

2.8 Transportation and Utility Rights-of-Way

2.8.1 Key Issues

The key transportation and utility ROW issues in the PRB study area include:

- Highway capacity and safety issues from development-related traffic changes;
- Railroad capacity and safety issues related to potential increases in coal production;
- Utility capacity requirements related to increased development; and
- Potential utility ROW/easement requirements and related conflicts with other land uses or transportation corridors.

2.8.2 Study Area

The study area for transportation and utility ROWs includes all or portions of Sheridan, Johnson, Campbell, and Converse counties (see **Figure 1-1**). It includes most of the area administered by the BLM Buffalo Field Office, a portion of the area administered by the BLM Casper Field Office, and a portion of the TBNG, which is administered by the FS (see **Figure 1-2**). State and private lands also are included in the study area (see **Figure 1-3**).

2.8.3 Current Conditions

2.8.3.1 Transportation

Highways and Roads

Consistent with the low population density in the Wyoming PRB study area, the major road network is quite sparse. In the approximately 120-mile by 140-mile area, there are only two major north-south highways, and one major route with several lesser two-lane primary highways running east and west (see **Figure 1-1**). I-25 runs north and south along the west side of the Wyoming PRB study area, intersecting I-90 at Buffalo. I-90 continues northwesterly through Sheridan and on to Billings, Montana, and easterly through Gillette, across northeast Wyoming, and on to Rapid City, South Dakota. South of Buffalo, I-25 runs through Casper, Douglas, Wheatland, and Cheyenne and continues on through Colorado's Front Range cities. The other major north-south highway is SR 59 running through the eastern portion of the Wyoming PRB study area from the Montana state line through Weston, Gillette, and Bill, to Douglas and I-25.

I-90 is the northernmost continuous interstate route across the U.S. from Seattle to Boston. It is the primary east-west route through the Wyoming PRB study area, crossing from the Montana state line through Sheridan, Buffalo, and Gillette and exiting Wyoming into South Dakota. Primary, two-lane east-west highways include U.S. Highways 14 and 16 on a northerly route from Gillette to I-90 at Sheridan (U.S. Highway 14) and Buffalo (U.S. Highway 16), and SR 387 from Reno Junction/Wright to I-25 at Midwest, just outside of the Wyoming PRB study area.

Several short segments of U.S. highways and secondary state roads and numerous county roads also provide local access to public and private lands in the Wyoming PRB study area. In addition, there is a complex network of essentially unimproved, and only minimally maintained, local roads serving the area, some of which are not open to public access without landowner permission.

Traffic volumes on the road network in the Wyoming PRB study area are highly variable. The highest volume counts are found on major roadways in or near the largest communities, particularly Gillette and to a lesser extent Sheridan and Buffalo. In rural areas, the interstate highways (I-90 and I-25) carry the largest traffic volumes, followed by major state highways. Traffic volumes for major roads are presented in **Table 2.8-1**. Current traffic volumes are well within the capacity of major highways in the Wyoming PRB study area, although congestion occurs periodically in the urbanized areas, and a combination of

