
- d. Objectives for allowing travel in the defined area;
- e. Setting characteristics that are to be maintained (including recreation opportunity system and VRM settings); and
- f. Areas with large, intact blocks of public land currently accessible to the public.

O.4.2 Route Inventory

The BiFO began collecting route inventory information in 2005, in an effort to establish a route baseline for use in the planning process. The BiFO used a variety of methods to inventory existing routes/ways within the planning area for consideration, including digitized route information while traveling on off-highway vehicles or by foot using GPS, other data provided by BLM staff, map and orthophoto data and staff and cooperator knowledge of existing routes. Digitized lines were overlaid with various road layers (county, USGS 1:100 data) and other geospatial data-sets (e.g., range improvement fenceline data, ROW corridors, seismic lines, overhead powerlines, etc.) and line discrepancies were reviewed and resolved. Route data was

then verified and reviewed by an interdisciplinary team in preparation of the next phase - route evaluation/assessment process.

O.4.3 Route Evaluation/Assessment

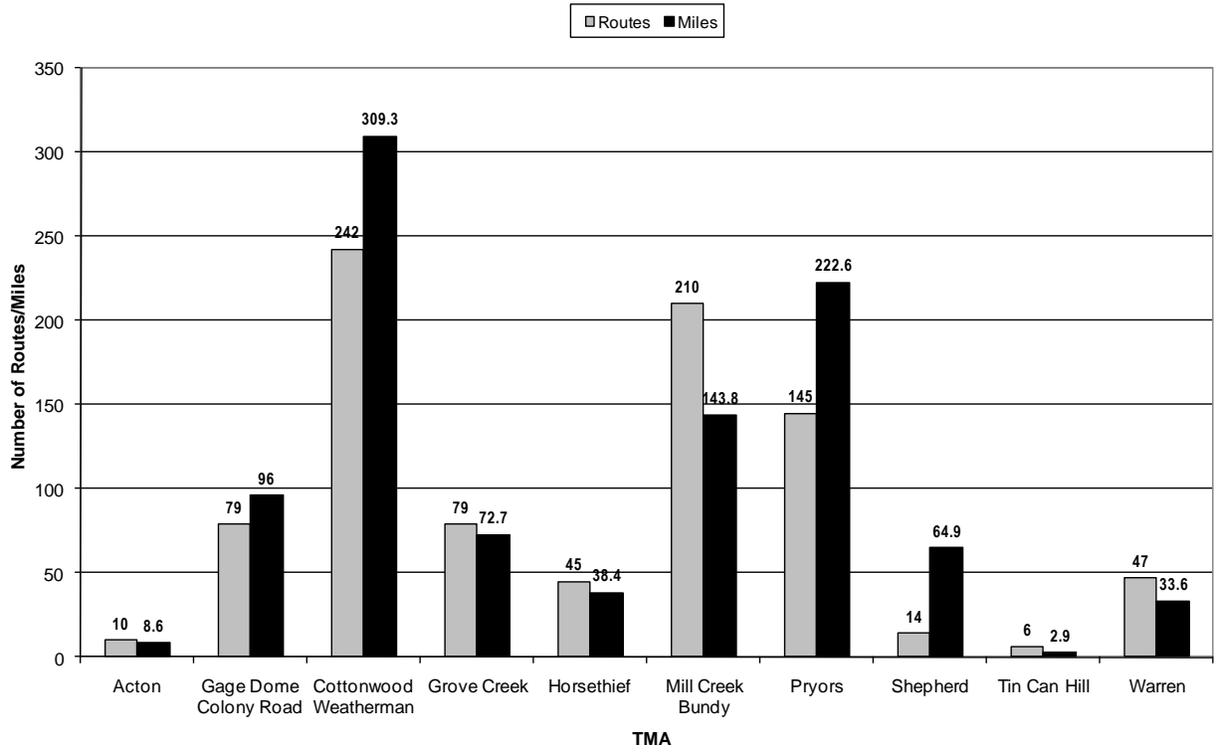
The Route Evaluation Tree Process© (Advanced Resource Solutions, Inc.) and its associated software/database is a tool designed to assist land management agencies with the systematic, neutral collection and compilation of data necessary for the thorough evaluation, analysis and/or designation of motorized and non-motorized routes. The process addressed a range of issues regarding travel planning, including: planning policies and regulations, sensitive resources (biological, physical and cultural), commercial access needs, and recreational access preferences. Additionally, the Route Evaluation Tree Process© is designed to integrate the desired outcomes (goals and objectives) that were developed based on the issues and opportunities unique to the specific travel planning (geographic) area, with the range of management options to work toward achieving those desired outcomes. The process also allows for the incorporation of stakeholder comments to be addressed as part of the route evaluations/assessments.

In order to effectively address the many facets of route evaluation and transportation planning, the Route Evaluation Tree Process© is divided into a series of assessment tasks/steps which provides for systematic collection of data needed to evaluate and designated routes through an interdisciplinary assessment.

The process utilizes a Route Evaluation Tree program that helps guide the interdisciplinary team through a series of questions and associated project-specific drop-down menus that assist with addressing compliance with a variety of applicable statutory requirements that principally address the need to protect identified resource values, as well as commercial/administrative access needs and public recreational access issues. The questions and menus allow both for narrowly focused route-by-route assessments, as well as landscape-scale assessments in an effort to consider the broader route network and cumulative effects.

The process incorporates consideration and selection of measures designed to eliminate, minimize or mitigate resource impacts, based on resource values present. The result of the process is the creation of different route network alternatives that utilize different thresholds of acceptable impact to address the identified issues. The information considered and evaluated for each route is captured in a data-base and used for analysis.

Figure 4.1a: Summary of Route/Miles by TMA



O.5 Impact Analysis

Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by the action and occur later or farther away but are still reasonably foreseeable. Cumulative impacts are the effects on the environment that result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions.

Impacts are also described as to their context, intensity, and duration. Context generally refers to the geographic extent of impact (localized or widespread). Impact duration refers to how long an impact would last. Unless otherwise stated for any particular impact topic, short-term impacts would occur with five years of implementing the Plan, often during construction and recovery, while long-term impacts would occur beyond five years, often from operations. Impact intensity is the magnitude or degree to which a resource would be beneficially or adversely affected. The criteria used to rate the intensity of the impact for each impact topic are as follows:

- Negligible: Impacts on travel and access would not be noticeable as there would be no discernible effect on the number or miles of routes designated as open, limited in use, or completely closed. While a few roads could be improved or upgraded, overall road conditions would essentially remain the same.
- Minor: Impacts on travel and access would be slightly noticeable in certain areas, although there would no substantive effect on the overall miles of routes designated as open, limited in use, or completely closed throughout the Planning Area. While numerous roads could be improved or upgraded, these would be site specific while the condition of most roads would essentially remain the same.
- Moderate: Impacts on travel and access would be evident in many portions of Planning Area due to the overall miles of routes designated as open, limited in use, or completely closed. Changes in road conditions would be noticeable in certain portions of the Planning Area due to road improvement or upgrades.
- Major: Impacts on travel and access would be extensive throughout the Planning Area due to the overall miles of routes designated as open, limited in use, or completely closed. Substantial numbers/miles of roads could be improved or upgraded, resulting in a noticeable change in road condition throughout the Planning Area.

This Appendix organizes the likely impacts on the human and natural environment predicted to occur from implementing the alternatives presented in Chapter 2. The impact analysis for travel management, as presented in this Appendix, divided into two main parts. The first part describes environmental consequences associated with proposed management in RMP alternatives for the Billings Field Office overall (referred to as RMP level decisions).. The second part describes the effects to specific resources from the site-specific travel plan alternatives (implementation decisions) for the 11 Travel Management Areas. Maps depicting travel routes by alternative, by TMA, are included in the map section of this RMP.

O.5.1 Resource Management Plan Level Analysis

Of the 434, 154 acres of public lands within the BiFO, this plan would deal with travel management decisions within eleven separate areas (Travel Management Areas) totaling 282,404.5 acres. The rest of the BiFO, totaling approximately 149,352.6 acres, would be deferred for no more than 5 years once the ROD is signed. Having management decisions on the Travel Management Areas are a high priority, while the deferred lands are mostly inaccessible and isolated parcels with no management issues.

A specific note for the readers of this document is that, in the course of conducting evaluations, route numbers and names shown on maps in this RMP are for display purposes only, and the numbers and names may not match route numbers and names found on other agency publications.

O.5.1.1 Alternative A - No Action Alternative

O.5.1.1.1 Proposed Actions

Of the 434,154 acres of BLM public lands in the BiFO, vehicle travel would be limited to existing roads and trails on 326,561 acres. On about 101,027 acres, site-specific travel planning has been completed and motorized travel would be limited to designated routes in the following Travel Management Areas (TMAs): Shepherd Ah-Nei (4,680 acres), Acton (3,697 acres), Horsethief (11,423 acres) and the Pryors (81,227 acres). Under Alternative A, the South Hills OHV area would continue to be designated as open to motorized cross-country travel, limited to motorcycle use only (1,097 acres open) with a 260 acre closed area to provide a buffer to residential areas adjacent to the area.

General Travel Access: Under the No Action Alternative, the 877 existing BLM routes (993 miles) that comprise the travel networks within the eleven TMAs would continue to be managed using the five existing designations shown in Table 1 and Figure 4.1.1a – Alternative A Route Designations for All TMAs (refer to the Figures Appendix at the end of this document), with the overwhelming majority of routes (about 84%) open to all motorized uses or open with special seasonal or vehicular restrictions. Designations specific to individual TMAs are shown in Table 1(a)

Table 1: Alternative A Route Designations for All TMAs				
Potential Route Designations	Alternative A			
	Number of Routes in Full Network	Percent of Full Network	Miles of Routes in Full Network	Percent of Full Network
Number of open routes	726	83%	763.6	77%
Number of open with vehicle restrictions routes	1	0.1%	52.7	5.3%
Number of open with seasonal restrictions routes	7	0.8%	7.2	0.7%

Potential Route Designations	Alternative A			
	Number of Routes in Full Network	Percent of Full Network	Miles of Routes in Full Network	Percent of Full Network
Number of limited to administrative use only routes	54	6.1%	61.1	6.2%
Number of closed routes	89	10%	108.6	11%
Average number/miles open routes per square mile (density)	1.5	X	1.7	X

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average open per square mile (density)
Acton	Number of Routes	0	0	7	0	3	1.2
	Miles of Routes	0	0	7	0	2	1.2
Gage Dome/ Colony Road	Number of Routes	79	0	0	0	0	1.4
	Miles of Routes	96	0	0	0	0	1.6
Cottonwood/ Weatherman	Number of Routes	226	0	0	16	0	1.7
	Miles of Routes	286	0	0	24	0	2.2
Grove Creek	Number of Routes	79	0	0	0	0	2.2
	Miles of Routes	73	0	0	0	0	2
Horsethief	Number of Routes	38	0	0	5	2	1.2
	Miles of Routes	33	0	0	3	3	1
Mill Creek/ Bundy	Number of Routes	196	0	0	14	0	2.5
	Miles of Routes	127	0	0	17	0	1.6
Pryors	Number of Routes	60	0	0	1	84	0.49
	Miles of Routes	116	0	0	2	14	1
Shepherd	Number of Routes	1	1	0	12	0	0.3
	Miles of Routes	0.2	53	12	0	0	8.9
Tin Can Hill	Number of Routes	0	0	0	6	0	0
	Miles of Routes	0	0	0	3	0	0
Warren	Number of Routes	47	0	0	0	0	2.2
	Miles of Routes	34	0	0	0	0	1.5

Route Density: While the existing route density of the overall network is 1.8 routes per square mile at 2 miles per square mile for all designation types, managing the existing route network as is would retain an existing average route density of 1.5 open routes per square mile at 1.7 miles per square mile for the TMAs. On a specific TMA basis, the Mill Creek/Bundy TMA has the highest density of open routes at 2.5 routes per square mile while the Tin Can Hill TMA has the lowest density of open routes at 0.0 routes per square mile. In terms of miles of routes per square mile, the Shepherd TMA has the highest route density among the TMAs, of 8.9 miles of open routes; while again, Tin Can Hill has the lowest route density of 0.0 miles of open routes (See Figure 4.1.1b in the Figures Appendix at the end of this document).

Route Proliferation: During the specific route evaluation process, BLM staff specialists identified routes that have a higher potential for route proliferation in 9 of 11 TMAs: Acton, Cottonwood/Weatherman, Grove Creek, Gage Dome/Colony Road, Mill Creek/Bundy Road, Shepherd, South Hills, Warren and Pryors. Route proliferation is described as the ongoing or potential creation of new routes by unauthorized means, such as repeated off-route travel.

Table 2 displays the existing route designations that are in place for the 609 routes (781 miles) where proliferation concerns were noted during the route evaluation process.

Table 2: Alternative A Routes In/Thru Route Proliferation Area of Concern for All TMAs				
Potential Route Designations	Alternative A			
	Number of Selected Routes	Percent of Selected Network	Miles of Selected Routes	Percent of Selected Network
Number of open routes	502	82%	591.7	76%
Number of open with restrictions routes	5	0.8%	58.8	7.5%
Number of limited to administrative use only routes	17	3%	25.9	3.3%
Number of closed routes	85	14%	104.9	13%

Public Safety Concerns: Another issue identified during the route evaluation process was public safety concerns associated with 13 routes in 3 of 11 TMAs: Cottonwood/Weatherman, Grove Creek and Pryors. Public safety concerns include, but are not limited to, poor road placement, soils concerns, poor alignment, poor condition related to maintenance, line of site related to on-coming traffic, etc.

O.5.1.1.2 Consequences

Summary: In this Alternative, the areas designated as ‘limited to existing roads and trails’ would continue to be difficult to enforce as unauthorized route creation and proliferation by users makes the ‘existing network’ ever-changing. In those areas where motorized travel is limited to existing roads and trails, impacts to various resources, including soil, water, fragile cultural or

paleontological sites and wildlife habitat would continue in those areas outside of the existing TMAs (where route designations have been made under previous decisions).

Generally, limiting motorized travel in a majority of the planning area to existing roads and trails is not always compatible with the other resource uses or resource values associated with certain areas. Addressing site specific travel planning decisions better addresses localized conditions, resource features, on-going/historic uses and recreational trend information.

General Travel Access: Though in the long-term, travelers could experience minor increases in traffic on these open routes due to the assumptions described above, over 8 out of every 10 existing BLM routes would remain open to all users under Alternative A and the availability of access to the TMAs for travelers would remain fairly constant for the long-term. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may increase to a minor, short-term extent on a localized basis as these new routes potentially become available for, and help spread out public use; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 143 routes at 170 miles, the long-term, direct, localized effect of these restricted routes on access is minor, due to the availability of 735 open routes at 824 miles with the route densities that are described below.

Route Density: Generally, TMAs with higher densities of open routes provide greater access opportunities to public land areas for all types of travelers. Those areas with densities under 1 open route per square mile and/or under 1 open mile per square mile, could be considered much less accessible by travelers that rely solely on motorized modes of travel. As such, the existing motorized travel designations of Alternative A could constitute a continuation of a long-term, direct, localized minor to moderate restriction of motorized access in 4 of 11 TMAs (Horsethief, Pryors, Shepherd, and Tin Can Hill).

Route Proliferation: Current management decisions of 'closed', 'limited', or 'open with restrictions' on some 107 routes (190 miles), would continue to maintain a reduced potential for new, unauthorized routes by maintaining a reduced accessibility on 18% of the routes of concern. This would continue to directly reduce the potential for illegal route creation in the long-term, which would contribute to minimizing harassment of wildlife, disruption of wildlife habitats, damage to soil, watershed, vegetation, air, or other resources, and the potential for adversely affecting natural areas to a minor degree by reducing the number of routes with known route proliferation concerns (43 CFR 8342.1(a)(b)(d)).

Public Safety Concerns: Table 3 displays the existing route designations that are in place for the 13 routes (32 miles) where public safety concerns were noted during the evaluations (note: safety concerns are primarily associated with specific locations on a specific route, not the entire length of that route). Current management decisions of 'closed', 'limited', or 'open with restrictions' on 5 routes (5 miles), would continue to maintain a reduced potential for incidents involving public safety by maintaining reduced access opportunities on 39% of the routes of concern. This direct, long-term, reduction of routes would promote safety of all users of the

public lands to a minor to moderate degree by reducing the potential for public safety incidents on routes with known safety concerns (43 CFR 8342.1).

Table 3: Alternative A Routes with Public Safety Concerns for All TMAs

Potential Route Designations	Alternative A			
	Number of Selected Routes	Percent of Selected Network	Miles of Selected Routes	Percent of Selected Network
Number of open routes	8	61.5%	26.9	85%
Number of open with restrictions routes	0	0%	0	0%
Number of limited to administrative use only routes	0	0%	0	0%
Number of closed routes	5	38.5%	4.7	15%

O.5.1.2 Alternative B

O.5.1.2.1 Decisions

Under Alternative B, vehicle travel would be limited to designated roads and trails on 282,285 acres and limited to existing roads and trails on 145,303 acres of BLM public lands in the BiFO. Additionally, under Alternative B, South Hills (1,357 acres) would be designated as closed to all motorized modes of travel. This would result in a direct, long-term impact to motorized users (motorcycle only) resulting from the area closure of the South Hills OHV area. Under Alternative B, an additional 181,258 acres (or a 36 percent increase) (compared to Alternative A) would be limited to designated motorized routes in the planning area. Refer to Table 4: Alternative B Route Designations for All TMAs (compared to Alt. A).

Table 4: Alternative B Route Designations for All TMAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	# Routes	% of Network	Miles	% Network	# Routes	% of Network	# Δ from Alt. A	% Δ from Alt. A	Miles	% of Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	726	83%	763.6	77%	81	9.2%	-645	-74%	272.4	27%	-491.2	-50%
Number of open with vehicle restrictions routes	1	0.1%	52.7	5.3%	5	0.5%	4	0.4 %	65.1	6.5%	12.4	1.2%
Number of open with seasonal restrictions routes	7	0.8%	7.2	0.7%	6	0.7%	-1	-0.1%	11.8	1.2%	4.6	0.5%

Table 4: Alternative B Route Designations for All TMAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	# Routes	% of Network	Miles	% Network	# Routes	% of Network	# Δ from Alt. A	% Δ from Alt. A	Miles	% of Network	# Δ from Alt. A	% Δ from Alt. A
Number of limited to administrative use only routes	54	6.2%	61.1	6.2%	223	25%	169	19%	247.3	25%	186.2	19%
Number of closed routes	89	10%	108.6	11%	562	64%	473	54%	396.5	40%	287.9	29%
Average number/miles <u>open</u> routes per square mile (density)	1.5	X	1.7	X	0.2	X	-1.3	-88%	0.7	X	-1.0	-58%

General Travel Access: Under the Alternative B, the 877 existing BLM routes (993 miles) that comprise the existing travel networks within the eleven TMAs would be managed using the five existing designations shown in Table 5 Figure 4.1.2a (at the end of this document), which also compare Alternative B designations with Alternative A. Designations specific to individual TMAs are shown in Table 5(a) and are also compared to Alternative A. At 562, the majority of routes (64% of overall network) would be recommended for closure to all motorized modes of travel and 223 routes (25% of overall network) would be recommended for administrative use only.

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average open per square mile (density)
Acton	Alt. A # of Routes	0	0	7	0	3	1.2
	Alt. A Miles	0	0	7	0	2	1.2
	Alt. B # of Routes	0	0	3	0	7	0.5
	Alt. B Miles	0	0	5	0	4	0.9
	% Δ # of Routes	0.0%	0.0%	-40.0%	0.0%	40.0%	-57.0%
	% Δ Miles	0.0%	0.0%	-24.0%	0.0%	23.0%	-29.0%
Gage Dome/ Colony Road	Alt. A # of Routes	79	0	0	0	0	1.4
	Alt. A Miles	96	0	0	0	0	1.6
	Alt. B # of Routes	7	0	0	41	31	0.1
	Alt. B Miles	31	0	5	45	20	0.6
	% Δ # of Routes	-91.0%	0.0%	0.0%	52.0%	39.0%	-91.0%
	% Δ Miles	-68.0%	0.0%	5.0%	47.0%	21.0%	-62.0%
Cottonwood/ Weatherman	Alt. A # of Routes	226	0	0	16	0	1.7
	Alt. A Miles	286	0	0	24	0	2.2
	Alt. B # of Routes	29	2	0	52	159	0.2
	Alt. B Miles	123	10	0	68	108	1
	% Δ # of Routes	-84.0%	1.0%	0.0%	15.0%	66.0%	-86.0%
	% Δ Miles	-53.0%	3.0%	0.0%	14.0%	35.0%	-53.0%
Grove Creek	Alt. A # of Routes	79	0	0	0	0	2.2
	Alt. A Miles	73	0	0	0	0	2
	Alt. B # of Routes	7	0	0	8	64	0.2
	Alt. B Miles	18	0	0	9	46	0.5
	% Δ # of Routes	-91.0%	0.0%	0.0%	10.0%	81.0%	-91.0%
	% Δ Miles	-76.0%	0.0%	0.0%	13.0%	63.0%	-76.0%

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average open per square mile (density)
Horsethief	Alt. A # of Routes	38	0	0	5	2	1.2
	Alt. A Miles	33	0	0	3	3	1
	Alt. B # of Routes	5	1	0	15	24	0.2
	Alt. B Miles	10	2	0	14	13	0.4
	% Δ # of Routes	-73.0%	2.0%	0.0%	22.0%	49.0%	-84.0%
	% Δ Miles	-59.0%	4.0%	0.0%	29.0%	26.0%	-64.0%
Mill Creek/ Bundy	Alt. A # of Routes	196	0	0	14	0	2.5
	Alt. A Miles	127	0	0	17	0	1.6
	Alt. B # of Routes	13	0	0	56	141	0.2
	Alt. B Miles	20	0	0	56	68	0.3
	% Δ # of Routes	-87.0%	0.0%	0.0%	20.0%	67.0%	-93.0%
	% Δ Miles	-74.0%	0.0%	0.0%	27.0%	48.0%	-84.0%
Pryors	Alt. A # of Routes	60	0	0	1	84	0.49
	Alt. A Miles	116	0	0	2	14	1
	Alt. B # of Routes	19	1	3	25	97	0.2
	Alt. B Miles	71	1	7	26	119	0.6
	% Δ # of Routes	-28.0%	1.0%	2.0%	17.0%	9.0%	-62.0%
	% Δ Miles	-20.0%	1.0%	3.0%	11.0%	7.0%	-33.0%
Shepherd	Alt. A # of Routes	1	1	0	12	0	0.3
	Alt. A Miles	0.2	53	12	0	0	8.9
	Alt. B # of Routes	1	1	0	8	4	0.3
	Alt. B Miles	1	53	0	11	2	7.2
	% Δ # of Routes	0.0%	0.0%	0.0%	-29.0%	29.0%	0.0%
	% Δ Miles	0.0%	0.0%	-19.0%	16.0%	3.0%	-19.0%
Tin Can Hill	Alt. A # of Routes	0	0	0	6	0	0
	Alt. A Miles	0	0	0	3	0	0
	Alt. B # of Routes	0	0	0	2	4	0
	Alt. B Miles	0	0	0	1	2	0
	% Δ # of Routes	0.0%	0.0%	0.0%	-67.0%	67.0%	0.0%
	% Δ Miles	0.0%	0.0%	0.0%	-62.0%	62.0%	0.0%

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average <u>open</u> per square mile (density)
Warren	Alt. A # of Routes	47	0	0	0	0	2.2
	Alt. A Miles	34	0	0	0	0	1.5
	Alt. B # of Routes	0	0	0	16	31	0
	Alt. B Miles	0	0	0	18	16	0
	% Δ # of Routes	-100.0%	0.0%	0.0%	34.0%	66.0%	-100.0%
	% Δ Miles	-100.0%	0.0%	0.0%	53.0%	47.0%	-100.0%

Route Density: While Alternative A would continue managing existing route network at an average route density of 1.5 open routes per square mile at 1.7 miles per square mile for the TMAs, Alternative B would greatly reduce densities across all TMAs to an average of 0.2 open routes per square mile (an 88% reduction) at an average of 0.7 miles per square mile (a 58% reduction). On a specific TMA basis, the Acton TMA would have the highest density of open routes at 0.5 routes per square mile while the Tin Can Hill and Warren TMAs would have the lowest densities of open routes at 0.0 routes per square mile. In terms of miles of routes per square mile, the Shepherd TMA would have the high among the TMAs of 7.2 miles of open routes, while again, Tin Can Hill and Warren would have the low of 0.0 miles of open routes (See Figure 4.1.2b at the end of this document).

Route Proliferation: Table 6 displays the Alternative B route designations compared to the Alternative A designations for the 609 routes (781 miles) where route proliferation concerns were noted during the route evaluations for 9 out of the 11 TMAs. Alternative B designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 546 routes (547 miles), would restrict access on 89% of the routes identified as having route proliferation concerns; 72% more routes with restrictions in Alternative B than the current 18% in Alternative A.

Table 6: Alternative B Routes In/Thru Route Proliferation Area of Concern for All TMAs

Potential Route Designations	Alternative A				Alternative B							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	502	82%	591.7	76%	62	10%	-440	-72%	233.5	30%	-358	-46%
Number of open with restrictions routes	5	0.8%	58.8	7.5%	8	1.3%	3	0.5%	74.2	9%	15.4	2%
Number of limited to administrative use only routes	17	2.8%	25.9	3.3%	129	21%	112	18%	148	19%	122.1	16%
Number of closed routes	85	14%	104.9	13%	409	67%	324	53%	325.2	42%	220.3	28%

Public Safety Concerns: Table 7 displays the Alternative B route designations compared to the Alternative A designations for the 13 routes (32 miles) where public safety concerns were noted during the route evaluation process for 3 TMAs. Alternative B designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 10 routes (14 miles), would restrict access on **77%** of the routes identified as having public safety concerns; 38% more routes with restrictions in Alternative B than the current **39%** in Alternative A.

Table 7: Alternative B Routes with Public Safety Concerns for All TMAs

Potential Route Designations	Alternative A				Alternative B							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	8	61.5%	26.9	85%	3	23%	-5	-39%	17.7	56%	-9.2	-29%
Number of open with restrictions routes	0	0%	0	0%	3	23%	3	23%	6.7	21.2%	6.7	21.2%
Number of limited to administrative use only routes	0	0%	0	0%	1	7.7%	1	7.7%	2.2	7%	2.2	7%
Number of closed routes	5	38.5%	4.7	15%	6	46%	1	7.7%	5.0	16%	0.3	0.9%

O.5.1.2.2 Consequences

Summary: This Alternative would generally have more restrictions and constraints to motorized access which would have a direct, long-term impact to motorized users by limiting access and opportunities; however, there would be fewer direct, indirect and cumulative impacts to sensitive and fragile resource issues identified (refer to those corresponding impact analysis discussions by alternative). Generally, designating roads and trails for motorized travel within the TMAs better responds to and addresses resource conditions.

General Travel Access: This would result in 54% more closed routes in Alternative B than already exist in Alternative A and in 19% more routes designated for administrative use only in Alternative B than exist in Alternative A. These results would be a long-term, direct, widespread, major reduction in general public access opportunities via motorized modes of travel. The closures would directly impact administrative users, but only to a minor degree in the long-term as closed route were not primary access to administrative facilities and functions.

While the number of routes recommended for closure and administrative use only would be 64% and 25% of the overall network respectively, the actual miles of routes closed under Alternative B would be 397 or about 40% and those limited to administrative use would be 247 or about 25% of the existing mileage. This would result in 29% more miles of routes closed in Alternative B than the current 11% closure mileage in Alternative A. Additionally, there would be 19% more mileage of routes identified for administrative use only in Alternative B than the current 6% mileage in Alternative A. This would result in a moderate, long-term, direct loss of motorized access opportunities for the general public and a negligible change in access availability for administrative uses, as such uses would continue to have access on administrative routes, absent of public use. So, while the actual number of routes recommended for closure changes greatly (54% more in Alternative B than in Alternative A) the actual number of miles of closed routes changes only moderately (29% more in Alternative B than in Alternative A) for an overall minor to moderate loss of available access.

Routes open to all motorized uses or open with special seasonal or vehicular restrictions would decrease to a total of 90 routes (10% of the network), or about 74% fewer open routes in Alternative B than the current 84% of open routes in Alternative A. In the long-term, travelers could experience major increases in traffic on open routes due to the concentration effects of excluding public motorized use from 9 out of every 10 existing BLM routes. Fewer open routes available to the public would concentrate travelers on fewer available routes, which could diminish realization of travelers' expectations for broader, uncrowded access, greatly reducing the potential for realizing various benefits that are possible with full access. However, with regard to route miles, Alternative B would recommend 347 miles with these open designations--35% of the proposed network. This would result in 49% fewer miles of open routes in Alternative B than the current 83% in Alternative A.

As the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may be diminished to a minor, short-term extent on a localized basis as these new routes potentially become available for public use; such effects would ebb and flow with energy development.

Route Density: Given that areas with densities under 1 open route and/or 1 open mile per square mile could be considered much less accessible by motorized travelers, only two TMAs in Alternative B (Cottonwood/Weatherman and Shepherd) would meet or exceed this standard and then only in miles per square mile. As such, the route designations of Alternative B would constitute a long-term, direct, localized major restriction of motorized access in terms of travel dispersal opportunities in 8 of 10 TMAs (All except Cottonwood/Weatherman and Shepherd). However, concentrating motorized vehicular travel use on fewer routes may increase compaction, create more disturbance due to limited routes for travel, and higher frequency of use, which could result in unintended consequences of limiting motorized travel.

Route Proliferation: This would directly reduce the potential for illegal route creation in the long-term, which would contribute to minimizing harassment of wildlife, disruption of wildlife habitats, damage to soil, watershed, vegetation, air, or other resources, and the potential for adversely affecting natural areas to a major degree by reducing the number of routes with known route proliferation concerns (43 CFR 8342.1(a)(b)(d)).

Public Safety Concerns: This direct, long-term, reduction of routes would promote safety of all users of the public lands to a major degree by reducing the potential for public safety incidents on routes with known safety concerns (43 CFR 8342.1). However, for those travel areas that receive a high frequency of use, limiting access in some cases could create increased user conflicts or incidences of high traffic volume, as there are fewer motorized routes available in the planning area.

O.5.1.3 Alternative C

O.5.1.3.1 Decisions

Under Alternative C, vehicle travel would be limited to designated roads and trails on 282,285 acres and limited to existing roads and trails on 145,303 acres of BLM public lands in the Planning Area. This would be the same as Alternative B. Under Alternative C, within the South Hills OHV Area, 1,296 acres are open to motorized vehicle use (limited to motorcycle use only), and would identify a 61 acre closure area to motorized use (all uses) in the South Hills OHV Area to provide a buffer to adjacent residential areas. This would be an increase of 199 acres for an open area designation from Alternative A. Generally, under Alternative C, more routes would be designated as open all forms of motorized travel than in Alternative B, and fewer than Alternative A (refer to 4.1.3a: Alternative C Route Designations for All TMAs (compared to Alt. A, located at the end of this document)).

General Travel Access: Under the Alternative C, the 877 existing BLM routes (993 miles) that comprise the existing travel networks within the 11 TMAs would be managed using the five existing designations shown in Table 8 and Figure 4.1.3a below, which also compare Alternative C designations with Alternative A. Designations specific to individual TMAs are shown in Table 9 and are also compared to Alternative A. At 22, few routes (2.5% of overall network) would be recommended for closure to all motorized modes of travel and 120 routes (13.7% of overall network) would be recommended for administrative use only. This would result in 7.6% fewer

closed routes in Alternative C than already exist in Alternative A and in 7.5% more routes designated for administrative use only in Alternative C than exist in Alternative A.

While the number of routes recommended for closure and administrative use only would be 2.5% and 13.7% of the overall network respectively, the actual miles of routes closed under Alternative C would be 5.9 or about 0.6% and those limited to administrative use would be 91.3 or about 9.2% of the existing mileage. This would result in 10.3% fewer miles of routes closed in Alternative C than the current 11% closure mileage in Alternative A. Additionally, there would be 3% more mileage of routes identified for administrative use only in Alternative C than the current 6.2% mileage in Alternative A. The slight gain in administrative use only route miles is offset by the loss of over 3 times that amount in closed route miles (many that were designated as open in Alternative C). So, while the actual number of routes recommended for closure changes to a negligible to minor degree (7.6% fewer in Alternative C than in Alternative A) the actual number of miles of closed routes changes to a minor degree (10.3% fewer in Alternative C than in Alternative A) for an overall minor loss of available access.

Routes open to all motorized uses or open with special seasonal or vehicular restrictions would increase slightly by 1 route from Alternative A to a total of 735 routes (84% of the network), or about 0.1% more open routes in Alternative C. In terms of the number of open routes, there would be essentially no change from the number of open routes in Alternative A. However, with regard to route miles, Alternative C would recommend 896 miles with these open designations (90% of the proposed network). This would result in 8% more miles of open routes in Alternative C than the current 83% in Alternative A.

Table 8: Alternative C Route Designations for All TMAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative C							
	# Routes	% of Network	Miles	% Network	# Routes	% of Network	# Δ from Alt. A	% Δ from Alt. A	Miles	% of Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	726	83%	763.6	77%	727	82.9%	1	0.1%	825	83%	61.4	6.2%
Number of open with vehicle restrictions routes	1	0.1%	52.7	5.3%	7	0.8%	6	0.7%	70.7	7.1%	18	1.8%
Number of open with seasonal restrictions routes	7	0.8%	7.2	0.7%	1	0.1%	-6	-0.7%	0.2	0%	-7	-0.7%
Number of limited to administrative use only routes	54	6.2%	61.1	6.2%	120	13.7%	66	7.5%	91.3	9.2%	30.2	3.0%
Number of closed routes	89	10%	108.6	11%	22	2.5%	-67	-7.6%	5.9	0.6%	-102.7	-10%
Average number/miles open routes per square mile (density)	1.5		1.7		1.5		0	0.1%	1.8		0.1	8.8%

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average open per square mile (density)
Acton	Alt. A # of Routes	0	0	7	0	3	1.2
	Alt. A Miles	0	0	7	0	2	1.2
	Alt. C # of Routes	1	0	0	0	0	1.7
	Alt. C Miles	9	0	0	0	0	1.5
	% Δ # of Routes	100.0%	0.0%	-70.0%	0.0%	-30.0%	43.0%
	% Δ Miles	100.0%	0.0%	-83.0%	0.0%	-17.0%	19.0%
Gage Dome/ Colony Road	Alt. A # of Routes	79	0	0	0	0	1.4
	Alt. A Miles	96	0	0	0	0	1.6
	Alt. C # of Routes	69	0	0	10	0	1.2
	Alt. C Miles	91	0	0	5	0	1.5
	% Δ # of Routes	-13.0%	0.0%	0.0%	13.0%	0.0%	-13.0%
	% Δ Miles	-6.0%	0.0%	0.0%	6.0%	0.0%	-6.0%
Cottonwood/ Weatherman	Alt. A # of Routes	226	0	0	16	0	1.7
	Alt. A Miles	286	0	0	24	0	2.2
	Alt. C # of Routes	220	5	0	14	3	1.7
	Alt. C Miles	279	16	0	14	1	2.3
	% Δ # of Routes	-3.0%	2.0%	0.0%	-1.0%	1.0%	-1.0%
	% Δ Miles	-3.0%	5.0%	0.0%	-3.0%	1.0%	3.0%
Grove Creek	Alt. A # of Routes	79	0	0	0	0	2.2
	Alt. A Miles	73	0	0	0	0	2
	Alt. C # of Routes	69	0	0	8	2	1.9
	Alt. C Miles	70	0	0	2	1	1.9
	% Δ # of Routes	-13.0%	0.0%	0.0%	10.0%	3.0%	-13.0%
	% Δ Miles	-4.0%	0.0%	0.0%	3.0%	1.0%	-4.0%
Horsethief	Alt. A # of Routes	38	0	0	5	2	1.2
	Alt. A Miles	33	0	0	3	3	1
	Alt. C # of Routes	41	1	0	2	1	1.3
	Alt. C Miles	36	2	0	1	1	1.1
	% Δ # of Routes	7.0%	2.0%	0.0%	-7.0%	-2.0%	11.0%
	% Δ Miles	8.0%	4.0%	0.0%	-6.0%	-7.0%	14.8%
Mill Creek/	Alt. A # of Routes	196	0	0	14	0	2.5

Table 9: Alternative C Route Designations for Specific TMAs (compared to Alt. A)

TMA	Potential Route Designations	Open	Open with vehicle restrictions	Open with seasonal restrictions	Limited to administrative use only	Closed	Average open per square mile (density)
Bundy	Alt. A Miles	127	0	0	17	0	1.6
	Alt. C # of Routes	144	0	0	54	12	1.9
	Alt. C Miles	108	0	0	33	3	1.4
	% Δ # of Routes	-25.0%	0.0%	0.0%	19.0%	6.0%	-27.0%
	% Δ Miles	-13.0%	0.0%	0.0%	11.0%	2.0%	-15.0%
Pryors	Alt. A # of Routes	60	0	0	1	84	0.49
	Alt. A Miles	116	0	0	2	14	1
	Alt. C # of Routes	114	0	1	27	3	0.9
	Alt. C Miles	191	0	1	30	1	1.6
	% Δ # of Routes	37.0%	0.0%	1.0%	18.0%	-56.0%	92.0%
	% Δ Miles	34.0%	0.0%	1.0%	13.0%	-46.0%	65.0%
Shepherd	Alt. A # of Routes	1	1	0	12	0	0.3
	Alt. A Miles	0.2	53	12	0	0	8.9
	Alt. C # of Routes	10	1	0	3	0	1.5
	Alt. C Miles	8	53	0	4	0	8.3
	% Δ # of Routes	64.0%	0.0%	0.0%	-64.0%	0.0%	450.0%
	% Δ Miles	12.0%	0.0%	-19.0%	7.0%	0.0%	-7.0%
Tin Can Hill	Alt. A # of Routes	0	0	0	6	0	0
	Alt. A Miles	0	0	0	3	0	0
	Alt. C # of Routes	5	0	0	1	0	5
	Alt. C Miles	3	0	0	1	0	2.7
	% Δ # of Routes	83.0%	0.0%	0.0%	-83.0%	0.0%	+ 5 routes
	% Δ Miles	93.0%	0.0%	0.0%	-97.0%	0.0%	+ 2.7 miles
Warren	Alt. A # of Routes	47	0	0	0	0	2.2
	Alt. A Miles	34	0	0	0	0	1.5
	Alt. C # of Routes	45	0	0	1	1	2.1
	Alt. C Miles	33	0	0	1	1	1.5
	% Δ # of Routes	-4.0%	0.0%	0.0%	2.0%	2.0%	-4.0%
	% Δ Miles	-3.0%	0.0%	0.0%	1.0%	2.0%	-3.0%

Route Proliferation: Table 10 displays the Alternative C route designations compared to the Alternative A designations for the 609 routes (781 miles) where route proliferation concerns were noted during the route evaluation process for 9 TMAs. Alternative C designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 105 routes (138 miles), would restrict access on 17% of the routes identified as having route proliferation concerns; 0.4% fewer routes with restrictions in Alternative C than the current 18% in Alternative A.

Potential Route Designations	Alternative A				Alternative C							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	502	82%	591.7	76%	504	82.8%	2	0.3%	643.2	82.3%	51.5	6.6%
Number of open with restrictions routes	5	0.8%	58.8	7.5%	7	1.1%	2	0.3%	69.3	8.9%	10.5	1.3%
Number of limited to administrative use only routes	17	2.8%	25.9	3.3%	89	14.6%	72	12%	65.8	8.4%	39.9	5.1%
Number of closed routes	85	14%	104.9	13%	9	1.5%	-76	-13%	3.1	0.4%	-101.8	-13%

Public Safety Concerns: Table 11 displays the Alternative C route designations compared to the Alternative A designations for the 13 routes (32 miles) where public safety concerns were noted during the route evaluation process for 3 TMAs. Alternative C designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 7 routes (5.3 miles), would restrict access on 54% of the routes identified as having public safety concerns; 15.4% more routes with restrictions in Alternative C than the current 39% in Alternative A.

Table 11: Alternative C Routes with Public Safety Concerns for All TMAs

Potential Route Designations	Alternative A				Alternative C							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	8	61.5%	26.9	85%	6	46.2%	-2	-15.4%	26.4	83.3%	-0.5	-2%
Number of open with restrictions routes	0	0%	0	0%	1	7.7%	1	7.7%	0.2	0.6%	0.2	0.6%
Number of limited to administrative use only routes	0	0%	0	0%	5	38.5%	5	38.5%	4.8	15.1%	4.8	15%
Number of closed routes	5	38.5%	4.7	15%	1	7.7%	-4	-30.8%	0.3	0.9%	-4.4	-14%

O.5.1.3.2 Consequences

Summary: This Alternative would be a direct, long-term moderate increase in access opportunities for all travelers to these areas. However, the increase number of routes available for all uses would result in impacts to soils, vegetation, wildlife and sensitive cultural areas (refer to those corresponding impact analysis discussions by alternative).

General Travel Access: These results would not substantially change public motorized access opportunities from Alternative A, as administrative only or closed route changes would occur only between those designations and not the open designations. The closures would directly impact administrative users to a minor degree in the long-term as 66 closed routes would become limited to administrative use only, thereby providing greater access for administrative functions.

As such, this would result in a minor, long-term, direct net gain of motorized access opportunities for the general public and a negligible gain in access availability for administrative uses. Many of the routes that would be closed were from consideration of redundant routes, therefore, the net impacts to access would be further minimized, as an access opportunity would still exist.

In the long-term, travelers would have a direct, minor, widespread increase in access opportunities in that 9 out of every 10 existing BLM route would be open to public motorized use.

As the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may be diminished to a minor, short-term extent on a localized basis as these new routes potentially become available for public use; such effects would ebb and flow with energy development.

Route Proliferation: This Alternative would directly reduce the potential for illegal route creation in the long-term, which would contribute to minimizing harassment of wildlife, disruption of wildlife habitats, damage to soil, watershed, vegetation, air, or other resources, and the potential for adversely affecting natural areas to a negligible to minor degree by reducing the number of routes with known route proliferation concerns (43 CFR 8342.1(a)(b)(d)).

Public safety Concerns: This direct, long-term, reduction of routes would moderately promote safety of all users of the public lands by reducing the potential for public safety incidents on routes with known safety concerns (43 CFR 8342.1).

O.5.1.4 Alternative D

O.5.1.4.1 Decisions:

Under Alternative D, vehicle travel would be limited to designated roads and trails on 282,285 acres of BLM public lands and limited to existing roads and trails on 145,303 acres of BLM lands in the Planning Area. This would be the same as Alternatives B and C. Additionally, 982 acres would be designated as open to motorized vehicle use (limited to motorcycle use only).

Within the South Hills OHV Area under Alternative D, 982 acres would be designated as open to motorized vehicle use (limited to motorcycle use only), and 375 acres would be closed to provide for a buffer area to adjacent residential areas. This would be a decrease of 115 acres of an open designation, as compared to Alternative A.

General Travel Access: Under the Alternative D, the 877 existing BLM routes (993 miles) that comprise the existing travel networks within the 11 TMAs would be managed using the five existing designations shown in Table 12 and Figure 4.1.4a (located at the end of this document), which also compare Alternative D designations with Alternative A. Designations specific to individual TMAs are shown in Table 13 and are also compared to Alternative A. Few routes (80, or 9% of overall network) would be recommended for closure to all motorized modes of travel but 449 routes (51% of overall network) would be recommended for administrative use only. This would result in 1% fewer closed routes in Alternative D than already exist in Alternative A and in 45% more routes designated for administrative use only in Alternative D than exist in Alternative A.

While the number of routes recommended for closure and administrative use only would be 9% and 51% of the overall network respectively, the actual miles of routes closed under Alternative D would be 66 or about 7% and those limited to administrative use would be 313 or about 32% of the existing mileage. This would result in 4% fewer miles of routes closed in Alternative D than the current 11% closure mileage in Alternative A. Additionally, there would be 25% more miles of routes identified for administrative use only in Alternative D than the current 6% mileage in Alternative A. So, while the actual number of routes recommended for closure barely changes (1% fewer in Alternative D than in Alternative A) the actual number of miles of closed routes changes only slightly (4% fewer in Alternative D than in Alternative A) for an overall minor loss of available access.

Routes open to all motorized uses or open with special seasonal or vehicular restrictions would decrease to a total of 348 routes (40% of the network), or about 44% fewer open routes in Alternative D than the current 84% of open routes in Alternative A. In the long-term, travelers could experience major increases in traffic on open routes due to the concentration effects of excluding public motorized use from 6 out of every 10 existing BLM routes. Fewer open routes available to the public would concentrate travelers on fewer available routes, which could diminish realization of travelers' expectations for broader, uncrowded access, moderately reducing the potential for realizing various benefits that are possible with full access. However, with regard to route miles, Alternative D would recommend 614 miles with these open designations (62% of the proposed network). This would result in 21% fewer miles of open routes in Alternative D than the current 83% in Alternative A.

As the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may be diminished to a minor, short-term extent on a localized basis as these new routes potentially become available for public use; such effects would ebb and flow with energy development.

Table 12: Alternative D Route Designations for All TMAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative D							
	# Routes	% of Network	Miles	% Network	# Routes	% of Network	# Δ from Alt. A	% Δ from Alt. A	Miles	% of Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	726	83%	763.6	77%	332	38%	-394	-45%	530.2	53.4%	-233.4	-24%
Number of open with vehicle restrictions routes	1	0.1%	52.7	5.3%	5	0.6%	4	0.5%	68.7	6.9%	16	1.6%
Number of open with seasonal restrictions routes	7	0.8%	7.2	0.7%	11	1.3%	4	0.5%	15.1	1.5%	7.9	0.8%
Number of limited to administrative use only routes	54	6.2%	61.1	6.2%	449	51%	395	45%	313.0	31.5%	251.9	25.4%
Number of closed routes	89	10%	108.6	11%	80	9%	-9	-1.0%	66.0	6.6%	-42.6	-4.3%
Average number/miles <u>open</u> routes per square mile (density)	1.5	X	1.7	X	0.7	X	-0.8	-52.6%	1.2	X	-0.4	-25.4%

Route Density: While Alternative A would continue managing existing route network at an average route density of 1.5 open routes per square mile at 1.7 miles per square mile for the TMAs, Alternative D would greatly reduce densities across all TMAs to an average of 0.7 open routes per square mile (an 53% reduction) at an average of 1.2 miles per square mile (a 25%

reduction). On a specific TMA basis, the Tin Can Hill TMA would have the highest density of open routes at 2 routes per square mile while the Shepherd TMA would have the lowest density of open routes at 0.3 routes per square mile. In terms of miles of routes per square mile, the Shepherd TMA would have the high among the TMAs of 7.2 miles of open routes, while Warren TMA would have the low of 0.4 miles of open routes (See Figure 4.1.4b located at the end of this document).

Given that areas with densities under 1 open route and/or 1 open mile per square mile could be considered much less accessible by motorized travelers, eight TMAs in Alternative D (Gage Dome/Colony, Cottonwood/Weatherman, Grove Creek, Horsethief, Mill Creek/Bundy, Pryors, Shepherd and Warren) would meet or exceed this standard, primarily in routes per square mile.

Route Proliferation: 14 displays the Alternative D route designations compared to the Alternative A designations for the 609 routes (781 miles) where route proliferation concerns were noted during the route evaluation process for 9 TMAs. Alternative D designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 355 routes (357 miles), would restrict access on 58% of the routes identified as having route proliferation concerns; 41% more routes with restrictions in Alternative D than the current 18% in Alternative A.

Table 14: Alternative D Routes In/Thru Route Proliferation Area of Concern for All TMAs

Potential Route Designations	Alternative A				Alternative D							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	502	82%	591.7	76%	254	41.7%	-248	-40.7%	424.7	54.4%	-167	-21%
Number of open with restrictions routes	5	0.8%	58.8	7.5%	12	2.0%	7	1.1%	81.6	10.4%	22.8	2.9%
Number of limited to administrative use only routes	17	2.8%	25.9	3.3%	285	46.8%	268	44%	216.9	27.8%	191.0	24.4%
Number of closed routes	85	14%	104.9	13%	58	9.5%	-27	-4.4%	58.2	7.4%	-46.7	-6.0%

Public Safety Concerns: Table 15 displays the Alternative D route designations compared to the Alternative A designations for the 13 routes (32 miles) where public safety concerns were noted during the route evaluation process for 3 TMAs. Alternative D designations of ‘closed’, ‘limited’, or ‘open with restrictions’ on 9 routes (12 miles), would restrict access on 69% of the routes identified as having public safety concerns; 31% more routes with restrictions in Alternative D than the current 39% in Alternative A.

Table 15: Alternative D Routes with Public Safety Concerns for All TMAs

Potential Route Designations	Alternative A				Alternative D							
	# Selected Routes	% of Selected Network	Miles Selected Routes	% Selected Network	# Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A	Miles Selected Routes	% of Selected Network	# Δ from Alt. A	% Δ from Alt. A
Number of open routes	8	61.5%	26.9	85%	4	31%	-4	-31%	19.9	63%	-7	-22%
Number of open with restrictions routes	0	0%	0	0%	3	23%	3	23%	6.7	21%	6.7	21.2%
Number of limited to administrative use only routes	0	0%	0	0%	4	31%	4	31%	2.9	9%	2.9	9.2%
Number of closed routes	5	38.5%	4.7	15%	2	15%	-3	-23%	2.1	7%	-2.6	-8%

O.5.1.4.2 Consequences

Summary: Generally, under Alternative D, fewer routes would be designated as open to all forms of motorized travel than in Alternatives A and C (refer to Figure 4.1.3a: Alternative D Route Designations for All TMAs (compared to Alt. A). The result would be a direct, long-term moderate decrease in access opportunities for all travelers to these areas. However, the consideration of motorized travel to other resources would minimize impacts to soils, vegetation, wildlife and sensitive cultural areas (refer to those corresponding impact analysis discussions by alternative).

General Travel Access: These results would be a long-term, direct, widespread, moderate reduction in general public access opportunities via motorized modes of travel. The closures would not greatly impact administrative users, but the additional administrative use only routes would, to a minor degree in the long-term, increase access for such uses. This would result in a minor, long-term, direct loss of motorized access opportunities for the general public and a negligible change in access availability for administrative uses, as such uses would continue to have access on administrative routes, absent of public use.

Route Density: As such, in this Alternative, the route designations of Alternative D would constitute a long-term, direct, localized major restriction of motorized access in terms of travel dispersal opportunities in 8 of 10 TMAs. However, limiting route densities would benefit sensitive resource concerns due to wildlife, cultural, or other ecologically sensitive areas (refer to those corresponding resource sections for impact analysis).

Route Proliferation: This Alternative would directly reduce the potential for illegal route creation in the long-term, which would contribute to minimizing harassment of wildlife, disruption of wildlife habitats, damage to soil, watershed, vegetation, air, or other resources, and the potential for adversely affecting natural areas to a moderate to major degree by reducing the number of routes with known route proliferation concerns (43 CFR 8342.1(a)(b)(d)).

Public Safety Concerns: This direct, long-term, reduction of routes would promote safety of all users of the public lands to a moderate to major degree by reducing the potential for public safety incidents on routes with known safety concerns (43 CFR 8342.1).

O.5.2 Implementation Level Impacts from Trails and Travel Management

This section discusses effects of alternatives for 11 site-specific travel plan areas (implementation decisions). This section is organized by resources/resource uses, by alternative, where implementation level impacts from motorized travel management actions, relative to 11 Travel Management Areas, would result in measurable impacts. Those resources/resources uses not specifically discussed would have negligible impacts.

O.5.2.1 Air Resources

O.5.2.1.1 Impacts Common to All Alternatives

Management of trails and routes will impact air quality. The greatest impacts to air quality from the use of trails and routes would result from motorized travel. These impacts vary greatly by the route/trail surface, transportation mode, soil type, soil condition, size of vehicle, and speed of travel.

Most uses would increase fugitive dust; however there are no areas within the planning area which have a severe WEI rating. Additionally, mechanized travel would also increase tail pipe emissions. Throughout all alternatives the BLM would either leave routes open or closed, however simply closing roads does not reduce or eliminate impacts to air quality. The public is likely to shift use to other roads in the same area or move to a different area to recreate. In some instances, shifting to a different area could mean longer travel distances resulting in more impacts to air quality. Fewer miles of open roads would concentrate usage and impacts on the remaining open roads in an area. Since usage would likely remain at the same level, tailpipe emissions would be unaffected and localized fugitive dust levels would increase where more concentrated route use occurs.

Fugitive dust levels would decrease where road closures allow native plants to re-colonize the disturbed areas. Limiting authorized travel to administrative use would reduce traffic to a minimum and would have a similar effect to closures. The net effect of limiting and/or closing routes would be localized and would not be expected to offset increases where use is more concentrated.

Construction or maintenance of higher standard routes has the potential for greater speeds increasing fugitive dust. Unimproved and un-maintained routes generally keep vehicle speeds lower, reducing dust levels.

Impacts to air quality in the immediate vicinity of heavily used off road areas would be minor to moderate but would be short in duration. Route-maintenance activities, which would be limited to existing route types, maintenance levels, and frequencies, would also result in emissions.

Watering and the use of chemical dust suppressants would greatly reduce the amount of dust emissions from maintenance and on haul roads from gravel pits, mines, and oil drilling sites.

O.5.2.1.2 Alternative A

Impacts would be the same as impacts common to all alternatives. Under Alternative A, all routes are “open” to all types of vehicle travel during all seasons with the exception of Shepherd Ah-Nei, South Hills, Sundance Lodge, Four Dances, Pompeys Pillar, and the Pryor Mountain Wild Horse Range which are closed or have designated open travel routes. Management under this alternative is summarized in the table below:

Travel Management Alternative A	
Closed to All Vehicles	109 miles
Open to Motorcycles Only	1357 acres
Open to Technical 4WD by Permit Only	0
Open to Vehicles 50” or less	53 miles
Open Routes	764 miles
Open with additional management/seasonal closures	7 miles
Administrative Use Only	61 miles

The Shepherd Ah-Nei area has 53 miles of trails open for ATV and motorcycle use subject to closures to protect rider safety and protect resource values. South Hills (1,097 acres) is open to motorcycles only. Sundance Lodge (387 acres), Four Dances (784 acres) are closed to motorized travel and emissions from OHV are reduced to only those from administrative activities. All routes at Pompeys Pillar outside the National Monument are closed except for administrative use. The National Monument visitors travel the 1/2 mile of paved road to the monument.

O.5.2.1.3 Alternative B

Impacts would be the same as impacts common to all alternatives. Management under Alternative B is summarized in the table below.

Travel Management Alternative B	
Closed to All Vehicles	397 miles
Closed to Motorcycles	1357 acres
Open to Technical 4WD by Permit Only	0
Open to Vehicles 50” or less	65 miles
Open Routes	272 miles
Open with additional management/seasonal closures	12 miles
Administrative Use Only	247 miles

Closures of routes would likely move usage to other open routes or other areas with open routes, impacts to air resources would be unchanged. Routes designated open or limited with monitoring would increase awareness of emerging air quality issues and allow timely adaptive management thus reducing air resource impacts. Routes that are designated open with monitoring would provide the greatest opportunity to address air resource impacts. Routes that are designated limited with monitoring or limited to administrative use with monitoring would allow vegetative re-colonization and allow timely use of adaptive management, but usage and impacts would likely be shifted to another area. While Alternative B closes the most routes in the TMAs and the number of open with monitoring routes is larger than other Alternatives. Since public demand for access to public lands is expected to rise and closing routes would likely concentrate usage, Alternative B affords the best opportunity to limit impacts to air quality.

The overall impact to air quality in this Alternative would not be expected to exceed air quality standards.

O.5.2.1.4 Alternative C

Impacts would be the same as impacts common to all alternatives. Eleven areas would be designated as TMAs and routes managed under a Travel Management Plan. More specific management designated in a travel plan would be expected to further lower impacts to air resources. The overall impact to air quality in this Alternative would be localized and minor to negligible. The public would have access to 736 miles of open road subject to closures for safety and to protect resources. Increased demand and usage is expected but the overall impact to air quality in this Alternative would be localized and short term.

The following management under Alternative C is listed in the table below.

Travel Management Alternative C	
Closed to All Vehicles	6 miles
Open to Motorcycles only	1357 acres
Open to Technical 4WD by Permit Only	1.5 miles
Open to Vehicles 50" or less	71 miles
Open Routes	825 miles
Open with additional management/seasonal closures	0.2 miles
Administrative Use Only	91 miles

O.5.2.1.5 Alternative D

Impacts would be the same as impacts common to all alternatives. Eleven areas would be designated as TMAs and routes managed under a Travel Management Plan. The number of miles of Open routes is 234 miles lower than Alternative A. Less open routes would allow more route reclamation resulting in less emissions and fugitive dust. More specific management designated in a travel plan would be expected to further lower the impacts. The overall impact to air quality

in this Alternative would be localized and negligible. Management under this alternative is summarized in the table below:

Travel Management Alternative D	
Closed to All Vehicles	66 miles
Open to Motorcycles only	1357 acres
Open to Technical 4WD by Permit Only	0
Open to Vehicles 50" or less	69 miles
Open Routes	530 miles
Open with additional management/seasonal closures	15 miles
Administrative Use Only	313 miles

O.5.2.2 Soil Resources

O.5.2.2.1 Impacts Common to All Alternatives

The primary impacts to soils from other management programs in the Planning Area include human-caused excessive erosion, soil compaction, and visual scars. These, in turn, can affect other resources such as water quality and quantity, health and makeup of vegetation communities, riparian function, health and sustainability of fish and wildlife habitats, etc.

Specifically, travel and transportation attributes, such as route type (primitive roads versus maintained roads), frequency and levels of use, types of vehicles, vehicle speeds, route structure, soil type, and surface type, come into play when assessing impacts to soils. Planning decisions that involve changes to the available number and overall miles of roads open for public or administrative use, the number of acres open or closed to off-road travel, road improvement or maintenance activities, or specific travel restrictions (e.g., speed limits, seasonal restrictions; etc.) would affect soils resources to varying degrees. Inasmuch as the use of motor vehicles on public routes constitutes the primary means of access to public lands for visitors to engage in a wide variety of motorized and non-motorized recreation activities and for commercial and administrative users to access facilities and resources, the supply and spatial extent of travel access networks for motor vehicles is an important factor in the condition of soils in the Travel Management Areas (TMA).

Travel through the TMAs is expected to increase due to the increased demand for open space and commercial recreation opportunities on public lands, as well as periodic up trends in energy exploration and development, including renewable energy production.

In analyzing the potential effects of route designations on soils, differences between each action alternative's set of route designations and the no action, current management route designations are analyzed and expressed primarily in terms of 'absolute percent change' versus a more familiar method of expressing 'relative percent change'. As a comparative example, in relative terms, an alternative that proposes to close 562 routes in Alternative X out of the total 877 routes

that exist where only 89 routes out of 877 routes are closed under No Action represents a 631% increase in the number of routes closed in Alternative X relative to the No Action Alternative. In absolute terms, however, the 89 closed routes in the No Action Alternative represent 10% of the current total network while under Alternative X, the 562 closed routes represent 64% of the potential network, resulting in 54% more routes closed in Alternative X than in the No Action Alternative. Planners determined to use the ‘absolute percent change’, primarily because a) the route ‘population’, or total number of routes under consideration for designation is constant for all alternatives for each query and b) planners believe the results better depict the ‘shifting’ of designations within alternatives using the same route inventory.

By alternative, the impacts of route designations were analyzed with respect to several variables. These analyses were used to determine the effects of each alternative’s route designations on soil resources.

O.5.2.2.2 Alternative A

In the following analyses, for all alternatives, impacts are categorized as:

- *N = Negligible = 8 out of 10 to 10 out of 10 routes open*
- *MI = Minor = 5 out of 10 to 7 out of 10 routes open*
- *MO = Moderate = 3 out of 10 to 4 out of 10 routes open*
- *MA = Major = 0 out of 10 to 2 out of 10 routes open*

Soils with Severe Water Erosion Hazard Rating: Under the No Action Alternative, the 241 existing BLM routes (95 miles) that comprise the travel networks within soils with a severe water erosion rating would continue to be managed using five existing designation types, almost 9 out of every 10 existing routes (about 87%) open to all motorized uses. Additionally, the route density within these severe soils would remain fairly constant for the long-term at 4.2 open routes per square mile and 1.6 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes affects approximately 129 acres or 0.4% of the 31,783 acres of soils with a severe water erosion hazard rating within the TMAs. In other words, for every 1 acre of route footprint within these soils, 245 acres would be without routes.

Under the No Action Alternative, the current open route network would continue the long-term, widespread conditions that directly and moderately affect soils rated as severe, regarding the water erosion hazard. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may increase to a minor, short-term extent on a localized basis as these new routes potentially become available and spread out public use; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 32 routes at 14 miles, the long-term, direct, localized effect of these restricted routes on reducing soil loss is negligible, due to the availability of 209 open routes at 82 miles with the route densities that are described above.

