



Environment

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# Task 1C Report for the Powder River Basin Coal Review Current Social and Economic Conditions

# Executive Summary

## Introduction

Energy development in the Wyoming portion of the Powder River Basin (PRB) has been occurring for well over a century. It has been a primary factor affecting social and economic conditions within the region, although the types and magnitude of effects vary by county, community, and timeframe. The first coal mine in the basin was developed near Glenrock, in Converse County, in 1883 (Foulke et al. 2002). Although coal and other energy resources can be found in many areas of Wyoming, the extensive surface-accessible coal resource located in the PRB sets it apart from most other energy-producing areas of the country. During the 1970s and 1980s, the PRB emerged as a major domestic coal-producing region. The surface coal mines that developed during that period are now mature operations, providing a stable economic and social foundation for the region.

Historically, energy resource development has been volatile, driven by commodity price fluctuations associated with international and domestic energy demand and policies, environmental regulation and litigation, changing technologies, and transportation constraints and improvements. That volatility has resulted in surges and contractions in local population, employment, income, needs for public services and infrastructure, and other dimensions of social and economic conditions in the affected communities.

The growth in domestic energy consumption coupled with the vast energy resource base in the PRB has resulted in a 50-year growth trend in the region without the major economic busts that characterize many other resource booms in the western United States. This period of extended energy development has been accompanied by substantial benefits, including economic growth, employment opportunity, and infrastructure development for local governments in the region and across Wyoming as tax revenues generated by coal and other energy resource production have funded statewide infrastructure development programs. At the same time, periods of rapid growth have stressed communities and their social structures, housing resources, and public infrastructure and service systems.

The emergence of the coal and other energy resource development industries in the PRB has had a long-term cumulative influence on social and economic conditions in the region. In general, Campbell County and the entire PRB region now have a greater capacity to respond to and accommodate growth. The regional coal industry also provides a measure of insulation from dramatic economic and social dislocations.

Over 90 percent of the coal reserves in the PRB are federally owned. The Bureau of Land Management (BLM) is required to complete a National Environmental Policy Act (NEPA) analysis (environmental impact statement [EIS] or environmental assessment [EA]) for each coal lease-by-application (LBA) as part of the leasing process. Initiated in 2003, Phase I of the PRB Coal Review included the description of current conditions (the Task 1 series of reports); identification of reasonably foreseeable development (RFD) and future coal production scenarios for 2010, 2015, and 2020 (Task 2 report); and projected future cumulative impacts (Task 3 report series) in the PRB.

Phase II of the PRB Coal Review was initiated in 2010 to update the analyses in light of the ongoing energy-related development in the PRB, the elapsed time since Phase I, and the BLM's need to maintain current development projections and related future cumulative impact analyses for use in the agency LBA EISs and EAs. Under Phase II, the existing and projected future energy-related development activities have been updated (Task 2), with updates of the air quality, water resources, socioeconomic, and other environmental resources base year analyses (Task 1) and projected cumulative impact analyses (Task 3) to follow. The past and present energy-related development activities for base year 2008 as identified in the Task 2 report (AECOM 2011) provide the basis for the analysis of existing (base year 2008) social and economic conditions as documented in this Task 1C report.

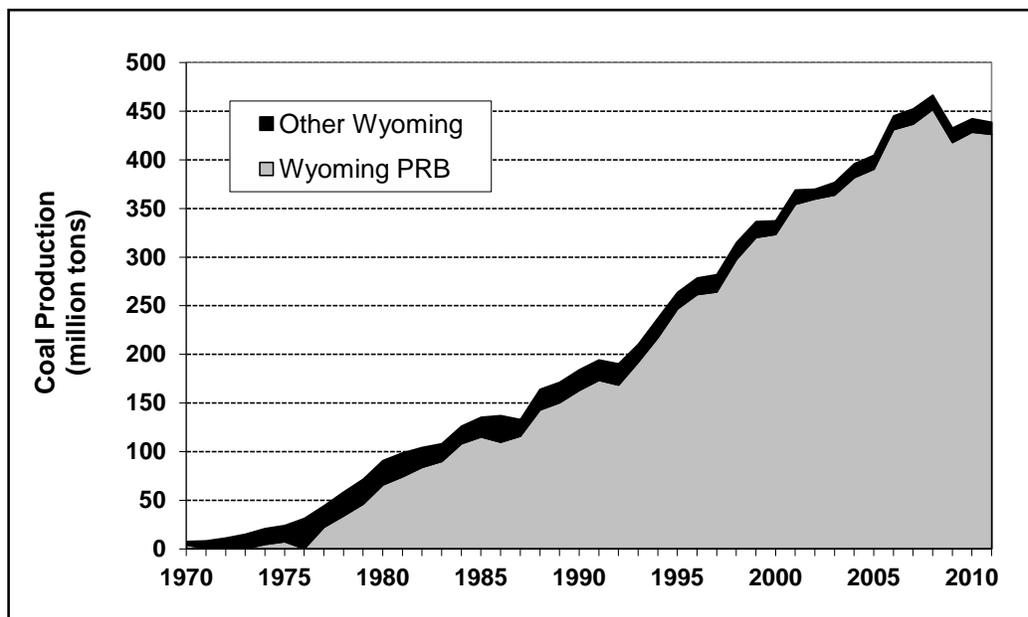
The primary focus of the socioeconomic component of the PRB Coal Review is Campbell County, reflecting the geographic concentration of most of the active coal mines, mining service firms, and production in that county. However, since the coal resource and the associated mining industry is the economic driver for the entire Wyoming PRB, it is necessary to also examine changes and trends in the nearby counties affected most directly by coal mining. Therefore, the six-county study area for the socioeconomic analysis includes Campbell, Converse, Crook, Johnson, Sheridan, and Weston counties.

## Energy Resource Development

Energy resource development and production are major factors affecting social and economic conditions in the six-county study area. Of the energy-related development in the study area, the primary industries affecting social and economic conditions include coal mining, conventional oil and gas development, coal bed natural gas (CBNG) development, and electrical power generation (including wind energy). Changes in these industries since completion of the Phase I report are discussed below.

### Coal Production

Statewide production climbed from 376.6 million tons in 2003 to an all-time high of 466.3 million tons in 2008 (**Figure ES-1**). Approximately 444 million tons of the 2008 production came from mines in the Wyoming PRB (AECOM 2011). Statewide annual production subsequently declined, with 438.4 million tons produced in 2011. The majority of all coal produced in Wyoming originates from the PRB; more specifically, Campbell County.



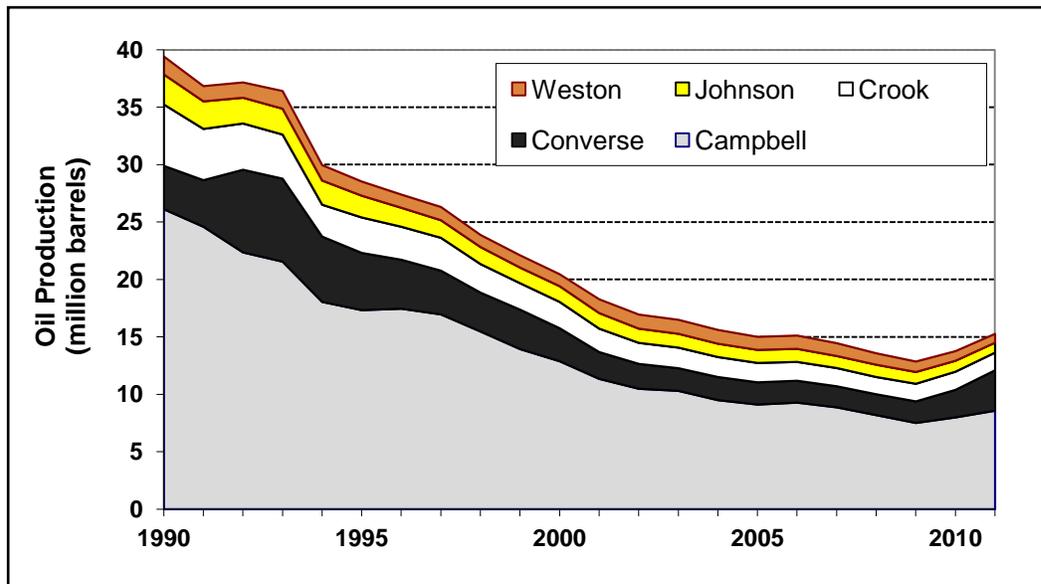
Source: Wyoming State Inspector of Mines 2012.

**Figure ES-1 Historical Coal Production Trends in Wyoming (1970 – 2011)**

### Oil Production

Oil development also has been an important economic driver in the PRB. Historically, the Wyoming PRB (including production from all six counties) was the origin of 30 to 40 percent of all oil produced in Wyoming. From a high of more than 30 million barrels per year, oil production in Campbell County declined to 7.5 million barrels in 2009 (**Figure ES-2**). The pattern of long-term decline occurred across the study area. Stimulated by the effects of higher oil prices on production economics, annual production

of oil increased in Campbell and Converse counties in 2010 and 2011, raising the regional total to 15.3 million barrels in 2011, which represents 23.8 percent of the total statewide production.



Note: Oil production in Sheridan County was less than 0.25 million barrels per year.

Sources: WOGCC 2003, 2012; WTA 2012.

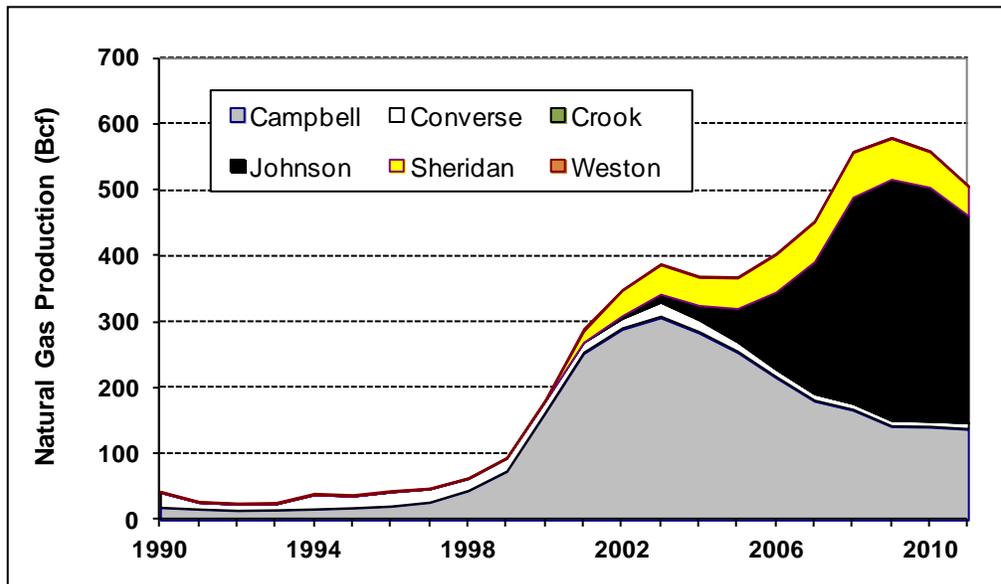
**Figure ES-2 Oil Production in the Study Area (1990 – 2011)**

### Natural Gas Production

Although substantial, the share of statewide natural gas production from the six-county study area has been less than its share of coal and oil. Prior to 1998, most natural gas produced in the study area was from conventional sources (**Figure ES-3**). Beginning in the late 1990s, CBNG production increased in the PRB, eventually exceeding 20 percent of the total statewide natural gas production. CBNG development initially was concentrated in Campbell County, but shifted into Sheridan and Johnson counties over time. Annual production in Campbell County increased to a peak of 308 billion cubic feet (Bcf) in 2003. Production in 2011 was 138 Bcf. A similar pattern of a rapid rise in production, followed by a peak and then declining production occurred in Johnson and Sheridan counties between 2004 and 2009. The combined production of conventional gas and CBNG in the study area peaked at 581.3 Bcf in 2009, declining to 560.9 Bcf in 2010.

### Electrical Power Generation, Including Wind

Recent expansion of the electrical generating capacity the region since the Phase I study has included the completion of the 422-megawatt (MW) Dry Fork Station power plant and 110-MW WYGEN III power plant, both coal-fired, plus more than 430 MWs of wind energy capacity (AECOM 2011).



Note: Includes production from conventional gas and CNBG sources.

Sources: WOGCC 2003, 2012; WTA 2012.

**Figure ES-3 Annual Natural Gas Production by County (1990 – 2011)**

## Current Social and Economic Conditions

Current cumulative social and economic conditions for the six-county study area as a result of energy-related development are summarized below, many of which reflect the recent activities in the Wyoming PRB study area as defined in the Task 2 analysis (AECOM 2011).

### Population and Demographics

**Population Change.** Population growth is the single best indicator of cumulative social and economic changes in the six-county study area. The impetus for growth as coal production increased was tempered by productivity increases in the mining industry, coupled with declining production of other energy resources. Consequently, the population in the six-county study area increased a relatively modest 11 percent (9,318 residents) between 1980 and 2000, reaching 91,916 (**Table ES-1**). Campbell County's total population was 33,698 in 2000, which was the fourth highest in the state.

Between 2000 and 2010, the six-county study area experienced renewed population growth, primarily linked to expanded coal production, residential and industrial construction, CBNG development, and most recently, oil development. Population counts from the 2010 Census registered a total population of 111,942 for the study area, nearly 22 percent higher than the population in 2000. Gains were reported for all six counties, ranging from 564 persons in Weston County to 12,435 persons in Campbell County.

**Table ES-1 Population by County (1990 - 2010)**

County	1990	2000	2010	Changes 2000 – 2010	
				Absolute	Percent
Campbell	29,370	33,698	46,133	12,435	36.9
Converse	11,128	12,052	13,833	1,781	14.8
Crook	5,294	5,887	7,083	1,196	20.3
Johnson	6,145	7,075	8,569	1,494	21.1
Sheridan	23,562	26,560	29,116	2,556	9.6
Weston	6,518	6,644	7,208	564	8.5
Six-county Region	82,017	91,916	111,942	20,026	21.8
<b>State of Wyoming</b>	<b>453,588</b>	<b>493,782</b>	<b>563,626</b>	<b>69,844</b>	<b>14.1</b>

Sources: U.S. Census Bureau various years, 2011a.

As in many rural areas of the West, population in the six-county study area tends to be concentrated in a few communities. The largest communities and their respective 2010 populations are:

- Campbell County: Gillette (29,087) and Wright (1,807);
- Converse County: Douglas (6,120) and Glenrock (2,576);
- Crook County: Sundance (1,182) and Moorcroft (1,009);
- Johnson County: Buffalo (4,585);
- Sheridan County: Sheridan (17,444); and
- Weston County: Newcastle (3,532) and Upton (1,100).

Most of these communities are county seats and also trade and service centers.

**Demographic Characteristics.** Demographic characteristics from the 2010 Census reveal many similarities to the statewide population, but also some differences across the six-county study area. First, the population in the six-county study area is predominately white, with a lower percentage of minority residents when compared to Wyoming as a whole. Whites accounted for between 93.2 and 97.2 percent of residents in the six counties, compared to 90.7 percent statewide. When compared to the state, fewer residents of the study area indicated they were Hispanic or Latino, with the highest share of Hispanic or Latino residents in Campbell County (7.8 percent).

The median age of Campbell County residents in 2010 was 31.9 years, compared to 36.8 years statewide. The median ages of residents in the remaining five counties in the study area all were higher than the statewide average, with the highest being 44.8 years in Johnson County. Campbell County had the highest percentage of residents less than 18 years of age in 2010, at 28 percent, compared to 24 percent statewide. The corresponding percentages for the other counties in the study area ranged from 21.8 percent in Weston County to 25.4 percent in Converse County. In all instances, the percentages declined from 2000 to 2010 indicating relatively fewer children within the population.

Average household size declined across the six-county study area between 2000 and 2010. Comparative average household sizes were 2.66 persons in Campbell County, 2.42 persons statewide, and between 2.25 (Johnson County) and 2.42 (Converse County) in the remaining counties.

## Economic Conditions

**Employment and the Economic Base.** Energy resource development since 1970 has resulted in substantial economic expansion across the six-county study area. Through 2010, total employment expanded by 206 percent as 51,446 net new jobs were added. A period of strong growth occurred between 2005 and 2008, when a net total of 12,325 new jobs were added in the six-county study area. Nearly half of the net job gain occurred in Campbell County, with strong gains also posted in Sheridan and Converse counties. Increases in coal mining, CBNG development, construction of the Dry Fork Station, wind energy development, and the development of natural gas transmission and processing capacity were the driving forces behind that expansion. Completion of the Dry Fork Station and slowdowns in the pace of natural gas development paralleling the decline in market prices resulted in a loss of more than 3,000 jobs between 2008 and 2010; the majority of which were in Campbell County. Mining accounted for more than 15 percent of total employment in the six-county study area in 2010.

**Labor Market Conditions.** Labor market conditions in the six-county study area reflect the region's generally healthy economy. Over time, unemployment levels and unemployment rates have both reflected the influences of a large, relatively stable employment supported by the coal mining industry and the more transitory and variable influences of natural gas, construction, and other industries. Until the recent national recession, average annual unemployment rates across the study area were consistently below national levels. Unemployment climbed as a result of the recessionary effects in slowing the pace of oil and gas development and residential construction, coupled with the completion of the Dry Fork Station. After peaking in 2010, unemployment rates abated. In 2011, unemployment rates in the study area ranged between 4.6 percent (Campbell County) to 7.1 percent (Johnson County). By comparison, unemployment statewide averaged 6.0 percent, with national unemployment averaging 8.9 percent.

Dynamic labor market conditions not only are reflected in the unemployment rates, but also in the underlying supply of labor. Increased labor opportunity entices individuals into the labor force, permits employers to increase work hours for workers, and convert part-time to full-time jobs. Strong labor demand also may trigger labor force migration. Weaker economic conditions may result in opposite responses. One such response was apparent in the contraction in labor force during the recent recession, with the net change in the county-level labor forces from 2003 to 2011 ranging from 4 percent in Weston County to 28 percent in Campbell County.

Commuting is another means of maintaining equilibrium in local labor markets. The presence of coal mining and oil and gas development and the well-paying long-term jobs these industries support, allow some workers to live at some distance and commute to work. Research conducted by the Wyoming Department of Workforce Services indicates that the number of workers commuting into Campbell County has increased substantially in recent years, including substantial numbers from Crook and Weston counties. The monetary flows related to wages and salaries are associated with such commuting, with implications for Campbell County and other local economies.

**Personal Income.** A major benefit associated with energy resource development, whether mineral mining or oil and gas development, is the wage and salary levels that are among the highest in the state. In 2010, per capita personal income in Campbell County was \$45,753, compared to the national average of \$39,937, and the statewide average of \$44,961. Per capita personal income in Campbell County has exceeded the national average for the past 7 years. Per capita personal income exceeded \$41,600 for the other counties in the study area in 2010, with that for Sheridan County residents exceeding that for Campbell County.

In terms of total personal income, Campbell County led the six-county study area with \$2.1 billion in 2010, and Sheridan County was second with aggregate personal income of \$1.4 billion. Total personal income in the other counties was substantially lower, ranging from \$299.2 million in Crook County to \$599.4 million in Converse County.

### Housing

From 2000 to 2010, the total housing inventory in the six-county study area expanded by 24 percent, slightly above the 22 percent net increase in population. As was true for the changes in population, the largest absolute and relative gains in the housing inventory occurred in Campbell County (**Table ES-2**).

**Table ES-2 Total Housing Inventory (2000 and 2010)**

	<b>Campbell</b>	<b>Converse</b>	<b>Crook</b>	<b>Johnson</b>	<b>Sheridan</b>	<b>Weston</b>	<b>Six-county Study Area</b>
<b>2000</b>	13,288	5,669	2,935	3,503	12,577	3,231	41,203
<b>2010</b>	18,955	6,403	3,595	4,553	13,939	3,533	50,978
<b>Change 2010 - 2000</b>	5,667	734	660	1,050	1,362	302	9,775
<b>Share (percent)</b>	<b>58</b>	<b>8</b>	<b>7</b>	<b>11</b>	<b>14</b>	<b>3</b>	<b>100</b>

Sources: U.S. Census Bureau various years, 2011b.

Despite the increase in housing stock from 2000 to 2010, housing availability was low. According to the 2010 census, there were a total of 6,049 vacant housing units in the six-county study area; however, only 2,339 of those would be considered vacant in a traditional sense. The others include second homes, cabins for recreational and seasonal use, recreational vehicles, and other types of housing that typically do not provide long-term housing. Furthermore, the 2,339 rental and for sale units included units that had already been rented or sold but not yet occupied. When vacancy rates were adjusted to account for those non-traditional/non long-term housing units, effective vacancy rates dropped to between 3.7 and 6.2 percent. Vacancy rates among units intended/suited for ownership were below 3.0 percent in Campbell, Crook, Johnson, and Sheridan counties.

Monthly costs for rental housing in the six-county study area in 2010 generally were highest in Campbell and Sheridan counties (**Table ES-3**). At that time, rental costs in Campbell County averaged \$1,222 per month for a single-family home, \$717 per month for an apartment, and \$377 per month for a mobile home lot. Weston and Crook counties had the lowest rental housing costs in the six-county study area during the same period.

**Table ES-3 Monthly Housing Rents in the Six-county Study Area (2010)**

<b>County</b>	<b>Apartments</b>	<b>Mobile Home Lots</b>	<b>Single Family Homes</b>
Campbell	\$717	\$377	\$1,222
Converse	\$555	\$191	\$735
Crook	\$455	\$149	\$470
Johnson	\$603	\$245	\$823
Sheridan	\$697	\$450	\$922
Weston	\$558	\$130	\$639
<b>Statewide Average</b>	<b>\$651</b>	<b>\$281</b>	<b>\$928</b>

Source: Wyoming Community Development Authority 2012.

In 2010, the average sale price of homes in the six-county study area ranged from \$140,858 in Crook County to \$242,635 in Sheridan County. The average home price statewide in 2010 was \$261,532 (\$204,643 excluding sales in Teton County). In 2010, the average sales price in Campbell County (\$238,208) also was higher than the adjusted statewide average (i.e., excluding Teton County).

Temporary housing resources are available in the six-county study area in the form of hotel-motel rooms, private and public campgrounds, two large special event facilities, and vacant spaces in mobile home parks. In all, there are an estimated 109 lodging establishments with a total of approximately 4,400 rooms, an increase of approximately 1,900 rooms over the past 6 to 8 years. In addition to meeting tourism and business travel needs, many of these housing resources have accommodated temporary housing needs associated with natural resource and energy projects in the past.

### Public Education

There are 10 school districts in the study area ranging in size from Campbell County School District #1 (Campbell #1) with 8,337 students in the 2011-2012 school year to Sheridan County School District #3 (based in Clearmont) with fewer than 100 students. Campbell #1, based in Gillette, serves the primary energy and resource development region.

Trends in public school enrollment generally mirrored population trends during the period of rapid population growth. District-wide enrollment in Campbell #1 grew by nearly 1,000 students between 2003-2004 and 2011-2012. Enrollment increased in the Converse #1 (Douglas), Johnson #1 (Buffalo), Sheridan #1 (Ranchester), and Sheridan #2 (Sheridan) districts as well, but declined in the Converse #2 (Glenrock), Crook #1 (Sundance), Sheridan #3 (Clearmont), Weston #1 (Newcastle), and Weston #7 (Upton) districts.

The Wyoming School Foundation Program (WSFP) oversees operating revenues and expenditures for public educational services delivered at the local level. The system is structured to achieve consistency in educational opportunities across the state, irrespective of individual district local revenue generating capacity. The Wyoming PRB plays an important role in the system because of its large energy and minerals-related tax base. Revenues for school funding come from taxes on minerals production; real estate and taxable personal property; and various other local, state, and federal sources.

Public education funding also functions under the rules and procedures of the Wyoming School Facilities Department (WSFD). Originally established as the Wyoming School Facilities Commission in 2002, the WSFD oversees construction and maintenance of public school facilities and physical plants. Its mission is to provide adequate educational facilities for all children in Wyoming, mirroring the focus of the WSFP on operations. Through the fiscal 2011-2012 biennium, the Wyoming state legislature has appropriated approximately \$2.0 billion for major facilities maintenance, capital construction and operations of the WSFD. All of the districts in the six-county study area have benefitted from funding provided through energy resource development. In addition, the WSFD submitted a budget request for approximately \$403.6 million during the 2013-2014 biennium. Nearly \$257 million of that total would be for new capital construction, with \$101 million for major maintenance. The current budget request include funding for the new alternative high school and an elementary school in Campbell #1, as well as a replacement elementary school and new small rural elementary school in Sheridan #2.

### Facilities and Services

Energy development affects local government facilities and services in several ways. In some cases such as law enforcement and road maintenance, local governments provide direct services to energy facilities. Local governments also provide facilities and services used by employees and residents associated with energy development, and many local governments receive revenues from taxes on energy facilities and production and from taxes on company and employee spending.

The types and levels of facilities and services provided by local governments reflect service demand, revenue availability, and community values regarding appropriate services and service levels. As with most socioeconomic characteristics, the level and availability of local government facilities and services varies by county and community across the study area. There are likely several hundred different service providers in the region. Although all local government facilities and services are affected by energy development, the critical facilities and services include municipal water and sewer systems, law enforcement at the county level, and hospitals. A comprehensive inventory and assessment of facilities and services is beyond the scope of this analysis. However, an initial screening revealed no critical needs or shortfalls and indicated that most providers are engaged in an ongoing long-term process to maintain and improve facilities and services to meet community needs and to comply with various regulations and standards.

### Fiscal Conditions

Federal mineral royalties (FMRs) and state and local taxes levied on coal and other mineral production are major public revenue sources in Wyoming. Taxes, fees, and charges levied on real estate improvements, retail trade, and other economic activity supported by energy development generate revenues to support public facilities and services. These revenues benefit not only local jurisdictions within which the production or activity occurs or is located, but also the federal treasury, state coffers, school districts, and local governments across the state through revenue sharing and intergovernmental transfer mechanisms.

**Assessed Valuation.** Coal and other minerals produced in Wyoming, regardless of ownership, are subject to ad valorem taxation by local taxing entities and a levy to support public education statewide. Statewide total taxable value of coal has increased in response to production and higher prices; however, falling prices for natural gas have dampened the increases. Taxable valuation on coal production climbed from \$1.8 billion in 2003 to \$4.0 billion in 2011. Of the latter value, 94 percent was based on production in the PRB.

Although the inventory and value of non-mineral property has increased over time, the valuation on minerals is the dominant component of Campbell County's ad valorem tax base. The total assessed valuation of Campbell County, boosted by higher coal valuations and CBNG production, was \$5.4 billion in 2011. Valuations on aggregate mineral production accounted for 81 percent of that total.

With respect to assessed valuation on mineral and energy resource production, Campbell County has been the primary beneficiary of production gains. In recent years, Johnson County also has benefitted from increases associated with CBNG. The results include order of magnitude differences in the assessed valuation among the counties in the six-county study area. Campbell County's assessed valuation of \$5.4 billion in 2011 was more than 40 times that of Weston County and 26 times that of Crook County.

**Severance Taxes.** Wyoming levies a severance tax on coal and many other minerals produced in the state. The severance tax rate, levied on the value of production, has varied over time. The tax rate on coal was 10.5 percent in 1977 to 1978, in part to fund long-term highway, education, and community infrastructure improvements associated with the expansions in coal mining and other energy resource development, but now stands at 7.0 percent.

In 2003, statewide severance tax receipts on all coal production were \$105.4 million. Rising production and higher prices yielded a 152 percent increase in receipts to \$265.2 million in 2011. Cumulative statewide severance tax proceeds on coal totaled \$1.9 billion from 2000 to 2011, essentially doubling the cumulative statewide total receipts since 1970. Severance tax revenues on coal produced in Campbell County total \$1.6 billion since 2000.

Distribution formulas for severance tax proceeds are set by the Wyoming legislature, with concurrence by the governor. The basic formula includes a constitutionally mandated diversion of the proceeds from a

1.5 percent tax levy into the Permanent Wyoming Mineral Trust Fund (PWMTF). The PWMTF principal, now in excess of \$2.0 billion, is invested and the derived income transferred into the state's General Fund for legislative appropriation. Following the above allocation, remaining severance tax proceeds are allocated for environmental remediation of leaking underground storage tanks, water development, local governments, highway and state aid to county road funds, capital construction, the state's general fund, and the state's budget reserve account.

**Federal Mineral Royalties.** Coal producers pay a 12.5 percent royalty to the federal treasury on the value of all surface coal production from federal leases. FMRs also are assessed on natural gas, oil, and other minerals produced on federal leases. Due to the quantity of surface coal production in the Wyoming PRB, and the predominance of federal ownership, FMRs are an important revenue source for Wyoming. Forty-nine percent of the FMR receipts are disbursed to the state in which the production occurred.

FMR receipts have grown sharply over time. In 2001, FMR receipts derived from coal and CBNG production in Wyoming totaled \$216.3 million. The corresponding total in 2011 was \$779.8 million, of which \$391.1 million was disbursed to the State of Wyoming. Cumulative FMR receipts on coal and CBNG production totaled \$5.7 billion from 2001 to 2011.

### Social Setting

In Campbell County, the major economic and energy development influences on the social setting continue to be coal mining, electric power generation, oil and gas development and production, and the prospects for new coal development technologies. Although the pace of oil and gas development has abated from recent levels, the many high-paying jobs in the energy development industries, the secondary jobs supported, and tax revenues generated have been key factors shaping the Campbell County social setting.

The purchases made by these industries and the incomes of the workers they employ have supported a substantial commercial investment in Gillette, the regional trade center for northeast Wyoming. Campbell County, its municipalities, the Campbell County School District, Campbell County Memorial Hospital, and Gillette College all made significant capital investments in recent years. These investments include utility and road infrastructure and schools, a full service indoor recreation center, an industrial technical education center, an events center, and hospital additions. In addition to the economic activity and employment generated, these facilities enhance the quality of life and the community's ability to attract new businesses and residents. Eighty-four percent of respondents to the Gillette 2011 Citizen Survey rated Gillette as a good or excellent place to live (City of Gillette 2011).

Throughout the last half-century, the expansions and improvements in public, health care, commercial, and housing infrastructure have increasingly allowed the community to accommodate population influxes without the social disruption that occurred during the early years of natural resource development in the region. Campbell County has extensive experience and expertise in planning and managing the socioeconomic effects of industrial and natural resource projects. Coupled with Wyoming's institutional mechanisms for managing the community effects of growth, the experience and expertise have given Campbell County and its communities the institutional capacity and resources to effectively plan for and accommodate energy-related development.

Other counties within the six-county study area have varying experience with energy development. The Antelope Mine, which straddles the Campbell/Converse County line, is the only currently operating coal mine in the Wyoming PRB outside of Campbell County. Sheridan County has had coalmines in the past, and many workers at mines in Campbell County live in Converse, Crook, and Weston counties. Workers at the Decker and Spring Creek coal mines in Montana also commute from Sheridan County. All counties in the six-county study area have experienced oil and gas development and Converse County has recent experience with wind energy development. This recent and ongoing energy development

experience provides a familiarity with energy development and fosters support of development from many residents for the economic and fiscal benefits that such development often brings.

Concern about and, in some cases, opposition to energy development in the Wyoming PRB occurs at both local and national levels. Locally, concern for the impacts to air quality, water quality, vegetation, and wildlife from coal development resulted in the formation of a regional advocacy group, the Powder River Basin Resource Council (PRBRC), in 1973. This group has broad membership and continues to advocate for consideration of groundwater depletion, air quality, reclamation (as it pertains to revegetation and aquifer restoration), climate change, and the potential effects of rail transportation of coal (PRBRC 2009, 2012). The PRBRC also advocates for a variety of energy development and land management policy issues.

Recent increases in oil and gas exploration and development in the PRB have resulted in concern about potential adverse effects related to hydraulic fracturing, including the quantity of water required to fracture wells and potential risks to groundwater quality. Other proposed technologies such as the stimulation of CBNG production by introducing nutrients to native microbes also have raised concern about the effects on groundwater resources.

Local officials and residents in the six-county study area generally are aware of the boom and bust cycles that sometimes accompany energy development and the detrimental effects of energy slowdowns on local economies and social conditions. Despite the familiarity and general support, it is possible that the scale of energy-related development relative to the size of nearby communities could strain housing resources and facility and service infrastructure and result in varying degrees of social disruption. This remains true especially for conventional oil and gas and CBNG development, which are more diffuse in nature than for coal mines and wind energy power generation projects. Conventional oil and gas and CBNG extraction and production activities are exempt from the Wyoming Industrial Information and Siting Act (WIISA) and therefore are not required to mitigate the socioeconomic effects of their operations, as are major industrial facilities.

It is generally true that counties and communities in the six-county study area, specifically Campbell County and its communities, are among the most likely to be able to accommodate additional energy development without substantial social disruption. The counties and communities in the study area often take proactive measures to anticipate and manage the effects of energy development, as evidenced by the establishment of wind energy regulations in Campbell and Converse counties, participation in WIISA-related proceedings, and the proactive development of public facility and service capacity to accommodate growth.

## List of Acronyms

BEA	Bureau of Economic Analysis
BLM	Bureau of Land Management
CAGR	compounded annual growth rate
Campbell #1	Campbell County School District #1
CBNG	coal bed natural gas
CCSO	Campbell County Sheriffs' Office
Converse #1	Converse County School District #1
Converse #2	Converse County School District #2
Crook #1	Crook County School District #1
EA	environmental assessment
EIS	Environmental Impact Statement
FMR	federal mineral royalties
FS	U.S. Forest Service
GCDDPD	Gillette Community Development Department – Planning Division
Johnson #1	Johnson County School District #1
LBA	lease-by-application
mcf	million cubic feet
mgpd	million gallons per day
MW	megawatts
NEPA	National Environmental Policy Act
ONRR	Office of Natural Resources Revenue
PILT	payments in lieu of taxes
PRB	Powder River Basin
PWMTF	Permanent Wyoming Mineral Trust Fund
RFD	reasonably foreseeable development
RV	recreational vehicle
SAWS-JPB	Sheridan Area Water and Sewer-Joint Powers Board
Sheridan #1	Sheridan County School District #1
Sheridan #2	Sheridan County School District #2
Sheridan #3	Sheridan County School District #3
tpy	tons per year
U.S.	United States
USC	United States Code
USDA	U.S. Department of Agriculture
WDAI	Wyoming Department of Administration and Information
Weston #1	Weston County School District #1
Weston #7	Weston County School District #7
WIISA	Wyoming Industrial Information and Siting Act
WMC	Wyoming Medical Center
WOGCC	Wyoming Oil and Gas Conservation Commission
WSFD	Wyoming School Facilities Department
WSFP	Wyoming School Foundation Program
WTA	Wyoming Taxpayers Association
WWDC	Wyoming Water Development Commission

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## 1.0 Introduction

The Powder River Basin (PRB) Coal Review is a regional technical study for assessing the existing conditions and the projected future cumulative impacts associated with energy-related past, present, and reasonably foreseeable development (RFD) in the Wyoming PRB and, for specific resources, the Montana PRB. This study is being conducted by AECOM, Inc. dba AECOM Environment (AECOM) under the direction of the Bureau of Land Management (BLM) High Plains District Office and Wyoming State Office. The socioeconomic component of the study has been conducted by Sammons/Dutton, LLC and Blankenship Consulting, LLC under contract to AECOM.

### 1.1 Study Background

The PRB of Wyoming is a major energy development area with diverse resource and environmental values. Energy development has been occurring in the PRB for well over a century. The first coal mine in the basin was developed near Glenrock, in Converse County, in 1883 (Foulke et al. 2002). While coal can be found in several areas of Wyoming, the extensive surface-accessible coal resource is what sets the PRB apart from other energy-producing areas of the state and country. The Wyoming portion of the PRB is the largest coal-producing region in the United States (U.S.); PRB coal is used to generate electricity within and outside of the region. The PRB also has produced large amounts of oil and gas resources. Over the last two decades, this region has experienced nationally significant development of natural gas from coal seams (coal bed natural gas [CBNG]).

Federal coal leasing is a high profile activity as over 90 percent of the coal reserves in the PRB are federally owned. The BLM is required to complete a National Environmental Policy Act (NEPA) analysis (environmental impact statement [EIS] or environmental assessment [EA]) for each coal lease-by-application (LBA) as part of the leasing process. In the coal leasing EAs and EISs prepared since the Powder River Regional Coal Team decertified the region in early 1990 (thereby allowing the BLM to use the coal LBA process), cumulative impacts have been addressed in a separate section of the NEPA analyses to highlight the distinction between site-specific and cumulative impacts. With coal leasing expected to continue into the foreseeable future, and with incremental impacts related to oil and gas development since the late 1990s due to development of CBNG in the PRB, the BLM initiated studies and analyses to provide a consistent basis for evaluation of cumulative impacts in the coal leasing EISs. These studies and analyses included the PRB Coal Development Status Check (BLM 1996), Wyodak EIS (BLM 1999), PRB Oil and Gas EIS (BLM 2003), Montgomery Watson Harza (2003) study of PRB coal demand through 2020, and most recently, the PRB Coal Review.

Initiated in 2003, Phase I of the PRB Coal Review included the description of current conditions (Task 1 reports); identification of RFD and future coal production scenarios for 2010, 2015, and 2020 (Task 2 report); and projected future cumulative impacts (Task 3 reports) in the PRB. The PRB Coal Review Phase I reports are accessible in electronic format on the BLM website at: [http://www.blm.gov/wy/st/en/programs/energy/Coal\\_Resources/PRB\\_Coal/prbdocs.html](http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/prbdocs.html).

Phase II of the PRB Coal Review was initiated in January 2010 to update the Phase I analyses. In Phase II, base year information has been updated through base year 2008, new RFD scenarios (including future coal production) have been developed, and projected cumulative impacts are being analyzed for 2020 and 2030.

The PRB Coal Review provides data, models, and projections to facilitate cumulative analyses for the BLM's future land use planning efforts and for future project-specific impact assessments for project development in compliance with NEPA. It should be noted that the PRB Coal Review is not a NEPA document. It also is not a policy study, analysis of regulatory actions, or analysis of the impacts of project-specific development.

Specific to the socioeconomic analysis, energy resource development in the Wyoming PRB has been a primary factor affecting social and economic conditions within the basin, although the types and magnitude of effects have varied by county, community, and time frame. PRB energy resources are a major component of the Wyoming economy and have been a major contributor of state and local tax revenues for more than a quarter century.

The pace of energy resource development in the Wyoming PRB has been volatile, driven by commodity price fluctuations associated with international and domestic energy demand and policies, environmental regulation and litigation, changing technologies, and product transportation constraints and improvements.

Energy resource development has resulted in economic and population growth in those Wyoming PRB communities near the energy resources and along transportation routes. Population growth in certain areas of the PRB has been rapid. Energy development is front loaded, in that the size of the workforce needed to develop the resource and supporting infrastructure typically is greater than that needed to produce the commodity. The public service demands of the construction workforce typically lead the generation of production-related tax revenues, resulting in a problem with tax lag-time, wherein local governments are required to provide services to workers in advance of corresponding increases in revenue to fund those services. The tax lag-time disparity diminishes as capital facilities are completed and become operational or as mineral resource production increases over time. Energy development has produced periodic surges in population in some Wyoming PRB communities, occasionally followed by periods of population loss. However, the nationwide growth in energy consumption, coupled with the vast and relatively diverse PRB energy resource base (coal, oil, natural gas, uranium), has resulted in a 50-year growth trend in Campbell County and other parts of the basin, without the absolute busts and resultant ghost towns that characterize many other western U.S. resource booms.

This period of sustained energy development in the Wyoming PRB has yielded substantial economic and community development benefits, including economic growth, employment opportunity, tax revenue growth, and infrastructure development for most local governments and for the State of Wyoming as a whole. At the same time, periods of rapid growth have stressed communities and their social structures, housing resources, public infrastructure, and public service systems.

The primary focus of the socioeconomic component of the PRB Coal Review is Campbell County, reflecting the geographic concentration of most of the active coal mines, mining service firms, and production in that county. However, since the coal resource and the associated mining industry is the economic driver for the entire Wyoming PRB, it is necessary to also examine changes and trends in the nearby counties affected most directly by coal mining. Although coal mining in the Wyoming PRB indirectly affects the entire state and areas far outside Wyoming, this analysis focuses on those immediately adjacent counties in Wyoming affected primarily by workforce commuting to and from the coal mines. Therefore, the six-county study area for the socioeconomic analysis includes Campbell, Converse, Crook, Johnson, Sheridan, and Weston counties (**Figure 1-1**).

It should be noted that a portion of the Antelope Mine, the southernmost active coal mine in the Wyoming PRB, is in Converse County. However, because Converse County overall is more similar to the other adjacent counties than to Campbell County in most social and economic linkages to PRB coal production, it is considered part of the directly affected area but not part of the primary study area for the Task 1C and 3C reports. Additionally, the indirect economic, social, or demographic effects in Niobrara and Natrona counties due to coal mining in the Wyoming PRB also were considered in the analysis. It generally is accepted that the impacts in these two counties are limited in scale, and are secondary or tertiary level effects arising not strictly from mining per se, but from a related industry or indirect economic linkages.

**Figure 1-1 Social and Economic Study Area**

## 1.2 Study Objectives

### 1.2.1 Phase I

Phase I of the PRB Coal Review was developed as a regional technical study to determine the base year conditions and assess potential future cumulative effects of projected energy-related development activities in the PRB for the years 2010, 2015, and 2020. Specific to the socioeconomic component of the study, the Task 1C report (ENSR 2005a) documented the existing social and economic impacts as of base year 2002, presenting data on coal production and other energy-related development in the Wyoming PRB and associated employment, population, and fiscal indicators.

The Task 2 report (AECOM 2009; ENSR 2005b) identified the past and present development actions in the Wyoming and Montana PRB study area, as well as the projected RFD scenarios in the study area, for years 2010, 2015, and 2020. The RFD scenarios defined in Task 2 provided the basis for the analysis of potential cumulative impacts (Task 3 reports). Specific to the socioeconomic component of the study, the Task 3C report (ENSR 2005c) presented the results of the cumulative social and economic impact assessments for projected energy-related development in the Wyoming PRB for future years 2010, 2015, and 2020. The regional social and economic impact analysis started with the mathematical modeling of the total effect of change to the regional economy. General concepts like jobs and income were used to measure the impacts, along with estimates of many additional specific economic outcomes.

The study also included the evaluation of base year conditions (Task 1) and projected cumulative impacts (Task 3) for air quality, water resources, and other environmental resources. The results of these analyses were presented in separate stand-alone reports.

### 1.2.2 Phase II

As with Phase I, Phase II of the PRB Coal Review is a regional technical study to determine the base year (2008) conditions and assess potential future (2020 and 2030) cumulative effects of projected energy-related development activities in the PRB. Phase II of the study was initiated due to the ongoing energy-related development in the PRB, the elapsed time since initiation of Phase I of the study, and the BLM's need to maintain up-to-date development projections and related projected future cumulative impact analyses for use in the agency LBA EISs and EAs. Under Phase II, the existing and projected future energy-related development activities have been updated (Task 2) based on more recent information, with the air quality, water resources, socioeconomic, and other environmental resources base year analyses (Task 1) and projected cumulative impact analyses (Task 3) correspondingly updated.

The past and present energy-related development activities (including coal mining and CBNG development) as identified in the Task 2 report (AECOM 2011) provided the basis for the analysis of existing social and economic conditions as documented in this Task 1C report. More recent data are presented where readily available and critical to the analysis. Specific to the socioeconomic base year analysis, data associated with past and present energy-related development has been updated based on actual data through 2010 to correspond with the use of the 2010 census data. The geographic focus of the socioeconomic component is the same six-county study area used in Phase I (**Figure 1-1**). The Task 2 (AECOM 2011) RFD scenarios will provide the basis for the analysis of potential cumulative social and economic impacts for years 2020 and 2030, as will be documented in the Task 3C report.

