ES.1 EXECUTIVE SUMMARY

Socioeconomic analysis responds to the public's interest in knowing that decision-makers have considered how people and their communities, lifestyles, and activities will be affected by the management of public lands and resources. This study was designed to support these considerations and to disclose their results. By focusing on selected key indicators over a long term, the analysis includes temporal, geographic, and demographic detail that also is helpful in addressing the planning questions of where, when, and how additional community development could be needed in the future as a result of the reasonably foreseeable development (RFD) scenarios identified for this study.

The analysis is based on the two RFD scenarios defined in the Task 2 Report for the Powder River Basin (PRB) Coal Review, Past and Present and Reasonably Foreseeable Development Activities (ENSR 2005b). Assumptions regarding future coal production levels are the primary differentiation between the two scenarios, increasing from 363 million tons per year (mmtpy) in 2003 to 508 mmtpy by 2020 under the lower production scenario and to 591 mmtpy under the upper production scenario. Under the lower production scenario, existing railroads would expand capacity, a new railroad line would be built, and three new power plants would begin operation. Expansions of rail transportation and electrical generation in the region also are part of the upper production scenario.

The structure of the two RFD scenarios is such that they do not represent a high and low bounded range within which there is a high likelihood of actual levels of economic activity and associated effects occuring. Rather, the two scenarios represent a range of economic activity derived by combining the range of future coal production with other identified foreseeable activity, all of which is assumed to occur. This formulation of the RFDs was done to assess the maximum cumulative environmental and socioeconomic consequences as a result of ongoing development activity. Changes affecting the other activities in terms of levels or timing (e.g., a different sequencing and phasing of new electrical generation capacity, a reduced pace of oil and gas well drilling, or an announcement and commencement of construction of a major new coal technology facility) would filter through as changes in the overall cumulative analysis.

REMI Policy Insight (REMI), a regional economic model, was used to develop the cumulative employment and population projections presented below. The version of the REMI model for this study was calibrated to represent two economic regions: the first consisting of Campbell County alone, and the second composed of the counties in Wyoming that border Campbell County and are linked to its economy by established industrial and consumer trade linkages and by work force commuting patterns. Results for the second region were then analyzed to focus on five counties, Converse, Crook, Johnson, Sheridan, and Weston, that are the most directly linked. Collectively, these five counties are referred to in this report as the surrounding counties. Additional analysis was undertaken to "disaggregate" REMI's population and employment forecasts for each of the surrounding counties and to derive housing requirements and project future school enrollment.

ES.2 CUMULATIVE SOCIOECONOMIC IMPACTS

Employment and Income

Employment is a key indicator of economic activity and changes in activity over time, particularly at the county level. It derives that status because data on employment, unemployment, and labor force data are collected monthly and reported, with only limited time lags, and the recognition that changes in employment typically are correlated with changes in population, housing demand, consumer spending, and public sector revenues and expenditures.

Within the PRB, energy and mineral development are the principal forces driving economic change. For the RFD scenarios, those forces include changes in coal mining, oil and gas development and production employment, and the construction of new power plants. The largest impetus to growth over the study period (2003 to 2020) is expected to occur by 2010. Under the lower production scenario, employment related to coal mining, oil and gas production, and oil field services is projected to increase by one-third, or more than 2,300 jobs, as compared to 2003 levels. A large portion of the jobs gained would be the result of increased oil and gas development, because while the number of coal mining jobs would increase, projected coal mine-related productivity gains would limit the increases in the number of mine employees required for operations.

Beyond 2010, as major infrastructure development (e.g., additional coal bed natural gas [CBNG] compression capacity) is completed and the pace of conventional oil and gas drilling decreases, total employment related to coal mining, oil and gas production, and oil field services would decline. Increases in CBNG production and coal mining employment would occur thereafter, such that total mining employment would approach pre-2010 levels by the end of the forecast period (2020). Under the RFD scenarios, concurrent construction of the three new power plants, having a combined capacity of 1,000 megawatts (MW) and a peak work force of approximately 1,550 workers in 2007-2008, is assumed to coincide with the increase in mining employment. Under the upper production scenario, a second temporary construction work force impact would occur between 2016 and 2020 in conjunction with the construction of an additional 700 MW power plant.

The net effects of these activities, including secondary effects on suppliers, retail merchants, service firms, and state agencies and local government in the region, would be the creation of more than 8,700 new jobs in the region between 2003 and 2010. Of those, more than 5,600 jobs, representing a 22 percent increase over 2003 employment, would be based in Campbell County (**Table ES-1**). The pace of economic expansion, at least in terms of jobs, would moderate after 2010. To illustrate, total employment growth of 2,017 additional jobs is projected in Campbell County between 2010 and 2020, with 1,741 additional jobs projected in the surrounding counties.