Soils with Moderate Water Erosion Hazard Rating: Under the No Action Alternative, the 323 existing BLM routes (173 miles) that comprise the travel networks within soils with a moderate water erosion rating would continue to be managed using five existing designation types, over 8 out of every 10 existing routes (about 85%) open to all motorized uses. Additionally, the route density within these moderate soils would remain fairly constant for the long-term at 3.9 open routes per square mile and 2.0 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes affects approximately 192 acres or 0.4% of the 45,512 acres of soils with a moderate water erosion hazard rating within the TMAs. In other words, for every 1 acre of route footprint within these soils, 236 acres would be without routes.

Under the No Action Alternative, the current open route network would continue the long-term, widespread conditions that directly and moderately affect soils rated as moderate, regarding the water erosion hazard. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may increase to a minor, short-term extent on a localized basis as these new routes potentially become available and spread out public use; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 48 routes at 32 miles, the long-term, direct, localized effect of these restricted routes on reducing soil loss is negligible, due to the availability of 275 open routes at 142 miles with the route densities that are described above.

TMAs with known erosion scars: Under the No Action Alternative, of the 206 routes that were noted during evaluation as having erosion scars, 182 or 88% would be open to all types of motor vehicle use, 5 or 2% would be open with restrictions, while 16 routes or 8% would be limited to administrative use only and 3 routes or 2% would be closed. In the long-term, almost 9 out of every 10 existing BLM routes with erosion scars would remain available for public access in the No Action Alternative. With 88% of existing routes potentially open and only 12% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion potential in areas with known erosion scars would be negligible (43 CFR 8342.1(a)(d)).

Route Types: Motorized use occurs in many forms, all of which depend on travel networks that contain routes that are not only open to such uses, but also route types and/or conditions that are more conducive to particular types of motorized use. Well-designed, regularly maintained routes can do much in the way of reducing excessive erosion during heavy precipitation events, while a more primitive route with no design and little maintenance might actually contribute more to excessive erosion, though the actual surface disturbance area is less.

With regard to route types, of the 877 routes under the No Action Alternative, 50 routes (about 6%) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 1 route (0.1%) classed as “semi-primitive roads”, 673 routes (76.8%) classed as “primitive roads” and 8 routes (0.9%) classed as ‘trails’ would be open/open with restrictions. Conversely, 1 route (about 0.1%) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 14 routes (1.6%) classed as “semi-

primitive roads”, 127 routes (14.5%) classed as “primitive roads” and 1 route (0.1%) classed as ‘trails’ would be administrative use only or closed.

Vehicle Use Levels in TMAs: Of the existing BLM routes within the TMAs under the No Action Alternative, 542 open routes (470 miles) or 81% are considered by resource specialists to have low vehicle use levels. Conversely, 95 open routes (219 miles) or 14% have vehicle use levels estimated as moderate and only 33 open routes (95 miles) or 5% are estimated to have heavy vehicle use. The combination of 89 closed routes (108 miles or 10% of all routes) and the continuation of low vehicle use levels on 81% of all open routes (60% of open route miles) would directly contribute, in the long-term, to lessening of the effects of route use, such as excessive loss of fine soils materials, soil compaction, the potential of off-road driving, etc. to a minor degree (43 CFR 8342.1(a)(d)).

Compared to Alternatives B and D, Alternative A would designate a much higher percentage of roads as “open”, which would lead to increased resource conflicts from impacts identified in this section. Alternative A would have similar impacts to soil resources as Alternative C.

O.5.2.2.3 Alternative B

Soils with Severe Water Erosion Hazard Rating: Under Alternative B, the 241 existing BLM routes (95 miles) that comprise the travel networks within soils with a severe water erosion rating would be managed using five existing designation types shown, with just over 2 out of every 10 existing routes (49 routes or about 20%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 65% fewer open routes in Alternative B than would be open in Alternative A. Additionally, the route density within these soil areas would be reduced by 77% for the long-term to 1.0 open route per square mile and reduced by 50% to 0.8 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 79 acres or 0.25% of the 31,783 acres of severe rated soils within the TMAs (34% fewer acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 403 acres would be without routes.

Alternative B proposes closures and restrictions to administrative use only on a combined 192 routes at 54 miles, a 66% more than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is moderate to major, due to the reduced availability and use of open routes to only 49 (at 41 miles) with the route densities that are described above.

Soils with Moderate Water Erosion Hazard Rating: Under Alternative B, the 323 existing BLM routes (173 miles) that comprise the travel networks within soils with a moderate water erosion rating would be managed using five existing designation types shown, with almost 2 out of every 10 existing routes (55 routes or about 17%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 68% fewer open routes in Alternative B than would be open in Alternative A. Additionally, the route density within these soil areas would be reduced by 80% for the long-term to 0.8 open routes per square mile and reduced by 42% to 1.2 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 118 acres or 0.26% of the 45,512 acres of moderate rated soils within the TMAs (32% fewer acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 383 acres would be without routes.

Alternative B proposes closures and restrictions to administrative use only on a combined 268 routes at 91 miles, a 68% more than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is moderate to major, due to the reduced availability and use of open routes to only 55 (at 82 miles) with the route densities that are described above.

TMA with known erosion scars: Under Alternative B, of the 206 routes that were noted during evaluation as having erosion scars, 26 or 13% would be open to all types of motor vehicle use (almost 76% fewer than in Alternative A), 5 or 2% would be open with restrictions (same as Alternative A), while 60 routes or 29% would be limited to administrative use only (21% more than in Alternative A) and 115 routes or 56% would be closed (54% more than in Alternative A). In the long-term, almost 2 out of every 10 existing BLM routes having erosion scars would remain available for public access in Alternative B. With 18% of existing routes potentially open and 82% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion potential in areas with known erosion scars would be major (43 CFR 8342.1(a)(d)).

Route Types: With regard to route types, of the 877 routes under the Alternative B, 29 routes (about 2% fewer than Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 1 route (same as Alternative A) classed as “semi-primitive roads”, 56 routes (70% fewer than Alternative A) classed as “primitive roads” and 2 routes (0.7% fewer than Alternative A) classed as ‘trails’ would be open/open with restrictions. Conversely, 22 routes (about 2.4% more than Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 14 routes (same as Alternative A) classed as “semi-primitive roads”, 742 routes (70% more than Alternative A) classed as “primitive roads” and 7 routes (0.7% more than Alternative A) classed as ‘trails’ would be administrative use only or closed.

Vehicle Use Levels in TMAs: Of the existing BLM routes within the TMAs under the Alternative B, 31 of the open routes (107 miles) or 34% are considered by resource specialists to have low vehicle use levels. Conversely, 35 of the open routes (154 miles) or 44% have vehicle use levels estimated as moderate and only 26 of the open routes (89 miles) or 28% are estimated to have heavy vehicle use. The combination of 562 closed routes (397 miles or 64% of all routes) and the low vehicle use levels on 34% of open routes (31% of open route miles) and 79% of all administrative use only routes (78% of all administrative route miles) would directly contribute, in the long-term, to lessening of the effects of route use, such as excessive loss of fine soils materials, soil compaction, the potential of off-road driving, etc. to a major degree (43 CFR 8342.1(a)(d)).

Alternative B would be the most protective and beneficial to soil resources with nearly 64% of all route miles closed.

O.5.2.2.4 Alternative C

Soils with Severe Water Erosion Hazard Rating: Under Alternative C, the 241 existing BLM routes (95 miles) that comprise the travel networks within soils with a severe water erosion rating would be managed using five existing designation types shown, with almost 9 out of every 10 existing routes (214 routes or about 89%) open to all motorized uses or open with special

seasonal or vehicular restrictions. This would result in 2% more open routes in Alternative C than would be open in Alternative A. Additionally, the route density within these soil areas would be increased by 2.4% for the long-term to 4.3 open routes per square mile and increased by 6.4% to 1.7 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 136 acres or 0.4% of the 31,783 acres of severe rated soils within the TMAs (5% more acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 232 acres would be without routes.

Alternative C proposes closures and restrictions to administrative use only on a combined 27 routes at 54 miles, a 2% fewer than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is negligible, due to the increased availability and use of open routes to 214 (at 87 miles) with the route densities that are described above.

Soils with Moderate Water Erosion Hazard Rating: Under Alternative C, the 323 existing BLM routes (173 miles) that comprise the travel networks within soils with a moderate water erosion rating would be managed using five existing designation types shown, with over 8 out of every 10 existing routes (271 routes or about 84%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 1% fewer open routes in Alternative C than would be open in Alternative A. Additionally, the route density within these soil areas would be decreased by 1.5% for the long-term to 3.8 open routes per square mile and increased by 13% to 2.2 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 215 acres or 0.5% of the 45,512 acres of moderate rated soils within the TMAs (9.6% more acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 211 acres would be without routes.

Alternative C proposes closures and restrictions to administrative use only on a combined 52 routes at 14 miles, a 1% more than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is negligible, due to the increased availability and use of open routes to 271 (at 159 miles) with the route densities that are described above.

TMAs with known erosion scars: Under Alternative C, of the 206 routes that were noted during evaluation as having erosion scars, 176 or 85% would be open to all types of motor vehicle use (3% fewer than in Alternative A), 4 or 2% would be open with restrictions (slightly less than Alternative A), while 20 routes or 10% would be limited to administrative use only (2% more than in Alternative A) and 6 routes or 3% would be closed (2% more than in Alternative A). In the long-term, over 8 out of every 10 existing BLM routes having erosion scars would remain available for public access in Alternative C. With 87% of existing routes potentially open and only 13% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing erosion potential in areas with known erosion scars would be negligible (43 CFR 8342.1(a)(d)).

Route Types: With regard to route types, of the 877 routes under the Alternative C, 50 routes (same as Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 12 routes (1.3% fewer than Alternative A) classed as “semi-primitive roads”, 664 routes (1% fewer than Alternative A) classed as “primitive roads” and 7 routes (0.1% fewer than Alternative A) classed as ‘trails’ would be

open/open with restrictions. Conversely, 1 route (same as Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 3 routes (1.2% fewer than Alternative A) classed as “semi-primitive roads”, 136 routes (1% more than Alternative A) classed as “primitive roads” and 2 routes (0.1% more than Alternative A) classed as ‘trails’ would be administrative use only or closed.

Vehicle Use Levels in TMAs: Of the existing BLM routes within the TMAs under the Alternative C, 533 of the open routes (504 miles) or 80% are considered by resource specialists to have low vehicle use levels. Conversely, 95 of the open routes (221 miles) or 14% have vehicle use levels estimated as moderate and only 35 of the open routes (96 miles) or 5% are estimated to have heavy vehicle use. The combination of 22 closed routes (6 miles or 3% of all routes), the low vehicle use levels on 80% of the open routes (61% of open route miles) and 98% of administrative use only routes (99% of administrative route miles) would directly contribute, in the long-term, to lessening of the effects of route use, such as excessive loss of fine soils materials, soil compaction, the potential of off-road driving, etc. to a minor degree (43 CFR 8342.1(a)(d)).

Alternative C actions would have the most adverse impacts to soil resources by managing approximately 90% of route miles as open and leaving almost 86% of roads open that are associated with moderate and severely erodible soils.

O.5.2.2.5 Alternative D

Soils with Severe Water Erosion Hazard Rating: Under Alternative D, the 241 existing BLM routes (95 miles) that comprise the travel networks within soils with a severe water erosion rating would be managed using five existing designation types shown, with over 5 out of every 10 existing routes (131 routes or about 54%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 32% fewer open routes in Alternative D than would be open in Alternative A. Additionally, the route density within these soil areas would be decreased by 37% for the long-term to 2.6 open routes per square mile and decreased by 20% to 1.3 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 110 acres or 0.35% of the 31,783 acres of severe rated soils within the TMAs (13% fewer acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 288 acres would be without routes.

Alternative D proposes closures and restrictions to administrative use only on a combined 110 routes at 30 miles, a 32% more than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is minor, due to the increased availability and use of open routes to 131 (at 65 miles) with the route densities that are described above.

Soils with Moderate Water Erosion Hazard Rating: Under Alternative D, the 323 existing BLM routes (173 miles) that comprise the travel networks within soils with a moderate water erosion rating would be managed using five existing designation types shown, with over 4 out of every 10 existing routes (148 routes or about 46%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 39% fewer open routes in Alternative D than would be open in Alternative A. Additionally, the route density within these soil areas would be decreased by 46% for the long-term to 2.1 open routes per square mile and

decreased by 18% to 1.6 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes would affect approximately 160 acres or 0.35% of the 45,512 acres of moderate rated soils within the TMAs (14% fewer acres than in Alternative A). In other words, for every 1 acre of route footprint within these soils, 284 acres would be without routes.

Alternative D proposes closures and restrictions to administrative use only on a combined 175 routes at 73 miles, a 39% more than in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing soil loss is minor to moderate, due to the increased availability and use of open routes to 148 (at 116 miles) with the route densities that are described above.

TMAs with known erosion scars: Under Alternative D, of the 206 routes that were noted during evaluation as having erosion scars, 79 or 38% would be open to all types of motor vehicle use (50% fewer than in Alternative A), 9 or 4% would be open with restrictions (2% more than Alternative A), while 96 routes or 47% would be limited to administrative use only (39% more than in Alternative A) and 22 routes or 11% would be closed (9% more than in Alternative A). In the long-term, just over 4 out of every 10 existing BLM routes having erosion scars would remain available for public access in Alternative D. With 42% of existing routes potentially open and 58% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion potential in areas with known erosion scars would be moderate (43 CFR 8342.1(a)(d)).

Route Types: With regard to route types, of the 877 routes under the Alternative D, 40 routes (about 1.1% fewer than Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 4 routes (0.3% more than Alternative A) classed as “semi-primitive roads”, 298 routes (about 43% fewer than Alternative A) classed as “primitive roads” and 4 routes (0.5% fewer than Alternative A) classed as ‘trails’ would be open/open with restrictions. Conversely, 11 routes (about 1.1% more than Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 11 routes (0.4% fewer than Alternative A) classed as “semi-primitive roads”, 502 routes (43% more than Alternative A) classed as “primitive roads” and 5 routes (0.4% more than Alternative A) classed as ‘trails’ would be administrative use only or closed.

Vehicle Use Levels in TMAs: Of the existing BLM routes within the TMAs under the Alternative D, 218 of the open routes (296 miles) or 66% are considered by resource specialists to have low vehicle use levels. Conversely, 79 open routes (212 miles) or 24% have vehicle use levels estimated as moderate and only 34 of the open routes (96 miles) or 10% are estimated to have heavy vehicle use. The combination of 80 closed routes (66 miles or 9% of all routes) and the low vehicle use levels on 66% of open routes (49% of open route miles) and 95% of administrative use only routes (96% administrative route miles) would directly contribute, in the long-term, to lessening of the effects of route use, such as excessive loss of fine soils materials, soil compaction, the potential of off-road driving, etc. to a moderate degree (43 CFR 8342.1(a)(d)).

O.5.2.3 Water Resources

O.5.2.3.1 Impacts Common to All Alternatives

Motorized and mechanized modes of travel on the BLM-administered land (outside of established TMAs) would be limited to existing roads and trails. Site-specific travel planning would be initiated if resources were impacted (not meeting Land Health Standards, excessive erosion). In all Alternatives, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. Prohibiting off road travel reduces erosion and protects water quality and riparian resources.

Travel planning designated 11 Travel Management Areas (TMAs) to designate specific routes as open, closed or limited to administrative use. Resource values and impacts from resource uses were used to develop a range of Alternatives designed to protect resources and comply with specific resource objectives while maintaining a sound multiple use condition.

The primary issues related to water resources are the preservation of water quality, erosion, and drainage from road surfaces into wetlands. More specifically, the existence of routes with their areas of surface disturbance, as well as the use of motor vehicles on those routes that are associated with water courses and/or sensitive soils constitutes a primary activity that has the potential to adversely affect water resources. Relative to travel management, this can occur by improper placement of routes; inappropriate behavior by visitors in these areas; the spread of invasive species or noxious weeds; or unauthorized off-road vehicle use. Therefore, the supply and spatial extent of travel access networks for motor vehicles is an important component for managing or providing various levels of protection for water resources.

O.5.2.3.2 Alternative A

See impacts common to all for general discussion pertaining to travel management impacts to water resources.

Motorized and mechanized modes of travel on the BLM-administered land (outside of established TMAs) would be limited to existing roads and trails. Site-specific travel planning would be initiated if water resources were impacted (not meeting Land Health Standards, excessive erosion). The BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. Prohibiting off road travel reduces erosion and protects water quality and riparian resources.

The following analysis determines the impacts of potential water pollution sources associated with routes in proximity to different types of water sources and when in areas where severe or moderate erosion rated soils were identified. These characteristics were determined to have the most potential to impact water resources, pertaining to travel management.

Routes in and through perennial channels (within 25 feet): Of the 1.1 miles (5 routes) that are within 25 feet of perennial channels, 1 mile (4 routes) would be open and 0.1 mile (1 route) would be closed. Therefore 91 percent of these routes would continue producing sediment in close proximity of the stream. This sediment has a high likelihood of impacting water quality.

There is also a high likelihood that noxious invasive species could increase thereby decreasing bank stability and producing additional sediment.

Routes associated with perennial channels (in, through, crossing, leads to/end at, proximate within 0.25 miles): Under the No Action Alternative, of the 63 routes that are in or through or proximate within 0.25 miles of perennial channels, 55 routes, or 87 percent, would be open to all types of motor vehicle use, and 8 routes or 13 percent would be closed. In the long-term, almost 9 out of every 10 existing BLM routes in or through or within 0.25 miles of perennial channels would remain available for public access. The localized, long-term effect of these open routes (erosion, drainage from road surfaces and the spread of noxious weeds into wetlands) and the potential for direct and indirect impacts to water resources would be major (43 CFR 8342.1(a)(d)).

Routes crossing or proximate to perennial channels in severe/moderate water erosion rated soils (in, through, within 300 feet of perennial): All 4.2 miles (14 routes) that are in, through or within 300 feet of perennial channels that are in severe or moderate water erosion rated soils, would be open to all vehicle uses. The actual footprint (area of surface disturbance) of open routes would be approximately eight acres in these areas. These sites have a high likelihood of extreme erosion with sediment delivery being a function of distance to the stream (43 CFR 8342.1(a)(d)).

Routes in and through intermittent channels (within 10 feet): Of the 158 routes with 82 miles that are in or through or within 10 feet of intermittent channels, 122 routes with 58 miles and 1 route at 5 miles open with vehicle restrictions would be open to use (77%), while 8 routes with 4 miles (5%) limited to administrative use and 27 routes with 15 miles (18%) would be closed. With about 77 percent of existing route miles potentially open and about 23 percent potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these routes impacting water resources through erosion and drainage from road surfaces and the spread of noxious weeds into wetlands and the potential for direct and indirect impacts to water values would be major (43 CFR 8342.1(a)(d)).

Routes associated with intermittent channels (in, through, crossing, leads to/end at, proximate within 300 feet): Of the 642 routes that are in, through or within 300 feet of intermittent channels, 525 routes or 82 percent would be open to use, while 1 of the routes or 0.2 percent would be open with vehicle restrictions and 6 routes or 0.9 percent would be open with seasonal restrictions. Additionally, 35 routes or 6 percent would be limited to administrative use only and 75 routes or 12 percent would be closed. In the long-term, over 8 out of every 10 existing BLM routes in, through or within 300 feet of intermittent channels would remain available for public access in the No Action Alternative. With about 83 percent of existing routes potentially open and about 17 percent potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these routes impacting water resources through erosion and drainage from road surfaces and the spread of noxious weeds into wetlands and the potential for direct and indirect impacts to water values would be major (43 CFR 8342.1(a)(d)).

O.5.2.3.3 Alternative B

See impacts common to all for general discussion pertaining to travel management impacts to water resources.

In action alternatives the BLM establishes Travel Management Areas (TMAs) to minimize impacts and provide a spectrum of motorized and non-motorized recreational opportunities. In each TMA motorized travel routes are designated open, closed or open with restrictions by resource issues analyzed in travel planning. Outside of the TMAs, motorized and mechanized travel would be limited to designated roads and trails as established in the 2001 OHV EIS. These routes have negligible impacts on water resources. Riparian areas are monitored for PFC on a regular basis and resource issues, primarily erosion/run-off and noxious invasive species spread, would be managed on a case by case basis as they are identified. In this alternative, riparian areas would be prioritized, by resource concerns, and treated to maintain or improve water quality conditions.

An implementation and monitoring plan would be initiated for the TMAs within 3-5 years of the ROD. The plan would include signing, mapping, information and education, and monitoring of impacts associated with continued use on designated open routes, etc. The implementation plan would also identify criteria for route variances specific to each TMA. In this plan, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. The travel plan would also allow for, upon project completion, roads used for commercial or administrative access on BLM-administered lands would be reclaimed, unless the route provides specific benefits for public access, minimizes impacts to the resource and would be considered on a case-by-case basis.

The BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. Prohibiting off road travel reduces erosion and protects water quality and riparian resources.

Alternative B is the most restrictive in closing roads or limiting them to vehicle types, dates or to administrative use only. Impacts to water quality from the effects of erosion, sediment delivery to water sources and the spread of noxious weeds to areas that may impact water quality, would be the least in alternative B travel management.

The following analysis determines the impacts of potential water pollution sources associated with routes in proximity to different types of water sources and when in areas where severe or moderate erosion rated soils were identified. These characteristics were determined to have the most potential to impact water resources, pertaining to travel management.

Routes in and through perennial channels (within 25’): Of the 5 routes that are within 25’ of perennial channels, 2 routes with 0.3 miles (27%) would be open, while no routes would be limited to administrative use only and 3 routes with 0.8 miles (73%) would be closed. Therefore 27 percent of these route miles would continue producing sediment in close proximity of the stream. Alternative B road designations would have the least impact, with less sediment input to perennial channels and less likelihood of promoting noxious weed infestations (43 CFR 8342.1(a)(d)).

Routes associated with perennial channels (in, through, crossing, leads to/end at, proximate within 0.25 miles): Under Alternative B, of the 63 routes that are in or through or within 0.25 miles of perennial channels, 17 or 27% would be open to all types of motor vehicle use, with 2 routes (3.2%) open with vehicle restrictions. Additionally, 9 routes or 14% would be limited to administrative use only and 35 routes or 56% would be closed. With 70 percent of the routes designated closed or limited to administrative use only (as opposed to only 13 percent in alternative A) sediment production and potential noxious weed infestations would be minimized (43 CFR 8342.1(a)(d)).

Routes crossing or proximate to perennial channels in severe/moderate water erosion rated soils (in, through, within 300' of perennial): Of the 14 routes that are in, through or within 300' of perennial channels that are in severe or moderated water erosion rated soils, 5 routes with 2.8 miles (67%) would be open to all vehicle uses. Additionally, 4 routes with 0.4 miles (10%) would be limited to administrative use only and 5 routes with 1 mile (23%) would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes would be approximately 6.4 acres in these areas (21% fewer than Alternative A). The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 1.2 acres (15% more than Alternative A). With 33 percent of the route miles closed or limited to administrative access only (as opposed to zero percent in alternative A) impacts from sediment production and noxious weed infestation would be less than other alternatives (43 CFR 8342.1(a)(d)).

Routes in and through intermittent channels (within 10'): Of the 158 routes that are in or through or within 10' of intermittent channels, 33 routes with 27 miles (32%) would be open to use with 4 routes at 6.8 miles (8%) open with vehicle restrictions. Additionally, 46 routes with 17.6 miles (21%) would be limited to administrative use only and 75 routes with 32 miles (39%) would be closed. Having 50% of the route miles closed or limited to administrative use only (as compared to 23% in alternative A) would minimize impacts to water resources from sediment production and noxious weed infestation (43 CFR 8342.1(a)(d)).

Routes associated with intermittent channels (in, through, crossing, leads to/end at, proximate within 300'): Of the 642 routes that are in, through or within 300' of intermittent channels, 71 routes or 11% would be open to use, while 4 routes or 0.6% would be open with vehicle and 5 routes or 0.8% would be open with seasonal restrictions (for a total of 70% fewer than Alternative A). Additionally, 176 routes or 27% would be limited to administrative use only (22% more than Alternative A) and 386 routes or 60% would be closed (48% more than Alternative A). Having 87% of the routes closed or limited to administrative use only (as opposed to 17% in alternative A) would minimize impacts to water resources from sediment production and noxious weed infestation (43 CFR 8342.1(a)(d)).

O.5.2.3.4 Alternative C

See impacts from alternative B for general discussion pertaining to travel management impacts to water resources in action alternatives.

Alternative C has the least restrictions to road designations (fewer routes closed, limited by dates or vehicle type, or limited to administrative use only). Alternative C would have the most

adverse impacts to water quality from the effects of erosion, sediment delivery to water sources and the spread of noxious weeds to areas that would impact water quality.

Routes in and through perennial channels (within 25’): Of the 5 routes that are within 25’ of perennial channels, 5 routes with 1.1 miles (100%) would be open and zero routes would be closed or limited (as opposed to 73 percent in alternative B). (43 CFR 8342.1(a)(d)). Alternative C road designations would have the highest impact (similar to alternative A), with the most potential for sediment input to perennial channels and promoting noxious weed infestations that would impact water quality (43 CFR 8342.1(a)(d)).

Routes associated with perennial channels (in, through, crossing, leads to/end at, proximate within 0.25 miles): Under Alternative C, of the 63 routes that are in or through or within 0.25 miles of perennial channels, 60 or 95% would be open to all types of motor vehicle use, with 2 routes (3.2%) open with vehicle restrictions. Additionally, 1 route or 2% would be limited to administrative use only and no routes would be closed. Having 98% of existing routes open and only 2% limited to administrative use only, impacts from sediment input to perennial channels and potential noxious weed infestations would impact water quality more than other alternatives (43 CFR 8342.1(a)(d)).

Routes crossing or proximate to perennial channels in severe/moderate water erosion rated soils (in, through, within 300’ of perennial): Of the 14 routes that are in, through or within 300’ of perennial channels that are in severe or moderated water erosion rated soils, 14 routes with 4.2 miles (100%) would be open to all vehicle uses (same as Alternative A). The actual footprint (area of surface disturbance) of open routes would be approximately 6.4 acres in these areas (same as Alternative A). The impacts for Alternative C would be the same as Alternative A.

Routes in and through intermittent channels (within 10’): Of the 158 routes that are in or through or within 10’ of intermittent channels, 130 routes with 64 miles (78%) would be open to use and 4 routes with 7.3 miles (9%) would be open with vehicle restrictions. Additionally, 20 routes with 10 miles (12%) would be limited to administrative use only and 4 routes with 0.8 miles (1%) would be closed. With about 87% of existing routes potentially open and about 13% potentially limited to administrative use only or closed to motor vehicle use (as opposed to 86 percent in alternative B), the impacts from sediment input to perennial channels and potential noxious weed infestations would be higher than alternatives B and D (43 CFR 8342.1(a)(d)).

Routes associated with intermittent channels (in, through, crossing, leads to/end at, proximate within 300’): Of the 642 routes that are in, through or within 300’ of intermittent channels, 546 routes or 85% would be open to use, while 6 routes or 1% would be open with vehicle and 5 routes and no routes would be open with seasonal restrictions. Additionally, 76 routes or 12% would be limited to administrative use only and 14 routes or 2% would be closed. Having about 86% of existing routes potentially open and about 14% potentially limited to administrative use only or closed to motor vehicle use, impacts from sediment input to perennial channels and potential noxious weed infestations would impact water quality more than alternatives B and D (43 CFR 8342.1(a)(d)).

O.5.2.3.5 Alternative D

See impacts from alternative B for general discussion pertaining to travel management impacts to water resources in action alternatives.

Alternative D has a moderate number of restrictions to road designations compared to other Alternatives. Alternative D would have a moderate level of impacts to water quality from the effects of erosion, sediment delivery to water sources and the spread of noxious weeds to areas that would impact water quality, compared to other alternatives.

Routes in and through perennial channels (within 25’): Of the 5 routes that are within 25’ of perennial channels, 2 routes with 0.3 miles (27%) would be open, while 3 routes with 0.8 miles (73%) would be limited to administrative use only and no routes would be closed. With only 27% of existing routes potentially open and 73% potentially limited to administrative use only, the impacts from sediment input to perennial channels and potential noxious weed infestations would affect water quality more than alternative B, but less than alternatives A and C (43 CFR 8342.1(a)(d)).

Routes associated with perennial channels (in, through, crossing, leads to/end at, proximate within 0.25 miles): Under Alternative D, of the 63 routes that are in or through or within 0.25 miles of perennial channels, 28 or 44% would be open to all types of motor vehicle use, with 2 routes (3.2%) open with vehicle restrictions (for a total of 40% fewer open routes than in Alternative A). Additionally, 32 routes or 51% would be limited to administrative use only (51% more than Alternative A) and 1 routes or 2% would be closed (11% fewer than Alternative A). With 48% of existing routes potentially open and only 52% potentially limited to administrative use only or closed to motor vehicle use, the impacts from sediment input to perennial channels and potential noxious weed infestations would affect water quality more than alternative B, but less than alternatives A and C (43 CFR 8342.1(a)(d)).

Routes crossing or proximate to perennial channels in severe/moderate water erosion rated soils (in, through, within 300’ of perennial): Of the 14 routes that are in, through or within 300’ of perennial channels that are in severe or moderated water erosion rated soils, 7 routes with 3.1 miles (74%) would be open to all vehicle uses. Additionally, 7 routes with 1.1 miles (26%) would be limited to administrative use only and no routes would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes would be approximately 6.8 acres in these areas (16% fewer than Alternative A). With 74% of existing routes potentially open and 26% potentially limited to administrative use only, the impacts from sediment input to perennial channels and potential noxious weed infestations would impact water quality more than alternative B, but less than alternatives A and C (43 CFR 8342.1(a)(d)).

Routes in and through intermittent channels (within 10’): Of the 158 routes that are in or through or within 10’ of intermittent channels, 85 routes with 47 miles (58%) would be open to use and 4 routes with 7.3 miles (9%) open with vehicle restrictions. Additionally, 52 routes with 20 miles (24%) would be limited to administrative use only and 17 routes with 7.3 miles (9%) would be closed. Having about 67 percent of existing routes potentially open and about 33 percent potentially limited to administrative use only or closed to motor vehicle use, impacts

from sediment input to perennial channels and potential noxious weed infestations would impact water quality more than alternative B, but less than alternatives A and C (43 CFR 8342.1(a)(d)).

Routes associated with intermittent channels (in, through, crossing, leads to/end at, proximate within 300’): Of the 642 routes that are in, through or within 300’ of intermittent channels, 272 routes or 42% would be open to use, while 5 routes or 0.8% would be open with vehicle and 9 routes or 1.4% would be open with seasonal restrictions (for a total of 38% fewer than Alternative A). Additionally, 306 routes or 48% would be limited to administrative use only (42% more than Alternative A) and 50 routes or 8% would be closed (4% more than Alternative A). With about 45% of existing routes potentially open and about 55% potentially limited to administrative use only or closed to motor vehicle use, impacts from sediment input to perennial channels and potential noxious weed infestations would impact water quality more than alternative B, but less than alternatives A and C (43 CFR 8342.1(a)(d)).

In summary, water resources would be adversely impacted more from Alternatives A and C. Alternative B would be the most protective to water resources and Alternative D would be more protective than Alternatives A and C, but less than Alternative B.

O.5.2.4 Forest and Woodlands

O.5.2.4.1 Alternative A

Under this Alternative, motorized vehicle travel would be confined to existing roads and trails, except for those specifically closed. The total number of miles of travel routes that specifically impact forested areas is not known.

Limiting motorized travel to existing roads and trails would ensure that forest and woodland areas with young seedlings would be protected from damage, growth deformity, and/or mortality. However, the lack of a formal travel management plan would allow duplicate and unneeded routes to remain open; thereby contributing to increased erosion and higher maintenance costs. These routes have negative impacts on forest resources; including, encouraging unauthorized forest products removal, the spread of invasive plants, and damaging or killing seedlings. However, existing routes provide access to forest resources and reduce the cost of forest treatments and harvest. Closure and decommissioning of roads that contribute to resource damage, or which are not needed, would afford greater protection for forest resources, but would increase costs and restrict or eliminate some forest management treatments. The negative impacts to resources from duplicate unmaintained routes outweigh the benefits of additional access to forest and woodland acres and lower cost of treatments.

O.5.2.4.2 Alternative B

The establishment of eleven Travel Management Areas (TMAs) would reduce the number of miles of open roads and trails and improve route monitoring and maintenance. The reduction of routes would reduce the negative impacts to forest resources as discussed in Alternative A, except for the possible reduction in access for potential harvest and forest treatments. The increased cost of constructing and decommissioning temporary routes needed for forest management activities would reduce the amount of acres treated over the life of the plan.

Reclamation of roads upon completion of projects, unless the route provides specific benefits for public access, would minimize detrimental impacts to forests and woodlands and provide the conditions required for rapid forest regeneration. This Alternative closes or limits the most routes and reduces access for forest treatments and harvest more than the other Alternatives. The current level of planning would limit access to areas such as Tin Can Hill and Mill Creek/Bundy, thereby increasing the costs of forest management treatments. Closures under this Alternative would restrict access and eliminate all but the most expensive hand treatments in portions of some areas such as Grove Creek.

O.5.2.4.3 Alternative C

The impacts to forest resources would be similar to Alternative A. Soil compaction, loss of infiltration capacity, erosion, and vegetation loss would be less than Alternative A, but more than Alternatives B and D due to the increase in routes open for public use.

O.5.2.4.4 Alternative D

Impacts to forest resources would be the same as described in Alternative A. This Alternative is a compromise between public use and resource protection needs.

O.5.2.5 Rangelands

O.5.2.5.1 Impacts Common to all Alternatives

Travel on roads/trails could increase disturbances to soils and vegetation; resulting in increased soil compaction, rutting, surface runoff, and subsequent erosion. The severity of disturbance would depend upon soil conditions (moist or wet vs. dry or frozen), frequency, vehicle weight (lbs./sq. inch) and type, tire width or tread, and driver type. Effects would be greatest in areas of concentrated use that are not maintained or improved. Compaction and erosion could occur to the extent that natural revegetation fails and some sort of mechanical treatment would be required. Travel during wet soil conditions could lead to rutting and the creation of Alternative routes, parallel and/or braided roads/trails. Ruts can provide a channel for concentrated flow to accelerate soil erosion.

BLM roads/trails that are properly designed, graded, and maintained would provide for improved road/trail conditions. This could result in decreased soil disturbances associated with creation of parallel or braided roads/trails and associated runoff and subsequent erosion. Roads/trails with poor design and improper maintenance would be the most susceptible to erosion due to runoff, compacted surfaces, and lack of vegetative cover. Typically, poorly designed and improperly maintained roads are incised and channel water, leading to erosion within the road and vegetative loss adjacent to the road. Appropriate design standards and features that minimize surface runoff and subsequent soil erosion and subsequent vegetative loss would be required for new roads/trails.

Limiting road density per square mile could cause road closures in some locations of the planning area. The primary negative effects of high road density are habitat fragmentation/degradation and disturbance/disruption to wildlife and grazing animals.

Common road closure techniques include (but are not limited to) the following:

- Signage that indicates the road is closed and being allowed to naturally revegetate.
- Rubble and debris piles at road entrance points.
- Physical barriers, such as gates and tank traps.
- Mechanical ripping and obliteration of the road surface, followed by reseeded.

O.5.2.5.2 Alternative A

Under Alternative A, travel is restricted to “existing roads and trails”. Allowing OHV travel off existing roads and vehicular routes to retrieve big game kills and to access primitive campsites would increase disturbance from OHVs and trampling by humans, increasing vegetation damage in these localized areas. Rangeland management and monitoring sites, areas or sites of seeding, predator control, vegetation treatment, fuels management, monitoring or exclosures are typically accessed by motorized vehicle along existing routes. Total closure of routes to or near these areas or sites could have a detrimental effect on the ability of the agency personnel to access them to conduct research, treatments, reclamation or other related activities.

With regard to the 259 routes that are associated with rangeland management or monitoring areas or sites under the No Action Alternative, 237 routes (446 miles) or about 92% would continue to be managed as open/open with restrictions or limited to administrative use only. Although Alternative A carries forward 22 route closures, over 8% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of agency personnel to access these sites would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes for these activities.

Routes that are proposed for closure would either be allowed to reclaim vegetative cover naturally over time or would receive some degree of mechanical reclamation following closure. In either case, the route acreage returned to a more natural condition would potentially change overall upland health associated with such routes.

Under the No Action Alternative, no routes would be slated for active, mechanical reclamation. However, 81 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 120 acres.

O.5.2.5.3 Alternative B

Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative B, 142 routes (385 miles) or about 55% would continue to be managed as open/open with restrictions or limited to administrative use only (36% fewer than in Alternative A). Because Alternative B would close 117 routes, or over 45% of routes associated with these sites, the direct, long-term effect of these closed routes on the ability of agency personnel to

access livestock grazing facilities would be moderate to major, due to the availability of over 5 out of every 10 existing BLM routes for these activities.

Under Alternative B, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 458 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 404 acres, 285 more acres than Alternative A.

O.5.2.5.4 Alternative C

Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative C, 247 routes (494 miles) or over 95% would continue to be managed as open/open with restrictions or limited to administrative use only (4% more than in Alternative A). Because Alternative C would close just 12 routes, at 5% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of agency personnel to access these sites would be negligible, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Under Alternative C, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 18 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 6 acres, 63 fewer acres than Alternative A.

O.5.2.5.5 Alternative D

Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative D, 247 routes (523 miles) or about 95% would continue to be managed as open/open with restrictions or limited to administrative use only. Because Alternative D would close 14 routes, or about 5% of routes associated with these sites, the direct, long-term effect of these closed routes on the ability of agency personnel to access most sites would be negligible, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Under Alternative D, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 66 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 73 acres, 47 fewer acres than Alternative A.

O.5.2.6 Riparian and Wetlands Resources

O.5.2.6.1 Impacts Common to All Alternatives

The primary impact issues to riparian resources from other management programs in the Planning Area include loss or alteration of riparian communities and/or corridors, ground disturbance, increased invasion of noxious weeds and other non-native species, decreased water availability, increased fragmentation, and detrimental changes to riparian function—all of which can prevent or retard riparian communities from “maturing” toward the appropriate climax community for the specific site. Surface disturbing actions that alter riparian characteristics (e.g.

vegetative structures and composition, water quantity, water quality, erosion potential) also have the potential to affect riparian health.

Inasmuch as the use of motor vehicles on public routes that lead to or are proximate to, or are in and through riparian areas constitutes a primary activity that has the potential to adversely affect riparian characteristics and, in turn, proper riparian function. Relative to travel management, this can occur by improper placement of routes; inappropriate behavior by visitors in these areas; or unauthorized off-road vehicle use. Therefore, the supply and spatial extent of travel access networks for motor vehicles is an important component for managing or providing various levels of protection for these areas.

O.5.2.6.2 Alternative A

Motorized and mechanized modes of travel on BLM-administered land would be limited to existing roads and trails. Site specific travel planning would be initiated if resources were impacted (not meeting Land Health Standards, excessive erosion). In all Alternatives, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. Prohibiting off road travel reduces erosion and protects water quality and riparian resources.

The following analysis was completed to determine the potential impacts of the spread of noxious, invasive plant species to riparian areas and surrounding uplands as well as impacts from erosion caused by altered drainage patterns. The real impacts are unknown, however, varying degrees of proximity were analyzed to aid in future monitoring efforts and management action to preserve or enhance riparian habitat.

Routes in/through Riparian Areas: Under the No Action Alternative, of the 24 routes that are in or through riparian areas, 21 or 88% would be open to all types of motor vehicle use, while no routes would be limited to administrative use only and 3 routes or 12% would be closed. In the long-term, almost 9 out of every 10 existing BLM routes in or through riparian areas would remain available for public access in the No Action Alternative. With 88% of existing routes potentially open and only 12% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

This results in a higher level of impact, primarily from the potential spread of noxious, invasive plant species to the riparian area and surrounding uplands, which degrades riparian function.

Of the 10 routes that are in, through or cross riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 10 or 100% would be open to all types of motor vehicle use, while no routes would be limited to administrative use only or closed. In the long-term, 10 out of every 10 existing BLM routes in or through riparian areas with these soils would remain available for public access in the No Action Alternative. With 100% of existing routes potentially open and no routes limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)). This results in a higher level of impact, primarily from the potential spread of

noxious, invasive plant species to the riparian area and surrounding uplands and potential off route travel that increases erosion from surface disturbance.

Routes within 300' of Riparian Areas: Of the 35 routes that are within 300' of riparian areas, 29 or 83% would be open, while no routes would be limited to administrative use only and 6 routes or 17% would be closed. In the long-term, just over 8 out of every 10 existing BLM routes within 300' of riparian areas would remain available for public access in the No Action Alternative. With 83% of existing routes potentially open and 17% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 23 routes that are within 300' of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 19 or 83% would be open to all types of motor vehicle use, while no routes would be limited to administrative use only and 4 routes or 17% would be closed. In the long-term, just over 8 out of every 10 existing BLM routes within 300' of riparian areas in these soil types would remain available for public access in the No Action Alternative.

With 87% of existing routes potentially open and 17% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Routes within 0.25 miles of Riparian Areas: Of the 21 routes that are within 0.25 miles of riparian areas, 14 or 66.5% would be open to use (with 2 of the routes or 9.5% open with seasonal restrictions), while 5 routes or 24% would be limited to administrative use only and 2 routes or 9.5% would be closed. In the long-term, 6.5 out of every 10 existing BLM routes within 0.25 miles of riparian areas would remain available for public access in the No Action Alternative. With about 67% of existing routes potentially open and about 33% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Of the 12 routes that are within 0.25 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 8 or 67% would be open to all types of motor vehicle use (with 1 of the routes or 8% open with seasonal restrictions), while 4 routes or 33% would be limited to administrative use only and no routes would be closed. In the long-term, 6.7 out of every 10 existing BLM routes within 0.25 miles of riparian areas in these soil types would remain available for public access in the No Action Alternative. With 67% of existing routes potentially open and 33% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Routes within 0.5 miles of Riparian Areas: Of the 19 routes that are within 0.5 miles of riparian areas, 12 or 63% would be open to use (with 1 of the routes or 5% open with seasonal

restrictions), while 1 route or 5% would be limited to administrative use only and 6 routes or 32% would be closed. In the long-term, over 6 out of every 10 existing BLM routes within 0.5 miles of riparian areas would remain available for public access in the No Action Alternative. With about 63% of existing routes potentially open and about 37% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Of the 5 routes that are within 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 3 or 60% would be open to all types of motor vehicle use (with 1 of the routes or 20% open with seasonal restrictions), while no routes would be limited to administrative use only and 2 routes or 40% would be closed. In the long-term, 6 out of every 10 existing BLM routes within 0.5 miles of riparian areas in these soil types would remain available for public access in the No Action Alternative. With 60% of existing routes potentially open and 40% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

In general, Alternative A and C allow for more potential impacts to riparian resources than Alternatives B and D. Alternatives A and C leave many routes open for motorized travel without regard to the routes potential impact to various resources, including riparian.

O.5.2.6.3 Alternative B

In action Alternatives the BLM established 11 Travel Management Areas (TMAs) to minimize impacts and provide a spectrum of motorized and non-motorized recreational opportunities. In each TMA motorized travel routes are designated open, close or open with restrictions by resource issues analyzed in travel planning. Outside of the TMAs, motorized and mechanized travel would be limited to designated roads and trails as established in the 2001 OHV EIS. These routes have negligible impacts on riparian resources. Riparian areas are monitored for PFC on a regular basis and resource issues, primarily erosion/run-off and noxious invasive species spread, would be managed on a case by case basis as they are identified. In this Alternative, riparian areas would be prioritized, by resource concerns, and treated to improve riparian conditions. An implementation and monitoring plan would be initiated for the TMAs within 3-5 years of the ROD. The plan would include signing, mapping, information and education, and monitoring of impacts associated with continued use on designated open routes, etc. The implementation plan would also identify criteria for route variances specific to each TMA. In this plan, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. The travel plan would also allow for, upon project completion, roads used for commercial or administrative access on BLM-administered lands would be reclaimed, unless the route provides specific benefits for public access, minimizes impacts to the resource and would be considered on a case-by-case basis.

The following analysis was completed to determine the potential impacts of the spread of noxious, invasive plant species to riparian areas and surrounding uplands as well as impacts from erosion caused by altered drainage patterns. The real impacts are unknown, however, varying

degrees of proximity were analyzed to aid in future monitoring efforts and management action to preserve or enhance riparian habitat.

Routes in/through Riparian Areas: Under Alternative B, of the 24 routes that are in or through riparian areas, 6 or 25% would be open to all types of motor vehicle use (almost 63% fewer than in Alternative A), while 6 routes or 25% would be limited to administrative use only (25% more than in Alternative A) and 12 routes or 50% would be closed (38% more than in Alternative A). In the long-term, over 2 out of every 10 existing BLM routes in or through riparian areas would remain available for public access in Alternative B. With 25% of existing routes potentially open and 75% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)). Mainly, the potential of erosion issues and spread of noxious invasive plant species would be significantly reduced in this level of management.

Of the 10 routes that are in, through or cross riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 6 or 60% would be open to all types of motor vehicle use (40% fewer than in Alternative A), while 3 routes or 30% would be limited to administrative use only (30% more than in Alternative A) and 1 route or 10% would be closed (10% more than in Alternative A). In the long-term, 6 out of every 10 existing BLM routes in or through riparian areas with these soils would remain available for public access in Alternative B. With 60% of existing routes potentially open and 40% limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)). Spread of noxious invasive plant species and erosion issues would be decreased in this Alternative compared to all other Alternatives.

Routes within 300' of Riparian Areas: Of the 35 routes that are within 300' of riparian areas, 6 or 17% would be open, 1 route or 3% would be open with vehicle restrictions (a total of 63% fewer open routes than in Alternative A). Additionally, 7 routes or 20% would be limited to administrative use only (20% more than in Alternative A) and 21 routes or 60% would be closed (43% more than in Alternative A). In the long-term, 2 out of every 10 existing BLM routes within 300' of riparian areas would remain available for public access in Alternative B. With 20% of existing routes potentially open and 80% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)). This action would minimize impacts from invasive plant species spread and erosion issues that may arise from open route designations.

Of the 23 routes that are within 300' of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 4 or 18% would be open, 1 route or 4% would be open with vehicle restrictions (a total of 61% fewer open routes than in Alternative A). Additionally, 4 routes or 17% would be limited to administrative use only (17% more than in Alternative A) and 14 routes or 61% would be closed (44% more than in Alternative A). In the long-term, just over 2 out of every 10 existing BLM routes within 300' of riparian areas in these soil types would remain available for public access in Alternative B. With 22% of existing routes potentially open

and 78% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)). The primary benefit to riparian areas would be the reduced potential for erosion associated with open routes and lower potential spread of invasive noxious plant species.

Routes within 0.25 miles of Riparian Areas: Of the 21 routes that are within 0.25 miles of riparian areas, 5 or 24% would be open to use, 1 route or 5% would be open with seasonal restrictions (a total of 38% fewer open routes than in Alternative A). Additionally, 2 routes or 10% would be limited to administrative use only (14% fewer than in Alternative A) and 13 routes or 62% would be closed (52% more than in Alternative A). In the long-term, almost 3 out of every 10 existing BLM routes within 0.25 miles of riparian areas would remain available for public access in Alternative B. With about 29% of existing routes potentially open and about 71% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate (43 CFR 8342.1(a)(b)(d)).

Of the 12 routes that are within 0.25 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 5 or 42% would be open, 1 route or 8% would be open with seasonal restrictions (a total of 17% fewer open routes than in Alternative A). Additionally, 1 route or 8% would be limited to administrative use only (25% fewer than in Alternative A) and 5 routes or 42% would be closed (42% more than in Alternative A). In the long-term, 5 out of every 10 existing BLM routes within 0.25 miles of riparian areas in these soil types would remain available for public access in Alternative B. With 50% of existing routes potentially open and 50% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Routes within 0.5 miles of Riparian Areas: Of the 19 routes that are within 0.5 miles of riparian areas, 1 or 5% would be open, with no routes open with restrictions (a total of 58% fewer open routes than in Alternative A). Additionally, 4 route or 21% would be limited to administrative use only (16% more than in Alternative A) and 14 routes or 74% would be closed (42% more than in Alternative A). In the long-term, less than 1 out of every 10 existing BLM routes within 0.5 miles of riparian areas would remain available for public access in Alternative B. With about 5% of existing routes potentially open and about 95% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)).

Of the 5 routes that are within 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, no routes would be open/open with seasonal restrictions (60% fewer than in Alternative A), no routes would be limited to administrative use only and all 5 routes or 100% would be closed (60% more than in Alternative A). In the long-term, 0 out of every 10 existing BLM routes within 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative B. With no routes potentially open and 100%

potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)).

Routes in/through and within 300', 0.25/0.5 miles of Riparian Areas: Of the 97 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas, 18 or 19% would be open, 1 route or 1% would be open with seasonal restrictions, and 1 route or 1% would be open with vehicle restrictions (for a total of 56% fewer open routes than in Alternative A). Additionally, 16 routes or 17% would be limited to administrative use only (10% more than in Alternative A) and 61 routes or 63% would be closed (45% more than in Alternative A). In the long-term, just over 2 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas would remain available for public access in Alternative B. With about 21% of existing routes potentially open and about 79% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)).

Of the 50 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 15 or 30% would be open, 1 route or 2% would be open with seasonal restrictions, and 1 route or 2% would be open with vehicle restrictions (for a total of 46% fewer open routes than in Alternative A). Additionally, 8 routes or 16% would be limited to administrative use only (8% more than in Alternative A) and 25 routes or 50% would be closed (38% more than in Alternative A). In the long-term, over 3 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative B. With 34% of existing routes potentially open and only 66% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate to major (43 CFR 8342.1(a)(b)(d)).

Alternative B manages travel activities to protect natural resources, including riparian resources, more than any other Alternative.

O.5.2.6.4 Alternative C

In the analyses below for route designations in TMAs, Alternative C shows the most potential to impact riparian areas, primarily by the spread of noxious invasive plant species, increased sediment loading from erosion and un-natural drainage patterns, and direct impacts from habitat altering erosion. The more roads open in, through or in various proximities up to ½ mile from riparian areas increase the potential spread of noxious invasive plant species and potential erosion and sediment issues. The spread of noxious weeds can be detrimental to riparian functionality, reducing native plant diversity, abundance and vigor in some cases. This impact promotes erosion and changes in riparian wildlife and fish habitat, lowering the functional status of the riparian area.

Routes in/through Riparian Areas: Under Alternative C, of the 24 routes that are in or through riparian areas, 22 or 92% would be open to all types of motor vehicle use (4% more than in

Alternative A), while 2 routes or 8% would be limited to administrative use only (8% more than in Alternative A) and no routes would be closed (13% fewer than in Alternative A). In the long-term, over 9 out of every 10 existing BLM routes in or through riparian areas would remain available for public access in Alternative C. With 92% of existing routes potentially open and only 8% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 10 routes that are in, through or cross riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 10 or 100% would be open to all types of motor vehicle use (same as Alternative A) and no route would be limited to administrative use only or closed. The impacts would be the same as Alternative A.

Routes within 300' of Riparian Areas: Of the 35 routes that are within 300' of riparian areas, 33 or 94% would be open (11% more than in Alternative A), while 2 routes or 6% would be limited to administrative use only (6% more than in Alternative A) and no routes would be closed (17% fewer than in Alternative A). In the long-term, over 9 out of every 10 existing BLM routes within 300' of riparian areas would remain available for public access in Alternative C.

With 94% of existing routes potentially open and only 6% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 23 routes that are within 300' of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 22 or 96% would be open (13% more than in Alternative A), while 1 route or 4% would be limited to administrative use only (4% more than in Alternative A) and no routes would be closed (17% fewer than in Alternative A). In the long-term, over 9 out of every 10 existing BLM routes within 300' of riparian areas in these soil types would remain available for public access in Alternative C. With 96% of existing routes potentially open and only 4% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Routes within 0.25 miles of Riparian Areas: Of the 21 routes that are within 0.25 miles of riparian areas, 20 or 95% would be open to use, with no routes open with seasonal restrictions (for a total of 28% more open routes than in Alternative A). Additionally, 1 route or 5% would be limited to administrative use only (19% fewer than in Alternative A) and no routes would be closed (10% more than in Alternative A). In the long-term, over 9 out of every 10 existing BLM routes within 0.25 miles of riparian areas would remain available for public access in Alternative C. With 95% of existing routes potentially open and only 5% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 12 routes that are within 0.25 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, all 12 or 100% would be open, with no routes open with seasonal restrictions (for a total of 33% fewer open routes than in Alternative A). No routes would be limited to administrative use only (33% fewer than in Alternative A) and no routes would be closed (same as Alternative A). In the long-term, 10 out of every 10 existing BLM routes within 0.25 miles of riparian areas in these soil types would remain available for public access in Alternative C. With 100% of existing routes potentially open and 0% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Routes within 0.5 miles of Riparian Areas: Of the 19 routes that are within 0.5 miles of riparian areas, 17 or 90% would be open, with no routes open with restrictions (a total of 26% fewer open routes than in Alternative A). Additionally, 2 routes or 10% would be limited to administrative use only (5% more than in Alternative A) and no routes would be closed (32% fewer than in Alternative A). In the long-term, 9 out of every 10 existing BLM routes within 0.5 miles of riparian areas would remain available for public access in Alternative C. With 90% of existing routes potentially open and 10% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 5 routes that are within 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 5 routes 100% would be open, with no open with seasonal restrictions (for a total of 40% more than in Alternative A). No routes would be limited to administrative use only or closed (40% fewer than in Alternative A). In the long-term, 10 out of every 10 existing BLM routes within 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative C. With 100% potentially open and no routes potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Routes in/through and within 300', 0.25/.5 miles of Riparian Areas: Of the 97 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas, 90 or 93% would be open, with no routes open with seasonal restrictions (for a total of 17% more open routes than in Alternative A). Additionally, 7 routes or 7% would be limited to administrative use only (1% more than in Alternative A) and no routes would be closed (18% fewer than in Alternative A). In the long-term, just over 9 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas would remain available for public access in Alternative C. With 93% of existing routes potentially open and about 7% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

Of the 50 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 49 or 98% would be open,

with no routes open with seasonal restrictions (for a total of 18% more open routes than in Alternative A). Additionally, 1 route or 2% would be limited to administrative use only (6% fewer than in Alternative A) and no routes would be closed (12% fewer than in Alternative A). In the long-term, almost 10 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative C. With 98% of existing routes potentially open and only 2% potentially limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be negligible (43 CFR 8342.1(a)(b)(d)).

O.5.2.6.5 Alternative D

Impacts from Alternative D would be similar to impacts from Alternative B.

In all analyses below for route designations in TMAs, Alternative D has a moderate impact compared to Alternatives B (the least impact) and C (the highest impact), to riparian areas; primarily the spread of noxious invasive plant species, increased sediment loading from erosion and un-natural drainage patterns, and direct impacts from habitat altering erosion. The more roads open in, through or in various proximities up to ½ mile from riparian areas increase the potential spread of noxious invasive plant species and potential erosion and sediment issues. The spread of noxious weeds can be detrimental to riparian functionality, reducing native plant diversity, abundance and vigor in some cases. This impact promotes erosion and changes in riparian wildlife and fish habitat, lowering the functional status of the riparian area.

Routes in/through Riparian Areas: Under Alternative D, of the 24 routes that are in or through riparian areas, 12 or 50% would be open to all types of motor vehicle use (almost 38% fewer than in Alternative A), while 10 routes or 42% would be limited to administrative use only (42% more than in Alternative A) and 2 routes or 8% would be closed (4% fewer than in Alternative A). In the long-term, 5 out of every 10 existing BLM routes in or through riparian areas would remain available for public access in Alternative D. With 50% of existing routes potentially open and 50% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Of the 10 routes that are in, through or cross riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 7 or 70% would be open to all types of motor vehicle use (30% fewer than in Alternative A), while 3 routes or 30% would be limited to administrative use only (30% more than in Alternative A) and no routes would be closed (same as Alternative A). In the long-term, 7 out of every 10 existing BLM routes in or through riparian areas with these soils would remain available for public access in Alternative D. With 70% of existing routes potentially open and 30% limited to administrative use only, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Routes within 300' of Riparian Areas: Of the 35 routes that are within 300' of riparian areas, 11 or 32% would be open to all vehicle uses (51% fewer open routes than in Alternative A).

Additionally, 19 routes or 54% would be limited to administrative use only (54% more than in Alternative A) and 5 routes or 14% would be closed (3% fewer than in Alternative A). In the long-term, just over 3 out of every 10 existing BLM routes within 300' of riparian areas would remain available for public access in Alternative D. With 32% of existing routes potentially open and 68% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate (43 CFR 8342.1(a)(b)(d)).

Of the 23 routes that are within 300' of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 8 or 35% would be open (48% fewer open routes than in Alternative A). Additionally, 11 routes or 48% would be limited to administrative use only (48% more than in Alternative A) and 4 routes or 17% would be closed (same as Alternative A). In the long-term, over 3 out of every 10 existing BLM routes within 300' of riparian areas in these soil types would remain available for public access in Alternative D. With 35% of existing routes potentially open and 65% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate (43 CFR 8342.1(a)(b)(d)).

Routes within 0.25 miles of Riparian Areas: Of the 21 routes that are within 0.25 miles of riparian areas, 5 or 24% would be open to use, 4 routes or 19% would be open with seasonal restrictions (a total of 24% fewer open routes than in Alternative A). Additionally, 6 routes or 29% would be limited to administrative use only (5% more than in Alternative A) and 6 routes or 29% would be closed (19% more than in Alternative A). In the long-term, just over 4 out of every 10 existing BLM routes within 0.25 miles of riparian areas would remain available for public access in Alternative D. With 43% of existing routes potentially open and about 57% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor to moderate (43 CFR 8342.1(a)(b)(d)).

Of the 12 routes that are within 0.25 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 5 or 42% would be open (17% fewer than in Alternative A), 3 route or 25% would be open with seasonal restrictions (17% more than in Alternative A). Additionally, 2 route or 17% would be limited to administrative use only (17% fewer than in Alternative A) and 2 routes or 17% would be closed (17% more than in Alternative A). In the long-term, over 6 out of every 10 existing BLM routes within 0.25 miles of riparian areas in these soil types would remain available for public access in Alternative D. With 67% of existing routes potentially open and 33% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be minor (43 CFR 8342.1(a)(b)(d)).

Routes within 0.5 miles of Riparian Areas: Of the 19 routes that are within 0.5 miles of riparian areas, 5 or 26% would be open, with 1 route or 5% open with seasonal restrictions (for a

total of 32% fewer open routes than in Alternative A). Additionally, 12 routes or 63% would be limited to administrative use only (58% more than in Alternative A) and 1 routes or 5% would be closed (26% fewer than in Alternative A). In the long-term, just over 3 out of every 10 existing BLM routes within 0.5 miles of riparian areas would remain available for public access in Alternative D. With about 32% of existing routes potentially open and about 68% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate (43 CFR 8342.1(a)(b)(d)).

Of the 5 routes that are within 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, no routes would be open to all vehicle uses (40% fewer than in Alternative A), however, 1 route or 20% would be open with seasonal restrictions (same as Alternative A), 3 routes or 60% would be limited to administrative use only and 1 route or 20% would be closed (20% fewer than in Alternative A). In the long-term, 2 out of every 10 existing BLM routes within 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative D. With 20% routes potentially open and 80% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be major (43 CFR 8342.1(a)(b)(d)).

Routes in/through and within 300', 0.25/.5 miles of Riparian Areas: Of the 97 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas, 33 or 34% would be open, 5 routes or 5% would be open with seasonal restrictions (for a total of 37% fewer open routes than in Alternative A). Additionally, 45 routes or 46% would be limited to administrative use only (40% more than in Alternative A) and 14 routes or 14% would be closed (3% fewer than in Alternative A). In the long-term, almost 4 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas would remain available for public access in Alternative D. With about 39% of existing routes potentially open and about 61% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate (43 CFR 8342.1(a)(b)(d)).

Of the 50 routes that are in or through or within 300', 0.25 or 0.5 miles of riparian areas that are also in soils with severe or moderate water erosion hazard ratings, 20 or 40% would be open, 4 routes or 8% would be open with seasonal restrictions (for a total of 32% fewer open routes than in Alternative A). Additionally, 19 routes or 38% would be limited to administrative use only (30% more than in Alternative A) and 7 routes or 14% would be closed (2% more than in Alternative A). In the long-term, almost 5 out of every 10 existing BLM routes in or through or within 300', 0.25 or 0.5 miles of riparian areas in these soil types would remain available for public access in Alternative D. With 48% of existing routes potentially open and only 52% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to riparian values would be moderate to minor to moderate (43 CFR 8342.1(a)(b)(d)).