Table 2.8-1 Annual Average Daily Traffic Counts

County	Route	Location	Annual Average Daily Traffic								
			Counts			Percent Change					
			1998	2003	2008	1998-2003	Average Annual	2003-2008	Average Annual	1998-2008	Average Annual
Campbell	I-90	SR 59 intersection	6,070	7,710	8,150	27.0	4.9	5.7	1.1	34.3	3.0
	I-90	Gillette east urban limits	5,970	7,670	9,880	28.5	5.1	28.8	5.2	65.5	5.2
	I-90	Wyodak intersection	5,660	6,500	8,180	14.8	2.8	25.8	4.7	44.5	3.8
	U.S. Highways 14-16	Rozet intersection	5,100	6,080	7,160	19.2	3.6	17.8	3.3	40.4	3.5
	SR 50	Savageton	500	690	1,400	38.0	6.7	102.9	15.2	180.0	10.8
	SR 59	Wyoming-Montana State line	300	360	480	20.0	3.7	33.3	5.9	60.0	4.8
	SR 59	Gillette south corporate limits	18,690	17,180	19,800	-8.1	-1.7	15.3	2.9	5.9	0.6
	SR 59	Reno Junction (Wright)	2,150	2,790	3,950	29.8	5.3	41.6	7.2	83.7	6.3
	SR 59	Campbell-Converse County line	1,350	1,200	1,660	-11.1	-2.3	38.3	6.7	23.0	2.1
	SR 387	Campbell-Johnson County line	1,110	1,200	1,490	8.1	1.6	24.2	4.4	34.2	3.0
Converse	I-25	Converse-Platte County line	5,500	5,630	6,500	2.4	0.5	15.5	2.9	18.2	1.7
	SR 59	Bill	1,350	1,350	2,040	0.0	0.0	51.1	8.6	51.1	4.2
Johnson	I-90	Junction I-25 (Buffalo tri-level intersection)	3,680	3,900	2,260	6.0	1.2	-42.1	-10.3	-38.6	-4.8
	I-90	Johnson-Campbell County line	5,030	4,440	3,880	-11.7	-2.5	-12.6	-2.7	-22.9	-2.6
	I-25/U.S. Highway 87	Junction Kaycee interchange	2,800	3,030	2,950	8.2	1.6	-2.6	-0.5	5.4	0.5

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			1998	2003	2008	1998-2003	Average Annual	2003-2008	Average Annual	1998-2008	Average Annual
Sheridan	I-90/ U.S. Highway 87	Wyoming-Montana State line	3,710	3,860	3,830	4.0	0.8	-0.8	-0.2	3.2	0.3
	I-90	Sheridan-Johnson County line	5,700	6,250	7,350	9.6	1.9	17.6	3.3	28.9	2.6
	U.S. Highway 14	I-90	2,400	2,270	3,760	-5.4	-1.1	65.6	10.6	56.7	4.6
	U.S. Highways 14-16	Ucross Junction	560	580	1,130	3.6	0.7	94.8	14.3	101.8	7.3
	U.S. Highways 14-16	Sheridan-Campbell County line	180	400	570	122.2	17.3	42.5	7.3	216.7	12.2
	U.S. Highway 16	Johnson-Sheridan County line	260	350	420	34.6	6.1	20.0	3.7	61.5	4.9
	SR 336	Sheridan east corporate limits	4,100	5,500	6,000	34.1	6.1	9.1	1.8	46.3	3.9
	SR 338	Sheridan north urban limits	1,050	1,610	1,290	53.3	8.9	-19.9	-4.3	22.9	2.1

Sources: WYDOT 1999, 2004, 2011a.

terrain and lack of passing lanes on SR 59, combined with traffic levels, creates hazardous conditions on that route.

There is no readily discernible pattern to changes in traffic volumes over the past 10 years, except that the largest numerical increases generally have occurred in or near the larger communities, particularly Gillette (**Table 2.8-1**). However, the rates of change in traffic volumes have varied a great deal throughout the Wyoming PRB study area. The percent changes in traffic volumes were often, but not consistently, larger from 2003 to 2008 than from 1998 to 2003. These changes in traffic growth rates track with the increased population growth rates in Campbell and Sheridan counties in the latter half of the decade, which were driven by increases in coal and CBNG employment (**Table 2.8-1**).

There are numerous improved and unimproved (four-wheel-drive) roads within the Wyoming PRB study area. BLM transportation planning for the study area is discussed in the RMPs for the Buffalo and Casper Field Offices (BLM 1985, 2007). A revision to the Buffalo RMP is in progress (BLM 2012). Based on BLM Manual Section 9113 (BLM 2011), roads on BLM lands are classified into three classes based on the amount of traffic movement: collector, local, and temporary resource roads. Collector roads generally provide access to large land tracts and are the major access routes into development areas with relatively high average daily traffic rates. They usually connect with, or are extensions of, public road systems and are operated to support long-term land uses. Local roads normally serve a smaller area, have lower traffic volumes than collector roads, serve fewer types of traffic, and serve fewer uses. They connect with collectors or public road systems. In mountainous terrain, local roads may be single lane roads with turnouts. "User cost, comfort and travel time are secondary to construction and maintenance cost considerations" (BLM 2011). Resource roads generally are point access or spur roads that connect with local or collector roads and carry low traffic volumes. Use restrictions commonly are applied to prevent user conflicts.

