Appendix B - Road Analysis

ROADS ANALYSIS
Upper Blackfoot Watershed Analysis

Soda Springs Ranger District
Caribou-Targhee National Forest
Caribou County, Idaho

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INTRODUCTION

The following roads analysis was conducted to assess the existing road system and potential road management concerns within the Upper Blackfoot Watershed Analysis Area.

ROAD DEVELOPMENT

Historically, access to the watershed was provided by foot and horse trails. These provided access to and across the forest for hunting and trapping for native Americans and early trappers. Many of these trail corridors were later developed into roads to provide primary access for ranching, timber harvesting and mineral development. Following are some of the road improvements including mineral and timber projects that required improved access.

Primary Access

The Blackfoot River/Upper Valley Road, #50095, and the Chippy Creek Road, #51203, provide access to the upper portion of the watershed. These roads are well maintained and have seen improved drainage and surfacing by Caribou County in recent years. The section of the Blackfoot River Road across the forest thru the Blackfoot Narrows was transferred to Caribou County in 1990.

The Slug Creek Road, #51095, provides access to the watershed form the south. This road is well maintained and was most recently improved in 1991 including widening and resurfacing. The sections across National Forest lands were transferred to both Caribou and Bear Lake Counties in 1991.

The Trail Canyon Road #50124 and the Wood Canyon Road #50125 provide access to the watershed from the west. These roads are also well maintained and have had improvements to drainage and surfacing. The sections of these roads across the forest were transferred to the Caribou County in 1990 (Trail Canyon) and 1994 (Wood Canyon).

The Diamond Creek Road, #51102, was upgraded in the early 60's to provide access for timber. This included the construction of 5 bridges across Diamond Creek. The Diamond Creek Road up to the intersection with Smokey Canyon (Timber Creek) Road, #50110, was transferred to Caribou County in 1990. The section north of Smokey Canyon Road was resurfaced with crushed aggregate and the section south of the Smokey Canyon Road was improved and graveled in the early 90's.

Mineral Access

To provide access the Maybe Canyon Mine, the Dry Valley Road, #50601, was relocated and improved in the 1980's. It is well maintained and is under special use permit, but is open to the public. Local haul roads within the mine were also constructed with the

majority of these local roads closed to the public. A railroad line was also constructed up the valley during this time to allow for shipping phosphate ore from a load out facility below the mine.

To provide improved access for the Mountain Fuel Mine, the Dry Valley Road #50601 and railroad line were extended up to the head of the valley to access the mine in the mid 1990's. The Slug-Dry Road, #50387, connecting upper Dry Valley to Slug Creek was also relocated and upgraded at this time.

For the Wooley Valley Mine, a railroad line was constructed up to the east side of Wooley Ridge. Local haul roads were constructed up the west face of Wooley Ridge and within the mine on top of Wooley Ridge. A conveyer system was constructed to drop the phosphate ore down off of the ridge to the railroad loading facility at the end of the railroad line. These roads were closed to the public.

For the Rasmussen Mine, a haul road, #51330, was constructed in the 1990's from the Wooley Valley railroad loading facility, over Wooley Ridge north of the existing Wooley Valley haul road, then across Rasmussen Valley , and up to Rasmussen Ridge leases. Following the construction of this new haul road, the old conveyer system was removed and portions of the associated access road were decommissioned and recontoured. Local haul roads to access the south, central, and north mine panels were constructed. When the central mine panel was developed the section of the haul road up NoName Creek was relocated to the north and the old alignment was closed and partially recontoured. These roads are closed to the public.

To transport phosphate ore from the Smokey Canyon Mine east of the watershed, a slurry line was constructed across the watershed in mid 80's. This slurry line followed the Smokey Canyon Road down to the Diamond Creek Road, crossed Diamond Creek and then followed the Stewart Canyon Road, #50134, and crossed Dry Ridge. It then crosses Dry Valley and follows the Lone Tree Road, #50198 , then across private land and crossing another section of the forest along Trail Canyon before terminating at Conda. The Timber Creek Road was upgraded during this effort.

For the Dairy Syncline leases, temporary exploration roads were constructed of off the existing road system and then reclaimed.

Timber Access

To access the timber base in the watershed several collector and local road systems were developed or improved. Many of the local timber access roads were for short term access and were closed following sale activities. Following is a listing of timber sales from 1980. New or improved collector roads are noted.

81 Dave's Creek TS – Construction of the Dave's Creek Road, #50192.
82 Wood Canyon TS
83 Trail Hollow TS
83 Flat Valley TS – Realignment/Reconstruction of the Flat Valley Road, #50107.

85 Mountain Fuel Settlement Sale
86 Angus Creek TS – Construction of the Angus Creek Road, #50346.
86 Big Basin TS - Construction of the Harrington Peak, #51238, and Meadow Creek, #51241, Roads
87 Dave's Creek TS
88 Mosquito TS
88 Diamond Bench TS – Construction of the Diamond Bench Road, #51255.
90 Diamond Flat TS – Reconstruction and surfacing of the southern end of the Flat Valley Road #50107
91 Upper Fossil TS – Relocation/Reconstruction of the Big Basin Road, #51251.
92 Huckleberry TS – Reconstruction of the Green Basin Road, #50187.
93 Pole Canyon TS
95 South Fork TS
97 Stewart TS
98 Campbell Canyon TS
04 Olsen Creek TS
08 Aspen Range TS (proposed) – Realignment of the Sulphur Creek (Johnson Creek) Road #50126

CURRENT CONDITION

Current transportation facilities (roads, bridges, and culverts) in the Blackfoot Watershed provide important access for a variety of uses including recreation, ranching, timber harvest, and mining. The current system is very developed with a combination of planned and unplanned roads. The majority of the planned roads have been constructed for commercial access for grazing, timber, and mineral activities.

On the forest, the roads are categorized as arterial, collector and local. There is also a category of special use roads that provide access for the phosphate mines.

The arterial system is well developed and provides primary access to all of the major drainages with many of these primary access roads under county jurisdiction. These roads are generally graveled and receive annual maintenance. These roads include the Blackfoot River Road, Upper Valley Road, Chippy Creek Road, Diamond Creek Road, Timber Creek Road, Dry Valley Road, Trail Canyon Road, Wood Canyon Road, and Slug Creek Road. These roads provide access to and across the forest and also provide connectivity to public transportation routes outside of the watershed including State and Federal Highways and county roads.

There is also a well developed system of collector roads. These roads provide access to large areas and branch off of the primary arterial routes. Many of these roads are also graveled and receive annual maintenance. These roads include the Flat Valley Road, Diamond Bench Road, Dave's Creek Road, Rasmussen Valley Road, Harrington Peak Road and Big Basin Road.

There are numerous local roads many of which are native surfaced. Many of these roads evolved to support ranching activities. Additional roads were constructed for single purpose access for timber or mineral activities. Many of these roads are now used for recreational purposes especially during the hunting season. Some of these roads are managed as closed with several of these managed as motorized trails.

With the phosphate mining activity in the watershed there are also several special use haul roads, which are generally closed to the public. These roads can be up to 100 feet wide and have a graveled surface. These roads are associated with the Wooley Valley Mine, the Enoch Valley Mine, the Rasmussen Ridge Mines, the Dry Valley Mine, the Mountain Fuel Mine, the Champ and the Maybe Canyon Mines. In additional, there are many temporary local roads within the mine development including local haul roads.

As part of the 2007 revised forest travel planning effort, the forest transportation inventory was updated. Using digital orthoquads, an improved GIS layer of all existing system and non-system roads was developed. The 2007 Revised Travel Plan Roads Analysis analyzed each of these roads assessing the environmental impacts versus the transportation needs and made recommendations on their management. Based on the decisions of the Revised Travel Plan, there are approximately 286 miles of system roads within the watershed and within the forest boundary. These roads can be broken down as follows:

178 miles of roads open for public use
- 0.3 miles paved state highways
- 18.8 miles of aggregate county roads
- 36.1 miles of FS aggregate roads maintained for passenger cars
- 123.0 miles of FS native surfaced roads managed for high clearance vehicles

108 miles of FS roads closed to public use with full sized vehicles
- 44.7 miles managed as closed to all vehicles
- 51.5 managed as motorized trails
- 11.8 miles managed as special use mining haul roads

There are additional miles of roads within the forest boundary that are not managed as system roads. These include user created roads and decommissioned temporary timber and mineral access roads. Most of these roads were captured in the updated GIS coverage and evaluated during the revised travel planning roads analysis. Management recommendations were made for these roads and final decisions were made in the Revised Travel Plan FEIS. If appropriate, road closures and methods of closure were identified in the final plan. These roads are not inventoried as system roads and therefore not included in the miles above.