O.5.2.7 Invasive Species and Noxious Weeds

O.5.2.7.1 Alternative A

General: Inasmuch as the use of motor vehicles on public routes constitutes a primary source for the spread of noxious weed seeds and the establishment of new outbreaks and infestations of noxious weeds, the supply and spatial extent of travel access networks for motor vehicles is an important component for managing or providing some level of control in noxious weeds. Under the No Action Alternative, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (6%), or closed (10%). The overwhelming majority of routes (about 84%) would be open to all motorized uses or open with special seasonal or vehicular restrictions. In the long-term, over 8 out of every 10 existing BLM routes would remain available for access to the TMAs with an average route density of 1.5 open routes per square mile at 1.7 miles per square mile.

Therefore, Alternative A would continue to provide a moderate to high degree of motor vehicle access opportunities, which could perpetuate the potential for a moderate, long-term, indirect spread of noxious weeds on a localized basis. The potential for the spread of noxious weeds would be even greater in the Mill Creek/Bundy TMA, which has the highest density of open routes at 2.5 routes per square mile and the Shepherd TMA, which has a high of 8.9 miles per square mile of open routes. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may increase to a minor, short-term extent on a localized basis as these new routes potentially become available for and help spread out public use; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 143 routes (170 miles) or 16% of the routes, the long-term, direct, localized effect of these restricted routes on reducing the potential for spreading noxious weeds by motor vehicle use is minor.

Noxious Weeds in Riparian Areas: With regard to riparian areas, where noxious weed outbreaks have the potential over time to outcompete and replace native vegetative species, the number of open routes that are in, through or cross these areas, as well as routes that are proximate to riparian zones all have the potential to spread noxious weeds. Under the No Action Alternative, of the 24 routes that are in, through or cross riparian areas, 21 or 88% would be open to all types of motor vehicle use. Of the 35 routes that are within 300' of riparian areas, 29 or 83% would be open. These existing conditions would continue to provide a moderate to high degree of motor vehicle access opportunities to riparian areas, which could perpetuate the potential for a moderate, long-term, indirect spread of noxious weeds in such areas. However, of the 21 routes that are within 0.25 miles of riparian areas, only 14 or 67% would be open to use. This would reduce, to a minor degree, the potential for long-term, indirect spread of noxious weeds in near riparian areas.

Noxious Weeds Inventory and Treatment Areas: In assessing travel routes that are associated with inventoried weed areas, of the 101 routes (166 miles) that are in or through these areas, 78

routes (136 miles) or 77% would be open to all motorized vehicles. This represents a moderate potential for the direct, long-term spread of noxious weed species from known infestation sites to other non-infested areas.

Regarding motor vehicle routes available for noxious weed management actions, of the 527 routes (659 miles) that are in or through weed management areas, 426 routes (527 miles) or 80% are open to all motor vehicle uses and 17 routes (26 miles) or 3% are limited to administrative uses only. This represents a continuation of a major, widespread management condition that would be conducive to the long-term, direct control of noxious weeds.

O.5.2.7.2 Alternative B

General: Under Alternative B, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions (10%), limited to administrative use only, or closed. At 562, the majority of routes (64% of overall network) would be recommended for closure to all motorized modes of travel and 223 routes (25% of overall network) would be recommended for administrative use only. This would result in 54% more closed routes in Alternative B than already exist in Alternative A and in 19% more routes designated for administrative use only in Alternative B than exist in Alternative A.

Additionally, the actual miles of routes closed under Alternative B would be 397 or about 40% and those limited to administrative use would be 247 or about 25% of the existing mileage. This would result in 29% more miles of routes closed in Alternative B than the current 11% closure mileage in Alternative A. Additionally, there would be 19% more mileage of routes identified for administrative use only in Alternative B than the current 6% mileage in Alternative A. So, while the actual number of routes recommended for closure changes greatly--54% more in Alternative B than in Alternative A--the actual number of miles of closed routes changes only moderately --29% more in Alternative B than in Alternative A--for an overall minor to moderate reduction of motorized public access. This would result in a moderate reduction of the potential for the long-term, direct, spread of noxious weeds on a localized basis, contributing to minimizing damage to vegetation and watersheds (43 CFR 8342.1(a)).

The potential for the spread of noxious weeds in the Mill Creek/Bundy TMA would be greatly diminished by a 93% reduction in route density from the Alternative A high of 2.5 to 0.2 open routes per square mile the Alternative B. Similarly, the potential for spreading noxious weeds in the Shepherd TMA would be diminished to a minor degree by a 19% reduction in route density from the Alternative A high of 8.9 to 7.2 miles per square mile of open routes in Alternative B.

In reducing the supply to 90 open routes (347 miles) or 10% of the overall network, the long-term, direct, localized threat of these open routes spreading noxious weeds by motor vehicle use is minor.

Noxious Weeds in Riparian Areas: Under Alternative B, of the 24 routes that are in, through or cross riparian areas, 6 or 25% would be open to all types of motor vehicle use, resulting in 63% fewer open routes than exist in Alternative A. Of the 35 routes that are within 300' of riparian areas, 7 or 20% would be open in Alternative B; 63% fewer than those open in Alternative A. Finally, of the 21 routes that are within 0.25 miles of riparian areas, only 6 or 29%

would be open under Alternative B; 38% fewer than those open in Alternative A. The potential route designations of Alternative B would greatly reduce opportunities for motor vehicle access to riparian areas, which could moderately reduce the potential for long-term, indirect spread of noxious weeds in such areas, contributing to minimizing damage to vegetation and watersheds and disruption of wildlife habitats associated with riparian areas (43 CFR 8342.1(a),(b)).

Noxious Weeds Inventory and Treatment Areas: Under Alternative B, of the 101 routes (166 miles) that are in or through inventoried weed areas, 19 routes (91 miles) or 19% would be open to all motorized vehicles or open with restrictions; 58% fewer open routes in these areas than would be open in Alternative A. This represents a direct, long-term, moderate reduction in the potential for the spread of noxious weed species from known infestation sites to other non-infested areas.

Regarding motor vehicle routes available for noxious weed management actions, of the 527 routes (659 miles) that are in or through weed management areas, under Alternative B, 64 routes (251 miles) or 12% are open or open with restrictions; 69% fewer open routes than in Alternative A. Similarly, 101 routes (123 miles) or 19% are limited to administrative uses only; 16% more administrative routes than are in Alternative A. This represents a moderate to major reduction of motorized access potentially needed for the long-term, direct control of noxious weeds.

O.5.2.7.3 Alternative C

General: Under Alternative C, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions (84%), limited to administrative use only, or closed. At 22, few routes (3% of overall network) would be recommended for closure to all motorized modes of travel and 120 routes (14% of overall network) would be recommended for administrative use only. This would result in 8% fewer closed routes in Alternative C than already exist in Alternative A and in 8% more routes designated for administrative use only in Alternative C than exist in Alternative A.

Additionally, the actual miles of routes closed under Alternative C would be 6 or about 1% and those limited to administrative use would be 91 or about 9% of the existing mileage. This would result in 10% fewer miles of route miles closed in Alternative C than the current 11% closure mileage in Alternative A. Additionally, there would be 3% more route miles identified for administrative use only in Alternative C than the current 6% mileage in Alternative A. Though the number of open route miles is virtually the same for Alternative A and Alternative C, the 896 miles of open routes in Alternative C represents 7% more open route miles than in Alternative A. The potential route designations of Alternative C would result in a minor increase in access opportunities for motorized public access. This could result in a minor increase in the potential for the long-term, direct, spread of noxious weeds on a localized basis, contributing to minimizing damage to vegetation and watersheds (43 CFR 8342.1(a)).

The potential for the spread of noxious weeds in the Mill Creek/Bundy TMA would be moderately diminished by a 27% reduction in route density from the Alternative A high of 2.5 to 1.9 open routes per square mile the Alternative C. Similarly, the potential for spreading noxious weeds in the Shepherd TMA would be slightly diminished by a 7% reduction in route density from the Alternative A high of 8.9 to 8.3 miles per square mile of open routes in Alternative C.

Alternative C proposes 735 open routes (896 miles) or 84% of the overall network; virtually the same as Alternative A, with the exception that Alternative C would manage 72 more miles of open routes than Alternative A. Managing for the Alternative C network in the long-term would have essentially the same direct, localized threat of open routes spreading noxious weeds by motor vehicle use as Alternative A.

Noxious Weeds in Riparian Areas: Under Alternative C, of the 24 routes that are in, through or cross riparian areas, 22 or 92% would be open to all types of motor vehicle use, resulting in 4% more open routes than exist in Alternative A. Of the 35 routes that are within 300' of riparian areas, 33 or 94% would be open in Alternative C; 11% more than those open in Alternative A. Finally, of the 21 routes that are within 0.25 miles of riparian areas, 20 or 95% would be open under Alternative C; 38% more than those open in Alternative A. The potential route designations of Alternative C would slightly to moderately increase opportunities for motor vehicle access to riparian areas, which could moderately increase the potential for long-term, indirect spread of noxious weeds in such areas, contributing only slightly to minimizing damage to vegetation and watersheds and disruption of wildlife habitats associated with riparian areas (43 CFR 8342.1(a),(b)).

Noxious Weeds Inventory and Treatment Areas: Under Alternative C, of the 101 routes (166 miles) that are in or through inventoried weed areas, 85 routes (147 miles) or 84% would be open to all motorized vehicles or open with restrictions; 7% more open routes in these areas than would be open in Alternative A. This represents a direct, long-term, minor increase in the potential for the spread of noxious weed species from known infestation sites to other non-infested areas.

Regarding motor vehicle routes available for noxious weed management actions, of the 527 routes (659 miles) that are in or through weed management areas, under Alternative C, 467 routes (608 miles) or 89% are open or open with restrictions; 8% more open routes than in Alternative A. Similarly, 49 routes (47 miles) or 9% are limited to administrative uses only; 6% more administrative routes than are in Alternative A. This represents a minor increase in opportunities for motorized access potentially needed for the long-term, direct control of noxious weeds.

O.5.2.7.4 Alternative D

General: Under Alternative D, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions (40%), limited to administrative use only, or closed. At 80, few routes (9% of overall network) would be recommended for closure to all motorized modes of travel and 449 routes (51% of overall network) would be recommended for administrative use only. This would result in 1% fewer closed routes in Alternative D than already exist in Alternative A and in 45% more routes designated for administrative use only in Alternative D than exist in Alternative A. In reducing the open routes 44% from Alternative A to 346 open routes (584 miles) or 62% of the overall network and in increasing routes for administrative use only by 45% for Alternative D, the long-term, direct, potential for motor vehicle use of these open routes to spread noxious weeds would be minor to moderate, due to reduced traffic volume on administrative routes.

Additionally, the actual miles of routes closed under Alternative D would be 66 or about 7% and those limited to administrative use would be 313 or about 32% of the existing mileage. This would result in 4% fewer miles of routes closed in Alternative D than the current 11% closure mileage in Alternative A. Additionally, there would be 25% more route miles identified for administrative use only in Alternative D than the current 6% mileage in Alternative A.

Alternative D would result in an overall moderate reduction of motorized public access. This would result in a moderate reduction of the potential for the long-term, direct, spread of noxious weeds on a localized basis, contributing to minimizing damage to vegetation and watersheds (43 CFR 8342.1(a)).

The potential for the spread of noxious weeds in the Mill Creek/Bundy TMA would be greatly diminished by a 69% reduction in route density from the Alternative A high of 2.5 to 0.8 open routes per square mile the Alternative D. Similarly, the potential for spreading noxious weeds in the Shepherd TMA would be diminished to a minor degree by a 19% reduction in route density from the Alternative A high of 8.9 to 7.2 miles per square mile of open routes in Alternative D.

Noxious Weeds in Riparian Areas: Under Alternative D, of the 24 routes that are in, through or cross riparian areas, 12 or 50% would be open to all types of motor vehicle use, resulting in 38% fewer open routes than exist in Alternative A. Of the 35 routes that are within 300' of riparian areas, 11 or 31% would be open in Alternative D; 51% fewer than those open in Alternative A. Finally, of the 21 routes that are within 0.25 miles of riparian areas, only 9 or 43% would be open under Alternative D; 24% fewer than those open in Alternative A. The potential route designations of Alternative D would considerably reduce opportunities for motor vehicle access to riparian areas, which could moderately reduce the potential for long-term, indirect spread of noxious weeds in such areas, contributing to minimizing damage to vegetation and watersheds and disruption of wildlife habitats associated with riparian areas (43 CFR 8342.1(a),(b)).

Noxious Weeds Inventory and Treatment Areas: Under Alternative D, of the 101 routes (166 miles) that are in or through inventoried weed areas, 42 routes (112 miles) or 42% would be open to all motorized vehicles or open with restrictions; 36% fewer open routes in these areas than would be open in Alternative A. This represents a minor to moderate reduction in the potential for the direct, long-term, spread of noxious weed species from known infestation sites to other non-infested areas.

Regarding motor vehicle routes available for noxious weed management actions, of the 527 routes (659 miles) that are in or through weed management areas, under Alternative D, 230 routes (410 miles) or 44% are open or open with restrictions; 37% fewer open routes than in Alternative A. Similarly, 245 routes (192 miles) or 47% are limited to administrative uses only; 43% more administrative routes than are in Alternative A. This represents a minor increase of motorized access potentially needed for the long-term, direct control of noxious weeds.

O.5.2.8 Special Status Plants

O.5.2.8.1 Impacts Common to All Alternatives

Special Status Plants would most likely be impacted by OHV use off of roads or trails associated with establishment of campsites, principally due to mechanical crushing of vegetation, soil compaction or erosion, and introduction of noxious invasive weeds.

O.5.2.8.2 Alternative A

Impacts would be the same as impacts common to all alternatives. Under Alternative A, there would be 824 miles of open routes (83% of all route miles). This alternative opens more routes than Alternative B (35%) and D (62%) and fewer routes than Alternative C (90%). Therefore potential impacts would be greater than Alternatives B and D, but less than Alternative C.

O.5.2.8.3 Alternative B

Impacts would be the same as impacts common to all alternatives. Under Alternative B, there would be 349 miles of open routes (35% of all route miles). This Alternative Closes or limits to administrative access more route miles than all alternatives. Alternative A designates 83% of route miles as open, Alternative C designates 90% of route miles as open and Alternative D designates 62% of route miles as open. Therefore potential impacts would be fewer than all other alternatives.

O.5.2.8.4 Alternative C

Impacts would be the same as impacts common to all alternatives. Under Alternative C, there would be 893 miles of open routes (90% of all route miles). This Alternative closes or limits to administrative access less route miles than all alternatives. Alternative A designates 83% of route miles as open, Alternative B designates 35% of route miles as open and Alternative D designates 62% of route miles as open. Therefore potential impacts would be more than all other alternatives.

O.5.2.8.5 Alternative D

Impacts would be the same as impacts common to all alternatives. Under Alternative D, there would be 624 miles of open routes (62% of all route miles). This Alternative closes or limits to administrative access more route miles than alternatives A and C, but less than Alternative B.

Alternative A designates 83% of route miles as open, Alternative B designates 35% of route miles as open and Alternative C designates 90% of route miles as open. Therefore potential impacts would be less than Alternatives A and C, but more than Alternative B.

O.5.2.9 Wildlife Habitat and Special Status Species

Wildlife resources, habitat and individual populations and animals, are sensitive to travel management issues. The comprehensive analysis presented below was used by resource specialists to develop trails and travel management actions, considering impacts to wildlife and special status species and providing sound multiple use of BLM administered public lands.

O.5.2.9.1 Methods and Assumptions

The analysis of potential impacts to wildlife resources is based on the expertise of BLM resource specialists at the Billings Field Office. These specialists possess an extensive knowledge of wildlife resources within the Planning Area. The impact analysis is also based on review of existing literature and information provided by non-planning team experts in the BLM and other agencies. In absence of quantitative data, best professional judgment was used. Impacts are sometimes described using ranges of potential impacts or in qualitative terms, if appropriate.

The following assumptions regarding wildlife resources are made:

- Wildlife habitat would be managed for those species identified as priority wildlife species.
- All surface disturbing activities include mitigation to reduce impacts to wildlife resources. Analysis of impacts includes any and all mitigation.
- Travel through the TMAs is expected to increase due to the increased demand for open space and commercial recreation opportunities on public lands, as well as periodic up trends in energy exploration and development, including renewable energy production.
- Planning decisions that involve changes to the available number and overall miles of roads open for public or administrative use, the number of acres open or closed to off-road travel, road improvement or maintenance activities, or specific travel restrictions (e.g., speed limits, seasonal restrictions; etc.) would affect wildlife resources to varying degrees.

In analyzing the potential effects of route designations on wildlife resources, differences between each action alternative's set of route designations and the no action, current management route designations are analyzed and expressed primarily in terms of 'absolute percent change' versus a more familiar method of expressing 'relative percent change'. As each alternative develops a different transportation network or combination of route designations (open, limited, closed) using the same supply of existing routes, changes in the apportionment of designations within a given alternative are then measured against the apportioned designations of the No Action Alternative. As a comparative example then, in relative terms, an alternative that proposes to close 562 routes in Alternative X out of the total 877 routes that exist where only 89 routes out of 877 routes are closed under No Action represents a 631% increase in the number of routes closed in Alternative X relative to the No Action Alternative. In absolute terms, however, the 89 closed routes in the No Action Alternative represent 10% of the current total network while under Alternative X, the 562 closed routes represent 64% of the potential network, resulting in 54% more routes closed in Alternative X than in the No Action Alternative. Planners determined to use the 'absolute percent change', primarily because a) the route 'population', or total number of routes under consideration for designation is constant for all alternatives and b) planners believe the results better depict the 'shifting' of designations within alternatives using the same route inventory.

Direct impacts to wildlife resources from management activities may result in mortality or displacement of individuals, disturbance in reduced air or water quality, and alteration of immediate environments through loss of, or changes to, key habitat components. Key habitat components include food availability or quality, cover from predators, insulation from extreme temperatures, nesting/roosting/denning habitat, water availability and quality, and travel corridors. Direct impacts may affect wildlife populations or habitats for the duration of the action, for a few days thereafter, for several growing seasons, or may continue indefinitely where the action results in permanent habitat loss.

Indirect impacts to wildlife resources from management activities typically result from influences of post-disturbance succession, recovery, or rehabilitation of the habitat. These impacts may be long-term, depending on the severity of the habitat alteration, and may change species assemblages (relative abundances or species composition), species behaviors, or overall population trends, benefiting some species while negatively affecting others. The direct and indirect effects of management actions on wildlife resources may vary widely, depending on a variety of factors such as the dynamics of the habitat (e.g. community type, size, shape, complexity, seral state, condition); season, intensity, duration, frequency, and extent of the disturbance; rate and composition of vegetation recovery; change in vegetation structure; type of soils; topography and microsites; animal species present; and the mobility of wildlife species (i.e., ability to leave a site or recolonize a site after a disturbance).

Direct impacts are caused by an action and occur at the same time and place as the action. Indirect impacts are caused by the action and occur later or farther away but are still reasonably foreseeable. Cumulative impacts are the effects on the environment that result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other actions.

Impacts are also described as to their context, intensity, and duration. Context generally refers to the geographic extent of impact (localized or widespread). Impact duration refers to how long an impact would last. Unless otherwise stated for any particular impact topic, short-term impacts would occur with five years of implementing the Plan, often during construction and recovery, while long-term impacts would occur beyond five years, often from operations. Impact intensity is the magnitude or degree to which a resource would be beneficially or adversely affected. The criteria used to rate the intensity of the impact for each impact topic are as follows:

The intensities of impacts are also described, where possible, using the following guidance:

- Negligible: No changes to wildlife resources would occur, or effects on individuals, populations, or habitat would be at or below the level of detection. If detected, the effects would be considered slight.
- Minor: Changes to wildlife resources would be measurable, although the changes would be small, short-term (less than seven consecutive days), and local. Mitigation measures would not be necessary.

- **Moderate:** Changes to wildlife resources would be measurable and would have appreciable consequences, although the effect would be relatively local. Mitigating measures would be necessary, but would most likely be successful.
- **Major:** Changes to wildlife resources would be measurable, have substantial consequences, and be noticed regionally. Mitigating measures would be necessary, and their success would be uncertain.

O.5.2.9.2 Impacts Common to All Alternatives

The primary impact issues to wildlife resources from other management programs in the Planning Area include loss or alteration of native habitats, increased invasion of noxious weeds and other exotic weed species, decreased water availability, increased habitat fragmentation, changes in habitat and species composition, disruption of species behavior leading to reduced reproductive fitness and/or increased susceptibility to predation, and direct mortality of wildlife. Surface disturbing actions that alter vegetation characteristics (e.g. structure, composition, and/or production) have the potential to affect habitat suitability for wildlife, particularly where the disturbance removes or reduces cover and/or food resources. Even minor changes to vegetation communities have the potential to affect resident wildlife populations.

Resource Management Plan Level: Current management for travel is to designated roads and trails outside of Travel Management Areas (TMAs). Eleven Travel Management Areas (TMAs) were described and routes were designated. Route designations, such as Open, Closed, or Limited, vary in Alternatives B, C, and D. TMAs management is a more detailed site specific analysis of management described in, BLM. 2003c. *Off-Highway Vehicle EIS and Proposed Plan Amendment for Montana, North Dakota, and South Dakota*. ROD June, 2003.

O.5.2.9.3 Alternative A

Big Game Species

Under the No Action Alternative, the 865 existing BLM routes (974 miles) that comprise the travel networks within big game general winter range (BGGWR) would continue to be managed using the five existing designations shown in Table 16 and Figure 4.2.1.1a (below), with 8 out of every 10 existing routes (about 84%) open to all motorized uses or open with special seasonal or vehicular restrictions. Additionally, the route density within the BGGWR would remain fairly constant for the long-term at 1.7 open routes per square mile and 1.9 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes affects approximately 1,174 acres or 0.4% of the 275,839 acres of BGGWR within the TMAs. In other words, for every 1 acre of route footprint within the BGGWR, 234 acres would be without routes.

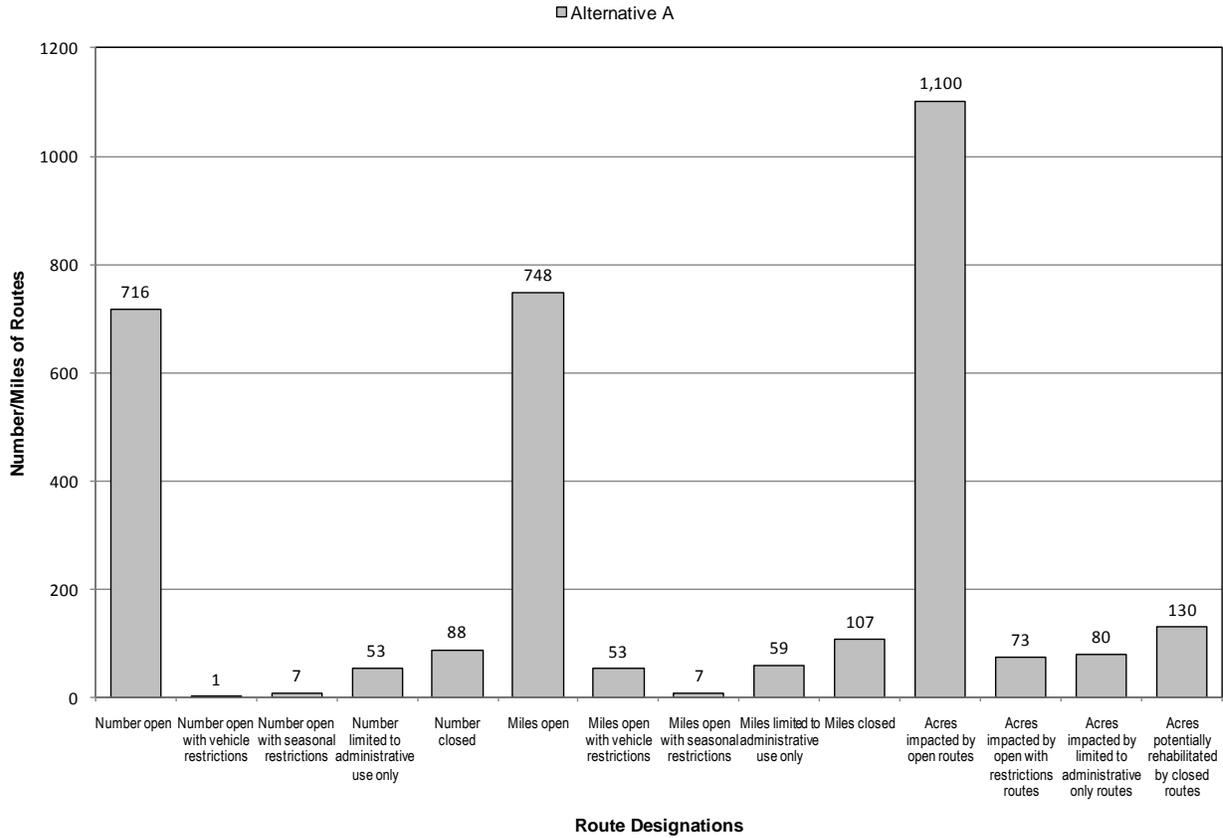
Under the No Action Alternative, the current open route network would continue the long-term, widespread conditions that directly and moderately affect big game species, such as impairment of big game species' movements, wildlife harassment by humans, and disruption of big game habitats through loss of, or changes to, key habitat components. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, these impacts may increase to a minor, short-term extent on a localized basis as these new routes

potentially become available and help spread out public use; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 141 routes at 166 miles, the long-term, direct, localized effect of these restricted routes on reducing BGGWR habitat fragmentation is minor, due to the availability of 724 open routes at 808 miles with the route densities that are described above.

Table 16: Alternative A Route Designations in Big Game General Winter Range						
Potential Route Designations	Alternative A					
	Routes	Percent	Miles	Percent	Acres impacted by routes	Percent of total route acreage
Open	716	83%	747.6	76.8%	1100.3	79.6%
Open with vehicle restrictions	1	0.1%	52.7	5.4%	73.4	5.3%
Open with seasonal restrictions	7	0.8%	7.2	0.7%		
Limited to administrative use only	53	6.1%	59	6.1%	79.6	5.8%
Closed	88	10.2%	107.4	11%	129.7	9.4%
Average <u>open</u> routes per square mile (density)	1.7		1.9			
Percent of open route acreage					0.4%	
Ratio of open route acres to un-routed acres					1:234	

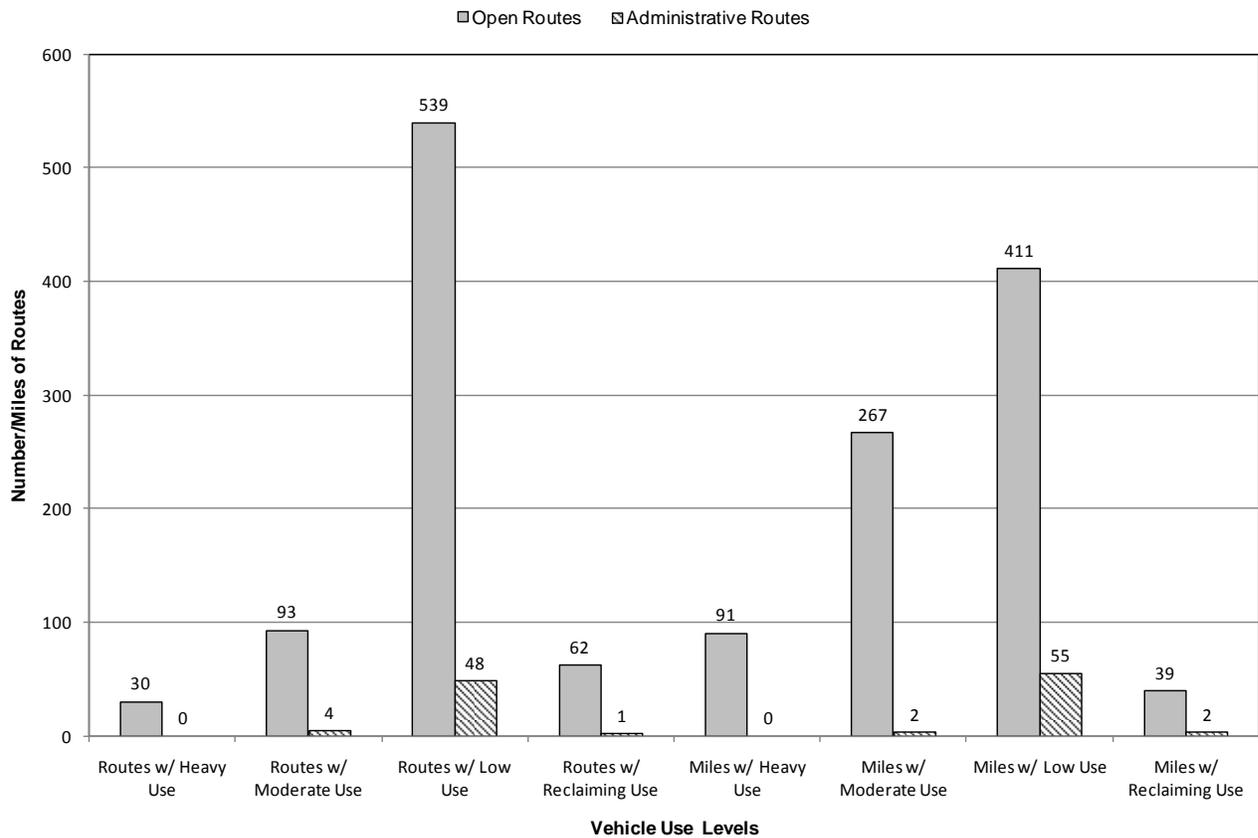
Figure 4.2.1.1a: Alternative A Route Designations in Big Game General Winter Range



Of the existing BLM routes within BGGWR under the No Action Alternative, 539 open routes (411 miles) are considered by resource specialists to have low vehicle use levels as shown in Figure 4.2.1.1b below. Conversely, 93 open routes (267 miles) have vehicle use levels estimated as moderate and only 30 open routes (91 miles) are estimated to have heavy vehicle use. The combination of 88 closed routes and the continuation of low vehicle use levels on 74% of open routes (51% of open route miles) and no observed vehicle use on 9% of open routes (5% of open route miles) in BGGWR would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a minor to moderate degree (43 CFR 8342.1 (b)).

Long term direct impacts to BGGWR would be minor to moderate for wildlife disturbance, displacement, and habitat loss due to low use or no use levels on 83% of open routes and 12% closed routes. The open road density of 1.9 miles of open routes per square mile exceeds the 1 mile per section road density recommended in the “Guidelines/ Recommendations” for road densities (Canfield, J.E. et. al. 1999).

Figure 4.2.1.1b: Alternative A Route Designations by in Big Game General Winter Range Estimated Vehicle Use Levels



Sage-Grouse

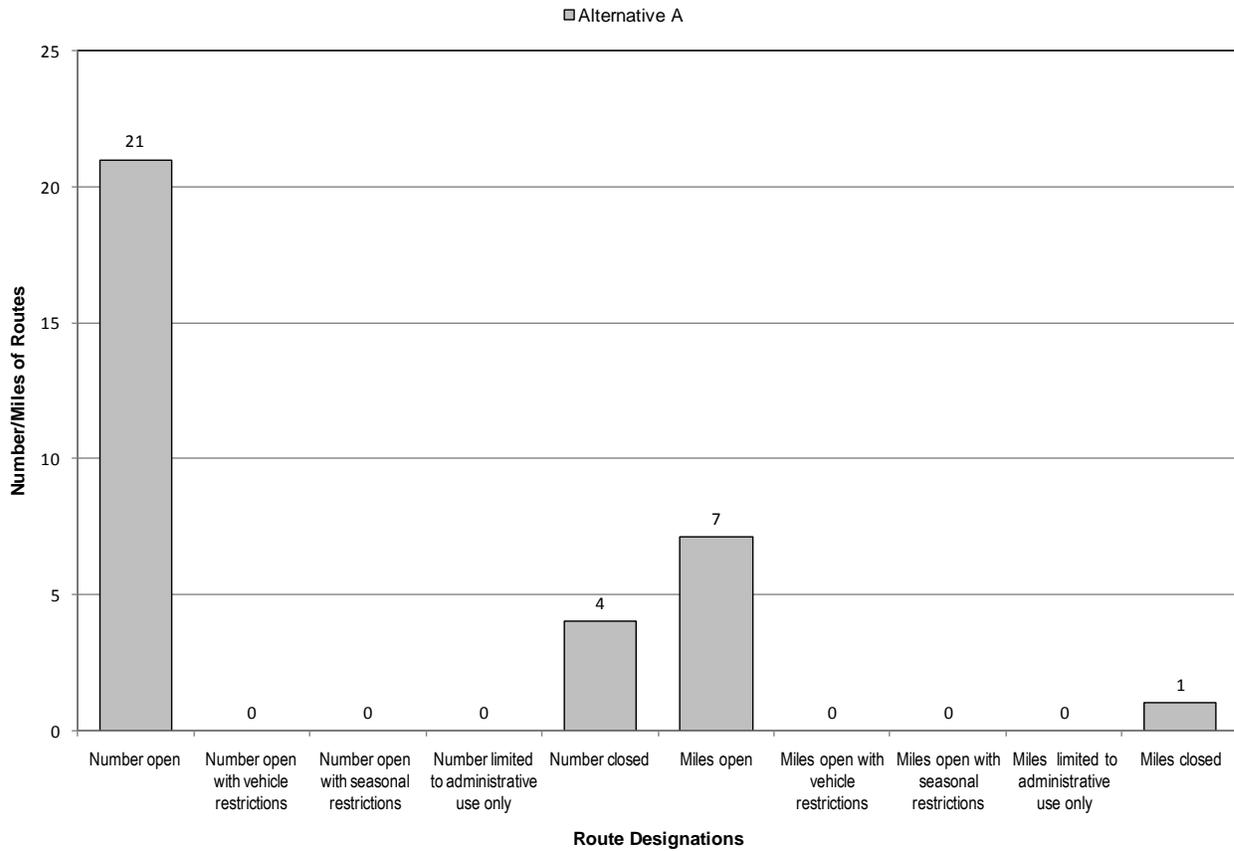
The current open route network would continue the long-term, localized conditions that directly and moderately affect sage-grouse at and near Lek sites, as well as within nesting habitat, such as impairment of species' movements, harassment by humans, and disruption of habitat through loss of, or changes to, key habitat components. Additionally, as the potential for new route development is realized with boom cycles in population, energy exploration and development, these impacts may increase to a minor, short-term local extent as these new routes potentially become available and help spread out public use.

Leks and Nesting Habitat

Under the No Action Alternative, of the 25 routes that are within 0.25 miles of identified sage-grouse leks, 21 routes (7.1 miles) or 84% would be open to all types of motor vehicle use. Only 4 routes (1 mile) or 16% would be closed to motor vehicle use. The long-term, direct, localized effect of these route closures on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be negligible, due to the availability of many open routes near the lek sites (43 CFR 8342.1(b)).

Table 17: Alternative A Route Designations within 1/4-mile of Sage-Grouse Leaks				
Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	21	84%	7.1	87.7%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	0	0%	0	0%
Limited to administrative use only	0	0%	0	0%
Closed	4	16%	1.0	12.3%

Figure 4.2.1.2a: Alternative A Route Designations within 1/4-mile of Sage Grouse Leaks

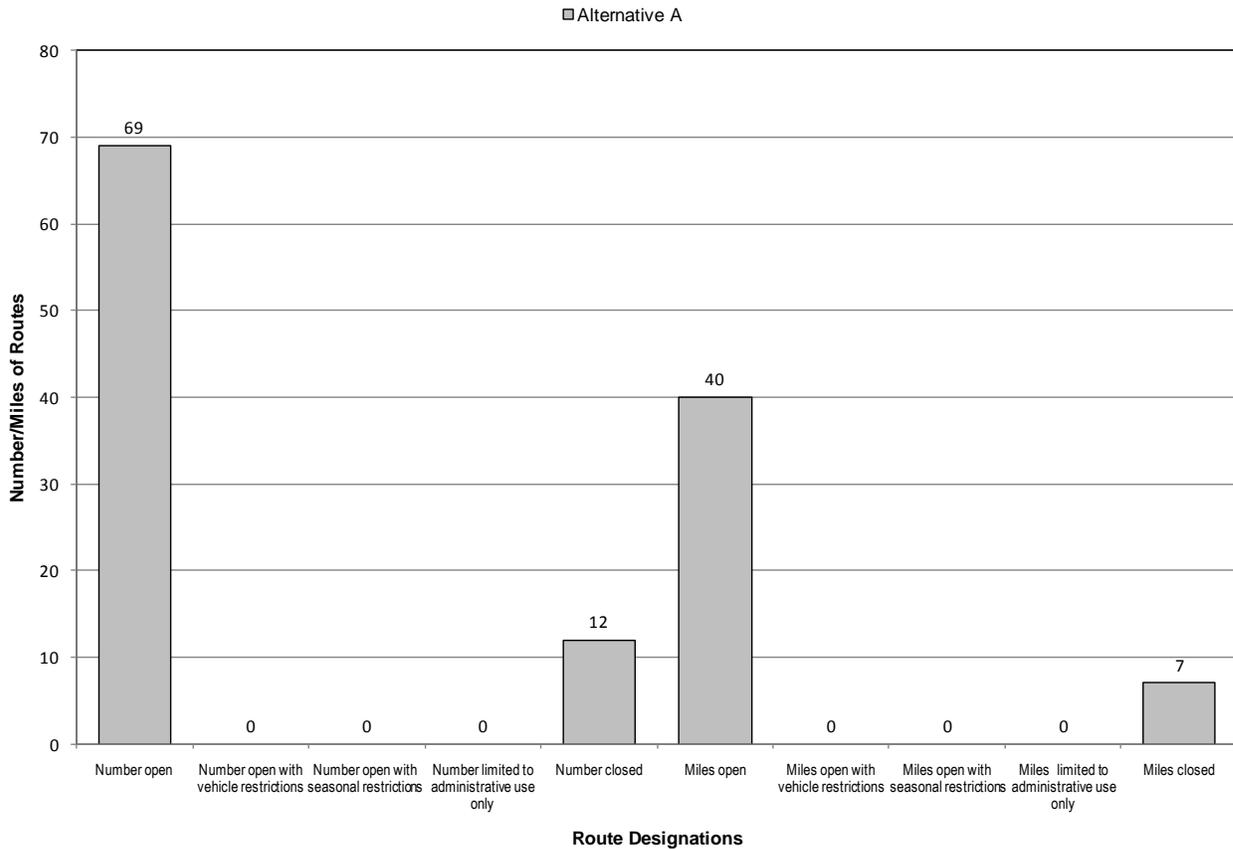


Of the 81 routes that are within 0.6 miles of identified sage-grouse leks, 69 routes (40 miles) or 85% would be open. Only 12 routes (7 miles) or 15% would be closed to motor vehicle use. The

long-term, direct, localized effect of these route closures on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be minor, due to the availability of many open routes near the lek sites (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	69	85.2%	40	85.1%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	0	0%	0	0%
Limited to administrative use only	0	0%	0	0%
Closed	12	14.8%	7	14.9%

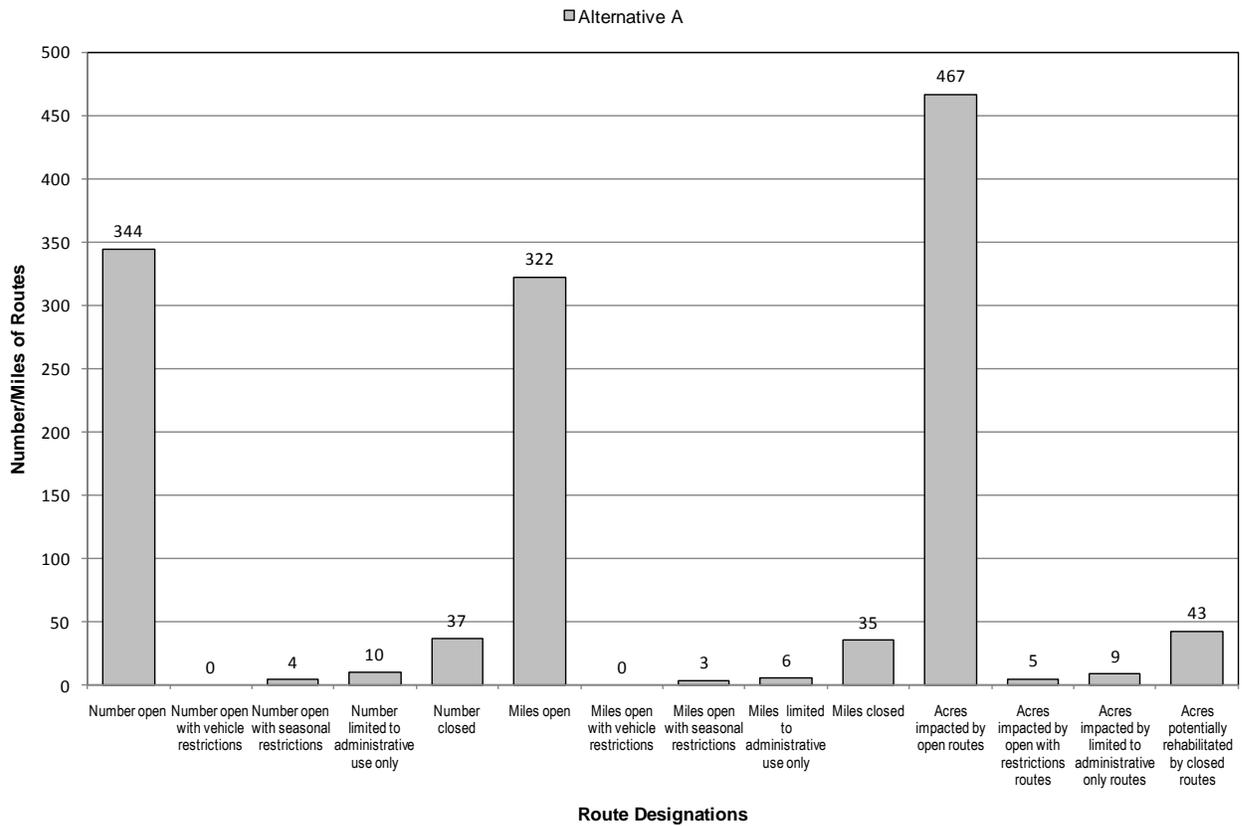
Figure 4.2.1.2b: Alternative A Route Designations within 0.6 miles of Sage Grouse Leks



Of the 395 routes that are within nesting habitat (within 2 miles of identified sage-grouse leks), 348 routes (325 miles) or 88% would be open or open with seasonal restrictions. Only 10 routes (6 miles) or 3% would be limited to administrative use only, while 37 routes (35 miles) or 9% would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes affects approximately 472 acres or 0.3% of the area within 2 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 2-mile nesting habitat, 332 acres would be without routes. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 43 acres or 8% of the total route acreage within the 2-mile nesting habitat. This would be a continuation of a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A					
	Routes	Percent	Miles	Percent	Acres impacted by routes	Percent of total within 2 miles
Open	344	87.1%	322	87.9%	466.8	89.3%
Open with vehicle restrictions	0	0%	0	0%	5.0	1.0%
Open with seasonal restrictions	4	1.0%	3.3	0.9%		
Limited to administrative use only	10	2.5%	5.6	1.5%	8.5	1.6%
Closed	37	9.4%	35.4	9.7%	42.7	8.2%
Percent of open route acreage					0.3%	
Ratio of open route acres to un-routed acres					1:332	

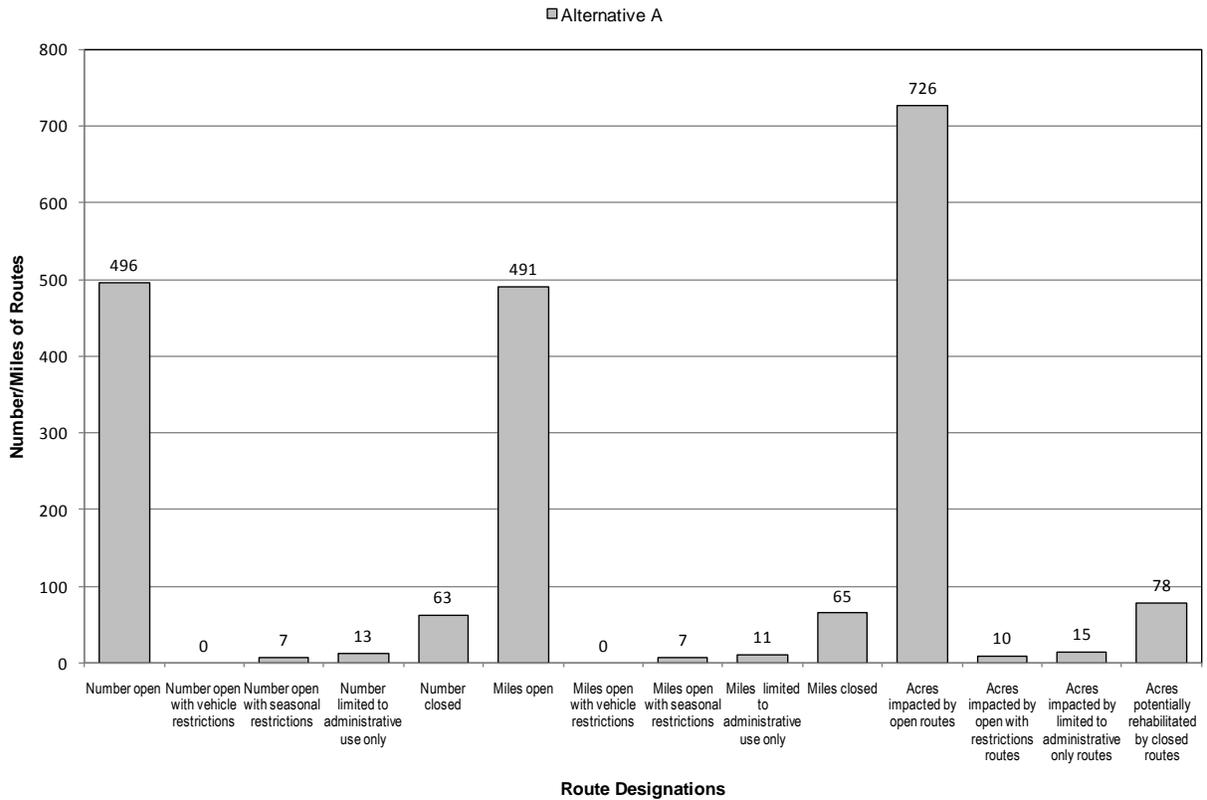
Figure 4.2.1.2c: Alternative A Route Designations in Sage Grouse Nesting Habitat (2 miles from Leks)



Of the 579 routes that are within nesting habitat (within 3 miles of identified sage-grouse leks), 503 routes (498 miles) or 87% would be open or open with seasonal restrictions. Only 13 routes (11 miles) or 2% would be limited to administrative use only, while 63 routes (65 miles) or 11% would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes affects approximately 736 acres or 0.2% of the area within 3 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 3-mile nesting habitat, 465 acres would be without routes. The footprint for routes that would be closed within the 3-mile nesting habitat would be 78 acres or 10% of the total. This would be a continuation of a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A					
	Routes	Percent	Miles	Percent	Acres impacted by routes	Percent of total within 3 miles
Open	496	85.7%	490.5	85.5%	726.2	87.6%
Open with vehicle restrictions	0	0%	0	0%	9.5	1.1%
Open with seasonal restrictions	7	1.2%	7.2	1.3%		
Limited to administrative use only	13	2.2%	10.9	1.9%	15.1	1.8%
Closed	63	10.9%	65.1	11.3%	78.4	9.5%
Percent of open route acreage					0.21%	
Ratio of open route acres to un-routed acres					1:465	

Figure 4.2.1.2d: Alternative A Route Designations in Sage Grouse Nesting Habitat (3 miles from Leks)

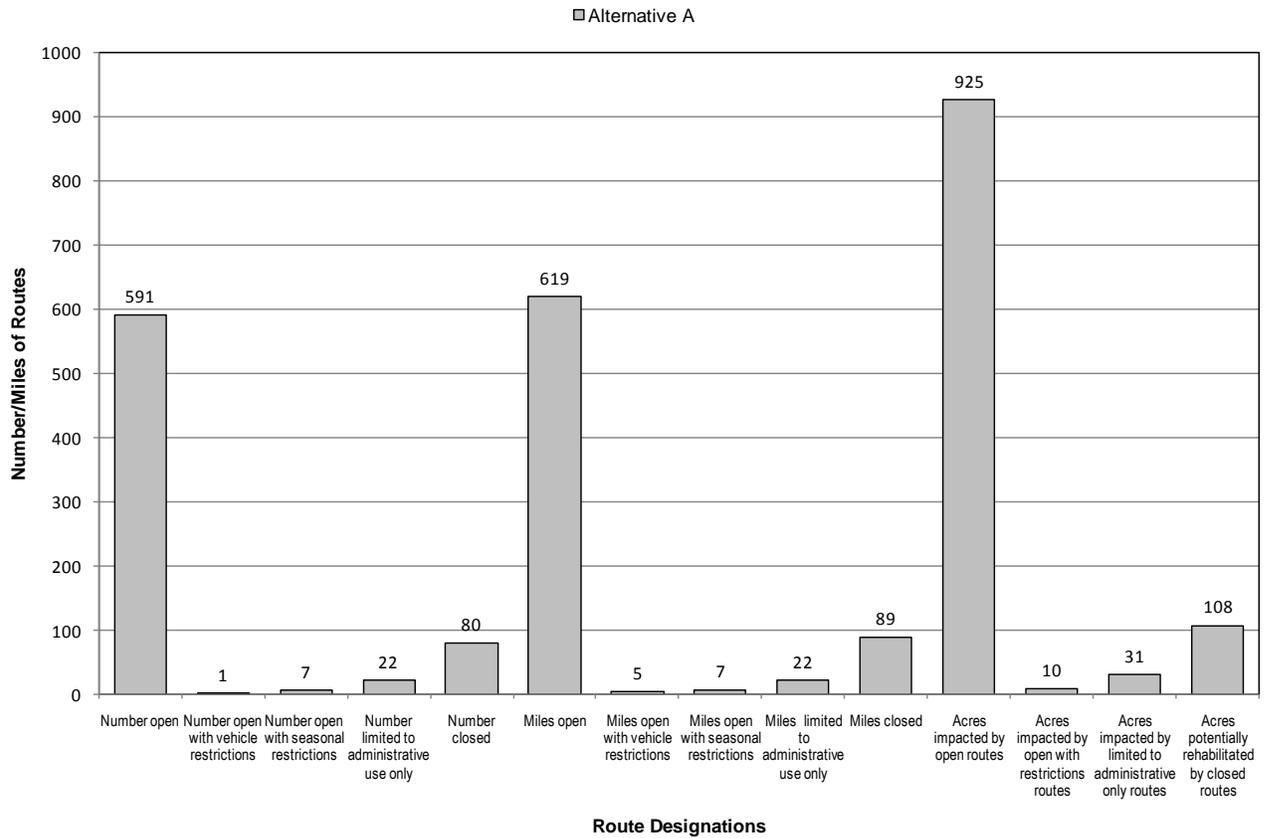


Finally, of the 701 routes that are within nesting habitat (within 4 miles of identified sage-grouse leks), 599 routes (631 miles) or 85% would be open or open with vehicle or seasonal restrictions.

Only 22 routes (22 miles) or 3% would be limited to administrative use only, while 80 routes (89 miles) or 11% would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes affects approximately 936 acres or 0.16% of the area within 4 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 4-mile nesting habitat, 623 acres would be without routes. The footprint for routes that would be closed within the 4-mile nesting habitat would be 108 acres or 10% of the total. This would be a continuation of a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

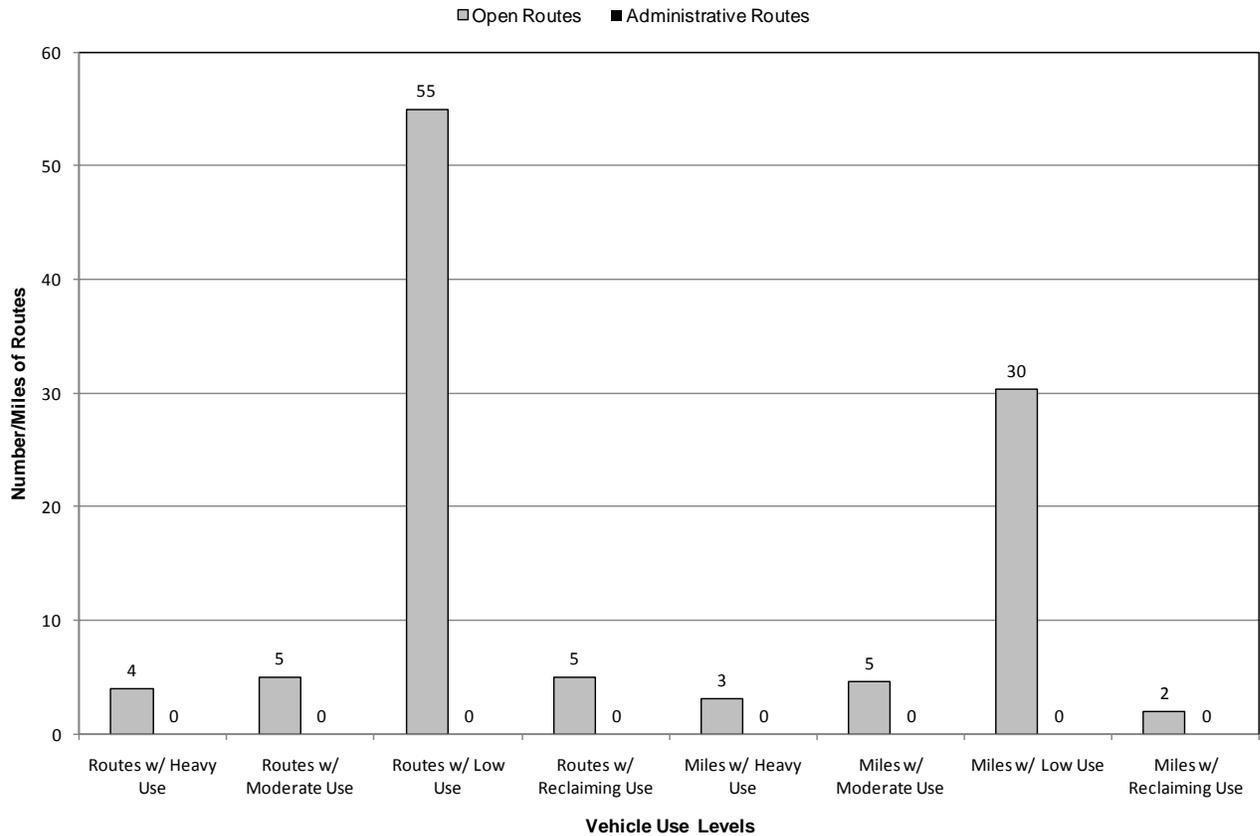
Potential Route Designations	Alternative A					
	Routes	Percent	Miles	Percent	Acres impacted by routes	Percent of total within 4 miles
Open	591	84.3%	618.8	83.3%	925.4	86.2%
Open with vehicle restrictions	1	0.1%	5.4	0.7%	9.5	0.9%
Open with seasonal restrictions	7	1.0%	7.2	1.0%		
Limited to administrative use only	22	3.1%	22	3.0%	30.7	2.9%
Closed	80	11.4%	89.3	12.0%	107.7	10.0%
Percent of open route acreage					0.16%	
Ratio of open route acres to un-routed acres					1:623	

Figure 4.2.1.2e: Alternative A Route Designations in Sage Grouse Nesting Habitat (4 miles from Leks)



Of the 81 existing BLM routes (47 miles) that comprise the travel routes within 0.6 miles of sage-grouse leks under the No Action Alternative, 60 open routes (30 miles) or 80% are considered by resource specialists to have low or no observed vehicle use. Conversely, 5 open routes (5 miles) or 7% have vehicle use levels estimated as moderate and only 4 open routes (3 miles) or 6% are estimated to have heavy vehicle use levels. The combination of 12 closed routes and the continuation of low or no observed vehicle use on 87% of open routes (81% of route miles) within 0.6 miles of sage-grouse lek sites would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a minor to moderate degree (43 CFR 8342.1 (b)).

Figure 4.2.1.2f: Alternative A Route Designations by Estimated Vehicle Use Levels for Routes within 0.6 miles of Sage Grouse Leaks

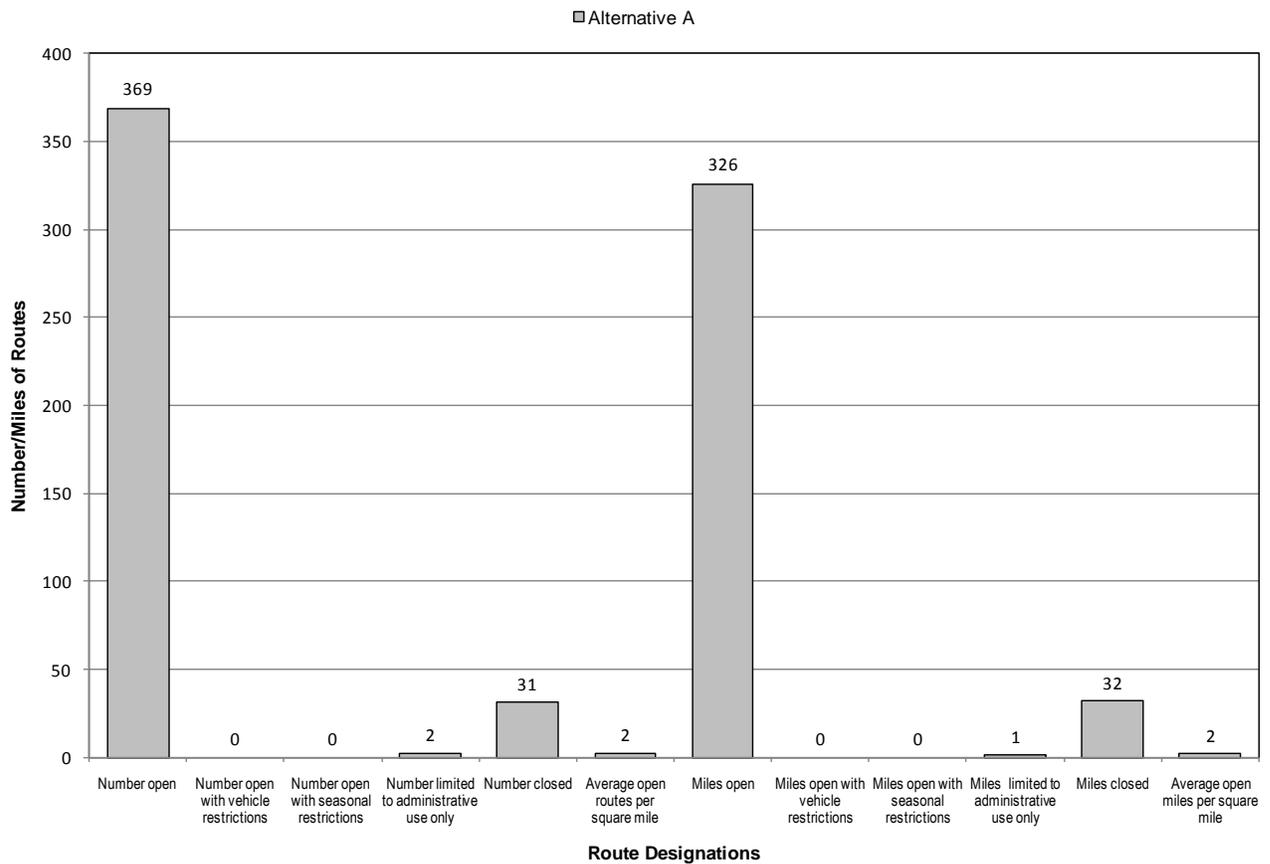


Greater Sage-Grouse Protection Priority Areas

Under the No Action Alternative, sage-grouse Protection Priority Areas (PPAs) would not be allocated. However, for analysis purposes, the route designations that follow would be for the same geographic areas that would become the PPAs in Alternatives B, C and D. Therefore, under the No Action Alternative, the 402 existing BLM routes (359 miles) that comprise the travel networks within these geographic areas would continue to be managed using five existing designation types, with more than 9 out of every 10 existing routes (92%) open to all motorized uses. Additionally, the route density within these areas would remain fairly constant for the long-term at 2 open routes per square mile and 1.8 miles of open routes per square mile. Although Alternative A carries forward closures and restrictions to administrative use only on 33 routes (33 miles) or 8% of the routes, the long-term, direct, localized effect of these restricted routes on reducing habitat fragmentation is minor, due to the availability of 369 open routes at 326 miles with the route densities that are described above (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	369	91.8%	326.1	90.9%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	0	0%	0	0%
Limited to administrative use only	2	0.5%	0.9	0.3%
Closed	31	7.7%	31.8	8.9%
Average open routes per square mile (density)	2		1.8	

Figure 4.2.1.2g: Alternative A Route Designations in Sage Grouse PPAs



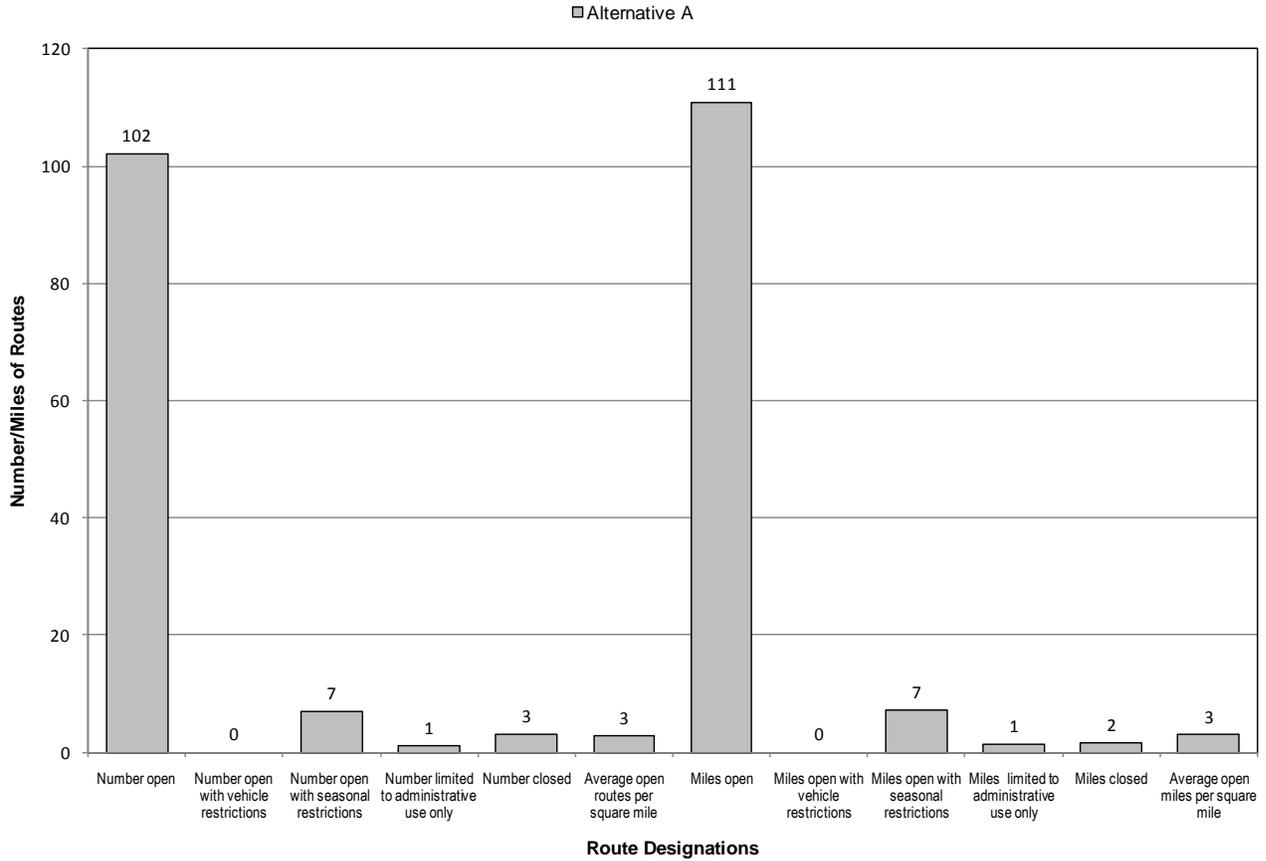
Greater Sage-Grouse Restoration Areas

Under the No Action Alternative, sage-grouse Restoration Areas (RAs) would not be allocated. However, for analysis purposes, the route designations that follow would be for the same geographic areas that would become the RAs in Alternatives B, C and D. Therefore, under the No Action Alternative, the 113 existing BLM routes (121 miles) that comprise the travel networks within these areas (RA) would continue to be managed using five existing designation types, with more than 9 out of every 10 existing routes (96%) open to all motorized uses or open with seasonal restrictions. Additionally, the route density within the RA would remain fairly constant for the long-term at 2.7 open routes per square mile and 2.9 miles of open routes per square mile. Although Alternative A carries forward closures and restrictions to administrative use only on 4 routes (3 miles) or 4% of the RA, the long-term, direct, localized effect of these restricted routes on reducing RA habitat fragmentation is negligible, due to the availability of 109 open routes at 118 miles with the route densities that are described above (43 CFR 8342.1(b)).