The BLM and FS are responsible for ensuring that new roads on federal lands meet the criteria for design and construction. BLM minimum road design and maintenance requirements are provided in BLM Manual Section 9113 – Roads (BLM 2011).

New roads across non-federal lands would have to comply with the design and maintenance requirements of the State of Wyoming and local jurisdictions, mainly counties. An access permit from the Wyoming Department of Transportation (WYDOT) would be required before a new road connection to a state highway could be constructed. An access permit also would be required before an existing private or ranch road accessing a state highway could be converted to public use.

Many of the existing roads within the Wyoming PRB study area need repairs or improvement. The fiscal year (FY) 2012 Surface Transportation Improvement Program (STIP), prepared by the WYDOT Planning Program, identified 321 projects on state and federal highways for FY 2012 addressing over 709 miles of roadway plus aeronautical and transit projects in the state at a cost of over \$406 million (WYDOT 2011b). Rural interstates, rural major collectors, and rural other principal arterials are the three largest categories of projects identified both in terms of cost and project miles. The federal government is expected to provide nearly 70 percent of the funding for the STIP projects. Major projects scheduled for 2012 construction in the Wyoming PRB study area include resurfacing and partial reconstruction of 5.7 miles of I-90 between Buffalo and Gillette, widening and overlaying 6.6 miles of SR 59 north of Gillette, milling and overlaying 8.3 miles of I-90 in Sheridan, and milling and overlaying 4.8 miles of SR 196 south of Buffalo. The STIP also identifies preliminary engineering activities for projects planned through FY 2017 and beyond.

The four counties in the Wyoming PRB study area have given varying degrees of attention to planning for transportation improvements. Campbell County prepared a Coal Belt Transportation Study in 2010 (KL&J 2010) with the purpose of evaluating current conditions and developing recommendations for existing county roadway network improvements and a long-term plan for new county road corridors within the coal production regions of the county. The study found the county road network to generally be in very good condition with adequate capacity through the 2040 end of the planning period. It also

provided a series of recommendations for road system improvements in 5-year increments through 2020 and beyond. Prior planning efforts discussed in the City of Gillette/Campbell County Comprehensive Planning Program indicated traffic generation and potential traffic conflicts would be considered in evaluating new developments and zoning changes (City of Gillette and Campbell County 1994, 1998). Transportation issues identified in the Converse County Land Use Plan (Converse County 2003) include paving and other improvements required to accommodate traffic from increased residential development and mineral extraction and processing in rural areas where gravel roads previously were suitable. Johnson County has no formal transportation plan. Sheridan County's Comprehensive Plan (Sheridan County 2008) identifies heavy truck corridors on major roadways connecting industrial land uses and energy production areas in adjacent counties. The main goals of the plan are to: 1) have a transportation network coordinated with adjacent land uses (Goal 5.1); 2) have multi-modal streets in urban areas (Goal 5.2); and 3) balance competing demands for rural road use and maintenance (Goal 5.3).

Railroads

Two major rail lines serve the Wyoming PRB study area (**Figure 1-1**). The Burlington Northern and Santa Fe (BNSF) Railroad enters Sheridan County from Montana north of Sheridan, runs southerly through the city, and then southeast through Clearmont to the City of Gillette in Campbell County. From Gillette, the railroad continues southeasterly to South Dakota. A secondary route jointly operated by BNSF and Union Pacific Railroad (UPRR), primarily serving coal trains from PRB mines, generally heads straight south from Gillette into Converse County toward Douglas where it splits into southerly and easterly branches. There is a major marshalling yard and repair facility about 5 miles south of Bill. Several spur lines connect the railroad with existing and historical mines in the area. The typical ROW corridor for the railroad in the Wyoming PRB study area is 400 feet wide (BLM 2012).

Recent coal train traffic averages approximately 160 coal unit trains per day (total outbound and returning): approximately 75 percent on the southern route and 25 percent on the northern route (BNSF 2011; UPRR 2012). The difference has been accommodated by upgrading the line south of Bill, Wyoming, to a triple main track configuration, plus a 20-mile section of 4-main-line tracks in the rugged terrain north of Bill near the Campbell-Converse County line.