The Caribou-Targhee National Forest contains several areas that are designated as “Idaho Roadless Areas” under the Idaho Roadless Rule. The Idaho Roadless Rule was published in the Federal Register on October 16, 2008 and is the current direction for management of these designated Idaho Roadless Areas.

The Idaho Roadless Rule established five management themes for the individual roadless areas (Map 7 Appendix A).

The five themes are as follows;

- Wild Land Recreation
- Special Areas of Historic or Tribal Significance
- Primitive
- Backcountry/Restoration
- General Forest, Rangeland and Grassland

These themes provide prohibitions and limited permissions for the following:

- Road construction and reconstruction
- Timber cutting, sale or removal
- Discretionary mineral activities

For further information regarding the Idaho Roadless Rule and the management themes and the associated prohibitions and limited permissions in those themes you can go to the following website http://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5053191.pdf .

ROADS ANALYSIS

Roads analysis is an integrated ecological, social, and economic approach to transportation planning, which addresses both existing and potential future roads (USFS 1999). This roads analysis follows the process outlined in the document "**Roads Analysis: Informing Decisions About Managing the National Forest Transportation System",** (USFS 1999). This is not a NEPA document, but rather a site-specific analysis of the forest transportation system. This analysis tiers off of the initial 2002 Forestwide Roads Analysis for the Caribou NF and the 2005 Forestwide Roads Analysis for the Revised Caribou NF Travel Plan. The 2002 analysis mostly evaluated the higher standard roads (ML 3-5) on the forest and validated their need, identified their environmental risks and developed management direction for managing all FS roads. The 2005 analysis looked at all roads on the forest including system roads and non-system roads, evaluated the need for and the environmental risks of each road and made recommendations as to whether the road should be managed as part of the road system or not and whether it should be managed as open or closed. The revised travel plan closed all NF lands to motorized cross country travel and identified which travel routes were to be designated for motorized travel. This analysis will identify road related concerns and management opportunities that can be incorporated into subsequent projects being evaluated through the NEPA process.

Step 1. Setting up this Analysis

-Statement of the objectives of the analysis.

To analyze the present and projected road system needed in the Blackfoot Watershed Analysis Area

-List of interdisciplinary team members and participants.
Randy Tate, Transportation Engineer; Jim Capurso, Fisheries Biologist; Darren Olsen, Range Management Specialist; Kara Kleinschmidt, Soil Scientist; Jim Laprevote and Louis Wasniewski, Hydrologists; Dylan Johnson, Fuels Specialist; Ann Keysor, Wildlife Biologist; Doug Heyrend, Timber and Recreation Specialist.

-List of information needs.
Various analytical tools from each IDT specialist, Forest resource database, and Arc-View maps. Issues for this Analysis Area will drive the intensity of analysis.

-Plan for the analysis.
The questions from Step 4 of the Roads Analysis were addressed by the IDT.

Step 2. Describing the Situation

-Map or other descriptions of the existing road and access system defined by the recent revised forest travel plan.
Caribou-Targhee National Forest Visitor Map for Soda Springs Ranger Districts. Caribou-Targhee National Forest Travel Map. An Arc-View map (MAP 3 Appendix A) has been produced showing the transportation network in the Analysis Area.

-Basic data needed to address roads analysis issues and questions.
Each specialist has reviewed his or her resource specialty against the transportation map mentioned above for this Watershed Analysis Area.
-Table 1 summarizes the existing condition of system roads within the analysis area.

Table 1 Existing Status and Condition of Roads (Map 1, page 4 for road locations)

Road Number	Road Name	Length (miles)	Open, Closed Year-round, or Seasonally	Surface	Operational Maintenance Level	Functional Class
30145	Sage Meadows	4.48	O	Native	2	L
30310	Upper Diamond Creek	2.72	C - Mot	Native	1	L
50027	Kendall Canyon	0.92	O	Native	2	L
50044	Sub Station	0.3	C - SU	Agg	1	L
50045		0.19	O	Native	2	L
50046	Bear Cr Powerline	0.58	C - SU	Native	1	L
50050`		0.18	O	Native	2	L
50051		0.26	O	Native	2	L
50052		1.34	C-Mot	Native	1	L
50095	Blackfoot River	3.46	O	Agg	4	A
50096	Upper Sheep Creek	2.05	C - SU	Native	1	L
50098	Trail Guard Station	0.22	O	Agg	3	L
50099	Mill Canyon CG	0.61	O	Agg	3	L
50100	S Dry Valley Well	3.76	O	Native	2	L
50103	Campbell Canyon	0.65	O	Native	2	L
50104	Bear Canyon	0.80	O	Native	2	L
50107	Lander Trail	11.85	O	Agg	3	C
50110	Smokey Canyon	7.49	0	Agg	3	A

50121	Rasmussen Valley	2.09	O	Agg/Native	County - 3	C
50122	Dry Valley	5.65	O	Native	2	L
50123	Dry Canyon	1.37	O	Agg	2	L
50124	Trail Canyon	2.62	O	Agg	County – 3	A
50125	Wood Canyon	3.94	O	Agg	County – 3	A
50126	Sulpher Canyon	5.63	O	Native	2	L
50130	Dry Fork	2.51	O	Native	2	L
50134	Maybe Canyon	9.24	O	Native	2	L
50139	Lanes Creek	3.67	O	Native	2	L
50150	Yellowjacket	0.95	O	Native	2	L
50151		0.16	O	Native	2	L
50160	Dry Canyon Spur	0.76	O	Native	2	L
50161	Trail Canyon Spur	0.42	O	Native	2	L
50176	Johnson Creek	1.28	O	Native	2	L
50178	Burchertt Spring	1.20	O	Native	2	L
50180	Peterson Flat	0.44	O	Native	2	L
50187	Slug Cr-Huckleberry Basin	3.44	O	Native	2	L
50192	Olsen Creek	4.95	O	Native	2	L
50193		1.41	O	Native	2	L
50194		1.21	C	Native	1	L
50195	Rasmussen Ridge Tie	2.46	C	Native	1	L
50198	Lone Tree Spring	1.71	O	Native	2	L
50199	Angus	0.97	C	Native	1	L
50200		1.01	O	Native	2	L
50201	Aspen Ridge	1.14 0.93	O C - Mot	Native	2 1	L
50202		0.77	C	Native	1	L
50205	Little Long Valley	1.9	C – Mot	Native	1	L
50206	South Little Long Valley	2.25	C - SU	Native	1	L
50211		0.09	C - SU	Native	1	L
50212	North Bridge Creek	0.37	C	Native	1	L
50213		0.57	O	Native	2	L
50217		0.29	O	Native	2	L
50219	Timber Creek Bench	3.6	O	Native	2	L
50220		0.3	C	Native	1	L
50222		3.63	C	Native	1	L
50228		0.61	C	Native	1	L
50231	Peterson Draw	0.47	O	Native	2	L
50233		0.32	C - SU	Native	1	L
50234		0.64	O	Native	2	L
50235		0.71	O	Native	2	L
50236		0.18	O	Native	2	L
50237		0.19	O	Native	2	L
50240	Trail Canyon Disp	0.37	O	Native	2	L
50242	Diamond Creek Warm Shelter	0.10	O	Native	2	L
50244	D2	1.87 1.17	O C - Mot	Native	2 1	L
50245	Midnight Springs	1.26 1.21	O C - Mot	Native	2 1	L
50246		0.49	O	Native	2	L
50247	F12	0.15	O	Native	2	L
50252	Corailsen Creek	0.64 1.81	O C	Native	2 1	L
50261	H2	1.03	O	Native	2	L