Table 23: Alternative A Route Designations in Sage-Grouse RAs

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	102	90.3%	110.8	91.6%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	7	6.2%	7.2	6.0%
Limited to administrative use only	1	0.9%	1.4	1.2%
Closed	3	2.7%	1.5	1.2%
Average <u>open</u> routes per square mile (density)	2.7	X	2.9	X

Figure 4.2.1.2h: Alternative A Route Designations in Sage Grouse RAs

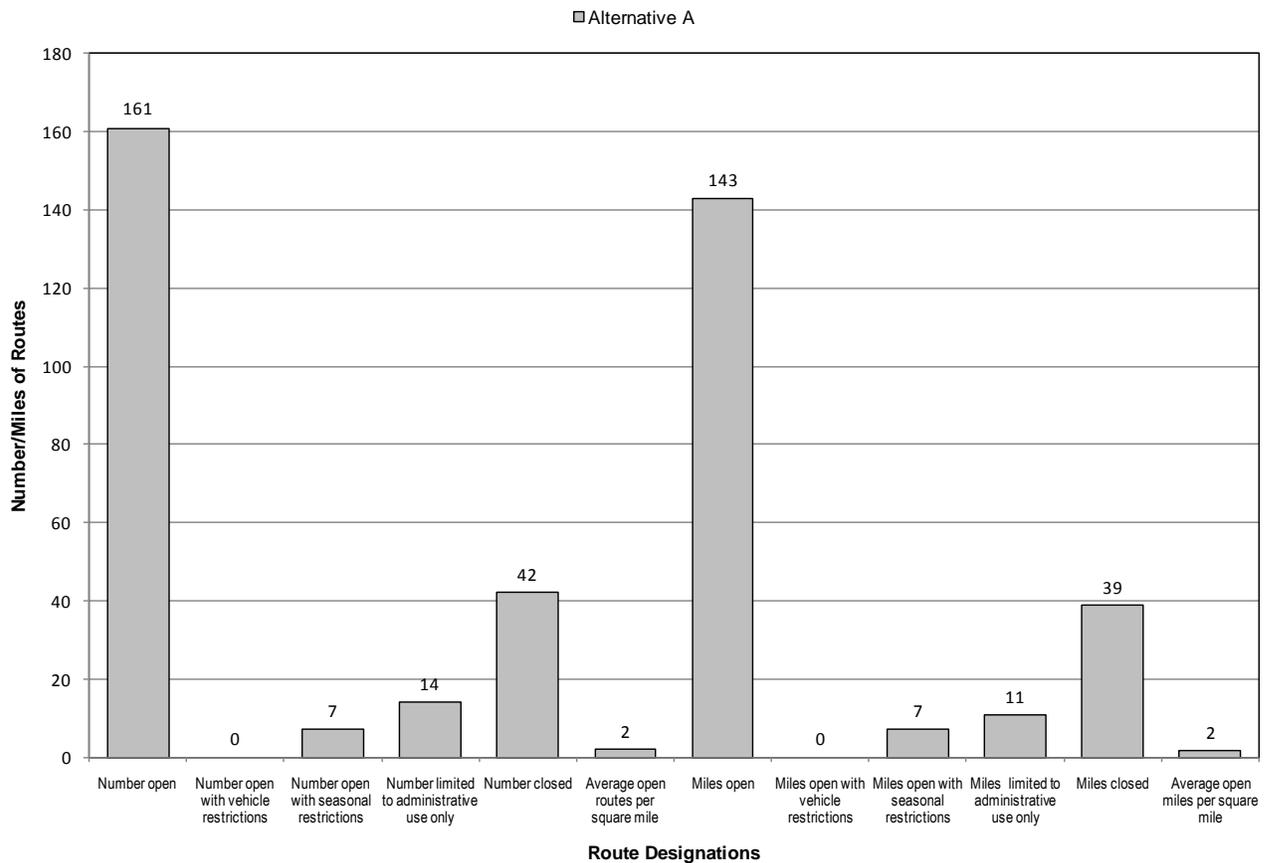


Greater Sage-Grouse General Habitat

Under the No Action Alternative, sage-grouse PPAs, RAs, and General habitat would not be allocated; however, they would be allocated in Alternatives B, C, and D. Route designations for those geographic areas (potential PPA/RA/General) are discussed in the previous two sections. However, for analysis purposes, the route designations that follow would be for the remaining sage-grouse general habitat. Under the No Action Alternative, the 224 existing BLM routes (200 miles) that comprise the travel networks within the remaining sage-grouse general habitat would continue to be managed using five existing designation types, with more than 7 out of every 10 existing routes (75%) open to all motorized uses or open with seasonal restrictions. Additionally, the route density within the remaining general habitat would remain fairly constant for the long-term at 1.8 open routes per square mile and 1.6 miles of open routes per square mile. Alternative A carries forward closures and restrictions to administrative use only on 56 routes (49 miles) or 25% of the remaining general habitat. The continued long-term, direct, localized effect of these restricted routes on reducing habitat fragmentation is minor, due to the availability of 168 open routes at 150 miles with the route densities that are described above (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	161	71.9%	142.9	71.6%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	7	3.1%	7.2	3.6%
Limited to administrative use only	14	6.3%	10.7	5.4%
Closed	42	18.8%	38.7	19.4%
Average open routes per square mile (density)	1.8		1.6	

Figure 4.2.1.2i: Alternative A Route Designations in Sage Grouse General Habitat



Overall, this Alternative would provide negligible to minor protection of sage-grouse leks and nesting habitat from habitat fragmentation and disturbance from travel routes within the Travel Management Areas (TMAs). The direct, long-term, local impacts to sage-grouse would continue to occur.

Prairie Dogs

The current open route network would continue the long-term, localized conditions that directly and moderately affect prairie dogs (white-tailed and black-tailed) at or within 0.5 miles of known prairie dog communities, such as impairment of species’ movements, harassment by humans, and disruption of habitat through loss of, or changes to, key habitat components. Additionally, as the potential for new route development is realized with boom cycles in population, energy exploration, and development, these impacts may increase to a minor, short-term local extent as these new routes potentially become available and help spread out public use.

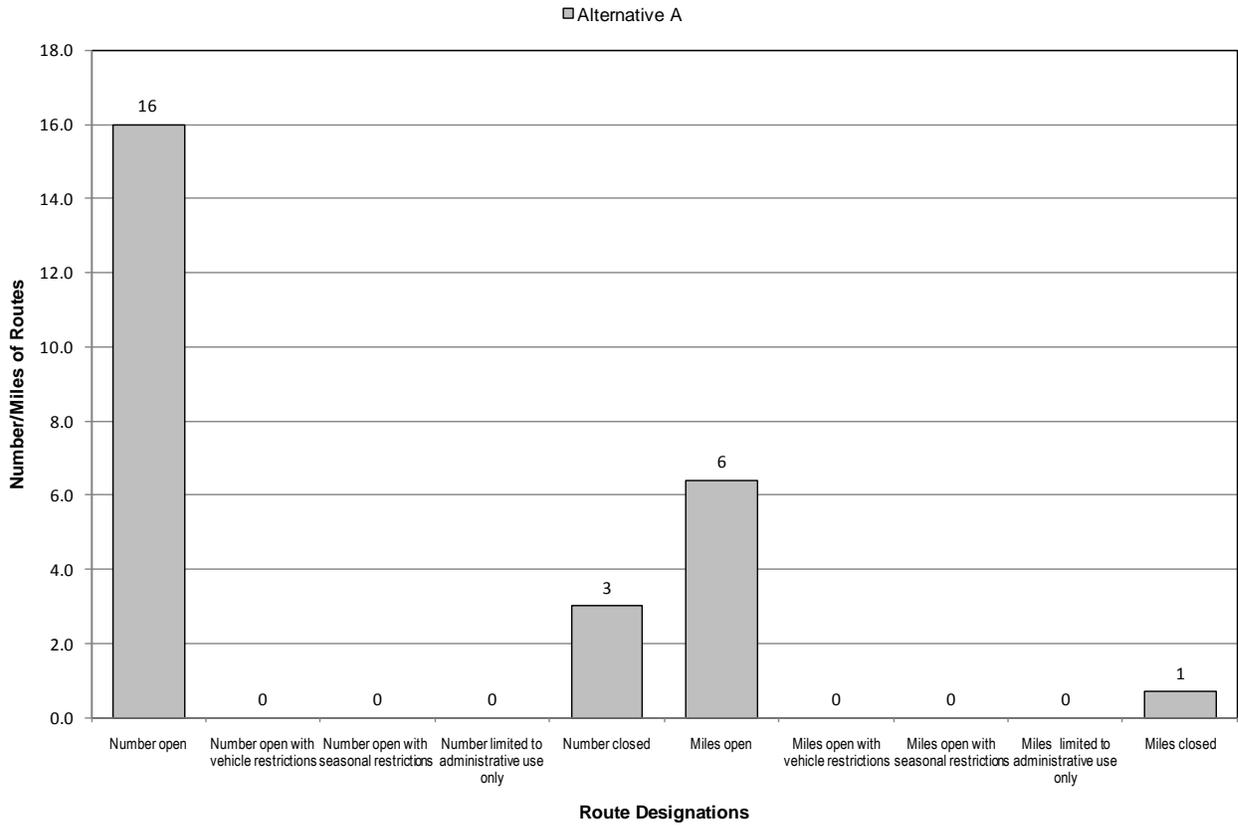
White-tailed Prairie Dogs

Under the No Action Alternative, of the 19 routes that are within 0.5 miles of identified white-tailed prairie dog “towns”, 16 routes (6.4 miles) or 84% would be open to all types of motor vehicle use. Only 3 routes (0.7 mile) or 16% would be closed to motor vehicle use. The long-term, direct, localized effect of these route closures on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be negligible, due to the availability of the 16 open routes near the “town” sites (43 CFR 8342.1(b)).

Table 25: Alternative A Route Designations within 1/2-mile of White-tailed Prairie Dog Habitat

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	16	84.2%	6.4	88.9%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	0	0%	0	0%
Limited to administrative use only	0	0%	0	0%
Closed	3	15.8%	0.7	9.7%

Figure 4.2.1.3a: Alternative A Route Designations within 0.5 miles of White-tailed Prairie Dog Habitat



Black-tailed Prairie Dogs

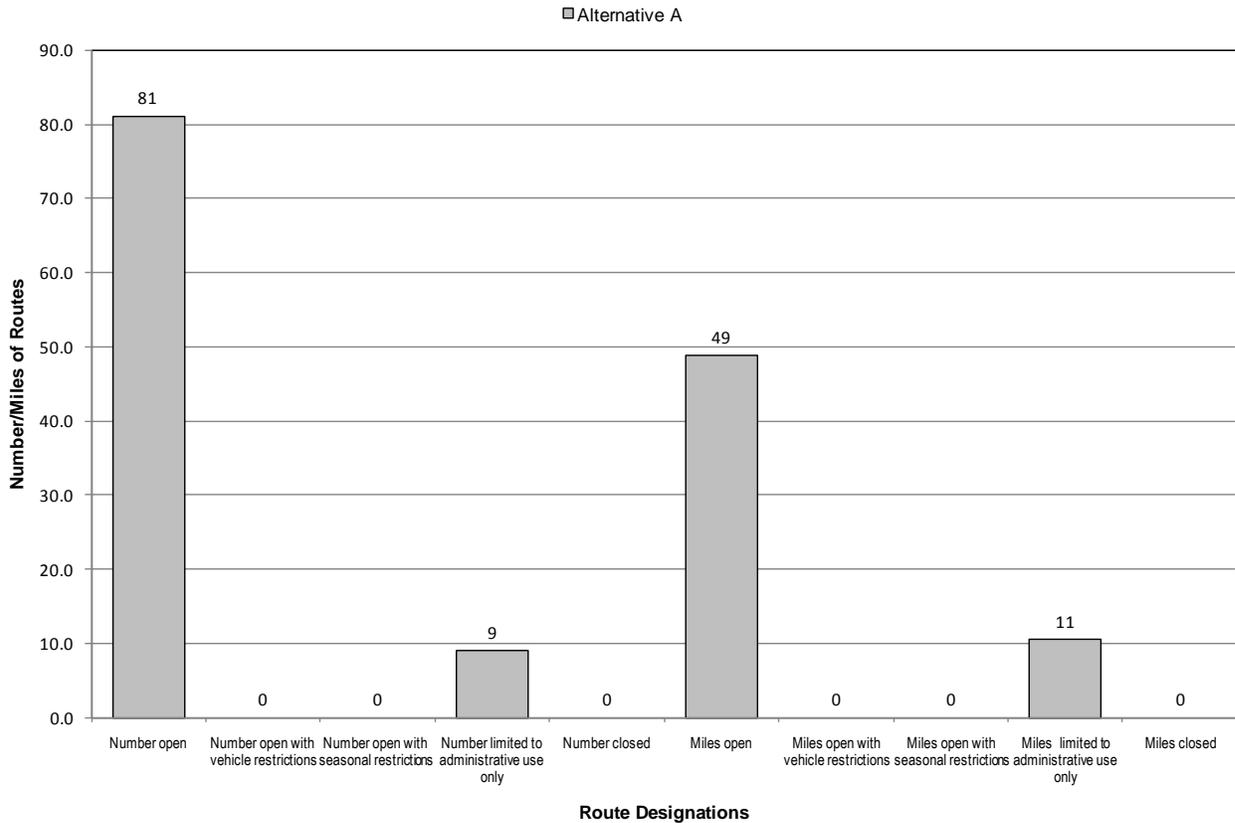
Under the No Action Alternative, of the 90 routes that are within 0.5 mile of identified black-tailed prairie dog “towns”, 81 routes (48.8 miles) or 90% would be open to all types of motor vehicle. No routes would be closed and only 9 routes (10.5 mile) or 10% would be limited to administrative use only. The long-term, direct, localized effect of these route restrictions on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be negligible, due to the availability of the 81 open routes near the “town” sites (43 CFR 8342.1(b)).

There would be negligible benefits to prairie dog habitat with this Alternative. The long-term, direct, localized, and moderate impacts on habitat fragmentation and prairie dog harassment would continue.

Table 26: Alternative A Route Designations within 1/2-mile of Black-tailed Prairie Dog Habitat

Potential Route Designations	Alternative A			
	Routes	Percent	Miles	Percent
Open	81	90.0%	48.8	82.3%
Open with vehicle restrictions	0	0%	0	0%
Open with seasonal restrictions	0	0%	0	0%
Limited to administrative use only	9	10.0%	10.5	17.7%
Closed	0	0%	0	0%

Figure 4.2.1.3b: Alternative A Route Designations within 0.5 miles of Black-tailed Prairie Dog Habitat



Summary Alternative A - Impacts from Trails and Travel Management

Under Alternative A, there would be 763.6 miles of open routes and 108.6 miles of closed routes. The impacts to wildlife and special status species as a result of implementing actions associated with travel management would include conflicts with motorized activities and road densities within associated habitats. Short-term impacts would include disruption and displacement of individuals and direct mortality to less mobile species. Long-term adverse impacts would include habitat loss and fragmentation with the development of roads.

O.5.2.9.4 Alternative B

Big Game Species

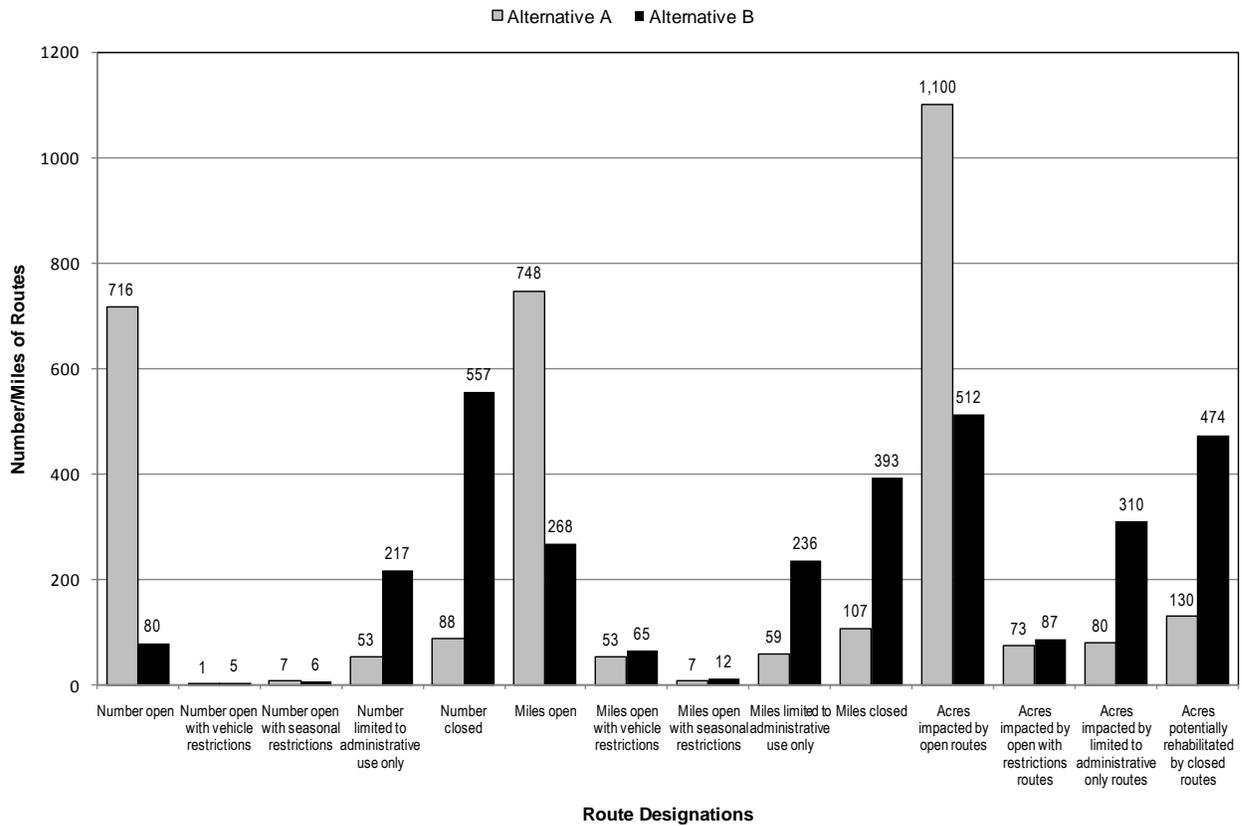
Under Alternative B, the 865 existing BLM routes (974 miles) that comprise the travel networks within big game general winter range (BGGWR) would continue to be managed using five existing designation types shown, with just over 1 out of every 10 existing routes (91 routes or about 11%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 73% fewer open routes in Alternative B than would be open in Alternative A. Additionally, the route density within the BGGWR would be reduced by 87% for the long-term to 0.2 open routes per square mile and reduced by 57% to 0.8 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes affects approximately 599 acres or 0.2% of the 275,839 acres of BGGWR within the TMAs. In other words, for every 1 acre of route footprint within the BGGWR, 460 acres would be without routes.

Alternative B proposes closures and restrictions to administrative use only on a combined 774 routes at 629 miles, a 73% increase from these designations in Alternative A. The long term, direct, localized effect of these restricted routes on reducing BGGWR habitat fragmentation is major, due to the reduced availability and use of open routes to only 91 (at 345 miles) with the route densities that are described above.

Table 27: Alternative B Route Designations for Big Game Winter Range (compared to Alt. A)

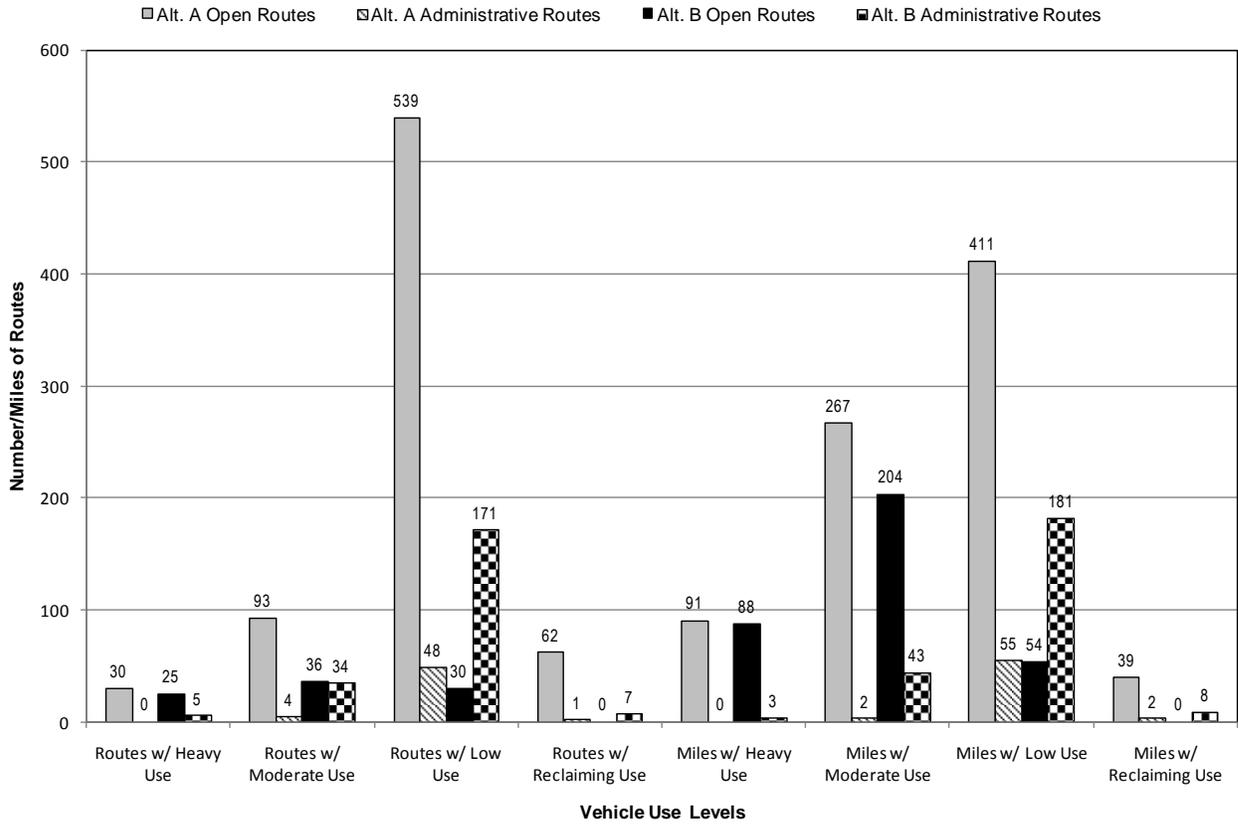
Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	716	83%	747.6	76.8%	80	9.2%	-636	-73.5%	268	27.5%	-480	-49.3%
Open with vehicle restrictions	1	0.1%	52.7	5.4%	5	0.6%	4	0.5%	65.1	6.7%	12.4	1.3%
Open with seasonal restrictions	7	0.8%	7.2	0.7%	6	0.7%	-1	-0.1%	11.8	1.2%	4.6	0.5%
Limited to administrative use only	53	6.1%	59	6.1%	217	25.1%	164	19.0%	236	24.2%	177	18.2%
Closed	88	10.2%	107.4	11%	557	64.4%	469	54.2%	393	40%	285.6	29.3%
Average open routes per square mile (density)	1.7		1.9		0.2		-1.5	-87.4%	0.8		-1.1	-57.3%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	1100.3		79.6%		512.1		37.0%		-588.2		-42.5%	
Open with restrictions	73.4		5.3%		86.6		6.3%		13.2		1.0%	
Limited to administrative use only	79.6		5.8%		309.7		22.4%		230.1		16.6%	
Closed	129.7		9.4%		474.4		34.3%		344.7		24.9%	
Percent of open route acreage	0.4%				0.2%							
Ratio of open route acres to unrouted acres	1:234				1:460							

Figure 4.2.2.1a: Alternative B Route Designations in Big Game General Winter Range (Compared to Alt. A)



Of the existing BLM routes within BGGWR under the Alternative B, 30 open routes (54 miles) are considered by resource specialists to have low vehicle use levels. Conversely, 36 open routes (204 miles) have vehicle use levels estimated as moderate and only 25 open routes (88 miles) are estimated to have heavy vehicle use. The combination of 557 closed routes and the low vehicle use levels on 33% of open routes (16% of open route miles) and 79% of administrative use only routes (77% administrative route miles) in BGGWR would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a moderate to major degree (43 CFR 8342.1 (b)).

Figure 4.2.2.1b: Alternative B Route Designations in Big Game General Winter Range by Estimated Vehicle Use Levels (Compared to Alt. A.)



Overall, this Alternative would provide moderate to major protection of big game winter range. The direct, local, and long term effects of route use on big game winter range such as wildlife harassment, human-caused animal mortality, stress, or displacement of individual animals would be reduced to a moderate to major degree on big game winter range. Route densities would be reduced to 0.2 miles per square mile (87% less) and 73% fewer open routes versus Alternative A. The open road density of 0.2 miles of open routes per square mile is 80% below the 1 mile per section road density recommended in the “Guidelines/ Recommendations” for road densities.

BLM Road Density Analysis indicated that 1,391,647 acres of BGWR CAPS SCORE 1 and 2 areas, (of all ownerships with any public land ownership (surface or subsurface)) have road densities that exceed 0.5 miles per square mile. This Alternative would require roads to be gated or closed during crucial seasons where they impact big game winter range or parturition areas. Public access in these areas would vary dependent on the depth of winter snow. In greater snow depth years, disturbance impacts to big game would decrease due to reduced public access. In these areas, gating, closures, or reclamation of roads would reduce impacts to big game winter range by 69% and 57% respectively when compared to Alternative C and Alternative D. This would directly contribute in the long-term to decreasing the effects of route use, such as wildlife harassment, displacement, and stress to big game on winter ranges to a moderate to major degree.

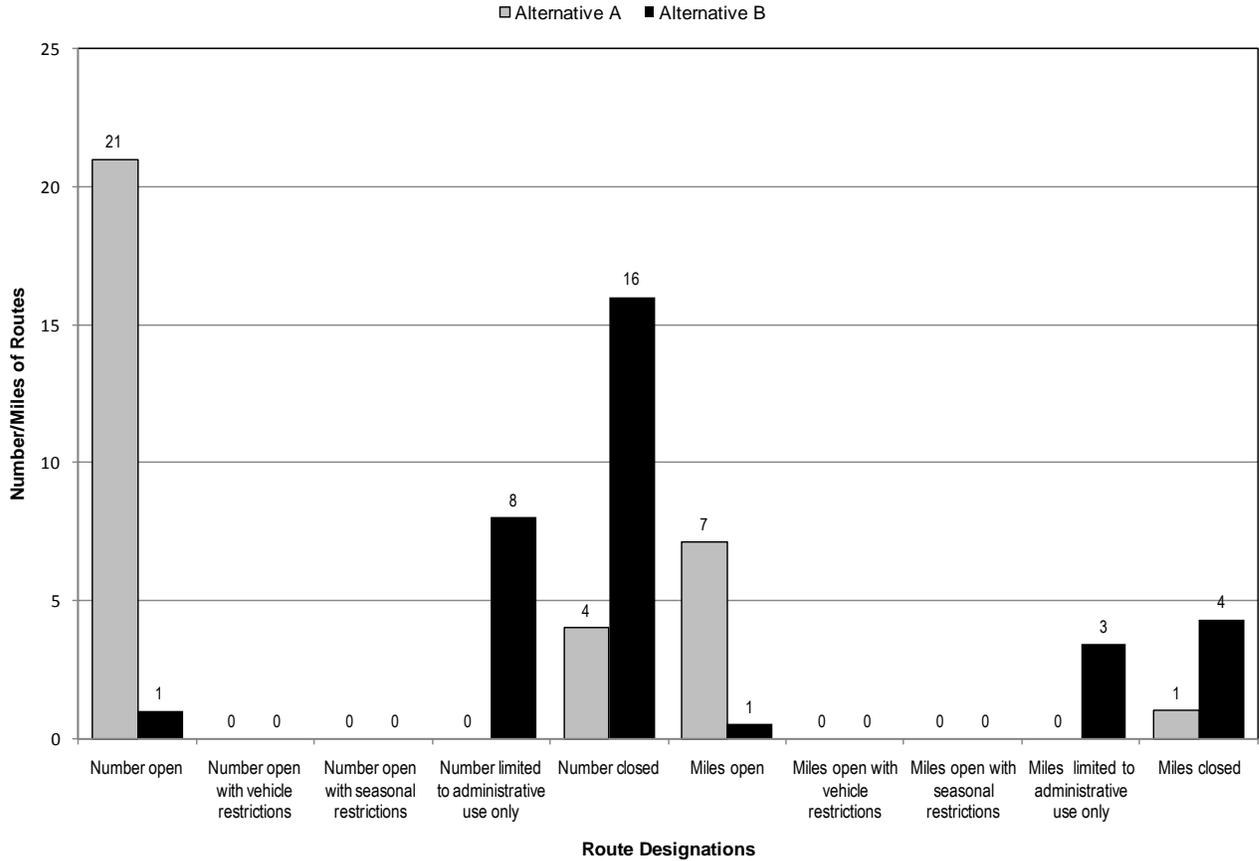
Greater Sage-Grouse Leks and Nesting Habitat

Under the Alternative B, of the 25 routes that are within 0.25 miles of identified sage-grouse leks, only 1 route (0.5 miles) or 4% would be open to all types of motor vehicle use. Conversely, 16 routes (4.3 miles) or 64% would be closed to motor vehicle use and 8 routes (3.4 miles) or 32% would be limited to administrative use only. This would result in 80% fewer open routes within 0.25 miles of leks in Alternative B than would be open in Alternative A. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be major, due to the extremely limited public motorized access opportunities near the lek sites (43 CFR 8342.1(b)).

Table 28: Alternative B Route Designations within 1/4-mile of Sage-Grouse Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	21	84.0%	7.1	87.7%	1	4.0%	-20	-80.0%	0.5	6.1%	-6.6	-81.6%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	8	32.0%	8	32.0%	3.4	41.5%	3.4	41.5%
Closed	4	16.0%	1.0	12.3%	16	64.0%	12	48.0%	4.3	52.4%	3.3	40.1%

Figure 4.2.2.2a: Alternative B Route Designations within 1/4-mile of Sage Grouse Leaks

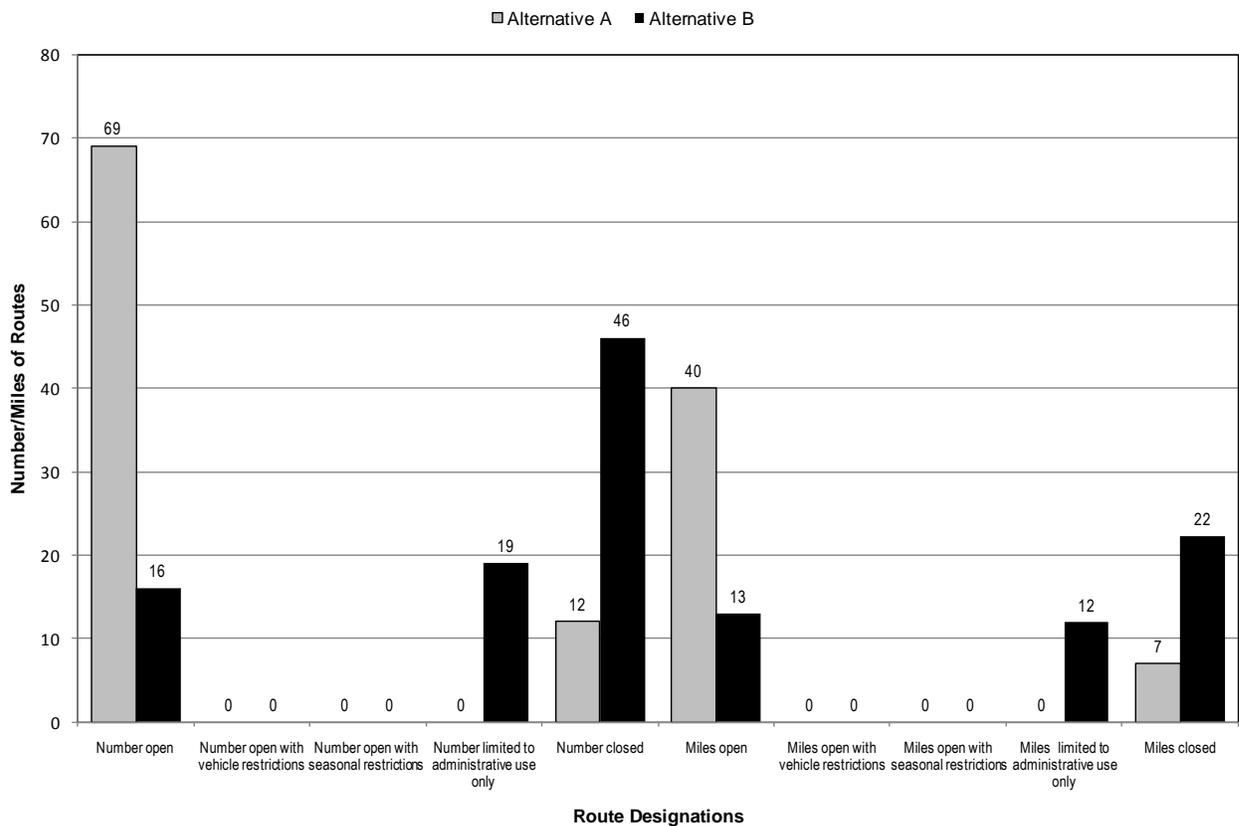


Under the Alternative B, of the 81 routes that are within 0.6 miles of identified sage-grouse leks, 16 routes (12.9 miles) or 20% would be open to all types of motor vehicle use. Conversely, 46 routes (22.2 miles) or 57% would be closed and 19 routes (11.9 miles) or 23% would be limited to administrative use only. This would result in 65% fewer open routes within 0.6 miles of leks in Alternative B than would be open in Alternative A. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be moderate to major, due to the limited public motorized access opportunities near the lek sites (43 CFR 8342.1(b)).

Table 29: Alternative B Route Designations within 0.6 miles of Sage-Grouse Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	69	85.2%	40.0	85.1%	16	19.8%	-53	-65.4%	12.9	27.4%	-27.1	-57.7%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	19	23.5%	19	23.5%	11.9	25.3%	11.9	25.3%
Closed	12	14.8%	7.0	14.9%	46	56.8%	34	42%	22.2	47.2%	15.2	32.3%

Figure 4.2.2b: Alternative B Route Designations within 0.6 miles of Sage Grouse Leks (Compared to Alt. A)

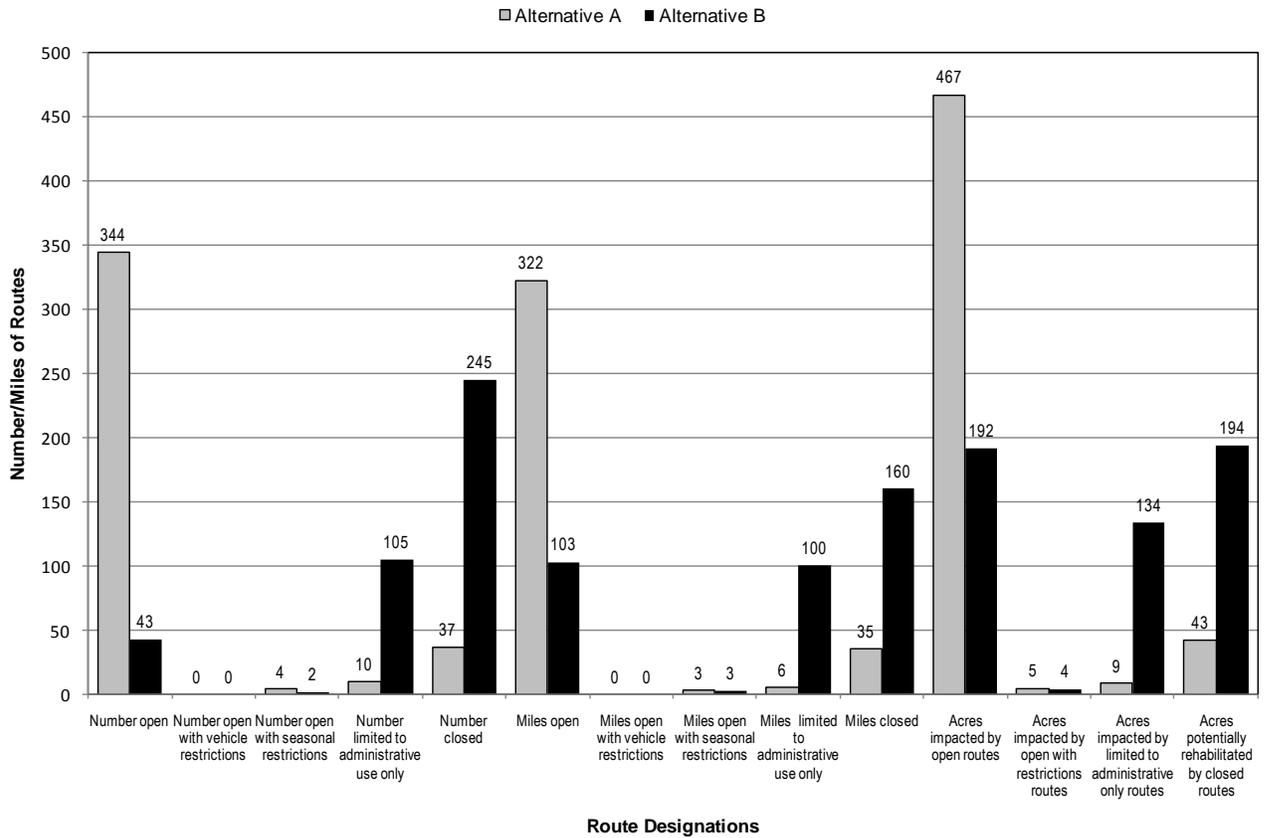


Of the 395 routes that are within nesting habitat (within 2 miles of identified sage-grouse leks), 44 routes (106 miles) or 11% would be open or open with seasonal restrictions. Conversely, 105 routes (100 miles) or 27% would be limited to administrative use only, while 245 routes (160 miles) or 62% would be closed to motor vehicle use. This would result in 76% fewer open routes within 2 miles of leks in Alternative B than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 196 acres or 0.12% of the total area within 2 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 2-mile nesting habitat, 802 acres would be without routes. This would result in 53% fewer open route acres in Alternative B than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 194 acres or 37% of the total route acreage within the 2-mile nesting habitat; 29% more than in Alternative A. This would be a long-term, direct, localized moderate to major reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Table 30: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 2 miles from Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	344	87.1%	322.0	87.9%	43	10.9%	-301	-76.2%	103.1	28.1%	-218.9	-59.8%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	4	1.0%	3.3	0.9%	2	0.5%	-2	-0.5%	2.7	0.7%	-0.6	-0.2%
Limited to administrative use only	10	2.5%	5.6	1.5%	105	26.6%	95	24.1%	100.4	27.4%	94.8	25.9%
Closed	37	9.4%	35.4	9.7%	245	62%	208	52.7%	160.1	43.7%	124.7	34.0%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	466.8		89.3%		191.5		36.6%		-275.3		-52.7%	
Open with restrictions	5.0		1.0%		4.3		0.8%		-0.7		-0.1%	
Limited to administrative use only	8.5		1.6%		133.8		25.6%		125.3		23.9%	
Closed	42.7		8.2%		193.6		37.0%		150.9		28.8%	
Percent of open route acreage	0.3%				0.12%							
Ratio of open route acres to unrouted acres	1:332				1:802							

Figure 4.2.2.2c: Alternative B Route Designations in Sage Grouse Nesting Habitat - 2 miles from Leks (Compared to Alt. A)

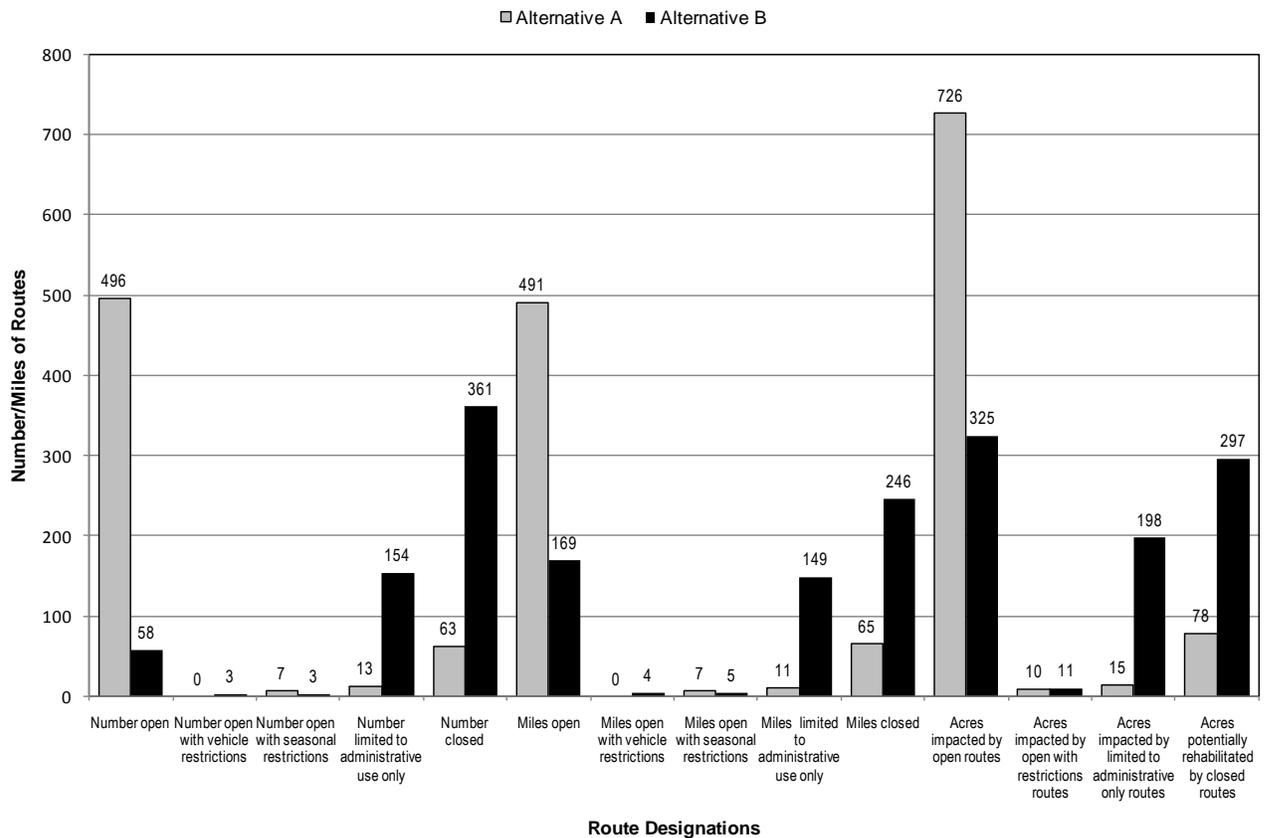


Of the 579 routes that are within nesting habitat (within 3 miles of identified sage-grouse leks), 64 routes (178 miles) or 11% would be open or open with vehicle or seasonal restrictions. Conversely, 154 routes (149 miles) or 27% would be limited to administrative use only, while 361 routes (246 miles) or 62% would be closed to motor vehicle use. This would result in 76% fewer open routes within 3 miles of leks in Alternative B than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 335 acres or 0.10% of the total area within 3 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 3-mile nesting habitat, 1,023 acres would be without routes. This would result in 48% fewer open route acres in Alternative B than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 297 acres or 36% of the total route acreage within the 3-mile nesting habitat; 26% more than in Alternative A. This would be a long-term, direct, localized moderate reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Table 31: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 3 miles from Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	496	85.7%	490.5	85.5%	58	10.0%	-438	-76%	169.0	29.5%	-321.5	-56.0%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	3	0.5%	3	0.5%	4.3	0.7%	4.3	0.7%
Open with seasonal restrictions	7	1.2%	7.2	1.3%	3	0.5%	-4	-0.7%	5.1	0.9%	-2.1	-0.4%
Limited to administrative use only	13	2.2%	10.9	1.9%	154	26.6%	141	24%	149.0	26.0%	138.1	24.1%
Closed	63	10.9%	65.1	11.3%	361	62.3%	298	51.5%	246.3	42.9%	181.2	31.6%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	726.2		87.6%		324.5		39.1%		-401.7		-48.5%	
Open with restrictions	9.5		1.1%		10.5		1.3%		1.0		0.1%	
Limited to administrative use only	15.1		1.8%		197.8		23.8%		182.7		22.0%	
Closed	78.4		9.5%		296.6		35.8%		218.2		26.3%	
Percent of open route acreage	0.21%				0.10%							
Ratio of open route acres to unrouted acres	1:465				1:1023							

Figure 4.2.2.2d: Alternative B Route Designations in Sage Grouse Nesting Habitat - 3 miles from Leks (Compared to Alt. A)

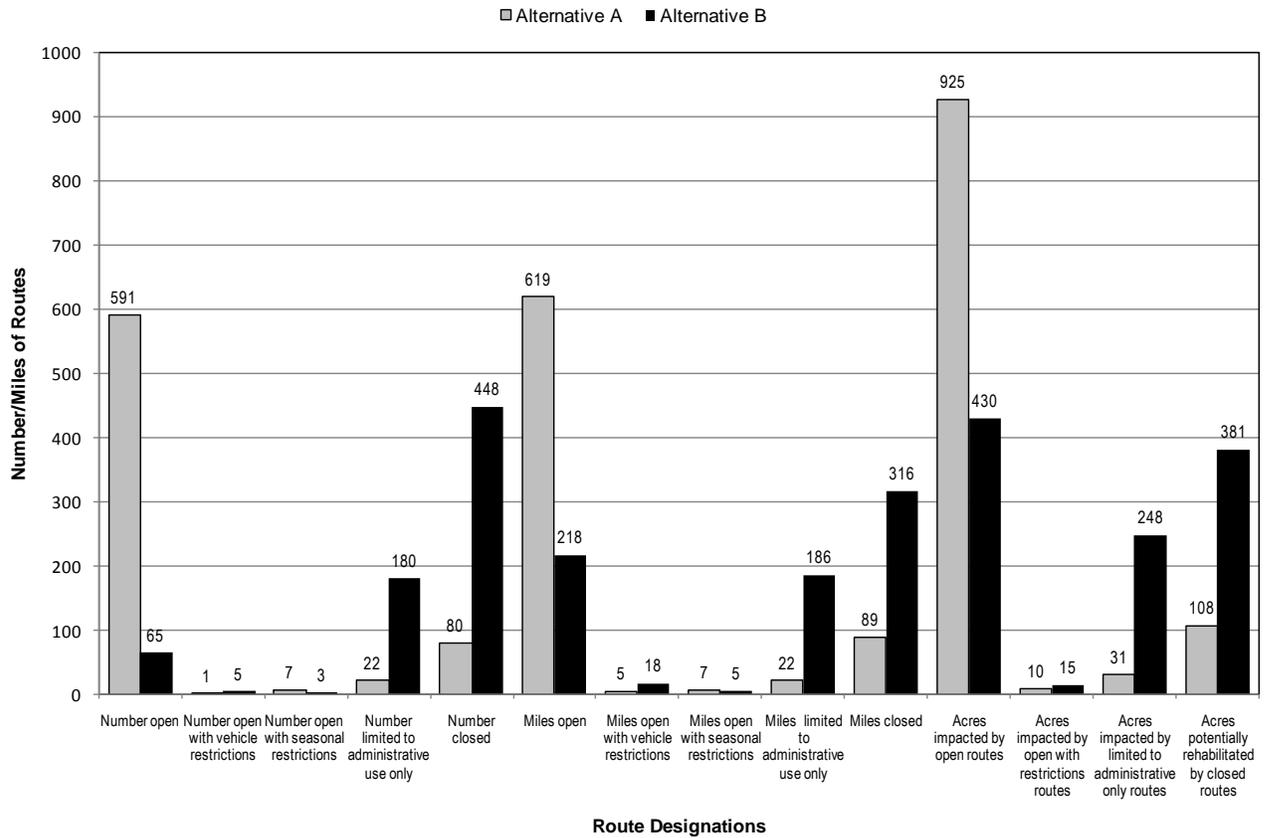


Of the 701 routes that are within nesting habitat (within 4 miles of identified sage-grouse leks), 73 routes (240 miles) or 10% would be open or open with seasonal restrictions. Conversely, 180 routes (186 miles) or 26% would be limited to administrative use only, while 448 routes (316 miles) or 64% would be closed to motor vehicle use. This would result in 75% fewer open routes within 4 miles of leks in Alternative B than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 443 acres or 0.08% of the total area within 4 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 4-mile nesting habitat, 1,313 acres would be without routes. This would result in 46% fewer open route acres in Alternative B than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 381 acres or 36% of the total route acreage within the 4-mile nesting habitat; 26% more than in Alternative A. This would be a long-term, direct, localized moderate reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

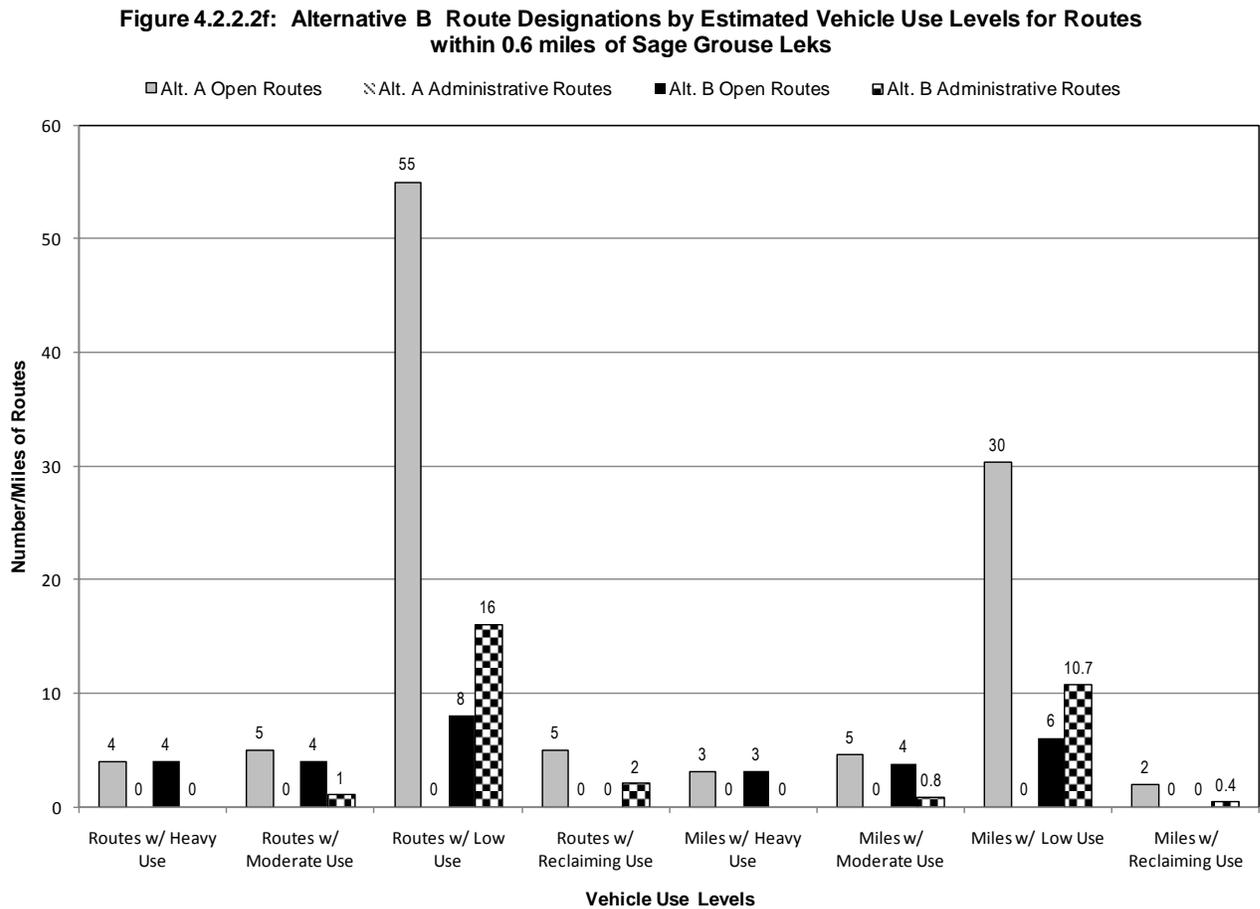
Table 32: Alternative B Route Designations in Sage-Grouse Nesting Habitat - 4 miles from Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	591	84.3%	618.8	83.3%	65	9.3%	-526	-75.0%	217.5	29.3%	-401.3	-54.0%
Open with vehicle restrictions	1	0.1%	5.4	0.7%	5	0.7%	4	0.6%	17.8	2.4%	12.4	1.7%
Open with seasonal restrictions	7	1.0%	7.2	1.0%	3	0.4%	-4	-0.6%	5.1	0.7%	-2.1	-0.3%
Limited to administrative use only	22	3.1%	22.0	3.0%	180	25.7%	158	22.5%	186.1	25.1%	164.1	22.1%
Closed	80	11.4%	89.3	12.0%	448	63.9%	368	52.5%	316.2	42.6%	226.9	30.6%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	925.4		86.2%		429.7		40.0%		-495.7		-46.2%	
Open with restrictions	9.5		0.9%		14.6		1.4%		5.1		0.5%	
Limited to administrative use only	30.7		2.9%		248.0		23.1%		217.3		20.2%	
Closed	107.7		10.0%		381.0		35.5%		273.3		25.5%	
Percent of open route acreage	0.16%				0.08%							
Ratio of open route acres to unrouted acres	1:623				1:1313							

Figure 4.2.2.2e: Alternative B Route Designations in Sage Grouse Nesting Habitat - 4 miles from Leks (Compared to Alt. A)



Of the 81 existing BLM routes (47 miles) within 0.6 miles of sage-grouse leks under the Alternative B, 8 open routes (6 miles) are considered by resource specialists to have low vehicle use. Conversely, 4 open routes (4 miles) have vehicle use levels estimated as moderate and only 4 open routes (3 miles) are estimated to have heavy vehicle use. The combination of 46 closed routes and the low vehicle use levels on 50% of open routes (47% of open route miles) and low use or no observed use on 95% of administrative use only routes (93% administrative route miles) within 0.6 miles of sage-grouse leks would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a major degree (43 CFR 8342.1 (b)).