## 1.3 Key Issues

Campbell County and nearby areas of the PRB have experienced a series of economic expansions and contractions associated with energy-related development. The more recent wave of activity associated with CBNG development in the region, and the prospect of expanded coal production and expanded electric power generation in the future, raises several social and economic issues for the socioeconomic cumulative impact analysis as identified below:

- What is the character of the local labor market, and how has it historically responded to changing conditions?
- What is the role of migration in terms of past and recent growth?
- To what extent does coal-related development in Campbell County affect the social and economic conditions in neighboring counties?
- How has average labor productivity in the coal mining industry changed?
- Is community infrastructure and service capacity adequate for current needs?
- What are the fiscal linkages between energy-related development, particularly coal production, and local government finances?
- How have community social conditions changed in response to energy resource development, and what is the current social climate regarding future energy development?

#### **1.4 Agency Outreach, Coordination, and Review**

The BLM directed the preparation of this PRB Coal Review. In order to ensure the technical credibility of the data, projections, interpretations, and conclusions of the study and to ensure the study's usefulness for other agencies, the BLM initiated contact with other federal, state, and local agencies early in the Phase I portion of the study. This same approach has been carried forward into Phase II of the study.

As part of this agency outreach and technical oversight, the BLM organized technical advisory groups for the key resources (air quality, water resources, and socioeconomics). These groups were composed of agency representatives and stakeholders with technical expertise in the applicable resources. Relative to the socioeconomic component of the PRB Coal Review, the Socioeconomics Working Group for Phase II includes individuals representing community, academic, and government interests serving in a technical review capacity.

## **2.0 Technical Approach**

### **2.1 Data Collection**

Data sources used to define the baseline social and economic conditions in the six-county study area included local, state, and federal government publications, internet data searches and downloads, interviews with state and local officials, and information gleaned from newspaper clippings and other historical archives housed at the Campbell County Public Library and Gillette Community Development Department.

Key sources of published information presented in this report include the following.

- BLM
- Campbell County
- Campbell County School District #1 (Campbell #1)
- City of Gillette
- U.S. Bureau of Economic Analysis (BEA)
- U.S. Bureau of Labor Statistics
- U.S. Census Bureau
- U.S. Department of Energy, Energy Information Administration
- U.S. Department of the Interior, Office of Budget
- U.S. Department of the Interior, Office of Natural Resources Revenue (ONRR)
- Wyoming Department of Administration and Information (WDAI), Economic Analysis Division
- Wyoming Department of Education
- Wyoming Department of Revenue
- Wyoming Department of State Lands and Investments
- Wyoming Mining Association
- Wyoming Office of the State Inspector of Mines
- Wyoming Department of Workforce Services
- Wyoming Oil and Gas Conservation Commission (WOGCC)
- Wyoming School Facilities Department (WSFD)
- Wyoming Taxpayers Association (WTA)

### **2.2 Modeling Assumptions and Methods**

Detailed economic, demographic, and fiscal modeling was not completed as part of this (Task 1C) report, as this report focuses on reviews of major historical trends and data describing current conditions in the six-county study area. Detailed modeling will be conducted as part of the cumulative impact analysis for the Task 3C report. The key inputs for that modeling effort will be derived from the RFD scenario(s) developed for the Task 2 report (AECOM 2011), and assumptions developed from contacts with industry, local government officials, and reviews of other studies.

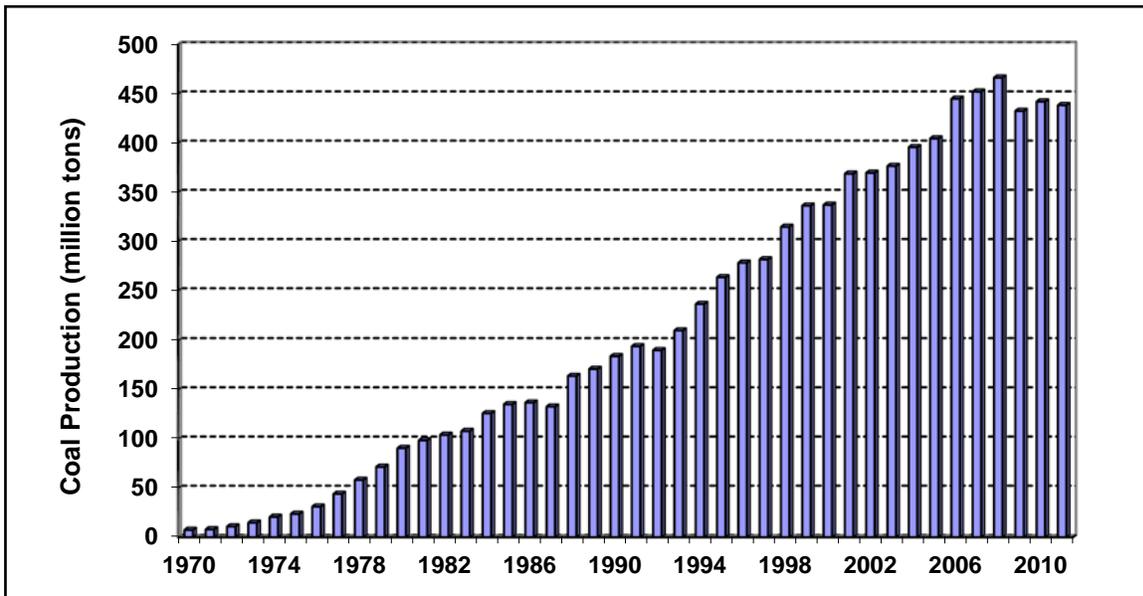
## **2.3 Analysis**

Data collection, compilation, and analysis efforts reflect the geographic location and concentration of coal mining in the Wyoming PRB study area, with the primary focus on Campbell County and a lesser emphasis on the surrounding counties. Quantitative techniques used to analyze historical trends and current conditions include basic descriptive and comparative statistics (e.g., means, percent change, and compounded annual growth rates [CAGRs]). Important time series and comparative data at selected intervals are portrayed graphically to help illustrate differences among the counties in the six-county study area or to highlight changes over time. The time periods analyzed vary by topic, reflecting the availability of data (e.g., detailed demographic data available only from the decennial censuses of population but annual employment and income data from the BEA). Qualitative analysis, reflecting a combination of content analysis and the integration and synthesis of information gained through direct observation, key interviews, and literature review, was used where appropriate. For instance, monetary and fiscal data, personal income, and annual severance taxes on coal production generally are reported in nominal terms. In other words, the monetary data are presented in amounts corresponding to those at the time the sale, expenditure, tax event, or income accrual occurred.

## 3.0 Energy Resource Development in the Wyoming Powder River Basin

### 3.1 Coal Production and Labor Productivity

In 1974, as the BLM was conducting a series of regional coal leasing efforts in Wyoming, Utah, and other states, 20.7 million tons of coal was produced in Wyoming. By 1981, total annual Wyoming coal output exceeded 100 million tons. Statewide production was 184 million tons in 1990, with production exceeding 200 million ton in 1993. Within 5 years, the total statewide coal production had grown to more than 300 million tons, with more than 400 million tons produced in 2005. Total statewide coal output peaked at 466.3 million tons in 2008, produced by 18 major operating mines. Approximately 444 million tons of the 2008 production came from mines in the Wyoming PRB (AECOM 2011). Statewide annual production declined by nearly 34 million tons to 432.5 million tons, the equivalent of 7.3 percent, the following year. Approximately 440 million tons of coal was produced annually in both 2010 and 2011 (**Figure 3-1**).



Source: Wyoming State Inspector of Mines 2012.

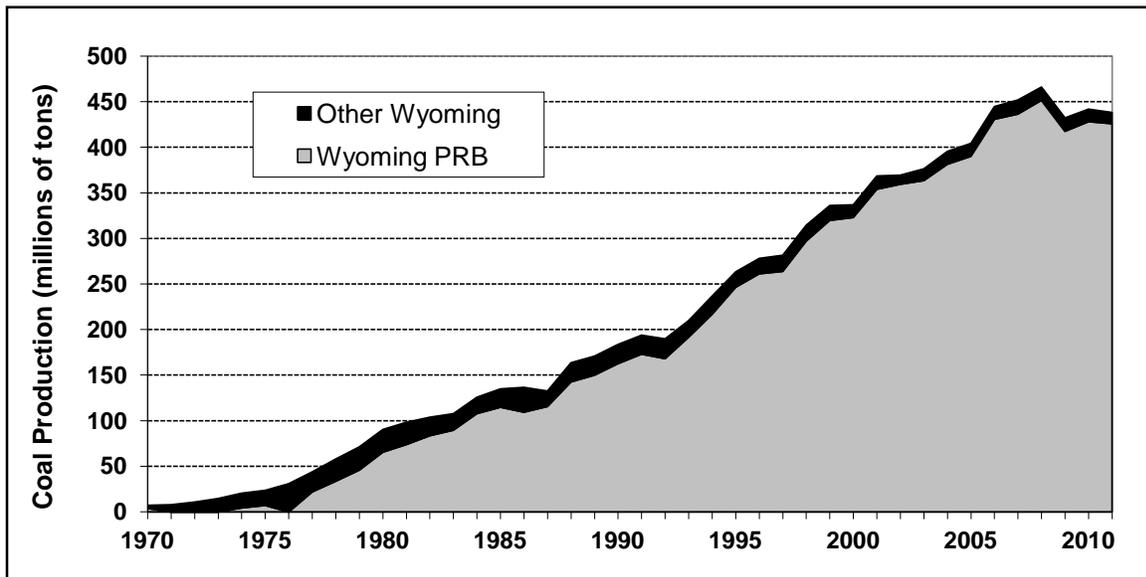
**Figure 3-1 Wyoming Statewide Coal Production (1970 – 2011)**

Wyoming leads the nation in annual coal production on a tonnage basis, accounting for more than 40 percent of total domestic production. In 2010, total coal production in Wyoming was more than triple that from second-ranked West Virginia and nearly 10 times the 44.7 million tons produced in Montana (Energy Information Administration 2012a,b).

To some extent, the long-term increases in coal production in Wyoming were anticipated. The Eastern PRB Final EIS (BLM 1979) projected production of 174 million tons of coal by 1990. At about the same time, the South-central Wyoming Regional Coal EIS (BLM 1978a) projected an annual output from mines in the Rawlins area to increase from 10.2 million tons in 1977 to 17.8 million tons, and the Southwestern Wyoming Regional Coal EIS (BLM 1978b) projected an annual output of 31.2 million tons by 1990 from mines in the Rock Springs and Kemmerer areas. Together these projections yielded an

aggregate annual production of 223 million tons by 1990. It is unclear whether the long-term expansion to more than 400 million tons annually was anticipated at that time.

The extent to which economic, market, and regulatory forces would alter the economic landscape of the coal mining industry in Wyoming was not fully foreseen in the earlier economic projections. In 1977, gross coal production of 22.0 million tons in the Wyoming PRB represented 50 percent of the total statewide production (**Figure 3-2**). Annual production in the remainder of the state peaked at approximately 26 million tons per year (tpy) in 1979. Since that time, coal production in the remainder of the state has declined. In 2011, total output of Wyoming coal outside the PRB was 12.3 million tons, just 2.8 percent of the statewide total.



Source: Wyoming State Inspector of Mines 2012.

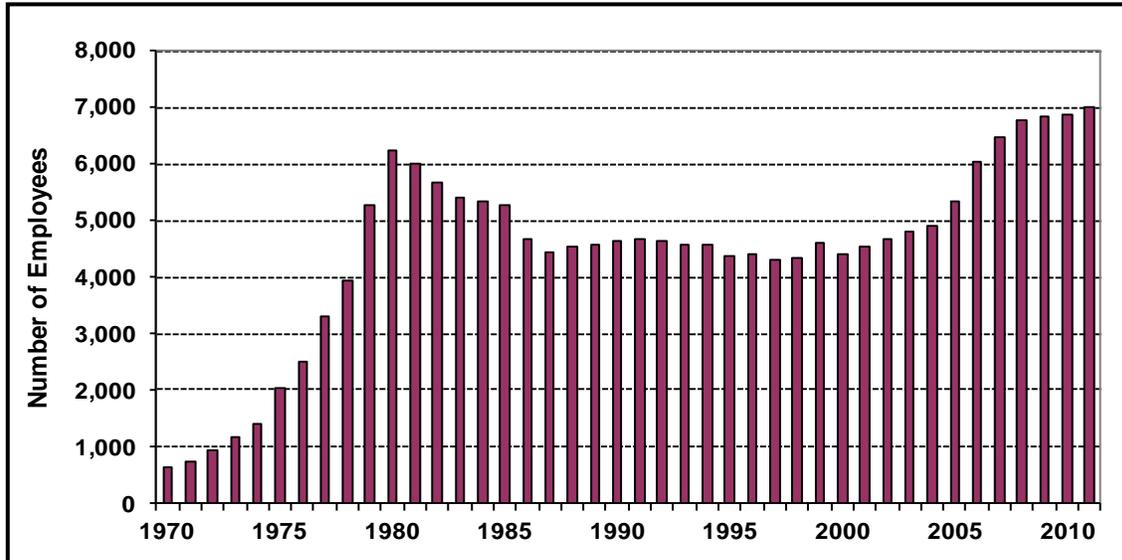
**Figure 3-2 Historic Coal Production Trends in Wyoming (1970 – 2011)**

The overwhelming majority of all coal produced in the Wyoming PRB originates from Campbell County (approximately 94 percent of the total in 2010). The Big Horn Mine in Sheridan County ceased production in 2000 and currently is in final reclamation and awaits bond release. Following the cessation of production at the Dave Johnston Mine near Glenrock, the Antelope Mine, which straddles the Converse and Campbell county line, is presently the only producing mine in Converse County.

Initially, expansion of the state's coal output was mirrored by increases in mining employment (**Figure 3-3**). Between 1970 and 1980, statewide coal mining employment increased ten-fold, from 621 to 6,231 employees, paralleling the increase in output from 7.4 to 90 million tons. In part, this reflected the lags between startup and full production linked to activities such as facility construction and overburden stripping.

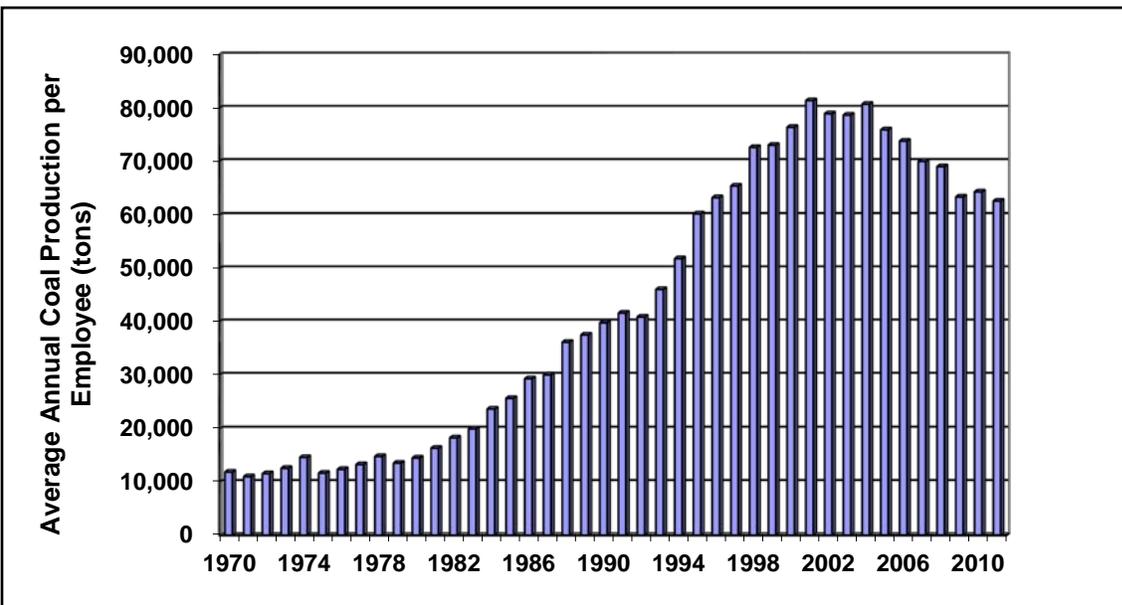
During the initial expansion period from 1970 to 1980, average annual output was relatively steady between 11,000 and 15,000 tons per employee. Average annual output per employee increased dramatically thereafter, primarily as a reflection of the higher productivity achieved by the surface mining operations in the PRB. The increases were such that total employment declined, even as total output climbed. By 1985, average productivity reached 25,612 tons per employee per year, with subsequent gains raising the average to 39,781 tpy by 1990 as 4,623 employees produced a total of 184 million tons. The trends in productivity gains continued through the 1990s and into the new decade. Average annual

output peaked at 81,363 tons per employee in 2001 (Figure 3-4). Total production that year was 368.7 million tons.



Source: Wyoming State Inspector of Mines 2012.

**Figure 3-3 Direct Employment in Wyoming Coal Mining Industry (1970 – 2010)**



Source: Wyoming State Inspector of Mines 2012.

**Figure 3-4 Average Annual Coal Production per Worker in Wyoming (1970 – 2011)**

Total coal mining employment in Wyoming has increased substantially since 2000, to 6,760 employees in 2008 and 7,000 employees in 2011. The increases in coal mining employment paralleled gains in total output to a record 466.3 million tons in 2008, an increase of 80 million tons (20 percent) when compared to 2001. Statewide annual production declined the following year, a period coinciding with a global economic recession.

Average annual production remained at approximately 80,000 tons per employee for several years; however, it has since decreased by more than 20 percent, dropping below 70,000 tons in 2007 and to 62,626 tons in 2011. The latter value is comparable to that recorded in 1996. The decline in average output per worker in recent years reflects several factors, including the removal of ever-greater amounts of overburden, longer pit hauls in some mines, and a relative increase in labor devoted to ongoing reclamation efforts. Continuing declines in average annual output of the coal mines outside of the PRB also have contributed to the declines in average output per worker. In 2011, average annual output in the PRB was more than five times the average achieved by the other coal mines in Wyoming (69,872 tons in the PRB compared to 13,640 tons for the non-PRB mines) and 12 percent higher than the statewide average. **Table 3-1** summarizes the relative concentrations of production and annual output and the average annual output per employee in Wyoming's coal mining industry in 2011.

**Table 3-1 Wyoming Coal Mining Industry Overview (2011)**

Region of Wyoming	Output (millions of tons)		Employees		Average Output per Employee (tons)
	Number	Percent of Total	Number	Percent of Total	
PRB Mines	426.1	97	6,098	87	69,872
Non-PRB Mines	12.3	3	902	13	13,640
Statewide	438.4	100	7,000	100	62,626

Source: Wyoming State Inspector of Mines 2012.

Another indication of the strong expansion in the Wyoming coal mining industry in recent years is the increase in the number of contractors providing support services (e.g., electrical installation and repairs, equipment and tire maintenance and repair, blasting, and other activities historically performed by mine employees). The full extent of such contracting is not known; however, the Wyoming State Inspector of Mines reports the number of contract employees serving the coal mining industry more than doubled from 576 in 1998 to 1,288 in 2003 and to approximately 2,100 in 2011 (Wyoming State Inspector of Mines 2012).

Total projected average annual coal output will be one of the critical variables driving the projections of future coal mining employment, which in turn underlie the overall economic and population projections associated with coal development. The assumptions regarding future productivity are the link between these two factors and are consequently critical to the overall analysis. Industry expectations are for average annual output to return to levels experienced in the past, with approximately 75,000 tons per worker per year under the lower production scenario for 2030 and approximately 85,000 tons per worker per year under the upper production scenario (AECOM 2011).

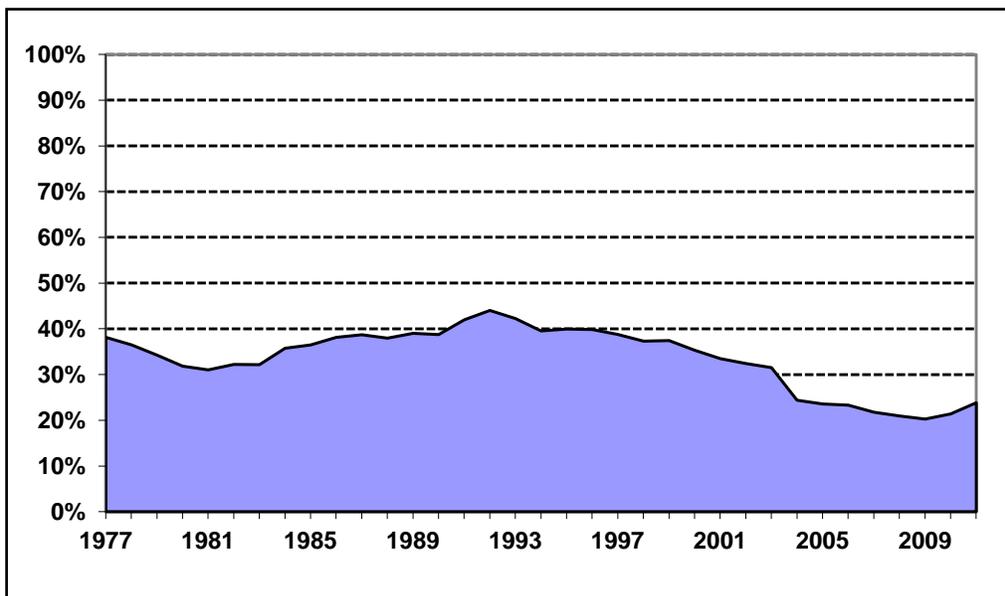
Development of the PRB coal resource resulted in the development of substantial ancillary industrial and transportation infrastructure. Since the 1970s, rail lines into the PRB have been expanded and improved to keep pace with coal production, resulting in a substantial rail construction, operation, and maintenance industry in the PRB. Transporting PRB coal to utilities and manufacturers across the nation is now a vital

source of traffic for the Burlington Northern Santa Fe Railroad and Union Pacific Railroad. Five coal-fired electric power plants (several with multiple units) have been constructed in the PRB to take advantage of the relatively low cost/low sulfur coal resource and to avoid coal transportation costs. A number of coal beneficiation and coal gasification plants have been proposed over the last 30 years in an effort to add value to the coal resource; however, these technologies have yet to be implemented on a commercial scale. A coal slurry pipeline was proposed during the 1980s to provide an alternative for transporting coal to markets, but was abandoned because of environmental hurdles and opposition from the railroads.

## 3.2 Other Energy Resources

### 3.2.1 Oil Production

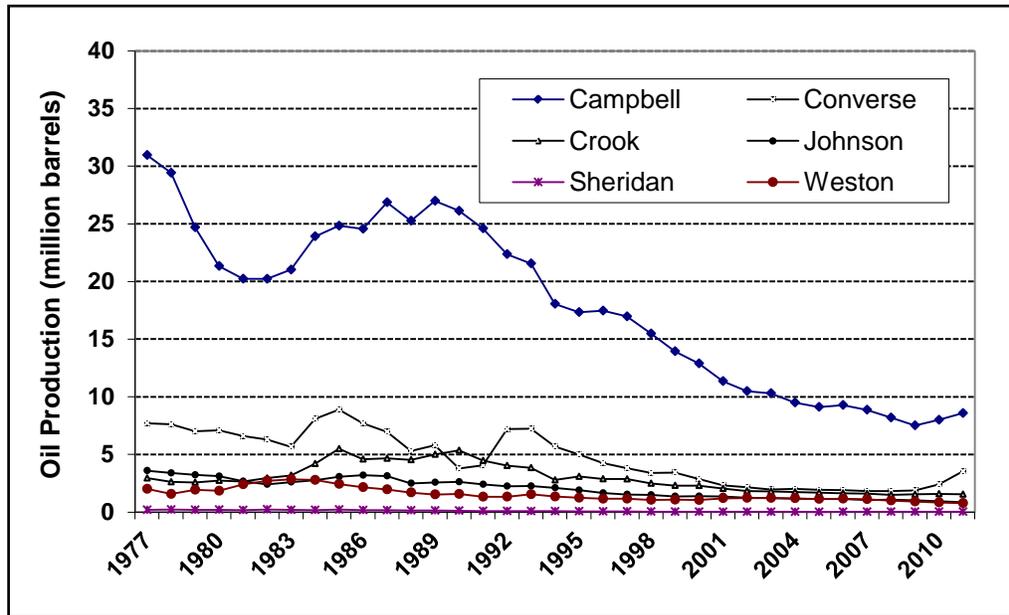
Oil production also has been an important economic driver in the PRB. For more than 25 years prior to 2004, the Wyoming PRB (including production from all six counties) was the origin of 30 to 40 percent of the total oil produced in Wyoming (**Figure 3-5**). The share of statewide production in the six-county study area fell below 25 percent in 2005, and then to a low of 20.3 percent in 2009 as a result of declining production in the PRB and increasing production elsewhere in the state. From a high of more than 30 million barrels per year in the 1970s, production in Campbell County declined to below 10 million barrels per year in 2004 and then to 7.5 million barrels in 2009. The pattern of long-term decline also occurred across the PRB. For example, annual production in Converse County declined from 5.0 million barrels in 1995 to 1.8 million barrels in 2009. In the six-county study area, total oil production was 12.9 million barrels in 2009 (WOGCC 2012).



Sources: WOGCC 2003, 2012; WTA 2012.

**Figure 3-5 Study Area Oil Production as a Share of Statewide Production (1977 – 2011)**

Stimulated by the effects of higher oil prices on production economics, annual oil production increased in Campbell and Converse counties in 2010 and 2011 (**Figure 3-6**), raising the regional total to 13.8 million barrels in 2010 and 15.3 million barrels in 2011. The latter total represented a 23.8 percent of total statewide production in 2011. The oil production totals in 2010 and 2011 were both below the 15.7 million barrels forecast for 2010 in the Phase I Task 2 report (AECOM 2009). Whereas the Phase I forecasts projected long-term declines, actual production increased by more than 10 percent between 2010 and 2011.



Sources: WOGCC 2003, 2012; WTA 2012.

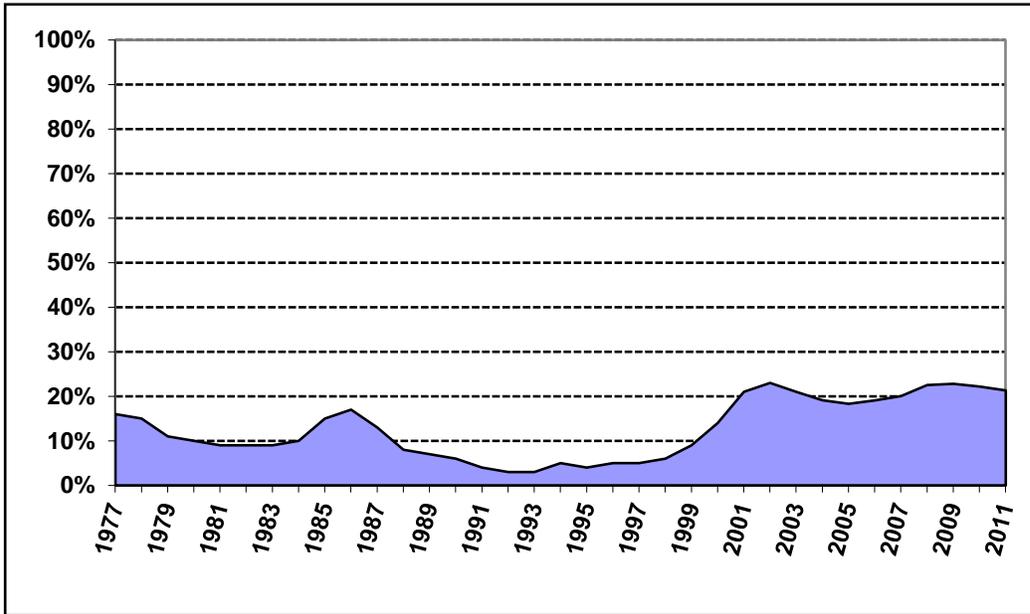
**Figure 3-6 Oil Production by County (1977 – 2011)**

### 3.2.2 Natural Gas Production

Although substantial, the share of statewide natural gas production from the six-county study area has been less than its share of coal and oil. From 1977 through 1997, most natural gas produced in the study area was from conventional sources. During that period, the study area produced on average approximately 7 percent of the total natural gas produced in the state (**Figure 3-7**). Historically, Campbell and Converse counties produced most of the natural gas in the study area, primarily from conventional wells. Beginning in the late 1990s, CBNG production in the study area increased dramatically, eventually pushing the share of statewide natural gas production from the six-county study area above 20 percent.

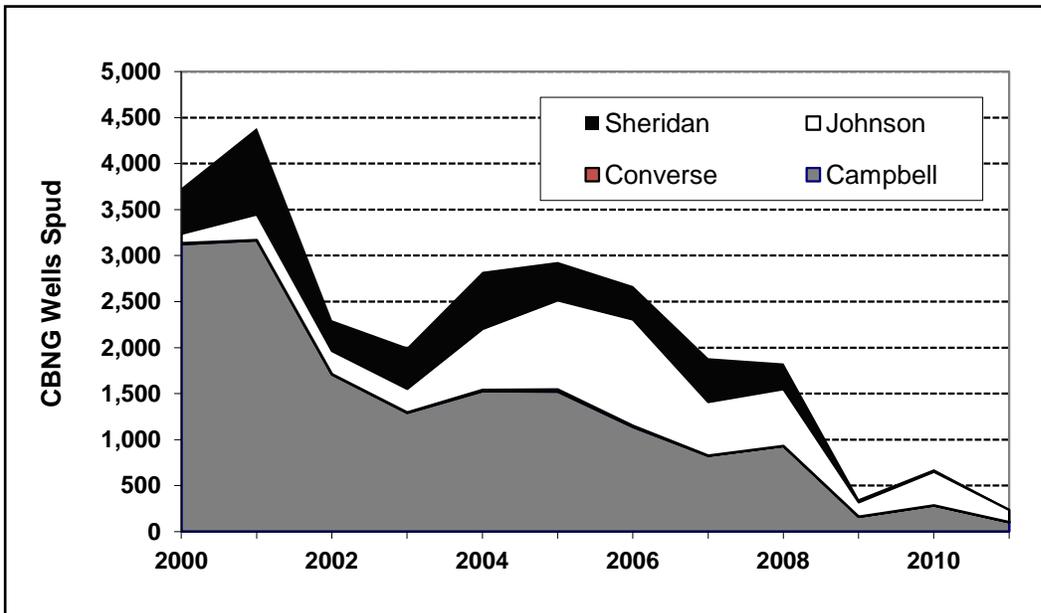
The bulk of CBNG development initially occurred in Campbell County and over time, shifted to the west and northwest into Sheridan and Johnson counties, leading to increased production in those counties. The geographic shift in CBNG development, as well as a decline in the overall pace of such development, is evident in the number of CBNG wells spudded (drilling commenced) in the six-county study area from 2000 through 2011 (**Figure 3-8**).

Increased levels of CBNG development in conjunction with the characteristic CBNG production profile (i.e., a sharp increase in production as wells are dewatered followed by rapidly declining production over the relatively short life of the wells) can result in dramatic increases in annual natural gas production as shown in **Figure 3-9**. Annual production in Campbell County increased more than 600 percent from 44.5 billion cubic feet (Bcf) in 1998 to a peak of 308 Bcf in 2003. Production in 2011 was 138 Bcf. A similar rise and subsequent decline in production occurred in Johnson County between 2004 and 2009, and in Sheridan County between 2002 and 2007 (**Figure 3-9**). The total combined production of conventional gas and CBNG in the six-county study area peaked at 581.3 Bcf in 2009, declining to 560.9 Bcf in 2010. The latter was more than 25 percent below the 750.8 Bcf projected for 2010 in the Phase I Task 2 report (AECOM 2009) and was the result of the slowdown in drilling triggered by the sharp decline in natural gas prices in recent years.



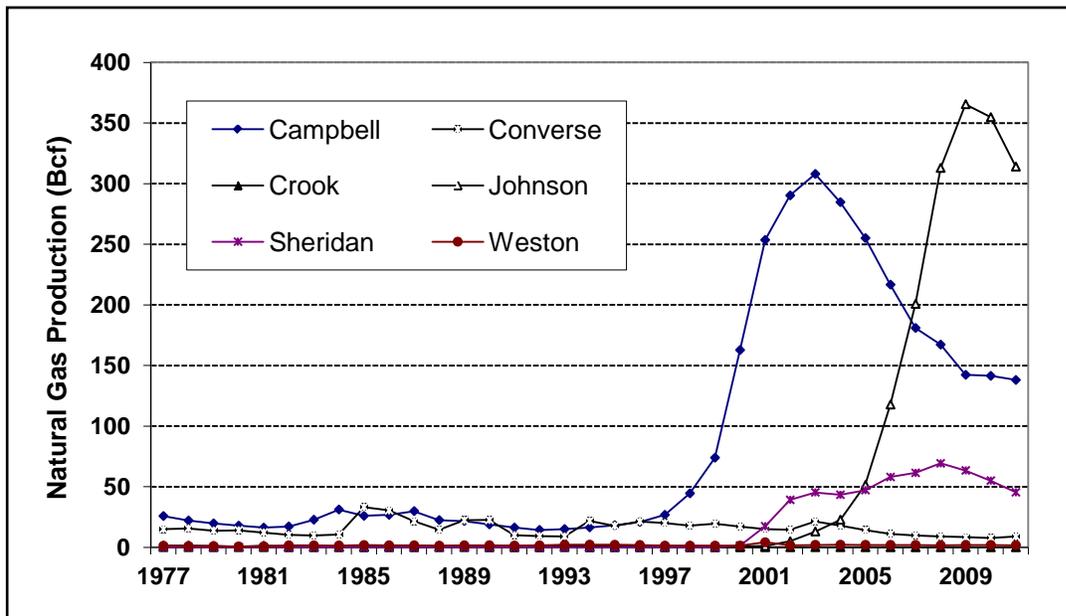
Sources: WOGCC 2003, 2012; WTA 2012.

**Figure 3-7 Study Area Natural Gas Production as a Share of Statewide Production (1977 – 2011)**



Sources: WOGCC 2003, 2012.

**Figure 3-8 Number of CBNG Wells Spudded in the Wyoming PRB by County (2000 – 2011)**



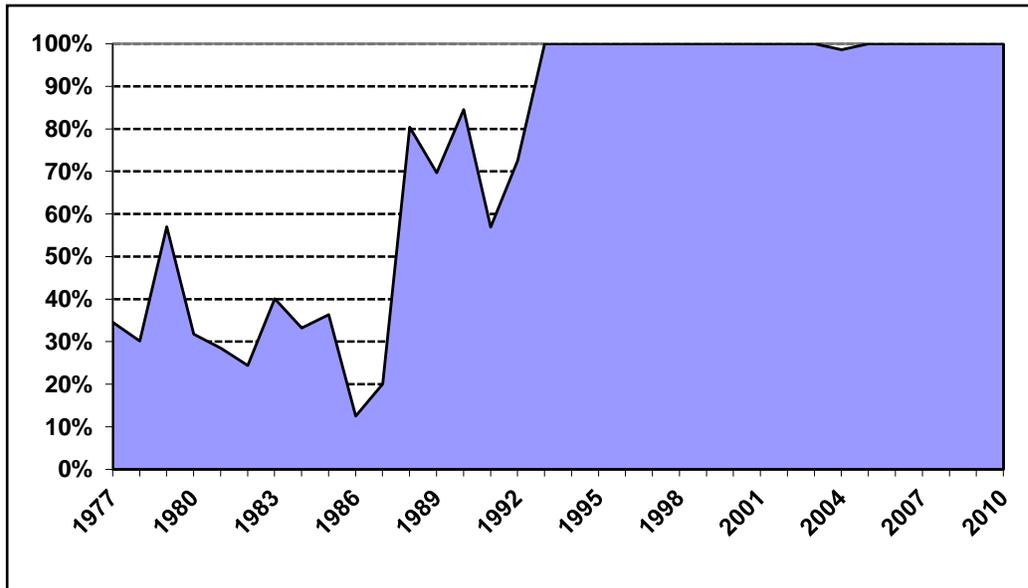
Note: Reflects total production from conventional gas and CBNG sources.  
 Sources: WOGCC 2003, 2012; WTA 2012.

**Figure 3-9 Annual PRB Natural Gas Production by County (1977 – 2011)**

### 3.2.3 Uranium

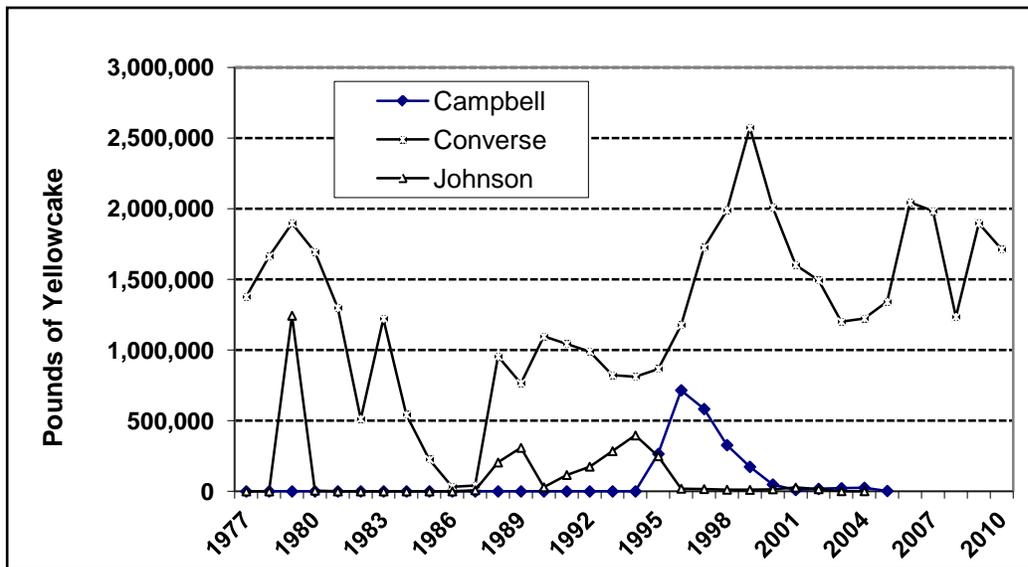
Uranium was once an important part of Wyoming’s economy and was considered a vital component of the nation’s energy future. However, demand for uranium has declined sharply in the wake of the Three Mile Island accident, the post-Cold War environment, and environmental concerns regarding the long-term disposal of spent fuel from nuclear reactors. More recently, the incident at the Fukushima Daiichi nuclear power plant following the earthquake and tsunami in Japan in March 2011 brought negative attention to nuclear power on a global scale, eroding what had been increasing interest in nuclear power as a domestic power source as an option to address greenhouse gas emissions.

Today, uranium is a smaller contributor to Wyoming’s energy economy, with production from Wyoming centered in the Wyoming PRB (**Figure 3-10**). Total yellowcake (the solid form of mixed uranium oxide produced from uranium ore during milling) production in Wyoming exceeded 2.0 million pounds in 2006, but fell to 1.25 million pounds in base year 2008. Annual production in 2010 was 1.7 million pounds of yellowcake. Most of the uranium in Wyoming currently is produced in Converse County (**Figure 3-11**), all of which comes from in situ operations, which is a process to extract the uranium without excavation of the ore bodies (Wyoming Mining Association 2004; Wyoming Department of Revenue 2012).



Sources: Wyoming Department of Revenue 2012; WTA 2012.

**Figure 3-10 PRB Uranium Production as a Share of Statewide Production (1977 – 2010)**



Sources: Wyoming Department of Revenue 2012; WTA 2012.

**Figure 3-11 Annual Uranium Production by County (1977 – 2010)**

### 3.2.4 Electrical Power Generation, Including Wind

The availability of coal and wind resources, the industrial demand for power associated with the mining industry, and the development of transmission capacity all have promoted development of substantial electrical power generating capacity in the Wyoming PRB. Current development includes seven coal-fired power plants in the study area, including the recently completed 422-megawatt [MW] (gross capacity) Dry Fork Station and 110-MW WYGEN III near Gillette. The other coal-fired plants, all of which were operational in base year 2008, include the Neil Simpson Units 1 and 2 (21.7 MW and 80 MW, respectively), WYGEN I and WYGEN II (80 MW and 90 MW, respectively), and MidAmerica Energy/PacifiCorp's Wyodak (330 MW) power plant, all located approximately 5 miles east of Gillette. Pacific Power and Light's Dave Johnston Power Plant is located in Converse County near Glenrock, Wyoming, outside of the Wyoming PRB study area.

Other electrical generating capacity in the Wyoming PRB includes three separate interconnected gas-fired power plants (Hartzog, Arvada, and Barber Creek) located near Gillette, Wyoming. Each unit contains three turbines, each rated at 5 MW with a 7.2 MW peak output providing a combined total of up to 67.8 MW of electric power to Basin Electric and its customers. All units are operational but typically are used to meet demand during peak periods.

Wyoming ranks among the top states in terms of wind energy potential. Although many Wyoming locations having the highest potential are in the southern portion of the state, areas in Converse and Campbell counties also support commercial-scale wind generation. As of the end of base year 2008, there was one operating wind power generation project: the 99-MW Glenrock Wind Energy Project. Four other wind farms have since become operational in the Wyoming PRB. These include: 1) the 99-MW Rolling Hills Wind Energy Project; 2) the 39-MW Glenrock III Wind Energy Project that began operations in January 2009; 3) the 99-MW Campbell Hill Windpower Project, owned by Three Buttes LLC, a subsidiary of Duke Energy, which began operations in December 2009; and 4) the 200-MW Top of the World Windpower Project that is owned by Duke Energy, located approximately 4 miles northeast of Glenrock and completed in 2010.