50265	Spur 3	0.70	C – Mot	Native	1	L
50267		0.37	O	Native	2	L
50268	Spur 1	0.31	C	Native	1	L
50276	Johnson GS	0.05	O	Agg	3	L
50277		0.20	C - SU	Native	1	L
50278		0.13	O	Native	2	L
50290		6.05	O	Native	2	L
50297	Trail Archery Range	0.59	O	Native	2	L
50307	South Daniels	0.59	O	Native	2	L
50309	Mill Springs	0.60 1.89	O C - Mot	Native	2 1	L
50232	S Dry Valley Well	2.25 2.10	O C - Mot	Native	2 1	L
50340	Black foot Narrows Sheep	0.11	C	Native	1	L
50343	Sheep Creek	1.57	C – Mot	Native	1	L
50345	Lower Rasmussen Valley	1.04	C – Mot	Native	1	L
50346	Rasmussen Face	3.81 0.49	O C	Native	2 1	L
50351	Becker Mine	1.85	C – SU	Agg	1	L
50354	North Fork Maybe Canyon	0.98 0.37	O C - SU	Native	2 1	L
50372	Cabin Creek	0.53	C – Mot	Native	1	L
50373	AJ2	0.41	O	Native	2	L
50383	AN2	0.79	O	Native	2	L
50385	AL2	0.35	C	Native	1	L
50387	Slug-Dry Valley	3.71	O	Native	3	C
50391	AH2	0.27	O	Native	2	L
50393	AG2	0.55	C	Native	1	L
50395	AE2	0.61 0.78	O C – Mot	Native	2 1	L
50503	Rasmussen Ridge	1.15	O	Native	2	L
50546	Clear Creek Ridge	0.26 1.57	O C	Native	2 1	L
50567	Combine Trail	0.37	O	Native	2	L
50572	BB2	1.17	O	Native	2	L
50574	Wood Sulphur	1.29	O	Native	2	L
50575	Johnson Creek Spur	0.22	O	Native	2	L
50576	BD2	0.96	O	Native	2	L
50588	Petterson Canyon	0.45 0.77	O C - Mot	Native	2 1	L
50589	BS2	0.87	O	Native	2	L
50590	BQ2	0.67	O	Native	2	L
50591	BR2	1.22	C – Mot	Native	1	L
50595	Dry basin	1.49	O	Native	2	L
50596	Dry Valley Sour	1.19	O	Native	2	L
50601	East Dry Valley	7.2	O	Agg	4	C
50611	South Maybe Canyon	0.80 0.30	O C – SU	Agg Native	2 1	L
50614	Bell Spring	1.33	O	Native	2	L
50618	BZ2	0.45	O	Native	2	L
50620	CB2	0.67	C – Mot	Native	1	L
50625	Stewart Flat	1.46 0.75	O C	Native	2 1	L
50626	Diamond Creek CG	1.9	O	Agg	3	L
50627	Timber Creek	0.5	O	Native	2	L
50629	Old Diamond Creek	0.63 1.17	O C – SU – Mot	Native	2 1	L
50630	BW2	0.81	C – Mot	Native	1	L

50632	No Fork Timber Cr	0.69	C – Mot	Native	1	L
50635	CE2	0.29	C	Native	1	L
50636	CF2	0.37	O	Agg	2	L
50643	Freeman Pass	0.86 2.37	O C	Native	2 1	L
50644	East Diamond	0.65	C	Native	1	L
50645	CD2	0.09	O	Native	2	L
50667	South Green Basin	0.9	O	Native	2	L
50668	The Ponds	0.28 0.55	O C – Mot	Native	2 1	L
50669	CP2	0.17 0.36	O C – Mot	Native	2 1	L
50670	Horseshoe Springs	0.48	O	Native	2	L
50671	West Horseshoe Springs	0.30	C – Mot	Native	1	L
50875	R2	0.68	C – SU	Agg	1	L
50876	Daniels Draw	0.66 0.58	O C	Native	2 1	L
50878	Mill Canyon	1.81	O	Native	2	L
50895	Cutoff	0.21	O	Native	2	L
50897	Sheep Camp No 9	0.78	O	Native	2	L
50900	Plantation	1.50	C – Mot	Native	1	L
50901	Tank Trap	0.54 0.41	O C – Mot	Native	2 1	L
50902	Wood Canyon North	1.12 1.4	O C – Mot	Agg/Native Native	2 1	L
51095	Slug Creek	9.68	O	Agg	4	A
51102	Diamond Creek	14.31	O	Agg	4	A
51203	Chippy Creek	4.9	O	Agg	4	A
51232	Doug Fir Drive	0.3	C	Native	1	L
51235	Lodgepole Lane	1.48	O	Native	2	L
51236	Wild Flat	0.4 3.79	O C – Mot	Native	2 1	L
51238	Harrington Peak	11.2	O	Agg Native	3 2	C
51240	Lower Huckleberry	1.24	C – Mot	Native	1	L
51241	Meadow Springs	0.71 2.53	O C – Mot	Native	2 1	L
51250	Ridge Road	1.64	C	Native	1	L
51251	Big basin Ridge	8.5	O	Agg/Native	3	C
51255	Diamond Creek Bench	0.44 4.43	O C – Mot	Agg Native	2 1	C
51256	Mosquito Cr South	1.25	C	Native	1	L
51257	Mosquito Cr Ridge	1.0	C – Mot	Native	1	L
51264	Stewart View Spur	0.65	C – Mot	Native	1	L
51269	Coyote South	0.93	O	Native	2	L
51271	Yellowjacket Ridge	0.14 0.75	O C – Mot	Native	2 1	L
51287		2.63 0.76	O C – Mot	Native	2 1	L
51296	North Big Basin	0.87	C – Mot	Native	1	L
51308	Middle Green Basin	1.01	C – SU – Mot	Native	1	L
51309	Lower Wilde Canyon	0.82	O	Native	2	L
51310	Wilde Flat Ext	0.54	C – Mot	Native	1	L
51313	Upper Pole Canyon	1.58	C	Native	1	L
51314	Upper Pole Canyon Spur A	0.97	O	Native	2	L
51330	Rasmussen Ridge Haul Road	9.35	C – SU	Agg	1	C

O = Open to public motorized use during the snow-free season.
C = Closed to public motorized use during the snow-free season.
SU = Special Use
Mot = Manage as Motorized Trail

Maintenance Level 1 – Assigned to intermittent service roads during the time they are closed to public for full sized vehicles The closure period must exceed one year. May be open to special use traffic, such as mining. May be managed as a motorized trail.

Maintenance Level 2 – Assigned to roads open for use by high clearance vehicles. Passenger car traffic is not a consideration. Traffic is normally minor, usually consisting of one or a combination of administrative, permitted, dispersed recreation, or other specialized uses. Appropriate traffic management strategies are either to discourage or prohibit passenger cars, or; accept or discourage high clearance vehicles.

Maintenance Level 3 – Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities. Roads in this maintenance level are typically low speed, single lane with turnouts and spot surfacing. Some roads may be fully surfaced with either native or processed material. Appropriate traffic management strategies are either "encourage" or "accept". "Discourage" or "prohibit" strategies may be employed for certain classes of vehicles or users

Maintenance Level 4 – Assigned to roads that provide a moderate degree of user comfort and convenience at moderate speeds. Most roads are double lane and aggregate surfaced. However, some roads may be single lane. Some roads may be paved and/or dust abated. The most appropriate traffic management strategy is "encourage." However, the "prohibit" strategy may apply to specific classes of vehicles or users at certain times.

Functional Class

Arterial (A) – A forest road that provides service to large land areas and usually connects with other arterial roads or public highways.

Collector (C) – A forest road that serves smaller land areas than an arterial road. Usually connects forest arterial roads to local forest roads or terminal.

Local (L) – A forest road that connects terminal facilities with forest collector, forest arterial, or public highways. Usually forest local roads are single purpose transportation facilities.

Step 3. Identifying Issues

-Summary of key road-related issues, including their origin and basis. The issues will be presented by general category (environmental, socio-cultural, and economic). *Issues were identified with forest specialists, line officers during the initial watershed meetings.*

-Description of the status of current data, including sources, availability, and methods of obtaining information.
The forest's resource database and various specialist databases are the most current information available for the Blackfoot Watershed Analysis Area.

Step 4. Assessing Benefits, Problems, and Risks

-A synthesis of the benefits, problems, and risks of the current road system.

A review of e*ach of the 71 questions answered in the previous forestwide roads analysis' was performed by the ID team and any additional comments were capured below in the document.*

-An assessment of the risks and benefits of entering any un-roaded area.
Covered in the review of the previous responses to the 71 questions, listed below.

-An assessment of the ability of the road system to meet objectives.
Again,a review of the previous responses to the 71 questions addressed the ability of the road system to meet objectives.

THE FOLLOWING ARE THE QUESTIONS THAT WERE ADRESSED BY THE ID TEAM AS PART OF STEP 4.