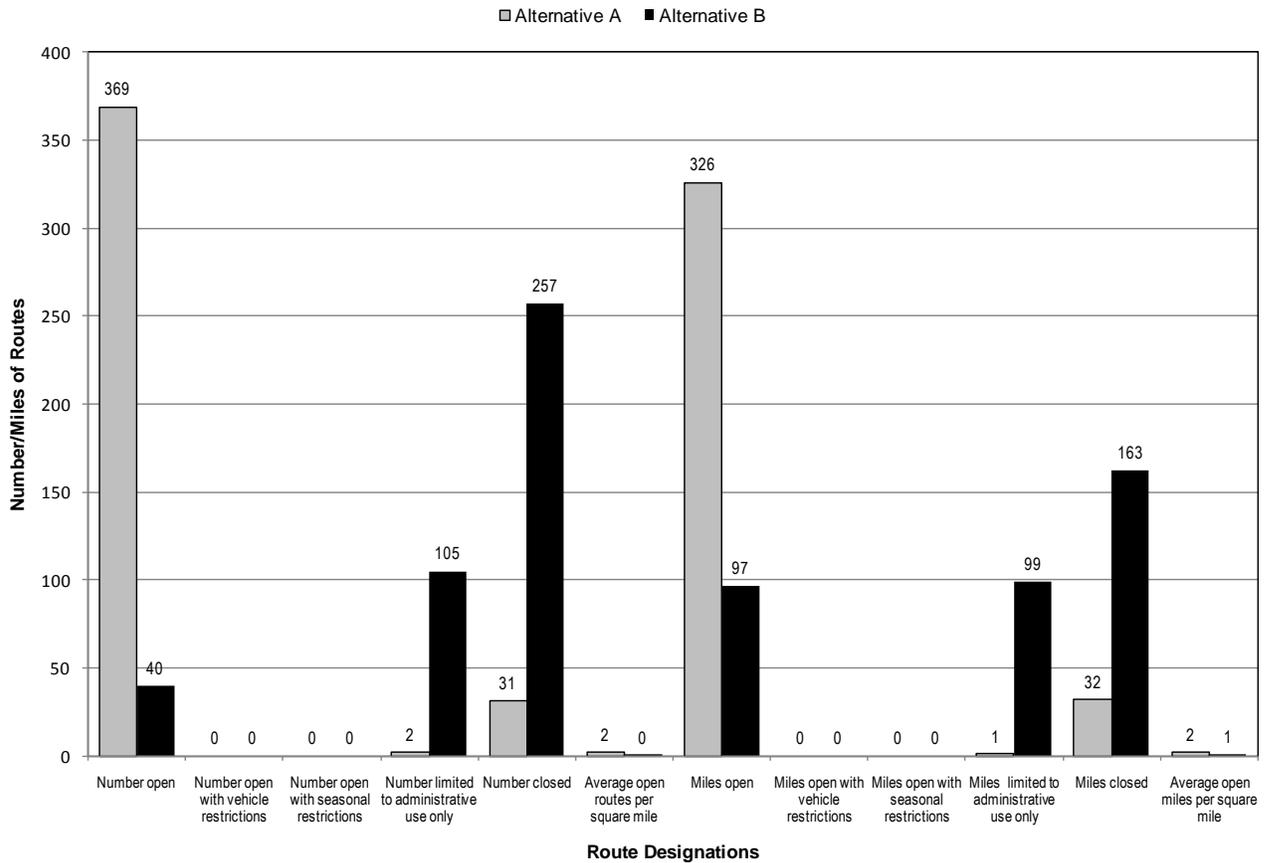
Greater Sage-Grouse Protection Priority Areas

Under Alternative B, sage-grouse Protection Priority Areas (PPAs) would be allocated and the 402 existing BLM routes (359 miles) that comprise the travel networks within the PPAs would be managed using five existing designation types, with only 1 out of every 10 existing routes (10%) open to all motorized uses. This would result in 82% fewer open routes within PPAs in Alternative B than would be open in Alternative A. Additionally, the route density within the PPAs would drop to 0.2 open routes per square mile and 0.5 miles of open routes per square mile. This would be an 89% reduction in open route density (70% reduction in the density of open route miles) in the PPAs from Alternative A. Alternative B would close and restrict to administrative use only 362 routes (262 miles) or 90% of the PPA routes. The long-term, direct, localized effect of these restricted routes on reducing PPA habitat fragmentation is major, due in part to the much smaller supply of 40 open routes at 97 miles with the route densities that are described above (43 CFR 8342.1(b)).

Table 33: Alternative B Route Designations in Sage-Grouse PPAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	369	91.8%	326.1	90.9%	40	10.0%	-329	-81.8%	96.9	27.0%	-229.2	-63.9%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	2	0.5%	0.9	0.3%	105	26.1%	103	25.6%	99.3	27.7%	98.4	27.4%
Closed	31	7.7%	31.8	8.9%	257	63.9%	226	56.2%	162.5	45.3%	130.7	36.4%
Average open routes per square mile (density)	2.0		1.8		0.2		-1.8	-89.2%	0.5		-1.3	-70.3%

Figure 4.2.2.g: Alternative B Route Designations in Sage Grouse PPAs



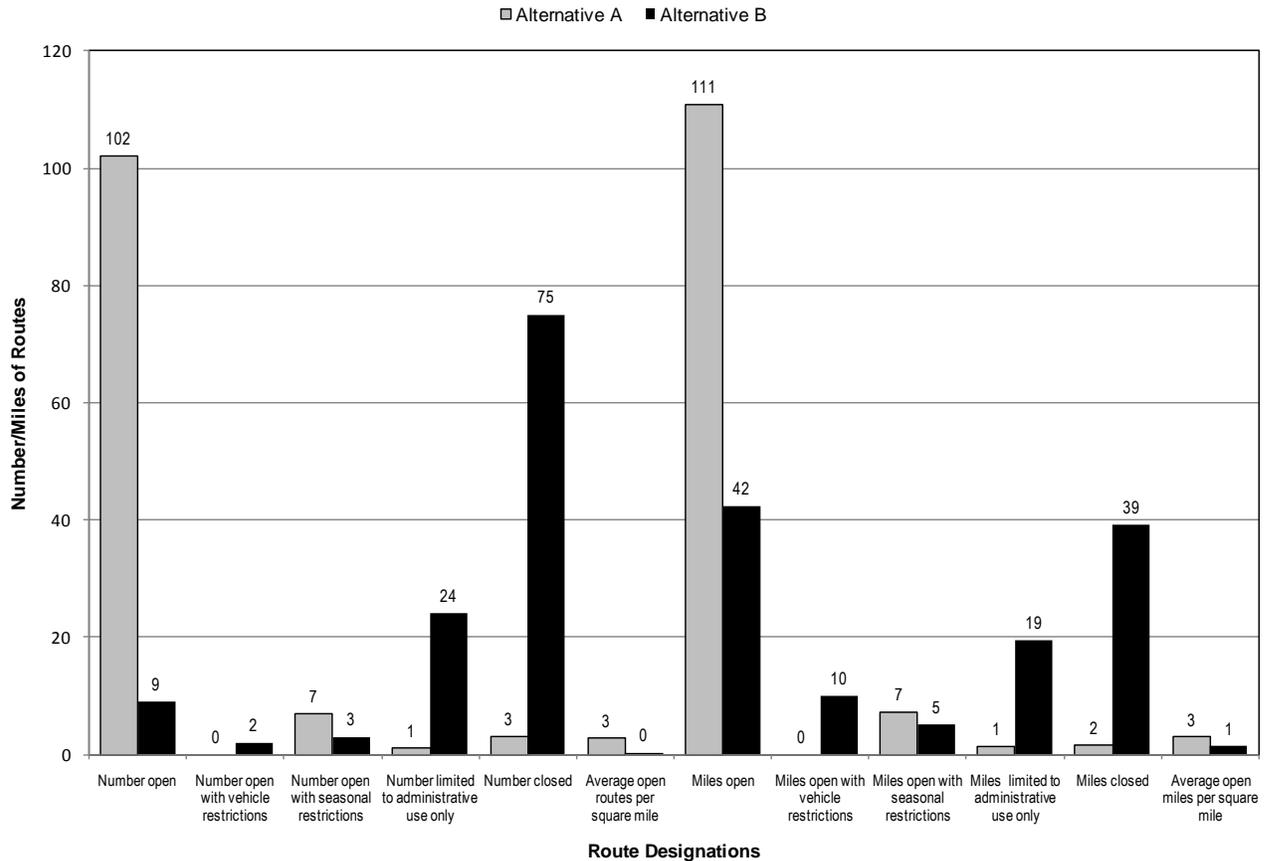
Greater Sage-Grouse Restoration Areas

Under Alternative B, sage-grouse Restoration Areas (RAs) would be allocated and the 113 existing BLM routes (121 miles) that comprise the travel networks within the RAs would continue to be managed using five existing designation types, with a little more than 1 out of every 10 existing routes (13%) open to all motorized uses and open with restrictions. This would result in 84% fewer open routes within RAs in Alternative B than would be open in Alternative A. Additionally, the route density within the RAs would drop to 0.3 open routes per square mile and 1.4 miles of open routes per square mile. This would be an 87% reduction in open route density (51% reduction in the density of open route miles) in the RAs from Alternative A. Alternative B would close and restrict to administrative use only 99 routes (59 miles) or 88% of the RA routes. The long-term, direct, localized effect of these restricted routes on reducing RA habitat fragmentation is major, due in part to the much smaller supply of 14 open routes at 57 miles with the route densities that are described above (43 CFR 8342.1(b)).

Table 34: Alternative B Route Designations in Sage-Grouse RAs (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	102	90.3%	110.8	91.6%	9	8.0%	-93	-82.3%	42.3	36.5%	-68.5	-55.1%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	2	1.8%	2	1.8%	9.9	8.5%	9.9	8.5%
Open with seasonal restrictions	7	6.2%	7.2	6.0%	3	2.7%	-4	-3.5%	5.1	4.4%	-2.1	-1.6%
Limited to administrative use only	1	0.9%	1.4	1.2%	24	21.2%	23	20.4%	19.4	16.8%	18	15.6%
Closed	3	2.7%	1.5	1.2%	75	66.4%	72	63.7%	39.1	33.8%	37.6	32.5%
Average open routes per square mile (density)	2.7	X	2.9	X	0.3	X	-2.4	-87.2%	1.4	X	-1.5	-51.4%

Figure 4.2.2.2h: Alternative B Route Designations in Sage Grouse RAs



Greater Sage-Grouse General Habitat

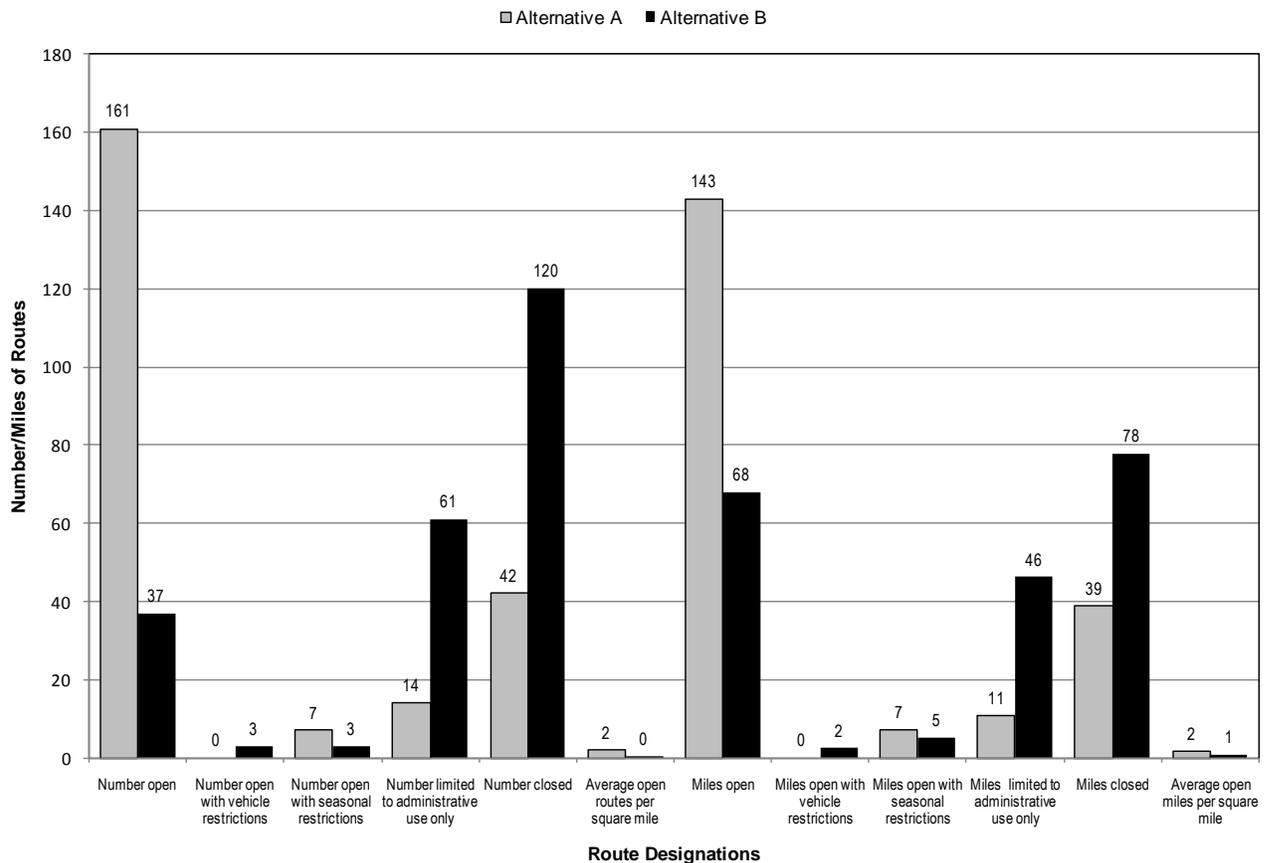
Under Alternative B, the 224 existing BLM routes (200 miles) that comprise the travel networks within the remaining sage-grouse general habitat would continue to be managed using five existing designation types, with almost 2 out of every 10 existing routes (19%) open to all motorized uses and open with restrictions. This would result in 57% fewer open routes within general habitat in Alternative B than would be open in Alternative A. Additionally, the route density within the general habitat would drop to 0.5 open routes per square mile and 0.8 miles of open routes per square mile. This would be a 74% reduction in open route density (50% reduction in the density of open route miles) in the general habitat from Alternative A.

Alternative B would close and restrict to administrative use only 181 routes (124 miles) or 81% of the general habitat routes. The long-term, direct, localized effect of these restricted routes on reducing general habitat fragmentation is major, due in part to the much smaller supply of 43 open routes at 75 miles with the route densities that are described above (43 CFR 8342.1(b)).

Table 35: Alternative B Route Designations in Sage-Grouse General Habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	161	71.9%	142.9	71.6%	37	16.5%	-124	-55.4%	67.9	34.0%	-75	-37.6%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	3	1.3%	3	1.3%	2.4	1.2%	2.4	1.2%
Open with seasonal restrictions	7	3.1%	7.2	3.6%	3	1.3%	-4	-1.8%	5.1	2.6%	-2.1	-1.1%
Limited to administrative use only	14	6.3%	10.7	5.4%	61	27.2%	47	21.0%	46.2	23.2%	35.5	17.8%
Closed	42	18.8%	38.7	19.4%	120	53.6%	78	34.8%	77.9	39.0%	39.2	19.6%
Average open routes per square mile (density)	1.8		1.6		0.5		-1.4	-74.4%	0.8		-0.8	-49.8%

Figure 4.2.2.2i: Alternative B Route Designations in Sage Grouse General Habitat



Overall, this Alternative would provide moderate to major protection of sage-grouse leks and nesting habitat from habitat fragmentation and disturbance from travel routes within the Travel Management Areas (TMAs). The direct, long-term, local impacts to sage-grouse would be reduced to a moderate to major degree when compared to Alternative A.

Prairie Dogs

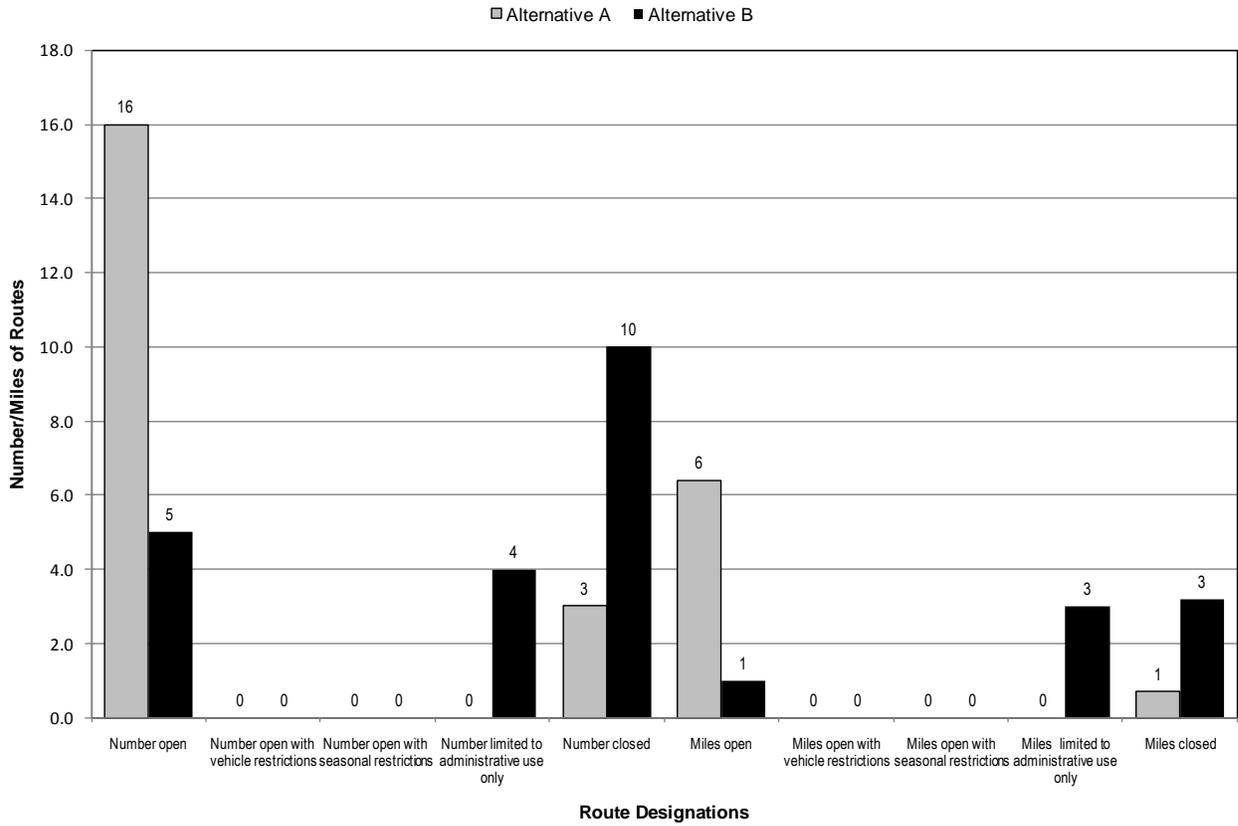
White-tailed Prairie Dogs

Under Alternative B, of the 19 routes that are within 0.5 miles of identified white-tailed prairie dog “towns”, 5 routes (1 mile) or 26% would be open to all types of motor vehicle use. This would result in 58% fewer open routes within 0.5 miles of prairie dog “towns” in Alternative B than would be open in Alternative A. Only 4 routes (3 mile) or 21% would be limited to administrative use only and 10 routes (3.2 miles) or 53% would be closed to motor vehicle use. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be major, due in large part to limited public access in only 5 open routes near the “town” sites (43 CFR 8342.1(b)).

Table 36: Alternative B Route Designations within 1/2-mile of White-tailed Prairie Dog Habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	16.0	84.2%	6.4	88.9%	5.0	26.3%	-11	-57.9%	1.0	13.9%	-5.4	-75.0%
Open with vehicle restrictions	0.0	0.0%	0.0	0.0%	0.0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0.0	0.0%	0.0	0.0%	0.0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0.0	0.0%	0.0	0.0%	4.0	21.1%	4	21.1%	3.0	41.7%	3	41.7%
Closed	3.0	15.8%	0.7	9.7%	10.0	52.6%	7	36.8%	3.2	44.4%	2.5	34.7%

Figure 4.2.2.3a: Alternative B Route Designations within 0.5 miles of White-tailed Prairie Dog Habitat (Compared to Alt. A)



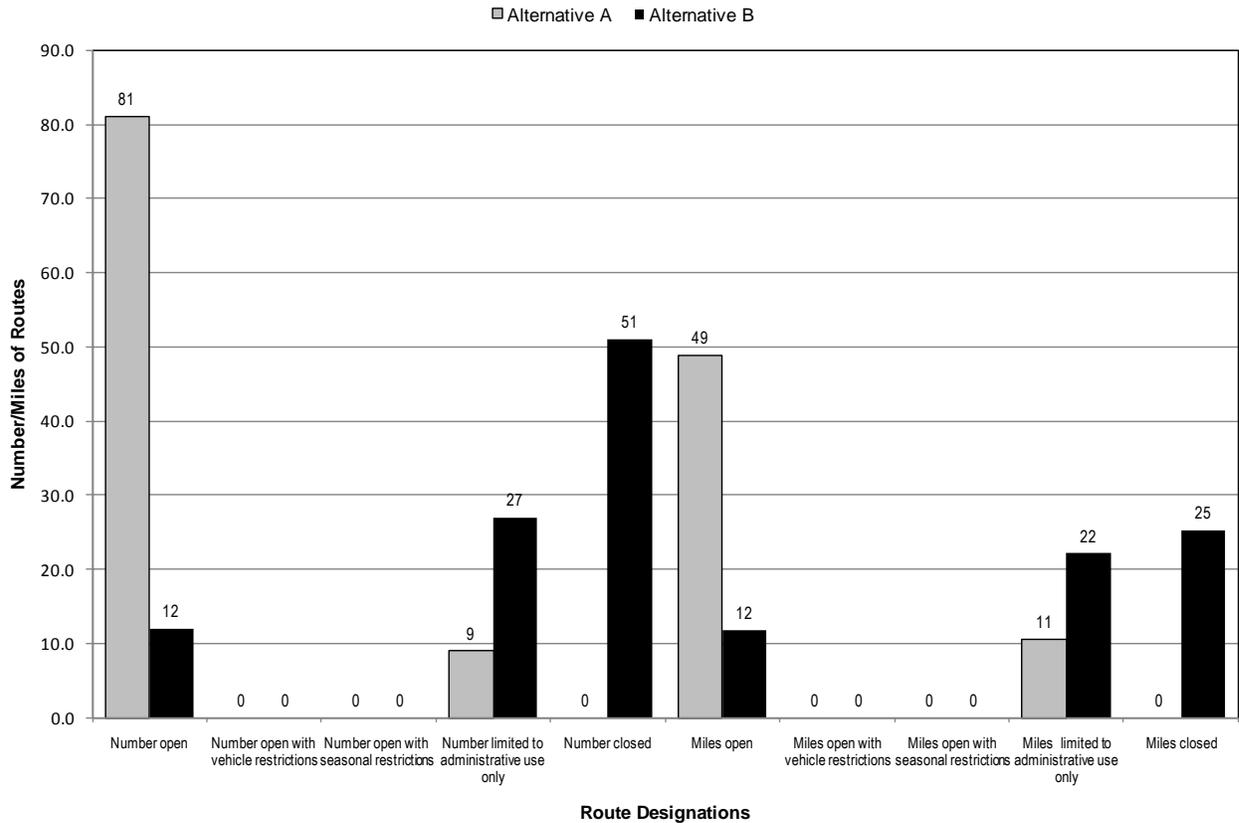
Black-tailed Prairie Dogs

Under Alternative B, of the 90 routes that are within 0.5 miles of identified black-tailed prairie dog “towns”, 12 routes (11.8 miles) or 13% would be open to all types of motor vehicle use. This would result in 77% fewer open routes within 0.5 miles of prairie dog “towns” in Alternative B than would be open in Alternative A. Only 27 routes (22.1 mile) or 30% would be limited to administrative use only and 51 routes (25.3 miles) or 57% would be closed to motor vehicle use. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be major, due in large part to limited public access in only 12 open routes near the “town” sites (43 CFR 8342.1(b)).

Table 37: Alternative B Route Designations within 1/2-mile of Black-tailed Prairie Dog Habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	81.0	90.0%	48.8	82.3%	12.0	13.3%	-69	-76.7%	11.8	19.9%	-37	-62.4%
Open with vehicle restrictions	0.0	0.0%	0.0	0.0%	0.0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0.0	0.0%	0.0	0.0%	0.0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	9.0	10.0%	10.5	17.7%	27.0	30.0%	18	20.0%	22.1	37.3%	11.6	19.6%
Closed	0.0	0.0%	0.0	0.0%	51.0	56.7%	51	56.7%	25.3	42.7%	25.3	42.7%

Figure 4.2.2.3b: Alternative B Route Designations within 0.5 miles of Black-tailed Prairie Dog Habitat (Compared to Alt. A)



There would be major benefits to prairie dog habitat with this Alternative. The long-term, direct, and localized impacts to habitat fragmentation and prairie dog harassment would be reduced by the closure to motor vehicle use of 53-57% of routes when compared to Alternative A.

Summary Alternative B

Impacts would be the same as described under Alternative A, except more restrictive with 272.4 miles of open routes and 396.5 miles of closed routes.

O.5.2.9.5 Alternative C

General impacts are the same as those described in impacts common to all alternatives and under Alternative B. Other specific analysis, relative to Alternative C, of sensitive habitats and species follows.

Big Game Species

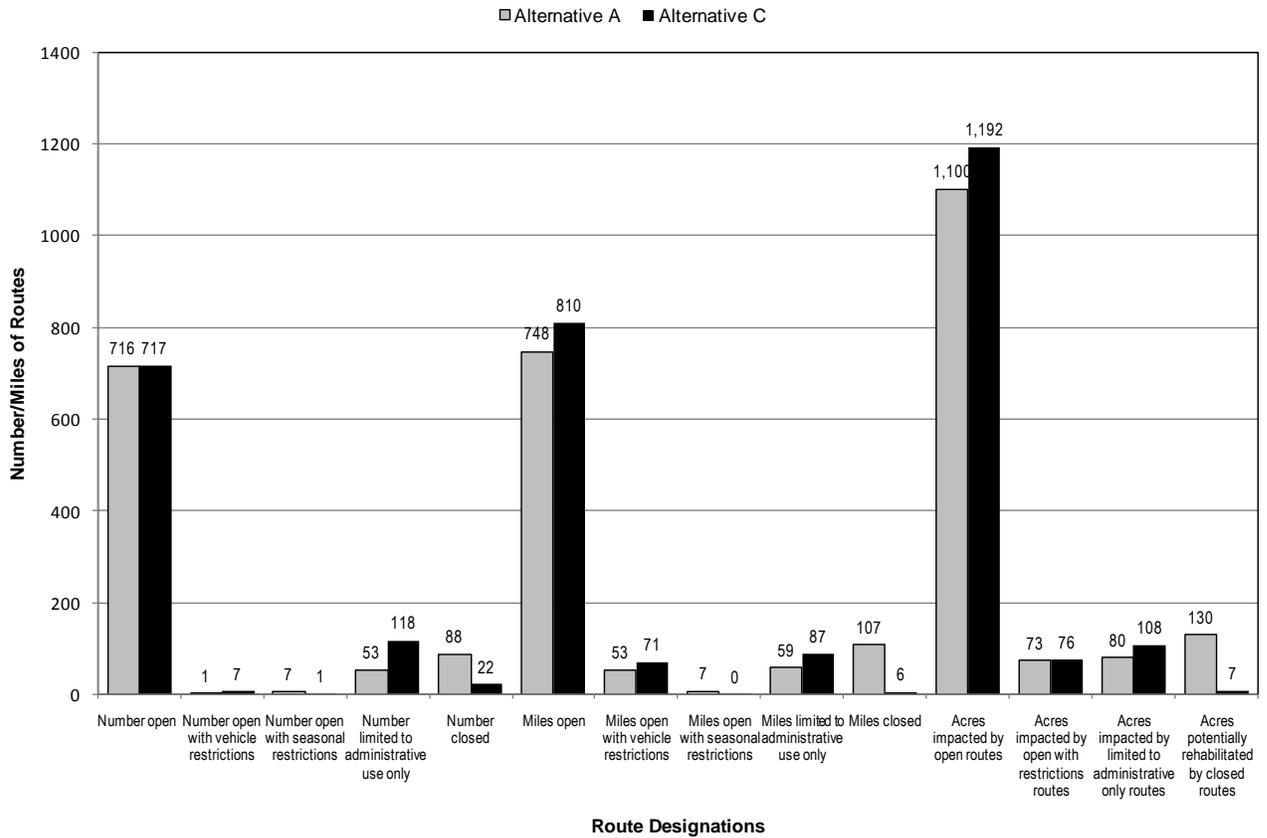
Under Alternative C, the 865 existing BLM routes (974 miles) that comprise the travel networks within big game general winter range (BGGWR) would continue to be managed using five existing designation types, with just over 8 out of every 10 existing routes (725 routes or about 84%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in only 0.1% more open routes in Alternative C than would be open in Alternative A, but 8% more open route miles than in Alternative A. Additionally, the route density within the BGGWR would remain the same at 1.7 open routes per square mile but would increase from Alternative A by 9% to 2 open route miles per square mile for Alternative C. The footprint (actual area of surface disturbance) of open routes affects approximately 1,267 acres or 0.5% of the 275,839 acres of BGGWR within the TMAs. In other words, for every 1 acre of route footprint within the BGGWR, 217 acres would be without routes.

Alternative C proposes closures and restrictions to administrative use only on a combined 140 routes at 93 miles, a 0.1% decrease from these designations in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing BGGWR habitat fragmentation is negligible, due to the availability and ongoing use of 725 open routes (at 882 miles) with the route densities that are described above.

Table 38: Alternative C Route Designations for Big Game Winter Range (compared to Alt. A)

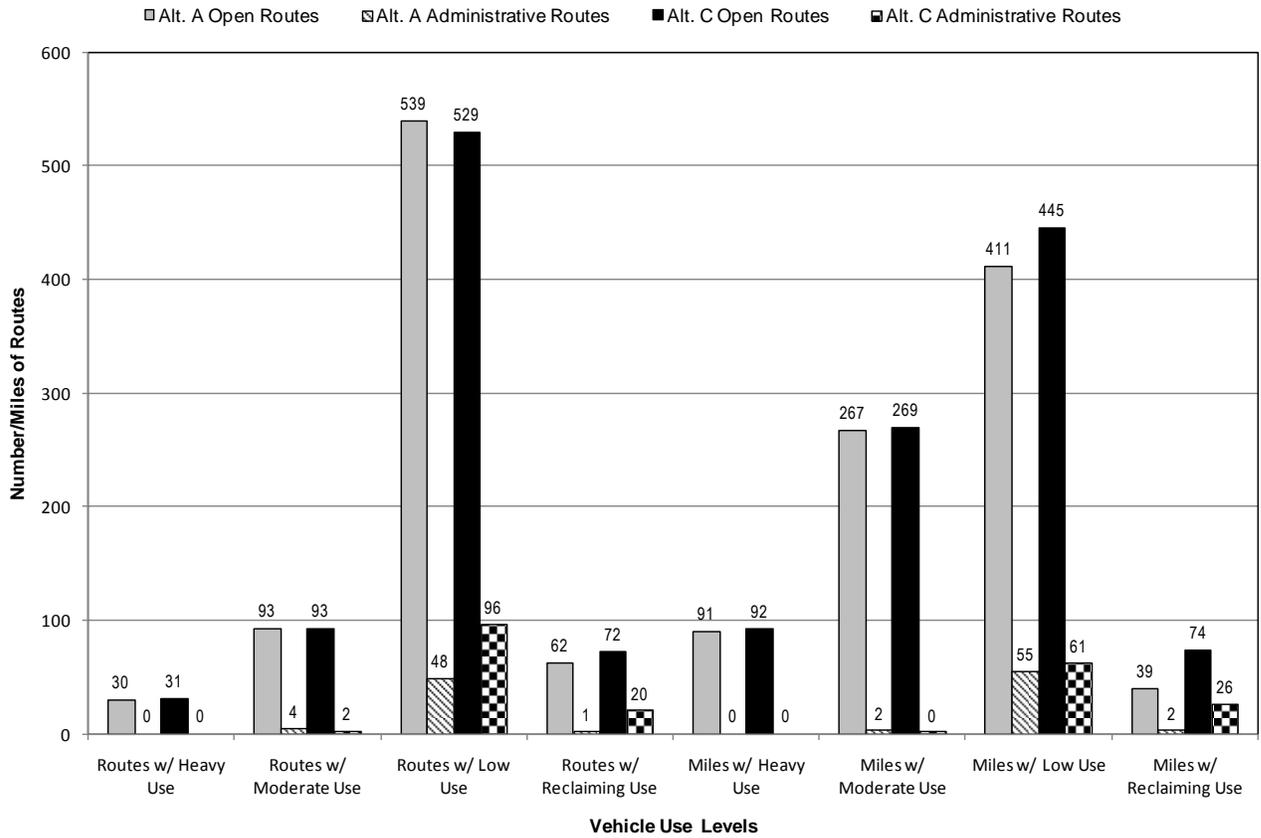
Potential Route Designations	Alternative A				Alternative C							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	716	83%	747.6	76.8%	717	82.9%	1	0.1%	809.7	83.1%	62.1	6.4%
Open with vehicle restrictions	1	0.1%	52.7	5.4%	7	0.8%	6	0.7%	70.7	7.3%	18	1.8%
Open with seasonal restrictions	7	0.8%	7.2	0.7%	1	0.1%	-6	-0.7%	0.2	0.0%	-7	-0.7%
Limited to administrative use only	53	6.1%	59	6.1%	118	13.6%	65	7.5%	87.3	9.0%	28.3	2.9%
Closed	88	10.2%	107.4	11%	22	2.5%	-66	-7.6%	5.9	0.6%	-101.5	-10.4%
Average open routes per square mile (density)	1.7	X	1.9	X	1.7	X	0	0%	2.0	X	0.2	9.1%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	1100.3		79.6%		1191.6		86.2%		91.3		6.6%	
Open with restrictions	73.4		5.3%		75.8		5.5%		2.4		0.2%	
Limited to administrative use only	79.6		5.8%		108.4		7.8%		28.8		2.1%	
Closed	129.7		9.4%		7.2		0.5%		-122.5		-8.9%	
Percent of open route acreage	0.4%				0.5%							
Ratio of open route acres to unrouted acres	1:234				1:217							

Figure 4.2.3.1a: Alternative C Route Designations in Big Game General Winter Range (Compared to Alt. A)



Of the existing BLM routes within BGGWR under the Alternative C, 529 open routes (445 miles) are considered by resource specialists to have low vehicle use levels. Conversely, 93 open routes (269 miles) have vehicle use levels estimated as moderate and only 31 open routes (92 miles) are estimated to have heavy vehicle use. The combination of 22 closed routes, the low vehicle use levels on 73% of open routes (51% of open route miles and 81% of administrative use only routes (70% administrative route miles), and no observed vehicle use on 10% of open routes (8% of open route miles) in BGGWR would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a minor degree (43 CFR 8342.1 (b)).

Figure 4.2.3.1b: Alternative C Route Designations by in Big Game General Winter Range Estimated Vehicle Use Levels (Compared to Alt. A.)



Long term direct impacts to BGGWR would be a negligible to minor decrease of the effects from wildlife disturbance, displacement, and habitat loss from Alternative A. This is due to low use or no use levels on 83% of open routes and 16% closures and restriction to administrative use only routes. The open road density of 2.0 miles of open routes per square mile exceeds the 1 mile per section road density recommended in the “Guidelines/ Recommendations” for road densities.

The BLM Road Density Analysis indicated that 433,129 acres of BGWR CAPS SCORE 1 and 2 areas, (of all ownerships with any public land ownership (surface or subsurface)) have road densities that exceed 1.5 miles per square mile. This Alternative would require roads to be gated or closed during crucial seasons where they impact big game winter range or parturition areas. Public access in these areas would vary dependent on the depth of winter snow. In greater snow depth years, disturbance impacts to big game would decrease due to reduced public access. In these areas, gating, closures, or reclamation of roads would increase impacts to big game winter range by 69% and 28% respectively when compared to Alternative B and Alternative D. This would directly contribute in the long-term to decreasing the effects of route use, such as wildlife harassment, displacement, and stress to big game on winter ranges to a moderate degree.

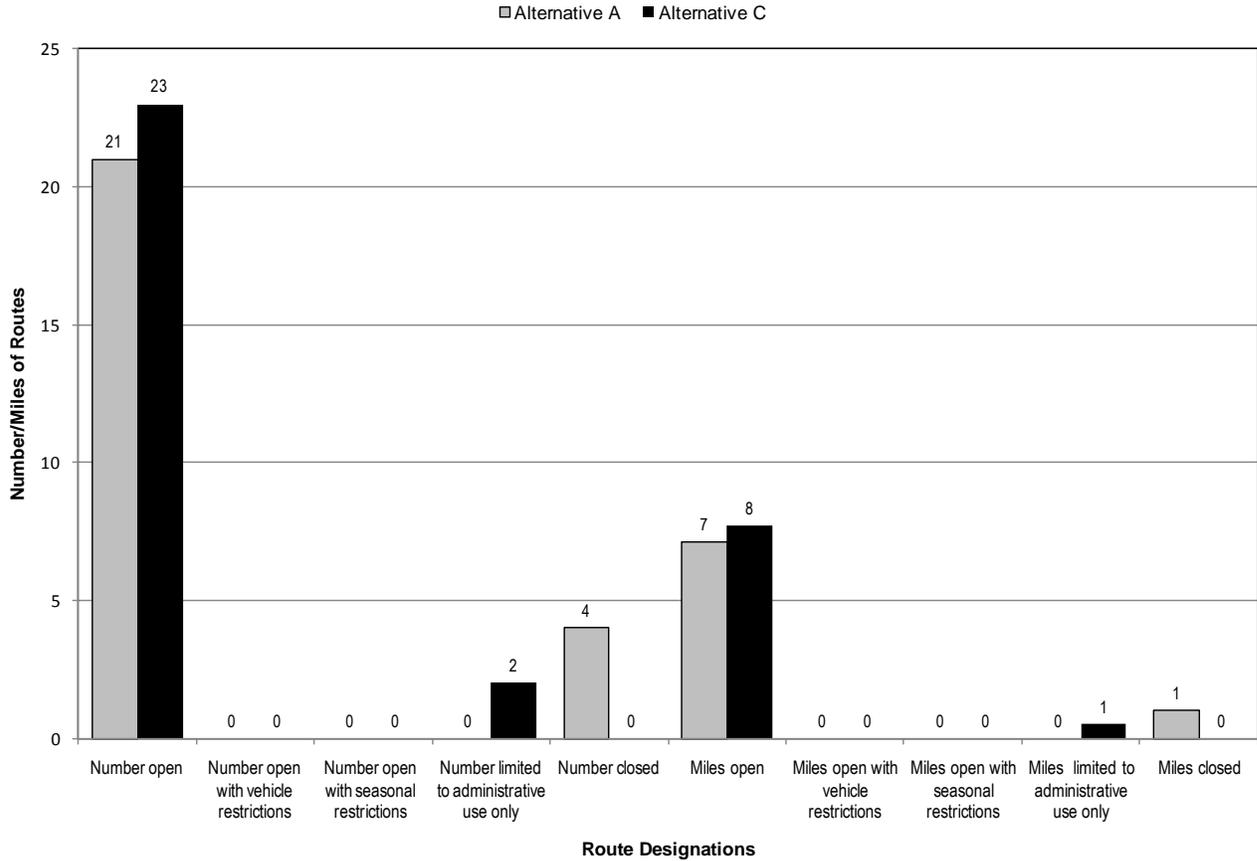
Greater Sage-Grouse – Leks and Nesting Habitat

Under the Alternative C, of the 25 routes that are within 0.25 miles of identified sage-grouse leks, 23 routes (7.7 miles) or 92% would be open to all types of motor vehicle use. Conversely, no routes would be closed and 2 routes (0.5 miles) or 8% would be limited to administrative use only. This would result in 8% more open routes within 0.25 miles of leks in Alternative C than would be open in Alternative A. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be negligible, due to the availability of many open routes near the lek sites (43 CFR 8342.1(b)).

Table 39: Alternative C Route Designations within 1/4-mile of Sage-Grouse Leks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative C							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	21	84.0%	7.1	87.7%	23	92.0%	2	8.0%	7.7	93.9%	0.6	6.2%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	2	8.0%	2	8.0%	0.5	6.1%	0.5	6.1%
Closed	4	16.0%	1.0	12.3%	0	0.0%	-4	-16.0%	0.0	0.0%	-1	-12.3%

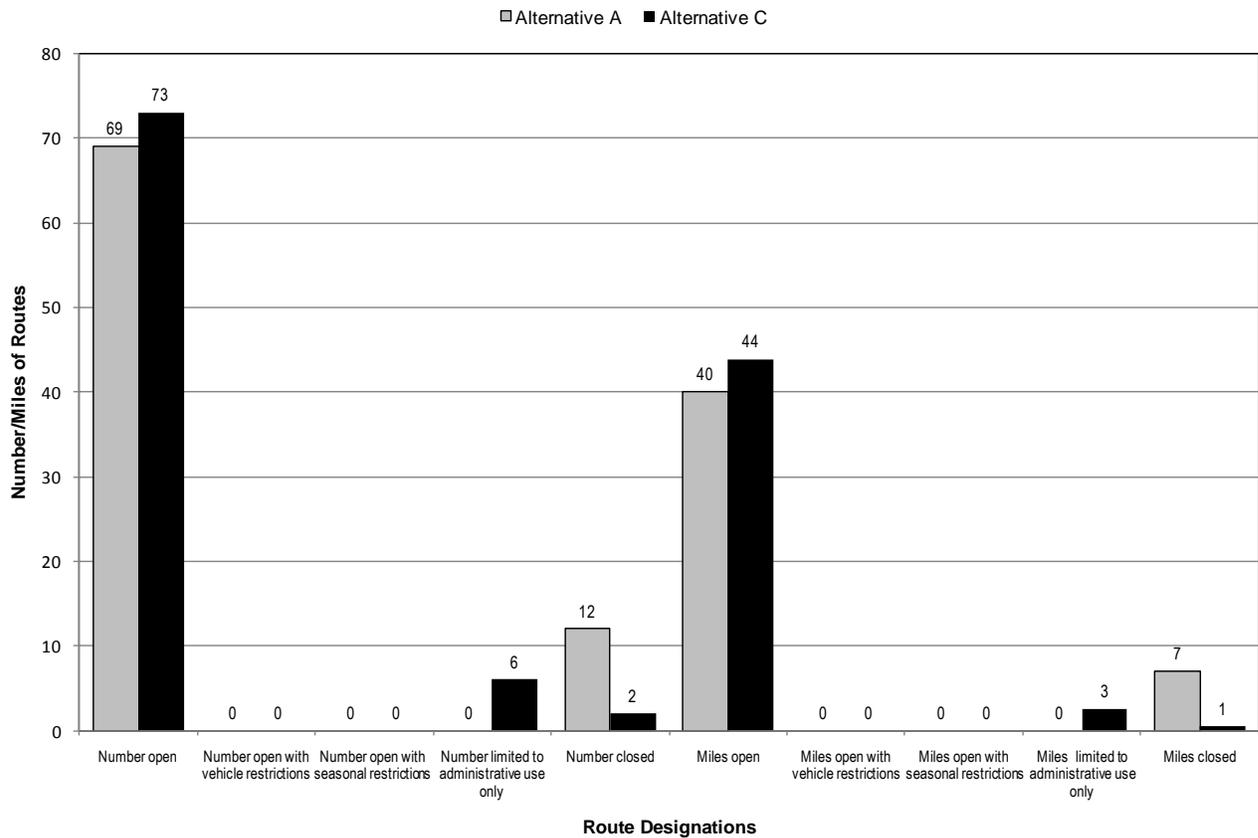
Figure 4.2.3.2a: Alternative C Route Designations within 1/4-mile of Sage Grouse Leks



Under the Alternative C, of the 81 routes that are within 0.6 miles of identified sage-grouse leks, 73 routes (44 miles) or 90% would be open to all types of motor vehicle use. Conversely, 6 routes (2.6 miles) or 7% would be limited to administrative use only, while 2 routes (0.5 miles) or 3% would be closed to motor vehicle use. This would result in 5% more open routes within 0.6 miles of leks in Alternative C than would be open in Alternative A. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be negligible, due to the availability of many open routes near the lek sites (43 CFR 8342.1(b)).

Potential Route Designations	Alternative A				Alternative C							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	69	85.2%	40.0	85.1%	73	90.1%	4	4.9%	43.9	93.4%	3.9	8.3%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	6	7.4%	6	7.4%	2.6	5.5%	2.6	5.5%
Closed	12	14.8%	7.0	14.9%	2	2.5%	-10	-12.3%	0.5	1.1%	-6.5	-13.8%

Figure 4.2.3.2b: Alternative C Route Designations within 0.6 miles of Sage Grouse Leks (Compared to Alt. A)



Of the 395 routes that are within nesting habitat (within 2 miles of identified sage-grouse leks), 404 routes (334 miles) or 88% would be open or open with seasonal restrictions. Conversely, 49 routes (29 miles) or 11% would be limited to administrative use only, while 7 routes (2.8 miles) or 2% would be closed to motor vehicle use. This would result in 0.3% fewer open routes within 2 miles of leks in Alternative C than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 484 acres or 0.31% of the total area within 2 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 2-mile nesting habitat, 324 acres would be without routes. This would result in 2% more open route acres in Alternative B than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 3.4 acres or 0.7% of the total route acreage within the 2-mile nesting habitat; 8% less than in Alternative A. This would be a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 579 routes that are within nesting habitat (within 3 miles of identified sage-grouse leks), 505 routes (530 miles) or 87% would be open or open with vehicle restrictions. Conversely, 65 routes (40 miles) or 11% would be limited to administrative use only, while 9 routes (3 miles) or 2% would be closed to motor vehicle use. This would result in 0.4% more open routes within 3 miles of leks in Alternative C than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 777 acres or 0.23% of the total area within 3 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 3-mile nesting habitat, 441 acres would be without routes. This would result in 5% more open route acres in Alternative C than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 3.8 acres or 0.5% of the total route acreage within the 3-mile nesting habitat; 9% fewer than in Alternative A. This would be a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 701 routes that are within nesting habitat (within 4 miles of identified sage-grouse leks), 611 routes (690 miles) or 87% would be open or open with vehicle restrictions. Conversely, 77 routes (48 miles) or 11% would be limited to administrative use only, while 13 routes (4.2 miles) or 2% would be closed to motor vehicle use. This would result in 2% more open routes within 2 miles of leks in Alternative C than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 1,011 acres or 0.17% of the total area within 2 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 2-mile nesting habitat, 577 acres would be without routes. This would result in 7% more open route acres in Alternative C than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 5.1 acres or 0.5% of the total route acreage within the 2-mile nesting habitat; 10% fewer than in Alternative A. This would be a long-term, direct, localized minor reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 81 existing BLM routes (47 miles) within 0.6 miles of sage-grouse leks under the Alternative C, 64 open routes (36 miles) are considered by resource specialists to have low or no observed vehicle use. Conversely, 5 open routes (4.6 miles) have vehicle use levels estimated as moderate and only 4 open routes (3.1 miles) are estimated to have heavy vehicle use. The

combination of 2 closed routes and the low or no observed vehicle use on 88% of open routes (83% of open route miles) and low or no observed vehicle use on 100% of administrative use only routes (100% administrative route miles) within 0.6 miles of sage-grouse leks would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a minor degree (43 CFR 8342.1 (b)).

Greater Sage-Grouse Protection Priority Areas

Under Alternative C, sage-grouse Protection Priority Areas (PPAs) would be allocated and the 402 existing BLM routes (359 miles) that comprise the travel networks within the PPAs would continue to be managed using five existing designation types, with more than 9 out of every 10 existing routes (91%) open to all motorized uses. This would result in only 1% fewer open routes within PPAs in Alternative C than would be open in Alternative A. Additionally, the route density within the PPAs would remain at almost 2.0 open routes per square mile but the increase slightly to 1.9 miles of open routes per square mile. This would be a 1% reduction in open route density and a 4% increase in the density of open route miles in the PPAs from Alternative A. Alternative C would close and restrict to administrative use only 38 routes (19 miles) or 9% of the PPA routes. The long-term, direct, localized effect of these restricted routes on reducing PPA habitat fragmentation is minor, due to the availability of 364 open routes at 340 miles with the route densities that are described above (43 CFR 8342.1(b)).

Greater Sage-Grouse Restoration Areas

Under Alternative C, sage-grouse Restoration Areas (RAs) would be allocated and the 113 existing BLM routes (121 miles) that comprise the travel networks within the RAs would continue to be managed using five existing designation types, with just over 7 out of every 10 existing routes (71%) open to all motorized uses and open with vehicle restrictions. This would result in 26% fewer open routes within RAs in Alternative C than would be open in Alternative A. Additionally, the route density within the RAs would drop to 2.0 open routes per square mile and 2.7 miles of open routes per square mile. This would be a 27% reduction in open route density (9% reduction in the density of open route miles) in the RAs from Alternative A. Alternative C would close and restrict to administrative use only 33 routes (12.8 miles) or 29% of the RA routes. The long-term, direct, localized effect of these restricted routes on reducing RA habitat fragmentation is minor, due in part to the supply of 80 open routes at 108 miles with the route densities that are described above (43 CFR 8342.1(b)).

Greater Sage-Grouse General Habitat

Under Alternative C, the 224 existing BLM routes (200 miles) that comprise the travel networks within the remaining sage-grouse general habitat would be managed using five existing designation types, with just over 9 out of every 10 existing routes (91%) open to all motorized uses and open with vehicle restrictions. This would result in 16% more open routes within general habitat in Alternative C than would be open in Alternative A. Additionally, the route density within the general habitat would increase to 2.2 open routes per square mile and 2.0 miles of open routes per square mile. This would be a 21% increase in open route density (a 23% increase in the density of open route miles) in the general habitat from Alternative A. Alternative C would close and restrict to administrative use only 20 routes (15.5 miles) or 9% of the general

habitat routes. The long-term, direct, localized effect of these restricted routes on reducing general habitat fragmentation is negligible, and in fact, offset to a minor degree due to the 21% increase from Alternative A in the supply of 204 open routes at 184 miles with the route densities that are described above (43 CFR 8342.1(b)).

Overall, this Alternative would provide negligible to minor protection of sage-grouse leks and nesting habitat from habitat fragmentation and disturbance from travel routes within the Travel Management Areas (TMAs). There would be a minor increase in sage-grouse habitat protected in this Alternative compared to Alternative A. Lek habitat would receive less protection and nesting habitat would receive slightly greater protection than Alternative A. The direct, long term, local impacts to sage-grouse would continue to occur in the majority of habitat.

Prairie Dogs

White-tailed Prairie Dogs

Under Alternative C, of the 19 routes that are within 0.5 miles of identified white-tailed prairie dog “towns”, 19 routes (7.2 miles) or 100% would be open to all types of motor vehicle use. This would result in 16% fewer open routes within 0.5 miles of prairie dog “towns” from Alternative A. No routes would be limited to administrative use only or closed to motor vehicle use. The long-term, direct, localized effect of these route designations on increasing habitat fragmentation and/or the potential for wildlife harassment would be minor, due to increased public access near the “town” sites (43 CFR 8342.1(b)).

Black-tailed Prairie Dogs

Under Alternative C, of the 90 routes that are within 0.5 miles of identified black-tailed prairie dog “towns”, 57 routes (37.9 miles) or 63% would be open to all types of motor vehicle use. This would result in 27% fewer open routes within 0.5 miles of prairie dog “towns” from Alternative A. Only 33 routes (21.3 mile) or 37% would be limited to administrative use only and no routes would be closed to motor vehicle use. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be minor, due to limiting public access to only 57 open routes near the “town” sites (43 CFR 8342.1(b)).

There would be negligible to minor benefits to prairie dog habitat with this Alternative. The long-term, direct, and localized impacts to habitat fragmentation and prairie dog harassment would be reduced by the closure to motor vehicle use of 16-27% of routes when compared to Alternative A.

Summary Alternative C

Impacts would be the same as described under Alternative A, except there would be 825 miles of open routes and 5.9 miles of closed routes. Alternative C is therefore, less restrictive than Alternative A.

O.5.2.9.6 Alternative D

Impacts would be similar to impacts from impacts common to all and Alternative B, except for species or habitat specific impacts presented below.

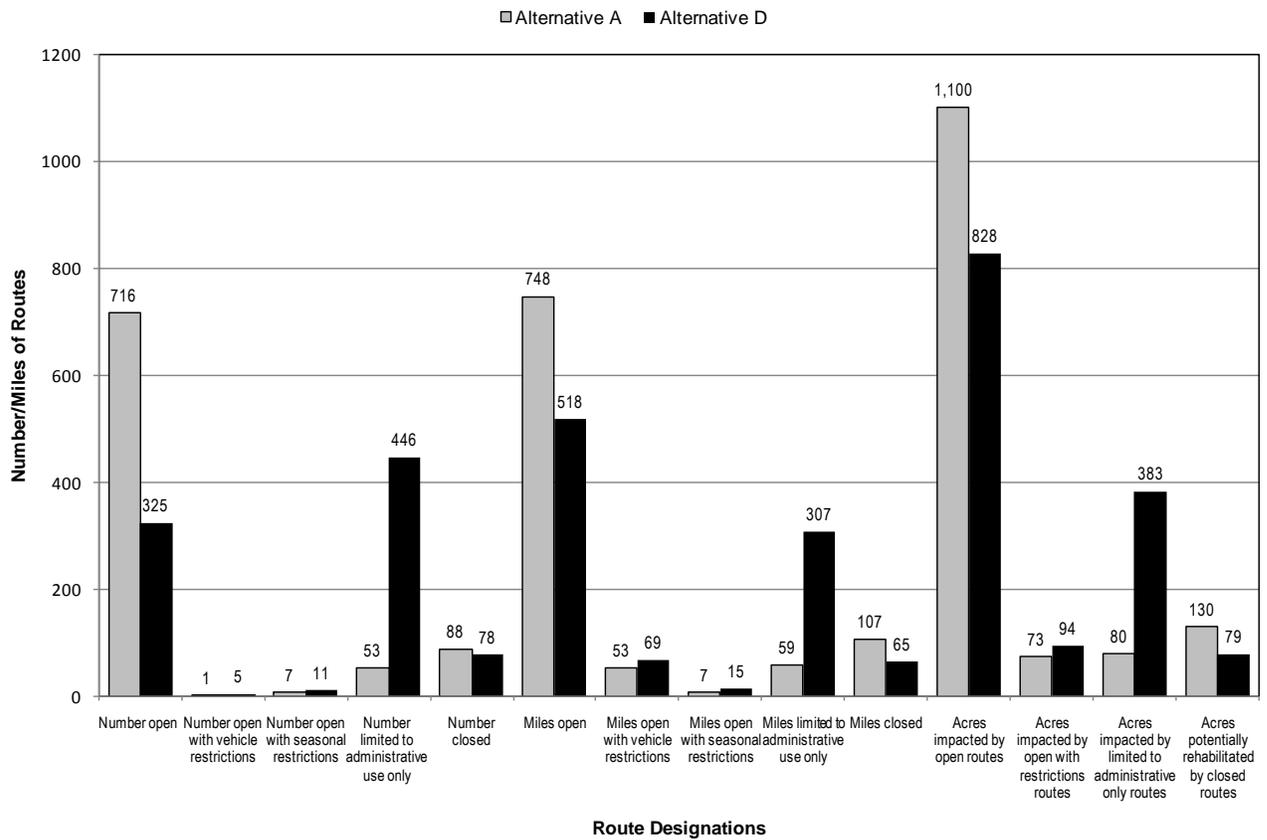
Big Game Species

Under Alternative D, the 865 existing BLM routes (974 miles) that comprise the travel networks within big game general winter range (BGGWR) would continue to be managed using the five existing designations shown in Table 41 and Figure 4.2.4.1a below, with 4 out of every 10 existing routes (341 routes or about 40%) open to all motorized uses or open with special seasonal or vehicular restrictions. This would result in 44% fewer open routes in Alternative D than would be open in Alternative A. Additionally, the route density within the BGGWR would be reduced by 53% for the long-term to 0.8 open routes per square mile and reduced by 26% to 1.4 miles of open routes per square mile. The footprint (actual area of surface disturbance) of open routes affects approximately 922 acres or 0.3% of the 275,839 acres of BGGWR within the TMAs. In other words, for every 1 acre of route footprint within the BGGWR, 298 acres would be without routes.

Alternative D proposes closures and restrictions to administrative use only on a combined 524 routes at 372 miles, a 44% increase from these designations in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing BGGWR habitat fragmentation is moderate, due to the continued availability and use of 341 open routes (at 601 miles) with the route densities that are described above.

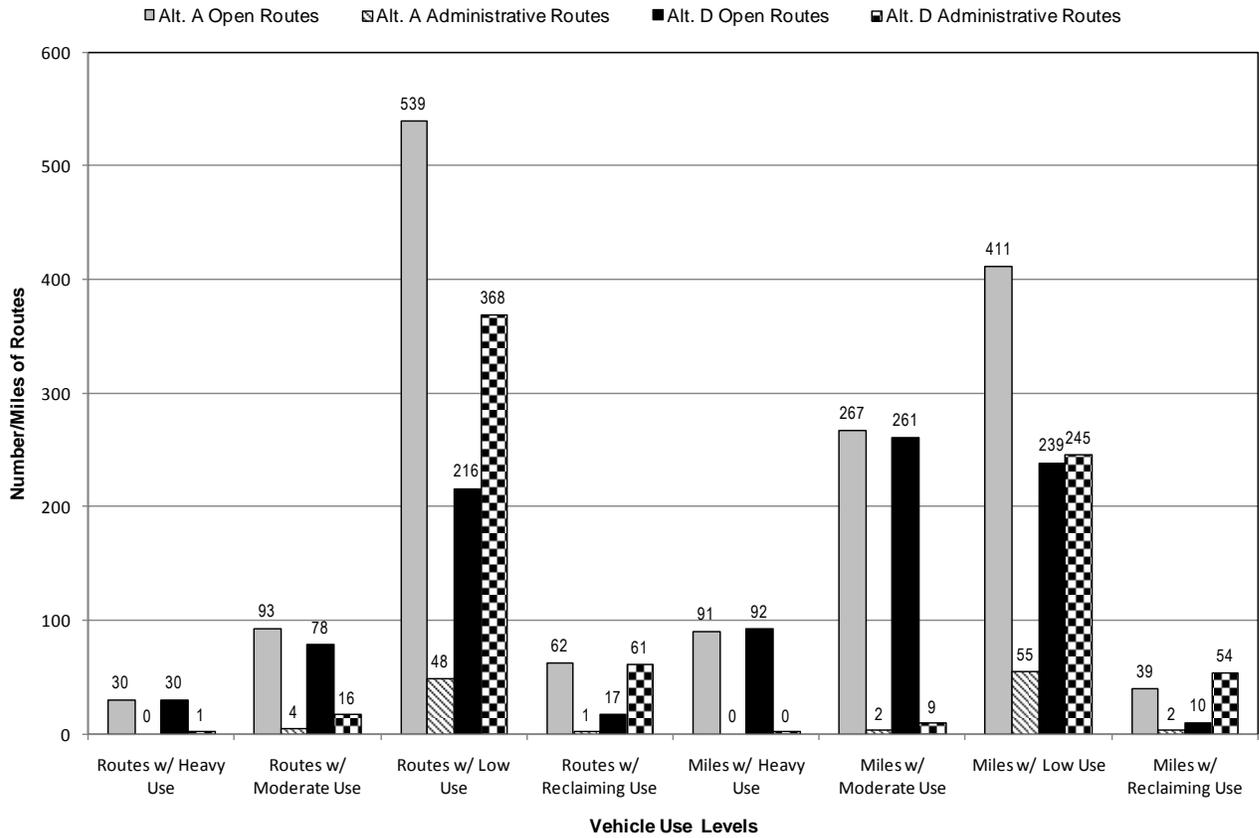
Potential Route Designations	Alternative A				Alternative D							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	716	83%	747.6	76.8%	325	37.6%	-391	-45.2%	517.5	53.1%	-230.1	-23.6%
Open with vehicle restrictions	1	0.1%	52.7	5.4%	5	0.6%	4	0.5%	68.7	7.1%	16	1.6%
Open with seasonal restrictions	7	0.8%	7.2	0.7%	11	1.3%	4	0.5%	15.1	1.6%	7.9	0.8%
Limited to administrative use only	53	6.1%	59	6.1%	446	51.6%	393	45.4%	307.2	31.5%	248.2	25.5%
Closed	88	10.2%	107.4	11%	78	9.0%	-10	-1.2%	65.2	6.7%	-42.2	-4.3%
Average open routes per square mile (density)	1.7		1.9		0.8		-0.9	-52.9%	1.4		-0.5	-25.5%
Route- Acres	Acres impacted by routes		Percent of total route acreage		Acres impacted by routes		Percent of total route acreage		Acres change from Alt. A		% change from Alt. A	
Open	1100.3		79.6%		827.8		59.9%		-272.5		-19.7%	
Open with restrictions	73.4		5.3%		93.8		6.8%		20.4		1.5%	
Limited to administrative use only	79.6		5.8%		383.0		27.7%		303.4		21.9%	
Closed	129.7		9.4%		78.7		5.7%		-51.0		-3.7%	
Percent of open route acreage	0.4%				0.3%							
Ratio of open route acres to unrouted acres	1:234				1:298							

Figure 4.2.4.1a: Alternative D Route Designations in Big Game General Winter Range (Compared to Alt. A)



Of the existing BLM routes within BGGWR under the Alternative D, 216 open routes (239 miles) are considered by resource specialists to have low vehicle use levels as shown in Figure 4.2.4.1b below. Conversely, 78 open routes (261 miles) have vehicle use levels estimated as moderate and only 30 open routes (92 miles) are estimated to have heavy vehicle use. The combination of 78 closed routes and the low vehicle use levels on 63% of open routes (40% of open route miles) and 83% of administrative use only routes (80% administrative route miles) in BGGWR would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a moderate degree (43 CFR 8342.1 (b)).

Figure 4.2.4.1b: Alternative D Route Designations by in Big Game General Winter Range Estimated Vehicle Use Levels (Compared to Alt. A.)