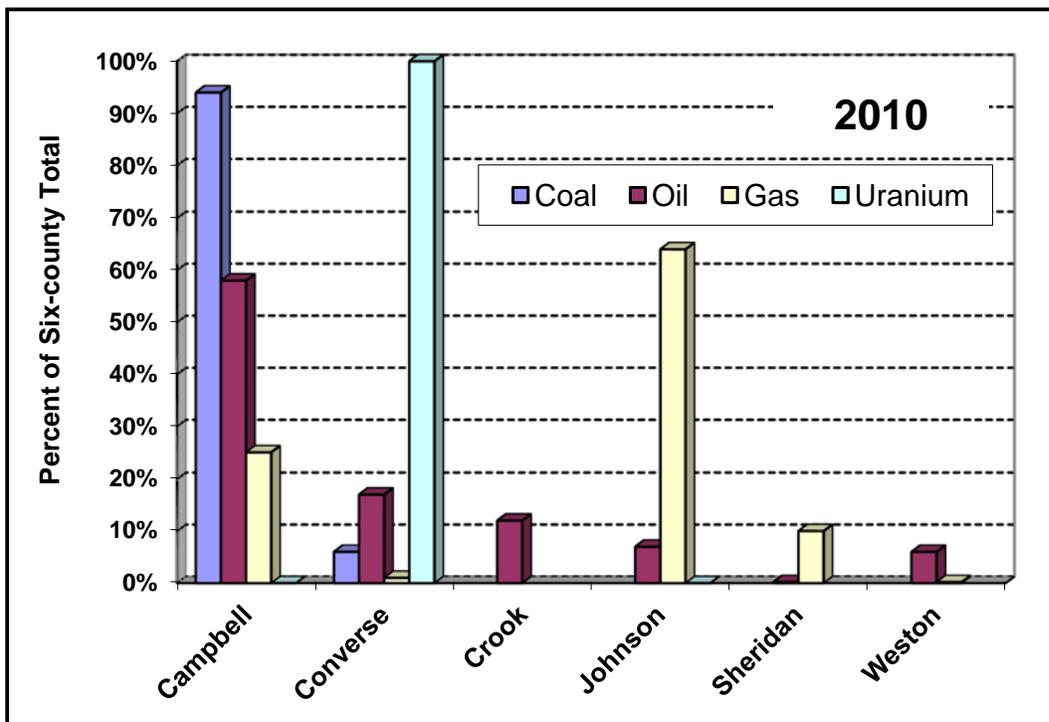
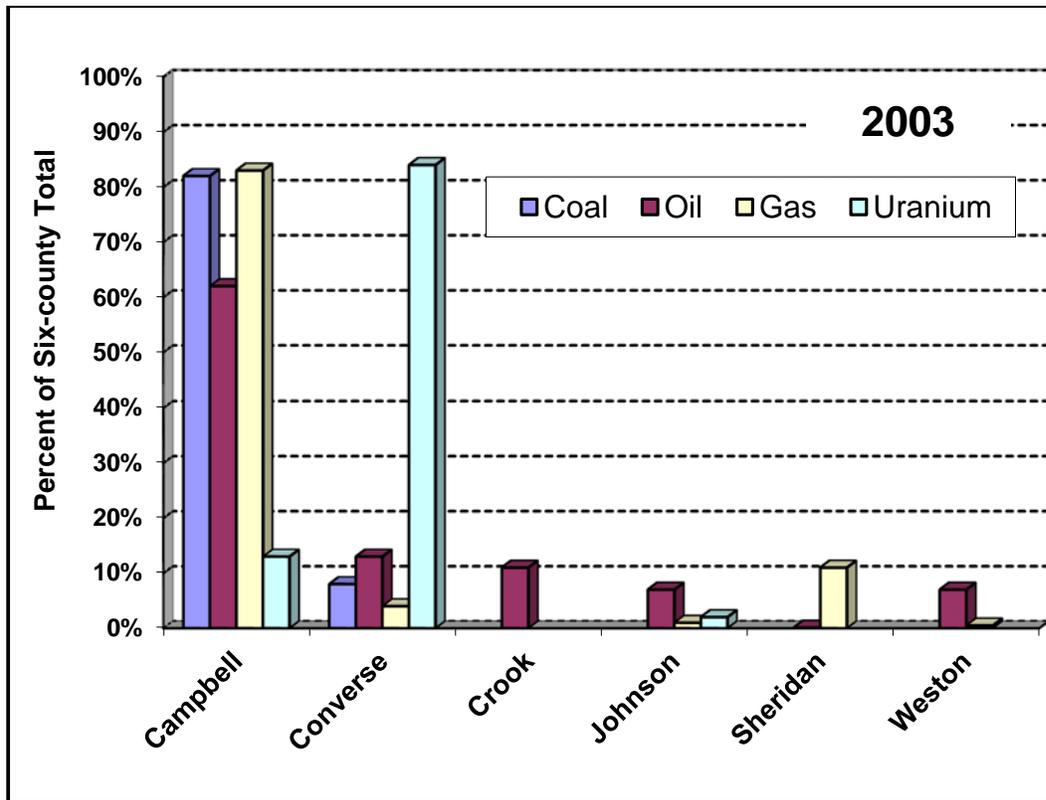
In July 2010, Third Planet Windpower received a permit for the proposed Reno Junction Wind Project, a 150-MW project to be located approximately 40 miles south of Gillette near a recently-constructed power substation. The company had anticipated initiating construction in late 2010, but failed to do so due to the inability to secure adequate project financing.

### 3.2.5 Recent Shifts in PRB Energy Resource Production

Shifts in energy commodity production have occurred within the PRB since the analysis was completed for the Phase I Task 1C report (ENSR 2005a). The major geographic shifts between 2003 and 2010, as shown in **Figure 3-12**, include:

- The concentration of coal production increased in Campbell County, offset by a decline in Converse County;
- The distribution of oil production changed only slightly, with a minor increase in Converse County offset by a decline in Campbell County production;
- The distribution of natural gas production shifted dramatically, declining in Campbell County while increasing in Johnson and Sheridan counties; and
- All uranium production occurs within Converse County.

Total electrical generation capacity in the Wyoming PRB increased by more than 170 percent between 2003 and 2010, from 616.7 to 1,737.5 MW. Of the total capacity in 2010, 969 MW have come online since the end of base year 2008, consisting of a combination of coal-fired and wind-powered generation capacity. The 2010 total power generation capacity consisted of 1,201.5 MW of coal- and gas-fired capacity and 536 MW of renewable wind energy capacity.



Sources: Wyoming Department of Revenue 2012; WOGCC 2003, 2012; Wyoming State Inspector of Mines 2012; WTA 2012.

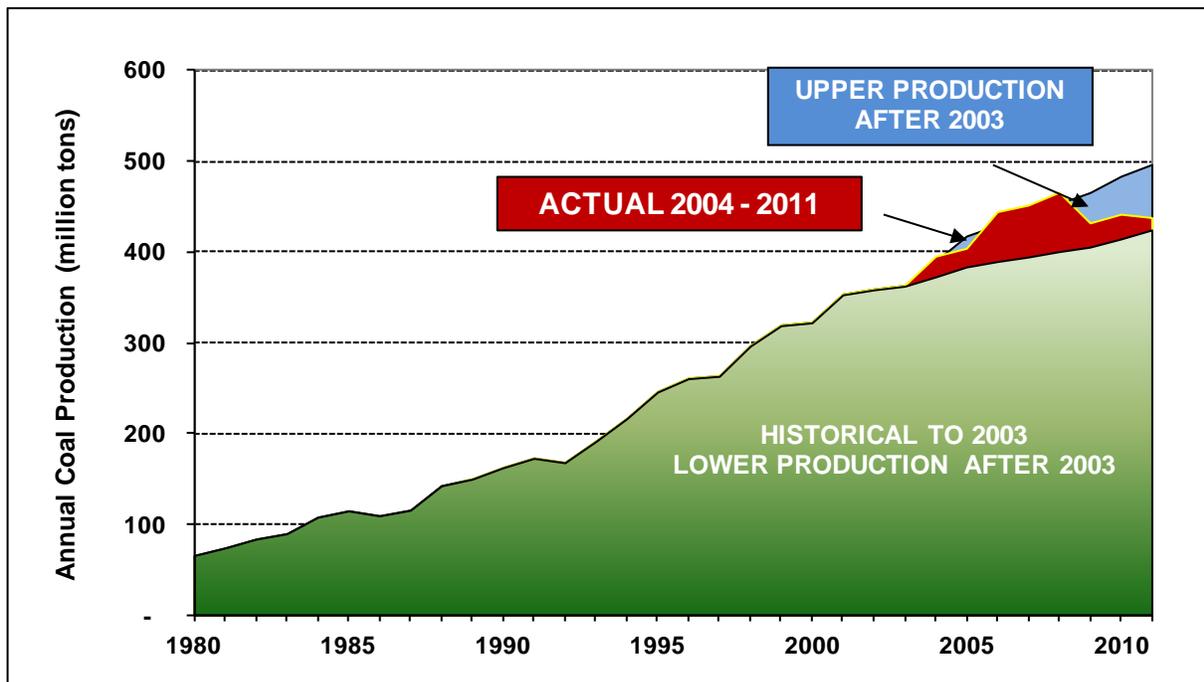
**Figure 3-12 Shares of Energy Production by Commodity Type and County (2003 and 2010)**

## 4.0 Review of 2010 Socioeconomic Projections from Phase I

This chapter compares the 2010 projections for coal production, total employment, population, and housing as presented in the Phase I Task 3C report (ENSR 2005a) with the actual levels reported for 2010. This retrospective provides insights into the general accuracy of the cumulative development assumptions, as well as the resulting economic and demographic changes associated with that development. Further study of the variance between the projected and actual changes also helps identify the role of uncertainties, unforeseen or newly emerging influences, or other causes of variances. An understanding of these variances will be carried forward to improve the updated projections for 2020 and 2030 being prepared for the Phase II Task 3C report.

### 4.1 Coal Production

Coal production has been, and will continue to be, the principal driver of the PRB’s long-term economic prosperity. Two future coal production scenarios were developed for each analysis year during the Phase I effort. From an actual production value of 363.4 million tons in 2003 in the Wyoming portion of the PRB, the upper production scenario projected the annual production to increase to 484 million tons in 2010, a 33 percent increase. The lower production scenario projected an increase of 14 percent to 416.0 million tons. **Figure 4-1** shows the annual upper and lower production levels based on linear interpolation between the 5-year milestones developed as part of the Task 2 analysis, with actual production from 2004 through 2011 superimposed over the underlying projections.



Sources: ENSR 2005c; Wyoming State Inspector of Mines 2012.

**Figure 4-1** Historic and Projected Wyoming PRB Coal Production (1980 – 2011)

As shown in **Figure 4-1**, annual production consistently has been higher than the levels predicted by the lower production scenario from 2004 through 2011. During the same period, annual production was at or below those associated with the upper production scenario in 5 of the 8 years. In 3 of the 8 years, including 2008 when production in the Wyoming PRB peaked at 451.4 million tons, annual production exceeded the levels derived under the assumption of steady growth between the milestone years.

## 4.2 Key Socioeconomic Parameters

### 4.2.1 Employment

In 2003, total employment in the six-county study area was 63,903. Under the two production scenarios developed for the Phase I analysis, the total employment was projected to rise to between 72,645 and 75,466 by 2010. The actual total employment in 2010 was 76,369, 903 employees more than the projection for the upper production scenario (**Table 4-1**). The difference represents a variance of 1.2 percent relative to the upper production scenario projections, but 7.8 percent when considered in terms of the net change compared to the 2003 levels.

**Table 4-1 Actual and Projected Total Employment (2003 – 2010)**

County	Actual		Projected 2010		2010 Actual Compared to Projected
	2003	2010	Lower Scenario	Upper Scenario	
Campbell	25,096	32,824	30,737	33,316	Between lower and upper
Converse	7,001	8,297	7,415	7,459	838 higher than upper
Crook	3,808	4,261	3,973	3,994	267 higher than upper
Johnson	5,261	5,937	5,830	5,862	75 higher than upper
Sheridan	17,928	19,815	19,651	19,768	47 higher than upper
Weston	4,809	5,235	5,039	5,067	168 higher than upper
<b>Six-county Study Area</b>	<b>63,903</b>	<b>76,369</b>	<b>72,645</b>	<b>75,466</b>	<b>903 higher than upper</b>

Sources: ENSR 2005a; U.S. Census Bureau 2011a.

Actual employment in 2010 was between the projections for the lower and upper production scenarios in Campbell County, but higher than the upper production scenario in the other five counties, with the largest absolute variances in Campbell and Converse counties. Actual employment in Sheridan County also was considerably higher than the projected levels. Across the six-county study area, the combined variance amounted to 4.6 percent of total employment. Observed trends and possible factors that explain the differences between actual and projected employment include:

- Total employment in coal mining was considerably higher than projected, even though a new mine did not initiate operations in Sheridan County as had been anticipated;
- Total oil and gas exploration and development employment was lower;
- Completion of the Dry Fork Station occurred a year later than anticipated;
- Other sources of residential growth (retirement) and the effects of such growth on employment were not accounted for;

- Possible influences of wind energy development, which was not envisioned during Phase I; and
- Possible influences of energy exploration and development in Converse County.

#### 4.2.2 Population

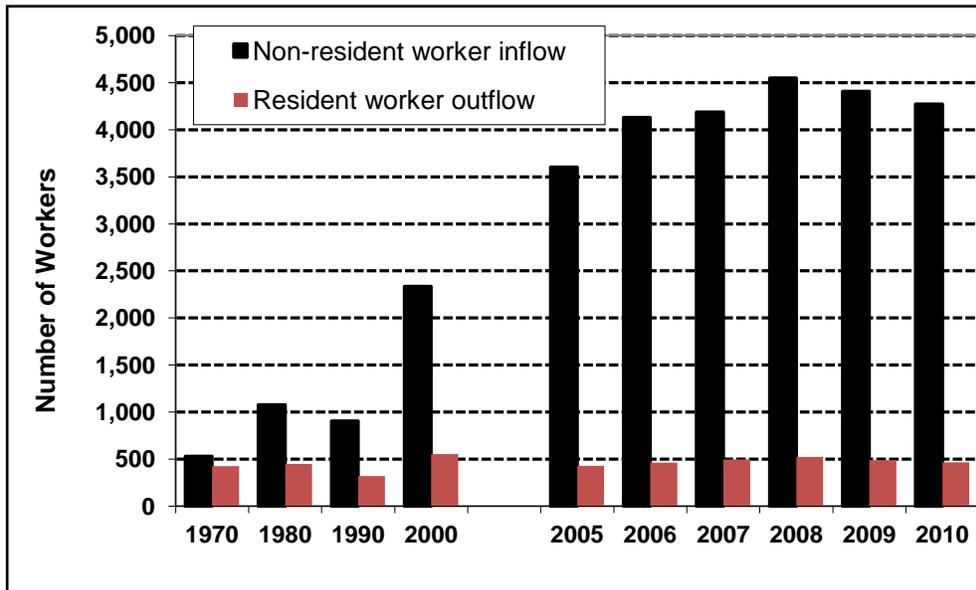
In 2003, total population in the six-county study area was 96,708. Under the two production scenarios developed for the Phase I analysis, the combined population was projected to rise to between 109,616 and 111,532 by 2010. The actual combined total was 111,942, a total of 410 individuals above the projection for the upper production scenario (**Table 4-2**). The difference between the actual and projected population represents a net variance of less than 0.5 percent relative to the upper production scenario, and 2.7 percent when considered in terms of the net change compared to the 2003 levels.

**Table 4-2 Actual and Projected Total Population (2003 – 2010)**

County	Actual			Projected 2010		2010 Actual Compared to Projected
	2000	2003	2010	Lower Production	Upper Production	
Campbell	33,698	36,438	46,133	45,925	47,662	Between lower and upper
Converse	12,104	12,314	13,833	13,103	13,160	673 higher than upper
Crook	5,895	5,986	7,083	6,542	6,570	513 higher than upper
Johnson	7,108	7,554	8,569	8,389	8,424	145 higher than upper
Sheridan	26,606	27,115	29,116	28,549	28,579	537 higher than upper
Weston	6,642	6,671	7,208	7,108	7,137	71 higher than upper
<b>Six-county Study Area</b>	<b>92,053</b>	<b>96,078</b>	<b>111,942</b>	<b>109,616</b>	<b>111,532</b>	<b>410 higher than upper</b>

Sources: ENSR 2005a; U.S. Census Bureau 2001, 2011a.

The actual 2010 population was between the projections for the lower and upper production scenarios in Campbell County, but higher than the upper production scenario in the other five counties, with the largest variances occurring in Converse and Sheridan counties. The specific reasons for the variances are unclear, but may include the contributions of economic and population growth from sources not envisioned during the Phase I analysis (e.g., retirement and lifestyle migration in Sheridan, Johnson, and Converse counties), energy-related development associated with wind energy and Niobrara shale oil and gas resources in Converse County, and high levels of workforce commuting and temporary non-resident employment in Campbell County (**Figure 4-2**). Earnings flow data from the BEA suggest a sharp increase in the level of in-commuting and temporary non-resident employment in Campbell County, particularly during the construction of the Dry Fork Station, when more than 4,500 non-resident workers are estimated to have been employed in Campbell County. Information published by the U.S. Census Bureau and Wyoming Department of Workforce Services, although not directly comparable, indicate similar patterns of heavy worker inflow to Campbell County (U.S. Census Bureau 2012; Wyoming Department of Workforce Services 2012). The estimated level of worker inflow is considerably higher than the 3,600 to 3,900 non-resident workers projected for 2010 in the Phase I Task 3C report (ENSR 2005a).



Note: Worker inflow and outflow estimated based on BEA earnings flow data and average annual wage data.  
 Sources: BEA 2012; U.S. Census Bureau various years.

**Figure 4-2 Campbell County Estimated Workforce Inflow and Outflow (1970 – 2010)**

**4.2.3 Housing**

In 2003, an estimated total of 42,240 housing units existed in the six-county study area. Under the two production scenarios developed for the Phase I analysis, the aggregate supply of housing supported by estimated demand in the PRB in 2010 was projected to be between 48,398 and 49,168 housing units. The actual total reported in the 2010 Census was 50,978 units, a net difference of 1,810 units more than the need projected under the upper production scenario (**Table 4-3**). The difference between the actual supply and projected need represents a net variance of 3.7 percent relative to the upper production scenario.

Positive variances between actual and projected needs occurred in all six counties, with the net variance ranging between 100 units in Weston County and 420 units in Johnson County. The second largest variance, 377 units, occurred in Converse County. With the exception of Campbell County, the higher than projected need for housing corresponds to higher than projected employment and population. Furthermore, unlike variances in some other parameters, having housing supply expand more than anticipated can have many social benefits.

**Table 4-3 Actual and Projected Total Housing (2003 – 2010)**

County	Actual		Projected 2010		2010 Actual Compared to Projected
	2003	2010	Lower Scenario	Upper Scenario	
Campbell	13,707	18,955	18,015	18,674	281 higher than upper
Converse	5,741	6,403	6,004	6,026	377 higher than upper
Crook	3,036	3,595	3,277	3,289	306 higher than upper
Johnson	3,622	4,553	4,119	4,133	420 higher than upper
Sheridan	12,861	13,939	13,563	13,613	326 higher than upper
Weston	3,273	3,533	3,420	3,433	100 higher than upper
<b>Six-county Study Area</b>	<b>42,240</b>	<b>50,978</b>	<b>48,398</b>	<b>49,168</b>	<b>1,810 higher than upper</b>

Sources: ENSR 2005a; U.S. Census Bureau 2011a.

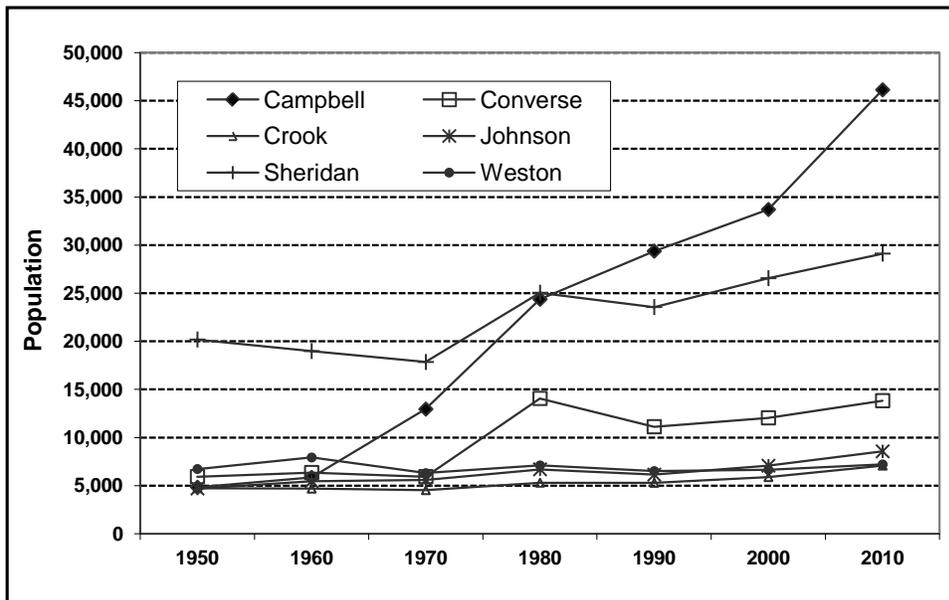
## 5.0 Current Social and Economic Conditions

### 5.1 Population

This section presents current population data (generally 2010) as well as some historical trend data for the main cities and towns in the six-county study area.

#### 5.1.1 County Population

All six counties in the study area have experienced population effects from energy resource development. However, Campbell County's growth from approximately 6,000 in 1960 to more than 46,000 in 2010 is the most dramatic change in the region. Anchored by the City of Gillette, Campbell County is recognized as the economic hub and largest city in the study area. Campbell County has grown in every decade since 1960, and the county experienced dramatic growth between 1970 and 1980 (Figure 5-1).



Source: U.S. Census Bureau various years.

**Figure 5-1 Population Trends by County (1950 – 2010)**

In 1960, Campbell County had a population of 5,861, and Sheridan County had a population of 18,989. By 1980, Campbell County's population had more than quadrupled to 24,367, which was just 3 percent lower than Sheridan County's population of 25,048. In 1990, after continued growth in Campbell County and a loss of population in Sheridan County, Campbell County had a population of 29,370, approximately 25 percent higher than Sheridan County's population of 23,562. In 2000, Campbell County's population was 33,698, up another 15 percent, while Sheridan County's population rose 13 percent to 26,560.

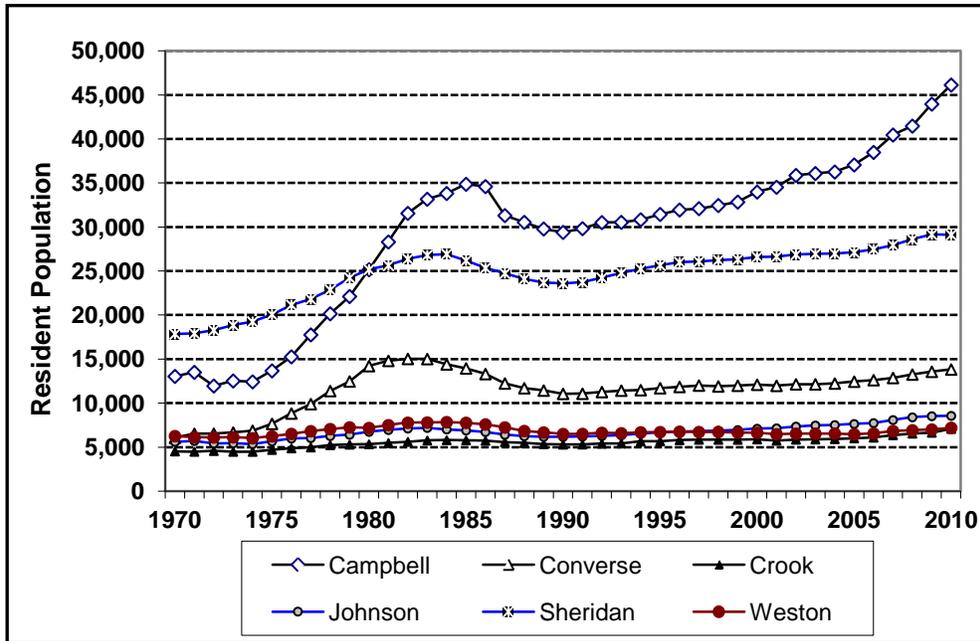
Between 2000 and 2010 all six counties in the study area registered population gains (Figure 5-1 and Table 5-1). The gains ranged from 12,435, representing a net increase of nearly 37 percent in Campbell County, to 564 (8.5 percent) in Weston County. The net gain across the six-county study area was 20,026 (22 percent), raising the six-county population total above 100,000 for the first time. Most of the growth during that decade occurred between 2005 and 2010, driven by a combination of increases in annual coal production, CBNG development, and construction of the Dry Fork Station.

**Table 5-1 Population Distribution by County (1990 – 2010)**

County/Location	1990	2000	2010	Changes 2000 – 2010	
				Absolute	Percent
<b>Campbell</b>					
Gillette (city)	17,635	19,646	29,087	9,441	48.1
Wright (town)	1,236	1,347	1,807	460	34.1
Rest of county	10,499	12,705	15,239	2,534	19.9
<b>Total</b>	<b>29,370</b>	<b>33,698</b>	<b>46,133</b>	<b>12,435</b>	<b>36.9</b>
<b>Converse</b>					
Douglas (city)	5,076	5,288	6,120	832	15.7
Glenrock (town)	2,153	2,231	2,576	345	15.5
Rest of county	3,899	4,533	5,137	604	13.3
<b>Total</b>	<b>11,128</b>	<b>12,052</b>	<b>13,833</b>	<b>1,781</b>	<b>14.8</b>
<b>Crook</b>					
Moorcroft (town)	768	807	1,009	202	25.0
Sundance (town)	1,139	1,161	1,182	21	1.8
Rest of county	3,387	3,919	4,892	973	24.8
<b>Total</b>	<b>5,294</b>	<b>5,887</b>	<b>7,083</b>	<b>1,196</b>	<b>20.3</b>
<b>Johnson</b>					
Buffalo (city)	3,302	3,900	4,585	685	17.6
Rest of county	2,843	3,175	3,984	809	25.5
<b>Total</b>	<b>6,145</b>	<b>7,075</b>	<b>8,569</b>	<b>1,494</b>	<b>21.1</b>
<b>Sheridan</b>					
Sheridan (city)	13,900	15,804	17,444	1,640	10.4
Rest of county	9,662	10,756	11,672	916	8.5
<b>Total</b>	<b>23,562</b>	<b>26,560</b>	<b>29,116</b>	<b>2,556</b>	<b>9.6</b>
<b>Weston</b>					
Newcastle (city)	3,003	3,065	3,532	467	15.2
Upton (town)	980	872	1,100	228	26.1
Rest of county	2,535	2,707	2,576	-131	-4.8
<b>Total</b>	<b>6,518</b>	<b>6,644</b>	<b>7,208</b>	<b>564</b>	<b>8.5</b>
<b>Six-county Study Area</b>					
Selected places	49,192	54,121	68,442	14,321	26.5
Rest of area	32,825	37,795	43,500	5,705	15.1
<b>Total</b>	<b>82,017</b>	<b>91,916</b>	<b>111,942</b>	<b>20,026</b>	<b>21.8</b>
<b>State of Wyoming</b>	<b>453,588</b>	<b>493,782</b>	<b>563,626</b>	<b>69,844</b>	<b>14.1</b>

Sources: U.S. Census Bureau various years, 2011a.

Other counties in the PRB, such as Sheridan County, experienced moderate growth in the 1970s, stabilization and a modest decline in the 1980s, and a resumption of growth in the 1990s, that largely continued to the present (Figure 5-2).



Source: BEA 2012.

**Figure 5-2 Annual Population by County (1970 – 2010)**

The cities and towns in the six-county study area all gained population between 2000 and 2010 (Table 5-1). With 29,087 residents in 2010, Gillette was the largest community in the study area and fourth most populous in the state. Sheridan was the second most populous community in the study area (2010 population of 17,444), followed by Douglas (2010 population of 6,120). Approximately 35 percent of the residents in the study area live in smaller communities or unincorporated areas.

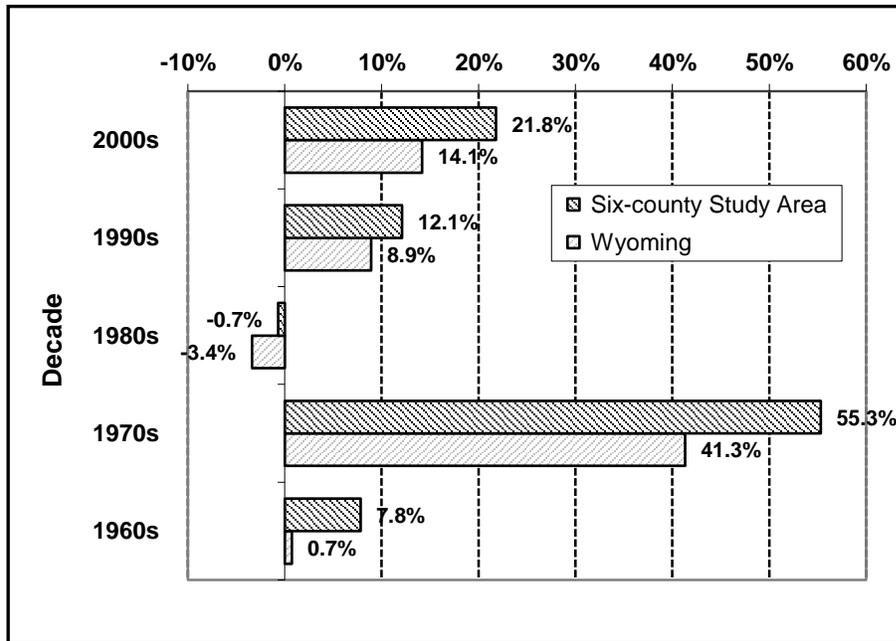
The six-county study area is a relatively urbanized area in the sense that the majority of the population resides in cities, towns, or designated places, and a minority of the population resides in areas outside of recognized population concentrations. This characteristic began with the growth of the 1940s and peaked in the 1950s. The 1960 census reported that 60.5 percent of the study area population resided in cities, towns, and designated places. Since then, the population distribution has remained very similar, with the 2010 census reporting a 61.1 percent urban share.

The general trend toward residency in urban areas in the six-county study area coincides with the emergence of energy resource development as the region’s principal economic driver. This has been reinforced by the policies of well-situated cities and towns such as annexing adjacent land. Through such policies, these municipalities, including and perhaps especially Gillette, gained and then generally maintained a majority share of population in the study area.

**5.1.2 Study Area Population Growth in a Statewide Context**

Driven by the strong population growth in Campbell County, total population in the six-county study area has grown more rapidly in relative terms (or declined less) than the state of Wyoming as a whole in every decade since 1960. Figure 5-3 compares the population change by decade in the six-county study area

to the corresponding changes in Wyoming. Between 2000 and 2010, the combined population of the six-county study area increased by a net 21.8 percent, more than 50 percent higher than the overall statewide average.



Source: U.S. Census Bureau various years.

**Figure 5-3 Population Change Rates by Decade (1960s – 2000s)**

Population growth in the six-county study area accounted for approximately 30 percent of the total statewide growth. Among all Wyoming counties and municipalities, Campbell County and the City of Gillette lead the state in terms of absolute population gains between 2000 and 2010. Cheyenne (+6,455 residents) and Casper (+5,672 residents), were second and third behind Gillette in terms of absolute population gains between 2000 and 2010.

**5.1.3 Components of Population Change**

Migration is an important component of population change in the six-county study area. Although migration data do not identify the motivation of the movers, pursuit of economic opportunity traditionally has been a major factor for intrastate and interstate (but not local) moves, with young adults and young households/families traditionally among the most mobile. However, economic mobility increased sharply among all demographics during the recent recession.

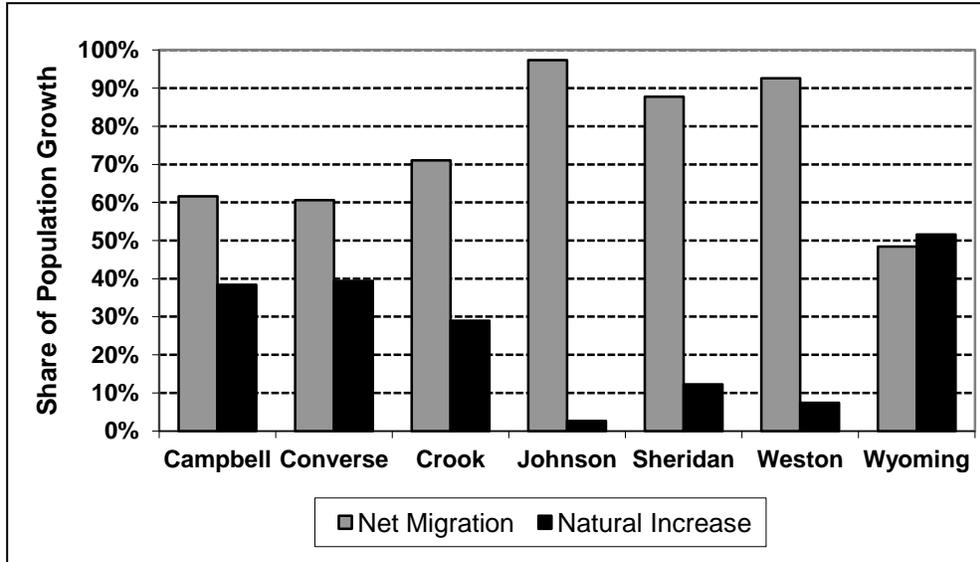
Over the past decade, migration accounted for more than 70 percent of the net population growth in the six-county study area, with natural growth accounting for less than 30 percent. In contrast, migration accounted for less than 40 percent of the growth across the remainder of the state. Alternatively, the total migration into the study area represented nearly half of all migration-related growth in the state, whereas natural increase within the study area was less than 20 percent of the total natural increase statewide (**Table 5-2** and **Figure 5-4**).

**Table 5-2 Cumulative Components of Population Change (April 2000 – 2009)**

Geographic Area	Total Population Change <sup>1</sup>	Natural Increase (Estimated)	Net Migration (Estimated)
Campbell County	10,269	3,999	6,426
Converse County	1,526	626	962
Crook County	766	229	563
Johnson County	1,456	39	1,433
Sheridan County	2,603	337	2,407
Weston County	365	28	350
<b>Six-county Total</b>	<b>16,985</b>	<b>5,258</b>	<b>12,141</b>
Wyoming	50,487	27,356	25,660
Six-county Share of Statewide Change	34%	19%	47%

<sup>1</sup> Total population change is based on the Census Bureau's estimated 2009 population and the Census 2000 population counts. Total change is composed of natural increase and net migration; however, the Census Bureau's estimates of those two factors are derived from a variety of sources and do not sum to the total change.

Source: U.S. Census Bureau 2011c.



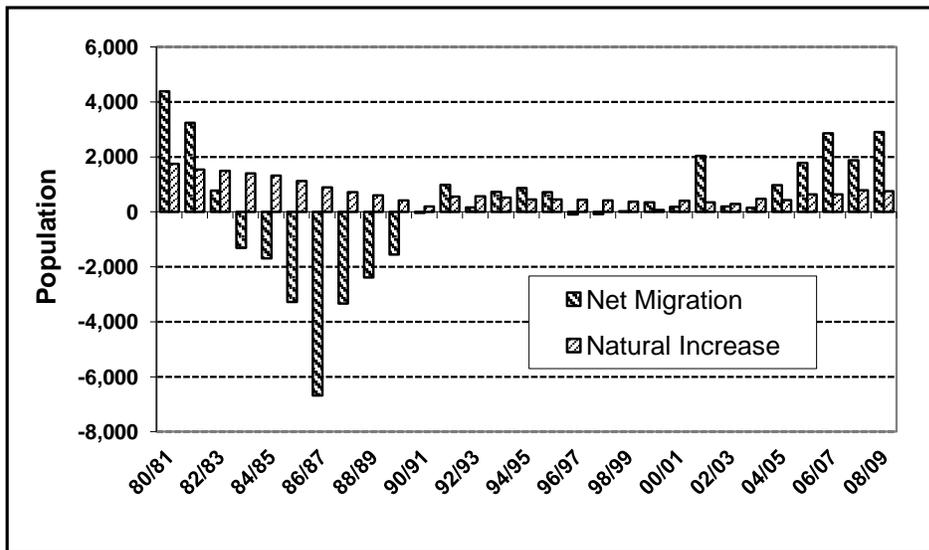
Source: U.S. Census Bureau 2011c.

**Figure 5-4 Shares of Population Growth Attributed to Net Migration and Natural Increase (2000 – 2009)**

Within the six-county study area, Campbell County experienced the largest population influx in absolute terms (more than 6,400 new residents), as well as the largest gains from internal growth (approximately 4,000 residents) between 2000 and 2009. However, in relative terms, net in-migration was responsible for virtually all of the growth in Johnson, Sheridan, and Weston counties.

Data compiled and analyzed by the Wyoming Department of Workforce Services indicate that the states that originated the largest migration flows to Campbell County were South Dakota, California, Colorado, and Montana. Wyoming counties that typically account for large migration flows to Campbell County include Natrona, Sheridan, Converse, Weston, and Sweetwater counties. Geographic proximity and economic similarity likely are the primary factors in these linkages, with the relative population sizes of typical origins and destinations a secondary factor.

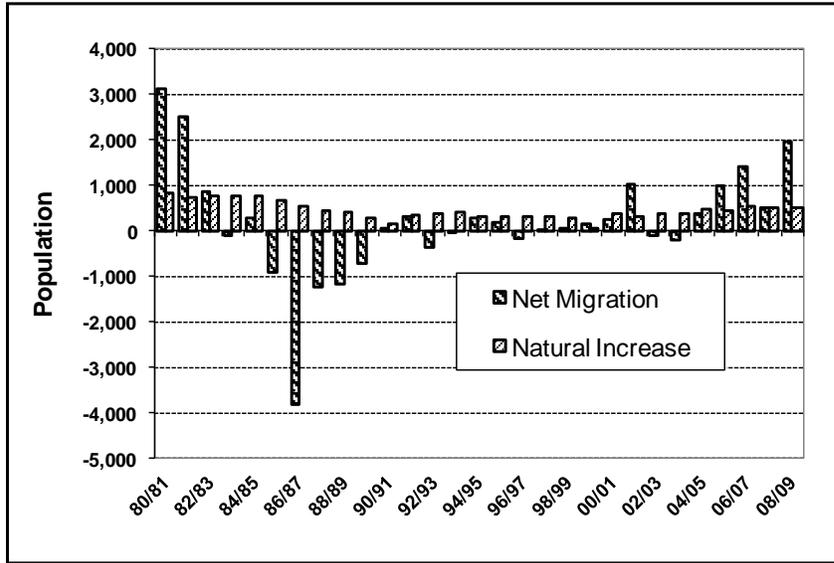
Annual estimates of population change prepared by the U.S. Census Bureau indicate the relative importance of migration for year-to-year population change and the responsiveness of migration to changes in economic conditions. **Figure 5-5** shows year-to-year population changes in the six-county study area due to net migration and natural increase for the 1-year periods from July 1980 through July 2009. The data reflect the turning point in annual net migration to the study area that occurred in the early 1980s as the natural resources economy began to slow. Net in-migration decreased from 1981 through 1983 and turned to net out-migration beginning in 1984. The study area did not experience net in-migration again until 1993. Since then, net migration generally has been positive, with strong gains in 2002-2003 related to oil and gas development, and in the past 5 years (2005 to 2009) with the gains driven by construction of coal-fired electrical generating capacity and increased coal mining employment. Population growth attributable to natural increase has been increasing over time as the region's population has grown; estimated natural increase across the PRB climbed from 250 for the 2001-2002 period to 750 for the 2008-2009 period. Data for Campbell County follow the same pattern, reflecting the county's relative importance in driving overall trends within the PRB (**Figure 5-6**).



Note: Estimations are from July 1 to July 1 of the following year. The horizontal axis labels indicate the beginning and ending year (e.g., 80/81 indicates the period July 1, 1980, to July 1, 1981).

Source: U.S. Census Bureau 2011c.

**Figure 5-5 Components of Population Change in the Six-county Study Area (1980 – 2009)**



Note: Estimations are from July 1 to July 1 of the following year. The horizontal axis labels indicate the beginning and ending year (e.g., 80/81 indicates the period July 1, 1980, to July 1, 1981).

Source: U.S. Census Bureau 2011c.

**Figure 5-6 Components of Population Change in Campbell County (1980 – 2009)**

**5.1.4 Population Demographics and Household Characteristics**

Characteristics of the population and households, as measured in the 2010 Census, indicate that the energy-boom of the 2000s continues to foster a relatively young, family oriented community in Campbell County (**Table 5-3**). In contrast to the changes in other counties in the six-county study area and the state as a whole, Campbell County’s median age (31.8 years) declined between 2000 and 2010. Although the share of Campbell County residents under 18 years of age declined from 31.0 to 28.9 percent over the past decade, it is considerably higher than the comparable shares of younger residents in the other counties and the 24.0 percent statewide average.

In contrast to the nation’s general population, males comprise over half the resident population across the six-county study area and Wyoming as a whole. Moreover, the percentage of males increased between 2000 and 2010. In 2010, males accounted for 52.6 percent of Campbell County residents, with an equivalent share in Weston County. Among the other counties in the study area, Sheridan County had the lowest share of males (50 percent).

Families in Campbell County account for a larger share of all households, and the typical household is larger than in surrounding counties or the state as a whole. Families in Campbell County accounted for 69.5 percent of all households in 2010, a decline from the 73.8 percent in 2000 but higher than in other counties in the study area and the state as a whole. In 2010, Campbell County’s average household size of 2.66 persons per household also was higher than the state’s average household size of 2.42 and those of other study area counties, which range from 2.25 (Johnson) to 2.42 (Converse) persons per household. The local age and household characteristics also are reflected in other local social and economic conditions, especially public education.

**Table 5-3 Selected Demographic and Household Characteristics (2000 and 2010)**

County/State	Male (percent)	Female (percent)	Median Age (years)	Under 18 years (percent)	Average Household Size (persons)	Family Households <sup>1</sup> (percent)
<b>2000</b>						
Campbell	51.4	48.6	32.2	31.0	2.73	73.8
Converse	49.8	50.2	37.5	28.5	2.55	72.6
Crook	50.6	49.4	40.2	27.9	2.51	71.3
Johnson	49.1	50.9	43.0	24.2	2.36	67.8
Sheridan	48.9	50.1	40.6	24.1	2.31	63.4
Weston	50.8	49.2	40.7	24.1	2.42	71.2
Wyoming	50.3	49.7	36.2	26.1	2.48	67.4
<b>2010</b>						
Campbell	52.6	47.4	31.9	28.1	2.66	69.5
Converse	50.7	49.3	39.0	25.4	2.42	68.0
Crook	51.5	48.5	43.6	23.8	2.41	69.0
Johnson	50.9	49.1	44.8	22.1	2.25	63.7
Sheridan	50.0	50.0	41.9	22.3	2.27	62.3
Weston	52.6	47.4	42.3	21.8	2.28	64.8
Wyoming	51.0	49.0	36.8	24.0	2.42	64.6
<b>Direction of Change 2000 to 2010/Campbell County Value Relative to Other Counties<sup>2</sup></b>						
Campbell	↑/+	↓/-	↓/-	↓/+	↓/+	↓/+
Converse	↑	↓	↑	↓	↓	↓
Crook	↑	↓	↑	↓	↓	↓
Johnson	↑	↓	↑	↓	↓	↓
Sheridan	↑	↓	↑	↓	↓	↓
Weston	↑	↓	↑	↓	↓	↓
Wyoming	↑	↓	↑	↓	↓	↓

<sup>1</sup> Family households consist of a householder and one or more other individuals related to the householder by birth, marriage, or adoption.

<sup>2</sup> The arrows indicate overall direction of change of a given parameter between 2000 and 2010. The + or - indicate whether the Campbell County values is higher (+), or less than (-) the corresponding values for other counties in the study area and the state as a whole.

Sources: U.S. Census Bureau 2001, 2011a.

The population of the six-county study area is predominately white and not Hispanic or Latino, although minorities account for a slightly higher share of the population in Campbell County than in other counties in the study area, and the minority presence in the population, expressed in terms of the percent of total, increased between 2000 and 2010. As shown in the census data in **Table 5-4**, self-identified Hispanic or Latino persons constitute 7.8 percent of the total population of Campbell County, compared to between 2.0 and 6.3 percent in other counties in the study area and 8.9 percent of Wyoming as a whole.

**Table 5-4 Race and Hispanic or Latino Population (2000 and 2010)**

County/State	Racial and Ethnic Composition of Population			
	White Alone (percent)	One Race – All Other (percent)	Two or More Races (percent)	Hispanic or Latino – Any Race (percent)
<b>2000</b>				
Campbell	96.1	2.6	1.3	3.5
Converse	94.7	3.8	1.5	5.5
Crook	97.9	1.4	0.7	0.9
Johnson	97.0	1.4	1.6	2.1
Sheridan	95.9	2.8	1.3	2.4
Weston	95.9	2.6	1.5	2.1
Wyoming	92.1	6.1	1.8	6.4
<b>2010</b>				
Campbell	93.2	4.7	2.1	7.8
Converse	95.1	3.2	1.7	6.3
Crook	97.2	1.6	1.2	2.0
Johnson	96.5	2.4	1.1	3.2
Sheridan	95.4	3.1	1.5	3.5
Weston	95.5	2.8	1.7	3.0
Wyoming	90.7	7.1	2.2	8.9

Sources: U.S. Census Bureau 2001, 2011a.