Ecosystem Functions and Processes (EF)

EF (1) What ecological attributes, particularly those unique to the region, would be affected by roading of currently un-roaded areas?

Roads in previously unroaded areas would provide access for a variety of forest management activities, including timber harvest, and minerals extraction. These management activities would change the amount, pattern, and composition of forest cover. This would lead to a change in terrestrial wildlife and ecological processes.

Newly constructed road(s) in an unroaded area(s) could contribute to the spread of invasive species.

Newly constructed road(s) in previously unroaded area(s) could disrupt big game in their summer habitat and increase accessibility to forest cover areas during hunting.

EF (2): To what degree do the presence, type, and location of roads increase the introduction and spread of exotic plant and animal species, insects, diseases, and parasites? What are the potential effects of such introductions to plant and animal species and ecosystem function in the area?

Roads provide access to new places. No matter what type of road (ATV, four wheel drive or passenger vehicle) or its location, roads serve as a corridor for the establishment and spread of noxious weeds.

The potential effects of new introductions to plants is a reduction in quality forage for wild and domestic animals. The potential effects of new introductions to animals could lead to a decline in population numbers and/or health of the animals.

EF (3): To what degree does the presence, type, and location of roads contribute to the control of insects, diseases, and parasites?

The presence of roads increases a manager's options for controlling noxious weeds, insects, diseases, and parasites. Roads allow access to the forest for many types of treatment, including, mechanical, chemical, and burning.

EF (4): How does the road system affect ecological disturbance regimes in the area?

The road system provides access for the removal of biomass (i.e. saw timber and firewood) from the analysis area. The removal of biomass can be a viable management strategy for reducing the risk of high severity fires that adversely impact the watersheds.

Roads provide access for fire suppression activities; however road access also increases the risk of human-caused fires. The risk of human caused fires can be reduced by administrative restrictions and closures during high and extreme fire danger periods.

EF (5): What are the adverse effects of noise caused by developing, using, and maintaining roads?

Traffic on roads can be an adverse disturbance both to the overall enjoyment of an area for people and as a disturbance that decrease the use of an area by wildlife. As the use of a road increases the frequency and duration of the noise increases and the disturbance can become chronic.

Aquatic, Riparian Zone, and Water Quality (AQ)

AQ (1): How and where does the road system modify the surface and subsurface hydrology of the area?

Roads can expand or reduce the channel network, convert subsurface flow to surface flow, and reduce infiltration on the road surface. All of these factors affect the overall hydrology in a watershed, particularly the quantity and timing of flow.

The channel network can be expanded by roads, which can create stream channels in previously unchannelized portions of the hillside. Conversely, a road intercepting several drainages and concentrating flows into a single channel can reduce the channel system. Road ditches can also intercept subsurface flow and convert it to surface flow. An expanded or contracted channel network can alter surface and subsurface flows, timing, and peaks if water is concentrated or diffused, and flows reach the channel at different rates than water traveling unrestricted. Reduced infiltration can contribute to additional surface flows, since water does not infiltrate for storage in the soil profile, but rather runs off as overland or surface flow. Storage and movement of water through the soil profile

as subsurface flow regulates and sustains stream baseflows. When roads disrupt these processes, more water becomes available during surface runoff periods, and less water is available to sustain baseflows.

Compacted surfaces of roads and dispersed campsites along roads may decrease infiltration into the ground, increasing surface runoff which is occurring along the Diamond Creek road. Roads in valley bottoms and adjacent to stream (in AIZ) can affect surface hydrology when they get rutted as ruts can act as surface streams. The lower portion of the road is the stream channel. Blackfoot Narrows where road prism is adjacent to the stream and constrains natural stream sinuosity and hydrologic function. . It is recommended to evaluate the surfacing or alternative routes of this road to reduce surface erosion, dust control, and/or channel function.

AQ (2): How and where does the road system generate surface erosion?

Native surface roads are prone to erosion due to the bare, compacted tread (Seyedbagheri 1996). Graveled roads also erode and are a source of sediment to streams. Proper engineering on suitable soils, well-maintained drainage structures, and appropriate level and season of use can result in low levels of erosion. Roads located near streams on soils with a high erosion potential are the most likely to deliver sediment. Surfacing will further reduce the amount of erosion and sediment delivery.

The Blackfoot River Road #50095, Mill Canyon Campground Road #50099, Smokey Canyon Road #50110, Slug Creek Road #51095, and Diamond Creek Road #51102 are graveled FS system roads in the watershed. These roads are at least partially located on soils with a high erosion hazard potential, and are likely to directly or indirectly result in sediment input into the stream system.

The Bear Canyon Road #50104, North Fork Maybe Canyon #50354, Dry Ridge #50611, Old Diamond Creek Road #50629, and a native surface segment of Smokey Canyon Road #50110 are native surface roads that are at least partially located on soils with a high erosion hazard potential, and are likely to directly or indirectly result in sediment input into the stream system.

AQ (3): How and where does the system affect mass wasting?

The majority of the unstable landforms are located in the northeastern part of the Blackfoot watershed; however, a few unstable landforms are identified throughout the analysis area. Segments of the Lanes Creek Road #50139, and to a lesser extent the Sulphur Canyon Road #50126, are located on soils identified as potentially unstable.

AQ (4): How and where do road-stream crossings influence local stream channels and water quality?

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Road-stream crossings have the potential to directly and indirectly affect local stream channels and water quality. Poorly designed crossings directly affect hydrologic function when they constrict the channel, when they are misaligned relative to the natural stream channel, or when improperly sized culverts are installed.

Road-stream crossings also act to connect disturbed areas where water and sediment can be delivered directly to the stream channel. Connected disturbed areas are defined as "high runoff areas like roads … that discharge surface runoff into a stream or lake … connected disturbed areas are the main source of damage in all regions" (FSH 2509.25-99-2).

Increasing peak flows through a modified channel network (See AQ1) affects the energy available for inchannel processes, which can affect stream stability and sedimentation. The biggest water quality concern associated with the road system is sediment delivered to the stream system through connected disturbed areas.

The following road-stream crossings influence local stream channels and water quality and are recommended sites for future restoration or improvement: the Diamond Creek road (FDR 102) at the bridge near the campground is undersized, Diamond Creek road (FDR 102) where it crosses Stewart Creek culvert size and elevation need to be evaluated-stream is entrenched in this area, Slug Creek Crossing (FDR 095) at the upper drainage, Spur road (FDR 200) culverts off the Slug Creek road need to be evaluated for improvement to hydrologic function and fish passage, and Browns Canyon Crossing (FDR 107) consider replacing to improve hydrologic function and beaver plugging.

AQ (5): How and where does the road system create potential for pollutants, such as chemical spills, oils, de-icing salts, or herbicides to enter surface waters?

The biggest pollutant on the Forest is excess sediment, derived from within-channel erosion and upland erosion reaching stream channels. Other pollutants can include hydrocarbons from petroleum products or any other chemical that may be hauled in a vehicle. Petroleum products can spill or leak from fuel tanks or drip from engine, transmission or chassis seals. Other pollutants can leak or spill from containers, especially if the transport vehicle has an accident.

Anywhere roads run adjacent to or cross streams or floodplains, some potential exists for spilled pollutants to access streams. Poorly cross-drained ditches may transport spilled pollutants to standing or flowing water bodies. Generally, these pollutants are not transported in bulk across the Caribou National Forest except where noted below. Weed control programs use herbicides on the Forest and will create some potential for pollutant contribution in the case of vehicle or equipment accidents. Hauling trucks and other heavy equipment associated with mining, timber harvesting, mining, and road maintenance activities carry

sufficient fuel and oil to cause localized water quality problems should an accident occur. This is minimized by stipulations in mining plans and timber sale contracts that specify fuel storage and loading practices and other aspects of the operations. Forest road maintenance crews are also trained to use safe areas and procedures for refueling heavy equipment. The potential for pollutant associated with log and mine ore haulers would be highest on those key roads used for mining and timber harvest access.

The application of magnesium or calcium chloride for road dust abatement may affect water quality, but past studies have found that the effects can only be detected after many years of repeated year-round application (Heffner, 1997). Typically, magnesium or calcium chloride is only applied in limited quantities on high use roads or in campgrounds to reduce dust and washboarding for safety, resource and maintenance reasons.