Airports

Three public airports exist in the Wyoming PRB study area (AirNav.com 2012). The Gillette-Campbell County Airport, which is located 4 miles northwest of Gillette, has two runways of 7,500 feet and 5,800 feet in length. It has very little commercial traffic. The Gillette very high frequency omnidirectional range (VOR) (radio aid used for navigation) is located at the airport. The Sheridan County Airport and VOR are located southwest of the City of Sheridan. This airport has an 8,300-foot-long runway and a 5,000-foot-long runway. Approximately 14 percent of the airport's traffic is commercial or air taxi service. All development within the Sheridan County designated Airport Zone must comply with the Airport Master Plan Update (Barnard Dunkelberg & Company 1996). The Johnson County Airport and Crazy Woman VOR are located 3 miles northwest of the City of Buffalo. The airport has a single 6,100-foot-long runway and little or no commercial traffic.

Federal Aviation Administration (FAA) regulations require a 2-mile radius safety zone around airports to promote air navigational safety at the airport, and to reduce the potential for safety hazards for property and persons on lands near airports. FAA regulations also require filing a notice (FAA Form 7460-1) for construction projects which extend 200 feet or greater above natural terrain and are located within 5 miles of an airport. Portions of the study area are located within the 2-mile safety zones for these airports.

2.8.3.2 Utility ROWs

A study to locate major energy corridors throughout the western U.S. was conducted by the BLM, FS, and other federal agencies, culminating in both BLM and FS RODs in 2009 (BLM 2009; FS 2009). None of the designated major corridors traverse the Wyoming PRB study area.

Electric Transmission

There are four major electric power line corridors through the Wyoming PRB study area. Two of these run in a generally north-south direction and two run in a generally east-west direction. All four corridors contain 230-kilovolt (kV) power lines. One of the north-south corridors on the western side of the Wyoming PRB study area essentially parallels the I-90 corridor southward from the Montana border, passes around the City of Sheridan on the east, passes the City of Buffalo on the east, and connects with the I-25 corridor, which it parallels through Casper, Douglas, and southward to the Laramie River Station near Wheatland, Wyoming. The other north-south corridor runs along the east side of the Wyoming PRB study area. As part of the regional grid, it connects the Wyodak/Neil Simpson/Wygen Power Plant complex near Gillette to the 750-megawatt Dave Johnston Power Plant operated by PacificCorp near Glenrock, Wyoming. The two 230-kV power lines running east-west include one from near Gillette to Buffalo and, the most recent addition (Hughes Transmission Line) from Rozet, east of Gillette, to Gillette and northwesterly to an existing substation northeast of Sheridan.

Oil and Gas Pipelines

The Wyoming PRB study area is crossed by an extensive network of oil and gas transportation pipelines due to its history of oil and natural gas production. The gas collection network has expanded in recent years as new areas were developed for CBNG production. Among the major crude oil lines are the 18-inch Belle Fourche pipeline running northeast from a junction near Kaycee to the Montana state line near the Campbell-Crook county line, and the 18-inch Rocky Mountain Pipeline System running south to Casper from the same junction northeast of Kaycee.

There are numerous large diameter natural gas pipelines carrying gas from the extensive network of gathering lines to markets outside the basin, mainly to the south. There are a pair of parallel 24-inch Fort Union Gas Gathering System pipelines running nearly straight south from southeast of Gillette to the I-25 corridor west of Douglas. A 24-inch Thunder Creek Gas Services pipeline also runs nearly straight south from gas fields northwest of Gillette to the I-25 corridor between Douglas and Casper. There are two 16-inch pipelines running southerly from the Western Gas Resources processing plant northeast of Wright. One is a Kinder Morgan operating line, which parallels SR 59 into Douglas. The other is a McCulloch Interstate Gas Company line, which runs approximately 15 miles farther west, crossing the I-25 corridor west of Douglas. There are numerous smaller natural gas gathering and oil, natural gas, and products transmission pipelines lacing across the PRB that are operated by more than a dozen pipeline companies.