The employment effects identified above imply substantial pressures on local labor markets. Strong demand for labor would lower local unemployment, creating upward pressure on wages and salaries. Those influences would stimulate substantial economic migration into Campbell County, causing impacts to population, housing demand, and other economic and social conditions. Similar influences would occur in the surrounding counties, although the implications are less severe because the scale of the effects would be smaller and distributed over multiple communities and service providers.

Table ES-1
Total Employment in the PRB Study Area to 2020 under the Lower Production Scenario

Location	2003	2010	2015	2020	Change 2003 to 2020	CAGR[1] (percent)
Campbell	25,096	30,737	31,992	32,374	7,278	1.5
Surrounding Counties[2]	38,807	41,908	43,197	43,649	4,842	0.7
Six-county Study Area	**63,903**	**72,645**	**75,189**	**76,023**	**12,120**	**1.0**

[1]CAGR = compounded annual growth rate
[2]Includes Converse, Crook, Johnson, Sheridan, and Weston counties.
Source: U.S. Bureau of Economic Analysis 2005 (2003 data).

Several important issues arise in the context of the rapid economic expansion implied by the growth projections through 2010. One issue is that achieving the projected levels of energy and mineral development activity assumes that industry has access to the necessary equipment, materials, labor, and other vital inputs. Current oil and gas exploration and development interest across the Rocky Mountain region has absorbed the available inventory of drilling rigs and crews. A lack of additional resources could delay or limit the job gains below the levels projected, even though prospects for such growth remain. Secondly, the competition for equipment could combine with tight labor markets to negate the productivity gains that underlie the projections, such that the employment and associated impacts do materialize, but are associated with lower levels of activity (e.g., a lengthier construction period for a power plant or fewer new wells drilled each year).

Employment effects associated with the upper production scenario, assuming productivity gains in coal mining equivalent to those in the lower production scenario, would result in total employment gains of 11,563 jobs by 2010 in the six-county study area, with an additional 3,667 jobs by 2020[1] (**Table ES-2**). As compared to the employment projections under the lower production scenario, those gains would include 2,821 additional jobs in 2010 and 3,214 additional jobs in 2020. Most of the incremental gains would be based in Campbell County, further stressing labor markets, housing, and other community resources. Such pressures could delay or affect the development plans of individual firms and operators, such that the projected employment levels would not be realized in the time frames shown. Nonetheless, substantial growth in employment is expected to occur, and even if the projected total employment levels are not realized, substantial social and economic impacts still would be anticipated.

[1] Projected coal mining employment under the upper production scenario was estimated assuming future productivity gains equivalent to those under the lower production scenario. This assumption reflects a departure from the assumptions established in the Task 2 report, whereby a 16 percent higher production would be achieved with a 2.5 percent increase in work force. Those assumptions, although based on a continuation of historic productivity gains, may underestimate population and employment growth and related socioeconomic effects if the production is achieved but the productivity gains lag. Using the productivity gains from the lower production scenario thus provides a more conservative perspective on potential long-term population growth for the purposes of the cumulative analysis.

Table ES-2
Total Employment in the PRB Study Area to 2020 under the Upper Production Scenario

County	2003	2010	2015	2020	Change 2003 to 2020	CAGR (percent)
Campbell	25,096	33,316	34,386	35,206	10,110	2.0
Surrounding Counties[1]	38,807	42,150	43,453	43,927	5,120	0.7
Six-county Study Area	**63,903**	**75,466**	**77,839**	**79,133**	**15,230**	**1.3**

[1]Includes Converse, Crook, Johnson, Sheridan, and Weston counties.
Source: U.S. Bureau of Economic Analysis 2005 (2003 data).

The economic stimulus associated with the RFD scenarios also would stimulate increases in employment in other nearby counties. However, the potential effects in these areas are not addressed in this report because most of the effects would be indirect or induced growth that would be limited in scale relative to the size of the respective economies. Furthermore, the economic outlook for those areas also is heavily influenced by factors that are beyond the scope of this study, such as the role of the oil and gas support services in Natrona County that also support energy development in the south-central and southwestern portions of Wyoming.

Personal incomes in the region would increase over time, both in aggregate and on a per capita basis, in conjunction with the economic outlooks foreshadowed by the RFD scenarios. In 2003, total personal income was $1.12 billion in Campbell County and approximately $1.88 billion in the surrounding counties. Under the lower production scenario, total personal income would more than triple to $3.14 billion in 2020, and personal income in the surrounding counties would increase by approximately 111 percent to $4.43 billion (all in nominal dollars). By 2020, the upper production scenario would generate an additional $262 million per year in Campbell County and approximately $30 million in the surrounding counties. Annual per capita incomes are projected to increase by approximately 17 percent (in real terms) in Campbell County and 27 percent across the remainder of the region between 2003 and 2020. Households with one or more workers employed in the energy industry, associated key suppliers, and the construction industry likely would realize larger shares of the overall gains.

Population

The magnitude and timing of projected employment changes under either production scenario would trigger corresponding effects to population across the PRB, particularly in Campbell County (**Figure ES-1**).