## 5.2 Economic Base

### 5.2.1 Employment

Energy resource development since 1970 has resulted in substantial economic expansion across the six-county study area. Through 2010, total employment expanded by 206 percent as 51,446 net new jobs were added (**Table 5-5**). The most rapid expansion occurred between 1975 and 1980 through the addition of 16,420 new jobs. More modest growth and even some declines occurred through the 1980s and into the mid-1990s due to the curtailment of development plans and the shutdown of a number of coal enhancement, uranium, and other anticipated projects. Due primarily to increases in CBNG development and coal mine employment, including subcontractors, growth resumed in the late 1990s.

Another period of strong growth occurred between 2005 and 2008, when a net total of 12,325 new jobs were added in the six-county study area, more than half of which occurred in Campbell County. CBNG development, construction of the Dry Fork Station, wind energy development, and the development of

natural gas transmissions and processing capacity were the driving forces behind that expansion. More than half of the total net job gain in the six-county region since 1970 occurred in Campbell County, where total employment increased from 6,026 jobs in 1970 to 32,824 jobs in 2010. Strong gains also were posted in Sheridan County (11,355 jobs) and Converse County (5,534 jobs). Unlike the other four counties, job gains in Johnson and Sheridan counties since 1985 were larger than those between 1970 and 1985. Over the entire 40-year history reported in **Table 5-5**, total employment in Campbell County grew at a CAGR of 4.3 percent. Employment growth rates among the other counties, on a CAGR basis, ranged from 1.4 percent in Weston County to 2.8 percent in Converse County.

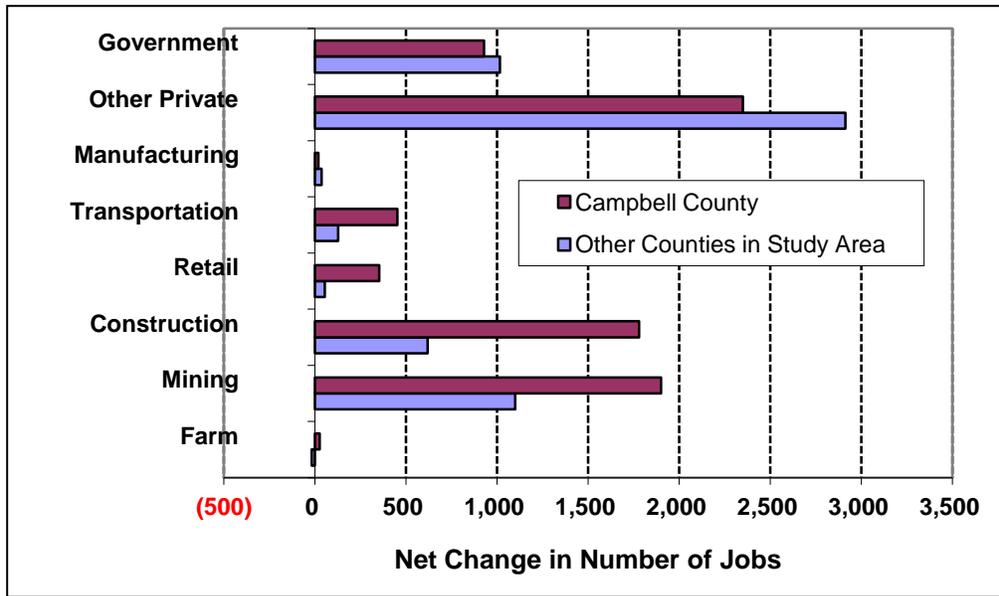
**Table 5-5 Total Employment by County (1970 – 2010)**

Year	County						Six-county Area
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
1970	6,026	2,763	2,084	2,640	8,460	2,950	24,923
1980	16,904	7,729	2,909	3,757	12,727	4,203	48,229
1990	18,735	5,887	3,005	3,825	13,181	4,433	49,066
2000	23,441	7,088	3,671	4,886	16,586	4,841	60,513
2005	27,471	7,302	3,802	5,387	18,241	4,839	67,042
2006	30,307	7,437	3,991	5,678	19,139	4,950	71,502
2007	32,454	7,830	4,199	5,976	20,368	5,225	76,052
2008	34,445	8,334	4,278	6,307	20,755	5,278	79,397
2009	33,853	8,239	4,226	6,007	20,062	5,158	77,545
2010	32,824	8,297	4,261	5,937	19,815	5,235	76,369
<b>Absolute Change</b>							
1970 to 1985	15,537	4,036	1,061	986	4,300	1,272	27,192
1985 to 2010	11,261	1,498	1,116	2,311	7,055	1,013	24,254
<b>Total 1970 to 2010</b>	<b>26,798</b>	<b>5,534</b>	<b>2,177</b>	<b>3,297</b>	<b>11,355</b>	<b>2,285</b>	<b>51,446</b>
CAGR 1970 to 2010	4.3%	2.8%	1.8%	2.0%	2.2%	1.4%	2.8%

Sources: BEA 2011, 2012.

Completion of the Dry Fork Station and slowdowns in the pace of natural gas development paralleling the decline in market prices resulted in a loss of more than 3,000 jobs between 2008 and 2010; the majority of which affected employment in Campbell County. A substantial loss of jobs also occurred in Sheridan County during that time (**Table 5-5**).

Gains in mining, conventional oil and gas, and construction were the forces driving employment growth between 2003 and 2010 (**Figure 5-7** and **Table 5-6**). The economic stimulus associated with those gains and the population gains that accompanied the growth triggered secondary job gains in trade, services, and government. The majority of the net growth occurred in Campbell County, particularly in the mining, construction, and retail trades.



Source: BEA 2012.

**Figure 5-7 Net Change in Employment for Selected Industrial Sectors (2003 – 2010)**

**Table 5-6 Changes in Total Employment by Major Industry and Location (2003 – 2010)**

Sector/Industry	Total Employment in Study Area			Source of Difference by Location		
	2003	2010	Difference 2003 to 2010	Campbell County	Other Counties in Study Area	Campbell County Share (percent)
Farm	3,037	3,047	10	27	(17)	>100
Mining	8,722	11,721	2,999	1,900	1,099	63
Construction	5,421	7,820	2,399	1,780	619	74
Retail	6,510	6,919	409	354	55	87
Transportation	2,593	3,173	580	453	127	78
Manufacturing	1,537	1,592	55	19	36	35
Other Private <sup>1</sup>	24,448	29,711	5,263	2,350	2,913	45
Government	10,441	12,386	1,945	929	1,016	48
<b>Total</b>	<b>62,709</b>	<b>76,369</b>	<b>13,660</b>	<b>7,812</b>	<b>5,848</b>	<b>57</b>

<sup>1</sup> Other private industries include the forestry, fisheries, utilities, whole trade, and all service industries. These industries are not reported separately due to data disclosure issues in the BEA data series.

Source: BEA 2012.

Substantial employment gains also were registered in Campbell County in the wholesale trade, accommodations, and professional services industries. Other economic parameters also can be used to

describe employment conditions in the six-county study area, such as those provided in **Table 5-7**. These data show that:

- The majority of all jobs in Campbell County are wage and salary positions, with proprietors accounting for 9 percent of the total reported jobs. In contrast, proprietors account for between 27 and 51 percent of all jobs in the other counties in the study area.
- Farms, ranches, and related agricultural industries, including landscaping and nurseries, still employ a sizeable number of individuals in all six counties, ranging from 277 jobs in Weston County to 696 jobs in Sheridan County.
- Broadly defined, farm employment accounts for approximately 2 percent of all jobs in Campbell County and 16 percent of all jobs in Crook County.
- Government jobs account for 14 to 18 percent of all jobs among the counties in the study area.

**Table 5-7 Employment by Type and Type of Establishment (2010)**

Parameter	County					
	Campbell	Converse	Crook	Johnson	Sheridan	Weston
<b>Total Employment</b>	32,824	8,297	4,261	5,937	19,815	5,235
<b>Employment by Type</b>						
Wage and Salary (dollars)	29,870	6,034	2,574	3,560	13,916	2,553
Proprietors	2,954	2,263	1,687	2,377	5,899	2,682
Wage and Salary (percent)	91	73	60	60	70	49
Proprietors (percent)	9	27	40	40	30	51
<b>Establishment Type</b>						
Farm	690	519	481	384	696	277
Non-farm Private	27,551	6,235	3,013	4,494	15,534	4,109
Government	4,583	1,543	767	1,059	3,585	849
Farm (percent)	2	6	11	6	4	5
Non-farm Private (percent)	84	75	71	76	78	78
Government (percent)	14	19	18	18	18	16

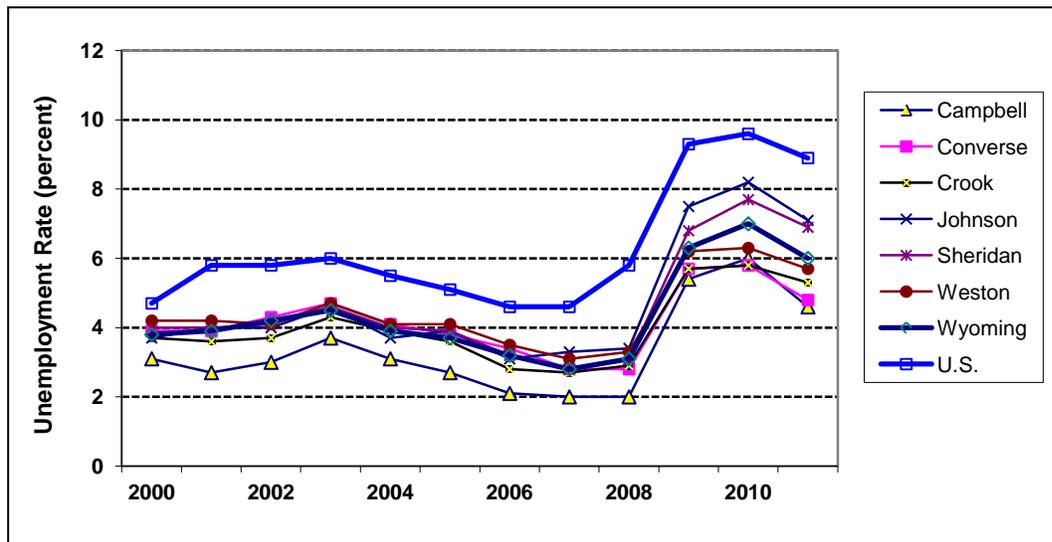
Source: BEA 2012.

### 5.2.2 Labor Force, Unemployment, and Commuting

Labor market conditions in the six-county study area generally reflect the region's healthy economy. Over time, unemployment levels and unemployment rates have both reflected the influences of a large, relatively stable employment base supported by the coal mining industry and the more transitory and variable influences of natural gas and other industries. Since 2000, average annual unemployment rates across the study area have consistently been below national levels, as has been the statewide average (**Figure 5-8**). Moreover, the unemployment rates in Campbell County have been below the statewide average and lower than the other counties in the study area.

The increased labor demand associated with CBNG development combined with demand in the coal mining industry and construction initially contributed to declines in unemployment rates across the study area such that average annual unemployment in Campbell County fell to 2.0 percent in 2007.

Unemployment in the other counties in the study area ranged from 2.7 to 3.3 percent. Some economists have viewed an unemployment rate of 2 to 3 percent as indicative of “full employment.”



Source: U.S. Bureau of Labor Statistics 2012.

**Figure 5-8 Average Annual Unemployment Rates (2000 – 2011)**

The onset of the national economic recession in late 2007 initially did not register strongly in the six-county study area as energy development and construction supported local demand for labor. The recession’s subsequent effects in reducing energy demand and energy commodity prices resulted in layoffs and deferred replacement hiring and expansion, pushing unemployment rates higher across the study area and the state in 2009 and 2010. Unemployment in Campbell, Converse, Crook, and Weston counties climbed to approximately 6.0 percent in 2010, but remained below the statewide and national averages of 7.0 and 9.6 percent, respectively. In part, the increase in local unemployment registered in 2009 and 2010 may have been exacerbated by unemployed job-seekers from other parts of the country drawn by the reports in the media of the region’s relatively strong economy. It is interesting to note that the peak unemployment rate in Campbell County in 2009-2010 (**Figure 5-9**) coincided with the peak employment month for construction of the Dry Fork Station.

In contrast to the other counties in the study area, Sheridan and Johnson counties both experienced unemployment rates that were higher than the statewide average in 2010. Unemployment rates have since declined across the study area, lead by Campbell County, which registered 4.6 percent unemployment for 2011. This was 4.3 percentage points below the national average and 1.4 percentage points below the statewide average.

Changing labor market conditions are not only reflected in the unemployment rates, but also the underlying supply of labor. Increasing labor opportunity can entice additional individuals into the labor force; allow employers to increase the hours worked for part-time employees, overtime hours for full-time workers, and convert part-time to full-time jobs; increase commuting from nearby locations; and trigger immigration of additional job-seekers and workers. The responses for individual employers will vary based on the specific skills and job requirements. Immigration has played a large role across the six-county study area, translating into population growth and an expanded labor force. Such expansion occurred between 2003 and 2009-2010 in all counties, followed by labor force contraction in 2010-2011 (**Table 5-8**). The contraction in Campbell County coincides with the completion of construction of the Dry Fork Station. Following the recent declines, the net change in the county-level labor forces ranged from 4 percent in Weston County to 28 percent in Campbell County.



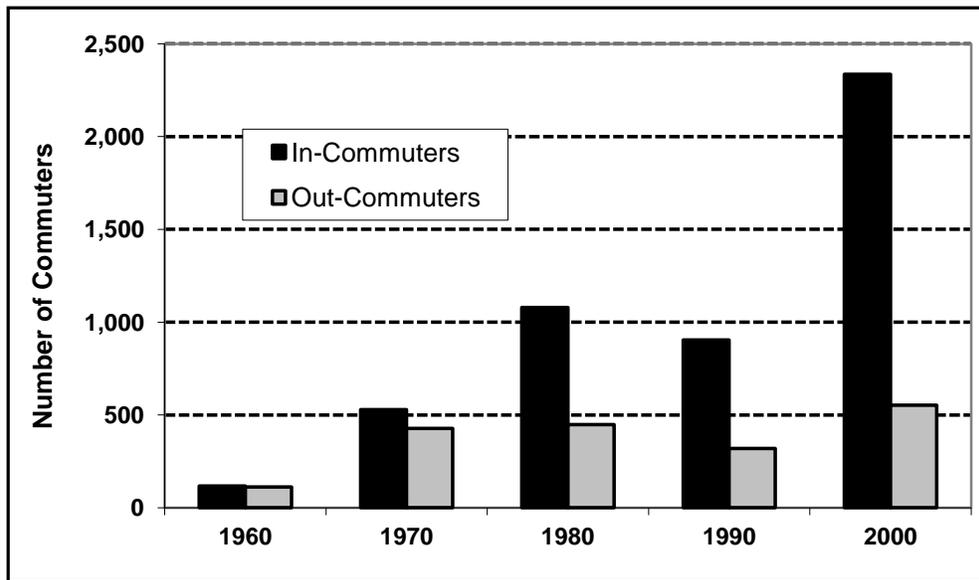
Demographic and workforce data for Campbell County indicate that immigration and an increase in labor force participation both have occurred during the current economic expansion. As shown in **Table 5-9**, estimated resident population, labor force, and the number of jobs all grew substantially between 2003 and 2010. These data suggest that while immigration occurred, the percentage of working age individuals among the immigrants also was very high. As a consequence, the number of resident workers employed in Campbell County in 2008 was equivalent to 66.5 percent of total countywide population. As labor demand slackens, the reverse patterns (i.e., higher unemployment, out-migration, and withdrawal from the labor force) would be expected. In fact, labor force as a percent of total population declined to 59.7 percent in 2010. These data suggest that while immigration occurred, the percentage of working age individuals among the immigrants also was very high. As a consequence, the number of resident workers employed in Campbell County in 2008 was equivalent to 66.5 percent of total countywide population.

**Table 5-9 Relationship of Labor Force to Total Population in Campbell County (2003 – 2010)**

Variable	Absolute Values								
	2003	2004	2005	2006	2007	2008	2009	2010	Change
Population	36,086	36,260	37,061	38,487	40,462	41,474	43,967	46,133	10,047
Employment	20,856	21,104	22,703	24,739	25,902	27,017	26,927	25,888	5,032
Labor Force	21,657	21,783	23,325	25,281	26,425	27,565	28,492	27,531	5,874
Unemployment	801	679	622	542	523	548	1,565	1,643	842
Labor Force/ Population	60.0%	60.1%	62.9%	65.7%	65.3%	66.5%	64.8%	59.7%	NA
Variable	Year-to-Year Changes								
	2003- 2004	2004- 2005	2005- 2006	2006- 2007	2007- 2008	2008- 2009	2009- 2010	Change	
Population	174	801	1,426	1,975	1,012	2,493	2,166	10,047	
Employment	248	1,599	2,036	1,163	1,115	-90	-1,039	5,032	
Labor Force	126	1,542	1,956	1,144	1,140	927	-961	5,874	
Unemployment	-122	-57	-80	-19	25	1,017	78	842	

Sources: U.S. Bureau of Labor Statistics 2012; U.S. Census Bureau 2011a,c.

Labor force commuting is another means of maintaining equilibrium in the local labor market. The presence of coal mining in the PRB, the long-term well-paying employment opportunities it supports, and extended shift work schedules permit some workers to live at some distance from the mines and commute to work. Such decisions may be promoted by consideration of employment opportunities for a spouse, differences in the cost of living, social setting, availability of the desired type of housing, or other factors. Whatever the motivation, such commuting redistributes or shifts some secondary economic, population, and social effects of mining from Campbell County to nearby communities. The level of workforce commuting into Campbell County has grown substantially over time, from 529 in 1970 to 2,335 in 2000, while the level of out-commuting has fluctuated within the much narrower range of 381 to 583 since 1970 as shown in **Figure 5-10**.



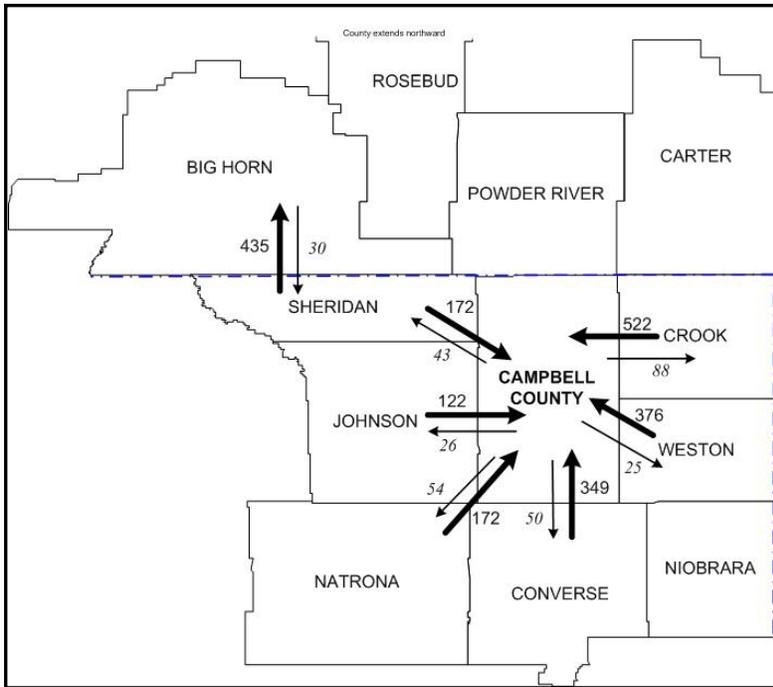
Note: Tables showing detailed origin and destination commuting information from 1960 through 2000 can be found in the appendix to the Phase I Task 1C report (ENSR 2005a).

Source: U.S. Census Bureau various years.

**Figure 5-10 Workforce Commuting Flows to/from Campbell County (1960 – 2000)**

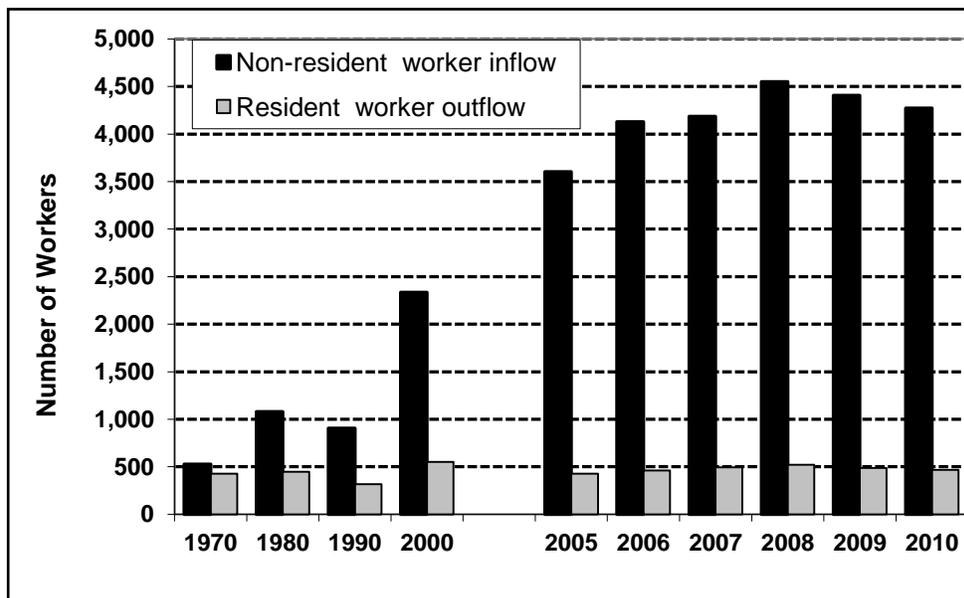
As shown in **Figure 5-11**, the 2000 census reported 1,713 workers who commuted to work in Campbell County from other nearby Wyoming counties, with another 786 workers who regularly work in Campbell County but live elsewhere. The largest inflows of workers were from Crook, Weston, and Converse counties. In contrast, 597 Campbell County residents commute to work outside the county. Monetary flows related to wages and salaries are associated with such commuting, with implications for the local economies as well. In addition to supporting residents commuting to Campbell County, Sheridan County also supported a substantial outflow to Big Horn County, Montana, associated with coal mining in that region.

The number of non-resident workers, including both daily commuters and temporary residents who reside in Campbell County on a temporary basis during a multi-day/multi-week work rotation but maintain a permanent residence elsewhere, more than doubled between 2000 and 2008, but declined in 2009 and 2010 (**Figure 5-12**). The estimated number of non-resident workers commuting or temporarily residing in Campbell County represented approximately 15 percent of the countywide total wage and salary jobs that year. The number of Campbell County residents who hold jobs outside of the county has fluctuated slightly but remains below 500.



Source: U.S. Census Bureau various years.

**Figure 5-11 Workforce Commuting Flows to/from Campbell County in 2000**

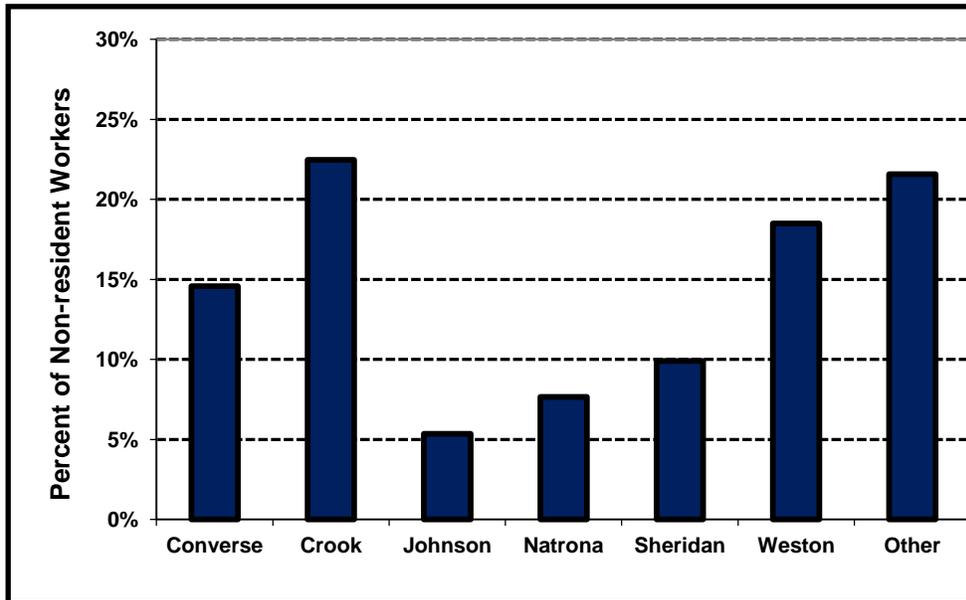


Note: Worker inflow and outflow estimated based on BEA earnings flow data and average annual wage data.

Sources: BEA 2012; U.S. Census Bureau various years.

**Figure 5-12 Worker Inflow and Outflow to/from Campbell County (1970 – 2010)**

As was the case in 2000, the largest numbers of commuting and non-resident workers come from neighboring counties, in particular Crook, Converse, and Weston counties (**Figure 5-13**). Colorado, South Dakota, Montana, and Texas are the primary places of residents of non-resident workers from outside Wyoming.



Source: Wyoming Department of Workforce Services 2012.

**Figure 5-13 Intrastate Commuting to Campbell County (2010)**

**5.2.3 Personal Income and Earnings**

A benefit often associated with economic expansion or development of any type is the increase in total and per capita personal income that results. Higher than average wages and salaries are characteristic of jobs in energy resource development whether they are in the coal mining or oil and gas industries. The combination of strong job growth and high wages and salaries resulted in a near doubling of total personal income in the six-county study area between 2000 and 2010, as total income grew from \$2.61 billion to \$5.16 billion. In 2010 the combined six-county income accounted for 20.2 percent of the statewide income, up from 18.1 percent at the beginning of the decade. The gains in total personal income, in nominal terms, ranged from \$133.3 million (72 percent) in Weston County to \$1.16 billion (121 percent) in Campbell County (**Table 5-10**).

**Table 5-10 Total Personal Income by County (2000 – 2010)**

Year	Total Personal Income by County (millions)					
	Campbell	Converse	Crook	Johnson	Sheridan	Weston
2000	\$957.1	\$316.7	\$153.0	\$182.0	\$816.8	\$185.5
2001	\$1,076.3	\$355.3	\$175.4	\$205.8	\$870.3	\$203.6
2002	\$1,086.9	\$350.4	\$182.5	\$227.2	\$895.0	\$202.2
2003	\$1,146.0	\$371.9	\$193.4	\$247.3	\$953.2	\$208.1

**Table 5-10 Total Personal Income by County (2000 – 2010)**

Year	Total Personal Income by County (millions)					
	Campbell	Converse	Crook	Johnson	Sheridan	Weston
2004	\$1,253.7	\$406.0	\$207.4	\$258.2	\$1,051.5	\$215.0
2005	\$1,457.3	\$447.8	\$242.0	\$279.4	\$1,156.2	\$240.0
2006	\$1,728.8	\$510.8	\$262.6	\$316.0	\$1,296.7	\$274.1
2007	\$1,872.8	\$519.7	\$265.9	\$336.6	\$1,442.1	\$279.1
2008	\$2,204.2	\$627.6	\$300.1	\$406.4	\$1,468.3	\$339.2
2009	\$2,063.8	\$580.8	\$283.7	\$352.7	\$1,399.6	\$302.9
2010	\$2,115.1	\$599.4	\$299.2	\$357.7	\$1,429.4	\$318.9

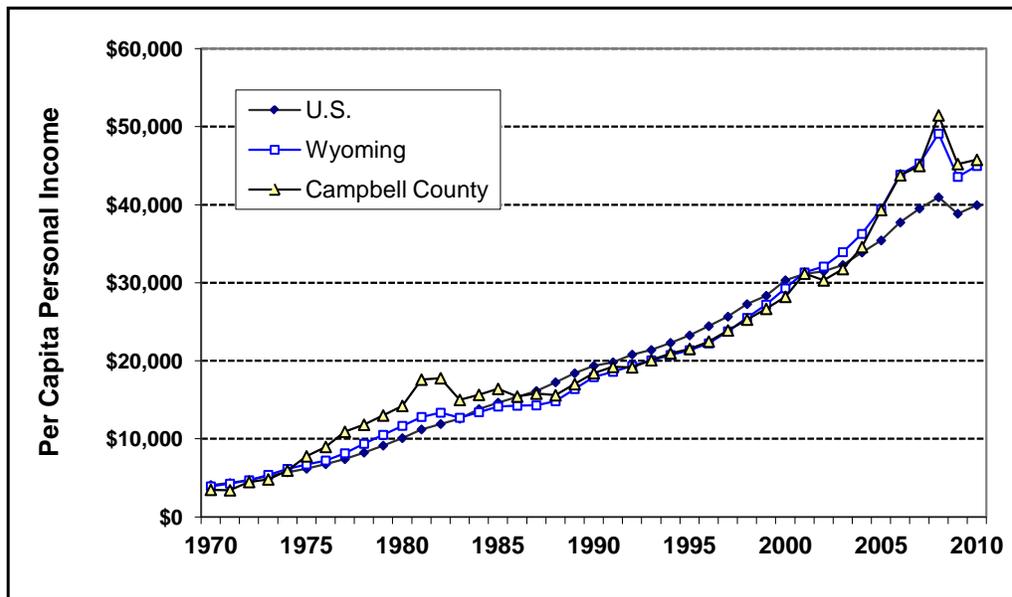
Source: BEA 2012.

Per capita income trends in Campbell County, which had historically lagged the statewide and national trends through the 1950s and 60s, reflect the rising personal income that accompanied the expansion of coal mining, particularly the gains during the late 1970s and early 1980s. Labor shortages, high wages, overtime pay, and other factors all contributed to above-average income growth such that per capita incomes (in nominal terms) exceeded the statewide and national averages (**Figure 5-14**).

Following several years of decline and relative stagnation, per capita personal income (nominal) in Campbell County resumed a positive growth trend in 1987 until reaching \$30,253 in 2002. Those gains notwithstanding, per capita income among the county's residents was slightly below the statewide and national norms, and also lagged Sheridan (\$32,563) and Weston (\$31,388) counties.

Between 2003 and 2008, energy development in the PRB and across the state resulted in dramatic increases in personal income. During that period, per capita personal income of Wyoming residents increased by \$15,183, to \$49,104, representing a 44 percent gain. In Campbell County, the gain was \$19,688, to \$51,466, representing a 62 percent gain. A large portion of this occurred in 2008 in conjunction with increases of more than \$58 million in wages and salaries in the coal mining industry and \$83 million in labor earnings paid in the construction industry. Gains in per capita personal income were registered in the other five counties in the study area during the same period. In 2008, per capita personal income in all six counties exceeded the national average by a considerable margin (**Table 5-11**).

The remarkable gains in per capita personal income in Campbell County and across the state in 2008 were reversed the following year due to sharp declines in total wages and salaries paid by the oil and gas development industries, lower wages and salaries in other sectors, and estimated population gains that spread the income over a larger base. Increases in unemployment benefits only provided a partial offset to the reductions in labor earnings paid. As mentioned earlier, per capita income in the other five counties in the study area, as well as the statewide average, mirrored the decline in Campbell County (**Table 5-11**). The size of the declines within the six-county study area exceeded the national average. Between 2009 and 2010, per capita personal income rose at the national and statewide levels as well as in all of the counties in the study area except Johnson County.



Sources: BEA 2011, 2012.

**Figure 5-14 Per Capita Personal Income in Nominal Dollars (1970 – 2010)**

**Table 5-11 Total per Capita Personal Income by County (2003 – 2010)**

Year	Total Personal Income by County (millions)							Wyoming Statewide	U.S.
	Campbell	Converse	Crook	Johnson	Sheridan	Weston			
2003	\$31,324	\$30,407	\$32,334	\$32,989	\$35,384	\$31,478	\$33,634	\$32,295	
2004	\$33,968	\$32,871	\$34,266	\$34,185	\$39,029	\$32,350	\$35,825	\$33,909	
2005	\$38,462	\$35,551	\$39,188	\$36,355	\$42,703	\$36,389	\$38,839	\$35,452	
2006	\$43,771	\$39,900	\$41,782	\$40,539	\$47,288	\$40,814	\$43,836	\$37,725	
2007	\$44,964	\$39,760	\$40,182	\$41,326	\$51,789	\$39,679	\$45,281	\$39,506	
2008	\$51,446	\$46,533	\$43,979	\$48,033	\$51,583	\$47,558	\$49,104	\$40,947	
2009	\$44,635	\$41,454	\$40,093	\$39,841	\$46,532	\$41,437	\$42,828	\$38,637	
2010	\$47,067	\$42,952	\$42,422	\$39,111	\$48,631	\$46,362	\$45,353	\$39,791	

Source: BEA 2012.

The earnings of individuals employed in Campbell County but residing elsewhere play an important role in the regional economy. The total wages and salaries paid by employers in Campbell County in 2010 were more than 50 percent higher than the combined total of employers in the other five counties. However, 10 percent of the total paid by employers in Campbell County in 2010 was to residents of other counties (**Table 5-12**). The net inflow of earnings by residents employed outside their respective counties, the majority of which was from Campbell County, ranged from 7.3 percent (\$57.2 million) in

Johnson County to 46.1 percent (\$66.3 million) in Crook County. In absolute terms, the largest net inflow was \$70.1 million to Converse County.

**Table 5-12 Selected Characteristics of Personal Income (2010)**

County	Total Labor Earnings	Inflows of Earnings	Outflow of Earnings	Net Residence Adjustment	Net Residence Adjustment/Place of Work Earnings (percent)
Campbell	\$2,123,040	\$26,099	\$(238,509)	\$(212,410)	-10.0
Converse	\$380,955	\$115,872	\$(45,814)	\$70,058	18.4
Crook	\$143,923	\$88,369	\$(22,053)	\$66,316	46.1
Johnson	\$177,259	\$25,701	\$(12,451)	\$13,250	7.5
Sheridan	\$787,066	\$74,151	\$(16,950)	\$57,201	7.3
Weston	\$181,568	\$52,349	\$(10,485)	\$41,864	23.1

Source: BEA 2012.

Non-labor earnings in the form of dividends, interest, and rents, as well as personal current transfer payments such as unemployment, retirement, and social security, play an important role in the local economy. Derived from past and current investments, private and public retirement programs, and other sources not tied to current employment, this income tends to be less sensitive to current local economic conditions. In 2010, the sources of income not derived from current labor earnings contributed between \$106.4 million in Crook County and \$686.5 million in Sheridan County. That income accounted for as much as 53 percent of all personal income in 2010 (**Table 5-13** and **Figure 5-15**).

The contributions of non-labor earnings are a key factor underlying the high per capita incomes in Sheridan and Johnson counties, reflecting the effects of retirement-related migration in those counties. As shown in **Figure 5-16**, the contribution of net earnings to total income in Campbell County has been in the 20 to 25 percent range over the past 20 years. Sheridan and Johnson counties have been trending upward, with such income consistently accounting for more than 40 percent of all income since the mid-1980s.

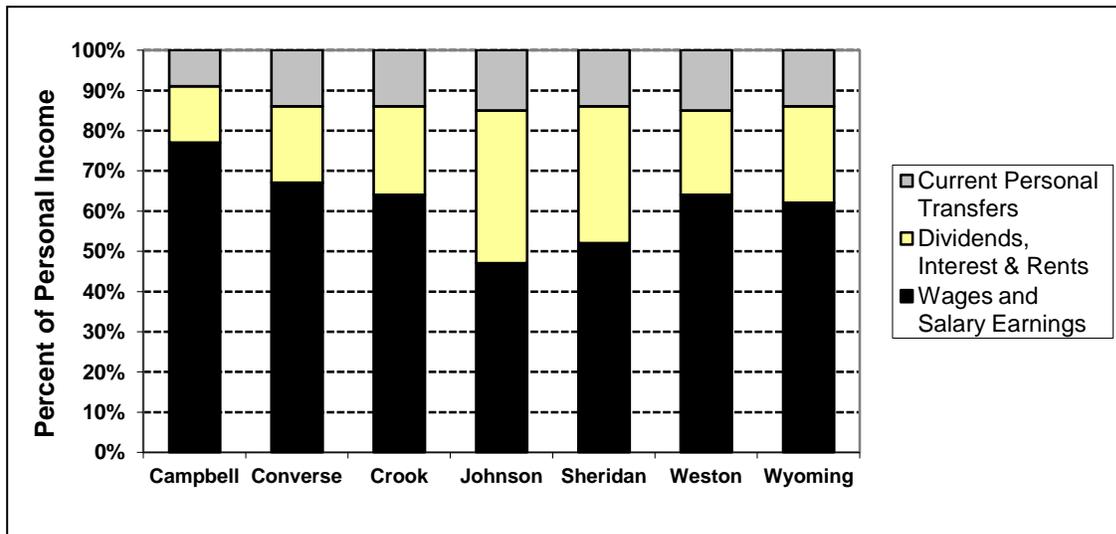
**Table 5-13 Summary of Personal Income by Major Type (2010)**

Income Source	County					
	Campbell	Converse	Crook	Johnson	Sheridan	Weston
Total Personal Income (millions)	\$2,115.1	\$599.4	\$299.2	\$357.7	\$1,429.4	\$318.9
<b>Income by Major Type (millions)</b>						
Net Earnings from Wages and Salary	\$1,637.0	\$401.8	\$192.8	\$167.9	\$742.9	\$204.6
Dividends, Interest, and Rents	\$293.2	\$113.1	\$65.2	\$135.5	\$482.1	\$66.9
Personal Current Transfers	\$184.9	\$84.5	\$41.2	\$54.2	\$204.4	\$47.3

**Table 5-13 Summary of Personal Income by Major Type (2010)**

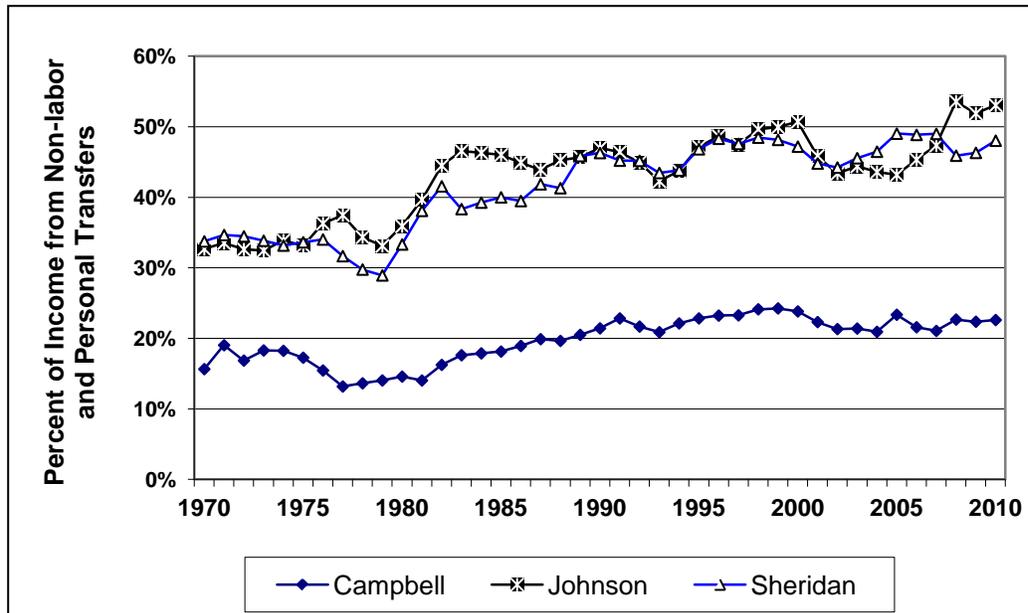
Income Source	County					
	Campbell	Converse	Crook	Johnson	Sheridan	Weston
<b>Percent Income by Major Type</b>						
Net Earnings from Wages and Salary	77	67	64	47	52	64
Dividends, Interest, and Rents	14	19	22	38	34	21
Personal Current Transfers	9	14	14	15	14	15

Source: BEA 2012.



Source: BEA 2012.

**Figure 5-15 Composition of Personal Income (2010)**



Source: BEA 2012.

**Figure 5-16 Income from Non-labor and Personal Transfers in Campbell, Johnson, and Sheridan Counties (1970 – 2010)**

#### 5.2.4 Farming and Ranching

Farming and ranching played an important role in the settlement and economic development of the Rocky Mountain West and are still viewed as economic and social cornerstones of many local western economies. However, agriculture has faced many challenges in recent years, including changes in federal management of public lands affecting grazing, changes in consumer attitudes and consumption patterns, and the effects of drought. Energy resource development also can pose challenges for farmers and ranchers, due to such issues as those associated with split estate lands (i.e., the mineral estate held by a different party than surface ownerships) and pressures or opportunities to sell land at prices above those necessary to support an ongoing agricultural enterprise. These and other factors have affected the local farming and ranching industry in a multitude of ways. Two direct characteristics of the local industry that are perhaps the most enlightening are the total number of farms (defined by the Census Bureau as all agricultural operations, irrespective of whether production is primarily in crops or from livestock) and the total amount of land involved in agricultural pursuits.

The 2007 Census of Agriculture (the most current available) enumerated 2,680 farms in the six-county study area, an increase of 315 compared to 2002. Of these 2,680 farms, 633 (24 percent) were in Campbell County, an increase of 101 farms since 2002 (**Table 5-14**). Gains in the total number of farms were registered in all of the other five counties, with total gains ranging from 16 (Weston) to 96 (Converse) operations. Across the six-county study area, operating farms and ranches reported a combined total of nearly 10.8 million acres of land involved in agriculture, approximately 13 percent less than 5 years earlier. Declines in total acres farmed between 2002 and 2007 occurred in all but Crook County. The combination of more farms and less land involved in operations translated into a substantial decline in the average size of farming operation across most of the study area. The most significant change occurred in Campbell County where the average size declined by nearly 1,900 acres. Across the study area, the average size in 2007 ranged from 2,044 acres in Sheridan County to 6,101 acres in Johnson County.

**Table 5-14 Selected Farm Statistics (1997 – 2007)**

Year	County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
<b>Number of Farms</b>							
1997	531	348	498	315	568	233	2,493
2002	532	339	440	272	561	221	2,365
2007	633	435	457	319	599	237	2,680
<b>Total Acres in Farms</b>							
1997	2,943,628	2,515,290	1,689,572	2,131,595	1,608,206	1,420,632	12,308,923
2002	2,985,945	2,517,920	1,523,198	2,155,277	1,638,163	1,605,637	12,426,140
2007	2,345,915	2,366,020	1,569,912	1,946,197	1,224,625	1,328,294	10,780,963
<b>Average Size per Farm (acres)</b>							
1997	5,544	7,228	3,393	6,797	2,831	6,097	4,937
2002	5,613	7,427	3,462	7,924	2,920	7,265	5,254
2007	3,706	5,439	3,435	6,101	2,044	5,605	4,023

Sources: U.S. Department of Agriculture (USDA) 2004, 2009.

The changes in the total number of farms registered as increases in the number of smaller farms (those in the 1 to 49 acre and 50 to 499 acre categories) and a corresponding reduction in the number of larger operations (**Table 5-15**). The most notable shifts occurred in Campbell and Converse counties, a pattern which is thought to be indicative of the development of rural residential subdivisions.