Overall, this alternative would provide moderate protection of big game winter range. The direct, local, and long term effects of route use on big game winter range such as wildlife harassment, human-caused animal mortality, stress, or displacement of individual animals would be reduced to a moderate degree on big game winter range. Route densities would be reduced to 1.4 miles per square mile (26% less) and 44% fewer open routes versus Alternative A. The open road density of 1.4 miles of open routes per square mile is 40% above the 1 mile per section road density recommended in the “Guidelines/ Recommendations” for road densities. (Canfield, J.E. et. al. 1999. Ungulates. in G. Joslin and H. Youmans, coordinators. Effects of recreation on Rocky Mountain Wildlife: A review for Montana. Committee on Effects of Recreation on Wildlife, MT. Chapter of the Wildlife Society. Pg. 6.12).

The BLM Road Density Analysis indicated that 595,259 acres of BGWR CAPS SCORE 1 and 2 areas, (of all ownerships with any public land ownership (surface or subsurface)) have road densities that exceed 1.0 miles per square mile. This alternative would require roads to be gated or closed during crucial seasons where they impact big game winter range or parturition areas. Public access in these areas will vary dependent on the depth of winter snow. In greater snow depth years, disturbance impacts to big game will decrease due to reduced public access. In these areas, gating, closures, or reclamation of roads would increase impacts to big game winter range by 57% compared to Alternative B and reduce impacts by 28% when compared to Alternative C.

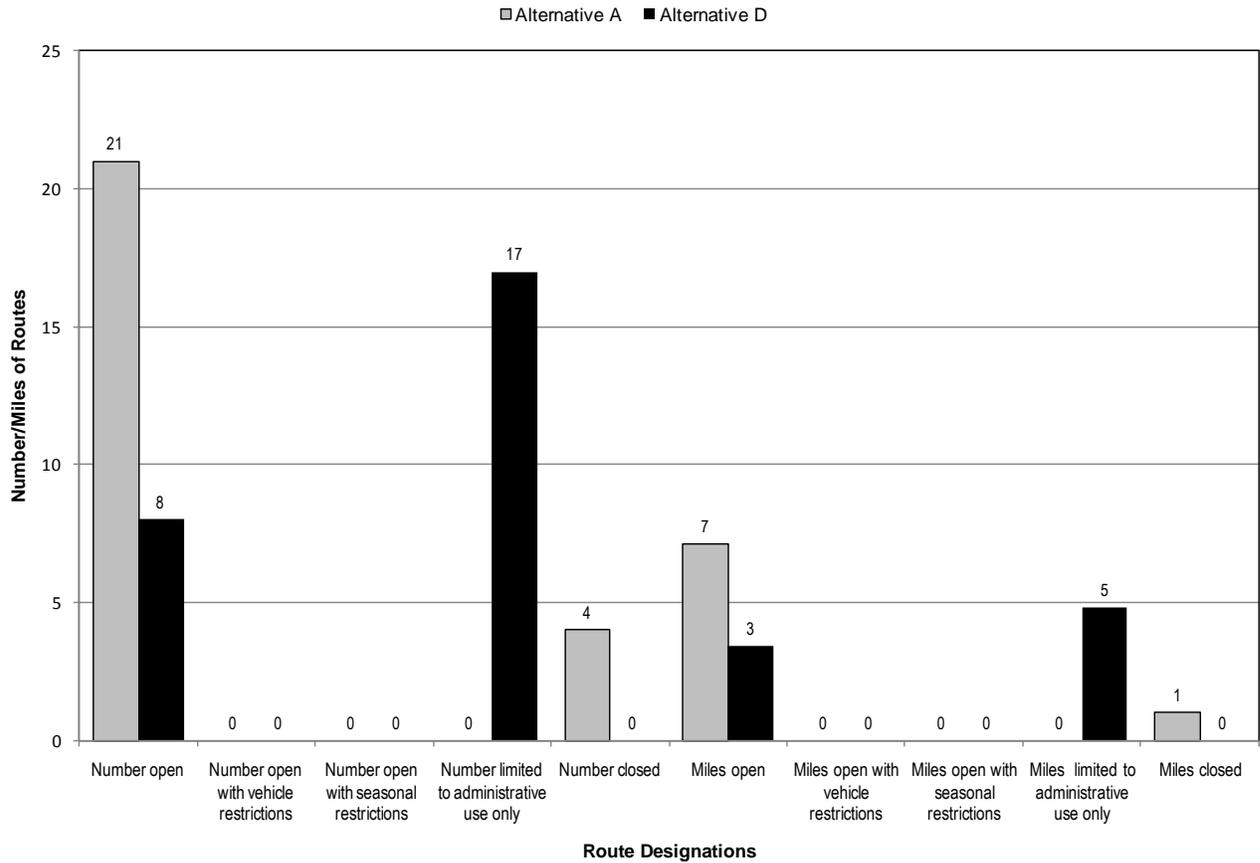
This would directly contribute in the long-term to decreasing the effects of route use, such as wildlife harassment, displacement, and stress to big game on winter ranges to a moderate degree.

Greater Sage-Grouse – Leks and Nesting Habitat

Under the Alternative D, of the 25 routes that are within 0.25 miles of identified sage-grouse leks, only 8 routes (3.4 miles) or 32% would be open to all types of motor vehicle use. Conversely, no routes would be closed to motor vehicle use and 17 routes (4.8 miles) or 68% would be limited to administrative use only. This would result in 52% fewer open routes within 0.25 miles of leks in Alternative D than would be open in Alternative A.

Potential Route Designations	Alternative A				Alternative D							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	21	84.0%	7.1	87.7%	8	32.0%	-13	-52.0%	3.4	41.5%	-3.7	-46.2%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	17	68.0%	17	68.0%	4.8	58.5%	4.8	58.5%
Closed	4	16.0%	1.0	12.3%	0	0.0%	-4	-16.0%	0.0	0.0%	-1	-12.3%

Figure 4.2.4.2a: Alternative D Route Designations within 1/4-mile of Sage Grouse Leaks

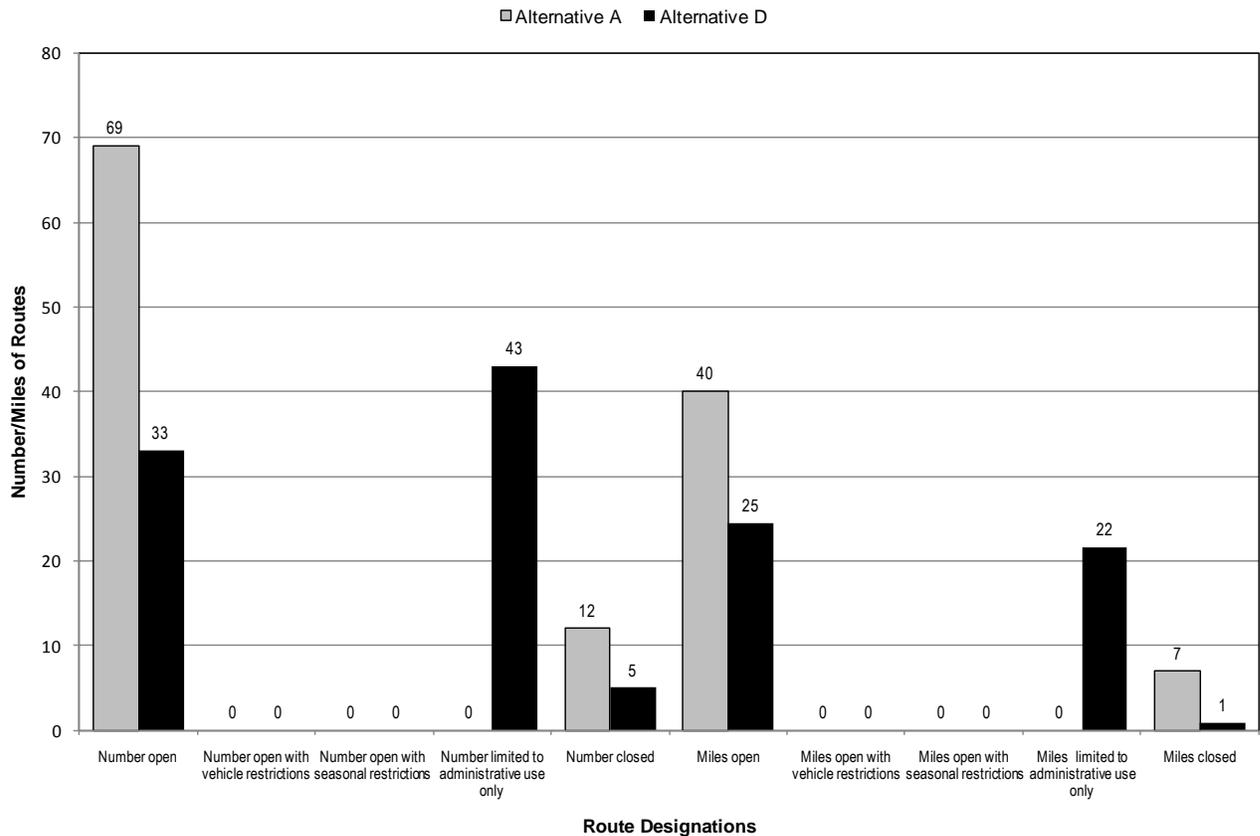


Under the Alternative D, of the 81 routes that are within 0.6 miles of identified sage-grouse, 33 routes (12.9 miles) or 46% would be open to all types of motor vehicle use. Conversely, 5 routes (0.9 miles) or 6% would be closed and 43 routes (21.6 miles) or 53% would be limited to administrative use only. This would result in 44% fewer open routes within 0.6 miles of leks in Alternative D than would be open in Alternative A. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be minor to moderate, due to the limited public motorized access opportunities near the lek sites (43 CFR 8342.1(b)).

Table 43: Alternative D Route Designations within 0.6 miles of Sage-Grouse Leaks (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative D							
	Routes	Percent	Miles	Percent	Routes	Percent	# Δ from Alt. A	% Δ from Alt. A	Miles	Percent	# Δ from Alt. A	% Δ from Alt. A
Open	69	85.2%	40.0	85.1%	33	40.7%	-36	-44.4%	24.5	52.1%	-15.5	-33.0%
Open with vehicle restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Open with seasonal restrictions	0	0.0%	0.0	0.0%	0	0.0%	0	0.0%	0.0	0.0%	0	0.0%
Limited to administrative use only	0	0.0%	0.0	0.0%	43	53.1%	43	53.1%	21.6	46.0%	21.6	46.0%
Closed	12	14.8%	7.0	14.9%	5	6.2%	-7	-8.6%	0.9	1.9%	-6.1	-13.0%

Figure 4.2.4.2b: Alternative D Route Designations within 0.6 miles of Sage Grouse Leaks (Compared to Alt. A)



Of the 395 routes that are within nesting habitat (within 2 miles of identified sage-grouse leks), 160 routes (215 miles) or 41% would be open or open with restrictions. Conversely, 209 routes (141 miles) or 53% would be limited to administrative use only, while 26 routes (10.3 miles) or 7% would be closed to motor vehicle use. This would result in 48% fewer open routes within 2 miles of leks in Alternative D than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 338 acres or 0.21% of the total area within 2 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 2-mile nesting habitat, 465 acres would be without routes. This would result in 26% fewer open route acres in Alternative D than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 12.8 acres or 2.4% of the total route acreage within the 2-mile nesting habitat; 6% fewer than in Alternative A. This would be a long-term, direct, localized moderate reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 579 routes that are within nesting habitat (within 3 miles of identified sage-grouse leks), 240 routes (349 miles) or 41% would be open or open with seasonal restrictions. Conversely, 299 routes (197 miles) or 52% would be limited to administrative use only, while 40 routes (28.5 miles) or 7% would be closed to motor vehicle use. This would result in 45% fewer open routes within 3 miles of leks in Alternative D than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 555 acres or 0.16% of the total area within 3 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 3-mile nesting habitat, 618 acres would be without routes. This would result in 22% fewer open route acres in Alternative D than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 36.6 acres or 4% of the total route acreage within the 3-mile nesting habitat; 5% fewer than in Alternative A. This would be a long-term, direct, localized minor to moderate reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 701 routes that are within nesting habitat (within 4 miles of identified sage-grouse leks), 285 routes (451 miles) or 41% would be open or open with vehicle restrictions. Conversely, 350 routes (236 miles) or 51% would be limited to administrative use only, while 58 routes (48 miles) or 8% would be closed to motor vehicle use. This would result in 43% fewer open routes within 4 miles of leks in Alternative D than would be open in Alternative A. The actual footprint (area of surface disturbance) of open routes affects approximately 726 acres or 0.12% of the total area within 4 miles of sage-grouse leks. In other words, for every 1 acre of route footprint within the 4-mile nesting habitat, 803 acres would be without routes. This would result in 20% fewer open route acres in Alternative D than in Alternative A. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 57 acres or 5% of the total route acreage within the 4-mile nesting habitat; 5% fewer than in Alternative A. This would be a long-term, direct, localized minor to moderate reduction of fragmented habitat and the potential for wildlife harassment (43 CFR 8342.1(b)).

Of the 81 existing BLM routes (47 miles) within 0.6 miles of sage-grouse leks under the Alternative D, 24 open routes (16.8 miles) are considered by resource specialists to have low vehicle use levels. Conversely, 5 open routes (4.6 miles) have vehicle use levels estimated as moderate and only 4 open routes (3 miles) are estimated to have heavy vehicle use. The

combination of 5 closed routes and the low vehicle use levels on 73% of open routes (69% of open route miles) and low use or no observed use on 100% of administrative use only routes (100% administrative route miles) within 0.6 miles of sage-grouse leks would directly contribute, in the long-term, to lessening of the effects of route use, such as wildlife harassment, human-caused animal mortality or displacement of individual animals to a moderate to major degree (43 CFR 8342.1 (b)).

Greater Sage-Grouse Protection Priority Areas (PPAs)

Under Alternative D, sage-grouse Protection Priority Areas (PPAs) would be allocated and the 402 existing BLM routes (359 miles) that comprise the travel networks within the PPAs would continue to be managed using five existing designation types, with only 4 out of every 10 existing routes (40%) open to all motorized uses. This would result in 52% fewer open routes within PPAs in Alternative D than would be open in Alternative A. Additionally, the route density within the PPAs would drop to 0.9 open routes per square mile and 1.1 miles of open routes per square mile. This would be a 56% reduction in open route density (37% reduction in the density of open route miles) in the PPAs from Alternative A. Alternative D would close and restrict to administrative use only 241 routes (153 miles) or 60% of the PPA routes. The long-term, direct, localized effect of these restricted routes on reducing PPA habitat fragmentation is moderate, due in part to the much smaller supply of 161 open routes at 206 miles with the route densities that are described above (43 CFR 8342.1(b)).

Greater Sage-Grouse Restoration Areas

Under Alternative D, sage-grouse Restoration Areas (RAs) would be allocated and the 113 existing BLM routes (121 miles) that comprise the travel networks within the RAs would continue to be managed using five existing designation types, with almost 4 out of every 10 existing routes (39%) open to all motorized uses and open with restrictions. This would result in 58% fewer open routes within RAs in Alternative D than would be open in Alternative A. Additionally, the route density within the RAs would drop to 1.1 open routes per square mile and 2.2 miles of open routes per square mile. This would be a 60% reduction in open route density (25% reduction in the density of open route miles) in the RAs from Alternative A. Alternative D would close and restrict to administrative use only 69 routes (32 miles) or 61% of the RA routes. The long-term, direct, localized effect of these restricted routes on reducing RA habitat fragmentation is moderate, due in part to the much smaller supply of 44 open routes at 89 miles with the route densities that are described above (43 CFR 8342.1(b)).

Greater Sage-Grouse General Habitat

Under Alternative D, the 224 existing BLM routes (200 miles) that comprise the travel networks within the remaining sage-grouse general habitat areas would continue to be managed using five existing designation types, with over 5 out of every 10 existing routes (56%) open to all motorized uses and open with restrictions. This would result in 19% fewer open routes within general habitat in Alternative D than would be open in Alternative A. Additionally, the route density within the general habitat would drop to 1.4 open routes per square mile and 1.5 miles of open routes per square mile. This would be a 26% reduction in open route density (12% reduction in the density of open route miles) in the general habitat from Alternative A. Alternative D would close and restrict to administrative use only 99 routes (67 miles) or 44% of

the general habitat routes. The long-term, direct, localized effect of these restricted routes on reducing general habitat fragmentation is moderate, due in part to the much smaller supply of 125 open routes at 133 miles with the route densities that are described above (43 CFR 8342.1(b)).

Overall, this alternative would provide moderate to major protection of sage-grouse leks and nesting habitat from habitat fragmentation and disturbance from travel routes within the Travel Management Areas (TMAs). The direct, long-term, local impacts to sage-grouse would be reduced to a moderate to major degree when compared to Alternative A.

Prairie Dogs

White-tailed Prairie Dogs

Under the Alternative D, of the 19 routes that are within 0.5 miles of identified white-tailed prairie dog “towns”, 10 routes (3.4 miles) or 53% would be open to all types of motor vehicle use. This would result in 32% fewer open routes within 0.5 miles of prairie dog “towns” from Alternative A. Only 8 routes (3.5 mile) or 42% would be limited to administrative use only and 1 route (0.3 miles) or 5% would be closed to motor vehicle use. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or the potential for wildlife harassment would be moderate, due to limiting public access to only 10 open routes near the “town” sites (43 CFR 8342.1(b)).

Black-tailed Prairie Dogs

Under the Alternative D, of the 90 routes that are within 0.5 miles of identified black-tailed prairie dog “towns”, 35 routes (28.1 miles) or 39% would be open to all types of motor vehicle. This would result in 51% fewer open routes within 0.5 miles of prairie dog “towns” from Alternative A. Over half of the total routes (53 routes (30.8 mile) or 59%) would be limited to administrative use only and 2 routes (0.4 miles) or 2% would be closed to motor vehicle use. The long-term, direct, localized effect of these route designations on reducing habitat fragmentation and/or minimizing the potential for wildlife harassment would be minor to moderate, due to limiting public access to only 35 open routes near the “town” sites (43 CFR 8342.1(b)).

There would be minor to moderate benefits to prairie dog habitat with this alternative. The long-term, direct, and localized impacts to habitat fragmentation and prairie dog harassment would be reduced by the closure to motor vehicle use of 2-5% of routes and administrative use only restrictions on 59% of the routes or 51% fewer open routes when compared to Alternative A.

O.5.2.10 Fisheries Habitat and Special Status Species

O.5.2.10.1 Impacts Common to All Alternatives

Motorized and mechanized modes of travel on BLM-administered land (outside of established TMAs) would be limited to existing roads and trails. Site specific travel planning would be initiated if resources were impacted (not meeting Land Health Standards, excessive erosion). In all alternatives, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. Prohibiting off road travel reduces erosion and protects water quality and fisheries habitat. General impacts associated with travel management, pertaining to fisheries

resources, are related to: weed infestations that degrade upland and riparian health; erosion and un-natural drainage that results in sedimentation and other non-point source pollution to streams.

O.5.2.10.2 Alternative A

The primary issues related to fisheries are the preservation of water quality, erosion, and drainage from road surfaces into stream channels. More specifically, the existence of routes with their areas of surface disturbance, as well as the use of motor vehicles on those routes that drain into with water courses and/or are through sensitive soils constitutes a primary activity that has the potential to adversely affect fisheries. Relative to travel management, this can occur by improper placement of routes; inappropriate behavior by visitors in these areas; intense rainfall events or unauthorized off-road vehicle use. Therefore, the supply and spatial extent of travel access networks for motor vehicles is an important component for managing or providing various levels of protection for fisheries.

The species of concern with regard to route designations is Yellowstone cutthroat trout, which, within the context of this analysis, only occur in the Pryor TMA. The analysis results are derived from looking at all routes that underwent route evaluation that are within .5 miles (in/through/to/proximate) of the YCT Suitable and YCT Conservation habitat areas depicted in the BLM’s GIS data. Only one route (PM1088 at 0.14 miles within the Pryor TMA) was apparently in or very close to a YCT Conservation population. The No Action Alternative and Alternative B proposed closure for the route, while Alternative C proposed to open to all vehicles and Alternative D proposed administrative uses only for the route. Topographic features associated with this route negate impacts to YCT habitat.

Table 44: Alternative A: Number of Routes Associated with Yellowstone cutthroat trout habitat

Potential Route Designations	Alternative A			
	Within 0.5 miles from YCT habitat)	% of routes within 0.5 miles of YCT habitat	Within 0.5 miles from YCT habitat and in sensitive soils	% of routes within 0.5 miles of YCT habitat in soils
Open	14	61	6	100
Open with vehicle restrictions	0	0	0	0
Open with seasonal restrictions	0	0	0	0
Limited to administrative use only	0	0	0	0
Closed	9	39	0	0

Routes in, through, crossing, or proximate within 0.5 miles of YCT suitable habitat and conservation population habitat: Under the No Action Alternative, of the 23 routes that are in or through or proximate within 0.5 miles of YCT habitat, 10.2 miles (63%) on 14 routes would be open to all types of motor vehicle use, while no routes would be limited to administrative use only; and 5.9 miles (37%) on 9 routes would be closed. In the long-term, 6 out of every 10 miles of existing BLM routes in or through or within 0.5 miles of YCT habitat would remain available for public access in the No Action Alternative. With 63% of existing routes potentially open and

37% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to YCT habitat would be moderate (43 CFR 8342.1(a)(b)(d)).

Routes in, through, crossing, or proximate within 0.5 miles of YCT suitable habitat and conservation population habitat in severe/moderate water erosion rated soils: Of the 6 routes that are in, through or within 0.5 miles of YCT habitat that are also in severe or moderate water erosion rated soils, 7.1 miles on 6 routes, or 100% would be open to all vehicle uses. No routes would be limited to administrative use only or closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes would be approximately 12 acres in these areas. The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 0 acres. In the long-term, 10 out of every 10 existing BLM routes in, through or within 0.5 miles of YCT habitats in these soil types would remain available for public access in the No Action Alternative. With 100% of existing routes potentially open and 0% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to YCT habitat would be major (43 CFR 8342.1(a)(b)(d)).

Each route is unique in its potential to impact fisheries resources and quantitative data is not available specific to each route, however, assumptions lead to the conclusion that more open routes adjacent to fisheries resources will lead to degraded fisheries habitat from sedimentation/erosion and invasive species infestations. Impacts from travel route designations are addressed specifically when riparian areas are monitored for functionality. It should be noted, there is no evidence that any routes analyzed above are having adverse impacts on fisheries resources, this analysis depicts potential impacts from route designations.

O.5.2.10.3 Alternative B

In action alternatives (B, C, D) the BLM established 11 Travel Management Areas (TMAs) to minimize impacts and provide a spectrum of motorized and non-motorized recreational opportunities. In each TMA, motorized and mechanized travel would be limited to designated roads and trails, except in designated open areas (ex: South Hills Motorcycle Area). Routes on BLM lands but outside of TMAs would be managed as in Alternative A, “limited to existing roads and trails”.

An implementation and monitoring plan would be initiated for the TMAs within 3-5 years of the ROD. The plan would include signing, mapping, information and education, and monitoring of impacts associated with continued use on designated open routes, etc. Implementation plan would also identified criteria for route variances specific to each TMA. In this plan, the BLM may close or restore unauthorized, user created roads and trails to prevent resource damage. The travel plan would also allow for, upon project completion, roads used for commercial or administrative access on BLM-administered lands would be reclaimed, unless the route provides specific benefits for public access, minimizes impacts to the resource and would be considered on a case-by-case basis.

The following analysis determines the impacts of potential water pollution sources associated with routes in proximity to different types of water and fisheries resources and when in areas where severe or moderate erosion rated soils were identified. These characteristics were determined to have the most potential to impact water resources, pertaining to travel management.

Table 45: Alternative B: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative B					
	Within 0.5 miles	% of routes within 0.5 miles	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	Within 0.5 miles	% of routes within 0.5 miles	% Δ from Alt. A	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	% Δ from Alt. A
Open	14	61	6	100	4	17	-44	2	33	-67
Open with vehicle restrictions	0	0	0	0	0	0	0	0	0	0
Open with seasonal restrictions	0	0	0	0	1	4	4	1	17	17
Limited to administrative use only	0	0	0	0	2	9	9	0	0	0
Closed	9	39	0	0	16	70	30	3	50	50

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat: Under alternative B, of the 23 routes (16.1 miles) that are in or through or proximate within 0.5 miles of YCT habitat, 4 routes with 4.9 miles (30%) would be open to all types of motor vehicle use, with 1 route at 2 miles (12%) open with seasonal restrictions (for a total of 21% fewer open miles (3.3 miles) than in alternative A). Additionally, 2 routes with 1.2 miles (8%) would be limited to administrative use only (7% more miles open than alternative A) and 16 routes with 8 miles (50%) would be closed (13% more than Alternative A). In the long-term, 6.9 miles out of 16.1 existing miles in or through or proximate within 0.5 miles of YCT habitat would remain available for public access in alternative B. With 43% of existing route miles potentially open and 57% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to YCT habitat would be moderate, speaking of miles of routes (43 CFR 8342.1(a)(d)). As described in alternative A, the actual impacts to YCT habitat and fish populations cannot be quantified due to minimal data concerning erosion and input to these aquatic systems.

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat in severe/moderate water erosion rated soils: Of the 6 routes (7.1 miles) that are in, through or within 0.5 miles of YCT habitat that are also in severe or moderated water erosion rated soils, 2 routes with 2.9 miles or (41%) would be open to all vehicle uses and 1 route at 2 miles (28%) would be open with seasonal restrictions (for a total of 18% fewer miles than Alternative A). Additionally, no

routes would be limited to administrative use only (same as Alternative A) and 3 routes with 2.2 miles (31%) would be closed to motor vehicle use (31% more miles than Alternative A). The actual footprint (area of surface disturbance) of open routes would be approximately 9.4 acres in these areas (21% fewer than Alternative A). The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 2.7 acres (22% more than Alternative A). In the long-term, 5 out of every 10 existing BLM routes in, through or within 0.5 miles of YCT habitat in these soil types would remain available for public access in Alternative B. With 69% of existing routes potentially open and 31% potentially closed to motor vehicle use, the localized, long-term effect of these route restrictions on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to YCT habitat would be moderate (43 CFR 8342.1(a)(d)).

The determination, by this analysis, only reflects the relative impacts of open versus closed route miles, as opposed to the detailed potential impacts that may arise from issues to resources by route designations. Each route is unique in its potential to impact fisheries resources and quantitative data is not available specific to each route, however, assumptions lead to the conclusion that more open routes adjacent to fisheries resources will lead to degraded fisheries habitat from sedimentation/erosion and invasive species infestations. Impacts from travel route designations are addressed specifically when riparian areas are monitored for functionality.

O.5.2.10.4 Alternative C

Alternative C designates the most open routes in the established Travel Management Areas and continues to restrict motorized vehicle use to existing roads and trails in the rest of the field office. The following analysis determines the impacts of potential water pollution sources associated with routes in proximity to different types of water and fisheries resources and when in areas where severe or moderate erosion rated soils were identified. These characteristics were determined to have the most potential to impact water resources, pertaining to travel management.

Table 46: Alternative C: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative C					
	Within 0.5 miles	% of routes within 0.5 miles	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	Within 0.5 miles	% of routes within 0.5 miles	% Δ from Alt. A	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	% Δ from Alt. A
Open	14	61	6	100	22	96	35	6	100	0
Open with vehicle restrictions	0	0	0	0	0	0	0	0	0	0
Open with seasonal restrictions	0	0	0	0	0	0	0	0	0	0
Limited to administrative use only	0	0	0	0	1	4	4	0	0	0
Closed	9	39	0	0	0	0	-39	0	0	0

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat: Under Alternative C, of the 23 routes (16.1 miles) that are in or through or within 0.5 miles of YCT habitat, 22 routes with 15.6 miles (97%) would be open to all types of motor vehicle use (34% more miles than in Alternative A). Additionally, 1 route at 0.5 miles (3%) would be limited to administrative use only and no routes would be closed (63% fewer miles than Alternative A). In the long-term, with 97% of BLM route miles in or through or within 0.5 miles of YCT habitat remaining available for public access in Alternative C, the localized, long-term effect on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to fisheries values would be major (43 CFR 8342.1(a)(d)).

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat in severe/moderate water erosion rated soils: Of the 6 routes (7.1 miles) that are in, through or within 0.5 miles of YCT habitat that are also in severe or moderated water erosion rated soils, 6 routes (7.1 miles) or 100% would be open to all vehicle uses (same as Alternative A). Additionally, no routes would be limited to administrative use only or closed to motor vehicle use (same as Alternative A). The actual footprint (area of surface disturbance) of open routes would be approximately 12.1 acres in these areas (same as Alternative A). The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 0 acres (same as Alternative A). The impacts for Alternative C would be the same as Alternative A.

The determination, by this analysis, only reflects the relative impacts of open versus closed route miles, as opposed to the detailed potential impacts that may arise from issues to resources by route designations. Each route is unique in its potential to impact fisheries resources and quantitative data is not available specific to each route, however, assumptions lead to the conclusion that more open routes adjacent to fisheries resources will lead to degraded fisheries habitat from sedimentation/erosion and invasive species infestations. Impacts from travel route designations are addressed specifically when riparian areas are monitored for functionality.

O.5.2.10.5 Alternative D

Impacts would be the same as described in impacts from in Alternative B. Based on assumptions, the more route miles open will have more impacts to fisheries resources.

Under Alternative D, there would be 624 miles of open routes (62% of all route miles). This Alternative closes or limits to administrative access more route miles than alternatives A and C, but less than Alternative B. Alternative A designates 83% of route miles as open, Alternative B designates 35% of route miles as open and Alternative C designates 90% of route miles as open.

Table 47: Alternative D: Number of Routes Associated with Yellowstone cutthroat trout habitat (compared to Alt. A)

Potential Route Designations	Alternative A				Alternative D					
	Within 0.5 miles	% of routes within 0.5 miles	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	Within 0.5 miles	% of routes within 0.5 miles	% Δ from Alt. A	Within 0.5 miles and in sensitive soils	% of routes within 0.5 miles and in soils	% Δ from Alt. A
Open	14	61	6	100	5	22	-39	2	33	-67
Open with vehicle restrictions	0	0	0	0	0	0	0	0	0	0
Open with seasonal restrictions	0	0	0	0	1	4	4	1	17	17
Limited to administrative use only	0	0	0	0	12	52	52	2	33	33
Closed	9	39	0	0	5	22	-17	1	17	17

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat: Under Alternative D, of the 23 routes that are in or through or within 0.5 miles of YCT habitat, 5 routes with 6 miles (37%) would be open to all types of motor vehicle use, with 1 route at 2 miles (12%) open with seasonal restrictions (for a total of 12% fewer open miles than in Alternative A). Additionally, 12 routes with 6.8 miles (43%) would be limited to administrative use only and 5 routes with 1.2 miles (8%) would be closed (29% fewer miles than Alternative A). In the long-term, 8 miles of existing BLM routes in or through or within 0.5 miles of YCT habitat would remain available for public access in Alternative D. With 49% of existing route miles potentially open and 51% potentially limited to administrative use only or closed to motor vehicle use, the localized, long-term effect on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to water values would be moderate to major (43 CFR 8342.1(a)(d)).

Routes in, through, crossing, proximate within 0.5 miles of YCT habitat in severe/moderate water erosion rated soils: Of the 5 routes (7.1 miles) that are in, through or within 0.5 miles of YCT habitat that are in severe or moderated water erosion rated soils, 2 routes with 2.9 miles (41% would be open to all vehicle uses and 1 route at 2 miles (28%) would be open with

seasonal restrictions (for a total of 31% fewer miles open than Alternative A). Additionally, 1 route at 1.8 miles (25%) would be limited to administrative use only and 1 route at 0.4 miles (6%) would be closed to motor vehicle use. The actual footprint (area of surface disturbance) of open routes would be approximately 9.4 acres in these areas (22% fewer than Alternative A). The footprint for routes that would be closed (and eventually restored to a more natural condition) would be 0.5 acres (4% more than Alternative A). In the long-term, 4.9 out of every 7.1 miles (69%) of existing BLM routes in, through or within 0.5 miles of YCT habitat in these soil types would remain available for public access in Alternative D. With 69% of existing route miles potentially open and 31% potentially limited to administrative use only or closed, the localized, long-term effect of these route restrictions on reducing erosion and drainage from road surfaces into stream channels and wetlands with the potential for direct and indirect impacts to YCT habitat would be moderate to major (43 CFR 8342.1(a)(d)).

O.5.2.11 Wild Horses and Burros

The primary impact issue for wild horses in the Pryor Mountain area is the long-term viability of the herd. Travel management factors that can adversely impact herd viability include, roads open too early in spring and year-round; use of open routes too early in the spring creating greater resource damage as users drive around snowbanks, down trees, and muddy sections; and human presence disturbing herds during foaling season, potentially affecting foaling rates. Additionally, existing routes in the herd area are often widened or new routes are created during inclement weather or following winter thaw and tree fall.

O.5.2.11.1 Alternative A

Under the No Action Alternative, of the 16 routes that are within the Pryor Mountain TMA, 8 routes (29.3 miles) or 50% would be open to all types of motor vehicle use. No routes would be open with special restrictions and 1 route (2.4 miles) or 6% would be limited to administrative use only. Additionally, 7 routes (6.9 mile) or 44% would be closed to motor vehicle use. As such, the long-term, direct, localized effect of these route designations with regard to reducing impacts to the viability of the wild horse herd and/or minimizing the potential for harassment of the herd would be minor to moderate, due to the open availability of 50% of the routes associated with the herd area (43 CFR 8342.1(a)(d)).

O.5.2.11.2 Alternative B

Under the Alternative B, of the 16 routes that are within the Pryor Mountain TMA, 2 routes (17.6 miles) or 13% would be open to all types of motor vehicle use. This would result in 38% fewer open routes in Alternative B than would be open in Alternative A. While 3 routes (6.7 miles) or 19% would be open with special restrictions (19% more than in Alternative A), only 2 routes (3.8 miles) or 13% would be limited to administrative use only (6% more than in Alternative A) and 9 routes (10.6 miles) or 56% would be closed to motor vehicle use (13% more than in Alternative A). As such, the long-term, direct, localized effect of these route designations with regard to reducing impacts to the viability of the wild horse herd and/or minimizing the potential for harassment of the herd would be moderate, due to the open availability of 31% of the routes associated with the herd area (43 CFR 8342.1(a)(d)).

O.5.2.11.3 Alternative C

Under the Alternative C, of the 16 routes that are within the Pryor Mountain TMA, 7 routes (28.7 miles) or 44% would be open to all types of motor vehicle use. This would result in 6% fewer open routes in Alternative C than would be open in Alternative A. While 1 route (0.2 miles) or 6% would be open with special restrictions (6% more than in Alternative A), 8 routes (9.8 miles) or 50% would be limited to administrative use only (44% more than in Alternative A) and no routes would be closed to motor vehicle use (44% fewer than in Alternative A). As such, the long-term, direct, localized effect of these route designations with regard to reducing impacts to the viability of the wild horse herd and/or minimizing the potential for harassment of the herd would be minor to moderate, due to the open availability of 50% of the routes associated with the herd area (43 CFR 8342.1(a)(d)).

O.5.2.11.4 Alternative D

Under the Alternative D, of the 16 routes that are within the Pryor Mountain TMA, 3 routes (19.8 miles) or 19% would be open to all types of motor vehicle use. This would result in 31% fewer open routes in Alternative D than would be open in Alternative A. While 3 routes (6.7 miles) or 19% would be open with special restrictions (19% more than in Alternative A), 8 routes (8.9 miles) or 50% would be limited to administrative use only (44% more than in Alternative A) and 2 routes (3.3 miles) or 13% would be closed to motor vehicle use (31% fewer than in Alternative A). As such, the long-term, direct, localized effect of these route designations with regard to reducing impacts to the viability of the wild horse herd and/or minimizing the potential for harassment of the herd would be moderate, due to the open availability of 37% of the routes associated with the herd area (43 CFR 8342.1(a)(d)).

O.5.2.12 Cultural Resources

O.5.2.12.1 Alternative A

General Access: The primary issues for cultural resources regarding route designations and motorized access are the protection of cultural sites from physical damage related to motorized use; access opportunities related to scientific research; and public overuse and damage to certain cultural sites, either by inappropriate visitor behavior and/or too much motorized access to sites.

While restricting public motorized access to or near known cultural sites and/or areas may make it difficult to impossible for visitors to view and enjoy these resources, reductions in public access to these areas could decrease the potential for further or future damage to sites and loss of the scientific information that they hold. Conversely, unrestrained, increased or widespread motorized use in such areas may increase the potential for such damage. Inasmuch as the use of motor vehicles on public routes constitutes the primary means of access to public lands for visitors, administrative personnel and researchers, the supply and spatial extent of travel access networks for motor vehicles is an important.

Under the No Action Alternative, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (6%), or closed (10%). Although Alternative A carries forward closures

and restrictions to administrative use only on 143 routes (170 miles) or 16% of the routes, the overwhelming majority of routes (about 84%) would be open to all motorized uses (82.8%) or open with special seasonal (0.8%) or vehicular restrictions (0.1%).

Overall, in the long-term, the average route density for the TMAs would be 1.5 open routes per square mile at 1.7 miles per square mile. Direct and indirect impacts to cultural resources by motorized access based on route densities would potentially be even higher in the Mill Creek/Bundy TMA, which has the highest density of open routes at 2.5 routes per square mile and the Shepherd TMA, which has a high of 8.9 miles per square mile of open routes.

Therefore, Alternative A would continue to provide a moderate to high degree of motor vehicle access in the TMAs that, in the long-term, would contribute only a minor degree to reducing public motorized access and minimizing potential indirect damage to cultural resources, due to the continued open availability of over 8 out of every 10 existing BLM routes in the TMAs (43 CFR 8342.1(a)). Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, the availability of open public motorized access may increase to a minor degree, on a short-term, localized basis, potentially dispersing use into new areas that may possess cultural resources. Such effects would ebb and flow with energy development.

Public Access associated with Cultural Sites/Areas: Route networks that are open to all uses allow public access to and/or near both known and undocumented cultural resource sites and/or areas. Such access can indirectly impact cultural resources in ways that range from unintentional, unknowing damage from foot traffic to intentional, illegal destruction of sites and removal of artifacts. Managing the availability of public motorized access to and/or near known cultural sites and areas can, therefore, directly reduce the potential for these impacts to occur in the long-term, which would contribute to minimizing damage to cultural resources and the potential for adversely affecting natural areas (43 CFR 8342.1(a)(d)).

With regard to the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under the No Action Alternative, only 17 routes (26 miles) or about 5% would be limited to administrative use only and 60 routes (77 miles) or 19% would be closed; 246 routes (329 miles) or about 76% would continue to be managed as open/open with restrictions. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 77 routes at 103 miles, the direct, long-term effect of these restricted routes on reducing public motorized access and potentially minimizing damage to cultural resources would be minor, due to the continued availability of over 7 out of every 10 existing BLM routes currently associated with known cultural sites and/or areas (43 CFR 8342.1(a)).

Administrative and/or Research Access to Cultural Sites/Areas: Total closure of routes to or near these resources could have a detrimental effect on the ability of the scientific community to access sites and areas to conduct recordation, research, excavation, stabilization, restoration or other related activities.

With regard to the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under the No Action Alternative, 263 routes (355 miles) or

about 81% would continue to be managed as open/open with restrictions or limited to administrative use only. Although Alternative A carries forward closures on a total of 60 routes at 77 miles, the direct, long-term effect of these restricted routes on accessing scientific research activities at known cultural sites and/or areas would be minor, due to the continued availability of over 8 out of every 10 existing BLM routes currently available for these activities.

O.5.2.12.2 Alternative B

General Access: Under Alternative B, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would be managed as open/open with restrictions, limited to administrative use only (25%), or closed (64%). Alternative B would restrict to administrative use only and closures, 785 routes (644 miles) or 90% of the existing routes; a 73% increase from Alternative A.. Only 9.2% of existing routes would be open to all motorized uses with 0.7% open with special seasonal restrictions and 0.3% open with vehicular restrictions. This would result in 73% decrease in open routes in Alternative B from the open routes in Alternative A.

Overall, in the long-term, the average route density for the TMAs under Alternative B would be 0.2 open routes per square mile at 0.7 miles per square mile. Direct and indirect impacts to cultural resources by motorized access based on route densities would potentially higher in the Acton TMA, which, for Alternative B, would have the highest density of open routes at 0.5 routes per square mile and the Shepherd TMA, which would have the high of 7.2 miles per square mile of open routes.

Therefore, Alternative B would provide a small degree of motor vehicle access in the TMAs that, in the long-term, would contribute to reducing public motorized access and minimizing, to a major degree, the potential for indirect damage to cultural resources by the drastic reduction of open routes to just 1 out of every 10 (43 CFR 8342.1(a)). Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, the availability of open public motorized access may increase to a minor degree, on a short-term, localized basis, potentially dispersing use into new areas that may possess cultural resources. Such effects would ebb and flow with energy development.

Public Access associated with Cultural Sites/Areas: Of the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under Alternative B, 53 routes (65 miles) or about 16% would be limited to administrative use only, an 11% increase from this designation in Alternative A, and 228 routes (193 miles) or 71% would be closed, a 52% increase from this designation in Alternative A. The result is 42 routes (174 miles) or about 13% that would be managed as open/open with restrictions, a 63% reduction from open designations in Alternative A. Because Alternative B would close and restrict to administrative use only a total of 281 routes at 258 miles, the direct, long-term effect of these restricted routes on reducing public motorized access and potentially minimizing damage to cultural resources would be major, due to the limited public availability of just over 1 out of every 10 existing BLM routes currently associated with known cultural sites and/or areas (43 CFR 8342.1(a)).

Administrative and/or Research Access to Cultural Sites/Areas: With regard to the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under the Alternative B, 95 routes (239 miles) or about 29% would be managed as

open/open with restrictions or limited to administrative use only, a 51% decrease from these designations in Alternative A. Because Alternative B would close a total of 228 routes at 193 miles, the direct, long-term effect of these closures on accessing scientific research activities at known cultural sites and/or areas would be moderate to major, due to potentially limiting availability to almost 3 out of every 10 existing BLM routes currently available for these activities.

O.5.2.12.3 Alternative C

General Access: Under Alternative C, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would be managed as open/open with restrictions, limited to administrative use only (14%), or closed (3%). Alternative C would restrict to administrative use only and closures, 142 routes (97 miles) or 17% of the existing routes; a 0.1% overall decrease from Alternative A.. Only 83% of existing routes would be open to all motorized uses with 0.1% open with special seasonal restrictions and 0.8% open with vehicular restrictions. This would result in 0.1% increase in open routes in Alternative C from the open routes in Alternative A.

Overall, in the long-term, the average route density for the TMAs under Alternative C would be 1.5 open routes per square mile at 1.8 miles per square mile. Direct and indirect impacts to cultural resources by motorized access based on route densities would potentially higher in the Tin Can Hill TMA, which, for Alternative C, would have the highest density of open routes at 5 routes per square mile and the Shepherd TMA, which would have the high of 8.3 miles per square mile of open routes. Alternative C increases the number of open routes only by 1 route, therefore, the impacts would be essentially the same as Alternative A.

Public Access associated with Cultural Sites/Areas: Of the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under Alternative C, 42 routes (42 miles) or about 13% would be limited to administrative use only, an 8% increase from this designation in Alternative A, and 7 routes (2 miles) or 2% would be closed, a 16% increase from this designation in Alternative A. The result is 274 routes (389 miles) or about 85% that would be managed as open/open with restrictions, a 9% increase from open designations in Alternative A. Because Alternative C would close and restrict to administrative use only a total of 49 routes at 43 miles, the direct, long-term effect of these restricted routes on reducing public motorized access and potentially minimizing damage to cultural resources would be negligible to minor, due to the public availability of over 8 out of every 10 existing BLM routes currently associated with known cultural sites and/or areas (43 CFR 8342.1(a)).

Administrative and/or Research Access to Cultural Sites/Areas: With regard to the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under the Alternative C, 316 routes (430 miles) or about 98% would be managed as open/open with restrictions or limited to administrative use only, a 16% increase from these designations in Alternative A. Because Alternative C would close a total of 7 routes at 2 miles, the direct, long-term effect of these closures on accessing scientific research activities at known cultural sites and/or areas would be negligible, due to potentially limiting availability to almost 10 out of every 10 existing BLM routes currently available for these activities.

O.5.2.12.4 Alternative D

General Access: Under Alternative D, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would be managed as open/open with restrictions, limited to administrative use only (51%), or closed (9%). Alternative D would restrict to administrative use only and closures, 529 routes (379 miles) or 60% of the existing routes; a 44% increase from Alternative A.. Only 38% of existing routes would be open to all motorized uses with 1.3% open with special seasonal restrictions and 0.6% open with vehicular restrictions. This would result in 44% decrease in open routes in Alternative D from the open routes in Alternative A.

Overall, in the long-term, the average route density for the TMAs under Alternative D would be 0.7 open routes per square mile at 1.2 miles per square mile. Direct and indirect impacts to cultural resources by motorized access based on route densities would potentially higher in the Tin Can Hill TMA, which, for Alternative D, would have the highest density of open routes at 2 routes per square mile and the Shepherd TMA, which would have the high of 7.2 miles per square mile of open routes.

Therefore, Alternative D would provide a moderate degree of motor vehicle access in the TMAs that, in the long-term, would contribute to reducing public motorized access and minimizing, to a moderate degree, the potential for indirect damage to cultural resources by the reduction of open routes to just 4 out of every 10 (43 CFR 8342.1(a)). Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, the availability of open public motorized access may increase to a minor degree, on a short-term, localized basis, potentially dispersing use into new areas that may possess cultural resources. Such effects would ebb and flow with energy development.

Public Access associated with Cultural Sites/Areas: Of the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under Alternative D, 157 routes (121 miles) or about 49% would be limited to administrative use only, an 43% increase from this designation in Alternative A, and 45 routes (54 miles) or 14% would be closed, a 5% decrease from this designation in Alternative A. The result is 121 routes (258 miles) or about 37% that would be managed as open/open with restrictions, a 39% reduction from open designations in Alternative A. Because Alternative D would close and restrict to administrative use only a total of 202 routes at 174 miles, the direct, long-term effect of these restricted routes on reducing public motorized access and potentially minimizing damage to cultural resources would be minor to moderate, due to the limited public availability of just under 4 out of every 10 existing BLM routes currently associated with known cultural sites and/or areas (43 CFR 8342.1(a)).

Administrative and/or Research Access to Cultural Sites/Areas: With regard to the 323 routes that are considered to be in, through or proximate (within 300 feet) to known cultural sites and/or areas under the Alternative D, 278 routes (379 miles) or about 86% would be managed as open/open with restrictions or limited to administrative use only, a 5% increase of these designations in Alternative A. Because Alternative D would close a total of 45 routes at 54 miles, the direct, long-term effect of these closures on accessing scientific research activities at known

cultural sites and/or areas would be minor, due to potentially limiting availability to almost 8.6 out of every 10 existing BLM routes currently available for these activities.

O.5.2.13 Paleontological Resources

O.5.2.13.1 Impacts Common to All Alternatives

This section presents the potential impacts of route designations on paleontological resources. Specifically, it evaluates the potential for elements of travel management to directly impact these resources by off-route vehicle use or by providing access to areas with moderate to high potential fossil yields and thus indirectly increasing the likelihood of travelers getting out of their vehicles, walking around and finding vertebrate fossils that may then be intentionally stolen or unintentionally damaged. Generally, motorized travel on designated routes are of no concern, as fossils at the surface within the roadbeds are already impacted or removed, while fossils under the surface are typically undisturbed. Additionally, potential restrictions to public motorized access in areas with potential fossil yields are evaluated in this section, as they may support or complement BLMs strategies and management objectives aimed at protecting these resources. More directly stated, in relation to travel networks, the availability of access to and through such areas is an important factor in managing and protecting these resources in the long-term.

Analysis of possible route designation impacts to paleontological resources considers potential route networks in light of the Potential Fossil Yield Classification (PFYC) for each alternative, which is tied directly to certain geologic formations that have varying potentials for yielding fossils. Formations that have a PFYC 3a or 3b are of interest to science and specialists, while formations that have a PFYC 4 are of special interest, and PFYC 5 formations have proven value.

O.5.2.13.2 Alternative A

PFYC 5 Areas: This section evaluates motorized access in and through all PFYC 5 areas in the TMAs. Under the No Action Alternative, the overall network of 518 existing BLM routes (433 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (8%), and closed (1%). The majority of routes (about 91%) would be open to all motorized uses (90%) or open with special seasonal or vehicular restrictions (1%). In the long-term, 9 out of every 10 existing BLM routes would remain available for public access in and through PFYC 5 areas. With 91% of existing routes potentially open and only 9% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be negligible (43 CFR 8342.1(a) (d)).

PFYC 4 Areas: This section evaluates motorized access in and through all PFYC 4 areas in the TMAs. Under the No Action Alternative, the overall network of 13 existing BLM routes (8 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (0%), and closed (23%). The majority of routes (about 77%) would be open to all motorized uses, with no routes open with special seasonal or vehicular restrictions (0%). In the long-term, almost 8 out of every 10 existing BLM routes would remain available for public

access in and through PFYC 4 areas. With 77% of existing routes potentially open and only 23% potentially closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with special interest for yielding paleontological resources would be minor (43 CFR 8342.1(a) (d)).

PFYC 3a & 3b Areas: This section evaluates motorized access in and through all PFYC 3a and 3b areas in the TMAs. Under the No Action Alternative, the overall network of 212 existing BLM routes (230 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (4%), and closed (15%). The majority of routes (about 81%) would be open to all motorized uses (80%) or open with special seasonal restrictions (1%). In the long-term, 8 out of every 10 existing BLM routes would remain available for public access in and through PFYC 3a and 3b areas. With 81% of existing routes potentially open and only 19% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be negligible to minor (43 CFR 8342.1(a) (d)).

O.5.2.13.3 Alternative B

PFYC 5 Areas: This section evaluates motorized access in and through all PFYC 5 areas in the TMAs. Under Alternative B, the overall network of 518 existing BLM routes (433 miles) would be managed as 9% open/open with restrictions (about 82% fewer than Alternative A), 28% limited to administrative use only (about 20% more than Alternative A), and 63% closed (about 62% more than Alternative A). Few routes would be open to all motorized uses (8.5%) or open with special seasonal or vehicular restrictions (0.8%). In the long-term, just under 1 out of every 10 existing BLM routes would remain available for public access in and through PFYC 5 areas. With only 9% of existing routes potentially open and 91% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be major (43 CFR 8342.1(a) (d)).

PFYC 4 Areas: This section evaluates motorized access in and through all PFYC 4 areas in the TMAs. Under Alternative B, the overall network of 13 existing BLM routes (8 miles) would be managed as 0% open/open with restrictions (about 77% fewer than Alternative A), 31% limited to administrative use only (about 31% more than Alternative A), and 69% closed (about 46% more than Alternative A). No routes would be open to all motorized uses or open with special seasonal or vehicular restrictions. In the long-term, 0 out of every 10 existing BLM routes would remain available for public access in and through PFYC 4 areas. With no existing routes potentially open and 100% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with special interest for yielding paleontological resources would be major (43 CFR 8342.1(a) (d)).

PFYC 3a & 3b Areas: This section evaluates motorized access in and through all PFYC 3a and 3b areas in the TMAs. Under Alternative B, the overall network of 212 existing BLM routes (230 miles) would be managed as 16% open/open with restrictions (about 66% fewer than Alternative A), 23% limited to administrative use only (about 19% more than Alternative A), and 61% closed (about 47% more than Alternative A). Few routes would be open to all motorized uses (14%) or open with special seasonal or vehicle restrictions (2%). In the long-term, 1.6 out of every 10 existing BLM routes would remain available for public access in and through PFYC 3a and 3b areas. With only 16% of existing routes potentially open and 84% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be major (43 CFR 8342.1(a) (d)).

O.5.2.13.4 Alternative C

Impacts from Route Designations to Paleontological Resources

PFYC 5 Areas: This section evaluates motorized access in and through all PFYC 5 areas in the TMAs. Under Alternative C, the overall network of 518 existing BLM routes (433 miles) would be managed as 83% open/open with restrictions (about 8% fewer than Alternative A), 14% limited to administrative use only (about 6% more than Alternative A), or 3% closed (about 2% more than Alternative A). Most routes would be open to all motorized uses (82%) and open with special vehicular restrictions (1.2%). In the long-term, just over 8 out of every 10 existing BLM routes would remain available for public access in and through PFYC 5 areas. With 83% of existing routes potentially open and only 17% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be minor (43 CFR 8342.1(a) (d)).

PFYC 4 Areas: This section evaluates motorized access in and through all PFYC 4 areas in the TMAs. Under Alternative C, the overall network of 13 existing BLM routes (8 miles) would be managed as 92% open/open with restrictions (about 15% more than Alternative A), 8% limited to administrative use only (about 8% fewer than Alternative A), and no closed routes (about 23% fewer than Alternative A). Most routes (92%) would be open to all motorized uses with no open with special seasonal or vehicular restrictions. In the long-term, over 9 out of every 10 existing BLM routes would remain available for public access in and through PFYC 4 areas. With 92% of existing routes potentially open, only 8% potentially limited to administrative use only and no routes closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with special interest for yielding paleontological resources would be negligible (43 CFR 8342.1(a) (d)).

PFYC 3a & 3b Areas: This section evaluates motorized access in and through all PFYC 3a and 3b areas in the TMAs. Under Alternative C, the overall network of 212 existing BLM routes (230 miles) would be managed as 88% open/open with restrictions (about 7% more than Alternative A), 11% limited to administrative use only (about 7% more than Alternative A), and

1% closed (about 13% fewer than Alternative A). Most routes would be open to all motorized uses (87%) or open with vehicle restrictions (1%). In the long-term, almost 9 out of every 10 existing BLM routes would remain available for public access in and through PFYC 3a and 3b areas. With 88% of existing routes potentially open and only 12% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be negligible (43 CFR 8342.1(a) (d)).

O.5.2.13.5 Alternative D

Impacts from Route Designations to Paleontological Resources

PFYC 5 Areas: This section evaluates motorized access in and through all PFYC 5 areas in the TMAs. Under Alternative D, the overall network of 518 existing BLM routes (433 miles) would be managed as 39% open/open with restrictions (about 52% fewer than Alternative A), 52% limited to administrative use only (about 44% more than Alternative A), and 9% closed (about 8% more than Alternative A). Many routes would be open to all motorized uses (37%) or open with special seasonal or vehicular restrictions (2%). In the long-term, just under 4 out of every 10 existing BLM routes would remain available for public access in and through PFYC 5 areas. With 39% of existing routes potentially open and 61% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be moderate to major (43 CFR 8342.1(a) (d)).

PFYC 4 Areas: This section evaluates motorized access in and through all PFYC 4 areas in the TMAs. Under Alternative D, the overall network of 13 existing BLM routes (8 miles) would be managed as 8% open (about 69% fewer than Alternative A), 84% limited to administrative use only (about 85% more than Alternative A), and 8% closed (about 15% more than Alternative A). No routes would be open with special seasonal or vehicular restrictions. In the long-term, almost 1 out of every 10 existing BLM routes would remain available for public access in and through PFYC 4 areas. With 8% of existing routes potentially open and 92% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with special interest for yielding paleontological resources would be major (43 CFR 8342.1(a) (d)).

PFYC 3a & 3b Areas: This section evaluates motorized access in and through all PFYC 3a and 3b areas in the TMAs. Under Alternative D, the overall network of 212 existing BLM routes (230 miles) would be managed as 47% open/open with restrictions (about 34% fewer than Alternative A), 45% limited to administrative use only (about 41% more than Alternative A), and 8% closed (about 7% fewer than Alternative A). Many routes would be open to all motorized uses (45%) or open with special seasonal or vehicle restrictions (2%). In the long-term, almost 5 out of every 10 existing BLM routes would remain available for public access in and through PFYC 3a and 3b areas. With 47% of existing routes potentially open and 53% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of

these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to formations with proven value for yielding paleontological resources would be moderate (43 CFR 8342.1(a) (d)).

O.5.2.14 Visual Resources

O.5.2.14.1 Alternative A

This section presents the potential impacts of route designations on visual resources, specifically the potential for elements of travel management to create or perpetuate visual changes or contrasts in the landscape, as evaluated against the proposed visual resource objectives (VRM classes). Additionally, potential restrictions to public motorized access in an area previously known for its sightseeing, scenic vistas, or overlooks are evaluated, as they may encumber visitors' opportunities to engage in those activities and enjoy the potential experience and benefits they offer. Managing 877 miles of existing routes in the TMAs could continue to influence the landscape to varying degrees. Travel on these routes would continue to produce intermittent dust, causing indirect, short-term, and negligible to minor visual impacts; essentially visible human-caused contrasts with the existing landscape. The visual impact of carrying forward closure of 108 miles (11%) of existing route miles in the TMAs would continue to diminish, either by direct active reclamation actions in the short-term or by indirect natural processes in the long-term. Additionally, actions such as rerouting poor route alignments, monitoring the creation of unauthorized routes and obscuring/rehabilitating those found, and active and/or passive natural reclamation of any temporary routes would enhance visual resources by reducing visual contrasts on a localized, long-term basis. Employing a designated trails and travel management system could indirectly ensure that the public would continue to have access opportunities to scenic resources over the long-term.

Regarding potential effects of route designations on the visual appearance of the landscape, under the No Action Alternative, the network's open route "footprint" (disturbed surface) is 0.17% of the total VRM Class I acreage in the TMAs, or a 1:576 ratio of route acres to acres without routes. For VRM Class II, the footprint is 0.29% or a 1:345 ratio, while VRM Class III is 0.42% or a 1:239 ratio and VRM Class IV is 0.08% or 1:1,322 ratio. This footprint would represent a continuation of a negligible to minor, long-term impact to visual resources (43 CFR 8342.1(a)), due to the relatively small and widely dispersed route "footprint".

Regarding access for the general public for sightseeing and enjoying scenic resources in the TMAs, under the No Action Alternative, the overall network of 877 existing BLM routes (993 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (6%), or closed (10%). The overwhelming majority of routes (about 84%) would be open to all motorized uses (82.8%) or open with special seasonal (0.8%) or vehicular restrictions (0.1%). In the long-term, over 8 out of every 10 existing BLM routes would remain available for public access to the TMAs. Under Alternative A, 50% of the existing access within VRM Class I areas would be open to all motorized uses, while 55% in VRM Class II, 86% in VRM Class III and 100% in VRM Class IV would be open. With 84% of existing routes potentially open and only 16% potentially limited to administrative use only or closed to motor vehicle use, the long-

term, direct, widespread effect of these route restrictions on reducing public access to scenic resources in general would be negligible to minor.

O.5.2.14.2 Alternative B

Managing 877 miles of existing routes in the TMAs could continue to influence the landscape to varying degrees. Closing 397 miles (40%) of existing route miles in the TMAs would increase the amount of existing (Alternative A) closures by 29%, further diminishing the overall visual appearance of routes on the landscape, either by direct active reclamation actions in the short-term or by indirect natural processes in the long-term. Under Alternative B, the network's open route "footprint" (disturbed surface) is 0.14% of the total VRM Class I acreage in the TMAs, or a 1:706 ratio of route acres to acres without routes, a 17.6% reduction from Alternative A. For VRM Class II, the footprint is 0.17% or a 1:592 ratio (a 41.4% reduction from Alternative A), while VRM Class III is 0.19% or a 1:531 ratio (a 54.7% reduction from Alternative A) and VRM Class IV is 0. This would represent a moderate to major reduction of long-term impacts to visual resources by routes (43 CFR 8342.1(a)), due to a greatly reduced route "footprint".

Regarding access for the general public for sightseeing and enjoying scenic resources in the TMAs, under the Alternative B, the overall network of 877 existing BLM routes (993 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (25%), or closed (64%). Few routes (about 10.4%) would be open to all motorized uses (9.2%) or open with special seasonal (0.7%) or vehicular restrictions (0.3%). In the long-term, just over 1 out of every 10 existing BLM routes would be available for public access to the TMAs. Under Alternative B, 25% of the existing access within VRM Class I areas would be open to all motorized uses or open with restrictions, while 12% in VRM Class II, 10% in VRM Class III and no routes in VRM Class IV would be open. With only 10.4% of existing routes potentially open and almost 90% potentially limited to administrative use only or closed to motor vehicle use, the long-term, direct, widespread effect of these route restrictions on reducing public access to scenic resources in general would be major.

O.5.2.14.3 Alternative C

Managing 877 miles of existing routes in the TMAs could continue to influence the landscape to varying degrees. Closing only 5.9 miles (0.6%) of existing route miles in the TMAs would decrease the amount of existing (Alternative A) closures by 10%, only slightly diminishing the overall visual appearance of routes on the landscape, either by direct active reclamation actions in the short-term or by indirect natural processes in the long-term. This would also represent a 10% increase in the visual contrast created by routes, as this increase would come about by re-opening currently closed routes. Under Alternative C, the network's open route "footprint" (disturbed surface) is 0.18% of the total VRM Class I acreage in the TMAs, or a 1:552 ratio of route acres to acres without routes, a 5.8% increase from Alternative A. For VRM Class II, the footprint is 0.49% or a 1:202 ratio (a 69% increase from Alternative A), while VRM Class III is 0.45% or a 1:223 ratio (a 7.1% increase from Alternative A) and VRM Class IV is 0.08% or a 1:1,321 ratio (the same as Alternative A). This would represent a minor increase of long-term impacts to visual resources by routes in VRM Classes I and III, and a moderate to major increase in VRM Class II (43 CFR 8342.1(a)), due to an increased route "footprint" inherent with more open and administrative routes designated from previously closed routes.