Magnesium and calcium chloride may be used during the winter months as de-icing agents, although this is not a common practice on forest roads that run through the Caribou National Forest. The Blackfoot Narrows Road occasionally receives magnesium chloride treatments for dust control. Part of the reason to add dust control in this section is to reduce fugitive dust from contaminating the adjacent Blackfoot River. It is recommended to evaluate the surfacing or alternative routes of this road to reduce surface erosion, dust control, and/or channel function.

AQ (6): How and where is the road system hydrologically connected to the stream system? How do the connections affect water quality and quantity (such as delivery of sediments, thermal increases, elevated peak flows)?

The road system is hydrologically connected to the stream system where there are connected disturbed areas (See AQ 2 and AQ4). This includes road-stream crossings, as well as areas where roads are adjacent to stream courses and there is an insufficient buffer strip between the road or road drainage structures and the stream system. As discussed in AQ1, the modified channel network can influence peak and base flows. As discussed in AQ4, water quality can be degraded where connected disturbed areas increase the delivery of sediment and other pollutants to the stream system. Connected disturbed areas with highly erodible or unstable soils are the most likely to deliver sediment to the stream system.

AQ4 discusses stream crossing recommendation. In addition it is recommended to move (FDR126) road out of the riparian area on Johnson Creek and FDR 297 away from Trail Creek as was identified in the Aspen Range Timber Sale EA. Slug Creek FDR 095 contributes sediment directly into the stream and should be evaluated drainage improvement, relocation, and/or graveling this is also near the Slug Creek culvert improvements listed in AQ4.

AQ (7): What downstream beneficial uses of water exist in the area? What changes in uses and demand are expected over time? How are they affected or put at risk by road-derived pollutants?

Downstream beneficial uses of water in the area are outlined in State water quality rules and regulations. Standards contained within these rules and regulations are specifically designed to support designated beneficial uses, which include agriculture, protection and propagation of fish and wildlife, industry, human consumption, recreation, and scenic value.

Section 303(d) of the Federal Clean Water Act addresses designated beneficial uses. All States are required to identify waters within their boundaries that do not support beneficial uses, develop Total Maximum Daily Loads (TMDLs) for all identified pollutants, and develop Implementation Plans to control identified pollutants. There are currently fifty streams in and adjacent to the Forest that have been identified by the State of Idaho as being "water quality limited." These streams are identified in the State of Idaho's 303(d) list that is submitted at two-year intervals to the Environmental Protection Agency (EPA). The next list is due in 2008, and some streams or stream segments identified on the 2002 list could be deleted and others added.

All streams generally flow into reservoirs that are used for irrigation, recreation, and fish habitat. Many of these roads run adjacent to stronghold streams for Yellowstone cutthroat trout and affects from the location or condition of the road could affect the quality of these stronghold areas.

AQ (8): How and where does the road system affect wetlands.

Roads can affect wetlands directly by encroachment, and indirectly by altering hydrologic surface and subsurface flow paths. A majority of wetlands within the analysis area are associated with streams and adjacent riparian areas. These are generally riverine or palustrine in nature and can include low floodplains where groundwater is at or near the surface for most of the year, or beaver ponds where water is backed up and floods adjacent lands. Encroachment results in a loss of wetland area directly proportional to the area disturbed by the road. Alteration of the hydrologic flow paths can affect wetland function with the effects extending beyond the area directly affected by the road. The Watershed Conservation Practices Handbook (FSH 2509.25) provides measures to protect wetlands and riparian areas. The following roads are examples of road that could affect wetlands Diamond Creek Road from Campbell Canyon up to Stewart Creek, the Blackfoot Narrows where wetlands existed prior to the present constructed road through this area. Dispersed camping and user created road/trails in the Trail Creek "Warming Hut" area off of FDR 124 and 902 such be addressed to reduce impacts to riparian area and wetlands.

AQ (9): How does the road system alter physical channel dynamics, including isolation of flood plains; constraints on channel migration; and the movement of large wood, fine organic matter, and sediment?

Roads can directly affect physical channel dynamics when roads encroach on floodplains, situated within AIZs that could restrict channel migration. Floodplains help dissipate excess energy during high flows and recharge soil moisture and groundwater. Floodplain function is compromised when roads encroach on or isolate floodplains. This can increase peak flows. This can alter channel flow dynamics. If, for example, water is concentrated in a smaller area, rather than being spread out over a floodplain, velocities may increase, which can increase in-channel erosion potentials, which, in turn, can affect channel stability. Restricting channel migration can cause channel straightening which increases the stream energy available for channel erosion. This can also result in channel instability. Altering channel pattern affects a stream's ability to transport materials, including wood and sediment. Once a channel adjustment process begins, it may be decades before the channel completes an evolutionary process to a new state that is in equilibrium with the new setting. When the amount of sediment in the stream substrate increases, the food supply and reproductive success of trout is generally reduced. Sediment delivery is minimized at stream crossings if there are properly installed bridges, culverts, or hardened fords. Roads with a gravel surface deliver less sediment to streams than do unimproved roads. Roads within AIZs may also affect fish habitat by isolating floodplains; restricting lateral channel migration; and reducing riparian vegetation, shade, and the input of wood and other organic matter.

Most roads in the analysis area extend directly up stream valleys. When roads encroach upon streams, they can decrease floodplain capacity, increasing the energy of flood events. They can decrease the ability of streams to reach their potential sinuosity, further increasing stream energy. Riparian roads can decrease wood and fine organic delivery to the stream through direct elimination by the mere presence of the right-of-way and the maintenance of roads (cutting fallen trees in the right-of-way, decreasing their value as instream wood). The presence of roads near streams can deliver sediment to the stream from their surfaces or associated erosion. In particular, FS Road 50139 encroaches upon Lanes Creek and FS Road 50126 encroaches upon Johnson Creek, affecting sediment loads and riparian vegetation of those streams. Although the undersized culvert was replaced at Stewart Canyon, there is still the need to repair the erosion it caused downstream of its location.

The Blackfoot Narrows Road encroaches upon the Blackfoot River through the narrows. This location has occasionally been treated with a magnesium chloride solution, but may not have been treated the last couple of years due to a lack of funding. The majority of sediment delivered to the river at this location comes in the form of dust. The associated impacts to fish habitat is likely less than the road-related sediment delivered to smaller streams in the watershed because trout reproduction is likely more directly impacted in these streams that are smaller

than the Blackfoot River, likely have more reproduction occurring downstream, and are less able to mobilize sediments.

AQ (10): How and where does the road system restrict the migration and movement of aquatic organisms? What aquatic species are affected and to what extent

Most often, the migration and movement of aquatic organisms can be affected by roads at their crossings of streams. When road crossings consist of culverts, aquatic organisms may not be able to migrate upstream, particularly if the culvert is under-capacity or perched. Aquatic species that could be affected by insufficient culverts include native Yellowstone cutthroat trout, mottled sculpin, aquatic macroinvertebrates, and amphibians. Few of the stream crossings surveyed during the 2005 Aquatic Organism Passage Survey were identified as barriers to upstream migration of aquatic organisms. The one full barrier that was identified (South Stewart Canyon) has been replaced with a passable culvert. During this watershed analysis process the crossing of FS Road 50589 of Slug Creek has been identified as a potential barrier to upstream-migrating aquatic species.

AQ (11): How does the road system affect shading, litter-fall, and riparian plant communities?

When roads are located in riparian areas, they can affect riparian plant communities and their benefits to the stream (such as shading and litter-fall) through displacement of riparian vegetation with road or shoulder surface. These effects may be evident where roads encroach upon streams, as discussed in AQ(9).

AQ (12): How and where does the road system contribute to fishing, poaching, or direct habitat loss for at-risk aquatic species?

The road system increases access that can provide opportunities for fishing and may contribute to poaching. Road placements can result in a direct loss in habitat when they are located in riparian zones.

AQ (13): How and where does the road system facilitate the introduction of non-native aquatic species?

The road system increases the accessibility to streams for the introduction of nonnative aquatic species by humans. This risk is greatest where roads cross or encroach upon streams.

AQ (14): To what extent does the road system overlap with areas of exceptionally high aquatic diversity or productivity, or areas containing rare or unique aquatic species or species of interest?

Native Yellowstone cutthroat trout populations still exist in much of the upper Blackfoot River system. Some of the tributaries that provide the most valuable habitat in the watershed have no roads extending up them, such as Timothy and Bacon creeks. In the Blackfoot River system, it appears the majority of the road-related impacts are associated with crossings as opposed to encroachment.