**Table 5-15 Number of Farms by Acres Farmed (2002 and 2007)**

Size (acres farmed)	County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
<b>2002</b>							
1 to 49	86	47	27	32	148	17	357
50 to 499	117	94	109	53	185	38	596
>500	329	198	304	187	228	166	1,412
<b>Total</b>	<b>532</b>	<b>339</b>	<b>440</b>	<b>272</b>	<b>561</b>	<b>221</b>	<b>2,365</b>
<b>2007</b>							
1 to 49	154	209	32	27	155	10	587
50 to 499	167	71	129	106	206	68	747
>500	312	155	296	186	238	159	1,346
<b>Total</b>	<b>633</b>	<b>435</b>	<b>457</b>	<b>319</b>	<b>599</b>	<b>237</b>	<b>2,680</b>

**Table 5-15 Number of Farms by Acres Farmed (2002 and 2007)**

Size (acres farmed)	County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
<b>Change 2002 to 2007</b>							
1 to 49	68	162	5	(5)	7	(7)	230
50 to 499	50	(23)	20	53	21	30	151
>500	(17)	(43)	(8)	(1)	10	(7)	(66)
<b>Total</b>	<b>101</b>	<b>96</b>	<b>17</b>	<b>47</b>	<b>38</b>	<b>16</b>	<b>315</b>

Sources: USDA 2004, 2009.

A corollary to the number of smaller farms is the number of farm operators indicating a primary occupation other than farming (**Table 5-16**); an increase of 480 such operations compared to a decline of 165 operations where farming is the primary occupation. As a consequence, the number of farms where farming is not the primary occupation for the operator now exceeds the number where farming is the primary occupation.

**Table 5-16 Number of Farms by Primary Occupation (2002 and 2007)**

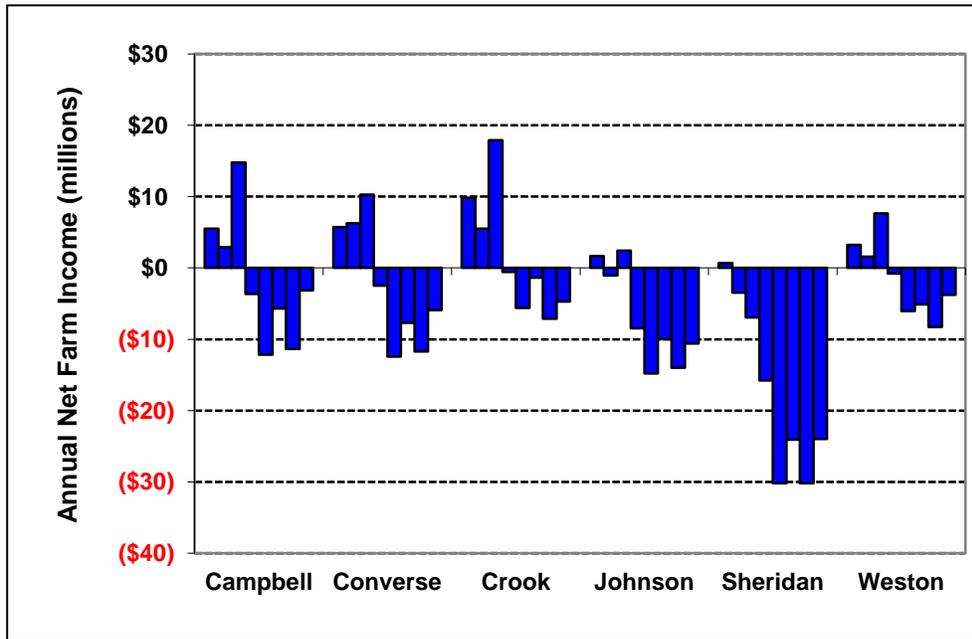
Status of Farms	Number of Farms per County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
<b>2002</b>							
Farming	321	220	309	184	313	143	1,490
Not Farming	211	119	131	88	248	78	875
<b>2007</b>							
Farming	245	209	298	190	278	105	1,325
Not Farming	388	226	159	129	321	132	1,355
<b>Change 2002 to 2007</b>							
Farming	(76)	(11)	(11)	6	(35)	(38)	(165)
Not Farming	177	107	28	41	73	54	480

Sources: USDA 2004, 2009.

Across the six-county study area, 43 percent of all farms had sales of less than \$5,000 in 2007, up from 35 percent in 2002. In 2007, a total of 815 farms and ranches in the study area (30 percent of the total) reported sales of \$50,000. That number is up from 771 farms in 2002. The largest number in the latter group was in Campbell County.

Farmers and ranchers in the study area have faced economic challenges in recent years. As shown in **Figure 5-17**, net farm income has been negative in all six counties every year during the 5-year period from 2006 to 2010. The losses reflect a combination of lower income from livestock sales over time, but more significantly the increases in farm production expenses. The largest losses, amounting to more than \$20 million annually from 2007 to 2010, have occurred in Sheridan County. The farming and

ranching communities in Campbell, Converse, and Johnson counties each registered collective losses of \$10 million or more in at least 2 of the past 5 years.



Source: BEA 2012.

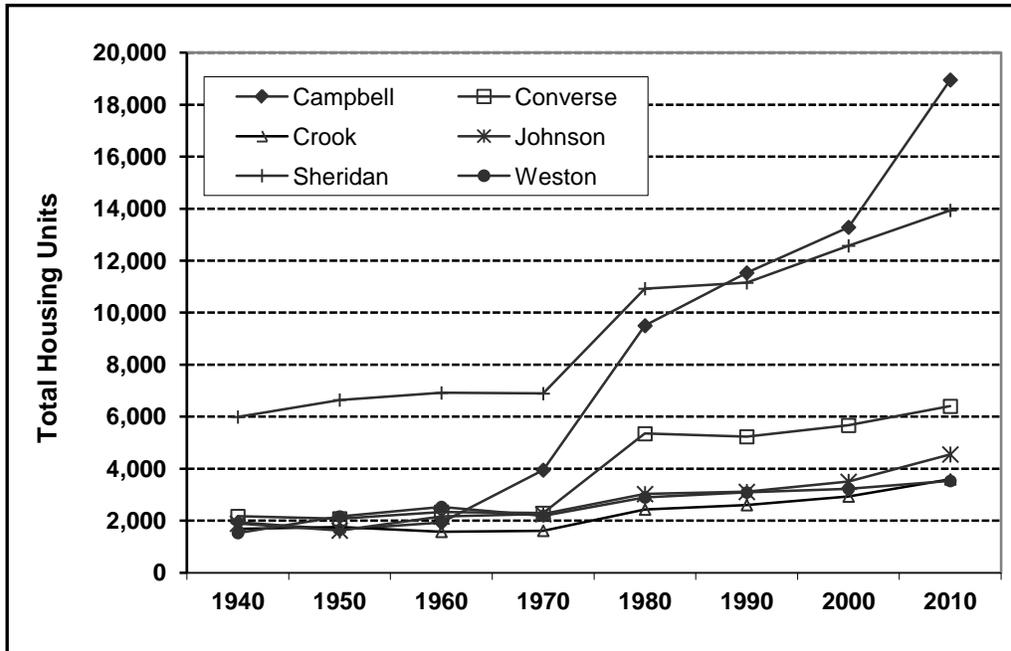
**Figure 5-17 Trends in Net Farm Income by County (2003 – 2010)**

### 5.3 Housing

This section presents current housing data including long-term trends in housing inventory from the decennial censuses of 1940 through 2010. Data for the period 1980 to 2010 are presented for counties and for the main cities and towns. Totals for the State of Wyoming are included for comparison.

#### 5.3.1 Housing Inventory

In 2010, the housing inventory in the six-county study area totaled nearly 51,000 units. Nearly half of that total was added during the time periods from 1975 to 1980 and from 2000 to 2007. During the first of these periods, the major expansions occurred in Campbell, Converse, and Sheridan counties (**Figure 5-18**). Of the net increase in the study area of nearly 9,800 between 2000 and 2010, 58 percent (5,667 units) were located in Campbell County. Net increases of more than 1,000 units each also occurred in Sheridan and Johnson counties (**Table 5-17**).



Source: U.S. Census Bureau various years.

Figure 5-18 County Housing Inventories in the Decennial Censuses (1940 – 2010)

Table 5-17 Housing Units (1980 – 2010)

Location	Number of Housing Units				Change 2000 to 2010
	1980	1990	2000	2010	
<b>Campbell County</b>					
Gillette (city)	4,857	7,078	7,931	12,153	4,222
Wright (town)	514	527	544	813	269
Rest of county	4,134	3,933	4,813	5,989	1,176
<b>County Total</b>	<b>9,505</b>	<b>11,538</b>	<b>13,288</b>	<b>18,955</b>	<b>5,667</b>
<b>Converse County</b>					
Douglas (city)	2,338	2,267	2,385	2,788	403
Glenrock (town)	1,044	1,052	1,131	1,201	70
Rest of county	1,968	1,915	2,153	2,414	261
<b>County Total</b>	<b>5,350</b>	<b>5,234</b>	<b>5,669</b>	<b>6,403</b>	<b>734</b>
<b>Crook County</b>					
Moorcroft (town)	442	369	375	442	67
Sundance (town)	479	511	545	606	61
Rest of county	1,513	1,725	2,015	2,547	532
<b>County Total</b>	<b>2,434</b>	<b>2,605</b>	<b>2,935</b>	<b>3,595</b>	<b>660</b>

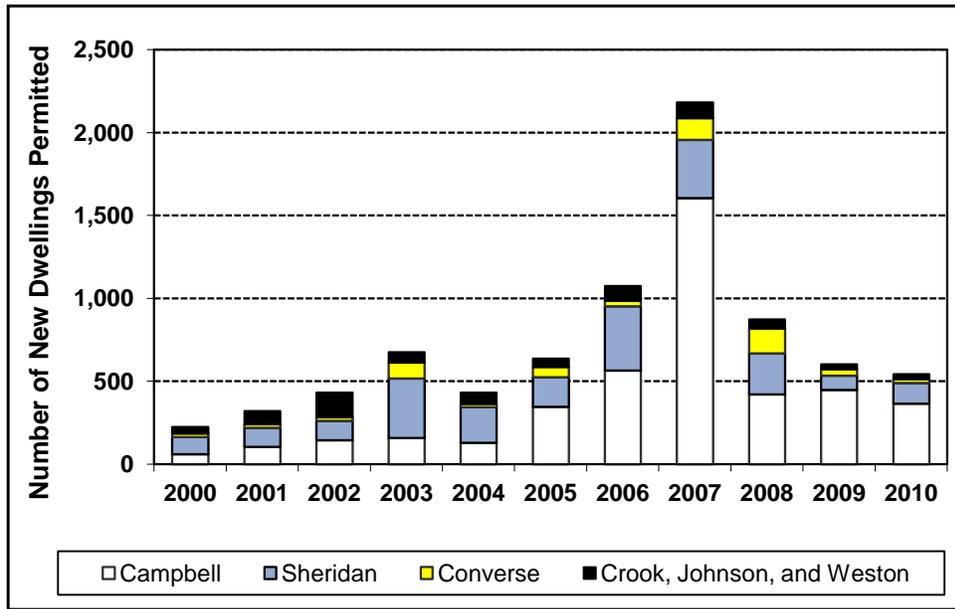
**Table 5-17 Housing Units (1980 – 2010)**

Location	Number of Housing Units				
	1980	1990	2000	2010	Change 2000 to 2010
<b>Johnson County</b>					
Buffalo (city)	1,673	1,627	1,842	2,300	458
Rest of county	1,356	1,485	1,661	2,253	592
<b>County Total</b>	<b>3,029</b>	<b>3,112</b>	<b>3,503</b>	<b>4,553</b>	<b>1,050</b>
<b>Sheridan County</b>					
Sheridan (city)	6,604	6,475	7,413	8,253	840
Rest of county	4,324	4,679	5,164	5,686	522
<b>County Total</b>	<b>10,928</b>	<b>11,154</b>	<b>12,577</b>	<b>13,939</b>	<b>1,362</b>
<b>Weston County</b>					
Newcastle (city)	1,443	1,439	1,458	1,663	205
Upton (town)	525	450	441	539	98
Rest of county	932	1,201	1,332	1,331	-1
<b>County Total</b>	<b>2,900</b>	<b>3,090</b>	<b>3,231</b>	<b>3,533</b>	<b>302</b>
<b>Six-county Study Area</b>					
Selected places	19,919	21,795	24,065	30,758	6,693
Rest of area	14,227	14,938	17,138	20,220	3,082
<b>Six-county Total</b>	<b>34,146</b>	<b>36,733</b>	<b>41,203</b>	<b>50,978</b>	<b>9,775</b>
<b>State of Wyoming</b>	<b>188,217</b>	<b>203,411</b>	<b>223,854</b>	<b>261,868</b>	<b>38,014</b>

Sources: U.S. Census Bureau various years, 2011b.

The net changes in housing inventories reflected in **Table 5-17** are the result of new residential construction activity across the six-county study area, particularly in Campbell County. The pace of new residential construction was particularly strong in 2003 and from 2006 through 2008; the latter period corresponding to the demand for housing related to construction of the Dry Fork Station in Gillette and energy and “lifestyle/retirement” demands in Sheridan and Converse counties. New construction activity peaked in 2007 when permits for nearly 2,200 new units were issued, more than 600 of which were for new multi-family residential units in Campbell County. **Figure 5-19** shows the trend in the number of permits issued annually from 2000 through 2010. The total number of new residential units permitted from 2000 to 2010 in the six-county study area was as follows:

- Campbell County – 4,350 units (54 percent of the total);
- Sheridan County – 2,285 units (29 percent of the total);
- Converse County – 615 units (8 percent of the total); and
- Crook, Johnson, and Weston counties – 629 units (9 percent of the total).



Source: WDAI 2012.

**Figure 5-19 Building Permits for Residential Units in Six-county Study Area (2000 – 2010)**

**5.3.2 Housing Occupancy and Vacancy**

At the time of the 2010 census, the reported overall countywide vacancy rates ranged from 9.4 percent in Campbell County to 18.7 percent in Crook County, with an overall average occupancy rate of 88.2 percent. Among the 44,929 occupied units, 72.5 percent were owner-occupied, with 27.5 percent renter-occupied (Table 5-18). Owner-occupancy rates were highest in Crook County (79.3 percent) and lowest in Sheridan County (68.8 percent). Owner-occupancy was 73.3 percent in Campbell County.

In the 2010 census, a total of 6,049 vacant housing units were reported in the six-county study area; however, only 2,339 of those would be considered vacant in a traditional sense. The others include second homes, cabins for recreational and seasonal use, recreational vehicles (RVs), and other types of housing that typically do not provide long-term housing. Furthermore, the 2,339 rental and for sale units included some units that had already been rented or sold but had not yet been occupied. When vacancy rates are adjusted to account for the non-traditional/non long-term housing, effective vacancy rates dropped to between 3.7 and 6.2 percent. Vacancy rates among units intended/suited for ownership were below 3.0 percent in Campbell, Crook, Johnson, and Sheridan counties. Other than in Converse County, the vacancy rates among rental units were higher, with rates of 13.8 percent in Campbell County (Figure 5-20).

**Table 5-18 Housing Occupancy Characteristics (2010)**

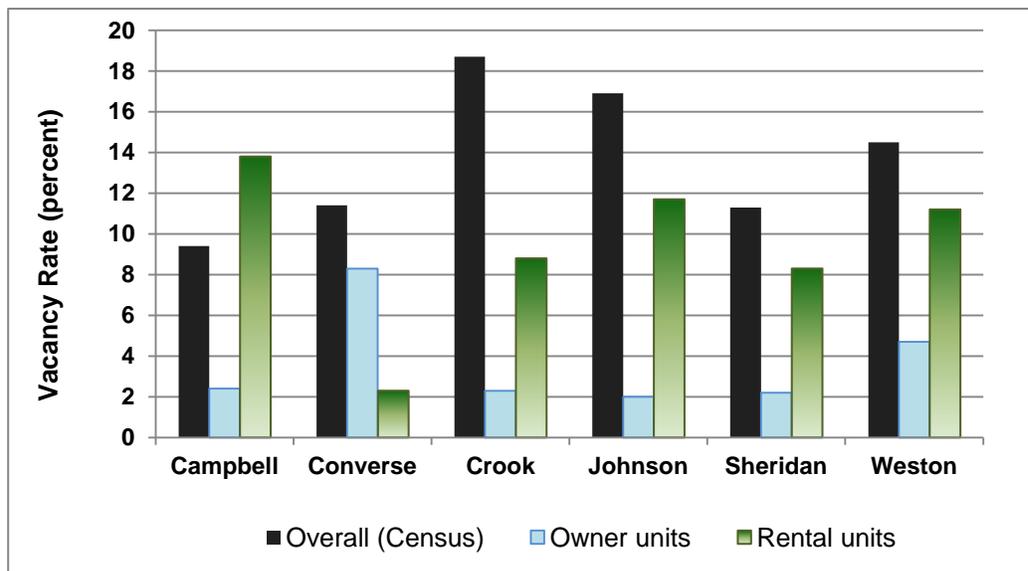
Characteristic	Housing by County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
Total Housing (units)	18,955	6,403	3,595	4,553	13,939	3,533	50,978
Occupied (units)	17,172	5,673	2,921	3,782	12,360	3,021	44,929
Occupied (percent)	90.6	88.6	81.3	83.1	88.7	85.5	88.2
Owner-occupied (percent)	73.3	72.0	79.3	71.0	68.8	77.8	72.5
Renter-occupied (percent)	26.7	28.0	20.7	29.0	31.2	22.2	27.5

**Table 5-18 Housing Occupancy Characteristics (2010)**

Characteristic	Housing by County						Six-county Total
	Campbell	Converse	Crook	Johnson	Sheridan	Weston	
Vacant (units)	1,783	730	674	771	1,579	512	6,049
For rent or rented (units)	731	144	58	145	347	85	1,510
For sale or sold (units)	315	97	55	56	191	115	829
Other (units) <sup>1</sup>	737	489	561	570	1,041	312	3,710

<sup>1</sup> Other includes units for seasonal, recreational, or occasional use; units for migratory workers; homes under construction that are substantially complete but not yet ready for occupancy; and other units that are withheld from the market for other reasons (e.g., while an estate is being settled).

Source: U.S. Census Bureau 2011b.



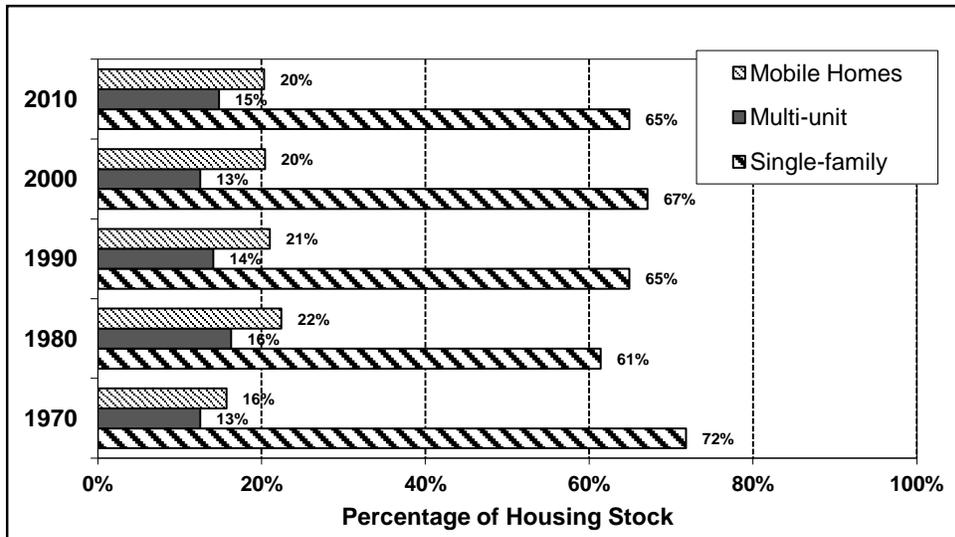
Note: The overall vacancy rate shown above is based on all units. The adjusted rate reflects only units listed for rent, rented but not occupied, for sale, and sold but not occupied. Units for seasonal or occasional use are not included.

Source: U.S. Census Bureau 2011b.

**Figure 5-20 Housing Vacancy Rates by County (2010)**

**5.3.3 Housing Mix by Type of Unit**

Single-family homes account for 65 percent of the housing stock in the six-county study area, while multi-family dwelling units account for 20 percent and mobile homes account for 15 percent. The overall mix has remained relatively steady over the past 20 years, even as more than 15,000 units have been added to the overall housing stock. **Figure 5-21** shows the compositional changes in housing unit mix in the study area over time.



Sources: U.S. Census Bureau various years, 2011b,d.

**Figure 5-21 Composition of the Housing Stock (1970 – 2000)**

At the county level, housing mix varies considerably across the study area. Single-family homes account for between 53 percent (Campbell) and 75 percent (Sheridan) of the respective county housing inventories. The corresponding ranges for multi-family dwellings are 3 (Crook) to 20 percent (Campbell), and 11 percent (Sheridan) to 27 percent (Campbell) for mobile homes (Table 5-19).

**Table 5-19 Housing Units by Structure Type (2010)**

County	Percent of Housing		
	Single-family <sup>1</sup>	Multi-unit	Mobile Homes <sup>2</sup>
Campbell	53	20	27
Converse	71	13	17
Crook	72	3	26
Johnson	69	13	18
Sheridan	75	14	11
Weston	68	7	26
<b>Six-county Combined</b>	<b>65</b>	<b>15</b>	<b>20</b>

<sup>1</sup> The single-family includes both 1-unit attached and 1-unit detached structures.

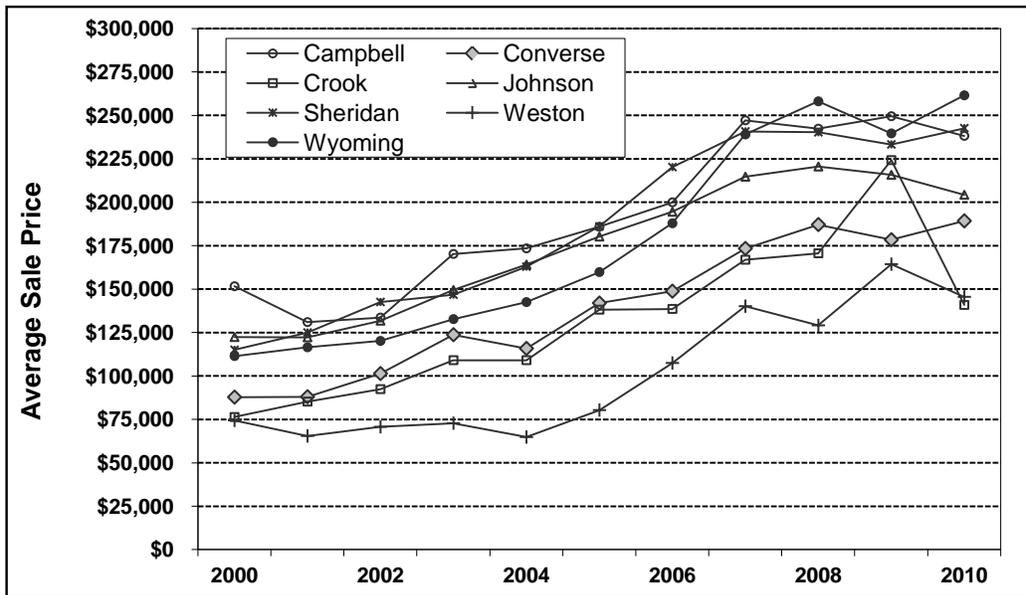
<sup>2</sup> Mobile home includes a small number of other types of units (e.g., boat, RV, van, etc.).

Sources: U.S. Census Bureau 2011b,d.

**5.3.4 Single-family Housing Cost**

As reflected by the average sale price of single-family homes during the year, housing costs in the six-county study area rose between 2003 and 2010 (Figure 5-22). Average costs of homes sold rose sharply between 2003 and 2007, particularly in Sheridan, Campbell, and Weston counties in response to strong local demand tied to energy development. In 2007, the average sale prices of homes ranged from \$140,127 to \$247,150 in Weston County. The statewide average was \$239,019. Along with Campbell County, the average sale prices in Sheridan and Johnson counties also exceeded the statewide

average. Although consistently the lowest in the study area and less than 60 percent of the Campbell County average, the average cost of housing in Weston County nearly doubled during that period. Average costs in Sheridan County registered the largest gains during that period at close to \$95,000.



Source: Wyoming Community Development Authority 2012.

**Figure 5-22 Average Sale Price of Houses in Nominal Dollars as Reported by County Assessors (2000 – 2010)**

The pattern of rising housing costs in the six-county study area began to abate in 2008, a time corresponding to the national recession and mortgage lending crisis. However, while housing prices fell dramatically in many areas of the nation, those in the study area remained relatively stable. In 2010, the average value of homes sold ranged from \$140,858 in Crook County to \$242,635 in Sheridan County. The average sales price in Campbell County was \$238,208, an increase of nearly \$68,000 over the 2003 average of \$170,218. Between 2003 and 2010, the average escalation rate in housing costs, measured in terms of CAGR, was between 3.2 percent in Johnson County and 12.4 percent in Weston County. The corresponding rates in Campbell and Converse counties were 4.6 percent and 7.3 percent, respectively.

### 5.3.5 Rental Housing Cost

The trends of escalating housing costs described in Section 5.3.4 for single-family home sales generally are mirrored in monthly costs for rental housing in the six-county study area. Monthly rental costs increased across the study area between 2003 and 2010 and were highest in Campbell and Sheridan counties (**Table 5-20**). At the end of 2010, monthly rental costs in Campbell County averaged \$717 for an apartment, \$337 for a mobile home lot, and \$1,222 for a single-family home. This represented an increase of more than \$500 per month for a single-family home compared to the average cost in 2003 and nearly \$300 more than the statewide average. The lowest rental housing costs in the study area generally occur in Crook County at \$455 for an apartment, \$149 per month for a mobile home lot, and \$470 for a single-family home. Comparable statewide averages were \$651 for an apartment, \$281 for a mobile home lot, and \$928 for a single-family home.

**Table 5-20 Monthly Rental Costs in Nominal Dollars (2003 and 2010)**

County	Apartments			Mobile Home Lot			Single-family House		
	2003 (\$)	2010 (\$)	Change (percent)	2003 (\$)	2010 (\$)	Change (percent)	2003 (\$)	2010 (\$)	Change (percent)
Campbell	563	717	27	228	377	65	707	1,222	73
Converse	385	555	44	150	191	27	488	735	51
Crook	345	455	32	120	149	24	NA	470	NA
Johnson	443	603	36	208	245	18	606	823	36
Sheridan	465	697	50	273	450	65	667	922	38
Weston	333	558	68	99	130	31	380	639	68
<b>Statewide Average</b>	<b>466</b>	<b>651</b>	<b>40</b>	<b>195</b>	<b>281</b>	<b>44</b>	<b>658</b>	<b>928</b>	<b>41</b>

Source: Wyoming Community Development Authority 2012.

### 5.3.6 Short-term Lodging and RV/campground Resources

Temporary housing resources are available in the six-county study area in the form of hotel-motel rooms, private and public campgrounds, two large special event facilities, and vacant spaces in mobile home parks. In all, there are 109 lodging establishments with a total of approximately 4,400 rooms. Those totals represent a net increase of 38 establishments and 1,800 rooms compared to 2002. Many of these resources, as well as areas of persistently vacant apartments, townhouses, and mobile home spaces in Gillette and Wright, have served to accommodate the temporary labor force associated with natural resource and energy projects in the past.

#### 5.3.6.1 Lodging

The largest share of the total hotel and motel rooms in the study area (1,644 rooms in 24 establishments) are located in Campbell County, with most of these in Gillette. Sheridan County also has a large lodging base (28 establishments with more than 1,300 rooms), with most of these in the City of Sheridan. Because of Sheridan's travel and tourism orientation, hotel and motel vacancies are typically more seasonal than in Campbell County. The hotel, motel, and campground portion of the temporary bed base is summarized in **Table 5-21**.

Numerous RV parks and campgrounds are located in Campbell and Sheridan counties; however, these facilities are more characteristic of the less populated counties in the six-county study area. Of the nearly 1,500 RV spaces identified in the study area, more than half are located in counties where the predominant use is related to travel and tourism associated with nearby attractions, including the Big Horn Mountains, Devil's Tower, and the Black Hills. Included in this category are more than 850 RV spaces in Crook, Johnson, and Weston counties. Many of these spaces are in facilities that operate seasonally.

**Table 5-21 Temporary Housing Resources (2011)**

County	Lodging		RV Parks and Campgrounds <sup>1</sup>	
	Establishments	Units	Establishments	Units
Campbell	24	1,644	3	151
Converse	9	403	9	130
Crook	23	291	8	235
Johnson	15	527	25	550
Sheridan	28	1,321	15	371
Weston	10	190	3	57
<b>Six County Total</b>	<b>109</b>	<b>4,376</b>	<b>63</b>	<b>1,494</b>

<sup>1</sup> Data do not include the CAM-PLEX Multi-event Facility campgrounds in Campbell County or the Wyoming State Fairgrounds campgrounds in Converse County that generally are used by arrangement for special events only.

Sources: Wyoming Tourism 2011, 2012.

### 5.3.6.2 Special Event Sites

Two large special event sites with extensive camping facilities are located in the study area. These are the CAM-PLEX Multi-Event Facility campgrounds in Gillette, and the Wyoming State Fairgrounds in Douglas.

The CAM-PLEX campgrounds in Campbell County contain 1,821 RV sites and ancillary facilities, including 953 full service sites and 90 water and electricity sites. The CAM-PLEX site is available seasonally by arrangement for rallies, rendezvous, and other events, but generally not available for public camping.

The state fairgrounds in Converse County have 312 RV or mobile home spaces with water, sewer, and electrical service and an additional 144 spaces with only water and electrical service. Typically, these facilities are used during the fair or are rented by special arrangement to groups of 20 or more; however, the fairground facilities were used to house the workforce of a gas transmission system project in Converse County from 1998 to 2001.

### 5.3.6.3 Other Resources

Campbell County also hosts several mobile home parks with spaces that can open or expand on short notice and with only modest additional investment. These resources represent an expansion factor in the temporary housing resource base that is a legacy of the major labor force boom of the 1970s.

## 5.4 Public Education

Public education in northeastern Wyoming serves students associated directly and indirectly with mineral and energy development. These schools also derive revenues from taxes on the mineral and energy industries.

There are 10 school districts in the six-county study area. Campbell #1 is the largest with 8,337 students in the 2011-2012 school year and Sheridan County School District #3 (Sheridan #3) is the smallest with fewer than 100 students. Campbell #1, based in Gillette, serves the primary energy and resource development region. **Table 5-22** is an overview of the school districts in terms of the number of schools in operation and recent enrollment.

**Table 5-22 Public School Districts in the Six-county Study Area**

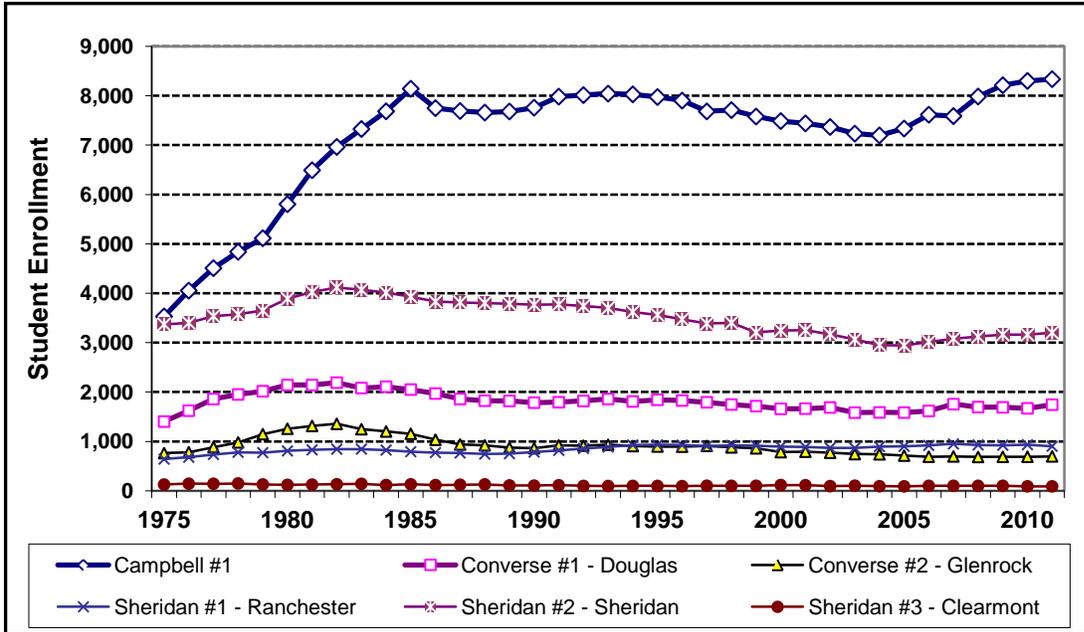
School District	District Office Location	Number of Schools in Operation	Students Enrolled			
			2003-2004	2011-2012	Change	Percent Change
Campbell #1	Gillette	20	7,368	8,337	969	13
Converse #1	Douglas	8	1,688	1,744	56	3
Converse #2	Glenrock	4	787	697	-90	-11
Crook #1	Sundance	6	1,122	1,093	-29	-3
Johnson #1	Buffalo	5	1,257	1,284	27	2
Sheridan #1	Ranchester	7	867	902	35	4
Sheridan #2	Sheridan	10	3,172	3,202	30	1
Sheridan #3	Clearmont	4	95	90	-5	-5
Weston #1	Newcastle	4	849	806	-43	-5
Weston #7	Upton	3	261	243	-18	-7

Sources: Wyoming Department of Education 2012a,b.

Public school enrollment across the study area generally mirrored economic trends during the period of rapid population growth. District-wide enrollment in Campbell County grew by more than 4,600 students (131 percent) between 1975 and 1985, reaching a total enrollment of 8,143 students in 1985. Enrollment increased in all school districts in Converse and Sheridan counties as well. Thereafter, enrollments remained relatively steady in Campbell County but declined in most of the other districts. The pattern of long-term decline continued through 2003 and 2004, including a decline of nearly 1,000 students in Campbell County between 1993 and 2003. Energy development and population growth from other sources resulted in a reversal of those trends in several of the other districts through the remainder of the decade. In 2009, total enrollment in Campbell County was 8,214, exceeding its previous high (**Figure 5-23**).

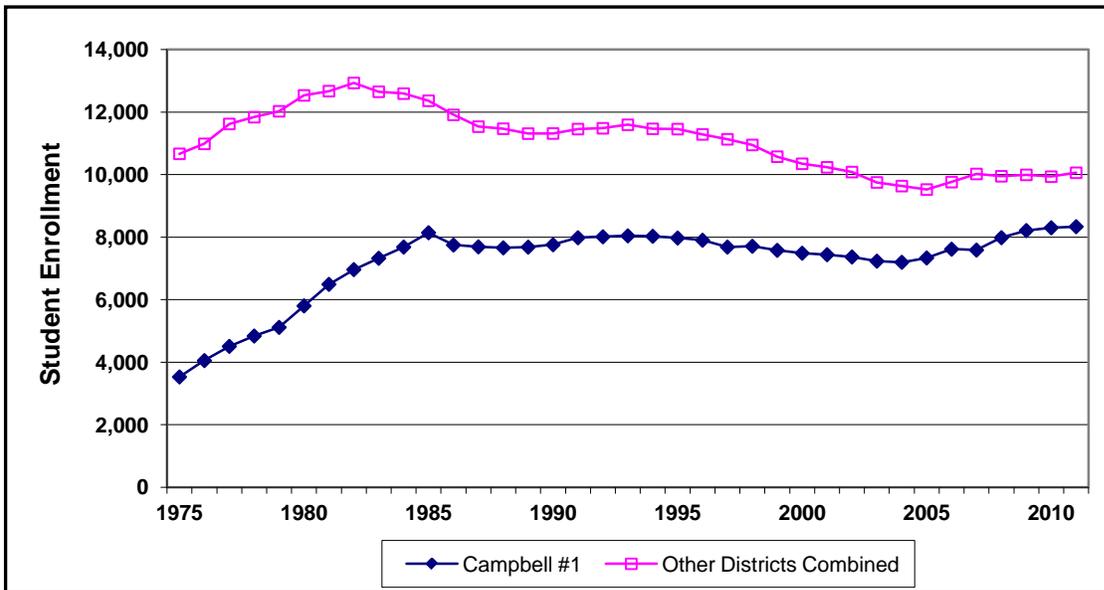
**Figure 5-24** shows a comparison between the enrollment growth and decline at Campbell #1 and the changes in combined enrollment at all other districts in the six-county study area. Collectively, the combined school enrollments in the six counties registered a net decline of more than 4,000 students (nearly 20 percent) from the prior peak to the lows in the early 2000s. Since then, the combined enrollments have climbed by more than 1,500 students to over 18,400.

**Table 5-23** presents selected financial characteristics of the school districts in the study area. Annual general fund expenditures for the 2009-2010 school year ranged from \$3.1 million in Sheridan #3 to \$110.4 million in Campbell #1. The total assessed valuation of real and personal property and mineral production within the districts for the 2010-2011 school year ranged from \$54.1 million in Sheridan #3, which has little mineral or energy production, to over \$5.0 billion in Campbell #1.



Source: Wyoming Department of Education 2012b.

**Figure 5-23 Public School Enrollment Trends in Directly Affected School Districts**



Sources: Wyoming Department of Education 2004, 2012b.

**Figure 5-24 Campbell #1 Enrollment versus Other Districts Combined (1975 – 2011)**

**Table 5-23 Overview of Public Education Finance by School District**

School District	General Fund Expenditures 2009-10 (millions)	Assessed Valuation (millions)			
		2002	2010	Change	Percent Change
Campbell #1	\$110.4	\$2,563.9	\$5,016.7	\$2,452.80	96
Converse #1	\$23.8	\$221.7	\$480.0	\$258.30	117
Converse #2	\$9.9	\$138.2	\$213.4	\$75.20	54
Crook #1	\$17.8	\$86.7	\$167.0	\$80.30	93
Johnson #1	\$18.6	\$102.2	\$1,133.1	\$1,030.90	1,009
Sheridan #1	\$13.4	\$38.5	\$79.9	\$41.40	108
Sheridan #2	\$39.7	\$161.9	\$405.8	\$243.90	151
Sheridan #3	\$3.1	\$25.1	\$54.1	\$29.00	116
Weston #1	\$14.2	\$61.5	\$96.0	\$34.50	56
Weston #7	\$5.2	\$16.6	\$21.1	\$4.50	27

Sources: Wyoming Department of Education 2012a,b.

The Wyoming School Foundation Program (WSFP) [Title 21, Chapter 13, of Wyoming Statutes] is a statewide school finance system that regulates operating revenues and expenditures for public educational services delivered at the local level. The system is structured to achieve equalization in educational opportunities across the state, irrespective of the differences in the local revenue generating capacities of the individual districts. The northeastern part of the state plays an important role in the system due to its large energy and minerals-related tax base. Campbell County alone accounted for 24 percent of the state's entire assessed valuation in 2010-2011. Revenues for school funding come from taxes on minerals production; real estate and taxable personal property; and various other local, state, and federal program funds and grants.

Public education funding also functions under the rules, policies, and procedures of the WSFD [Title 21, Chapter 15, of Wyoming Statutes]. The WSFD originally was established as the Wyoming School Facilities Commission during the 2002 Legislative session, with a charge to oversee all aspects of construction and maintenance of school facilities and physical plants. Its mission is to provide adequate educational facilities for all children in Wyoming, mirroring the mission of the WSFP that focuses on operations. The impetus for establishing the WSFD was a 2001 State Supreme Court decision (the State of Wyoming et al., v. Campbell County School District, et al., WY 19, 19, P.3d 518) requiring the legislature and school districts to remedy facilities that are in immediate need and inadequate condition.

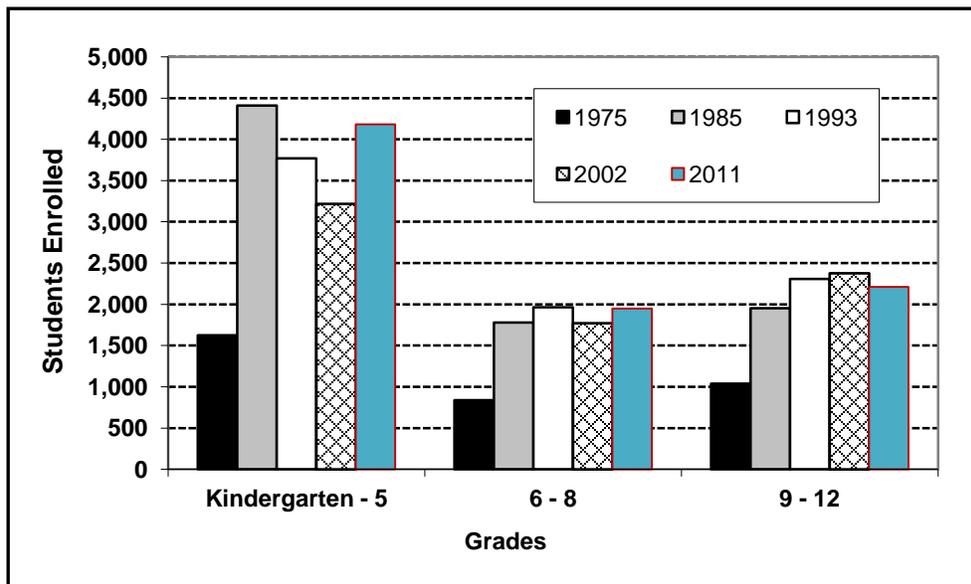
Prior to the establishment of the Wyoming School Facilities Commission, state aid for public education facilities was part of the broader Wyoming Capital Construction program. Under that program, local districts carried much of the responsibility for capital construction, frequently through the use of locally issued and retired long-term debt. Under the 2001 State Supreme Court decision, construction now must be funded through a statewide tax or from other revenues imposed equally on all taxpayers rather than from locally derived revenues.

#### 5.4.1 Campbell County School District #1

Campbell #1 provides public primary and secondary education services throughout Campbell County. This district operates 2 high school campuses in Gillette under a single administration, a junior-senior

high school in Wright, 2 junior high schools, 15 elementary schools (including 6 in the outlying rural areas of the county), and an alternative school. The district is in the final stages of a multi-year capital facilities program, which included completion of three of those elementary schools and major renovations of several others. Another new elementary school is scheduled for completion in the summer of 2012. The school district also joined with Campbell County and the City of Gillette in the completion of a major new recreation center (Campbell #1 2012; WSFD 2012a).

As described above, Campbell #1 experienced a decade-long decline in total enrollment between 1993 and 2002-2003. The elementary grades were most affected by the declines; however, high school enrollment actually increased. Those patterns have reversed over the past decade, with a net gain of nearly 1,000 elementary-aged students and 180 students in grades 6 through 8. These trends are reflected in **Figure 5-25**.



Source: Wyoming Department of Education 2012b.

**Figure 5-25 Campbell County School Enrollment by Grade for Selected Years**

Campbell #1 has an extensive vocational technical program focused on educating and training students for jobs in the energy and related industries in the county. Related industries include diesel mechanics and computer and robotics mechanics, as well as operation of computer assisted milling machines. This vocational program provides local industries with a pool of entry-level employees in critical trades and crafts and helps stabilize the community by providing employment opportunities for local youth.

Campbell #1 anticipates and is planning for growing enrollment. These plans include construction of three new elementary schools, which will replace existing schools and are sized to help optimize capacity to meet growing enrollment. A new high school also is planned, as is a new facility to house the district’s alternative high school (WSFD 2012a).

**5.4.2 Other School Districts**

Mineral development has directly and indirectly affected the other school districts of the six-county study area. Over the years, all districts within the study area have, to some extent, served student populations from households supported by energy, minerals, and related service industries.

#### **5.4.2.1 Converse County School District #1**

Converse County School District #1 (Converse #1) covers Douglas, Bill, Shawnee, and surrounding areas in eastern Converse County. The district operates four schools in Douglas, organized as follows: primary (kindergarten through grade 2), intermediate (grades 3 through 5), middle (grades 6 through 8), and high school (grades 9 through 12). The district also has five rural kindergarten through grade 8 schools, including the recently added Walker Creek School. These schools are used on an as-needed basis (Converse #1 2012; WSFD 2012a).