Regarding access for the general public for sightseeing and enjoying scenic resources in the TMAs, under the Alternative C, the overall network of 877 existing BLM routes (993 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (14%), or closed (2.5%). The majority of routes (about 84%) would be open to all motorized uses (82.9%) or open with special seasonal (0.1%) or vehicular restrictions (0.8%). In the long-term, over 8 out of every 10 existing BLM routes would be available for public access to the TMAs. Under Alternative C, 56% of the existing access within VRM Class I areas would be open to all motorized uses or open with restrictions, while 73% in VRM Class II, 85% in VRM Class III and 100% of routes in VRM Class IV would be open. With 84% of existing routes potentially open and about 16% potentially limited to administrative use only or closed to motor vehicle use, the long-term, direct, widespread effect of these route restrictions on reducing public access to scenic resources in general would be negligible.

O.5.2.14.4 Alternative D

Managing 877 miles of existing routes in the TMAs could continue to influence the landscape to varying degrees. Closing 66 miles (7%) of existing route miles in the TMAs would decrease the amount of existing (Alternative A) closures by 4%, only slightly diminishing the overall visual appearance of routes on the landscape, either by direct active reclamation actions in the short-term or by indirect natural processes in the long-term. This would also represent a 4% increase in the visual contrast created by routes, as this increase would come about by re-opening currently closed routes. Under Alternative D, the network's open route "footprint" (disturbed surface) is 0.17% of the total VRM Class I acreage in the TMAs, or a 1:601 ratio of route acres to acres without routes; a very slight change from Alternative A. For VRM Class II, the footprint is 0.18% or a 1:553 ratio (a 38% reduction from Alternative A), while VRM Class III is 0.32% or a 1:313 ratio (a 24% reduction from Alternative A) and VRM Class IV is 0 (same as Alternative A). This would represent a minor decrease of long-term impacts to visual resources by routes in VRM Classes II, III and IV, with no change in VRM Class I (43 CFR 8342.1(a)), due to an decreased open route "footprint", though fewer routes would be closed in Alternative D than in Alternative A.

Regarding access for the general public for sightseeing and enjoying scenic resources in the TMAs, under the Alternative D, the overall network of 877 existing BLM routes (993 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (32%), or closed (7%). Most routes (about 62%) would be open to all motorized uses (53.4%) or open with special seasonal (1.5%) or vehicular restrictions (6.9%). In the long-term, just over 6 out of every 10 existing BLM routes would be available for public access to the TMAs. Under Alternative D, 44% of the existing access within VRM Class I areas would be open to all motorized uses or open with restrictions, while 21% in VRM Class II, 40% in VRM Class III and no routes in VRM Class IV would be open. With 62% of existing routes potentially open and 38% potentially limited to administrative use only or closed to motor vehicle use, the long-term, direct, widespread effect of these route restrictions on reducing public access to scenic resources in general would be moderate.

O.5.2.15 Wildfire Ecology and Management

O.5.2.15.1 Alternative A

The potential for human-ignited wildfires would increase with increased human use in the BIFO. Areas accessible to motorized vehicles would likely be the most susceptible to human-ignited wildfires, but increased ignitions and acreage burned because of increased access would be difficult to quantify.

Maintaining or upgrading designated routes could make these areas more accessible to fire suppression vehicles but would lead to increased public use. Increased mileage of roads and trails would result in less continuous fuels. In such areas, fires could not spread as rapidly as in areas in which fuels were more continuous, making it more difficult to restore fire to its historical role in fire-adapted vegetation.

Under Alternative A, 326,561 acres (76%) of the BIFO would be limited to existing roads and trails, allowing the potential for human-ignited wildfires over a large portion of the BIFO and continued increase of user developed trails. Motor vehicles would be limited to designated routes on 101,027 acres (24%) of the BIFO; 260 acres (less than 1%) of the BIFO would be closed to motorized vehicle use. Under this Alternative, 885 miles of routes in the BIFO would be open to motorized use; the most under all the Alternatives.

O.5.2.15.2 Alternative B

The types of impacts experienced as a result of travel management would be similar to those described under Alternative A. However, Alternative B identifies 145,303 acres (34%) of the BIFO as limited to existing routes; motor vehicles would be limited to designated routes on 282,285 acres (66%) of the BIFO; and 1,357 acres (less than 1%) would be closed to motorized vehicle use. The acreage impacted by identified routes, although reduced in comparison to Alternative A, would still result in the potential for human-ignited wildfires over a large portion of the BIFO.

Motorized vehicle use limited to designated routes would limit the potential for human-ignited wildfires in the majority of the BIFO. Fuels would be more discontinuous with increased mileage of roads and trails in fire-adapted vegetation.

The establishment of eleven Travel Management Areas would reduce the number of miles of routes and improve route monitoring and maintenance. Reduction of routes would lessen the negative impacts to forest resources, except for the possible reduction in access for harvest and forest treatments. The increased cost of constructing and decommissioning the temporary routes needed for treatment and harvest would reduce the amount of acres treated over the life of the plan.

Upon completion of a project, roads would be reclaimed. Reclamation at the culmination of each project would provide the conditions needed for quick forest regeneration. This Alternative closes or limits the most routes and reduces access for forest treatments and harvest more than other Alternatives. The current level of planning would limit access to areas such as Tin Can Hill

and Mill Creek/Bundy causing forest treatments and harvest to be more expensive. The closures in this Alternative would restrict access and eliminate all but the most expensive hand treatments in portions of some areas such as Grove Creek.

O.5.2.15.3 Alternative C

The types of impacts experienced as a result of travel management would be similar to those described under Alternative B. However, Alternative C designates 61 acres as closed to motorized vehicles; motor vehicles would be limited to designated routes on 282,285 acres (66%) of the BIFO; and 145,303 acres (34%) would be limited to existing routes. The acreage impacted by identified routes, although reduced in comparison to Alternative A, would still result in the potential for human-ignited wildfires over a large portion of the BIFO.

The impacts to forest resources would be the same as described in Alternative A. Compaction, loss of infiltration, erosion and vegetation loss would be somewhat less than Alternative A. This Alternative would allow similar access for forest treatment and harvest as Alternative A.

O.5.2.15.4 Alternative D

The types of impacts experienced as a result of travel management would be similar to those described under Alternative B. However, Alternative D designates 375 acres (less than 1% of the BIFO) closed to motorized use, eliminating the potential for human-ignited wildfires in those areas. Motor vehicles would be limited to designated routes on 282,285 acres (66%) of the BIFO; and 145,303 acres (34%) would be limited to existing routes.

O.5.2.16 Wilderness Characteristics

O.5.2.16.1 Alternative A

This section presents the potential impacts of route designations on lands that have been evaluated and found to possess wilderness characteristics. Specifically, route designations have the potential to impact the “naturalness” component of LWC areas by providing motorized access into these areas or along their boundaries; access that always carries with it the potential for illegal, off-road use that can impact documented natural conditions.

Under the No Action Alternative, 1 route (1.9 miles) or 100% of all routes located within a LWC area, would continue to be managed as open. The potential indirect, long-term effect of this open route on the natural conditions of this area would be negligible to minor, as signing, appropriate barriers, and regular monitoring would deter illegal, off-road travel, minimizing the potential for impairment of wilderness characteristics and for adversely affecting the natural values of the LWC (43 CFR 8342.1(a)(d)).

Of the 3 routes that follow LWC boundaries in the TMAs, under the No Action Alternative, 3 routes (6.9 miles) or 100% would continue to be managed as open, while no routes would be limited to administrative use only or closed. The potential indirect, long-term effect of these open routes on the natural conditions of the LWC areas they bound would be minor, as signing, appropriate barriers, and regular monitoring would deter illegal, off-road travel, minimizing the

potential for impairment of wilderness characteristics and for adversely affecting the natural values of the LWC (43 CFR 8342.1(a)(d)).

O.5.2.16.2 Alternative B

Under Alternative B, 1 route (1.9 miles) or 100% of all routes located within a LWC area (same as Alternative A), would continue to be managed as open. The impacts of this route would be the same as Alternative A.

Of the 3 routes that follow LWC boundaries in the TMAs, under Alternative B, 1 route (3.8 miles) or 33% would continue to be managed as open, while 1 route (2.2 miles) or 33% would be limited to administrative use only and 1 route (0.9 miles) or 33% would be closed. The potential direct, long-term effect of these route designations on the natural conditions of the LWC areas they bound would be moderate to major, as public motorized use would be removed from 2/3 of the existing open boundary routes. Together with signing, appropriate barriers, and regular monitoring along the remaining route, the potential for illegal, off-road travel would be greatly reduced, minimizing the potential for impairment of wilderness characteristics and for adversely affecting the natural values of the LWC (43 CFR 8342.1(a)(d)).

O.5.2.16.3 Alternative C

Under Alternative C, 1 route (1.9 miles) or 100% of all routes located within a LWC area (same as Alternative A), would continue to be managed as open. The impacts of this route would be the same as Alternative A.

Of the 3 routes that follow LWC boundaries in the TMAs, under Alternative C, 2 routes (5.9 miles) or 67% would continue to be managed as open, while 1 route (2.2 miles) or 33% would be limited to administrative use only and no routes would be closed. The potential direct, long-term effect of these route designations on the natural conditions of the LWC areas they bound would be minor to moderate, as public motorized use would be removed from 1/3 of the existing boundary routes. Together with signing, appropriate barriers, and regular monitoring along the remaining routes, the potential for illegal, off-road travel would be reduced, minimizing the potential for impairment of wilderness characteristics and for adversely affecting the natural values of the LWC (43 CFR 8342.1(a)(d)).

O.5.2.16.4 Alternative D

Under Alternative D, 1 route (1.9 miles) or 100% of all routes located within a LWC area (same as Alternative A), would continue to be managed as open. The impacts of this route would be the same as Alternative A.

Under Alternative D, designations for routes along or bounding LWC areas would be the same as Alternative C. The impacts of these routes would be the same as Alternative C.

O.5.2.17 Lands and Realty

O.5.2.17.1 Alternative A

The primary impacts to lands and realty programs and uses from general public motorized access to public lands are vandalism of authorized facilities, trespass, interruptions in energy or water transmissions, etc. Specifically, the availability of motorized access to authorized facilities and/or private, state or other land ownerships comes into play when assessing impacts to lands and realty-related users. Planning decisions that involve changes to the available number and overall miles of roads open for public and/or administrative use and the number of acres of routes proposed for closure would affect these users to varying degrees. Inasmuch as the use of motor vehicles on public routes constitutes the primary means of access to public lands for both authorized users and other land owners, the supply and spatial extent of travel access networks for motor vehicles is an important factor in assessing potential impacts to their operations or property rights by the route designations in the Travel Management Areas (TMA).

In analyzing the potential effects of route designations on authorized uses and private and state inholdings, differences between each action alternative's set of route designations and the no action, current management route designations are analyzed and expressed primarily in terms of 'absolute percent change' versus a more familiar method of expressing 'relative percent change'. As a comparative example, in relative terms, an alternative that proposes to close 562 routes in Alternative X out of the total 877 routes that exist where only 89 routes out of 877 routes are closed under No Action represents a 631% increase in the number of routes closed in Alternative X relative to the No Action Alternative. In absolute terms, however, the 89 closed routes in the No Action Alternative represent 10% of the current total network while under Alternative X, the 562 closed routes represent 64% of the potential network, resulting in 54% more routes closed in Alternative X than in the No Action Alternative. Planners determined to use the 'absolute percent change', primarily because a) the route 'population', or total number of routes under consideration for designation is constant for all alternatives for each query and b) planners believe the results better depict the 'shifting' of designations within alternatives using the same route inventory.

Authorized facilities or uses on public lands, such as electric transmission lines, water pipelines, communication sites, etc., are typically accessed by motorized vehicle along existing routes. Total closure of routes that access these facilities could have a detrimental effect on the ability of the authorized user to access facilities for maintenance or other related activities essential to the authorized use.

With regard to the 159 routes that are associated with authorized uses under the No Action Alternative, 143 routes (259 miles) or about 90% would be open to all motorized uses or open with restrictions. Additionally, 4 routes (7 miles) or 3% of routes associated with facilities would be limited to administrative use only (which generally includes authorized users) and 12 routes (18 miles) or 8% would be closed. Although Alternative A carries forward 12 route closures, 8% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of authorized users to access facilities or use sites would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes for these activities.

Private and State land inholdings that are within larger blocks of public lands are typically accessed by motorized vehicle along existing routes. Total closure of routes to lands could have a detrimental effect on the ability of the land owners to access them.

With regard to the 149 routes that are associated with accessing private and state inholdings within larger blocks of public lands in the TMAs, under the No Action Alternative, 144 routes or about 97% would continue to be managed as open/open with restrictions or limited to administrative use only. Although Alternative A carries forward 5 route closures, over 3% of routes associated with inholdings, the direct, long-term effect of these closed routes on the ability to access private or state lands would be negligible to minor, due to the continued availability of almost 10 out of every 10 existing BLM routes for these activities.

O.5.2.17.2 Alternative B

With regard to the 159 routes that are associated with authorized uses under Alternative B, 29 routes (155 miles) or about 18% would be open to all motorized uses or open with restrictions (72% fewer than in Alternative A). Additionally, 60 routes (78 miles) or 38% of routes associated with facilities (35% more than in Alternative A) would be limited to administrative use only (which generally includes authorized users) and 70 routes (51 miles) or 44% would be closed (37% more than in Alternative A). Because Alternative B would close 70 routes or 44% of routes associated with authorized uses, the direct, long-term effect of these closed routes on the ability of authorized users to access facilities would be moderate, in part, due to the availability of over 5 out of every 10 existing BLM routes for these activities.

Of the 149 routes that are associated with accessing private and state inholdings within the larger blocks of public lands in the TMAs, under Alternative B, 68 routes or about 46% would continue to be managed as open/open with restrictions or limited to administrative use only (51% fewer than in Alternative A). Because Alternative B would close 81 routes, or over 54% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability to access private or state lands would be moderate to major, due to the availability of over 4 out of every 10 existing BLM routes for these activities.

O.5.2.17.3 Alternative C

With regard to the 159 routes that are associated with authorized uses under Alternative C, 142 routes (271 miles) or about 89% would be open to all motorized uses or open with restrictions (0.6% fewer than in Alternative A). Additionally, 16 routes (13 miles) or 10% of routes associated with facilities (8% more than in Alternative A) would be limited to administrative use only (which generally includes authorized users) and 1 route (0.7 miles) or 0.6% would be closed (7% fewer than in Alternative A). Because Alternative C would close only 1 route or 0.6% of routes associated with authorized uses, the direct, long-term effect of these closed routes on the ability of authorized users to access facilities would be negligible, in part, due to the availability of almost 10 out of every 10 existing BLM routes for these activities.

Of the 149 routes that are associated with accessing private and state inholdings within the larger blocks of public lands in the TMAs, under Alternative C, 147 routes or about 99% would continue to be managed as open/open with restrictions or limited to administrative use only (2%

more than in Alternative A). Because Alternative C would close 2 routes, or 1% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability to access private or state lands would be negligible, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

O.5.2.17.4 Alternative D

With regard to the 159 routes that are associated with authorized uses under Alternative D, 80 routes (220 miles) or about 50% would be open to all motorized uses or open with restrictions (40% fewer than in Alternative A). Additionally, 74 routes (62 miles) or 47% of routes associated with facilities (44% more than in Alternative A) would be limited to administrative use only (which generally includes authorized users) and 5 routes (2 miles) or 0.8% would be closed (4% fewer than in Alternative A). Because Alternative D would close 5 routes or 3% of routes associated with authorized uses, the direct, long-term effect of these closed routes on the ability of authorized users to access facilities would be negligible to minor, in part, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Of the 149 routes that are associated with accessing private and state inholdings within the larger blocks of public lands in the TMAs, under Alternative D, 135 routes or about 91% would continue to be managed as open/open with restrictions or limited to administrative use only (6% fewer than in Alternative A). Because Alternative D would close 14 routes, or over 9% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability to access private or state lands would be minor, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

O.5.2.18 Livestock Grazing

O.5.2.18.1 Alternative A

The primary impacts to livestock grazing and rangeland management from general public motorized access to public lands are vandalism of facilities, intentional and/or unintentional harassment of livestock, inadvertent disruptions of livestock management operations (i.e., leaving gates open), and impacts to soils and vegetation. Specifically, the availability of motorized access to rangeland facilities and/or monitoring sites comes into play when assessing impacts to livestock grazing operations and rangeland management responsibilities. Planning decisions that involve changes to the available number and overall miles of roads open for public and/or administrative use and the number of acres of routes proposed for closure would affect these operations and responsibilities to varying degrees. Inasmuch as the use of motor vehicles on public routes constitutes the primary means of access to public lands for both permitted livestock operators and administrative personnel in order to perform required tasks, the supply and spatial extent of travel access networks for motor vehicles is an important factor in assessing potential impacts to livestock grazing and rangeland management by the route designations in the Travel Management Areas (TMA).

In analyzing the potential effects of route designations on rangeland-related activities, differences between each action alternative's set of route designations and the no action, current management route designations are analyzed and expressed primarily in terms of 'absolute

percent change' versus a more familiar method of expressing 'relative percent change'. As a comparative example, in relative terms, an alternative that proposes to close 562 routes in Alternative X out of the total 877 routes that exist where only 89 routes out of 877 routes are closed under No Action represents a 631% increase in the number of routes closed in Alternative X relative to the No Action Alternative. In absolute terms, however, the 89 closed routes in the No Action Alternative represent 10% of the current total network while under Alternative X, the 562 closed routes represent 64% of the potential network, resulting in 54% more routes closed in Alternative X than in the No Action Alternative. Planners determined to use the 'absolute percent change', primarily because a) the route 'population', or total number of routes under consideration for designation is constant for all alternatives for each query and b) planners believe the results better depict the 'shifting' of designations within alternatives using the same route inventory.

Routes accessing rangeland facilities: Rangeland improvements or facilities for livestock grazing operations, such as fences, gates, wells, windmills, cattleguards, corrals, pipelines, ponds, springs, and tanks, are typically accessed by motorized vehicle along existing routes. Total closure of routes that access these facilities could have a detrimental effect on the ability of the permitted commercial livestock grazing operator to access facilities for gathering, branding, providing water or other related activities essential to the operator's business.

With regard to the 580 routes that are associated with livestock grazing facilities under the No Action Alternative, 493 routes (691 miles) or about 85% would be open to all motorized uses or open with restrictions. Additionally, 37 routes (45 miles) or 6% of routes associated with facilities would be limited to administrative use only (which generally includes grazing operators) and 50 routes (68 miles) or 9% would be closed. Although Alternative A carries forward 50 route closures, 9% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes for these activities.

Routes accessing agency management/monitoring sites: Rangeland management and monitoring sites, areas or sites of seeding, predator control, vegetation treatment, fuels management, monitoring or exclosures are typically accessed by motorized vehicle along existing routes. Total closure of routes to or near these areas or sites could have a detrimental effect on the ability of the agency personnel to access them to conduct research, treatments, reclamation or other related activities.

With regard to the 259 routes that are associated with rangeland management or monitoring areas or sites under the No Action Alternative, 237 routes (446 miles) or about 92% would continue to be managed as open/open with restrictions or limited to administrative use only. Although Alternative A carries forward 22 route closures, over 8% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes for these activities.

Routes closed with reclamation: Routes that are proposed for closure would either be allowed to reclaim vegetative cover naturally over time or would receive some degree of mechanical reclamation following closure. In either case, the route acreage returned to a more natural condition would potentially change forage availability in pastures associated with such routes.

Under the No Action Alternative, no routes would be slated for active, mechanical reclamation. However, 81 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 120 acres.

O.5.2.18.2 Alternative B

Routes accessing rangeland facilities: With regard to the 580 routes that are associated with livestock grazing facilities under Alternative B, 83 routes (338 miles) or about 14% would be open to all motorized uses or open with restrictions (71% fewer than in Alternative A). Additionally, 181 routes (214 miles) or 31% of routes associated with facilities (25% more than in Alternative A) would be limited to administrative use only (which generally includes grazing operators) and 316 routes (252 miles) or 55% would be closed (46% more than in Alternative A). Because Alternative B would close 316 routes or 55% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be major, in part, due to the availability of over 4 out of every 10 existing BLM routes for these activities.

Routes accessing agency management/monitoring sites: Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative B, 142 routes (385 miles) or about 55% would continue to be managed as open/open with restrictions or limited to administrative use only (36% fewer than in Alternative A). Because Alternative B would close 117 routes, or over 45% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be moderate to major, due to the availability of over 5 out of every 10 existing BLM routes for these activities.

Routes closed with reclamation: Under Alternative B, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 458 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 404 acres, 285 more acres than Alternative A.

O.5.2.18.3 Alternative C

Routes accessing rangeland facilities: With regard to the 580 routes that are associated with livestock grazing facilities under Alternative C, 490 routes (735 miles) or about 84% would be open to all motorized uses or open with restrictions (0.5% fewer than in Alternative A). Additionally, 76 routes (64 miles) or 13% of routes associated with facilities (7% more than in Alternative A) would be limited to administrative use only (which generally includes grazing operators) and 14 routes (4 miles) or 2% would be closed (6% fewer than in Alternative A). Because Alternative C would close 14 routes or 2% of routes associated with facilities, the

direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, in part, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Routes accessing agency management/monitoring sites: Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative C, 247 routes (494 miles) or over 95% would continue to be managed as open/open with restrictions or limited to administrative use only (4% more than in Alternative A). Because Alternative C would close just 12 routes, at 5% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Routes closed with reclamation: Under Alternative C, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 18 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 6 acres, 63 fewer acres than Alternative A.

O.5.2.18.4 Alternative D

Routes accessing rangeland facilities: With regard to the 580 routes that are associated with livestock grazing facilities under Alternative D, 241 routes (531 miles) or about 42% would be open to all motorized uses or open with restrictions (43% fewer than in Alternative A). Additionally, 312 routes (237 miles) or 54% of routes associated with facilities (47% more than in Alternative A) would be limited to administrative use only (which generally includes grazing operators) and 27 routes (35 miles) or 5% would be closed (4% fewer than in Alternative A). Because Alternative D would close 27 routes or 5% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, in part, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Routes accessing agency management/monitoring sites: Of the 259 routes that are associated with rangeland management or monitoring areas or sites under Alternative D, 247 routes (523 miles) or about 95% would continue to be managed as open/open with restrictions or limited to administrative use only. Because Alternative D would close 14 routes, or about 5% of routes associated with facilities, the direct, long-term effect of these closed routes on the ability of operators to access livestock grazing facilities would be negligible, due to the availability of over 9 out of every 10 existing BLM routes for these activities.

Routes closed with reclamation: Under Alternative D, no routes would be slated for active, mechanical reclamation (same as Alternative A). However, 66 existing BLM routes would be closed and natural reclamation would be allowed to occur. The footprint (actual area of surface disturbance) of these routes would be approximately 73 acres, 47 fewer acres than Alternative A.

O.5.2.19 Recreation and Visitor Services

O.5.2.19.1 Alternative A

Impacts from Route Designations to Recreation

Restricting public motorized access in an area previously known for its excellent vehicle exploring and sightseeing may make it difficult to impossible for visitors to engage in those activities and enjoy the potential experience and benefits opportunities they offer. Conversely, unrestrained and widespread motorized use in an area previously known for its excellent hiking, biking and equestrian opportunities in naturally quiet settings may have the same effects mentioned above for the motorized visitor. Inasmuch as the use of motor vehicles on public routes constitutes the primary means of access to public lands for visitors to engage in a wide variety of motorized and non-motorized recreation activities, the supply and spatial extent of travel access networks for motor vehicles is an important.

Under the No Action Alternative, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (6%), or closed (10%). The overwhelming majority of routes (about 84%) would be open to all motorized uses (82.8%) or open with special seasonal (0.8%) or vehicular restrictions (0.1%). In the long-term, over 8 out of every 10 existing BLM routes would remain available for access to the TMAs with an average route density of 1.5 open routes per square mile at 1.7 miles per square mile.

Therefore, Alternative A would continue to provide a moderate to high degree of motor vehicle access that would indirectly support, in the long-term, a variety of public recreation activity, experience and benefit opportunities. The potential for motorized recreation opportunities on a variety of routes would remain even higher in the Mill Creek/Bundy TMA, which has the highest density of open routes at 2.5 routes per square mile and the Shepherd TMA, which has a high of 8.9 miles per square mile of open routes. Additionally, as the potential for new route development is realized with boom cycles in energy exploration and development, the availability of motorized access for public recreation may increase and help disperse use to a minor, short-term extent on a localized basis; such effects would ebb and flow with energy development.

Although Alternative A carries forward closures and restrictions to administrative use only on 143 routes (170 miles) or 16% of the routes, the long-term, direct, localized effect of these restricted routes on reducing or precluding visitors from realizing available recreation activity, experience and benefit opportunities is minor.

Route Types: Motorized recreation occurs in many forms, all of which depend on travel networks that contain routes that are not only open to such uses, but also route types and/or conditions that are more conducive to particular types of motorized recreation. Often the difference between an enjoyable experience and an outstanding experience is linked to the type of route. For example, if visitors are looking for a comfortable, low risk driving experience in mostly natural settings, then a Road (graded and regularly maintained; see glossary) may be the most appropriate type of route for those visitors to have an outstanding experience. However,

visitors seeking a challenging, high risk driving experience in the backcountry may find their most outstanding experiences on rough, Primitive Roads or Trails (see glossary).

With regard to route types, of the 877 routes under the No Action Alternative, 50 routes (about 6%) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 1 route (0.1%) classed as “semi-primitive roads”, 673 routes (76.8%) classed as “primitive roads” and 8 routes (0.9%) classed as ‘trails’ would be open/open with restrictions. Conversely, 1 route (about 0.1%) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 14 routes (1.6%) classed as “semi-primitive roads”, 127 routes (14.5%) classed as “primitive roads” and 1 route (0.1%) classed as ‘trails’ would be administrative use only or closed. Visitors seeking more rugged and challenging vehicle exploring experiences would find that the widespread, plentiful supply of “primitive roads” and “trails” under Alternative A would directly support the long-term continuation of their activities to a major degree.

Specific Recreation Activities: While many types of recreation activity opportunities exist on the public lands managed by the Billings Field Office, several specific activities typically demonstrate greater popularity with the public as reflected in their higher visitation numbers year to year. As has been mentioned above regarding general recreation, motorized access via public travel networks is an important component for visitors’ ability to realize the recreation activity, experience and benefit opportunities afforded on public lands. This would be a critical component for the most popular recreation activities taking place in the TMAs. During the route evaluation process, resource specialists familiar with existing uses and users of the route network in the TMAs documented the primary recreation activities that are typically associated with each route. The following analysis is based on those data.

Under the No Action Alternative, of the 808 routes within the TMAs that are associated with hunting as a primary route use, 686 routes (735 miles) or about 85% would continue to be managed as open/open with restrictions, while 38 routes (38 miles) or about 5% would be limited to administrative use only and 84 routes (80 miles) or 10% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 122 routes at 118 miles, the direct, long-term effect of these restricted routes on accessing hunting opportunities would be minor, due to the continued availability of over 8 out of every 10 existing BLM routes currently associated with this activity.

Under the No Action Alternative, of the 293 routes within the TMAs that are associated with archery hunting as a primary route use, 277 routes (252 miles) or about 95% would continue to be managed as open/open with restrictions, while 1 route (2.4 miles) or about 0.3% would be limited to administrative use only and 15 routes (9.6 miles) or 5% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 16 routes at 12 miles, the direct, long-term effect of these restricted routes on accessing archery hunting opportunities would be negligible to minor, due to the continued availability of over 9 out of every 10 existing BLM routes currently associated with this activity.

Under the No Action Alternative, of the 252 routes within the TMAs that are associated with vehicle exploring as a primary route use, 228 routes (400 miles) or 90.5% would continue to be

managed as open/open with restrictions, while 3 routes (2.6 miles) or about 1.2% would be limited to administrative use only and 21 routes (19.4 miles) or 8.3% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 24 routes at 22 miles, the direct, long-term effect of these restricted routes on accessing vehicle exploring opportunities would be negligible to minor, due to the continued availability of over 9 out of every 10 existing BLM routes currently associated with this activity.

Under the No Action Alternative, of the 14 routes within the TMAs that are associated with viewing wild horses, 9 routes (35.8 miles) or about 64% would continue to be managed as open/open with restrictions, while 1 route (2.4 miles) or about 7% would be limited to administrative use only and 4 routes (4.4 miles) or 29% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 5 routes at 6.8 miles, the direct, long-term effect of these restricted routes on accessing viewing wild horses opportunities would be minor to moderate, due to the continued availability of over 6 out of every 10 existing BLM routes currently associated with this activity.

Under the No Action Alternative, of the 233 routes within the TMAs that are associated with viewing wildlife, 200 routes (231 miles) or about 85% would continue to be managed as open/open with restrictions, while 27 routes (30.5 miles) or about 12% would be limited to administrative use only and 6 routes (5.6 miles) or 3% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 33 routes at 36 miles, the direct, long-term effect of these restricted routes on accessing viewing wildlife opportunities would be minor, due to the continued availability of over 8 out of every 10 existing BLM routes currently associated with this activity.

Recreation Management Areas: As Special Recreation Management Areas (SRMA) are identified in the RMP, each carries with it a set of management objectives targeting specific activities, experiences and benefits that the BLM would strive to achieve by managing for certain recreation settings that are needed to support the management objectives. Similarly, with Extensive Recreation Management Areas (ERMA), the planning team identifies specific recreation objectives and actions to achieve those objectives, though no particular experience or benefit opportunities are specified. One aspect of managing the settings in SRMAs and more generic activities in ERMAs is routes. More specifically, in relation to travel networks, the availability of access to and through SRMAs and ERMAs is an important factor to the visitor experience.

Under the No Action Alternative, the Acton SRMA would not be allocated. However, the route designations that follow would be for the non-SRMA, custodial recreation management in the same geographic area that would become the Acton SRMA in Alternatives B, C and D. Of the 10 routes associated with this area, 7 routes (7.2 miles) or 70% would continue to be managed as open with restrictions, while no routes would be limited to administrative use only and 3 routes (1.5 miles) or 30% would be closed. Although Alternative A carries forward closures and restrictions to administrative use only on a total of 3 routes at 1.5 miles, the direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be minor, due to the continued availability of 7 out of every 10 existing BLM routes currently associated with this area.

Under the No Action Alternative, the Shepherd SRMA would not be allocated. However, the route designations that follow would be for the non-SRMA, custodial recreation management in the same geographic area that would become the Shepherd SRMA in Alternatives B, C and D. Of the 14 routes associated with this area, 2 routes (53 miles) or 14% would continue to be managed as open or open with restrictions, while 12 routes (13 miles) or 86% would be limited to administrative use only and no routes would be closed. Alternative A carries forward restrictions to administrative use only on a total of 12 routes at 13 miles, as such the continued direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be major, due to the limited availability for the public of just over 1 out of every 10 existing BLM routes currently associated with this area.

Under the No Action Alternative, the Yellowstone River SRMA would not be allocated. However, the route designations that follow would be for the non-SRMA, custodial recreation management in the same geographic area that would become the Yellowstone River SRMA in Alternatives B, C and D. Of the 24 routes associated with this area, 23 routes (15.5 miles) or 96% would continue to be managed as open, while 1 route (0.4 miles) or 4% would be limited to administrative use only and no routes would be closed. Although Alternative A carries forward restrictions to administrative use only on a total of 1 route at 0.4 miles, the direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes currently associated with this area.

Under the No Action Alternative, the Pryors ERMA would not be allocated. However, the route designations that follow would be for the non-ERMA, custodial recreation management in the same geographic area that would become the Pryors ERMA in Alternatives B, C and D. Of the 145 routes associated with this area, 60 routes (117 miles) or 41% would continue to be managed as open, while 1 route (2.4 miles) or 0.7% would be limited to administrative use only and 84 routes (104 miles) or 58% routes would be closed. Alternative A carries forward closures and restrictions to administrative use only on a total of 85 routes at 106 miles, as such the direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be moderate, due to the limited availability for the public of just over 4 out of every 10 existing BLM routes currently associated with this area.

Under the No Action Alternative, the Mill Creek/Bundy ERMA would not be allocated. However, the route designations that follow would be for the non-SRMA, custodial recreation management in the same geographic area that would become the Mill Creek/Bundy ERMA in Alternatives B, C and D. Of the 210 routes associated with this area, 196 routes (126 miles) or 93% would continue to be managed as open, while 14 route (15 miles) or 6.7% would be limited to administrative use only and no routes would be closed. Although Alternative A carries forward restrictions to administrative use only on a total of 14 route at 15 miles, the direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be negligible, due to the continued availability of over 9 out of every 10 existing BLM routes currently associated with this area

Under the No Action Alternative, the Horsethief ERMA would not be allocated. However, the route designations that follow would be for the non-ERMA, custodial recreation management in

the same geographic area that would become the Horsethief ERMA in Alternatives B, C and D. Of the 45 routes associated with this area, 38 routes (33 miles) or 85% would continue to be managed as open, while 5 route (3 miles) or 11% would be limited to administrative use only and 2 routes (2.8 miles) or 4% routes would be closed. Alternative A carries forward closures and restrictions to administrative use only on a total of 7 routes at 6 miles, as such the direct, long-term effect of these restricted routes on accessing the general recreation opportunities of this area would be minor, due to the limited availability for the public of just over 8 out of every 10 existing BLM routes currently associated with this area.

O.5.2.19.2 Alternative B

Impacts from Route Designations to Recreation

Under the Alternative B, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (25%), or closed (64%). Of the existing routes, very few (about 10%) would be open to all motorized uses (9.2%) or open with special seasonal (0.7%) or vehicular restrictions (0.3%). This would result in 73% fewer open routes in Alternative B than would be open in Alternative A. In the long-term, about 1 out of every 10 existing BLM routes would remain available for access to the TMAs with the average route density reduced by 88% for the long-term to 0.2 open routes per square mile and reduced by 58% to 0.7 miles of open routes per square mile. Therefore, Alternative B would provide a minor degree of motor vehicle access that would indirectly support, in the long-term, a variety of public recreation activity, experience and benefit opportunities.

The potential for motorized recreation opportunities on a variety of routes would be reduced dramatically in the Mill Creek/Bundy TMA by 93% for the long-term to 0.2 open routes per square mile and reduced only slightly in the Shepherd TMA by 19% to 7.2 miles of open routes per square mile.

Alternative B carries forward closures and restrictions to administrative use only on 785 routes (644 miles) or 90% of the routes, which is a 73% increase from these designations in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing or precluding visitors from realizing available recreation activity, experience and benefit opportunities is major.

Route Types: With regard to route types, of the 877 routes under the Alternative B, 29 routes (about 2% fewer than Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 1 route (same as Alternative A) classed as “semi-primitive roads”, 56 routes (70% fewer than Alternative A) classed as “primitive roads” and 2 routes (0.7% fewer than Alternative A) classed as ‘trails’ would be open/open with restrictions. Conversely, 22 routes (about 2.4% more than Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 14 routes (same as Alternative A) classed as “semi-primitive roads”, 742 routes (70% more than Alternative A) classed as “primitive roads” and 7 routes (0.7% more than Alternative A) classed as ‘trails’ would be administrative use only or closed. Visitors seeking more rugged and challenging vehicle exploring experiences would find that the drastically reduced supply of

“primitive roads” and “trails” under Alternative B would directly support the long-term continuation of their activities only to a minor degree.

Specific Recreation Activities: Under the Alternative B, of the 808 routes within the TMAs that are associated with hunting as a primary route use, 88 routes (286 miles) or about 11% would continue to be managed as open/open with restrictions, while 209 routes (238 miles) or about 26% would be limited to administrative use only and 511 routes (333 miles) or 63% would be closed. This would result in 74% fewer open routes in Alternative B available for hunting than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 720 routes at 567 miles. The direct, long-term effect of these restricted routes on accessing hunting opportunities would be major, due to the drastically reduced availability to just over 1 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative B, of the 293 routes within the TMAs that are associated with archery hunting as a primary route use, 29 routes (78 miles) or about 10% would continue to be managed as open/open with restrictions, while 66 routes (69 miles) or about 23% would be limited to administrative use only and 198 routes (117 miles) or 68% would be closed. This would result in 85% fewer open routes in Alternative B available for archery hunting than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 264 routes at 186 miles. The direct, long-term effect of these restricted routes on accessing archery hunting opportunities would be major, due to drastically reducing availability to 1 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative B, of the 252 routes within the TMAs that are associated with vehicle exploring as a primary route use, 64 routes (258 miles) or 25% would continue to be managed as open/open with restrictions, while 65 routes (82 miles) or about 26% would be limited to administrative use only and 123 routes (82 miles) or 49% would be closed. This would result in 65% fewer open routes in Alternative B available for vehicle exploring than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 188 routes at 164 miles. The direct, long-term effect of these restricted routes on accessing vehicle exploring opportunities would be major, due to drastically reducing availability to just over 2 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative B, of the 14 routes within the TMAs that are associated with viewing wild horses, 6 routes (31 miles) or about 43% would continue to be managed as open/open with restrictions, while 2 routes (3.3 miles) or about 14% would be limited to administrative use only and 6 routes (8 miles) or 43% would be closed. This would result in 21% fewer open routes in Alternative B available for viewing wild horses than would be open in Alternative A.

Alternative B would designate closures and restrictions to administrative use only on a total of 8 routes at 11 miles. The direct, long-term effect of these restricted routes on accessing viewing wild horses opportunities would be moderate, due to reducing availability to just over 4 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative B, of the 233 routes within the TMAs that are associated with viewing wildlife, 32 routes (108 miles) or about 14% would continue to be managed as open/open with restrictions, while 81 routes (94 miles) or about 35% would be limited to administrative use only and 120 routes (65 miles) or 52% would be closed. This would result in 72% fewer open routes in Alternative B available for viewing wildlife than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 201 routes at 159 miles. The direct, long-term effect of these restricted routes on accessing viewing wildlife opportunities would be major, due to drastically reducing availability to just over 1 out of every 10 existing BLM routes currently associated with this activity.

Recreation Management Areas: Under the Alternative B, the Acton SRMA would be allocated. Of the 10 routes associated with this area, 3 routes (5.1 miles) or 30% would continue to be managed as open with restrictions, while no routes would be limited to administrative use only and 7 routes (3.5 miles) or 70% would be closed. This would result in 40% fewer open routes in Alternative B available for accessing the targeted recreation opportunities in the SRMA than would be open in Alternative A. Although Alternative B would close a total of 7 routes at 3.5 miles, the direct, long-term effect of these restricted routes on accessing the targeted recreation opportunities of the SRMA would be moderate to major, due to reducing access to just 3 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative B, the Shepherd SRMA would be allocated. Of the 14 routes associated with this area, 2 routes (53 miles) or 14% would continue to be managed as open or open with restrictions, while 8 routes (11 miles) or 57% would be limited to administrative use only and 4 routes (3 miles) or 29% would be closed. This would result in no change from Alternative A in the number or mileage of open routes in Alternative B available for accessing targeted recreation opportunities in the SRMA. Alternative B would designate closures and restrictions to administrative use only a total of 12 routes at 13 miles. The continued direct, long-term effect of these restricted routes on accessing the targeted recreation opportunities of the SRMA would be major (like Alternative A), due to the limiting public access to just over 1 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative B, the Yellowstone River SRMA would be allocated. Of the 24 routes associated with this area, 5 routes (5 miles) or 21% would continue to be managed as open, while 6 route (5 miles) or 25% would be limited to administrative use only and 13 routes (6 miles) or 54% would be closed. This would result in 75% fewer open routes in Alternative B available for accessing targeted recreation opportunities in the SRMA than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 19 route at 11 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the SRMA would be moderate to major, due to drastically reducing accessibility to just over 2 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative B, the Pryors ERMA would be allocated. Of the 145 routes associated with this area, 23 routes (78 miles) or 16% would continue to be managed as open, while 25 routes (26 miles) or 17% would be limited to administrative use only and 97 routes (119 miles) or 67% routes would be closed. This would result in 26% fewer open routes in Alternative B

available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 122 routes at 146 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be moderate to major, due to drastically reducing accessibility to 1.6 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative B, the Mill Creek/Bundy ERMA would be allocated. Of the 210 routes associated with this area, 13 routes (20 miles) or 6.2% would continue to be managed as open, while 56 routes (54 miles) or 27% would be limited to administrative use only and 141 routes (68 miles) or 67% would be closed. This would result in 87% fewer open routes in Alternative B available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 197 routes at 112 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be major, due to drastically reducing access to less than 1 out of every 10 existing BLM routes currently associated with this area

Under the Alternative B, the Horsethief ERMA would not be allocated. Of the 45 routes associated with this area, 6 routes (12 miles) or 13% would continue to be managed as open, while 15 route (14 miles) or 33% would be limited to administrative use only and 24 routes (12.7 miles) or 53% routes would be closed. This would result in 71% fewer open routes in Alternative B available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative B would designate closures and restrictions to administrative use only on a total of 39 routes at 27 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be major, due to drastically reducing access to 1 out of every 10 existing BLM routes currently associated with this area.

O.5.2.19.3 Alternative C

Impacts from Route Designations to Recreation

Under the Alternative C, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (14%), or closed (2.5%). The overwhelming majority of routes (about 84%) would be open to all motorized uses (82.9%) or open with special seasonal (0.1%) or vehicular restrictions (0.8%). This would result in 0.1% more open routes in Alternative C than would be open in Alternative A. In the long-term, over 8 out of every 10 existing BLM routes would remain available for access to the TMAs with the average route density of open routes per square mile remaining the same as Alternative A at 1.5 and the miles of open routes per square mile increased by 8.8% to 1.8. Therefore, Alternative C would provide a major degree of motor vehicle access (slightly more that under current management) that would indirectly support, in the long-term, a variety of public recreation activity, experience and benefit opportunities.

The potential for motorized recreation opportunities on a variety of routes would be reduced somewhat in the Mill Creek/Bundy TMA by 27% for the long-term to 1.9 open routes per square mile and reduced only slightly in the Shepherd TMA by 7% to 8.3 miles of open routes per

square mile. Alternative C carries forward closures and restrictions to administrative use only on 142 routes (97 miles) or 16% of the routes, which is a 0.1% decrease from these designations in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing or precluding visitors from realizing available recreation activity, experience and benefit opportunities is negligible to minor.

Route Types: With regard to route types, of the 877 routes under the Alternative C, 50 routes (same as Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 12 routes (1.3% fewer than Alternative A) classed as “semi-primitive roads”, 664 routes (1% fewer than Alternative A) classed as “primitive roads” and 7 routes (0.1% fewer than Alternative A) classed as ‘trails’ would be open/open with restrictions. Conversely, 1 route (same as Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 3 routes (1.2% fewer than Alternative A) classed as “semi-primitive roads”, 136 routes (1% more than Alternative A) classed as “primitive roads” and 2 routes (0.1% more than Alternative A) classed as ‘trails’ would be administrative use only or closed. Visitors seeking more rugged and challenging vehicle exploring experiences would find that the widespread, plentiful supply of “primitive roads” and “trails” under Alternative C would directly support the long-term continuation of their activities to a major degree.

Specific Recreation Activities: Under the Alternative C, of the 808 routes within the TMAs that are associated with hunting as a primary route use, 684 routes (769 miles) or about 85% would continue to be managed as open/open with restrictions, while 106 routes (80 miles) or about 13% would be limited to administrative use only and 18 routes (5 miles) or 2% would be closed. This would result in 0.2% fewer open routes in Alternative C available for hunting than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 124 routes at 84 miles. The direct, long-term effect of these restricted routes on accessing hunting opportunities would be negligible to minor, due to the remaining availability of over 8 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative C, of the 293 routes within the TMAs that are associated with archery hunting as a primary route use, 225 routes (234 miles) or about 77% would continue to be managed as open/open with restrictions, while 56 routes (28 miles) or about 19% would be limited to administrative use only and 12 routes (3 miles) or 4% would be closed. This would result in 18% fewer open routes in Alternative C available for archery hunting than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 68 routes at 31 miles. The direct, long-term effect of these restricted routes on accessing archery hunting opportunities would be minor, due to the availability of over 7 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative C, of the 252 routes within the TMAs that are associated with vehicle exploring as a primary route use, 211 routes (401 miles) or 84% would continue to be managed as open/open with restrictions, while 33 routes (19 miles) or about 13% would be limited to administrative use only and 8 routes (2 miles) or 3% would be closed. This would result in 7% fewer open routes in Alternative C available for vehicle exploring than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only

on a total of 41 routes at 21 miles. The direct, long-term effect of these restricted routes on accessing vehicle exploring opportunities would be negligible to minor, due to the availability of just over 8 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative C, of the 14 routes within the TMAs that are associated with viewing wild horses, 8 routes (35 miles) or about 57% would continue to be managed as open/open with restrictions, while 6 routes (8 miles) or about 43% would be limited to administrative use only and no routes would be closed. This would result in 7% fewer open routes in Alternative C available for viewing wild horses than would be open in Alternative A. Alternative C would designate restrictions to administrative use only on a total of 6 routes at 8 miles. The direct, long-term effect of these restricted routes on accessing viewing wild horses opportunities would be minor to moderate, due to the availability of almost 6 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative C, of the 233 routes within the TMAs that are associated with viewing wildlife, 190 routes (233 miles) or about 82% would continue to be managed as open/open with restrictions, while 34 routes (32 miles) or about 15% would be limited to administrative use only and 9 routes (2 miles) or 4% would be closed. This would result in 4% fewer open routes in Alternative C available for viewing wildlife than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 43 routes at 34 miles. The direct, long-term effect of these restricted routes on accessing viewing wildlife opportunities would be negligible to minor, due to the availability of just over 8 out of every 10 existing BLM routes currently associated with this activity.

Recreation Management Areas: Under the Alternative c, the Acton SRMA would be allocated. Of the 10 routes associated with this area, 10 routes (8.6 miles) or 100% would continue to be managed as open, while no routes would be limited to administrative use only or closed. This would result in 30% more open routes in Alternative C available for accessing the targeted recreation opportunities in the SRMA than would be open in Alternative A. With no restrictions or closures, the direct, long-term effect of all open routes on accessing the targeted recreation opportunities of the SRMA would be moderate, due to increasing access to 10 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative C, the Shepherd SRMA would be allocated. Of the 14 routes associated with this area, 11 routes (62 miles) or 79% would continue to be managed as open or open with restrictions, while 3 routes (4 miles) or 21% would be limited to administrative use only and no routes would be closed. This would result in 64% more open routes in Alternative C available for accessing the targeted recreation opportunities in the SRMA than would be open in Alternative A. Although Alternative C would restrict to administrative use only a total of 3 routes at 4 miles, the direct, long-term effect of these restricted routes on accessing the targeted recreation opportunities of the SRMA would be negligible to minor, due to the availability for public use of just under 8 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative C, the Yellowstone River SRMA would be allocated. Of the 24 routes associated with this area, all route designations and estimated impacts would be the same as Alternative A. Under the Alternative C, the Pryors ERMA would be allocated. Of the 145 routes

associated with this area, 115 routes (192 miles) or 79% would continue to be managed as open, while 27 routes (30 miles) or 19% would be limited to administrative use only and 3 routes (1.3 miles) or 2% routes would be closed. This would result in 38% more open routes in Alternative C available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 30 routes at 32 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be negligible to minor, due to the availability for public use of almost 8 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative C, the Mill Creek/Bundy ERMA would be allocated. Of the 210 routes associated with this area, 144 routes (108 miles) or 69% would continue to be managed as open, while 54 routes (31 miles) or 26% would be limited to administrative use only and 12 routes (3 miles) or 6% would be closed. This would result in 25% fewer open routes in Alternative C available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 66 routes at 34 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be minor, due to the availability for public use of almost 7 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative C, the Horsethief ERMA would not be allocated. Of the 45 routes associated with this area, 42 routes (37 miles) or 93% would continue to be managed as open, while 2 route (1 mile) or 4% would be limited to administrative use only and 1 routes (0.1 miles) or 2% routes would be closed. This would result in 9% more open routes in Alternative C available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative C would designate closures and restrictions to administrative use only on a total of 3 routes at 1.1 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be negligible, due to the availability for public use of over 9 out of every 10 existing BLM routes currently associated with this area.

O.5.2.19.4 Alternative D

Under the Alternative D, the overall network of 877 existing BLM routes (993 miles) within the eleven TMAs would continue to be managed as open/open with restrictions, limited to administrative use only (51%), or closed (9%). Of the existing routes, less than half (about 40%) would be open to all motorized uses (37.9%) or open with special seasonal (1.3%) or vehicular restrictions (0.6%). This would result in 44% fewer open routes in Alternative D than would be open in Alternative A. In the long-term, about 4 out of every 10 existing BLM routes would remain available for access to the TMAs with the average route density reduced by 53% for the long-term to 0.7 open routes per square mile and reduced by 25% to 1.2 miles of open routes per square mile. Therefore, Alternative D would provide a moderate degree of motor vehicle access that would indirectly support, in the long-term, a variety of public recreation activity, experience and benefit opportunities.

The potential for motorized recreation opportunities on a variety of routes would be reduced dramatically in the Mill Creek/Bundy TMA by 69% for the long-term to 0.8 open routes per square mile and reduced only slightly in the Shepherd TMA by 19% to 7.2 miles of open routes per square mile.

Alternative D carries forward closures and restrictions to administrative use only on 529 routes (379 miles) or 60% of the routes, which is a 44% increase from these designations in Alternative A. The long-term, direct, localized effect of these restricted routes on reducing or precluding visitors from realizing available recreation activity, experience and benefit opportunities is moderate.

Route Types: With regard to route types, of the 877 routes under the Alternative D, 40 routes (about 1.1% fewer than Alternative A) currently classed as “roads” in the TMAs would be open to all types of motor vehicle use or open with restrictions, while 4 routes (0.3% more than Alternative A) classed as “semi-primitive roads”, 298 routes (about 43% fewer than Alternative A) classed as “primitive roads” and 4 routes (0.5% fewer than Alternative A) classed as ‘trails’ would be open/open with restrictions. Conversely, 11 routes (about 1.1% more than Alternative A) currently classed as “roads” in the TMAs would be limited to administrative use only or closed, while 11 routes (0.4% fewer than Alternative A) classed as “semi-primitive roads”, 502 routes (43% more than Alternative A) classed as “primitive roads” and 5 routes (0.4% more than Alternative A) classed as ‘trails’ would be administrative use only or closed. Visitors seeking more rugged and challenging vehicle exploring experiences would find that the supply of “primitive roads” and “trails” under Alternative D would directly support the long-term continuation of their activities only to a moderate degree.

Specific Recreation Activities: Under the Alternative D, of the 808 routes within the TMAs that are associated with hunting as a primary route use, 326 routes (534 miles) or about 40% would continue to be managed as open/open with restrictions, while 423 routes (292 miles) or about 52% would be limited to administrative use only and 59 routes (27 miles) or 7% would be closed. This would result in 45% fewer open routes in Alternative D available for hunting than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 482 routes at 319 miles. The direct, long-term effect of these restricted routes on accessing hunting opportunities would be moderate, due to reducing availability to just 4 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative D, of the 293 routes within the TMAs that are associated with archery hunting as a primary route use, 109 routes (172 miles) or about 37% would continue to be managed as open/open with restrictions, while 156 routes (82 miles) or about 53% would be limited to administrative use only and 28 routes (11 miles) or 10% would be closed. This would result in 57% fewer open routes in Alternative D available for archery hunting than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 184 routes at 92 miles. The direct, long-term effect of these restricted routes on accessing archery hunting opportunities would be moderate, due to reducing availability to almost 4 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative D, of the 252 routes within the TMAs that are associated with vehicle exploring as a primary route use, 160 routes (374 miles) or 64% would continue to be managed as open/open with restrictions, while 75 routes (41 miles) or about 30% would be limited to administrative use only and 17 routes (6 miles) or 7% would be closed. This would result in 27% fewer open routes in Alternative D available for vehicle exploring than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 92 routes at 48 miles. The direct, long-term effect of these restricted routes on accessing vehicle exploring opportunities would be minor to moderate, due to reducing availability to just over 6 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative D, of the 14 routes within the TMAs that are associated with viewing wild horses, 7 routes (33 miles) or about 50% would continue to be managed as open/open with restrictions, while 5 routes (6 miles) or about 36% would be limited to administrative use only and 2 routes (3 miles) or 14% would be closed. This would result in 14% fewer open routes in Alternative D available for viewing wild horses than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 7 routes at 9 miles. The direct, long-term effect of these restricted routes on accessing viewing wild horses opportunities would be moderate, due to reducing availability to 5 out of every 10 existing BLM routes currently associated with this activity.

Under the Alternative D, of the 233 routes within the TMAs that are associated with viewing wildlife, 94 routes (179 miles) or about 40% would continue to be managed as open/open with restrictions, while 120 routes (79 miles) or about 52% would be limited to administrative use only and 19 routes (9 miles) or 8% would be closed. This would result in 46% fewer open routes in Alternative D available for viewing wildlife than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 139 routes at 88 miles. The direct, long-term effect of these restricted routes on accessing viewing wildlife opportunities would be major, due to drastically reducing availability to just over 4 out of every 10 existing BLM routes currently associated with this activity.

Recreation Management Areas: Under the Alternative D, the Acton SRMA would be allocated. Of the 10 routes associated with this area, 6 routes (7 miles) or 60% would continue to be managed as open with restrictions, while 3 routes (1.1 miles) or 30% would be limited to administrative use only and 1 routes (0.8 miles) or 10% would be closed. This would result in 10% fewer open routes in Alternative D available for accessing the targeted recreation opportunities in the SRMA than would be open in Alternative A. Although Alternative D would restrict to administrative use only or close a total of 4 routes at 1.9 miles, the direct, long-term effect of these restricted routes on accessing the targeted recreation opportunities of the SRMA would be minor to moderate, due to reducing access to 6 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative D, the Shepherd SRMA would be allocated. Of the 14 routes associated with this area, 2 routes (53 miles) or 14% would continue to be managed as open or open with restrictions (the same as Alternative A), while 9 routes (11 miles) or 64% would be limited to administrative use only and 3 routes (1.8 miles) or 21% would be closed. This would result in no

change from Alternative A in the number or mileage of open routes in Alternative D available for accessing targeted recreation opportunities in the SRMA. Alternative D would designate closures and restrictions to administrative use only a total of 12 routes at 13 miles. The continued direct, long-term effect of these restricted routes on accessing the targeted recreation opportunities of the SRMA would be major (like Alternative A), due to the limiting public access to just over 1 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative D, the Yellowstone River SRMA would be allocated. Of the 24 routes associated with this area, 12 routes (11.5 miles) or 50% would continue to be managed as open, while 9 route (3.6 miles) or 38% would be limited to administrative use only and 3 routes (0.8 miles) or 13% would be closed. This would result in 46% fewer open routes in Alternative D available for accessing targeted recreation opportunities in the SRMA than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 12 routes at 4.4 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the SRMA would be moderate to major, due to drastically reducing accessibility to 5 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative D, the Pryors ERMA would be allocated. Of the 145 routes associated with this area, 68 routes (128 miles) or 47% would continue to be managed as open, while 60 routes (59.4 miles) or 41% would be limited to administrative use only and 17 routes (36 miles) or 12% routes would be closed. This would result in 5.6% more open routes in Alternative D available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 77 routes at 96 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be minor to moderate, due to limiting accessibility to slightly less than 5 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative D, the Mill Creek/Bundy ERMA would be allocated. Of the 210 routes associated with this area, 61 routes (68 miles) or 29% would continue to be managed as open, while 129 routes (68 miles) or 61% would be limited to administrative use only and 20 routes (6 miles) or 10% would be closed. This would result in 64% fewer open routes in Alternative D available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only on a total of 149 routes at 73 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be major, due to drastically reducing access to less than 3 out of every 10 existing BLM routes currently associated with this area.

Under the Alternative D, the Horsethief ERMA would not be allocated. Of the 45 routes associated with this area, 17 routes (22.5 miles) or 38% would continue to be managed as open, while 25 route (14 miles) or 56% would be limited to administrative use only and 3 routes (1.9 miles) or 7% routes would be closed. This would result in 47% fewer open routes in Alternative D available for accessing general recreation opportunities in the ERMA than would be open in Alternative A. Alternative D would designate closures and restrictions to administrative use only

on a total of 28 routes at 16 miles. The direct, long-term effect of these restricted routes on accessing the general recreation opportunities of the ERMA would be moderate, due to drastically reducing access to less than 4 out of every 10 existing BLM routes currently associated with this area.

O.5.2.20 Special Designations - ACECs

O.5.2.20.1 Alternative A

This section presents the potential impacts of route designations on Areas of Critical Environmental Concern (ACECs), as proposed; specifically the potential for elements of travel management to create or perpetuate impacts to resource values documented as relevant and important within these areas. Potential restrictions to public motorized access in areas known for their important biological, cultural or paleontological resources are evaluated, as they may support or complement BLMs strategies and management objectives aimed at protecting these resources. More directly, in relation to travel networks, the availability of access to and through ACECs is an important factor to the managing and protecting these resources in the long-term.

All ACECs: Regarding motorized access in, through, or proximate to (within 0.6 miles) all ACECs in the TMAs, under the No Action Alternative, the overall network of 94 existing BLM routes (114 miles) would continue to be managed as open/open with restrictions, limited to administrative use only (18%), or closed (14%). The majority of routes (about 68%) would be open to all motorized uses, with no special seasonal or vehicular restrictions. In the long-term, almost 7 out of every 10 existing BLM routes would remain available for public access in, through, or proximate to the ACECs. With 68% of existing routes potentially open and only 32% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be minor to moderate (43 CFR 8342.1(a)(d)).

Of the overall network of 28 portal routes that access the ACECs in the TMAs under the No Action Alternative, 22 existing BLM routes (about 79% of all portal routes) would continue to be managed as open to all motorized uses, with no special seasonal or vehicular restrictions. Of the remaining routes, 2 routes would be limited to administrative use only (7%), 4 routes (14%) would be limited to administrative use only with public non-motorized use allowed, and no routes would be closed. In the long-term, almost 8 out of every 10 existing portal routes would remain available for public access to the ACECs. With 79% of existing routes potentially open and only 21% potentially limited to administrative use only, the widespread, long-term effect of these route designations on reducing public motorized access to ACECs and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be minor (43 CFR 8342.1(a)(d)).

Cultural ACECs: This section evaluates motorized access in, through or proximate to (within 0.6 miles) all cultural ACECs in the TMAs with cultural resources documented as relevant and important. Under the No Action Alternative, the overall network of 47 existing BLM routes (47 miles) would continue to be managed as open/open with restrictions, limited to administrative

use only (34%), or closed (6%). The majority of routes (about 60%) would be open to all motorized uses, with no special seasonal or vehicular restrictions. In the long-term, 6 out of every 10 existing BLM routes would remain available for public access in, through, or proximate to the cultural ACECs. With 6% of existing routes potentially open and only 40% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be moderate (43 CFR 8342.1(a)(d)).

Of the overall network of 15 portal routes that access the ACECs in the TMAs with relevant and important cultural values under the No Action Alternative, 9 existing BLM routes (about 60% of all portal routes) would continue to be managed as open to all motorized uses, with no special seasonal or vehicular restrictions. Of the remaining routes, 2 routes would be limited to administrative use only (13%), 4 routes (27%) would be limited to administrative use only with public non-motorized use allowed, and no routes would be closed. In the long-term, 6 out of every 10 existing portal routes would remain available for public access to the cultural ACECs. With 60% of existing routes potentially open and only 40% potentially limited to administrative use only, the widespread, long-term effect of these route designations on reducing public motorized access to ACECs and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be moderate (43 CFR 8342.1(a)(d)).

O.5.2.20.2 Alternative B

Impacts from Route Designations to Areas of Critical Environmental Concern (ACEC)

All ACECs: Regarding motorized access in, through, or proximate (within 0.6 miles) to all ACECs in the TMAs, under Alternative B, the overall network of 135 existing BLM routes (158 miles) would be managed as 12% open/open with seasonal restrictions (about 56% fewer than Alternative A), 17% limited to administrative use only (1% fewer than Alternative A), and 71% closed (about 57% more than Alternative A). In the long-term, just over 1 out of every 10 existing BLM routes would be available for public access in, through, or proximate to the ACECs. With only 12% of existing routes potentially open and only 88% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be major (43 CFR 8342.1(a)(d)).