Terrestrial Wildlife (TW)

TW (1): What are the direct effects of the road system on terrestrial species habitat?

The road prism removes local vegetative communities. The type and width of the road and amount of traffic can fragment terrestrial habitat for many smaller ground dwelling species. The single lane or gravel surface roads are usually not an effective barrier to movement. The extra wide haul roads have the potential to have an impact. (Displacement and road kill is discussed below.) This loss of usable habitat due to displacement of animals by activities on roads is a very low percentage and not impacting wildlife needs.

TW (2): How does the road system facilitate human activities that affect habitat?

Vehicle access onto the National Forest increasing the opportunities for humans to remove, destroy or change wildlife habitat. Roads facilitate logging, mining, recreation opportunities, and the construction of developments (guard stations, corrals, and camp grounds). Wildfires are easier to control and prescribed burning may be easier to implement. Roads increase the probability of human caused wildfires and opportunities to obtain firewood, removing snags. Campers remove down woody debris for campfires and trample the vegetation in localized areas. The probability of introducing exotic plant and animal species also increases.

TW (3): How does the road system affect legal and illegal human activities (including trapping, hunting, poaching, harassment, road kill, or illegal kill levels)? What are the effects on wildlife species?

Roads increase human interactions with wildlife. Although these interactions are usually to the detriment of wildlife, roads also facilitate wildlife viewing opportunities. Access increases vulnerability to mortality and increases disturbance and displacement from suitable habitats; specifically big-game. Road kills are more common when vehicle speeds are faster and wildlife are slower (amphibians, reptiles, and small mammals) or really bad timing. Roads also provide winter snowmobile routes, which can increase disturbance and displacement and possible mortality of wintering wildlife.

Idaho Department of Fish and Game hunting and trapping regulations are determined by estimated game populations. However, hunting unit boundaries, season lengths, and tag numbers are determined is part by open roads and motorized trails. Motorized access not only increases wildlife-killing opportunities but law enforcement capabilities.

TW (4): How does the road system directly affect unique communities of special features in the area?

Unique communities of special features in the area are probably limited to wetland and riparian habitats along the Blackfoot River and its larger tributaries. Roads can remove habitat and increase human disturbance.

Economics (EC)

EC (1): How does the road system affect the agency's direct costs and revenues? What, if any, changes in the road system will increase net revenue to the agency by reducing cost, increasing revenue, or both?

The agency derives direct revenue from grazing, timber harvest, firewood permits, Christmas tree permits and special use permits that are all accessible by the present road system.

The road system decreases cost of fire suppression by increasing access to remote areas or by not decommissioning roads.
The road system decreases the cost to administer range allotments by providing access.

EC (2): How does the road system affect priced and non-priced consequences included in economic efficiency analysis used to assess net benefits to society?

The economics was addressed in the new Forest Travel Management Plan

EC (3): How does the road system affect the distribution of benefits and costs among affected people?

The road system is open and free to everyone (benefits). The cost of the system is borne through a combination of county, state and federal taxes. Many people, who do not directly benefit from the road system, contribute to the cost of it. Timber sales and mineral development have the potential to improve roads by graveling, improving drainage and maintenance to a road system.

Timber management (TM)

TM (1): How does road spacing and location affect logging system feasibility?

The present road system provides primary access to the watershed. Collector and local roads have been constructed to access much of the timber base in the watershed. Additional local road access may be required to access currently unroaded areas. If there are additional transportation system needs, new construction (system or temporary roads), re-construction, and re-location to access treatment areas, if permitted by forest plan, will be evaluated.

TM (2): How does the road system affect managing the suitable timber base and other lands?

Road systems provide for faster and less expensive access to national forest lands for resource inventory data collection, monitoring activities and conditions, law enforcement, fire suppression, watershed restoration, site preparation and tree planting, treating noxious weeds, tree thinning, and numerous other forest management activities.

TM (3): How does the road system affect access to timber stands needing silvicultural treatment?

As noted above, new or improved roads may be required to access timber stands needing silvicultural treatments. Much of the timber base has existing roads access. Several road relocations and improvements were identified as part of the Aspen Range Timber EA. Some of these improvements would also benefit other resource needs.

Minerals management (MM)

MM (1): How does the road system affect access to locatable, leasable, and salable minerals?

Minerals exploration, development and extraction are generally dependant on the availability of reasonable road access. Access needs in the Blackfoot River drainage vary greatly depending on what type of minerals activity is being considered.

Locatable Minerals. Locatable minerals are regulated under the 1872 mining law and include metallic minerals (gold, silver, copper, lead, zinc, etc.), some industrial minerals (perlite, silica, gypsum, etc.), most gem stones, and uncommon varieties of stone that have special or unique properties (very pure limestone, etc.).

There is a general lack of known locatable minerals in the Blackfoot River watershed, and the geology is not conducive for the formation or discovery of such deposits. The only known exception to this is the presence of limestone that may be pure enough to be considered locatable. However, similar limestone

deposits are relatively widespread in the general area and sources outside the watershed may be more accessible, if the demand for them is present.

Because of a lack of discovered locatable minerals within the Blackfoot River watershed (with the possible exception of very pure limestone), there would be no foreseeable needs for access for this group of minerals.

Saleable Minerals. Saleable minerals include common varieties of sand, gravel, stone, etc. These types of materials found in the Blackfoot River watershed generally consist of sand/gravel used for road construction/surfacing, and possibly boulders or rock for landscaping stone. A few sources of material for road surfacing are present in the watershed. These sources would probably be sufficient for foreseeable needs (with the possible exception of needs for phosphate development) unless major road construction/reconstruction occurs. If new sources are necessary, additional access may be required if sources cannot be located along existing roads.

There is some use of local stone for landscaping purposes. The amount of material available outside the watershed should be adequate to supply local needs. No new transportation system is foreseeable for this commodity.

Leasable Minerals. Leasable minerals include such commodities as oil, natural gas, coal, and phosphate. There is no known coal of economic interest in the watershed.

Although a few exploratory oil/gas wells have been drilled within or near the watershed, there is no production of oil or gas from southeast Idaho or adjacent parts of Wyoming or Utah. The Forest is currently completing an EIS for oil/gas leasing on the Forest. The potential for the discovery of oil/gas in the watershed is moderate, but the development potential is probably low. Although four wells are anticipated to be drilled during the next 15 years somewhere on the Forest, the access needs for oil/gas activity in the watershed cannot be determined at this time. It is conceivable that some access needs may be necessary in the future.

The other known leasable mineral present in the watershed is phosphate. There are currently more than 50 phosphate leases within the Upper Blackfoot River Watershed. The portion of the known phosphate leases that represent reasonably foreseeable phosphate mines is not known because ownership of a lease does not guarantee ore recovery from that lease. However, it is probable that some additional access needs will be necessary in the future.

For new phosphate mineral development, such as in the Dairy Syncline area, additional access will be required.

Range management (RM)

RM (1): How does the road system affect access to range allotments?

The roads in this analysis area allow for easier administrative management of range allotments, including transportation of livestock, herding, salting, range improvements, controlling noxious weeds and a variety of range maintenance responsibilities (i.e. fencing, water developments).

Water production (WP)

WP (1): How does the road system affect access, constructing, maintaining, monitoring , and operating water diversions, impoundments, and distribution canals or pipes?

The existing road system is sufficient to access existing water diversions, impoundments, and distribution canals and pipes. The larger impoundments and diversions tend to be accessed by the arterial and collector roads. The road system in the analysis area does not affect water production and is not used for the production of water.

WP (2): How does road development and use affect the water quality in municipal watersheds?

No municipal watershed or source water protection zones are located within the analysis area.

Numerous watersheds elsewhere on the Forest provide domestic use water to individuals and municipalities. The States, through the Federal Safe Drinking water Act, are supposed to identify and protect Source Water Protection Areas.

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WP (3): How does the road system affect access to hydroelectric power generation?

The road system is not used for access to hydropower facilities.

Special forest products (SP)

SP (1): How does the road system affect access for collecting special forest products?

The collection of special forest products depends mainly on existing forest roads. Other than firewood gathering, which occurs extensively along roads, this analysis area does not offer many special forest products that are in demand.

Special-Use Permits (SU)

SU (1): How does the road system affect managing special-use permit sites (concessionaires, communications sites, utility corridors, and so on)?