Enrollment in Converse #1 for the 2011-2012 school year was 1,744 students, an increase of 56 students from 2003-2004. Construction of a new intermediate school (grades 4 and 5) will be completed in 2012. When completed, the additional capacity will allow reconfiguration of classes to alleviate pressures at the primary and current intermediate school due to high enrollment.

The City of Douglas relies heavily on Converse #1's facilities for recreation. For a number of years, the community has paid an optional 1.0-mill property tax to operate recreation programs and facilities.

#### **5.4.2.2 Converse County School District #2**

Converse County School District #2 (Converse #2) operates three schools in the Town of Glenrock and a remote school south of Glenrock (the Boxelder School) in the western part of Converse County. The three schools in Glenrock include an elementary school (kindergarten through grade 4), an intermediate/middle school (grades 5 through 8), and a high school (grades 9 through 12). The Boxelder School is used on an as-needed basis. Total district enrollment was 697 in the fall of 2011, a decline of 90 students compared to the fall of 2003.

The schools within Converse #2 had been underutilized because of declining enrollment. To help address this issue, the district built a new elementary school in 2008, closing an older, larger school that also needed major maintenance. The district plans to maintain and upgrade the other two schools as funding permits (Converse #2 2012; WSFD 2012a).

Community use of schools in Converse #2 is concentrated in the intermediate/middle school building, which was the old high school. It contains an indoor swimming pool that doubles as a public pool and an auditorium that is used for town meetings and social gatherings.

#### **5.4.2.3 Crook County School District #1**

Crook County School District #1 (Crook #1) serves Hulett, Moorcroft, and Sundance. These three communities are 30 to 40 miles apart. Enrollment in the district declined from 1,122 to 1,093 between 2010-2011 and 2011-2012. The actual decline was substantially less than what was projected in the Phase 1 Task 1C report, and the district is anticipating additional growth as a result of energy resource and other development. Historically, the community of Moorcroft has shown particular sensitivity to growth linked to energy development in Campbell County. As a consequence of recent and projected enrollment growth, the district completed major remodeling and updates of several existing schools, and a new elementary school is being planned in Moorcroft (Crook #1 2012; WSFD 2012a).

#### **5.4.2.4 Johnson County School District #1**

Johnson County gained nearly 1,500 residents between 2000 and 2010, following a population gain of more than 900 residents in the preceding decade. As a result, the student enrollment in Johnson County School District #1 (Johnson #1) has climbed, including a net increase of 27 students between 2002-2003 and 2011-2012, to a total of 1,284 students. The district operates five schools, including four in Buffalo and one in Kaycee. These two communities are approximately 45 miles apart. The district has closed three schools since 2003 (Johnson #1 2012; WSFD 2012a).

#### **5.4.2.5 Sheridan County School District #1**

Sheridan County School District #1 (Sheridan #1) serves Ranchester, Dayton, and Big Horn in north central Sheridan County. The district operates six schools: an elementary school and a high school in Ranchester, a middle school in Dayton, an elementary and a combined middle/high school in Big Horn, and a small rural school. The elementary school in Ranchester and middle/high school in Big Horn are new facilities completed in 2011.

Enrollment in the Sheridan #1 in 2011-2012 was 902 students, up from 867 in 2003. The district's current plans include a replacement elementary school in Big Horn to alleviate capacity issues (Sheridan #1 2012; WSFD 2012a).

#### **5.4.2.6 Sheridan County School District #2**

Enrollment in Sheridan County School District #2 (Sheridan #2) during the 2011-2012 school year was 3,202, which was an increase of 30 students since 2003. Enrollment growth in the district resulted from energy development and lifestyle migration to the region. The district operates nine schools including two high schools, a junior high school, and six elementary schools. All but two of these facilities are in Sheridan; two rural elementary schools located 20 and 11 miles from the district's administrative facilities. The district's facilities include a recently completed elementary school, and completion of another elementary school is anticipated in 2013 (Sheridan #2 2012; WSFD 2012a).

#### **5.4.2.7 Sheridan County School District #3**

Sheridan #3 is a small district that serves the sparsely populated eastern part of Sheridan County. There are two communities in the district, Clearmont and Arvada, which are 20 miles apart and are 38 and 58 miles from Sheridan, respectively. There is an elementary school in each community and a junior-senior high school at a central location. Both elementary schools are relatively new; the Clearmont elementary school was completed in 2007 and the Arvada school in 2009 (Sheridan #3 2012; WSFD 2012a).

District enrollment declined from 95 in 2003 to 90 in the 2011-2012 school year. Given the district's small enrollment and recent completion of the elementary schools, its facilities plan is focused on maintenance of the junior-senior high school.

#### **5.4.2.8 Weston County School District #1**

Weston County School District #1 (Weston #1) operates four schools: two elementary schools, one middle school, and a high school. All four schools are located in Newcastle. Because the district is very rural, many students travel long distances to get to school. The district's enrollment declined from 1,057 students in 1997-1998 to 836 in 2002-2003, and to 806 in the 2011-2012 school years. The most recent declines were less than had been expected for the Phase I Task 1C analysis. Population growth attributable to the increase in coal mining employment in central and southern Campbell County partially contributed to the less than anticipated decline. One of the elementary schools and the high school were built in the past decade. No additional new capital facilities currently are planned for the district (Weston #1 2012; WSFD 2012a).

#### **5.4.2.9 Weston County School District #7**

Weston County School District #7 (Weston #7) covers the northwest corner of Weston County adjacent to Campbell County. In the past, this has attracted mining employee households to locate in the district, as well as field services firms linked to energy and resource development. District enrollment was 243 in 2001-2012, down from 261 students in 2003. The district operates three schools: an elementary school; a middle school; and a high school, all located in Upton. No additional new capital facilities currently are planned for the district (Weston #7 2012; WSFD 2012a).

### 5.4.3 Wyoming School Foundation Program

The WSFP provides a guaranteed level of funding to every school district in the state through formulas based on numbers of students, classrooms, and other factors, such as adjustments for small schools, transportation, and special programs.

When enrollment growth occurs in a local school district, the WSFP's provisions generally ensure the availability of adequate funds to pay for the incremental instructional and administrative costs. However, under certain conditions, a district may experience a funding gap because the WSFP funding formula uses a 3-year rolling average of enrollment to compute the following year's allowable school district operating budget. Therefore, if a school district experiences a substantial year-over-year increase in enrollment, the WSFP may not fully fund the additional students for 3 years. There is an exception allowing for additional funding of enrollment spikes of 10 percent or more over the previous year. For growth of less than 10 percent, the district may need to hire new teachers and fund higher operating expenditures without a comparable increase in revenues. However, for large discrete projects, such as coal mines or power plants, the lead time required and the provisions of the Wyoming Industrial Information and Siting Act (WIISA) generally allow the district to adequately plan and secure funding to accommodate increases in enrollment. As noted above, CBNG development has not been accompanied by substantial increases in enrollment, so the 3-year rolling average factor has not been a major factor.

To fund public education, all districts are statutorily required to levy an ad valorem property tax of 43 mills, 31 mills of which are deemed local resources, with a separate statewide levy of 12 mills used to fund the guaranteed revenue for less wealthy districts. If local property tax revenues do not equal a district's guaranteed funding level, the WSFP makes up the difference. If the district's revenues exceed the guaranteed level, the excess is forwarded to the state to aid in the funding of other districts under what are termed the recapture provisions of the WSFP.

Over the years, Campbell #1 has forwarded large amounts of local revenue to the WSFP for redistribution to other school districts. Payments by Campbell #1 to the WSFP have varied widely since 1985; however, they frequently have been one-third to one-half of the district's local revenues. In the 2009-2010 school years, Campbell #1 paid the foundation program almost \$82 million to the WSFP. As a result of the increased valuation associated with natural gas production, Johnson #1 also was subject to the recapture provisions, forwarding \$38.4 million to the WSFP, or approximately 51 percent of the district's local revenue before recapture (**Table 5-24**). (Local revenue in Campbell County consists of the school district levy plus the county school levy.)

**Table 5-24 School District Revenues by Source (2009 – 2010 school year)**

School District	Total Revenue (millions)	Percent Share by Source			Payments to State Fund (millions)
		Local	State	Federal	
Campbell #1	\$110.9	99.8	0.1	0.1	\$81.6
Converse #1	\$23.6	68.6	31.4	0.0	-
Converse #2	\$9.8	69.7	30.2	0.0	-
Crook #1	\$17.7	44.0	56.0	0.0	-
Johnson #1	\$19.6	98.1	1.9	0.0	\$38.4
Sheridan #1	\$13.8	27.1	72.9	0.0	-
Sheridan #2	\$41.3	54.9	45.1	0.0	-
Sheridan #3	\$3.6	58.3	41.7	0.0	-
Weston #1	\$12.0	43.8	56.2	0.0	-

**Table 5-24 School District Revenues by Source (2009 – 2010 school year)**

School District	Total Revenue (millions)	Percent Share by Source			Payments to State Fund (millions)
		Local	State	Federal	
Weston #7	\$5.2	23.8	76.2	0.0	-
<b>Total for All Wyoming Districts</b>	<b>\$1,249.0</b>	<b>52.3</b>	<b>46.4</b>	<b>1.4</b>	<b>\$350.2</b>

Source: Wyoming Department of Education 2012b.

In northeastern Wyoming, the lagged response of WSFP funding to enrollment growth potentially could affect a local school district's ability to respond to higher rates of growth and development when such development arises from a series of dispersed activities (e.g., CBNG development). The pace of oil and gas development can change relatively quickly, unlike the large discrete projects that are covered by WIISA (e.g., coal mines and power plants) where large project lead times and WIISA provisions allow for districts to plan for and secure funding to handle anticipated growth.

#### 5.4.4 Wyoming School Facilities Department

The WSFD mission is to oversee all aspects of capital construction and physical plant maintenances for school facilities. To accomplish its mission, the WSFD established and maintains statewide standards for the adequacy of schools and related facilities necessary to provide the educational programs and services prescribed by law.

Since its inception, the WSFD has:

- Conducted a statewide assessment of school facility adequacy;
- Established a systematic approach to developing school enrollment projections;
- Developed space adequacy standards, based on the various types of programs;
- Adopted rules, policies, and procedures for developing, reviewing, and approving master plans for each district; and
- Completed and maintained a review of district master plans and formulated budget requests for submission to the legislature for funding.

Districts are required to conduct annual evaluations of school buildings and facilities, update their plans for compliance, and prioritize their future facility needs. Compliance can involve minor or major renovations and remodeling, new facility construction, as well as full or partial facility closure, demolition, sale, or lease.

From its creation in 2002 through the fiscal 2011-2012 biennium, the Wyoming State Legislature has appropriated \$1.974 billion for major facilities maintenance, capital construction, and operation of the WSFD. In addition, the WSFD submitted a budget request for approximately \$403.6 million during the 2013-2014 biennium; almost \$257 million is for new capital construction and \$101 million for major maintenance. These budget requests include funding for the new alternative high school and an elementary school in Campbell #1 as well as a replacement elementary school and new small rural elementary school in Sheridan #2. The WSFD's appropriations traditionally are funded by a transfer from the state's budget reserve account, which are in turn funded by revenues from the mineral severance tax, federal mineral royalties, and coal bonus distributions (WSFD 2012b).

## 5.5 Public Facilities and Services

Energy development affects local government facilities and services in several ways. In some cases such as law enforcement, emergency response, and road maintenance, local governments provide direct services to energy facilities. Local governments also provide facilities and services used by employees and population associated with energy development, and some local governments receive revenues from taxes on energy facilities and production and from taxes on company and employee spending.

The types and levels of facilities and services provided by local governments reflect service demand, revenue availability and community values regarding public services and service levels. As with most socioeconomic characteristics, the level and availability of local government facilities and services varies by county and community across the study area.

Although all local government facilities and services are affected by energy development, this assessment focuses on law enforcement and the largest municipal water and sewer systems in the six-county study area as these are among the essential community services, are staff and capital intensive, and require long-term planning. Although there are a number of smaller public water and wastewater systems across the study area, most individual residences and businesses located outside of communities rely on individual wells and septic systems. Public school facilities and services and hospitals are described in a subsequent section of this report.

The respective county sheriff's department has the primary responsibility for local law enforcement in each county, providing administration for the civil and criminal process, patrol, criminal investigation, court security, and detention services. One or more city/town municipal law enforcement agencies exist in each county in the study area, the largest of which is the Gillette police department.

In 2011, the combined staff of the respective sheriff's departments and municipal agencies ranged from 23 to 145 employees, with a corresponding range of 15 to 99 sworn officers (**Table 5-25**). The ratio of officers per 1,000 population served ranges from 1.7 in Sheridan County to 4.3 in Crook County, with a corresponding statewide average of 2.3 officers per 1,000 residents.

Crime rates within the six-county study area generally are at or below the statewide average of 247.7 crimes per 10,000 residents served, ranging from 157.6 in Weston County to 249.2 in Converse County. Additional discussion of local law enforcement services are provided, by county, in the following sections.

**Table 5-25 Law Enforcement and Crime Rates in the Six-county Study Area (2011)**

County	Local Law Enforcement Departments <sup>1</sup>	Total Employees <sup>2</sup>	Sheriff's Officers	Police Officers	Total Officers	Officers/1,000 Residents	Crime Rates <sup>3</sup>
Campbell	2	145	45	54	99	2.1	243.8
Converse	3	59	13	20	33	2.3	249.2
Crook	4	28	8	7	15	4.3	212.3
Johnson	2	33	12	11	23	2.6	169.5
Sheridan	3	72	21	30	51	1.7	187.9

**Table 5-25 Law Enforcement and Crime Rates in the Six-county Study Area (2011)**

County	Local Law Enforcement Departments <sup>1</sup>	Total Employees <sup>2</sup>	Sheriff's Officers	Police Officers	Total Officers	Officers/ 1,000 Residents	Crime Rates <sup>3</sup>
Weston	2	23	8	7	15	2.4	157.6
<b>Six-county Total</b>	<b>16</b>	<b>360</b>	<b>107</b>	<b>129</b>	<b>236</b>	<b>2.2</b>	<b>217.0</b>
Statewide	65	1,814	597	706	1,303	2.3	247.7

<sup>1</sup> Includes the county sheriff, city/town police, and Sheridan College departments.

<sup>2</sup> Total employees may include administrative, dispatch, and detention center staff.

<sup>3</sup> Crime rates are "indexed" crimes per 10,000 residents served. "Indexed" crimes are the more serious offenses, such as murder, rape, burglary, assault, and motor vehicle theft.

Source: Wyoming Office of Attorney General 2012.

### 5.5.1 Campbell County

In Campbell County, the major public facility and service providers include the county, City of Gillette, and Town of Wright. In some cases these entities cooperate to provide facilities and services under Joint Powers Agreements or on a contractual basis.

#### 5.5.1.1 Law Enforcement

The Campbell County Sheriff's Office (CCSO), headquartered in Gillette, provides law enforcement, detention, court security, and animal control services for the county. The CCSO maintains a substation in the Town of Wright and provides law enforcement services for Wright under a contract between the town and the county. The Gillette Police Department, the third largest department in the state in terms of number of officers, has primary responsibility for law enforcement within the city's corporate limits.

As of June 2012, the CCSO had 34 uniformed patrol officers that provide 24 hour per day patrol coverage, 7 days per week. The CCSO staff also includes 10 investigators, a K-9 team with three K-9 units, a hazardous device unit, a special response unit, and an animal control unit. As of June 2012, five deputies were stationed in Wright. The CCSO operates its own dispatch center staffed by 11 full-time employees and provides dispatch services for the Campbell County Fire Department and Campbell County Emergency Medical Services.

Originally constructed in 1985, the Campbell County Detention Center has undergone several expansions, the most recent of which increased the facility's maximum capacity to house 306 detainees. The expansion included a 16-bed juvenile detention facility. The detention center is staffed by 57 detention officers and 11 civilian staff (CCSO 2012).

Countywide, including the CCSO and 54 sworn officers of the City of Gillette Police Department, there was a ratio of 2:1 law enforcement officers per 1,000 residents in Campbell County in 2011. The statewide average was 2.3 officers per 1,000 residents (Wyoming Attorney General 2012).

#### 5.5.1.2 Gillette Water and Wastewater

The City of Gillette provides water and wastewater services within the city and to some portions of the surrounding Gillette Urban Service Area. The Water Division produces and distributes potable water to the citizens and businesses of Gillette. The 2011 service area population was 30,356. Water is produced from 26 wells and is treated prior to distribution. The system also includes five pump stations and nine

storage tanks and reservoirs (City of Gillette Water Department 2012). In 2011, the water system delivery capacity was 14.4 million gallons per day (mgpd), total treated water storage was 22 million gallons, and peak use was 14.7 mgpd. Gillette sells water to the Red Hills Subdivision and the Town of Moorcroft, when necessary (Wyoming Water Development Commission [WWDC] 2011).

In order to better serve recent population growth and accommodate anticipated growth in Gillette and other areas of northeast Wyoming, Gillette and Campbell counties entered into the Gillette Regional Water Supply System Joint Powers Agreement in December 2010. The primary purpose of the Gillette Regional Water Supply Project is to provide a new water supply, install regional extensions to serve local water districts, and make improvements to internal distribution systems of participating water districts. The Gillette Regional Water Supply Project is intended to serve the regional needs for the next 30 years, based on a design regional population of approximately 57,000 (City of Gillette 2012).

The water supply project includes three components: new water supply and conveyance capacity, new extensions to serve new areas, and distribution system improvement. The first is the Gillette Madison Pipeline Project, which will expand Gillette's groundwater sources in the Madison Formation, north of Keyhole Reservoir in Crook County and provide a new treatment and conveyance system to deliver this water to the Gillette regional area. The pipeline project is estimated to cost more than \$217 million and is being funded 67 percent by state grants and 33 percent through a Permanent Wyoming Mineral Trust Fund (PWMTF) loan, both of which are being administered by the WWDC. In May 2011, Campbell County voters approved a 1 percent Capital Facilities Tax to raise \$75 million to repay the PWMTF loan. Under the current schedule, the pipeline project is to be completed in 2016.

The second component is the District Extensions Project, which will provide extensions to serve existing water districts located in the Designated Service Area as established by the December 2010 Regional Water Joint Powers Agreement. The third is the Water District Internal Improvements Project, which will make improvements to the water distribution systems for each individual participating regional water district, downstream of the wholesale regional master meter connection (City of Gillette 2012).

The Gillette Wastewater Division collects and treats the sewage produced by the citizens and businesses of Gillette. The Wastewater Division operates and maintains approximately 202.8 miles of sewer pipe and 10 lift stations. The wastewater is treated at a conventional activated sludge treatment plant with anaerobic digestion and ultraviolet disinfection (City of Gillette Wastewater 2012a).

The Gillette wastewater system currently serves approximately 30,000 residents and associated commercial, industrial, and municipal demand. Improvements to the wastewater treatment plant completed in 2007 increased the plant capacity from 3.85 mgpd to 5.12 mgpd (City of Gillette Wastewater 2012b). These improvements should allow the system to accommodate approximately 35,000 people (Mulder 2012).

### **5.5.1.3 Wright Water and Wastewater**

Water and wastewater treatment services in the Town of Wright are provided by the Wright Water and Sewer District. Currently, the district provides water and wastewater services to an estimated 2,500 residents. The recently completed 20-year plan for the district's water and wastewater systems is to develop capacity to serve 5,000 residents. The district currently has six wells and recently completed a seventh well, which should be connected to the water system during the fall of 2012. The district also has state permits for two additional wells. The district has an existing 1 million gallon storage tank and plans to have a second 1 million gallon storage tank in operation within 2 years. These improvements will provide water system capacity to serve the target population of 5,000 residents. The district recently completed renovation and expansion of the wastewater lagoon system, which now provides capacity to accommodate the target population of 5,000 residents (Kingan 2012).

## **5.5.2 Converse County**

### **5.5.2.1 Law Enforcement**

Primary responsibility for law enforcement services in Converse County lies with the Converse County Sheriff's Office. During 2011 the Converse County Sheriff's Office had a staff of 25, including 13 sworn officers and 12 civilian employees. The Converse County Sheriff's Office also provides dispatch services for the county and operates the county detention center. The City of Douglas and Town of Glenrock maintain municipal police departments.

Countywide, including the sheriff's department and the officers of the Douglas and Glenrock police departments, there was a ratio of 2.3 law enforcement officers per 1,000 residents in Converse County in 2011 (Wyoming Attorney General 2012). The Converse County Sheriff's Office is affected by heavy volumes of commuter traffic associated with the coal mines in northern Converse and southern Campbell counties and to the increasing level of oil development in the county.

### **5.5.2.2 Douglas Water and Wastewater**

The Douglas water system served a population of 6,120 in 2011 (WWDC 2011). The existing water system was designed to accommodate a population of 10,000 (Sweeney 2004). The city has three water sources: 1) the Little Boxelder Spring is a high-quality gravity-fed water source located approximately 18-miles west of Douglas that provides up to 2.0 mgpd, which meets the city's water demands in the fall and winter; 2) the 1.5 mgpd Sheep Mountain well, which has been in service since 1994, supplements the city water supply during peak demand and allows for reduced usage of the more costly water treatment plant (City of Douglas 2012a); and 3) the North Platte River water rights (up to 2.5 mgpd), which primarily is used during the summer when lawn irrigation demands are high. River water is not intended to service the community in winter, but can be brought on-line under emergency circumstances (City of Douglas 2012a). The Douglas water system had a total water system capacity of 3.6 mgpd in 2011, and a peak use of approximately 3.3 mgpd (WWDC 2011).

The City of Douglas has four water storage facilities: a 3-million-gallon tank west of town, a 2-million gallon tank at the cemetery, and a 1-million-gallon tank east of town (City of Douglas 2012a). Total treated water storage capacity is 6.1 million gallons (WWDC 2011).

The Douglas wastewater treatment system is a three-cell complete aerated lagoon, with facilities provided for chlorination and de-chlorination of effluent prior to discharge to the North Platte River. The design capacity of the system could serve a population of approximately 15,000. The system includes two sewage pumping stations (City of Douglas 2012b).

### **5.5.2.3 Glenrock Water and Wastewater**

The Town of Glenrock provides water and wastewater treatment services to a population of approximately 2,900. The water system capacity is 1.7 mgpd, and recent peak daily use has been 1.4 mgpd. The town has 1.75 million gallons of storage capacity (Town of Glenrock 2011; WWDC 2011). Although the town has adequate water supply to accommodate a population of approximately 6,500, the conveyance system from the source to the town is constrained and is only capable of accommodating an additional population of approximately 800 people (Andrews 2012).

Glenrock also provides wastewater treatment services to approximately 2,500 residents. With the recently completed upgrades to the town's lagoon system, the wastewater utility also could accommodate an additional 800 people (Andrews 2012).

### **5.5.3 Crook County**

#### **5.5.3.1 Law Enforcement**

During 2011, the Crook County Sheriff's Office had a staff of 18, including 8 sworn officers and 10 civilian staff. Municipal law enforcement agencies exist in Moorcroft, Sundance, and Hulett.

Energy development affects law enforcement in Crook County in two ways. First, many residents of Campbell County recreate at Keyhole Reservoir and other locations in Crook County, which results in law enforcement demand for both traffic and criminal offenses. Second, an increasing number of Campbell County workers have chosen to live in Crook County, many in rural areas such as Pinehaven that previously were sparsely occupied. This results in law enforcement and other service demands in areas where demand previously was low.

Countywide, there was an average of 4.3 law enforcement officers for every 1,000 residents in 2011 (Wyoming Attorney General 2012). The overall average reflects the sheriff's office staff and the municipal police officers.

#### **5.5.3.2 Moorcroft Water and Wastewater**

Moorcroft provides water and sewer services to approximately 1,100 people. The Moorcroft water system capacity is 1.1 mgpd. There are six wells, including a recently added Madison Formation well, capable of producing 600 gallons per minute. Based solely on the Madison well and the two other largest producing wells, the Moorcroft water system could serve a population of approximately 1,950 assuming a maximum daily use of 560 gallons per capita. Moorcroft is still connected to the Gillette Regional System but does not plan to use this source except in the case of an emergency. The town has 0.5 million gallons of treated storage in town and 0.2 million gallons of treated storage at the Madison well site. Future water system improvements could include replacing aging water mains as funding becomes available and replacing and upgrading water meters to a radio read system (Carson 2012).

Moorcroft's three-cell lagoon wastewater system was constructed in the 1980s. A 2010 system review indicated that, with proper maintenance, the system should accommodate a population of 1,648 based on measured flows. System inflows are high, possibly indicating effects of inflow and infiltration into the collection system. During the summer of 2012, Moorcroft had problems meeting Wyoming Department of Environmental Quality discharge requirements and received a Notice of Violation. The city plans to address the identified issues either through eliminating discharge or through facility modifications and continuation of ongoing efforts to replace the worst of its aging clay tile sewer lines. If replacement of old lines reduces inflow and infiltration, the capacity may increase to a service population of 3,000 (Carson 2012). Expansion of the wastewater collection system will occur as necessary and typically is funded by development.

### **5.5.4 Johnson County**

#### **5.5.4.1 Law Enforcement**

As of July 2012, the Johnson County Sheriff's Office had a staff of 29, including 16 detention employees and 13 sworn officers, including the Sheriff (Wolf 2012). The City of Buffalo maintains a municipal police department, which had 11 officers in 2011.

Energy development-related demands on the Johnson County Sheriff's Office primarily have been associated with CBNG development. CBNG development and the associated demand on law enforcement initially increased after 2003, but subsequently declined.

Countywide, there was a ratio of 2.6 law enforcement officers for every 1,000 residents in 2011 (Wyoming Attorney General 2012). The overall average reflects the sheriff's office staff and the municipal police officers in Buffalo.

The recently constructed Johnson County Detention Facility has capacity to house 55 detainees (Wolf 2012).

#### **5.5.4.2 Buffalo Water and Wastewater**

The City of Buffalo provides water and sewer services to a population of approximately 4,600. Total water system capacity is 6.0 mgpd and recent peak demand has been 3.2 mgpd. The water treatment system could process an additional 4.0 mgpd with minor facility improvements. Buffalo has a total of 3.6 million gallons of treated water storage capacity and approximately 16 million gallons of raw water storage capacity (Hook 2012).

The Buffalo wastewater treatment facility has a design capacity of approximately 6 mgpd. Current peak flows are approximately 1.5 mgpd in the spring, when some infiltration of sewer lines occurs. The city is working to fix these infiltration problems. Some wastewater collection trunklines are nearing capacity and need to be replaced. Both the water and wastewater systems could accommodate a substantial increase in population (Hook 2012).

### **5.5.5 Sheridan County**

#### **5.5.5.1 Law Enforcement**

Headquartered in Sheridan, the Sheridan County Sheriff's Office had a staff of 27 in 2011, including 21 sworn officers and 6 civilian staff. Sixteen of the sworn officers were assigned to the patrol division, with primary responsibility for law enforcement services for the unincorporated portions of Sheridan County. The Sheridan Police Department has primary responsibility for law enforcement within the city's incorporated limits. Sheridan College, located in Sheridan, maintains a campus police department to address campus safety needs.

In 2006, the county completed a remodel of an addition to the Sheridan County Detention Center, which raised the facilities total capacity to 126 beds. The detention center is operated by a staff of approximately 55, including a number of sworn officers.

Countywide, there was a ratio of 1.7 law enforcement officers for every 1,000 residents in 2011. The overall average reflects the sheriff's office staff and the municipal police officers in Sheridan and Sheridan College (Wyoming Attorney General 2012).

#### **5.5.5.2 Sheridan Water and Wastewater**

The City of Sheridan provides raw and treated water to consumers within the city's incorporated limits and to other users within the Sheridan Area Water and Sewer-Joint Powers Board (SAWS-JPB) service area, the Downer Neighborhood Improvement and Service District, and the Veteran's Administration facilities located northwest of the city. In all, approximately 17,000 people are served by the water and wastewater systems. The water system has a total capacity of 19 mgpd; peak use in 2011 was 8.3 mgpd. The city has raw water rights on Goose Creek, extensive raw water storage facilities at Twin Lakes Reservoir, and shared ownership of other mountain reservoirs. The SAWS-JPB has 10 million gallons of treated water storage capacity in 12 different tanks. The city operates two water treatment plants: the Sheridan plant with a design capacity of 14 mgpd and the Big Goose plant with a design capacity of 4.5 mgpd (Cole 2004; WWDC 2011).

Sheridan operates a Level IV sewage treatment plant with a design capacity of 4.4 mgpd: current usage averages 2.3 mgpd, or approximately 52 percent of design capacity (City of Sheridan 2012).

## **5.5.6 Weston County**

### **5.5.6.1 Law Enforcement**

The Weston County Sheriff's Office had a staff of 10 in 2011, including 8 sworn officers and 2 civilian employees. The sheriff's office also operates a 38-bed detention facility in Newcastle. The Newcastle Police Department has primary responsibility for law enforcement within the city's corporate limits.

A number of employees of southern Campbell County coal mines reside in Newcastle and Upton. These employees typically commute to and from work on buses, resulting in little travel-related impact on the sheriff's office (Kettley 2004).

Countywide, there was a ratio of 2.4 law enforcement officers for every 1,000 residents in 2011. The overall average reflects the sheriff's office staff and the municipal police officers in Newcastle (Wyoming Attorney General 2012).

### **5.5.6.2 Newcastle Water and Wastewater**

The City of Newcastle's water and wastewater systems were designed to accommodate a population of over 5,000; however, with minor improvements, the water system could accommodate 6,000 (Hartley 2012). The Newcastle water system has a capacity of 2.3 mgpd and total treated water storage is 5.3 million gallons (WWDC 2011). Currently, the water system serves a population of approximately 4,400, including residents of several rural water districts that purchase water from Newcastle. The Newcastle wastewater system serves a somewhat smaller population because some residents of the rural water system rely on septic systems for wastewater disposal (Hartley 2012).

### **5.5.6.3 Upton Water and Wastewater**

The Town of Upton's water system was designed to accommodate a population of 3,000, and the town has adequate water supply and storage capacity for that amount. In 2011, the Upton water system served approximately 1,100 people. Total system capacity is 1.2 mgpd, and peak daily use in 2011 was 568,000 gallons. Upton's total treated water storage capacity is 0.6 million gallons (WWDC 2011). The town's sewage treatment facility was designed to accommodate between 4,000 and 5,000 people (Lundstrom 2004).

## **5.5.7 Other Regional Public Water and Wastewater Services**

There are a number of other public water and wastewater systems/districts serving residential and commercial needs in the smaller communities in the study area. These include:

- A community water system serving residential needs in the Fox Ridge area south of Gillette;
- The Rolling Hills public water and wastewater systems serving residential and commercial needs in the town of Rolling Hills, located west of Glenrock in Converse County;
- Three public water and wastewater systems/districts in Crook County serving residential and commercial needs in Hulett, Pine Haven, and Sundance;
- A municipal system serving residential and commercial needs in Kaycee in Johnson County;
- Public water and wastewater systems/districts located in Ranchester, Dayton, and Clearmont, serving some residents and commercial needs in outlying portions of Sheridan County; and
- A public water and wastewater district serving residents and commercial needs in Osage in Weston County.

## 5.6 Fire Protection

Local fire departments serve overall public safety in the six-county study area by providing public education regarding fire prevention, active fire suppression, and in many cases, emergency medical response, rescue, and inspection services. There are 23 active fire departments operating in the study area (**Table 5-26**). The majority are volunteer departments, operating from a single fire station; however, four departments are professional career departments or 'combination' departments having some paid administrative and/or firefighting staff.

The Campbell County Fire Department, which is organized and operates under a joint powers board, is the largest department in terms of staffing, number of stations, and the number and type of apparatus. The department provides countywide coverage, including coverage for the extensive industrial mining, electrical generating, and transportation base.

The BLM and U.S. Forest Service (FS) also maintain wildland fire suppression capabilities in the study area and can draw on national resources when warranted.

**Table 5-26 Local Fire Protection Providers in the Six-county Study Area (2011)**

County/Department	Type	Number of Paid Staff/Volunteers	Number of Stations
<b>Campbell County</b>			
Campbell County Fire Department	Combination	28/150	10
<b>Converse County</b>			
Converse County Rural Fire Control Association	Volunteer	0/105	NA
Douglas Volunteer Fire Department	Volunteer	0/35	1
Glenrock/Converse County Volunteer Fire Department	Volunteer	0/37	2
<b>Crook County</b>			
Crook County Fire Department	Volunteer	0/142	1
Hulett Fire Department	Volunteer	0/18	1
Moorcroft Volunteer Fire Department	Volunteer	0/19	1
Pine Haven Volunteer Fire Department	Volunteer	0/20	1
Sundance Volunteer Fire Department	Volunteer	0/16	1
<b>Johnson County</b>			
Buffalo Volunteer Fire Department	Volunteer	0/20	1
Johnson County Fire Control District #1	Combination	3/27	1
Powder River Fire District	Volunteer	0/20	2
<b>Sheridan County</b>			
Arvada-Clearmont Fire District	Volunteer	0/35	4
Big Horn Volunteer Fire Department	Volunteer	0/20	1
Dayton Volunteer Fire and Rescue	Volunteer	0/25	1
Sheridan Area Rural Fire Protection District	Volunteer	0/30	1
Sheridan Fire and Rescue	Career	17/0	1
Story Volunteer Fire and Rescue	Volunteer	0/9	1
Tongue River Fire Protection District	Volunteer	0/25	1

**Table 5-26 Local Fire Protection Providers in the Six-county Study Area (2011)**

County/Department	Type	Number of Paid Staff/Volunteers	Number of Stations
<b>Weston County</b>			
Newcastle Volunteer Fire Department	Volunteer	0/35	1
Osage Volunteer Fire Department	Volunteer	0/8	1
Upton Volunteer Fire Department	Volunteer	0/26	1
Weston County Fire Protection District	Combination	2 /85	3

Sources: U.S. Fire Administration 2012; Wyoming Attorney General 2012; Wyoming State Fire Marshal 2012.

## 5.7 Hospitals

Hospitals and major health clinics serve as the foundation for healthcare in the six-county study area. Each county has a hospital located in the county seat. Services provided reflect the service area population for each facility, fiscal resources, and distances to other healthcare facilities. Individual and group medical and dental practices partner with the services provided by these institutions to meet the healthcare needs of the community. **Table 5-27** identifies hospitals and healthcare clinics in the PRB and summarizes the services offered by these facilities.

**Table 5-27 Hospitals and Major Health Clinics in Northeastern Wyoming**

County	Facility	Beds	Services
Campbell	Campbell County Memorial Hospital (Gillette)	90 acute; 150 long-term	Inpatient: medical, surgical, 24/7 emergency room, intensive care unit, Wyoming Orthopedic and Rehabilitation Institute, maternal child, and hospice.  Outpatient: behavioral health services, cancer care, cardiopulmonary services, home healthcare, laboratory, Pioneer Manor Long-term Care Facility, pediatric specialty clinic, and a variety of other clinics and services.
	Wright Clinic	-	Family practice, laboratory, x-ray, physical therapy, visiting physician, and counseling services.
Converse	Converse County Memorial Hospital (Douglas)	25	Critical access, surgical services, birthing center, wellness and community education, diagnostic services, quality management, and radiology.
	Oregon Trail Rural Health Clinic (Glenrock)	-	Rural healthcare, x-ray, and basic laboratory.
Crook	Crook County Medical Services District (Sundance)	48	Emergency medical services, primary healthcare, wellness, health education, laboratory services, x-ray, physical therapy, and long-term care.
	Moorcroft Clinic	-	Ambulatory care, health physicals, and specialty matters including CT Scan and mammograms on a consulting basis.

**Table 5-27 Hospitals and Major Health Clinics in Northeastern Wyoming**

County	Facility	Beds	Services
Johnson	Johnson County Healthcare Center	25	24-hour emergency care, surgical unit, labor/delivery rooms, nursery, laboratory, radiology, physical therapy, and respiratory therapy.
Sheridan	Sheridan Memorial Hospital	88	Emergency medical services, intensive care, cardiac and pulmonary rehabilitation, dialysis, home care, laboratory, surgery, transitional care, radiology and medical imaging, women's health, and pediatrics.
Weston	Weston County Health Services	23	24-hour emergency services, surgery, laboratory, radiology, outpatient clinics, long-term care, home health, registered dietitians, swing bed program, respite care, physical therapy, speech therapy, cardiac rehabilitation, obstetrics, medical imaging, chemotherapy (limited), outpatient IV therapy, and sleep studies.

Sources: Campbell County Memorial Hospital 2012; Converse County Memorial Hospital 2012; Crook County Medical Services District 2004; Johnson County Healthcare Center 2012; Sheridan Memorial Hospital 2012; US News 2012; Weston County Health Services 2012.

Campbell County Memorial Hospital, the largest healthcare facility in the six-county study area, has undergone substantial expansion in recent years. The Heptner Radiation Oncology Center was completed in 2002, and an expansion of medical oncology services was completed in 2008 to form the Cancer Care Center at Campbell County Memorial Hospital. A 6,000 square foot expansion of the Emergency Department and construction of an extensive laboratory including the first full chemistry automation line in Wyoming was completed in 2009. A \$68 million expansion project began in June 2009 with construction of a multi-level, 294-space parking structure adjacent to the main entrance. In 2010, the hospital began construction of a 137,000 square foot, three-level hospital addition capable of supporting three additional levels. In addition to a variety of administrative functions, the new addition will house inpatient and outpatient surgery facilities and space for a 36-bed Medical/Surgical unit, as well as other medical and emergency receiving facilities (Campbell County Memorial Hospital 2012).

For some communities in the study area, the Wyoming Medical Center (WMC) in Casper may be a closer major hospital option. The WMC is a Joint Commission Accredited regional medical center and Level II Trauma Center, with over 200 beds and 150 attending physicians. WMC offers 50 healthcare specialties and operates two Centers of Excellence: the Heart Center of Wyoming and the Wyoming Neuroscience and Spine Institute (WMC 2010). Recent WMC occupancy has been 48 percent (Wyoming Department of Health 2010). WMC also operates a Life Flight helicopter and fixed-wing air ambulance. These aircraft can be dispatched throughout the region to transport critically ill patients to the nearest most appropriate facility, including Gillette, or to more specialized treatment centers in Denver, Salt Lake City, or Billings.

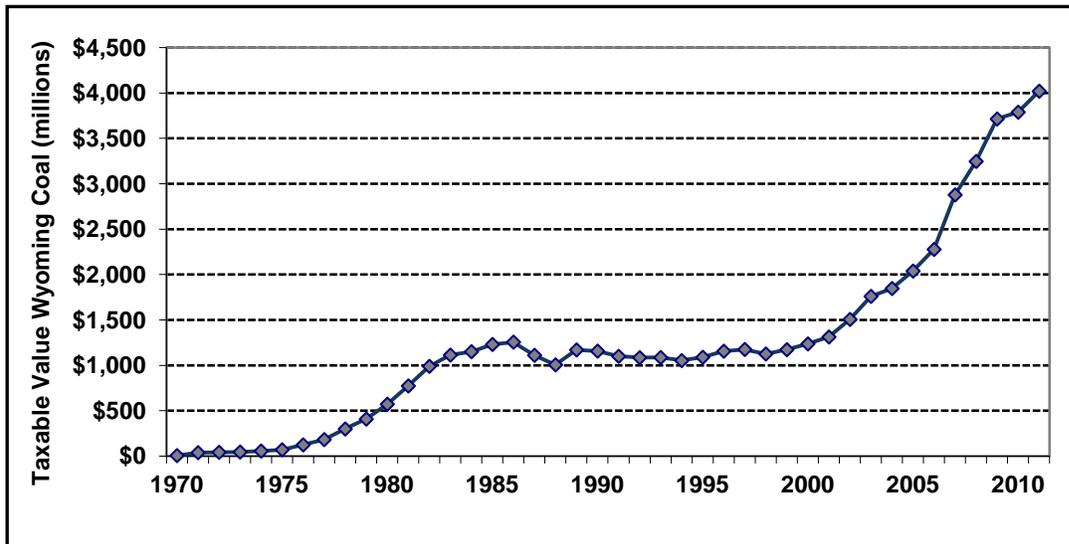
## 5.8 Fiscal Conditions

Federal mineral royalties and state and local taxes levied on coal and other mineral production are major sources of public revenue in Wyoming. Taxes, fees, and charges levied on real estate improvements, retail trade, and other economic activity supported by energy development provide additional sources of revenue to support public facilities and services. These revenues benefit not only the jurisdiction within

which the production or activity occurs or is located, but also the federal treasury, state coffers, school districts, and local governments across the state through various revenue-sharing and intergovernmental transfer mechanisms.

**5.8.1 Ad Valorem (Property Taxes)**

Coal and other minerals produced in Wyoming, regardless of ownership, are subject to ad valorem taxation by local taxing entities and the statewide levy to support public education. The statewide total taxable value of coal has increased in response to production; however, falling coal prices have dampened the increases. Total taxable valuation on coal production, in nominal terms, climbed from \$38.9 million in 1971 to \$773.6 million in 1981 and to approximately \$1.1 billion in 1991. Even as production expanded by 94 percent between 1991 and 2003, falling market prices limited the subsequent increases in total taxable value to \$660 million (60 percent), raising the statewide total to approximately \$1.8 billion in 2003. Since then, the combination of rising production and higher commodity prices has resulted in an increase in overall valuation to approximately \$4.0 billion in 2011, a 128 percent increase. Year-over-year increases during the period included a gains of more than \$600 million from 2006 to 2007, and more than \$450 million from 2008 to 2009 (**Figure 5-26**).



Source: WTA 2012 (with adjustments by Sammons/Dutton, LLC).

**Figure 5-26 Taxable Value of Annual Coal Production in Wyoming (1970 – 2011)**

As noted in Section 3.1, coal production in Campbell County has accounted for an increasing share of statewide production over time. The concentration of coal production in Campbell County is evidenced by the increase in total valuation from less than \$1.0 million in 1973 to just under \$1.5 billion in 2003 and to \$3.6 billion in 2011. The valuation on coal produced in Converse County reached \$50 million in 1991, driven by the combined production from the Dave Johnston and Antelope mines. It subsequently declined through the mid-1990s in response to declining market prices, but surged in response to increased production at the Antelope Mine near the Converse County/Campbell County line, even as the Dave Johnston Mine ceased production and initiated final reclamation. In recent years, the majority of the production at the Antelope Mine has been from coal located in Converse County, such that the total valuation topped \$264.2 million in 2011. That total exceeded the \$227.8 million valuation on all other (i.e., non-PRB) coal production in the state in 2011 (6 percent of the total). Recent trends in the taxable valuation (nominal) on coal for the six-county study area and the state as a whole are shown in **Table 5-28**.