Of the overall network of 65 portal routes that access the ACECs in the TMAs under Alternative B, 10 existing BLM routes (about 15% of all portal routes) would be open (about 63% fewer than Alternative A). Only 11% would be open to all motorized uses (about 68% fewer than Alternative A), and 5% would be open with special seasonal restrictions (about 5% more than Alternative A). Of the remaining routes, 11 routes (17%) would be limited to administrative use only (about 10% more than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 14% fewer than Alternative A), and 44 routes (68%) would be closed (68% more than Alternative A). In the long-term, 1.5 out of every 10 existing portal routes would be available for public access to the ACECs. With 15% of existing routes potentially open and 85% potentially limited to administrative use only or closed, the

widespread, long-term effect of these route designations on reducing public motorized access to ACECs and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be major (43 CFR 8342.1(a)(d)).

Cultural ACECs: This section evaluates motorized access in, through or proximate to (within 0.6 miles) all cultural ACECs in the TMAs with cultural resources documented as relevant and important. Under the Alternative B, the overall network of 50 existing BLM routes (50 miles) would be managed for 0 routes open to all motorized uses (60% fewer than Alternative A), 8% open with vehicle restrictions (about 8% more than Alternative A), 12% limited to administrative use only (8% more than Alternative A), 0 routes limited to administrative use only with public non-motorized use allowed (about 30% fewer than Alternative A), and 80% closed (about 74% more than Alternative A). In the long-term, just under 1 out of every 10 existing BLM routes would be available (with vehicle restrictions) for public access in, through, or proximate to the cultural ACECs. With not quite 1% of existing routes potentially open and only 92% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be major (43 CFR 8342.1(a)(d)).

Of the overall network of 19 portal routes that access the cultural ACECs in the TMAs under Alternative B, 2 existing BLM routes (about 11% of all portal routes) would be open (about 50% fewer than Alternative A). Of the remaining routes, 2 routes (11%) would be limited to administrative use only (about 3% fewer than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 27% fewer than Alternative A), and 15 routes (78%) would be closed (79% more than Alternative A). In the long-term, just over 1 out of every 10 existing portal routes would be available for public access to the cultural ACECs. With 11% of existing routes potentially open and 89% potentially limited to administrative use only or closed, the widespread, long-term effect of these route designations on reducing public motorized access to cultural ACECs and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be major (43 CFR 8342.1(a)(d)).

O.5.2.20.3 Alternative C

Impacts from Route Designations to Areas of Critical Environmental Concern (ACEC)

All ACECs: Regarding motorized access in, through, or proximate (within 0.6 miles) to all ACECs in the TMAs, under Alternative C, the overall network of 205 existing BLM routes (259 miles) would be managed as 79% open/open with seasonal restrictions (about 11% more than Alternative A), 19% limited to administrative use only (0.9% more than Alternative A), and 2% closed (about 12% fewer than Alternative A). In the long-term, about 8 out of every 10 existing BLM routes would be available for public access in, through, or proximate to the ACECs. With 79% of existing routes potentially open and only 21% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be minor (43 CFR 8342.1(a)(d)).

Of the overall network of 86 portal routes that access the ACECs in the TMAs under Alternative C, 70 existing BLM routes (about 81% of all portal routes) would be open (about 3% fewer than Alternative A). Just over 81% would be open to all motorized uses (about 1.7% more than Alternative A), and 1.2% would be open with special seasonal restrictions (about 1.2% more than Alternative A). Of the remaining routes, 15 routes (17%) would be limited to administrative use only (about 10% more than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 14% fewer than Alternative A), and 1 routes (1.2%) would be closed (1.2% more than Alternative A). In the long-term, 8 out of every 10 existing portal routes would be available for public access to the ACECs. With 81% of existing routes potentially open and 19% potentially limited to administrative use only or closed, the widespread, long-term effect of these route designations on reducing public motorized access to ACECs and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be minor (43 CFR 8342.1(a)(d)).

Cultural ACECs: This section evaluates motorized access in, through or proximate to (within 0.6 miles) all cultural ACECs in the TMAs with cultural resources documented as relevant and important. Under the Alternative C, the overall network of 91 existing BLM routes (84 miles) would be managed for 88% open to all motorized uses (28% more than Alternative A), 12% limited to administrative use only (8% more than Alternative A), 0 routes limited to administrative use only with public non-motorized use allowed (about 30% fewer than Alternative A), and no routes closed (about 6% fewer than Alternative A). In the long-term, just under 9 out of every 10 existing BLM routes would be available for public access in, through, or proximate to the cultural ACECs. With 88% of existing routes potentially open and only 12% potentially limited to administrative use only to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be minor (43 CFR 8342.1(a)(d)).

Of the overall network of 29 portal routes that access the cultural ACECs in the TMAs under Alternative C, 25 existing BLM routes (about 86% of all portal routes) would be open (about 26% more than Alternative A). Of the remaining routes, 4 routes (14%) would be limited to administrative use only (about 0.5% more than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 27% fewer than Alternative A), and no routes would be closed (no change from Alternative A). In the long-term, over 8 out of every 10 existing portal routes would be available for public access to the cultural ACECs. With 86% of existing routes potentially open and 14% potentially limited to administrative use only or closed, the widespread, long-term effect of these route designations on reducing public motorized access to cultural ACECs and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be minor (43 CFR 8342.1(a)(d)).

O.5.2.20.4 Alternative D

Impacts from Route Designations to Areas of Critical Environmental Concern (ACEC)

All ACECs: Regarding motorized access in, through, or proximate (within 0.6 miles) to all ACECs in the TMAs, under Alternative D, the overall network of 188 existing BLM routes (232

miles) would be managed as 32% open/open with seasonal restrictions (about 36% fewer than Alternative A), 54% limited to administrative use only (36% more than Alternative A), and 13% closed (about 1% fewer than Alternative A). In the long-term, just over 3 out of every 10 existing BLM routes would be available for public access in, through, or proximate to the ACECs. With only 32% of existing routes potentially open and only 68% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be moderate to major (43 CFR 8342.1(a)(d)).

Of the overall network of 81 portal routes that access the ACECs in the TMAs under Alternative D, 35 existing BLM routes (about 43% of all portal routes) would be open (about 35% fewer than Alternative A). Only 38% would be open to all motorized uses (about 40% fewer than Alternative A), 1% would be open with vehicle restrictions (about 1% more than Alternative A), and 4% would be open with special seasonal restrictions (about 4% more than Alternative A). Of the remaining routes, 39 routes (48%) would be limited to administrative use only (about 41% more than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 14% fewer than Alternative A), and 7 routes (9%) would be closed (9% more than Alternative A). In the long-term, 4 out of every 10 existing portal routes would be available for public access to the ACECs. With 43% of existing routes potentially open and 57% potentially limited to administrative use only or closed, the widespread, long-term effect of these route designations on reducing public motorized access to ACECs and its potential for direct and indirect impacts to relevant and important resource values in the ACECs would be moderate to major (43 CFR 8342.1(a)(d)).

Cultural ACECs: This section evaluates motorized access in, through or proximate to (within 0.6 miles) all cultural ACECs in the TMAs with cultural resources documented as relevant and important. Under the Alternative D, the overall network of 90 existing BLM routes (83 miles) would be managed for 31% open to all motorized uses (29% fewer than Alternative A), and no routes open with seasonal or vehicle restrictions (same as Alternative A), 54% limited to administrative use only (50% more than Alternative A), 0 routes limited to administrative use only with public non-motorized use allowed (about 30% fewer than Alternative A), and 14% closed (about 8% more than Alternative A). In the long-term, just over 3 out of every 10 existing BLM routes would be available for public access in, through, or proximate to the cultural ACECs. With just over 31% of existing routes potentially open and only 69% potentially limited to administrative use only or closed to motor vehicle use, the widespread, long-term effect of these route restrictions on reducing public motorized access and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be moderate to major (43 CFR 8342.1(a)(d)).

Of the overall network of 27 portal routes that access the cultural ACECs in the TMAs under Alternative D, 11 existing BLM routes (about 41% of all portal routes) would be open (about 19% fewer than Alternative A). Of the remaining routes, 15 routes (56%) would be limited to administrative use only (about 42% more than Alternative A), no routes would be limited to administrative use only with public non-motorized use allowed (about 27% fewer than Alternative A), and 1 route (4%) would be closed (4% more than Alternative A). In the long-

term, just over 4 out of every 10 existing portal routes would be available for public access to the cultural ACECs. With 41% of existing routes potentially open and 59% potentially limited to administrative use only or closed, the widespread, long-term effect of these route designations on reducing public motorized access to cultural ACECs and its potential for direct and indirect impacts to relevant and important resource values in the cultural ACECs would be moderate to major (43 CFR 8342.1(a)(d)).

O.5.2.21 Wild and Scenic Rivers

O.5.2.21.1 Alternative A

This section presents the potential impacts of route designations on lands that have been evaluated and found to eligible for designation as Wild and Scenic Rivers. Specifically, route designations have the potential to impact identified outstandingly remarkable values associated with the eligible river segments by providing motorized access to or proximate to these areas; access that carries with it the potential for illegal, off-road use that can impact those values. Of the 6 routes accessing WSR-eligible segments, under the No Action Alternative, 4 routes (4 miles) or 67% would continue to be managed as open, while no routes would be limited to administrative use only and 2 routes (0.8 miles) or 33% routes would be closed. The potential indirect, long-term effect of the open routes on outstandingly remarkable values of the WSR-eligible areas would be minor, as signing, appropriate barriers, and regular monitoring would deter illegal, off-road travel, minimizing the potential for damaging or adversely affecting those natural values (43 CFR 8342.1(a)(d)).

Of the 7 routes that follow WSR-eligible boundaries in the TMAs, under the No Action Alternative, 4 routes (2.3 miles) or 57% would continue to be managed as open, while no routes would be limited to administrative use only and 3 routes (0.6 miles) or 43% routes would be closed. The potential indirect, long-term effect of these open routes on outstandingly remarkable values of the WSR-eligible areas they bound would be minor, as signing, appropriate barriers, and regular monitoring would deter illegal, off-road travel, minimizing the potential for damaging or adversely affecting those natural values (43 CFR 8342.1(a)(d)).

O.5.2.21.2 Alternative B

Under Alternative B, route designations would be the same as Alternative A. The impacts of these route designations would be the same as Alternative A.

Of the 7 routes that follow WSR-eligible boundaries in the TMAs, under Alternative B, 3 routes (1.8 miles) or 43% would continue to be managed as open, while 1 route (0.5 miles) or 14% would be limited to administrative use only and 3 routes (0.6 miles) or 43% routes would be closed. The potential indirect, long-term effect of the Alternative B route designations on outstandingly remarkable values of the WSR-eligible areas they bound would be minor, as open routes would only be reduced by 14%. However, signing, appropriate barriers, and regular monitoring would help to deter illegal, off-road travel, minimizing the potential for damaging or adversely affecting those natural values (43 CFR 8342.1(a)(d)).

O.5.2.21.3 Alternative C

Under Alternative C, of the 6 routes accessing WSR-eligible segments, 6 routes (4.8 miles) or 100% would be managed as open, while no routes would be limited to administrative use only or closed. The potential effect of the open routes on outstandingly remarkable values of the WSR-eligible areas would be a 33% increase in open routes accessing these areas, which would be a minor to moderate, indirect, long-term impact. However, signing, appropriate barriers, and regular monitoring would, to a minor to moderate degree, help deter illegal, off-road travel, minimizing the potential for damaging or adversely affecting those natural values (43 CFR 8342.1(a)(d)).

Of the 7 routes that follow WSR-eligible boundaries in the TMAs, under Alternative C, 7 routes (2.9 miles) or 100% would continue to be managed as open, while routes would be limited to administrative use only or closed. The potential indirect, long-term moderate effect of the Alternative C route designations on outstandingly remarkable values of the WSR-eligible areas they bound would be a 43% increase in open routes accessing these areas. However, signing, appropriate barriers, and regular monitoring would, to a minor to moderate degree, help to deter illegal, off-road travel, minimizing the potential for damaging or adversely affecting those natural values (43 CFR 8342.1(a)(d)).

O.5.2.21.4 Alternative D

Under Alternative D, route designations for routes accessing WSR-eligible segments would be the same as Alternative A and B for open routes; however, 1 route (0.2 miles) or 16.7% would be limited to administrative use only rather than closed. The impacts of these route designations would be essentially the same as Alternative A and B.

Under Alternative D, route designations for routes that follow WSR-eligible boundaries in the TMAs would be the same as Alternative A for open routes; however, 2 routes (0.4 miles) or 29% would be limited to administrative use only rather than closed. The impacts of these route designations would be essentially the same as Alternative A.

O.5.3 Cumulative Impacts from Travel and Transportation

The cumulative impact analysis area for transportation system and motorized access is the TMAs within the BiFO Planning Area and immediately adjacent areas of state and local road networks. Cumulative impacts on transportation systems and motorized access would result from projects that increase traffic and subsequent transportation improvements and maintenance. Projects that could increase traffic would result from developing and transporting mineral and energy resources and management of transportation routes on adjacent lands. Cumulative impacts on trails and travel management would also primarily occur from actions that facilitate, restrict, or preclude motorized access.

Management actions that restrict OHV use would limit the degree of travel opportunities and the ability to access certain portions of the planning area for the public. However, in most cases, while motorized access on certain routes would be restricted to the public, administrative use for authorized uses would be allowed. The continued maintenance of federal and state highways

would provide arterial connections to BLM system roads. County-maintained routes that connect federal and state highways to BLM system routes would maintain and improve access to the decision area's resources. Past, present, and reasonably foreseeable future nonfederal actions have affected and would continue to affect travel management within the planning area. These actions, which include urban development patterns, the continuing growth of motorized vehicle-based recreation, planned road and highway projects, and population growth, are expected to increase demand and construction of transportation routes within and near the BiFO planning area.

Actions that would limit or restrict transportation project design (e.g., VRM designations, land use closures, NSO stipulations) would result in impacts on transportation and access. The actions and activities considered in this analysis, including land use restrictions for the preservation of sensitive resources, would not result in the overall inability of BLM to provide public access.

For the lands and routes which are outside of the TMAs and for which decisions are deferred, actions and activities would not result in the overall inability of BLM to provide public access or protect the lands from resource damage while the follow-on plans are yet to be completed. All travel management in the deferred areas in the interim would be limited to existing roads and trails.

Under all alternatives, reasonably foreseeable development (oil and gas), resource use assumptions, such as wind energy potential, and recreation demand, in addition to land use authorizations and projects, could increase the need to improve or maintain the transportation system and motorized access. Roads and pipelines constructed could expand the existing transportation system network and facilitate motorized access in areas currently not available.

Alternatives A and C could have the greatest incremental impact on the improvements and maintenance of the transportation system and motorized access because they propose the most potential development and propose fewer restrictions or constraints on limiting the travel network. The degree of impact would be highest under Alternative A because of fewer land use restrictions for the protection of sensitive resources would be considered, and motorized routes would be limited to existing roads and trails, except in those areas where travel designations have occurred. Conversely, the implementation of increased restrictions to motorized vehicular use, identified to protect sensitive resources under Alternative B, would result in the greatest level of impact on motorized transportation and access, but provides more protection to fragile or sensitive resources. Alternative C, overall, would have fewest restrictions on motorized travel and access and potentially the greatest impacts to fragile resources, as compared to Alternative B and D. However, Alternative C would have more restrictions to motorized travel than under Alternative A, as more route specific travel designations would be proposed. Alternative D has slightly less restrictions proposed, than under Alternative B and provides management flexibility and adaptability, based on resource conditions and indicators.

O.5.4 Irreversible and Irretrievable Commitment of Resources

Section 1502.16 of CEQ regulations requires that the discussion of environmental consequences include a description of "...any irreversible or irretrievable commitment of resources which

would be involved in the proposal should it be implemented.” An irreversible commitment of resources refers to decisions affecting the use of resources (generally nonrenewable resources) that limit the ability for future generations to use that resource. For example, extraction and processing of sand and gravel as part of an aggregate mining operation is considered an irreversible commitment of salable minerals. This action is irreversible because once the minerals are extracted and processed, they cannot be renewed in the ground within a reasonable timeframe, and are therefore unavailable for use by future generations. An irretrievable commitment of resources refers to decisions resulting in the loss of production or use of a resource. For example, a decision not to treat juniper encroachment into adjacent sagebrush habitat results in the irretrievable loss of forage production from the grassland community. This action is not irreversible, because a treatment applied to the encroaching juniper could restore the forage production of the sagebrush habitat.

All of the alternatives contain a range of management actions that may lead to future irreversible and irretrievable commitments of those resources, once a decision is made. Decisions made in the selected plan serve to guide future actions and subsequent site-specific decisions. Following the signing of the ROD for the Billings/Pompeys Pillar RMP revision, implementation plans will be developed and implemented by the BLM. Implementation decisions require appropriate project specific planning and NEPA analysis, and constitute BLM’s final approval authorizing on-the-ground activities to proceed. Assuming subsequent implementation decisions authorize activity- or project-specific plans, irreversible and irretrievable commitment of resources would occur. For most resources, the RMP will provide objectives for management and guidance for future implementation level decisions to minimize the potential for irreversible and irretrievable commitments of resources.

No irreversible or irretrievable commitment of resources are anticipated for air quality, visual resources, lands and realty, renewable energy, ROW and corridors, recreation, special designations, and socioeconomic resources. The Proposed RMP would result in surface-disturbing activities, including dispersed recreation, recreational OHV use, fire and fuels management, mineral and energy development, livestock grazing, and infrastructure development that could result in loss of irreversible or irretrievable resources. These surface-disturbing activities may permanently alter soil, water, and vegetation, visual resources, relevant and important values, ACECs, OHV use, tentative classifications of WSR segments, and potentially damage cultural and paleontological resources.

Habitats in nonfunctional condition may sustain sufficient degradation that they may no longer be capable of being restored to original site potential. If this change results in significant soil loss through channel down-cutting or incisement, or if riparian-wetland obligate plant species are replaced by facultative or upland species, these could represent irretrievable and irreversible impacts that cannot be corrected even through costly rehabilitation efforts.

O.5.5 Unavoidable Adverse Impacts

The NEPA §102(2)C requires disclosure of any adverse environmental effects that cannot be avoided should the proposed plan be implemented. Unavoidable adverse impacts are those that remain following the implementation of mitigation measures or impacts for which there are no

mitigation measures. Some unavoidable adverse impacts would occur as a result of implementing the Billings/Pompeys Pillar RMP and travel related implementation level actions. Others are a result of public use of BLM land within the planning area. This section describes the potential unavoidable adverse impacts that may occur from these implementation level decisions.

Implementing the Proposed RMP would cause some unavoidable adverse impacts. Surface-disturbing activities could cause unavoidable adverse impacts. Although these impacts are mitigated to the extent possible, unavoidable damage is inevitable. Conversion of vegetation resources to other uses, such as transportation and mineral and energy development, reduces the quantity of vegetation resources. Energy and mineral resource extraction on public lands potentially creates air quality, water quality, visual intrusions, soil erosion, and soil compaction problems. Portions of the resource area with more intense recreational use experience scarring, increased soil erosion, and loss of vegetation. Although these impacts are unavoidable, they are usually concentrated in previously disturbed areas, which reduce the spread of impacts to more remote or less frequented areas.

Travel on or off roads could cause soil compaction and loss of protective vegetation cover, thereby increasing soil erosion and fugitive dust emissions. Increased soil erosion can adversely impact riparian wetland areas through increased soil sedimentation. Weeds introduced by these and other management activities could cause a reduction in canopy coverage and leave soils subject to increased erosion as well.

Any facility developments, including but not limited to recreation sites, livestock water and other range improvements, and utility and road facilities, that are not properly restored even after mitigation measures are applied, could result in increased soil erosion. Inadvertent damage to, or loss of, cultural and paleontological resources from increased recreational use, OHV use, surface-disturbing activities, or natural deterioration is unavoidable. Although mitigation measures could be implemented for scientific data recovery (leaving portions of cultural resource sites undisturbed for future exploration), the area of excavation would be destroyed and future research would not be possible. The number of cultural sites or paleontological localities anticipated to be inadvertently damaged is unknown, but it is anticipated to be very low given the management decisions in the Proposed RMP.

Conflicts between user types, such as motorized recreationists and recreationists who seek more primitive types of recreation and motorized users who share recreation areas, are unavoidable adverse impacts. As recreation demand increases, recreational use disperses to other areas of the lands managed by the BiFO, which could create conflicts with existing uses of those areas. Increasing recreation use can cause conflicts with other resource uses, such as livestock grazing or forest and woodland products harvest. Recreation use and experiences could conflict with the results of livestock grazing, mineral extraction and timber harvest.

Under the DRMP/DEIS, for those alternatives in which mineral development is expected to be higher, recreational use and/or enjoyment of travel routes, could be displaced from those areas, which would increase the extent and frequency of conflict between these incompatible user groups. Numerous land use restrictions, imposed throughout the BiFO to protect sensitive

resources and other important values, by their nature, impact the ability of operators, individuals, and groups who use the public lands to do so freely without limitations. Although attempts are made to minimize these impacts by limiting the level of protection necessary to accomplish management objectives and by providing alternative use areas for impacted activities, some adverse impacts to such users are simply unavoidable.

O.6 Implementation-Level Travel/Transportation Plans

Following issuance of the ROD, implementation and management of the defined travel management network (a system of areas, roads/routes available for public use, and the specific limitations placed on use) will be used to develop future Travel Management Plans for each TMA. These Travel Management Plans (implementation plans) will be developed within 3-5 years of issuance of the ROD and will coordinate the implementation decisions over the life of the plan.

The components of the TMA implementation-level plans include (but not limited to):

- a. Maps that display the geographic units (TMAs) and display roads and trails for all travel modes, including road types and designations.
- b. Definitions and additional limitations for specific roads and trails (defined in 43 CFR 8340.0-5(g)).
- c. A set of guidelines for management, monitoring and maintenance of the travel system
- d. A set of indicators to guide future plan maintenance, modifications or revisions related to the travel management network.
- e. A list of easements and rights-of-way (to be issued to the BLM or others) to maintain the existing road and trail network providing public land access.
- f. A schedule for periodic reviews of travel management networks to ensure that current resource and travel management objectives are being met (see 43 CFR 8342.3).

The Travel Management Plans will tier to and/or include the specific management actions common to the TMAs, as well any management actions specific to a specific TMA.

O.7 Preliminary Route Network - outside of TMAs

Travel management, for both motorized and mechanized modes, outside of the TMAs would continue to be limited to existing roads and trails. Management actions identified through the ROD would be identified and implemented. Many of the geographic locales omitted from travel planning/route designations were isolated parcels and/or parcels with no current public access. However, in areas where resource or other use-conflicts arise or impacts to resources occur from travel modes, travel planning would be initiated, and would follow a similar planning process for the TMAs (defined above).

O.8 Plan Maintenance and Changes to Route Designations

The Proposed RMP includes criteria to be considered when conducting plan maintenance, amendments, or revisions related to OHV area designations or the approved road and trail system within “TMA” areas. Future conditions may require the designation or construction of new routes or closure of existing routes to better address resources and resource use conflicts. Actual route designations within the Limited category can be modified without completing a plan amendment, although compliance with the National Environmental Policy Act (of 1969) (NEPA) is still required.

The BiFO is aware that the current inventory of roads and trails being used for the route designation process is not 100 percent correct or complete. The BiFO anticipates that in spite of intensive quality control and review, there will be errors. Some undesirable unintended consequences may result from the final configuration of the Travel Route Designations. Adjustments may be needed to make the travel designation compatible with adjacent landowners. For example, edge matching has occurred with adjacent BLM and United States Forest Service (USFS) jurisdictions, but continued review and coordination will be required as changes resulting from continued motorized travel planning occur in the future. Routes currently not in the inventory may need to be added and designated as part of the implementation process. An adaptive management process that will allow adjustments to the final decision and will maintain the validity and integrity of the analyses and public disclosure presented in the Final EIS is outlined below. This process includes pre-defining actions for the disposition of routes discovered after the decision date, adding new routes, correcting errors, and adjusting the route designations that lead to undesirable, unintended consequences.

As IM 2004-061 notes, plan maintenance can be accomplished through additional analysis and land use planning (e.g., activity-level planning). BLM will collaborate with affected and interested parties in evaluating the designated route network for suitability for active OHV management and envisioning potential changes in the existing system or adding new trails that would help meet current and future demands. In conducting such evaluations, the following factors would be considered:

- The travel management plan should be flexible to allow designating existing routes that were not identified in the baseline data.
- The travel management plan should be flexible about the location of new routes needed to provide access for new activities, to new areas, or to reduce resource and/or user conflicts.
- Route designations would be coordinated and made consistent with criteria and resource decisions identified in the Proposed RMP.
- Measures needed to meet the objectives stated in the Proposed RMP (e.g., cultural resources, soil resources, special status species, and recreation).

- Where and when appropriate, plan, develop, and designate (in cooperation with user groups and cooperating agencies) new routes and trails that enhance and expand recreational opportunities and encourage responsible use.
- Routes suitable for various categories of OHVs (e.g., motorcycles, all-terrain vehicles [ATVs], dune buggies, and 4-wheel drive touring vehicles) and opportunities for joint trail use.
- Needs for parking, trailheads, informational and directional signs, mapping and profiling, and development of brochures or other materials for public dissemination.
- Opportunities to tie into existing or planned route networks.
- Public land roads or trails determined to cause considerable adverse effects or to constitute a nuisance or threat to public safety would be considered for relocation or closure and rehabilitation after appropriate coordination with applicable agencies and partners.
- Those areas managed as closed will not be available for new motorized designation.

Regulations at 43 *Code of Federal Regulations* (CFR) 8342.2 require BLM to monitor the effects of OHV use. Changes should be made to the Travel Plan based on the information obtained through monitoring. Site-specific NEPA documentation is required for changing the route designations in this Travel Plan, but not RMP Plan Amendment.

O.9 Implementation Process

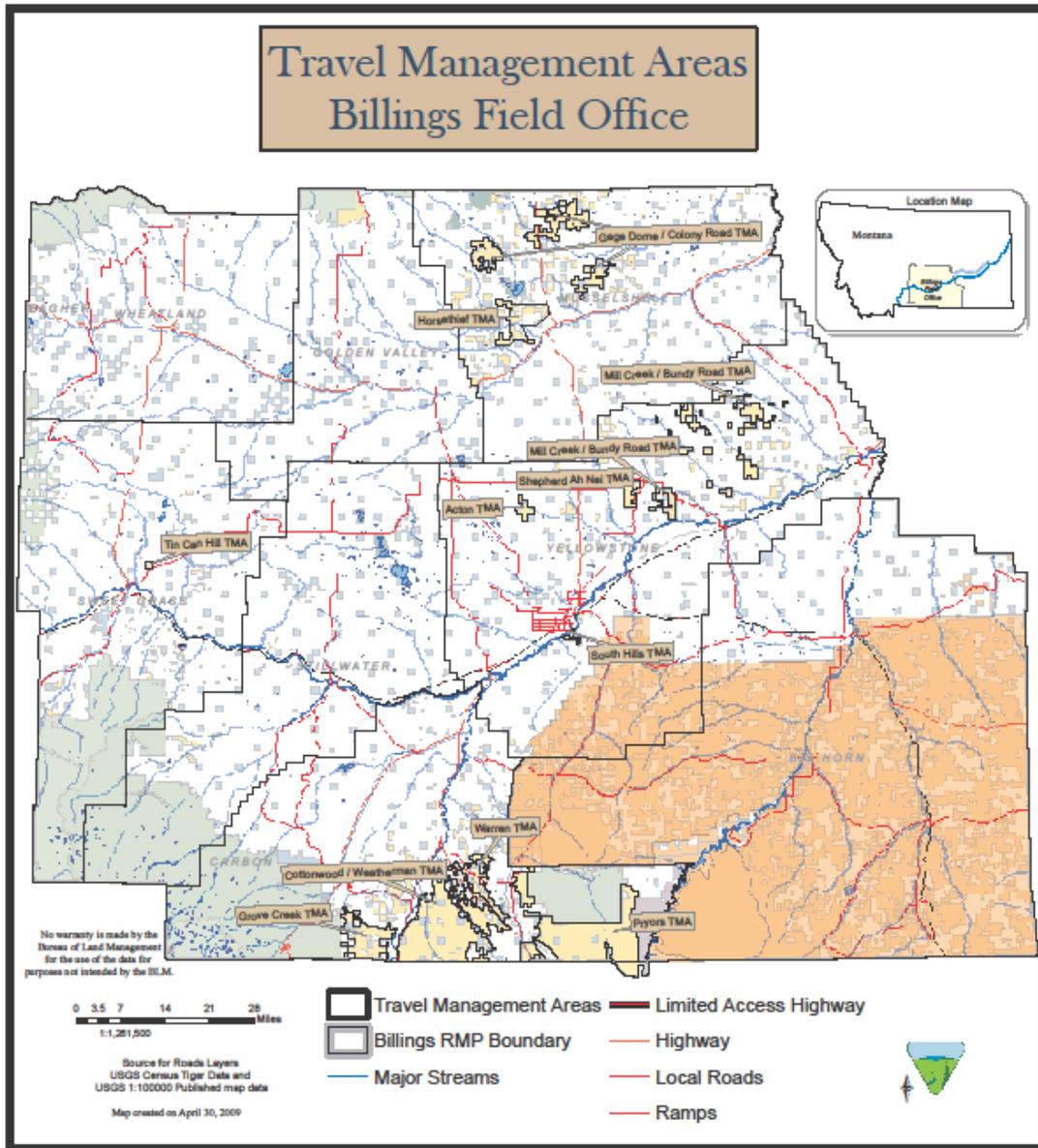
Implementation decisions are actions that BLM takes to implement land use plans and generally constitute BLM's final approval for allowing on-the-ground actions to proceed. These types of decisions, which are based on site-specific planning and NEPA analyses, are subject to the administrative remedies set forth in the regulations that apply to each BLM resource management program. Implementation decisions are not subject to protest under the planning regulations; rather, they are subject to various administrative remedies. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations after BLM resolves the protests to land use plan decisions and makes a decision to adopt or amend the Proposed RMP. Travel planning and the implementation process include the following:

- The monitoring of the transportation system and modifying as appropriate
- A map of roads and trails for all travel modes
- Notations of any limitation for specific roads and trails

- Criteria to select or reject roads and trails in the final travel management network, add new roads or trails, and specify limitations
- Guidelines for management, monitoring, and maintenance of the transportation system
- Needed easements and rights-of-ways (to be issued to BLM or others) to maintain the existing road and trail network providing public land access.

The Proposed RMP completes the initial route designation component of the Travel Management Plan and implementation process. These routes would be the initial basis for signing and enforcement. The BiFO will prioritize additional implementation actions, resources, and geographic areas based on RMP goals and objectives and the guidelines noted above.

Travel Management Area Map - Overview



Figures
Travel Management Planning

Figure 4.1a: Summary of Route/Miles by TMA

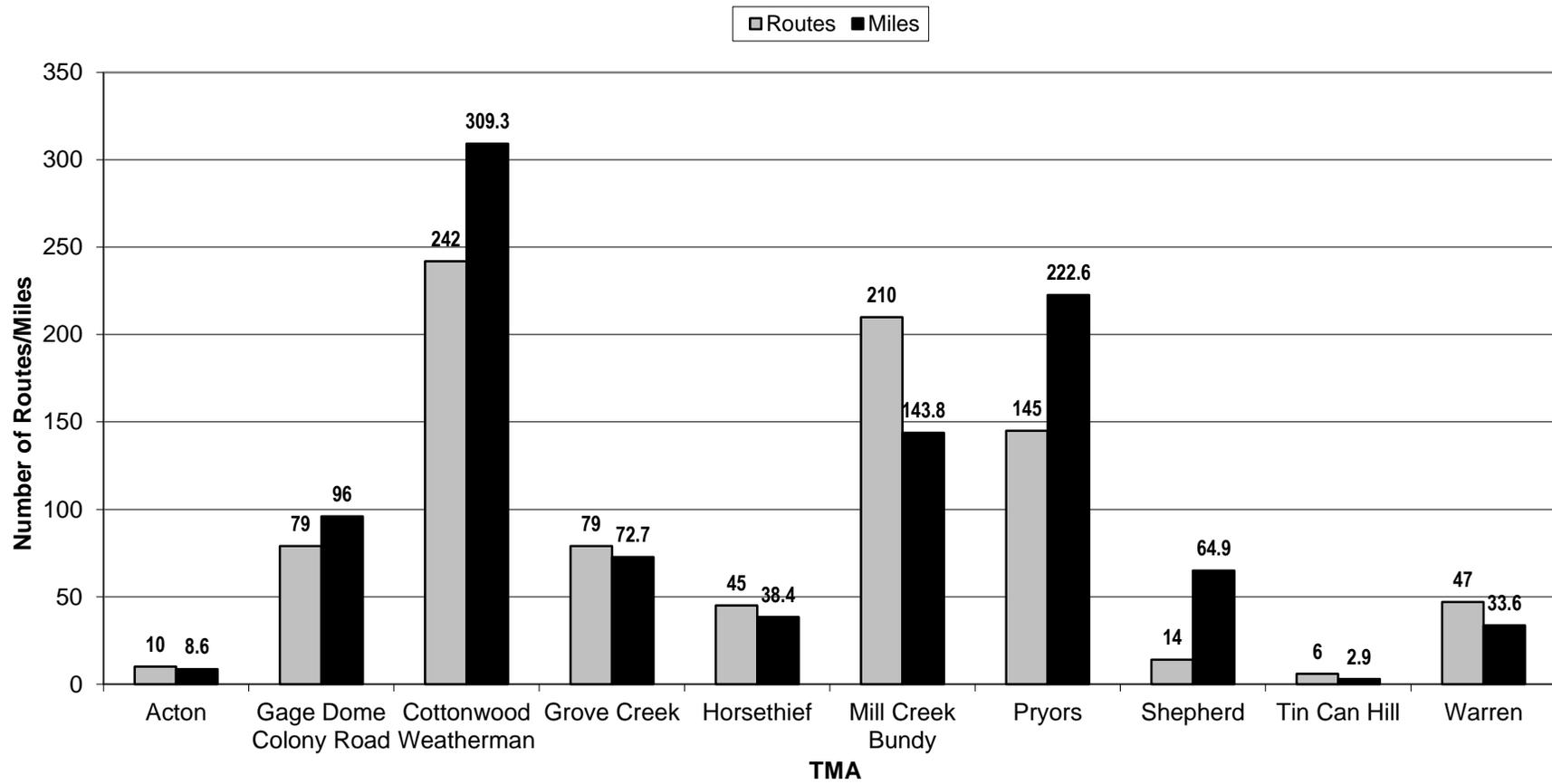


Figure 4.1.1a: Alternative A Route Designations for All TMAs

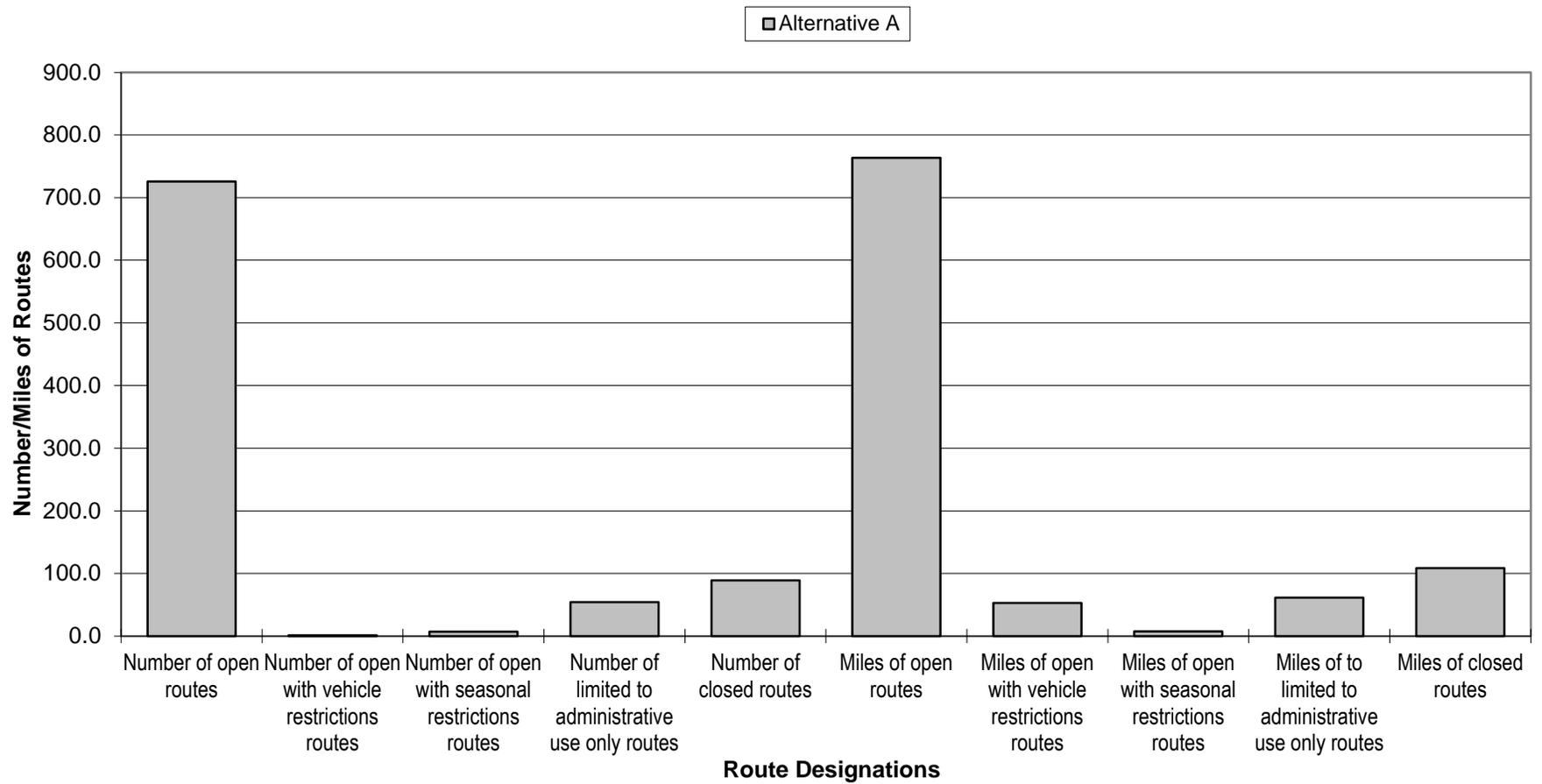


Figure 4.1.1b: Alternative A 'Open' Route Densities by TMA

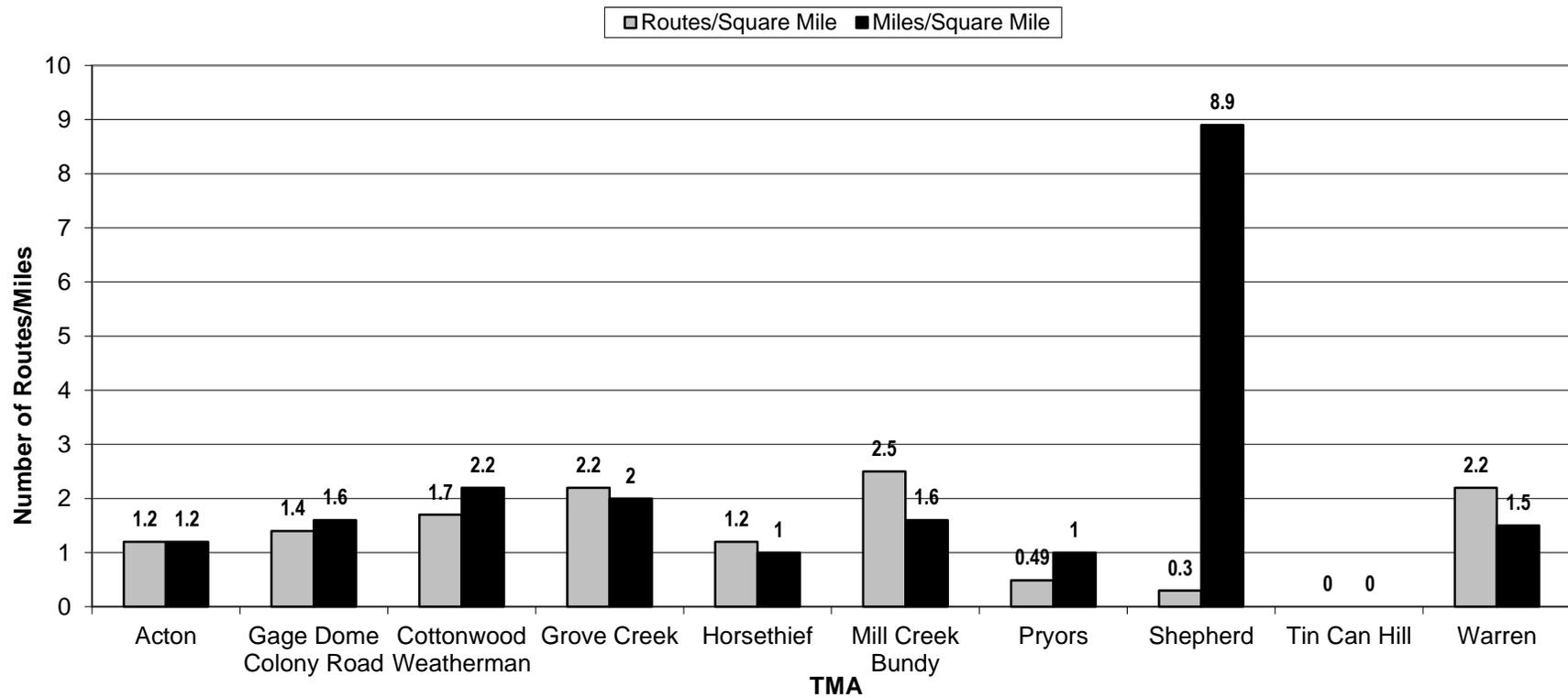


Figure 4.1.2a: Alternative B Route Designations for All TMAs (Compared to Alt. A)

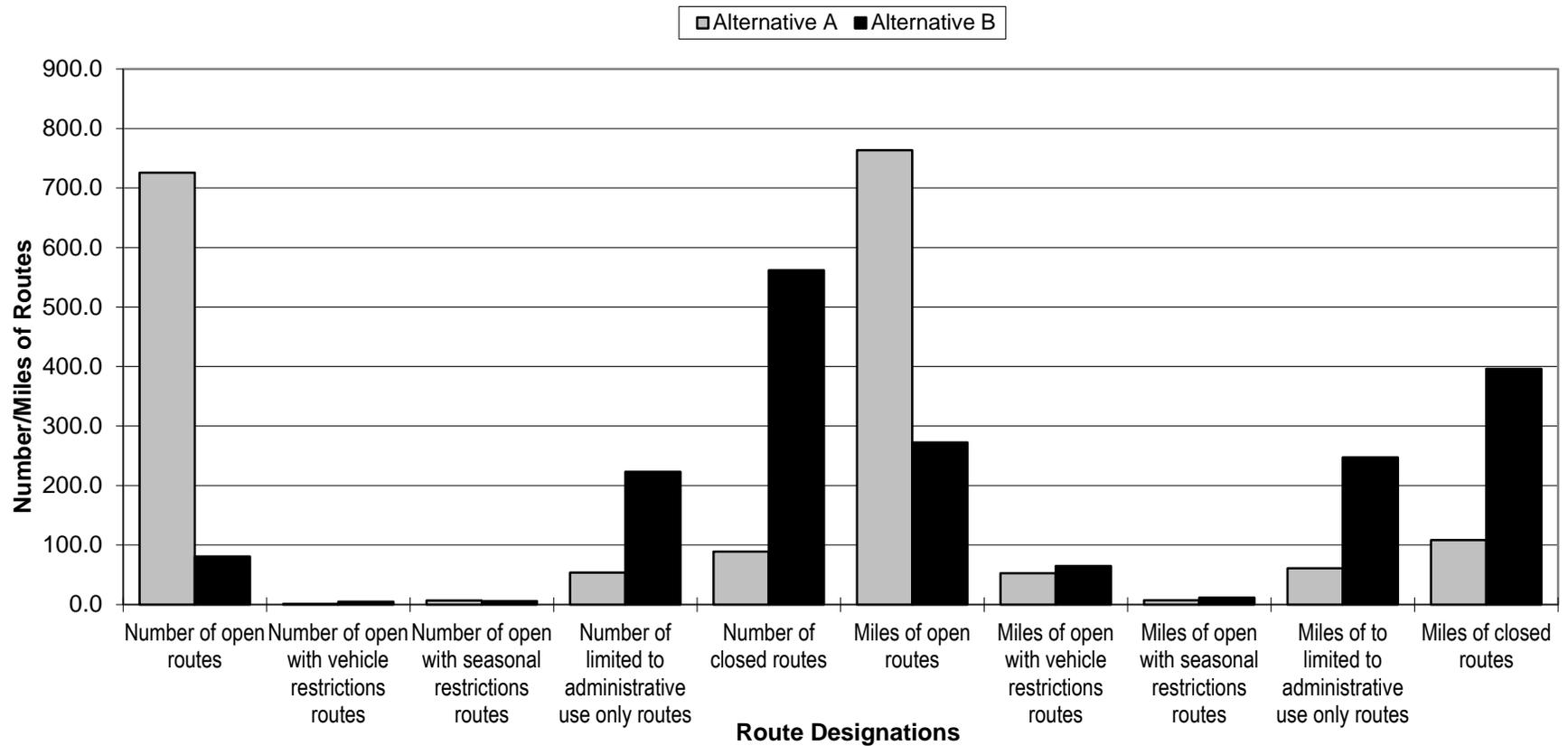


Figure 4.1.2b: Alternative B 'Open' Route Densities by TMA (compared to Alt. A)

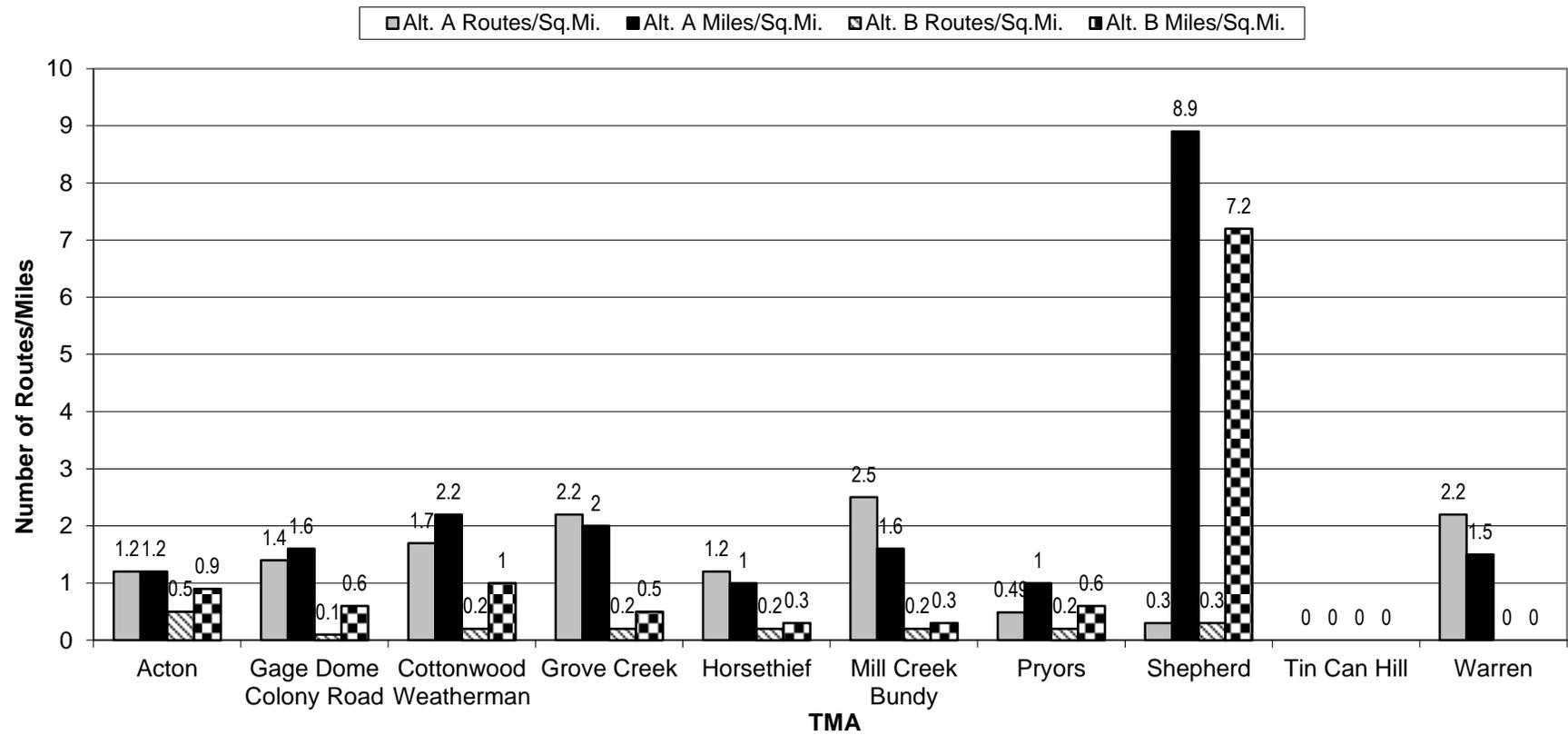


Figure 4.1.3a: Alternative C Route Designations for All TMAs (Compared to Alt. A)

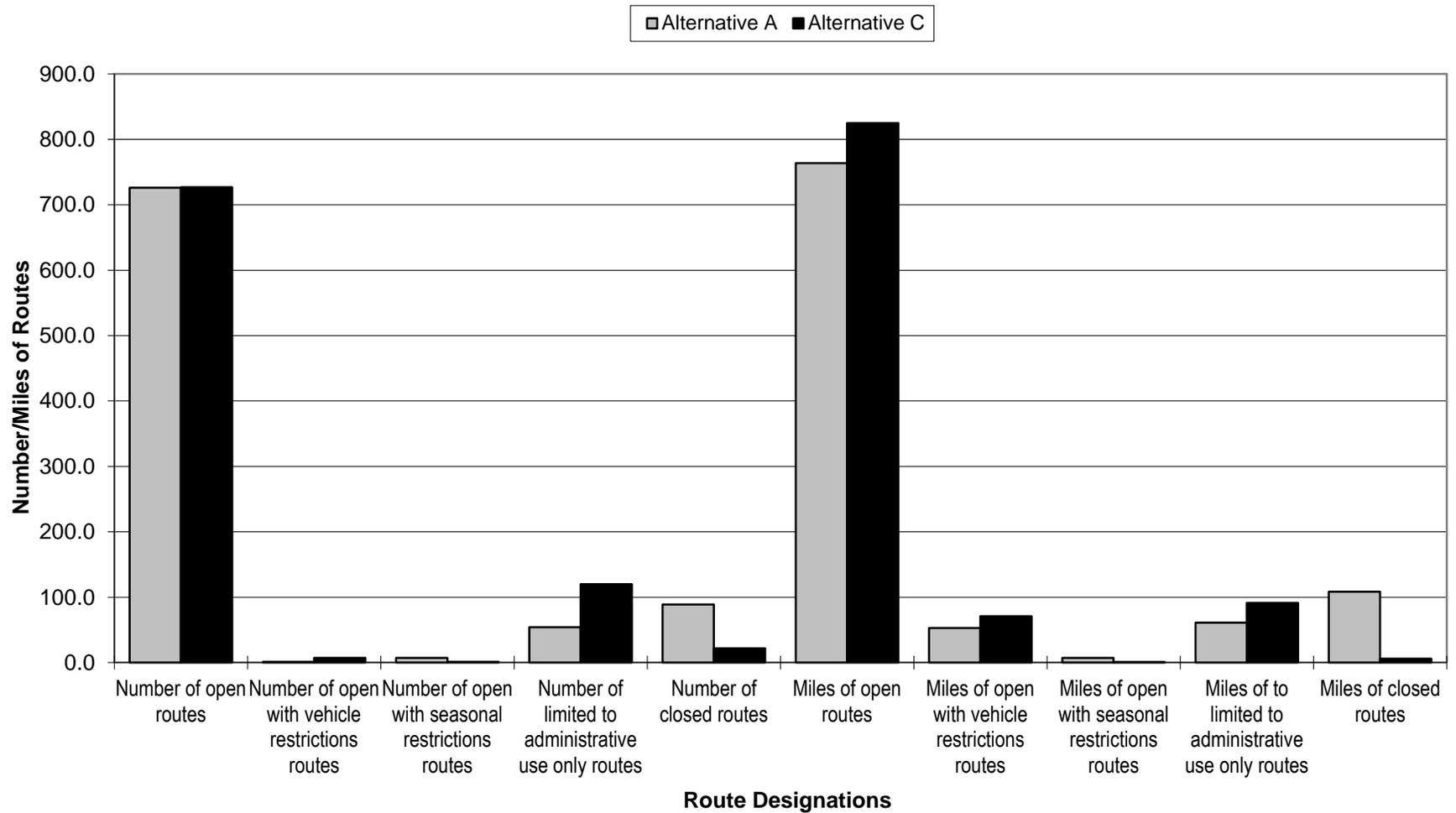


Figure 4.1.3b: Alternative C 'Open' Route Densities by TMA (compared to Alt. A)

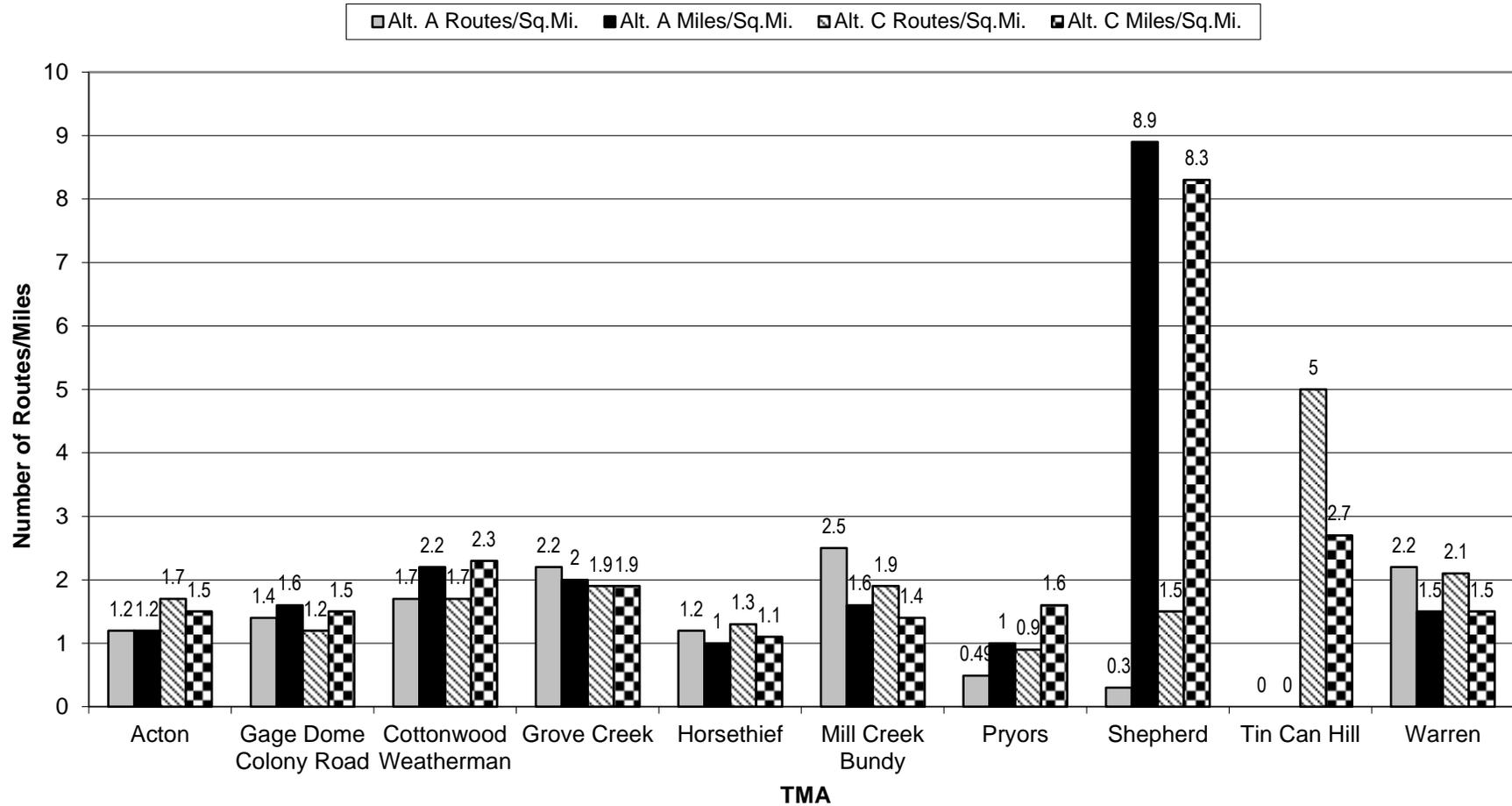


Figure 4.1.4a: Alternative D Route Designations for All TMAs (Compared to Alt. A)

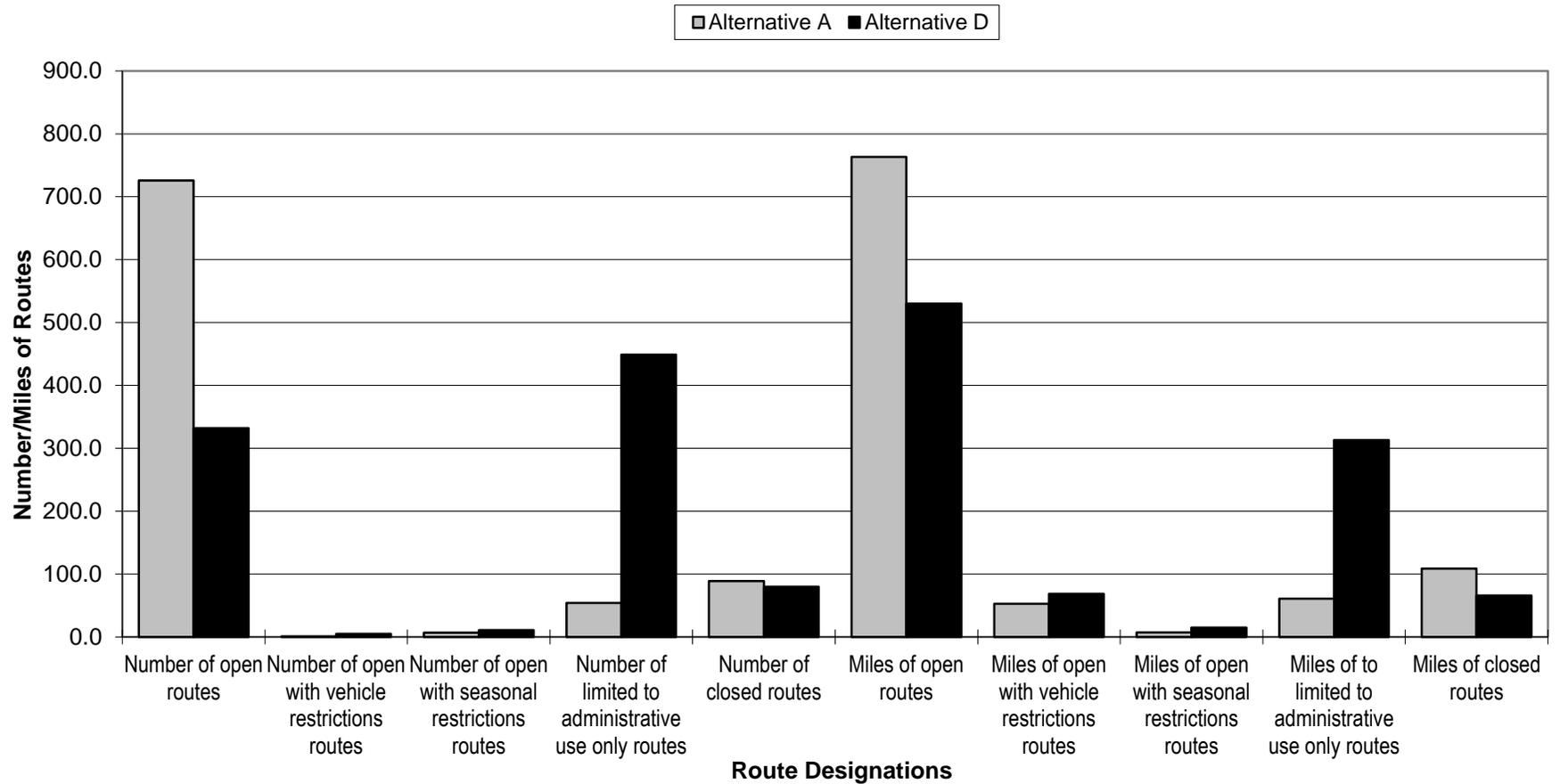


Figure 4.1.4b: Alternative D 'Open' Route Densities by TMA (compared to Alt. A)