General Public Transportation (GT)

GT (1): How does the road system connect to public roads and provide primary access to communities?

Forest roads, particularly forest arterial routes, provide access across and through the forest connecting to county and state roads. The arterial road system connects to public road systems to the north, east, south and west. To the north, the Upper Valley Road, #50095, and Chippy Creek Road, #51203, connect to State Highway 34. To the east, the Smokey Canyon/Timber Creek Road, #50110, connects to county roads and Afton, Wyoming. To the south, the Slug Creek Road, #51095 connects to the Georgetown Canyon Road and the city of Georgetown. To the west, the Wood Canyon Road, #50124, and Trail Canyon Road, #50125, provide access to Hwy 34 and Soda Springs.

GT (2): How does the road system connect large blocks of land in other ownership to public roads (ad hoc communities, subdivisions, in-holdings and so on)?

There are no large blocks of private inholdings in the analysis area. There are however, private, state, and BLM lands located within the analysis area, outside of the forest boundary. Access is provided by the roads noted above in GT (1).

GT (3) How does the road system affect managing roads with shared ownership or with limited jurisdiction? (RS 2477, cost-share, Prescriptive rights, FLPMA easements, FRTA easements, DOT easements).

An effort was made in the early 1990's to transfer several arterial roads across the forest to Caribou County. These roads include the Blackfoot River Road #50095, the Diamond Creek Road #51102, the Slug Creek Road #51095, the Trail Canyon Road #50124, the Wood Canyon Road #50125, and the Rasmussen Road #50121. Overall, this has had a positive effect on managing and maintaining these roads.

GT (4): How does the road system address the safety of road users?

The objective of roads analysis in the Forest Service is to provide line officers with critical information to develop road systems that are safe and responsive to public needs and desires, are affordable and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions.

Administrative uses (AU)

AU (1): How does the road system affect access needed for research, inventory, and monitoring?

Road access affects research, inventories, and field monitoring. Limited, or no road access, increases both time and costs for field observations. All roads in the analysis area are used for administrative purposes.

AU (2): How does the road system affect investigative of enforcement activities.

Forest Service law-enforcement agents are faced with a growing workload paralleling the growth in forest use. This workload adds to the traditional work related to investigating natural resource thefts and travel management enforcement. Expanded road access, particularly near towns, can add to problems with garbage dumping, vandalism and other criminal activities.

Protection (PT)

PT (1) How does the road system affect fuels management?

The road system does provide access for prescribed burns for decreasing fuels and access for wildfire. Also the roads provide an access for gathering firewood which reduces fuel loading in areas with down and dead standing trees.

PT (2) How does the road system affect the capacity of the Forest Service and cooperators to suppress wildfires?

Good access is critical to fire fighters; the road system does provide access for fire suppression, thus facilitating fire suppression efforts. The analysis area has numerous roads that need to be maintained on a regular basis to accommodate fire suppression if needed. Also some road improvements would help the majority of the roads in the analysis area if a need for fire equipment were to be used on the roads.

PT (3) How does the road system affect risk to firefighters and to public safety?

The location of narrow roads in canyons can endanger fire fighters because of poor sight distance, dust, smoke, and non-fire fighting personal on the roads and an increase of traffic on the roads. This is especially true with the road section that runs through the Blackfoot Narrows.

PT (4) How does the road system contribute to airborne dust emissions resulting in reduced visibility and human health concerns?

Most of the roads in this analysis area are constructed with native material, which when dried out causes a fair amount of dust from vehicles using the road, and for

a short period of time dust will remain in the air making visibility difficult and those with respiratory problems may be bothered for several minutes until the air clears again.

In the analysis area there is limited dust abatement used on the roads. The only dust abatement that has occurred in recent time is on the section of road that runs through the Blackfoot Narrows.

With the low volume of traffic using these roads, we feel that there is an extremely low risk to users, with the exception of the sections of the Blackfoot river road through the narrows and the Diamond Creek road, where some travelers drive it at speeds faster than recommended

Un-roaded Recreation (UR)

UR (1) Is there now or will there be in the future excess supply or excess demand for un-roaded recreation opportunities?

Currently there is no shortage of un-roaded recreational opportunities within the analysis area. Prescription emphasis within these areas are on deer/elk winter range, non-motorized recreation and wildlife security, semi-primitive recreation, range management, and special use recreation. The 2005 Revised Caribou Travel Plan EIS addressed the this issue in determining which roads would remain open.

UR (2) Is developing new roads into un-roaded areas, decommissioning of existing roads, or changing the maintenance of existing roads causing substantial changes in the quantity, quality, or type of un-roaded recreation opportunities?

The 2005 Revised Caribou Travel Plan addressed this issue. The decisions of the Revised Travel Plan are being implemented. This will include closing several roads including user created roads in previously open areas.

UR (3) What are the effects of noise and other disturbances caused by developing, using, and maintaining roads on the quantity, quality, and type of un-roaded recreation opportunities?

Some minor disturbance and annoyance may occur through these activities but they are short in duration and do not cause long-term impacts to affected recreational users.

UR (4) Who participates' in un-roaded recreation in the area affected by construction, maintaining and decommissioning roads?

Equestrians, dirt bike users, ATV users, hikers, mine claim permittees and hunters participate in un-roaded recreation. Those that participate would feel some affect.

UR (5) What are these participants' attachments to the area, how strong is their feelings, and is alternative opportunities and locations available?

This depends entirely upon the user group. For example, hikers like a more serene, peaceful, solitary recreational experience than the equestrian user. Within the motorized community there is a wide range. Dirt bike users tend to be more solitary while the snowmobile user tends to be more social/group oriented. The ATV user is a little of both.

Road- related recreation (RR)

RR (1) Is there now or will there be in the future excess supply or excess demand for roaded recreation opportunities?

The area has a good balance of roaded and unroaded areas within the watershed. The 2005 Revised Caribou Travel Plan EIS addressed the this issue in determining which roads would remain open.

RR (2) Is developing new roads into un-roaded areas, decommissioning existing roads, or changing maintenance of existing roads causing significant changes in the quantity, quality, or type of roaded recreation opportunities?

The 2005 Revised Caribou Travel Plan closed all of the forest to cross country motorized travel. This included closing several user created roads or converting them to motorized trails. No additional changes to the open road system are planned.

RR (3) What are the adverse effects of noise and other disturbances caused by constructing, using, and maintaining roads on the quantity, quality, or type of roaded recreation opportunities?

There may be some minor annoyance to the non-motorized recreation user but this annoyance will be of short duration with no long-term effects.

RR (4) Who participates in roaded recreation in the areas affected by road constructing, maintaining, or decommissioning?

Hunters, ATV and dirt bike users, campers, mountain bike users, and four-wheel drive enthusiasts participate in roaded recreation.

RR 5) What are these participants' attachments to the area, how strong is their feelings, and is alternative opportunities and locations available?

Forest users have feelings of strong historical and traditional use for specific areas. Some users have strong feelings for cross-country motorized travel and

others want areas closed to motorized travel-two conflicting uses. There is a reluctance to use alternative opportunities and locations because of these feelings.

Passive-Use Value (PV)

PV (1) Do areas planned for road entry, closure, or decommissioning have unique physical or biological characteristics, such as unique natural features and threatened or endangered species?

No

PV (2) Do areas planned for road construction, closure, or decommissioning have unique cultural, traditional, symbolic, spiritual, or religious significance?

No.

PV (3) What , if any, groups of people (ethnic groups, subcultures, and so on) hold cultural, symbolic, spiritual, sacred, traditional, for religious values for un-roaded areas planned for road entry or road closure?

The Shoshone-Bannock Tribes have ancestral treaty rights to uses of USFS lands within the watershed. A tribe's legal status is derived through legal agreements with the U.S. Government, congressional and executive branch recognition of tribes and federal court interpretation of Indian Law and legal documents, e.g. treaties. The Federal agencies have trust obligations to address effects to tribal interests, rights and property on reservations, public lands and are required to disclose know effects through the NEPA process. There may be natural resources that exist here which are utilized by the tribe for religious, cultural and traditional purposes but are unidentified for this analysis.

PV (4) Will road construction, closure, or decommissioning significantly affect passive-use value?

Yes, to some extent it will affect passive use values no matter what is done. To change from the present condition it will have some affect to the land and to the forest users. Existence value is value or benefit people receive from the existence of a specific place, condition, or thing independent form others. Each person will have there own value of the land independent from one another and how they would like to see it managed.