**Table 5-28 Taxable Valuation of Annual Coal Production in Nominal Dollars (2000 – 2011)**

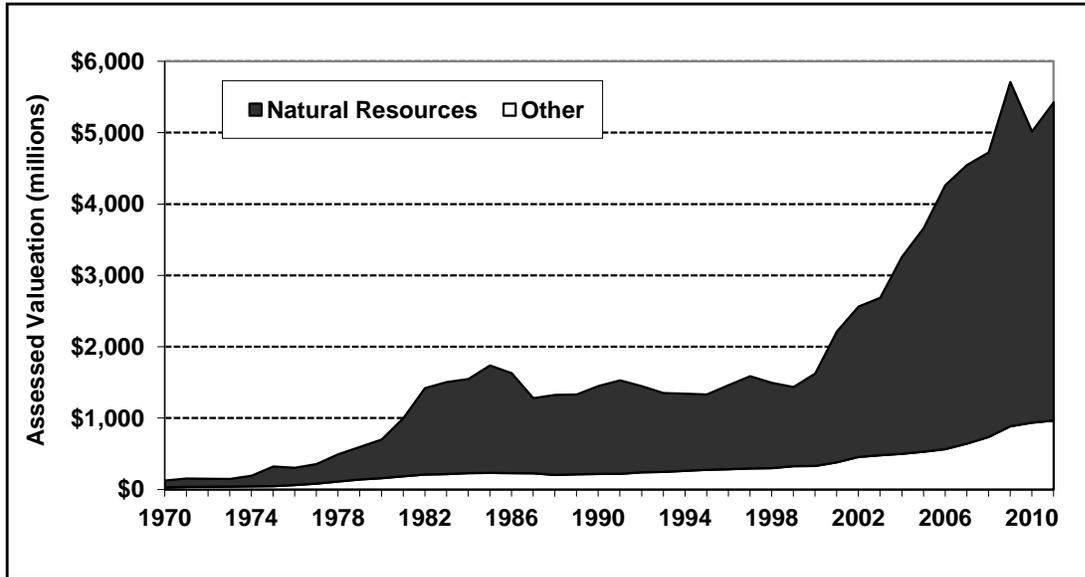
Year Assessed	County			Other Wyoming Counties	State Total
	Campbell	Converse	Sheridan		
2000	\$976,439,893	\$74,821,315	\$897,948	\$184,331,158	\$1,236,490,314
2001	\$1,065,607,228	\$74,616,015	\$543,370	\$171,929,074	\$1,312,695,687
2002	\$1,228,879,992	\$83,284,924	-	\$194,172,379	\$1,506,337,295
2003	\$1,480,406,834	\$108,151,284	-	\$171,733,186	\$1,760,291,304
2004	\$1,561,154,338	\$119,392,227	-	\$166,436,767	\$1,846,983,332
2005	\$1,739,291,552	\$103,750,043	-	\$195,956,635	\$2,038,998,230
2006	\$1,995,307,606	\$84,208,985	-	\$197,806,521	\$2,277,323,112
2007	\$2,532,604,861	\$135,444,876	-	\$209,886,735	\$2,877,936,472
2008	\$2,852,086,593	\$182,288,435	-	\$212,532,762	\$3,246,907,790
2009	\$3,321,045,794	\$195,947,032	-	\$197,101,204	\$3,714,094,030
2010	\$3,369,006,127	\$229,733,212	-	\$190,155,008	\$3,788,894,347
2011	\$3,527,937,616	\$264,224,714	-	\$227,780,080	\$4,019,942,410

Source: Wyoming Department of Revenue 2012.

Assessed valuation for Campbell County reflects the trends in coal and other natural resource production and commodity prices. Although the inventory and value of non-mineral property has increased over time, the valuation, in nominal terms, on minerals is the dominant source of the ad valorem tax base in Campbell County. The county's total assessed valuation, in nominal terms, expanded almost eight-fold from \$125.3 million in 1970, prior to the expansion of the region's mining industry, to \$998.7 million in 1981. Three years later, assessed valuation exceeded \$1.7 billion. For the next 15 years, the county's valuation fluctuated in a relatively narrow range of \$1.3 and \$1.6 billion, as production increases were largely offset by lower prices. Rising CBNG production helped boost total assessed valuation to \$2.7 billion in 2003 and \$4.3 billion in 2006. Countywide valuation reached an all-time high of \$5.7 billion in 2009, corresponding with a major increase in coal valuation and continuing high valuation on natural gas (**Figures 5-27 and 5-28**). Subsequent declines in natural gas and oil valuations due to declining commodity prices resulted in a \$704 million decline in total valuation the following year (2010). An increased coal valuation tied to higher production and higher valuations on oil and gas increased by \$380 million between 2010 and 2011, offsetting part of the previous decline. Valuation on other property also increased to yield total valuation of \$5.4 billion in 2011.

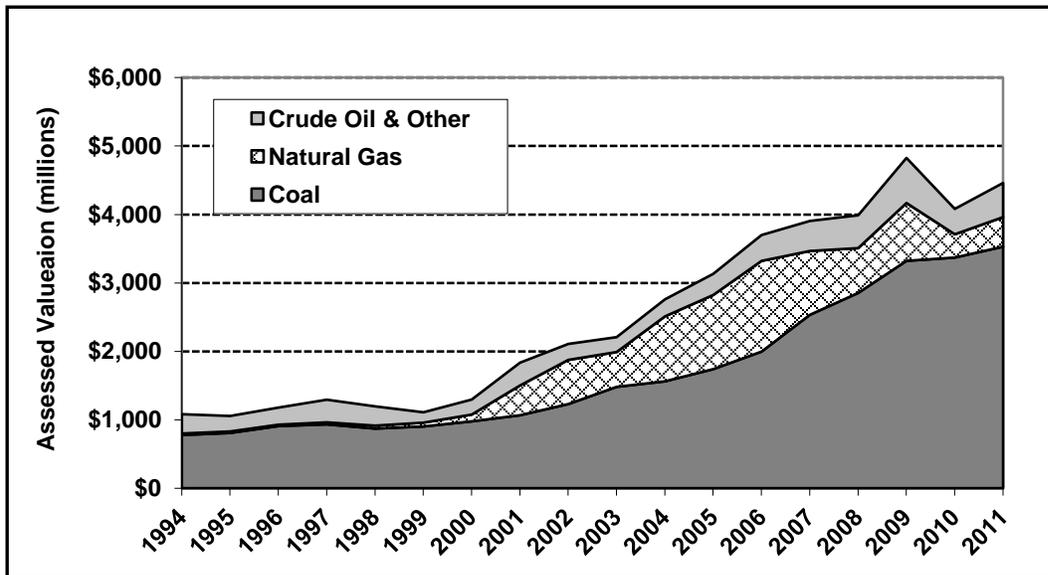
Total valuation on all other taxable property and other mineral production more than doubled between 2003 and 2011, from \$480 million to \$966 million. The gains reflect significant investments in oil and gas equipment, mining equipment at the region's coal mines, and new electrical generating capacity. In 2011, total coal and other natural resource production accounted for 82 percent of the total Campbell County valuation.

With respect to assessed valuation on mineral and energy resource production, Campbell County has been the primary beneficiary of energy resource production gains over the past four decades. As a result, order of magnitude differences in the assessed valuation exist among the six counties in the study area. Campbell County's assessed valuation of \$5.4 billion in 2011 was more than 40 times that of



Sources: Wyoming Department of Revenue 2012; WTA 2012.

**Figure 5-27 Campbell County Assessed Valuation from Natural Resources and Other Sources (1970 – 2011)**



Sources: Wyoming Department of Revenue 2012; WTA 2012.

**Figure 5-28 Valuation on Mineral Production for Campbell County (1994 – 2011)**

Weston County (\$132.9 million), and 26 times that of Crook County (\$205.0 million) (**Table 5-29**). Johnson County, and to a lesser extent Sheridan County, have realized increases in valuation due to CBNG development in the PRB since 2003. Both counties also realized gains due to substantial new residential development. The cumulative net gains in Johnson County were more than \$1.1 billion, raising the county's total valuation to just under \$1.3 billion and surpassing Converse County. Converse County, which also hosts coal production and electrical power generation facilities, including significant wind generation, has the third highest assessed valuation in the study area at \$851.3 million and the third largest gain between 2003 and 2011 at \$503.0 million.

**Table 5-29 Assessed Valuation by County (2003 and 2011)**

County	Assessed Value (2003)	Assessed Value (2011)	Change	Percent Change
Campbell	\$ 2,686,679,191	\$5,425,563,792	\$2,738,884,601	102
Converse	\$ 348,338,443	\$851,309,964	\$502,971,521	144
Crook	\$ 92,059,534	\$205,035,696	\$112,976,162	123
Johnson	\$ 111,195,527	\$1,290,787,314	\$1,179,591,787	1061
Sheridan	\$ 267,888,569	\$546,750,290	\$278,861,721	104
Weston	\$ 77,743,850	\$132,893,917	\$55,150,067	71
<b>Six-county Total</b>	<b>\$ 3,583,905,114</b>	<b>\$8,452,340,974</b>	<b>\$4,868,435,860</b>	<b>136</b>

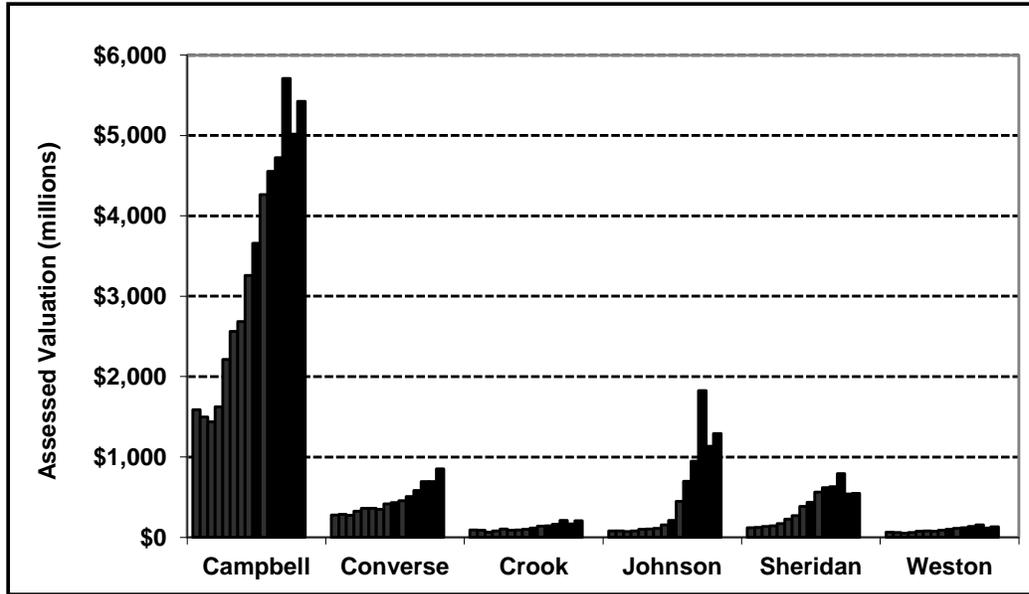
Sources: Wyoming State Board of Equalization 2011; WTA 2012.

Although linked to the underlying coal resource, the geographic extent of CBNG exploration, development, and production activities is not as constrained as that associated with coal mining. While the initial impacts of CBNG activities on assessed valuation were focused in Campbell County, energy resource-related increases also have been accruing in Sheridan and Johnson counties. Countywide assessed valuation for the past 15 years, which highlight the recent increases due to CBNG and coal production, are shown in **Figure 5-29**.

Taxing entities levying property taxes vary by location, but generally include the county, appropriate school districts, special districts (e.g., fire or hospital districts), and the statewide levy to support public education (25 mills). Applying the general mill levies for each county to the taxable values of coal production yields the estimated annual revenues shown in **Table 5-30**.

Annual ad valorem tax revenues on statewide coal production increased from \$76.4 million in 2000 to \$238.7 million in 2011, increasing consistently over time. However, the geographic distribution of revenue generation has changed, reflecting the increased concentration of production in the PRB and declining production elsewhere in the state. Whereas non-PRB coal production accounted for nearly 17 percent of the annual ad valorem tax revenue in 2000, that share had declined to just 4 percent in 2011.

Within the six-county study area, annual ad valorem taxes have increased by more than 250 percent since 2000, reaching \$214.2 million in Campbell County and \$15.5 million in Converse County in 2011. An estimated total of \$1.8 billion in ad valorem taxes have been collected on statewide coal production from 2000 thru 2011. Revenues generated from production in Campbell County total \$1.5 billion, or 86 percent of the statewide total. Total revenues generated in Converse County were \$98.8 million, or 6 percent of the statewide total.



Sources: Wyoming Department of Revenue 2012; Wyoming State Board of Equalization 2011.

**Figure 5-29 Assessed Valuation Trends by County (1997 – 2011)**

**Table 5-30 Estimated Ad Valorem Tax Revenue on Coal Production (2000 – 2011)**

Year Collected	Ad Valorem Tax Revenue by County			Other Wyoming Counties	State Total
	Campbell	Converse	Sheridan		
2000	\$59,126,340	\$4,476,120	\$62,570	\$12,751,140	\$76,416,170
2001	\$64,152,860	\$4,412,920	\$37,390	\$11,677,640	\$80,280,810
2002	\$76,038,200	\$5,179,800	-	\$13,281,400	\$94,499,400
2003	\$87,968,700	\$6,290,600	-	\$11,162,700	\$105,422,000
2004	\$92,008,200	\$6,998,300	-	\$10,498,800	\$109,505,300
2005	\$102,446,000	\$6,178,900	-	\$12,294,300	\$120,919,200
2006	\$117,617,400	\$5,145,800	-	\$12,489,500	\$135,252,700
2007	\$151,487,800	\$8,161,900	-	\$13,361,400	\$173,011,100
2008	\$171,598,600	\$10,907,200	-	\$13,610,600	\$196,116,400
2009	\$195,284,100	\$11,744,300	-	\$12,336,600	\$219,365,000
2010	\$201,385,700	\$13,777,100	-	\$12,259,300	\$227,422,100
2011	\$214,196,900	\$15,538,300	-	\$8,963,600	\$238,698,800
<b>Total</b>	<b>\$1,533,310,800</b>	<b>\$98,811,240</b>	<b>\$99,960</b>	<b>\$144,686,980</b>	<b>\$1,776,908,980</b>

Note: Estimated revenues are based on the tax levies for the respective counties, school districts, and special districts with countywide or broad-area taxing jurisdiction.

Source: Wyoming Department of Revenue 2012.

Ad valorem tax revenues of \$214.2 million on coal production accounted for 81 percent of the total assessments on revenues in Campbell County in 2011. The corresponding share was 54 percent in Converse County, but virtually zero elsewhere in the state as other minerals, primarily oil and gas, generated substantially more in ad valorem taxes. Nonetheless, coal accounted for one-fourth of the total statewide ad valorem revenue on minerals (**Table 5-31**).

**Table 5-31 Ad Valorem Tax Revenue on Coal Production as Shares of Total Ad Valorem Revenue on Mineral Production (2011)**

Source	County			Other Wyoming Counties	State Total
	Campbell	Converse	Sheridan		
Coal	\$214,196,900	\$15,538,300	-	\$8,963,600	\$238,698,800
Oil, Gas, and Other Minerals	\$50,759,968	\$13,074,600	\$11,518,091	\$648,096,802	\$723,449,461
<b>Total</b>	<b>\$264,956,868</b>	<b>\$28,612,900</b>	<b>\$11,518,091</b>	<b>\$657,060,402</b>	<b>\$962,148,261</b>
Coal (percent of total)	81	54	0	1	25

Note: Estimated revenues are based on the overlapping tax levies for the respective counties, school districts, and special districts with countywide or broad-area taxing jurisdiction.

Source: Wyoming Department of Revenue 2012.

As shown in **Table 5-32**, coal and mineral production accounted for a substantial share of each county's total assessed valuation in 2011. For Campbell County, mineral valuation of \$4.5 billion accounted for more than 82 percent of the county's total valuation. In Johnson County, the corresponding share was 84 percent, the highest in the six-county study area. Sheridan County had the lowest reliance on mineral production valuation (32 percent). Across the state, mineral production accounted for 64 percent of the total ad valorem tax revenues. Together the six-county region accounted for 41 percent of the statewide mineral valuation. This compares to 23 percent of the total in terms of valuation on real estate and other non-mineral property.

**Table 5-32 Ad Valorem Valuation on Mineral Production as Share of Total Ad Valorem Revenue (2011)**

County	Valuation on Mineral Production	Real Estate and Other Non-Mineral Property Valuation	Total Assessed Valuation	Minerals (percent of total)
Campbell	\$4,458,798,566	\$966,766,641	\$5,425,565,207	82
Converse	\$486,552,617	\$364,757,877	\$851,310,494	57
Crook	\$123,055,260	\$81,980,784	\$205,036,044	60
Johnson	\$1,085,258,376	\$205,529,315	\$1,290,787,691	84
Sheridan	\$173,701,353	\$373,049,145	\$546,750,498	32
Weston	\$63,781,903	\$69,112,298	\$132,894,201	48
Six-County Total	\$6,391,148,075	\$2,061,196,060	\$8,452,344,135	76
<b>Statewide Total</b>	<b>\$15,493,428,253</b>	<b>\$8,846,271,979</b>	<b>\$24,339,700,232</b>	<b>64</b>
Six-County Share of Statewide (Percent)	41	23	35	NA

Source: Wyoming Department of Revenue 2012.

### 5.8.2 Wyoming State Severance Taxes

Wyoming levies a state severance tax on coal and many other minerals produced in the state. That severance tax rate, levied on the value of production, has varied over time. Prior to the dramatic expansion of surface coal mining, the severance tax rate on coal stood at 1.0 percent in 1972. The Wyoming State Legislature raised the rate to 10.5 percent in 1977-78, in part to provide funding for long-term highway, education, and community infrastructure improvements. The severance tax rate was reduced to 8.5 percent between 1987 and 1992 and to 7.0 percent since 1992 as legislatively established permanent trust fund caps were reached.

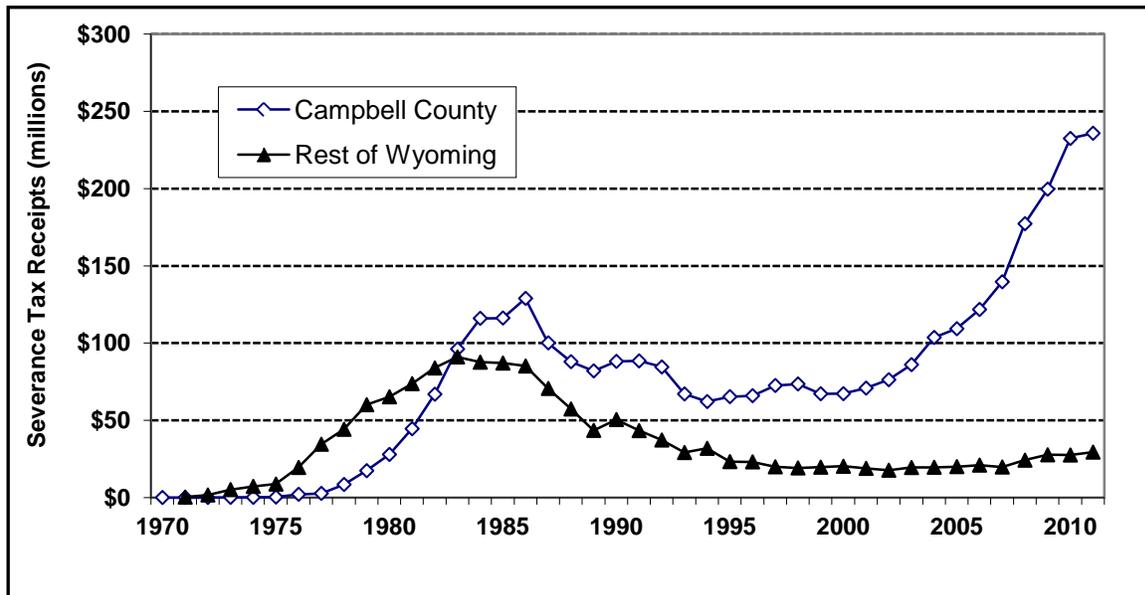
Despite the reduction in the severance tax rate, statewide severance tax receipts on coal have increased dramatically over time, from \$82.1 million in 2000 to \$265.2 million in 2011. The increases during the early years of that period were driven by rising production, but more recently by higher commodity prices (**Table 5-33** and **Figure 5-30**). Cumulative statewide severance tax receipts on coal between 2000 and 2011 total \$1.9 billion, the majority of which come from coal produced in Campbell County, with the majority of that being federal coal. Receipts on natural gas and oil have accounted for dramatic increases in severance tax receipts in the study area and statewide. Total severance tax receipts on all minerals produced in Wyoming were \$617.6 million for 2011.

**Table 5-33 Estimated Annual Severance Tax Receipts on Coal Production (2000 – 2011)**

Year	Annual Severance Tax Receipts by County			Other Wyoming Counties	State Total
	Campbell	Converse	Sheridan		
2000	\$63,127,670	\$4,759,580	\$36,510	\$14,210,710	\$82,134,470
2001	\$68,350,790	\$5,237,490	\$62,860	\$12,903,180	\$86,554,320
2002	\$74,592,510	\$5,223,120	\$38,040	\$12,035,040	\$91,888,710
2003	\$86,021,600	\$5,829,940	-	\$13,592,070	\$105,443,610
2004	\$103,628,480	\$7,570,590	-	\$12,021,320	\$123,220,390
2005	\$109,280,800	\$8,357,460	-	\$11,650,570	\$129,288,830
2006	\$121,750,410	\$7,262,500	-	\$13,716,960	\$142,729,870
2007	\$139,671,530	\$5,894,630	-	\$13,846,460	\$159,412,620
2008	\$177,282,340	\$9,481,140	-	\$14,692,070	\$201,455,550
2009	\$199,646,060	\$12,760,190	-	\$14,877,290	\$227,283,540
2010	\$232,473,210	\$13,716,290	-	\$13,797,080	\$259,986,580
2011	\$235,830,430	\$16,081,320	-	\$13,310,850	\$265,222,600
<b>Total</b>	<b>\$1,611,655,830</b>	<b>\$102,174,250</b>	<b>\$137,410</b>	<b>\$160,653,600</b>	<b>\$1,874,621,090</b>

Note: All values based on a 7.0 percent tax rate.

Source: Wyoming Department of Revenue 2012.



Sources: Wyoming Department of Revenue 2012; WTA 2012.

**Figure 5-30 Estimated Severance Tax Receipts from Wyoming Coal Production (1970 – 2011)**

Distribution formulas for severance tax proceeds are set by the Wyoming legislature, with concurrence by the governor. Over time, the basic allocation framework has remained relatively consistent, although some specific allocation shares have varied in response to changing fiscal needs. The basic formula includes a constitutionally mandated diversion of the proceeds from a 1.5 percent tax levy into the PWMTF. The PWMTF principal (now in excess of \$2.0 billion) is invested, and the derived income is transferred into the state's General Fund for appropriation by the legislature. Funds may be loaned to political subdivisions in Wyoming. Following these allocations, remaining severance tax proceeds are allocated as follows:

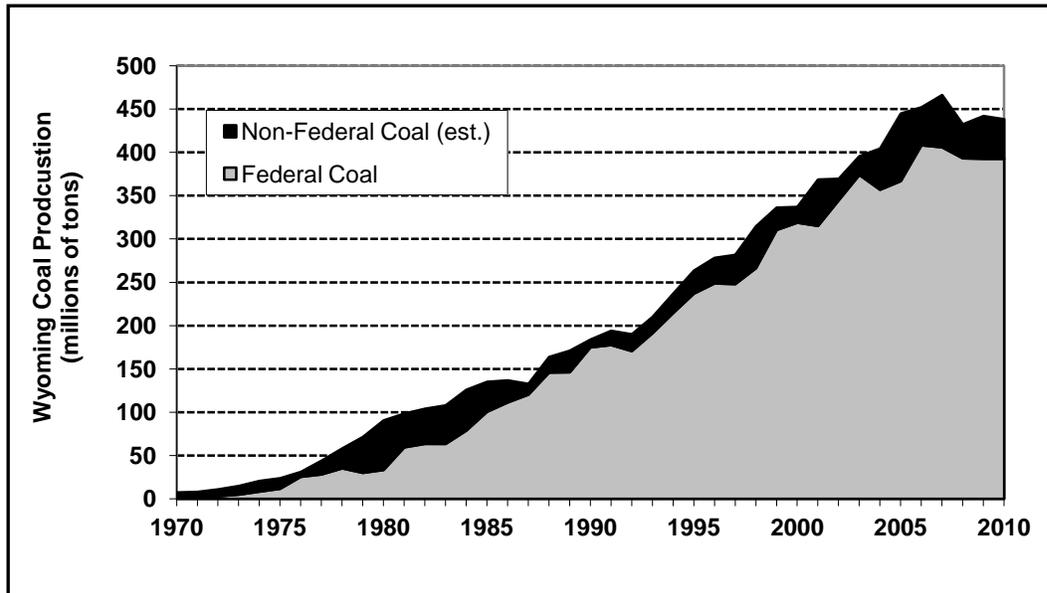
- An amount equal to the proceeds of a 1-cent statewide gas tax is dedicated for environmental remediation of leaking underground storage tanks.
- Remaining amounts, up to an annual cap of \$155 million, are transferred to the general fund (62.26 percent), water development accounts (14.55 percent), local governments (13.13 percent), highway and state aid to county road funds (7.23 percent), and capital construction (2.83 percent).
- Amounts in excess of \$155 million per year are allocated to the general fund (33.3 percent) and the state's budget reserve account (66.7 percent).

Like other investments, earnings from the PWMTF are subject to market condition fluctuations and other risks. These earnings were over \$61 million in 2003 and increased to \$377.2 million in 2011.

### 5.8.3 Federal Mineral Royalties

Federal mineral royalties (FMR) are assessed on coal, natural gas, oil, and other minerals produced on federal leases. Coal producers pay a 12.5 percent royalty to the federal treasury on the value of all surface coal production on federal leases.

Forty-nine percent of FMR receipts, one-half of the total net of a 2 percent processing and administrative fee, are disbursed to the state in which the production occurred. The size of the resource base, the rate of surface coal production in the PRB, and the predominance of federal ownership combine to make federal mineral royalties an important revenue source. Across the state of Wyoming, approximately 90 percent of all coal production is from federal coal (**Figure 5-31**).



Sources: ONRR 2012; U.S. Minerals Management Service 2004.

**Figure 5-31 Annual Coal Production in Wyoming – Federal Versus Non-federal Ownership (1970 – 2011)**

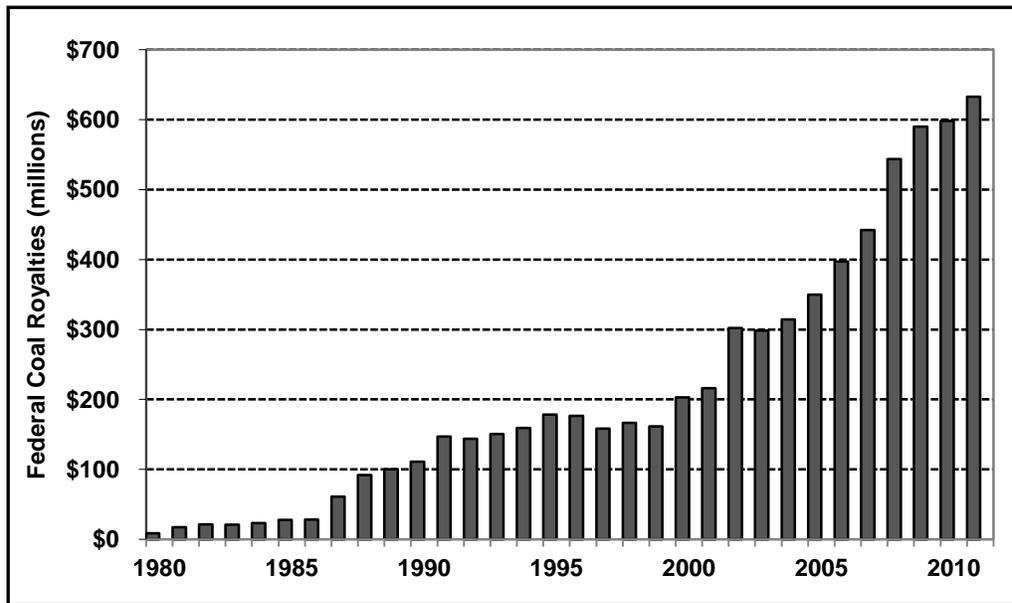
FMR receipts on coal have grown sharply as production in Wyoming, and in particular the PRB, has increased. Royalty receipts on coal produced in Wyoming first topped \$100 million in 1989 and \$200 million in 1999 (**Figure 5-32** and **Table 5-34**). Total FMRs from coal in 2003 were \$298.6 million, increasing to over \$543 million in 2008 and to \$632.6 million in 2011.

Cumulative FMRs on coal produced in Wyoming from 2001 to 2011 totaled \$4.7 billion. The annual distribution of FMRs on coal production to Wyoming was \$319.6 million in 2011 and totaled \$2.3 billion from 2001 to 2011.

Since 2005, FMRs also have been generated on CBNG production. Statewide receipts climbed rapidly as production increased from \$55.1 million in 2005 to \$215.6 million in 2008. FMR revenues declined by more than 50 percent the following year as declines in production volume (**Figure 3-9**) were compounded by weaker prices. Annual revenues have since rebounded; however, that pattern may be relatively short-lived due to the steep declines in annual production that are characteristic of CBNG wells. Cumulative FMRs from CBNG totaled \$981.6 million through 2011. Of that total, more than \$481.0 million has been disbursed to the State of Wyoming.

Like severance tax receipts, distributions of the state's FMR receipts follow a legislatively established, two-tier formula. The first tier covers total annual receipts up to \$200 million and the second applies to receipts over \$200 million per year. Under the tier-one allocation, a 1.0 percent administration fee is first transferred to the general fund. The remaining funds are allocated to the WSFP (44.8 percent), the highway and county road funds (32.625 percent), cities and towns (9.375 percent), the University of

Wyoming (6.75 percent), and capital construction projects (6.45 percent). Allocations of the tier-two funds are to the state’s budget reserve account (66.7 percent) and the WSFP (33.3 percent).



Sources: ONRR 2012; U.S. Minerals Management Service 2004.

**Figure 5-32 Federal Mineral Royalties Collected on Coal Produced in Wyoming (1980 – 2011)**

**Table 5-34 Federal Mineral Royalties on Coal and CBNG Production in Wyoming (2001 – 2011)**

Year	Coal		CBNG	
	Annual FMRs	Disbursements to Wyoming	Annual FMRs	Disbursements to Wyoming
2001	\$216,281,274	\$121,987,067	NA	NA
2002	\$302,276,339	\$130,825,247	NA	NA
2003	\$298,647,132	\$152,847,819	NA	NA
2004	\$314,161,967	\$159,846,573	NA	NA
2005	\$349,912,519	\$173,085,019	\$55,130,621	\$26,848,185
2006	\$397,150,903	\$193,774,658	\$129,801,664	\$63,389,827
2007	\$442,219,846	\$218,340,926	\$159,800,601	\$76,748,195
2008	\$543,366,514	\$268,040,035	\$215,625,854	\$98,228,397
2009	\$589,729,609	\$292,578,495	\$103,732,052	\$62,698,241
2010	\$598,146,416	\$293,501,279	\$170,308,883	\$82,119,988
2011	\$632,606,166	\$319,640,528	\$147,190,967	\$71,423,837
<b>Total</b>	<b>\$4,684,498,685</b>	<b>\$2,324,467,646</b>	<b>\$981,590,642</b>	<b>\$481,456,670</b>

Sources: ONRR 2012; U.S. Minerals Management Service 2004.

#### 5.8.4 Payments in Lieu of Taxes

Congress authorized payments in lieu of taxes (PILT) to local governments that have certain federal lands within their boundaries (31 United States Code [USC] 6901-6907–1976). These payments are intended to supplement other federal land receipt-sharing payments that the government may receive and to help defray or offset the costs of providing public services such as law enforcement, fire protection, and road construction and maintenance affected by the presence and use of those federal lands.

PILTs are authorized to local governments, generally counties, based on the acres of entitlement lands within their boundaries. Such entitlement lands consist of lands in the National Forest and National Parks systems, some lands involved in Bureau of Reclamation projects, National Wildlife Reserves, and lands administered by the BLM. The entitlement acreage is updated annually to reflect additions or disposal of federal lands. The amount of PILT to be paid to each local government is based on a formula factoring in the number of entitlement acres, a per acre payment rate, deductions for certain other federal land payments, and a ceiling or cap on payments based on the population of the area. The sum of the base payments typically exceeds the funding appropriated by Congress, such that the actual payment reflects a pro-rata reduction based on available funds. The amount of PILT is not a function of the land use activity or any mineral production that might occur on the land.

A total of 2,684,688 acres of entitlement land are located in the six-county study area (**Table 5-35**). Of that total, 42.8 percent is public land managed by the BLM, 56.6 percent is land within the National Forests, and 0.6 percent is other eligible federal lands. PILT-eligible entitlement lands total 367,114 acres in Campbell County. Among the six counties, Johnson County has the largest base of PILT entitlement acres with 829,272 acres.

**Table 5-35 Entitlement Acreage for Federal Payments in Lieu of Taxes (Fiscal Year 2010)**

County	Entitlement Acres			
	BLM	FS	Other	Total
Campbell	227,339	139,775	0	367,114
Converse	145,424	258,644	1,061	405,129
Crook	149,455	169,475	15,030	333,960
Johnson	502,489	326,783	0	829,272
Sheridan	49,818	393,626	711	444,155
Weston	74,695	230,363	0	305,058
<b>Six-county Combined</b>	<b>1,149,220</b>	<b>1,518,666</b>	<b>16,802</b>	<b>2,684,688</b>
<b>Percent of Total</b>	<b>42.8</b>	<b>56.6</b>	<b>0.6</b>	<b>100.0</b>

Source: USDOJ 2012.

Annual PILTs across the six-county study area in Fiscal Year 2011 ranged from \$474,914 in Weston County, to \$902,010 in Sheridan County, and \$730,889 in Campbell County. Despite having nearly 88 percent more PILT entitlement acres, Johnson County's receipts of \$844,439 were lower than those to Sheridan County because the receipts to Johnson County were capped due to its lower population. Total PILTs received by the six counties increased more than 91 percent from \$2.2 million in 2003 to \$4.2 million in 2011 (**Table 5-36** and **Figure 5-33**). The increases in annual PILT receipts reflect increases in Congressional appropriations for the program that began in Fiscal Year 2008, rather than increases in the entitlement acreage in the study area. Statewide total annual PILT increased from \$14.3 million to \$25.7 million during the same period for the same reason.

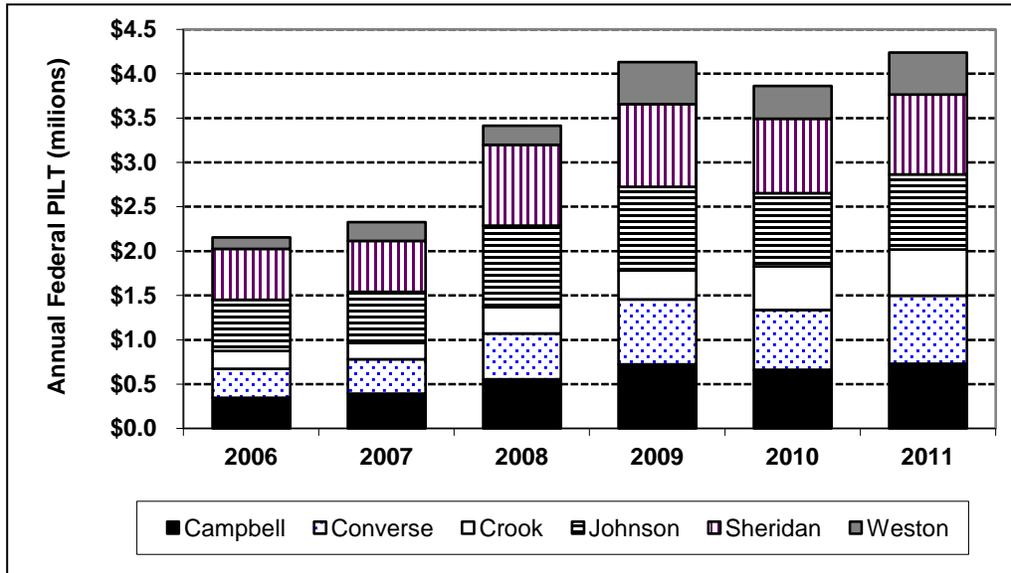
Cumulative PILTs to the six counties totaled \$20.1 million from 2006 through 2011. Of that total, Sheridan County received 24 percent, Johnson County 23 percent, and Campbell County 17 percent. Weston County had the lowest total receipts of PILT, \$1.9 million (9 percent) of the total.

**Table 5-36 Federal Payments in Lieu of Taxes in Nominal Dollars (Fiscal Years 2003 and 2011)**

County	Payments in Lieu of Taxes			Percent Change
	2003	2011	Change	
Campbell	\$393,156	\$730,889	\$337,733	86
Converse	\$370,669	\$765,404	\$394,735	106
Crook	\$182,313	\$521,742	\$339,429	186
Johnson	\$506,573	\$844,439	\$337,866	67
Sheridan	\$550,012	\$902,010	\$351,998	64
Weston	\$220,430	\$474,914	\$254,484	115
<b>Six-county Combined</b>	<b>\$2,223,153</b>	<b>\$4,239,398</b>	<b>\$2,016,245</b>	<b>91</b>

Note: Adjustments from source data have been made to account for inflation.

Source: ONRR 2012.



Source: USDOJ 2012.

**Figure 5-33 Federal Payments in Lieu of Taxes by County (Fiscal Years 2006 – 2011)**

**5.8.5 Local Fiscal Conditions**

**5.8.5.1 County Government Revenues**

Mineral and energy resource development, associated indirect and induced economic activities, population growth, and changing demands for public services and facilities are reflected in the key

revenue sources of local governments and school districts. In some instances, such as property taxes, the effects are linked to the physical location of resources and facilities, while in other cases the impacts reflect the location of indirect activities or the residential choices of the affected workforces. Local fiscal conditions also reflect the effects of other factors. Some of the more important factors include the structure of the economy, land use and ownership patterns, natural and human-created attractions that promote tourism, and the location of interstate highways and other transportation facilities that generate travel-related commerce through a community. These other factors notwithstanding, key public revenues reflect the dominant character and concentration of development and activity in Campbell County.

**Property Taxes.** Among the more obvious measures reflecting differences in the scale of public revenues in the PRB are the assessed value and the corresponding property taxes levied and collected by the respective counties. As discussed above, Campbell County's assessed value was nearly \$5.4 billion in 2011, which is just over four times that of Johnson County, the second highest among the six counties at \$1.3 billion. The mill levies for general fund purposes are relatively comparable among the six counties, ranging from 9.528 in Weston County to 12.000 in Sheridan County. The 12.000 mill levy in Sheridan County reflects an increase when compared to the 7.522 mills assessed by the county in 2003. Property tax revenues assessed on the tax base by the respective counties, other countywide special districts and districts that were not countywide, but not including municipalities, are shown in **Table 5-37**. The percent changes also are shown.

**Table 5-37 Property Tax Collections by County Government (2003 and 2011)**

County	Assessed Value (millions)	Property Tax by Major Fund/Use			
		General Fund	Other Countywide <sup>1</sup>	Other <sup>2</sup>	Total
<b>2003</b>					
Campbell	\$2,686.7	\$22,850,207	\$16,093,209	\$1,482,869	\$40,426,285
Converse	\$348.3	\$2,995,362	\$1,254,716	\$905,912	\$5,155,990
Crook	\$92.1	\$858,823	\$706,190	--	\$1,565,013
Johnson	\$111.2	\$920,969	\$1,245,566	\$372,211	\$2,538,746
Sheridan	\$267.9	\$2,014,951	\$1,735,490	\$522,867	\$4,273,308
Weston	\$77.7	\$695,885	\$703,505	\$291,812	\$1,691,202
<b>2011</b>					
Campbell	\$5,425.6	\$59,957,921	\$20,996,937	\$5,648,539	\$86,603,397
Converse	\$851.3	\$7,825,246	\$3,502,291	\$2,281,075	\$13,608,612
Crook	\$205.0	\$1,955,429	\$1,735,220	--	\$3,690,649
Johnson	\$1,290.8	\$14,436,170	\$7,349,745	\$3,377,096	\$25,163,011
Sheridan	\$546.8	\$6,561,011	\$1,093,502	\$1,579,976	\$9,234,489
Weston	\$132.9	\$1,266,216	\$1,524,562	\$539,233	\$3,330,011
<b>Percent Change</b>					
Campbell	102	162	30	281	114
Converse	144	161	179	152	164
Crook	123	128	146	NA	136

**Table 5-37 Property Tax Collections by County Government (2003 and 2011)**

County	Assessed Value (millions)	Property Tax by Major Fund/Use			
		General Fund	Other Countywide <sup>1</sup>	Other <sup>2</sup>	Total
Johnson	1,061	1,467	490	807	891
Sheridan	104	226	-37	202	116
Weston	71	162	30	281	114

<sup>1</sup> May include levies for weed and pest control, library services, the fair, museum, and a county-supported hospital.

<sup>2</sup> Includes other countywide special districts (e.g., a recreation district).

Note: The 2011 property tax revenues shown for Campbell and Converse counties are less than the corresponding totals shown in **Table 5-30**, which represent the total revenues from all overlapping tax districts (e.g., including school district levies).

The revenues in this table reflect only the tax levies for the county government.

Source: WTA 2012.

As shown, property tax collections in 2011 for the general funds for each county ranged from \$1.3 million in Weston County to \$60.0 million in Campbell County. Those revenues represented net increases since 2003 of between 128 percent in Crook County to 1,467 percent in Johnson County. General inflation during that period was approximately 122 percent, indicating that Crook County's use of property taxes for general fund revenues remained relatively constant over the period. Property tax revenues in Campbell, Converse, and Weston counties all increased somewhat more rapidly than inflation, although the implications in terms of absolute magnitudes vary considerably with more than \$46 million in Campbell County compared to \$1.6 million in Weston County. The differences also underscore the relatively limited property tax benefits that accrue to neighboring counties from increased mineral production.

Countywide property taxes also are levied to support hospital districts, weed and pest control, libraries, the county fair, and other services and purposes. Property taxes for these other functions ranged from just over \$1.0 million in Sheridan County to \$21.0 million in Campbell County. Other taxes are levied to support special districts or services that are not countywide in scope. Such taxes ranged from \$0 in Crook County to \$5.6 million in Campbell County. Fire protection and recreation are the two most common beneficiaries of the sub-county district, with the taxing districts centered around communities and excluding most of the rural farm areas. Combined property tax collections for the three categories totaled \$86.6 million for Campbell County in 2011, an increase of more than \$46.2 million compared to 2003. Johnson County had the second highest total property tax receipts at \$25.2 million. Among the six counties in the study area, Weston County had the lowest total property tax receipts in 2011 with \$3.3 million.

**Sales Taxes.** Sales and use tax receipts derived from retail purchases of equipment, supplies, motor vehicles, consumer goods, meals, and other taxable items are another important source of locally generated revenue for local governments, although more so for cities than for counties. Local sales tax collections within each county provide another insight into the relative sizes of the local economies and some of the fiscal implications of mineral development.

The countywide sales tax collections in 2003 and 2011 for each of the six counties in the study area are shown in **Table 5-38**. The economic contribution of the mining industry (inclusive of the oil and gas) is reflected in the total collections in Campbell County in both 2003 and 2011. Collections in the retail trade sector accounted for the largest amount and share of the total in 2003 and were second only to mining in 2011. Wholesale trade and services also generated significant sales tax collections in the county. Sheridan County ranked second in sales tax collections, largely on the strength of collections in the retail

trade sector. The retail trade sector in this county benefits from a large trade area that extends into Montana, a relatively more affluent resident population, and commercial travel and tourism associated with the interstate highway and the scenic amenities and recreation attractions in the county.

**Table 5-38 Sales Tax Collections by Industrial Sector (2003 and 2011)**

County	Sales Tax by Industrial Sector					
	Mining <sup>1</sup>	Wholesale Trade	Retail Trade	Services	All Other <sup>2</sup>	Total
<b>2003</b>						
Campbell	\$12,611,648	\$16,182,231	\$18,361,595	\$13,164,874	\$14,637,766	\$74,958,114
Converse	\$583,338	\$1,580,392	\$3,150,954	\$1,191,449	\$3,285,242	\$9,791,374
Crook	\$154,658	\$300,179	\$1,291,883	\$411,487	\$1,045,360	\$3,203,566
Johnson	\$673,330	\$355,258	\$2,091,757	\$874,451	\$1,792,739	\$5,787,535
Sheridan	\$1,096,476	\$1,482,965	\$13,039,913	\$3,151,953	\$6,217,270	\$24,988,577
Weston	\$226,948	\$364,881	\$1,581,006	\$336,015	\$1,033,990	\$3,542,839
<b>2011</b>						
Campbell	\$39,804,018	\$20,515,937	\$34,090,592	\$16,843,771	\$29,874,825	\$141,129,143
Converse	\$6,107,847	\$1,665,939	\$4,962,212	\$2,734,155	\$8,757,979	\$24,228,132
Crook	\$722,807	\$524,895	\$1,899,661	\$820,228	\$1,584,328	\$5,551,919
Johnson	\$3,112,773	\$931,169	\$3,423,507	\$1,423,835	\$4,853,481	\$13,744,765
Sheridan	\$468,486	\$1,182,020	\$13,382,333	\$5,265,992	\$8,526,378	\$28,825,209
Weston	\$480,657	\$325,425	\$1,695,301	\$634,263	\$1,344,290	\$4,479,936
<b>Percent Change</b>						
Campbell	216	27	86	28	104	88
Converse	947	5	57	129	167	147
Crook	367	75	47	99	52	73
Johnson	362	162	64	63	171	137
Sheridan	-57	-20	3	67	37	15
Weston	112	-11	7	89	30	26

<sup>1</sup> Includes oil and gas.

<sup>2</sup> Includes agriculture, manufacturing, construction, transportation, finance and real estate, and public administration.

Sources: WDAI 2004c; Wyoming Department of Revenue 2012.

Countywide sales and use tax receipts for the six counties were between 15 and 147 percent higher in 2011 than in 2003. This was due in large part to increases in receipts in the mining sector. The gains were particularly strong in Campbell, Converse, and Johnson counties. In Campbell County, the total receipts in the mining sector increased by more than \$27 million between 2003 and 2011, with major gains also registered in the retail trade and other categories (includes receipts associated with industrial construction activity). Industrial construction activity also contributed to high receipts in Converse and

Johnson counties in 2011. Some reductions in sales and use tax receipts may be expected in these counties following the completion of this construction activity. The gains in Sheridan, Weston, and Crook counties from 2003 to 2011, absent major construction and energy resource development, were much lower.

Annual sales tax collections for various sub-sectors in the retail trade sector for the six counties in the study area are shown in **Table 5-39**. Comparing receipts in the retail sector for the two periods reveals the strongest gains generally occurring in the auto dealer and gas service sub-sector and in the “all other” category, which includes building materials. Receipts in food stores declined, in large part due to an exemption of groceries from retail sales tax in 2006. Sales tax collections by general merchandise stores increased in five of the six counties. In Sheridan County, receipts from general merchandise stores decreased by 17 percent.

Substantial increases in sales tax receipts occurred in all six counties in other sub-sectors as well, particularly automotive and gas sales in Campbell, Converse, and Sheridan counties, and the all other category (including building materials, lodging, and eating and drinking sectors) in Campbell, Converse, Johnson, and Sheridan counties. Although lodging and eating and drinking sectors are technically considered parts of the services industry, the state reports the tax collections by establishments in these industries because they tend to account for a substantial volume of receipts.

**Table 5-39 Sales Tax Collections by Retail Sector (2003 and 2011)**

County/Year	Sales Tax by Retail Sector					
	General Merchandise	Food Stores <sup>1</sup>	Auto Dealer and Gas Service	Restaurants	All Other <sup>2</sup>	Total
<b>2003</b>						
Campbell	\$3,447,388	\$2,948,620	\$3,379,330	\$2,296,418	\$6,289,839	\$18,361,595
Converse	\$217,055	\$965,494	\$349,256	\$539,451	\$1,079,698	\$3,150,954
Crook	\$29,843	\$300,427	\$227,496	\$197,203	\$536,914	\$1,291,883
Johnson	\$22,684	\$336,746	\$260,780	\$400,160	\$1,071,387	\$2,091,757
Sheridan	\$4,270,215	\$1,827,411	\$1,240,610	\$2,029,839	\$3,671,838	\$13,039,913
Weston	\$224,428	\$495,876	\$144,336	\$237,132	\$479,234	\$1,581,006
<b>2011</b>						
Campbell	\$5,381,137	\$739,481	\$10,352,253	\$3,742,908	\$18,891,219	\$39,106,998
Converse	\$532,883	\$231,327	\$1,725,037	\$756,514	\$2,821,863	\$6,067,624
Crook	\$230,955	\$113,191	\$484,471	\$382,028	\$1,246,709	\$2,457,354
Johnson	\$359,618	\$209,370	\$649,957	\$583,551	\$2,607,040	\$4,409,536
Sheridan	\$3,553,623	\$412,459	\$2,087,533	\$2,733,050	\$8,236,427	\$17,023,092
Weston	\$343,515	\$117,567	\$365,724	\$284,746	\$968,312	\$2,079,864
<b>Percent Change</b>						
Campbell	56	-75	206	63	200	113
Converse	146	-76	394	40	161	93

**Table 5-39 Sales Tax Collections by Retail Sector (2003 and 2011)**

County/Year	Sales Tax by Retail Sector					
	General Merchandise	Food Stores <sup>1</sup>	Auto Dealer and Gas Service	Restaurants	All Other <sup>2</sup>	Total
Crook	674	-62	113	94	132	90
Johnson	1,485	-38	149	46	143	111
Sheridan	-17	-77	68	35	124	31
Weston	53	-76	153	20	102	32

<sup>1</sup> A sales tax exemption on groceries was approved in 2006.

<sup>2</sup> Other includes building materials, apparel, miscellaneous trade, eating and drinking establishments, and lodging. The latter two categories are not included as retail trade in **Table 5-38** and account for the difference in total revenue.

Sources: WDAI 2004c, 2012.

### 5.8.5.2 Campbell County Budgeted Expenditures

Residents, businesses, and visitors to Campbell County are afforded access to a broad range of public facilities and services. To a large extent, the range and quality of services provided reflect the county's financial resources, much of which is due to the coal, CBNG, and other energy-related development. At the same time, those activities and associated population and business activities impose demands for services and the need for facilities.

The increased demand on the county's resources accompanying the initial boom in the 1970s outpaced the community's ability to meet those demands or to expand facility capacity in a timely fashion. Inherent lags between when demand increased and when counties and cities realized increases in taxes and other revenues contributed to the problem. Long-term debt, grants, loans, and a focus on essential services allowed Campbell County to weather the initial boom. Subsequently, the county has maintained a long-term program of capital facility and service improvements. Recognizing the potential volatility of market conditions (e.g., the impact of changing prices on the taxable value of oil and gas and coal) the county traditionally has avoided the use of long-term debt. Instead, the county tends to accumulate surpluses and reserves during periods of economic strength, drawing on those resources to fund capital projects without resorting to debt. A consequence of the county's fiscal management approach is relatively high variability in the year-to-year budgeted expenditures, particularly for individual functions or departments. Commonly the variation is attributable to major capital expenditures.

Campbell County's total expenditure budget for 2011 was \$157.3 million, an increase of \$76.5 million, or 95 percent compared to the budget in 2003. General fund expenditures (including general administrative, judicial, and core public services provided by the county) amounted to \$101.7 million, \$31.5 million higher than in 2003 (**Table 5-40**). The change represents a 45 percent increase. Disproportionately large increases in budgeted expenditures were associated with the law enforcement, judicial, and road and bridge functions. Although the overall increase is substantial in nominal terms, it is less dramatic considering general inflation of 22 percent and net population growth of nearly 27 percent during the period.

**Table 5-40 Budgeted Expenditures for Campbell County (selected years)**

Budget Category	2003	2011	Change 2003 to 2011	Percent Increase
<b>General Fund</b>				
County Commissioners	\$3,825,090	\$5,274,248	\$1,449,158	38
Clerk, Treasurer, and Assessor	\$2,970,148	\$4,915,491	\$1,945,343	65
Sheriff, Attorney, Coroner	\$6,885,935	\$11,191,170	\$4,305,235	63
Court and Jail	\$5,150,798	\$8,665,556	\$3,514,758	68
Engineer and Road and Bridge	\$6,330,112	\$11,153,577	\$4,823,465	76
General Fund - Capital Construction	\$9,836,620	\$12,520,875	\$2,684,255	27
Other General Fund	\$35,226,202	\$47,967,239	\$12,741,037	36
<b>Total General Fund</b>	<b>\$70,224,905</b>	<b>\$101,688,156</b>	<b>\$31,463,251</b>	<b>45</b>
<b>Other Funds</b>				
Airport	\$1,247,026	\$1,555,772	\$308,746	25
Library	\$2,402,716	\$4,025,988	\$1,623,272	68
Recreation	\$4,061,751	\$6,263,607	\$2,201,856	54
Campbell County Fire Department <sup>1</sup>	NA	\$14,257,925	NA	NA
Other Funds	\$2,938,759	\$29,546,334	\$26,607,575	905
<b>Total Other Funds</b>	<b>\$10,650,252</b>	<b>\$55,649,626</b>	<b>\$44,999,374</b>	<b>423</b>
<b>Total Budgeted Expenditures</b>	<b>\$80,875,157</b>	<b>\$157,337,782</b>	<b>\$76,462,625</b>	<b>95</b>

<sup>1</sup> Funding information for the Campbell County Fire Department, a joint powers entity, was not reported in the 2003 budget.

Sources: Campbell County Commissioners 2003, 2011.

In addition to the general fund, Campbell County also provides funding to a series of special service districts. This funding is reported as part of the county's budget and includes operation of the Gillette/Campbell County Airport, Campbell County Fire Department, county library system, recreation district, fair, and other smaller districts. Total budgeted expenditures for these other districts, which tend to be more closely correlated with population levels and growth, have trended upward over time, increasing from \$6.6 million in 1994 to \$10.7 million in 2003 to \$55.6 million in 2011. The increases reflect a combination of increases in funding for some services/functions (e.g., Gillette-Campbell County Airport) in inclusion of budgets for services/functions that were budgeted separately in 2003, and services or projects that have been added since 2003 (e.g., the increase in recreation funding associated with the cooperative funding of a major new indoor recreation center in Gillette).

### 5.8.5.3 City of Gillette

Although the Town of Wright owes its existence to coal mining, the City of Gillette is the community most heavily affected by coal mining and other development in the region. Not only is it the largest community in the study area in terms of population, it is the regional trade and service center for much of

northeastern Wyoming. As a result, the city's revenues, in nominal dollars, have increased substantially over time.

Despite the recent reductions in the pace of oil and gas development, coal mining, continuing natural gas production, and local economic activity supported by the electrical generation industry provides a strong fiscal foundation for the City of Gillette. The city's total general government revenues in 2011 were \$55.8 million, \$38.4 million, or 220 percent higher than in 2003 (**Table 5-41**). Comparative increases were registered in all major sources, other than interest on investments.

Higher sales and use tax receipts accounted for the single largest increase, with \$47.7 million in 2011 compared to \$14.1 million in 2003 (**Table 5-42**). Local residential and commercial construction and retail activity associated with the construction of the Dry Fork Station likely contributed to the increase, along with the expansion in local consumer sales.

**Table 5-41 General Government Revenues by Source for the City of Gillette (2003 and 2011)**

Revenue Source	2003	2011	Change 2003 to 2011	Percent Increase
Taxes	\$14,118,881	\$47,658,731	\$33,539,850	238
Intergovernmental	\$1,642,598	\$5,842,993	\$4,200,395	256
Licenses and Permits	\$158,025	\$320,003	\$161,978	103
Charges for Services	\$421,420	\$641,662	\$220,242	52
Fines and Fees	\$372,448	\$426,360	\$53,912	14
Interest	\$578,417	\$173,414	(\$405,003)	-70
Miscellaneous	\$151,559	\$730,419	\$578,860	382
<b>Total</b>	<b>\$17,443,348</b>	<b>\$55,793,582</b>	<b>\$38,350,234</b>	<b>220</b>

Sources: City of Gillette 2003, 2011a.

**Table 5-42 Tax Receipts by Major Source for the City of Gillette (2003 and 2011)**

Tax Source	2003	2011	Change 2003 to 2011	Percent Increase
Severance	\$891,173	\$970,441	\$79,268	9
Property	\$700,836	\$1,648,246	\$947,410	135
Sales and Use	\$10,813,313	\$42,392,407	\$31,579,094	292
Other Taxes	\$1,713,559	\$2,647,637	\$934,078	55
<b>Total Taxes</b>	<b>\$14,118,881</b>	<b>\$47,658,731</b>	<b>\$33,539,850</b>	<b>238</b>

Sources: City of Gillette 2003, 2011a.

Because of the requirement for local governments to maintain balanced budgets, Gillette's general fund budgeted expenditures (**Table 5-43**) track closely with current revenues (**Table 5-41**). As a consequence, the city budgeted total general fund expenditures of \$57.4 million in 2011. That total includes funds added to the city's reserve accounts. The city's budgeted expenditures for administration and police both increased substantially compared to 2003 due to an expansion in the type and range of

functions and services provided by the city and an increase in the level of service provided to an expanding population and service area. However, capital outlays and increases in funding for other services, including recreation, accounted for \$28.9 million of the \$39.8 million overall increase.

The increase in types and levels of services provided, and an increased demand associated with Gillette's larger population, is reflected in its budgeted staffing levels. Overall staffing in 2011 was 289 full-time employees, an increase of 82 (40 percent) compared to 2003 (**Table 5-44**). The staffing associated with the new indoor recreation center (reported under the Community Development Department), an expansion of the police force, and additional administrative staff accounted for most of the increase.

**Table 5-43 General Fund Expenditures by Major Category for the City of Gillette (2003 and 2011)**

Expenditure Category	2003	2011	Change 2003 to 2011	Percent Change
Administration	\$3,097,996	\$9,991,147	6,893,151	223
Community Development	\$629,480	\$683,457	53,977	9
Police	\$5,084,150	\$9,339,427	4,255,277	84
Public Works	\$5,191,371	\$4,929,755	(261,616)	-5
Miscellaneous/Other	\$3,469,655	\$17,480,226	14,010,571	404
Capital Outlay	\$29,132	\$14,905,438	14,876,306	5,106
Debt Service	\$45,131	\$48,442	3,311	7
<b>Total</b>	<b>\$17,546,915</b>	<b>\$57,377,892</b>	<b>39,830,977</b>	<b>227</b>

Sources: City of Gillette 2003, 2011a.

**Table 5-44 Budgeted Staffing for the City of Gillette (2003 and 2011)**

Department	Number of Full-time Employees		
	2003	2011	Change 2003 to 2011 <sup>1</sup>
Administration	35.0	63.3	28.3
Community Development/Planning	4.0	31.5	27.5
Finance/Treasurer	10.0	11.3	1.3
Police	66.0	87.5	21.5
Public Works	31.0	46.0	15.0
Utilities	61.0	49.5	-11.5
<b>Total</b>	<b>207.0</b>	<b>289.0</b>	<b>82.0</b>

<sup>1</sup> Some changes reflect changes in departmental structure and reorganizations.

Sources: City of Gillette 2003, 2011a.

## 5.9 Social Setting

Section 3.11 (Social Setting) in the Phase I PRB Coal Review Task 1C report (ENSR 2005a) described historic factors that helped shape social conditions in the PRB. Preceding sections of this Phase II

Task 1C report describe factors that have affected social conditions in the PRB in the intervening years since the Phase I analysis, including industrial and natural resource development, economic and demographic change, and housing and public infrastructure development.

This section presents an overview of recent changes in the social setting in the six-county study area, focusing on Campbell County where much of the recent coal mining, electric power generation, and CBNG-related energy development have occurred. Changes associated with CBNG development in Johnson and Sheridan counties, wind energy in Converse County, and shale oil development in Converse and Campbell counties also are discussed. As with the Phase I Report, the objective is to describe the current social setting as a foundation for future energy development.

In Campbell County, the major economic and energy development influences on the social setting continue to be coal mining, electric power generation, oil and gas development and production, and the prospects for new coal development technologies. Although CBNG development continues (102 CBNG wells were drilled in Campbell County in 2011), the pace of development has declined substantially since 2000/2001 when over 3,000 CBNG wells were drilled in the county (WOGCC 2003, 20012). The high number of high-paying jobs in the energy development industries, the secondary jobs that they support, and the tax revenues they generate have been key factors in shaping the Campbell County social setting.

The purchases made by these industries and the incomes of the workers they employ have supported a substantial commercial investment in Gillette, the regional trade center for northeast Wyoming (Gillette Community Development Department – Planning Division [GCDDPD] 2010). The City of Gillette ad valorem tax base valuation added \$144.4 million in new commercial valuation (new buildings, alterations, and expansions) during 2007 and an additional \$114.2 million during 2008. Even during the recession years, the total valuation for new commercial development in Gillette was \$54 million in 2009, \$69.7 million in 2010, and \$39.1 million in 2011.

Additionally, Campbell County, its municipalities, the Campbell County School District, Campbell County Memorial Hospital, and Gillette College all made substantial investments in facilities in recent years. These investments included expanded and improved utility and road infrastructure as well as new public buildings including three new elementary schools, a full service indoor recreation center, an industrial technical education center, an events center, and a number of hospital additions. In addition to the economic activity and employment generated by these commercial and public investments, these facilities enhance the quality of life and the community's ability to attract new businesses and residents.

Between 2000 and 2009, Gillette added 4,322 housing units through new construction and annexation of existing units into the city for a 54 percent increase in housing stock over the decade (GCDDPD 2010). In 2010 and 2011, the city added 527 new housing units and annexed an additional 286 units (GCDDPD 2011, 2012). With the recent completion of construction of the Dry Fork Station, the dramatic slowdown in CBNG development, and the recession, rental housing vacancy rates for conventional housing increased from 0.1 percent in 2008 to 7.5 percent in 2011. Vacancy rates in manufactured home parks increased from 4.9 percent to 7.9 percent during that period (GCDDPD 2011, 2012).

A relatively stable employment base of well paying jobs, an expanding and diversifying commercial infrastructure, a broad array of community facilities and services, and an expanding stock of housing with reasonable availability all contribute to the quality of life for residents. Not surprisingly, 84 percent of respondents to the Gillette 2011 Citizen Survey rated Gillette as a good or excellent place to live (City of Gillette 2011b).

Throughout the last half-century, Campbell County and its municipalities have experienced periodic influxes of temporary workers for coal mine and power plant construction projects, as well as conventional oil and gas and CBNG development. During that period, the expansions and improvements in public, healthcare, commercial and housing infrastructure have allowed the community to

accommodate these influxes without the substantial social disruption that occurred during the early years of natural resource development in the county. Additionally, Campbell County and its communities have extensive experience and expertise in planning and managing the socioeconomic effects of industrial and natural resource projects. This experience and expertise, coupled with Wyoming's institutional mechanisms for assessing and managing the community effects of growth, have given Campbell County and its communities the institutional capacity and resources to effectively plan for and accommodate energy-related development.

Other counties within the six-county study area have had varying experience with energy-related development. As noted earlier, the Antelope Mine, which straddles the Campbell/Converse County Line, is the only currently operating coal mine in the Wyoming portion of the PRB outside of Campbell County. Workers at Campbell County mines live in Converse, Crook, and Weston counties. Some workers at the Decker and Spring Creek coal mines in Montana also live in Sheridan County. All of the counties in the study area have experienced oil and gas development. Campbell, Johnson, and Sheridan counties, and to a lesser extent Converse County, all have experienced CBNG development. Converse County also has had extensive recent experience with wind energy development.

Several counties are anticipating additional energy-related development, including potential increases in coal production in Campbell County for international export sales, a potential new coal mine in Sheridan County, increased CBNG development, and new wind energy development in Campbell and Converse counties, and the development of new technologies for producing natural gas from coal seams in several locations across the study area. This recent and ongoing energy-related development experience provides familiarity with energy development and, fosters support of development from residents for the economic and fiscal benefits that such development often brings.

Concern about and, in some cases, opposition to energy-related development in the PRB also occurs at both local and national levels. Locally, concern for impacts to air quality, water quality, vegetation, and wildlife from coal development resulted in the formation a regional advocacy group (Powder River Basin Resource Council [PRBRC]) in 1973. This group includes ranchers, sportsmen, and conservationists in its membership and continues to advocate for consideration of groundwater depletion, air quality, reclamation (as it pertains to revegetation and aquifer restoration for wildlife habitat and agricultural uses), climate change, and the effects of rail transport of coal in coal leasing assessments (PRBRC 2009, 2012). The PRBRC also advocates for a variety of energy development and policy issues. On a national level, environmental interest groups have become increasingly concerned about the role of coal combustion in climate change.

Concerns associated with CBNG development have included the effects of groundwater discharge on the quality of surface water, soils, and vegetation. Traffic, air quality, and socioeconomic issues also have been associated with CBNG development. Recent increases in oil and gas exploration and development in the PRB have resulted in concerns about hydraulic fracturing and the amount of water required to drill and fracture wells. Proposed newer technologies such as the stimulation of CBNG production by introducing nutrients to native microbes also have raised concern about the effects on groundwater resources.

Issues associated with uranium mining have included concerns for groundwater and surface water quality and concerns for effects on the value of nearby properties.

Many local officials and residents in the study area also are aware of the boom and bust cycles that sometimes accompany energy development and the detrimental effects of energy slowdowns on local economies and social conditions. Despite the familiarity and general support, it is possible that the scale of energy-related development relative to the size of nearby communities could strain housing resources and facility and service infrastructure and result in varying degrees of social disruption. This remains true for conventional oil and gas and CBNG development, which are more diffuse in nature than coal mines and wind energy power generation projects. The diffuse nature of the conventional oil and gas and

CBNG industries results from the fact that multiple companies typically have interests over a wide geographic area and much of the work is performed by contractors; therefore, development plans are more difficult to ascertain. Development plans also are sensitive to changes in market conditions, which are more variable in the short-term than coal prices. Conventional oil and gas and CBNG development and production activities also are exempt from the WIISA and, therefore, are not required to comply with the requirements to assess and mitigate the socioeconomic effects of their operations.

It generally is true that counties and communities in the six-county study area, specifically Campbell County and its communities, are among the most likely to be able to accommodate additional energy development without substantial social disruption. The counties and communities in the study area often take proactive measures to anticipate and manage the effects of energy development, as evidenced by the establishment of wind energy regulations in Campbell and Converse counties, participation in WIISA and other regulatory proceedings, and the proactive development of public facility and service capacity to accommodate growth.

## 6.0 References

References provided below are separated by those that are new for Phase II and those that were carried over from the Phase I document (secondary references). This approach was used to streamline the presentation of the secondary references.

### 6.1 New References

AECOM. 2011. Task 2 Report for the Powder River Basin Coal Review, Past and Present and Reasonably Foreseeable Future Development Activities. Prepared for the Bureau of Land Management High Plains District Office and Wyoming State Office. December 2011.

\_\_\_\_\_. 2009. Update of the Task 2 Report for the Powder River Basin Coal Review, Past and Present and Reasonably Foreseeable Future Development Activities. Prepared for the Bureau of Land Management High Plains District Office and Wyoming State Office. December 2009.

Andrews, D. 2012. Public Works Director, Town of Glenrock. Personal communication with G. Blankenship, Blankenship Consulting LLC. June 12, 2012.

Bureau of Economic Analysis (BEA). 2012. Interactive Website for Regional Economic Accounts, Local Area Personal Income and Employment, 1969 to 2010 for the U.S., Wyoming, and counties. Internet website: <http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1&isuri=1&acrdn=5>. Accessed June 2012. Individual data series include:

- Personal income, per capita personal income, and population (CA1-3);
- Average wage per job, wage and salary disbursements, and employment (CA34);
- Personal income and employment summary (CA04);
- Personal income and earnings by industry (CA05, CA05N);
- Compensation of employees by industry (CA06, CA06N);
- Total full-time and part-time employment by industry (CA25, CA25N);
- Economic profiles (CA30);
- Personal current transfer receipts (CA35);
- Farm income and expenses (CA45); and
- Gross flow of earnings (CA91).

\_\_\_\_\_. 2011. Interactive Website for Regional Economic Accounts, Local Area Personal Income and Employment, 1969 to 2009 for the U.S., Wyoming, and counties. Internet website: <http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1&isuri=1&acrdn=5>. (Note: The information for some past years was revised when data for 2010 was posted – see BEA [2012]). Accessed October 2011. Data series accessed include:

- Personal income, per capita personal income, and population (CA1-3);
- Personal income and employment summary (CA04);
- Personal income and earnings by industry (CA05, CA05N);
- Total full-time and part-time employment by industry (CA25, CA25N);

- Economic profiles (CA30); and
- Farm income and expenses (CA45).

Campbell County Commissioners. 2011. Campbell County, Wyoming Final Adopted Budget, Fiscal Year 2011-2012. Approved July 19, 2011.

Campbell County Memorial Hospital. 2012. Services web page. Internet website: <http://www.ccmh.net/Services.aspx>. Accessed June 12, 2012.

Campbell County School District #1 (Campbell #1). 2012. Online list of elementary and secondary schools. Internet website: <http://www.campbellcountyschools.net/schools.cfm>. Accessed June 2012.

Campbell County Sheriff's Office (CCSO). 2012. Main webpage. Internet website: <http://www.ccgov.net/departments/Sheriff/index.html>. Accessed June 6, 2012.

Carson, B. A. 2012. P.E. HDR Stetson Engineering, Gillette, Wyoming . Personal communication, email to G. Blankenship, Blankenship Consulting LLC. June 26, 2012.

City of Douglas. 2012a. Water Department webpage. Internet website: [http://www.cityofdouglaswy.com/index.asp?Type=B\\_BASIC&SEC={3662650E-EE54-4852-AD90-A005E8E4D737}&Design=PrintView](http://www.cityofdouglaswy.com/index.asp?Type=B_BASIC&SEC={3662650E-EE54-4852-AD90-A005E8E4D737}&Design=PrintView). Accessed July 10, 2012.

\_\_\_\_\_. 2012b. Wastewater Treatment webpage. Internet website: [http://www.cityofdouglaswy.com/index.asp?Type=B\\_BASIC&SEC={30751245-A901-4D94-A5FB-44F1FD4C90C0}](http://www.cityofdouglaswy.com/index.asp?Type=B_BASIC&SEC={30751245-A901-4D94-A5FB-44F1FD4C90C0}). Accessed July 10, 2012.

City of Gillette. 2012. Gillette Regional Water Supply Project webpage. Updated October 28, 2011. Internet website: <http://www.ci.gillette.wy.us/index.aspx?page=902>. Accessed June 7, 2012.

\_\_\_\_\_. 2011a. City of Gillette, Wyoming Financial Report for the Fiscal Year Ended June 30, 2011. December 7, 2011.

\_\_\_\_\_. 2011b. City of Gillette 2011 Citizen Survey Report. August 2011.

City of Gillette Community Development Department – Planning Division (GCDDPD). 2012. Developing Gillette 2011: The 2011 Annual Development Summary including special segments on the Decade in Review. March 2012.

\_\_\_\_\_. 2011. Developing Gillette 2010: April 2011.

\_\_\_\_\_. 2010. Developing Gillette 2009. February 2010.

City of Gillette Water Department. 2012. Water webpage. Updated February 23, 2012. Internet website: <http://www.ci.gillette.wy.us/index.aspx?page=163>. Accessed June 6, 2012.

City of Gillette Wastewater Department. 2012a. Wastewater webpage. Internet website: <http://www.ci.gillette.wy.us/index.aspx?page=162>. Accessed June 7, 2012.

\_\_\_\_\_. 2012b. Wastewater Treatment Process webpage. Internet website: <http://www.ci.gillette.wy.us/index.aspx?page=169>. Accessed June 7, 2012.

City of Sheridan. 2012. Wastewater webpage. Internet website: <http://www.sheridanwy.net/departments/utilities/wastewater>. Accessed July 10, 2012.

- Converse County Memorial Hospital. 2012. Services webpage. Internet website:  
<http://www.conversehospital.com/getpage.php?name=services&sub=Static>. Accessed June 12, 2012.
- Converse County School District #1 (Converse #1). 2012. Online list of schools. Internet website:  
<http://converse1schools.org/>. Accessed June 2012.
- Converse County School District #2 (Converse #2). 2012. Online list of schools. Internet website:  
<http://www.cnv2.k12.wy.us/>. Accessed June 2012.
- Crook County School District #1 (Crook #1). 2012. Online list of schools. Internet website:  
<http://www.crook1.com/index.html>. Accessed June 2012.
- Energy Information Administration. 2012a. U.S. Department of Energy Coal Data, Table 1: Annual U.S. Coal Production 2005 to 2011 (<http://www.eia.gov/coal/annual/pdf/table1.pdf>). Internet website: <http://205.254.135.7/coal/data.cfm#production>. Accessed May 30, 2012.
- \_\_\_\_\_. 2012b. U.S. Department of Energy Coal Data, Table 6: 2010 Coal Production by State (<http://www.eia.gov/coal/annual/pdf/table6.pdf>). Internet website: <http://205.254.135.7/coal/data.cfm#production>. Accessed May 30, 2012.
- ENSR. 2005a. Task 1C Report for the Powder River Basin Coal Review Current Social and Economic Conditions. Prepared for the Bureau of Land Management Casper Field Office and Wyoming State Office. March 2005.
- \_\_\_\_\_. 2005b. Task 2 Report for the Powder River Basin Coal Review, Past and Present and Reasonably Foreseeable Future Development Activities. Prepared for the Bureau of Land Management Casper Field Office and Wyoming State Office. October 2005.
- \_\_\_\_\_. 2005c. Task 3C Report for the Powder River Basin Coal Review, Cumulative Social and Economic Effects. Prepared for the Bureau of Land Management Casper Field Office and Wyoming State Office. December 2005.
- Hartley, R. 2012. City Engineer, Newcastle, Wyoming. Personal communication with G. Blankenship, Blankenship Consulting LLC. July 11, 2012.
- Hook, L. 2012. Public Works Director, City of Buffalo. Personal communication with G. Blankenship, Blankenship Consulting LLC. June 19, 2012.
- Johnson County Healthcare Center 2012. Hospital webpage. Internet website:  
<http://www.jchealthcare.com/hospital/>. Accessed July 16, 2012.
- Johnson County School District #1 (Johnson #1). 2012. Online list of schools. Internet website:  
<http://www.jcsd1.k12.wy.us/schools.cfm>. Accessed June 2012.
- Kingan, R. 2012. Superintendent, Wright Water and Sewer District. Personal communication with G. Blankenship, Blankenship Consulting LLC. July 16, 2012.
- Mulder, R. 2012. Public Works Department, City of Gillette. Personal communication with G. Blankenship, Blankenship Consulting LLC. June 13, 2012.
- Office of Natural Resource Revenue (ONRR). 2012. Interactive website, ONRR Statistical Information, Reported Royalty Revenues, 2001-forward. Internet website:  
<http://www.onrr.gov/ONRRWebStats/Home.aspx>. Accessed July 2012.

Sheridan County School District #1 (Sheridan #1). 2012. Online list of schools. Internet website: <http://www.sheridan.k12.wy.us/>. Accessed June 2012.

Sheridan County School District #2 (Sheridan #2). 2012. Online list of schools. Internet website: <http://www.scsd2.com/schools.cfm>. Accessed June 2012.

Sheridan County School District #3 (Sheridan #3). 2012. Online list of schools. Internet website: <http://www.sheridan3.com/>. Accessed June 2012.

Sheridan Memorial Hospital. 2012. About Us and Departments/Services web pages. Internet website: [http://www.sheridanhospital.org/about\\_sheridan\\_hospital.shtml](http://www.sheridanhospital.org/about_sheridan_hospital.shtml). Accessed July 16, 2012.

Town of Glenrock. 2011. Annual Water Quality Report. 2010.

U.S. Bureau of Labor Statistics. 2012. Interactive website on local area unemployment statistics – monthly and annual (labor force, employed, unemployed, and unemployment rate). Internet website: <http://data.bls.gov/pdq/querytool.jsp?survey=la>. Accessed June 2012.

U.S. Census Bureau. Various years. Decennial Census of Population and Housing, Wyoming – 1940, 1950, 1960, 1970, 1980, 1990, and 2000.

\_\_\_\_\_. 2012. Interactive website “OntheMap” application and longitudinal employer-Household dynamics, including place of residence and place of work. Internet website: <http://onthemap.ces.census.gov/>. Accessed July 2012.

\_\_\_\_\_. 2011a. 2010 Census, SF1, Table DP-1 Profile of General Population and Housing Characteristics. Internet website: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?ref=geo&refresh=t#none>. Accessed November 16, 2011.

\_\_\_\_\_. 2011b. 2010 Census, SF1, Table QT-H1 General Housing Characteristics: 2010. Internet website: <http://factfinder2.census.gov/faces/nav/jsf/pages/searchresults.xhtml?ref=geo&refresh=t#none>. Accessed October 20, 2011.

\_\_\_\_\_. 2011c. County Population, Population Change, and Estimated Components of Population change: April 1, 2000 to July 1, 2009; an Annual Series. Internet website: <http://www.census.gov/popest>. Accessed November 9, 2011.

\_\_\_\_\_. 2011d. American Community Survey - Selected Housing Characteristics (periodic estimates of housing by type for Wyoming counties). Internet website: <http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>. Accessed July 2012.

U.S. Department of Agriculture (USDA). 2009. 2007 Census of Agriculture – Wyoming and Counties, Internet website: [http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1\\_Chapter\\_2\\_County\\_Level/Wyoming/](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1_Chapter_2_County_Level/Wyoming/). Accessed November 2011.

U.S. Department of the Interior (USDO I). 2012. Office of Budget. Interactive website for Payments and Acreage by State/County, Fiscal Year 2011, State of Wyoming. Payments in Lieu of Taxes. Internet website: [http://www.doi.gov/pilt/county-payments.cfm?term=county&state\\_code=WY&fiscal\\_yr=2011](http://www.doi.gov/pilt/county-payments.cfm?term=county&state_code=WY&fiscal_yr=2011). Accessed June 2012.

- U.S. Fire Administration. 2012. Interactive website for National Fire Department Census Database (USFA-census-WY-2011.xls). Internet website: <http://apps.usfa.fema.gov/census/>. Accessed September 21, 2012.
- U.S. News. 2012. Health - Best Hospitals - Crook County Medical Services District. Internet website: <http://health.usnews.com/best-hospitals/crook-county-medical-services-district-6830261>. Accessed June 12, 2012.
- Weston County Health Services. 2012. Main webpage. Internet website: <http://www.wchs-wy.org/about-wchs>. Accessed July 2012.
- Weston County School District #1 (Weston #1). 2012. Online list of schools. Internet website: <http://www.weston1.k12.wy.us/education/district/district.php?sectionid=1>. Accessed June 2012.
- Weston County School District #7 (Weston #7). 2012. Online list of schools. Internet website: <http://bobcat.weston7.k12.wy.us/Schools.html>. Accessed June 2012.
- Wolf, K. 2012. Johnson County Undersheriff. Personal communication with G. Blankenship, Blankenship Consulting LLC. July 17, 2012.
- Wyoming Attorney General. 2012. Crime in Wyoming Annual Report, January through December 2011.
- Wyoming Community Development Authority. 2012. Interactive Website for Wyoming Demographics, Economics and Housing Reports, An Annual Series 2000 to 2011. Internet website: [http://www.wyomingcda.com/index.php?option=com\\_content&task=view&id=196&Itemid=11](http://www.wyomingcda.com/index.php?option=com_content&task=view&id=196&Itemid=11). Accessed June 2012.
- Wyoming Department of Administration and Information (WDAI). 2012. Annual Residential Housing Units Authorized by Building Permits for Wyoming and Counties: 1987 to 2010. Economic Analysis Division. Internet website: <http://eadv.state.wy.us/housing/annlbdg.htm>. Accessed July 2012.
- Wyoming Department of Education. 2012a. Statistical Report Series #1 – Assessed Valuations and Tax Levies, 2001 to 2011. Internet website: <http://edu.wyoming.gov/DataInformationAndReporting/StatisticalReportSeries1.aspx>. Accessed July 2012.
- \_\_\_\_\_. 2012b. Statistical Report Series #3 – Financial and Enrollment Data, 2001 to 2011. Internet website: <http://edu.wyoming.gov/DataInformationAndReporting/StatisticalReportSeries3.aspx>. Accessed July 2012.
- Wyoming Department of Health. 2010. Wyoming Licensed and/or Certified Health Care Facilities. Updated 11/18/2010.
- Wyoming Department of Revenue. 2012. Wyoming Department of Revenue Annual Reports (a series). Internet website: <http://revenue.state.wy.us/PortalVBVS/DesktopDefault.aspx?tabindex=2&tabid=10>.
- Wyoming Department of Workforce Services, 2012. Commuting in Wyoming 2005Q1 to 2011Q3 (a data series). Internet website: <http://doe.state.wy.us/lmi/commute/2012/default.htm>. Accessed September 2012.
- Wyoming Medical Center (WMC). 2010. Main webpage. Internet website: <http://www.wmcnet.org/index.php>. Accessed November 2, 2010.

- Wyoming Mining Association. 2004. History of Wyoming Uranium. Internet website:  
<http://www.wma-minelife.com/uranium/general/genfrm.htm>. Accessed July 16, 2004.
- Wyoming Oil and Gas Conservation Commission (WOGCC). 2012. WOGCC-OnLine Stats Menu, Interactive Retrieval Website for 2004 to 2011 Data. Internet website:  
[http://wogcc.state.wy.us/online\\_stats\\_bk/main\\_menu.cfm](http://wogcc.state.wy.us/online_stats_bk/main_menu.cfm). Accessed July 2012.
- Wyoming State Board of Equalization. 2011. Wyoming Abstract and Mill Levy Report – 2011 (an annual report, historical reports not posted). Internet website: <http://taxappeals.state.wy.us/>. Accessed October 30, 2011.
- Wyoming School Facilities Department (WSFD). 2012a. 2010 District Approved Facilities Plan (menu listing for all school districts). Internet website:  
[http://www.wyoming.gov/loc/03302010\\_1/resources/Pages/DistrictFacilityPlans.aspx](http://www.wyoming.gov/loc/03302010_1/resources/Pages/DistrictFacilityPlans.aspx). Accessed July 2012.
- \_\_\_\_\_. 2012b. 2012 Annual Report and 2014 Supplemental Budget Request. Internet website:  
[http://www.wyoming.gov/loc/03302010\\_1/reports/meetingminutes/Documents/2012%20Info/8.23.12%20Draft%20Annual%20Report.pdf](http://www.wyoming.gov/loc/03302010_1/reports/meetingminutes/Documents/2012%20Info/8.23.12%20Draft%20Annual%20Report.pdf). Accessed July 2012.
- Wyoming State Fire Marshal. 2012. Fire Service Directory 2012. Internet website:  
<http://wyofire.state.wy.us/pdf/Directory.pdf>. Accessed July 2012.
- Wyoming State Inspector of Mines. 2012. Annual Reports of the Wyoming State Inspector of Mines. Annual reports for 1970 through 2011. Internet website:  
<http://www.wyomingworkforce.org/employers-and-businesses/mines/Pages/mining-information.aspx>. Accessed June 2012.
- Wyoming Taxpayers Association (WTA). 2012. Wyoming Property Taxation, Annual Reports, 1970 through 2011. Cheyenne, Wyoming.
- Wyoming Tourism. 2012. Online Directory of Places to Stay. Internet website:  
<http://www.wyomingtourism.org/placestostay>. Accessed May 2012.
- \_\_\_\_\_. 2011. Wyoming Tourism 2010 Vacation Guide.
- Wyoming Water Development Commission. 2011. Water System Survey: Report #2 System Data and Report #3 System Use.

## 6.2 Phase I References

The following references and associated information as presented in the Phase I report have been carried over into this Phase II analysis. These secondary references were presented In: ENSR. 2005a. Task 1C Report for the Powder River Basin Coal Review Current Social and Economic Conditions. Prepared for the Bureau of Land Management Casper Field Office and Wyoming State Office. March 2005.

- Bureau of Land Management (BLM). 2003. Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project. Wyoming State Office and Buffalo Field Office. January 2003.
- Bureau of Land Management (BLM). 1999. Wyodak Coal Bed Natural Gas Project Final Environmental Impact Statement. Buffalo Field Office. May 1999.

- Bureau of Land Management (BLM). 1996. Coal Development Status Check, Powder River Federal Coal Region, Montana and Wyoming, Data Tables. Wyoming BLM Buffalo Resource Area, Casper District, and State Office and Montana BLM Powder River Resource Area, Miles City District and State Office. For Presentation at the Powder River Regional Coal Team Meeting Held in Cheyenne, Wyoming, on April 23, 1996.
- Bureau of Land Management (BLM). 1979. Eastern Powder River Coal – Final Environmental Impact Statement.
- Bureau of Land Management (BLM). 1978a. Draft Environmental Statement – Development of Coal Resources in South-central Wyoming.
- Bureau of Land Management (BLM). 1978b. Final Environmental Statement – Development of Coal Resources in Southwestern Wyoming.
- Campbell County Commissioners. 2003. Annual Appropriation Resolutions and Summaries of Mill Levies and Expenditures.
- City of Gillette. 2003. City of Gillette, Wyoming Annual Financial Report for the Fiscal Year Ended June 30, 2003.
- Cole, M. 2004. Assistant Director of Public Works for Utilities, City of Sheridan. Personal communication with G. Blankenship, Blankenship Consulting LLC. June 7, 2004.
- Crook County Medical Services District. 2004. Internet web site: <http://www.crookcountymedical.com/>. Accessed July 2004.
- Foulke, T., R. Coupal, and D. Taylor. 2002. Economic Trends in Wyoming's Mineral Sector: Coal. University of Wyoming Cooperative Extension Service. January 2002.
- Kettley, D. 2004. Sergeant, Weston County Sheriff's Department. Personal communication with G. Blankenship, Blankenship Consulting LLC. July 2004.
- Lundstrom, M. 2004. Town Superintendent, Town of Upton. Personal communication with G. Blankenship, Blankenship Consulting LLC. July 2004.
- Montgomery Watson Harza. 2003. Coal Planning Estimates Report. Prepared for the Bureau of Land Management Wyoming State Office. March 2003.
- Sweeney, B. 2004. Director of Public Works, City of Douglas, Wyoming. Personal communication with G. Blankenship, Blankenship Consulting LLC. June 7, 2004.
- U.S. Census Bureau. 2001. 2000 Census of Population and Housing – Wyoming. Internet website: [www.census.gov](http://www.census.gov). Accessed July 2004.
- U.S. Department of Agriculture (USDA). 2004. 2002 Census of Agriculture, Volume 1. Geographic Area Series, Part 50, AC-02-A-50.
- U.S. Minerals Management Service. 2004. Mineral Review Reports (reported by calendar year). 1980 to 1989, 1991, 1994, and 1987 to 2003. Disbursements by County Reports, 1987 to 2003 (reported by fiscal year). Accessed July 2004.
- Wyoming Department of Administration and Information (WDAI). 2004c. Sales, Use and Lodging Tax Reports, FY2000 to FY2004. Economic Analysis Division. Economic Analysis Division. Internet web site: <http://eadiv.state.wy.us/s&UTax/s&u.asp>.
- Wyoming Department of Education. 2004. Financial and Enrollment Data, 1975 to 2003. Internet website: <http://edu.wyoming.gov/DataInformationAndReporting/StatisticalReportSeries3.aspx>. Accessed 2004.
- Wyoming Oil and Gas Conservation Commission (WOGCC). 2003. Wyoming Oil and Gas Statistics 1977 through 2003. Internet website: <http://wogcc.state.wy.us/cfdocs/2003stats.htm>. Accessed July 19, 2004.