Social issues (SI)

SI (1) What are people's perceived needs and values for roads? How does road management affect people's dependence on, need for, and desire for roads?

Roads in this area have a great value, people depend on them for recreation, livestock management, timber management, and mineral development as well as general management of the National Forest Lands.
Many local residence depend on the road system for commodity use such as firewood gathering, hunting of big game animals to supplement family food supplies, livestock management operations, and providing saw timber to industry and for personal use. At one time some of the road system was used for mining activities as well as serving several mining towns and other businesses in the area.

SI (2) What are people perceived needs and values for access? How does road management affect people's dependence on, need for, and desire for access?

Access is the permission or ability to enter an area or reach a destination. The road trail system in the analysis area provides access to the entire area for all type of users. Some people perceive roads to be the means to access forest resources, on which they may be economically and culturally dependent. Some perceive roads to be a deterrent to healthy wildlife habitat, or unacceptable contribution to stream sedimentation. Others want to see roads maintained to a high standard. Each has a different view of how they would like to see a road system managed to match their individual lifestyle.

SI (3) How does the road system affect access to paleontological, archaeological, and historical sites?

There are no paleontological sites identified for this analysis area although the United States Government has a unique relationship with federally recognized American Indian tribes and any activities that may affect a tribes treaty rights, needs and concerns will be considered in road planning.

SI (4) How does the road system affect cultural and traditional uses (such as plant gathering, and access to traditional and cultural sites) and American Indian treaty rights.

The present road system provides access for cultural and traditional uses. This issue was addressed in the 2005 Revised Caribou Travel Plan.

SI (5) How are roads that are historic sites affected by road management?

Roads in this area could have assertions made on them by Caribou County as RS 2477 (Revised Statute), the Forest will not make any road management decisions to decommission roads that have an RS 2477 assertion until the claim has been resolved in court at which time the roads will be turned over to the public road agency or the forest will make a management decision on the states of the roads.

SI (6) How is community social and economic health affected by road management (for example, lifestyles, businesses, tourism industry, infrastructure maintenance)?

Current access needs to be maintained for timber, range, and minerals management and fire protection. Tourism in this area is primarily hunting/fishing and recreational/visitation along forest roads.

SI (7) What is the perceived social and economic dependency of a community on an un-roaded area versus the value of that un-roaded area for its intrinsic existence and symbolic values?

The road system is used by all groups of people with different values of life. constructing additional roads/motorized trails within the analysis area would affect different user groups.

SI (8) How does road management affect wilderness attributes, including natural integrity, natural appearance, opportunities for solitude, and opportunities for primitive recreation?

The opportunity for primitive recreation will remain the same.

SI (9) What are the traditional uses of animal and plants species within the area of analysis?

The entire analysis area provides year round habitat for a variety of species ranging from sagebrush valleys to high mountain peaks. Livestock have traditionally grazed the analysis area. Big game, small game and other animals have traditionally utilized the plants in the area for food and shelter. Tree species in the area are used by wildlife. Local residents have used trees as saw timber, firewood and other products.

Animals: big game, sage grouse, etc have been traditionally used as food. Hunting and trapping have a long history from uses by Native Americans, fur trappers, and miners.

Plants: livestock grazing, berry picking, Christmas Trees, saw log timber, other forest products, and firewood gathering.

SI (10) How does road management affect people's sense of place?

Some people have been using this analysis area for decades and consider it a special place. These people are ranchers, outfitters, hunters, and private forest users. Each person, or group of people, view the forest in their own way. To some it may be a place to make a living, a place to relax and escape, a religious experience, or a place to pursue hobbies. Changes in road management can affect access to special places and change the biophysical setting, all of which will affect the experience people have, either for the positive or the negative.

Civil Rights and Environmental Justice (CR)

CR (1) How does the road system, or its management, affect certain groups of people (minority, ethnic, cultural, racial, disabled, and low-income groups)?

The road system provides an opportunity for all groups to have access onto public lands. It provides an opportunity for people site see, explore other outdoor activities, to supplement their food and fuel bills by gathering firewood and hunting big game and fishing. The roads and trails in the analysis area provide a variety of access for all visitors that use the National Forest.

People are affected by changes in road management and the access afforded by roads. Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations, order Federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…" Department of Agriculture agencies are required, per the Secretary of Agriculture's 1978 decision, to identify and address the civil right implications of proposed agency actions in their management decisions.

Step 5. Describing Opportunities and Setting Priorities

-Description of the problems and risks posed by the current road system.

- Complete implementation and improve enforcement of the 2005 Revised Caribou NF Travel Plan. This includes an inventory of what has been completed and what needs to be accomplished, then closing roads and trails that were identified to be closed. Also includes signing the open road and trail system and educating the public.

- Correct or improve road/stream crossings to allow for aquatic organism passage. Many of these crossings were identified in the 2005 Aquatic Organism Passage Survey performed by the forest.

- Where practical, relocate roads away from streams and riparian areas to reduce impacts such as sedimentation to these streams from the road. If relocation is impractical, improve road drainage to reduce impacts.

- Identify any new access needs for timber management or mineral exploration and development.

- Identify any ROW needs across private or other state and federal lands to provide access to the forest for forest management activities including recreation.

OPPORTUNITIES TO ADDRESS PROBLEMS OR CONCERNS

Aquatic Passage and Steam Function

1. Replace the culvert at the FS Road 589 crossing of Slug Creek with a bottomless structure that has sufficient capacity.

2. Although the undersized, perched culvert at Stewart Creek was fixed, there is still some need for stabilizing the stream downstream of the crossing that had been impacted by the past culvert.

3. Replace culvert on the Flat Valley Road #50107 where it crosses Brown's Canyon Creek.

4. Assess the need to replace the culvert in the Slug Creek Road #50095 where it crosses Slug Creek.

5. Replace the bridge on the Diamond Creek Road #50102 near the Diamond Creek Campground to reduce stream restriction and improve stream function.

6. Replace the undersized culvert on the Trail Creek Road #50125 where it crosses Trail Creek below the forest boundary.

Sediment reduction projects

1. Relocate sections of the Sulphur Canyon (Johnson Creek) Road #50126 away from Johnson Creek. (Aspen Range TS)

2. The Lanes Creek Road #50139 encroaches upon Lanes Creek affecting sediment loads and riparian vegetation. Opportunities to relocate segments of this road should be investigated.

3. Improve drainage on Flat Valley Road #50107 and dispersed road along Brown's Canyon Creek. There are dispersed campsites encroaching on Brown Canyon Creek in the middle reach. The acceptable limits to motorized vehicles need to be defined at these sites. Determine if unstable stream banks described in 1984 still need stabilization and, if so, stabilize.

4. Relocate segments of the Archery Road #50297 away from Trail Creek to decrease sedimentation.

5. Assess the impacts of dispersed camping in the areas east of the Trail Canyon Warming Shelter on the riparian areas along Trail Creek.

6. Review campground in Mill Creek drainage to determine if there is a need to move the campsites away from the stream. Survey upper Mill Creek for phosphate mining-related impacts that need to be addressed and take action.

7. Reduce the impacts of dust and surface erosion on the Blackfoot River Road #51095 through the Blackfoot Narrows by applying a dust abatement treatment such as magnesium chloride. Also consider paving this road segment.

8. Assess impacts of dispersed camping along the Diamond Creek Road #50102.

Timber Access

1. New or improved access will be needed for the Aspen Range TS. This has been addressed in the Aspen Range EA and the Aspen Range Roads Analysis.

Mineral Access

1. New access may be needed for exploration activities for the Dairy Syncline Lease.

Forest Access

1. Resolve ROW access across private land on the Dave's Creek Road.

2. Acquire ROW access across private lands for the Lane's Creek Road.

3. Acquire FS ROW across state and private lands on the Johnson Creek Road 50126.

Road Maintenance

1. Replace and extend the aggregate surfacing on the Flat Valley Road #50107.

2. Add aggregate surfacing to the Timber Creek Road #50110.

Step 6. Reporting

-Reports including maps, analysis, and text documentation of the roads analysis.
See the project folder documentation for the Caribou and Targhee National Forest Roads Analysis for this Analysis Area.

-Maps that show the data and information used in the analysis, and the opportunities identified during the analysis.
See the project folder documentation for the Roads Analysis for this Analysis Area.