Under the lower production scenario, Campbell County's population is projected to increase by more than 14,550 residents between 2003 and 2020, of which nearly 9,500 are anticipated by 2010. Recent population estimates indicate that a portion of the projected growth already has occurred. However, additional growth over the next 5 to 6 years would result in substantial pressures on housing and other community resources. The energy and mineral development in the lower production scenario also would result in substantial population growth elsewhere in the PRB, with Sheridan, Johnson, and Converse counties all projected to gain substantial population

(**Figure ES-2** and **Table ES-3**). Population growth, like employment growth, would moderate after 2010.

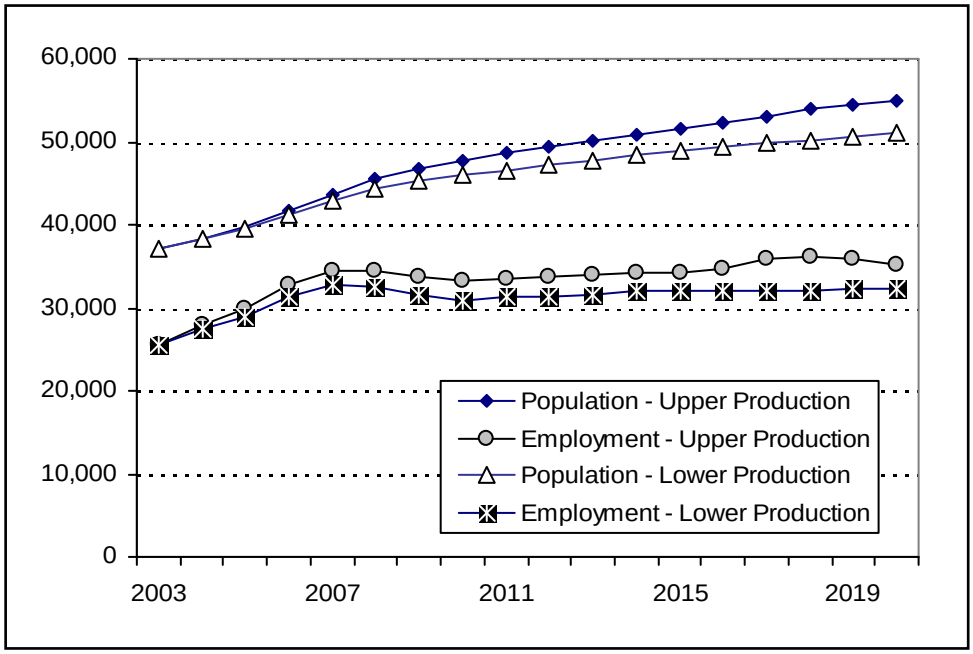

Figure ES-1. Projected Campbell County Population and Employment to 2020.

Sources: U.S. Census Bureau 2005a,b (2003 data).

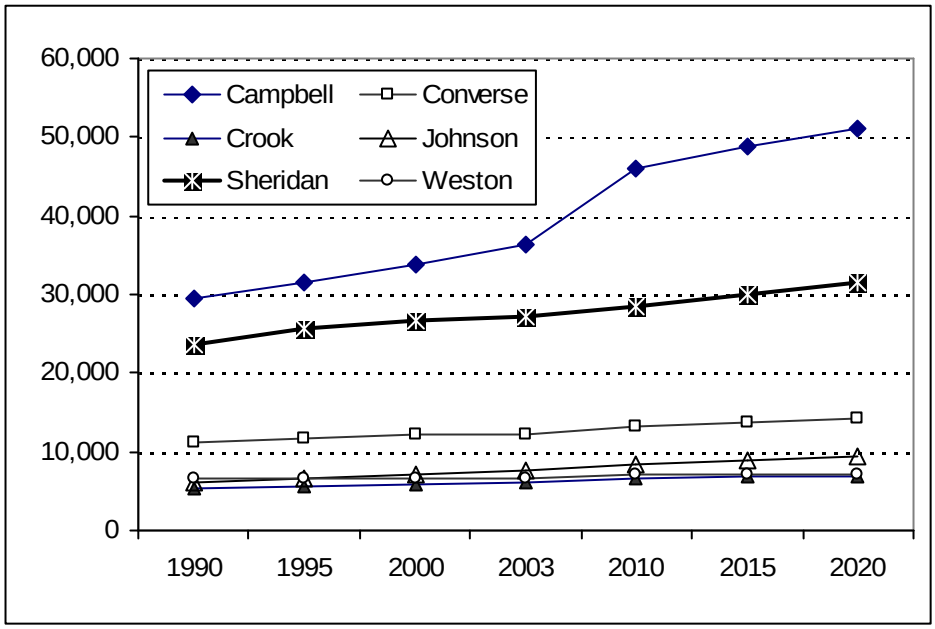

Figure ES-2. Projected Population Growth in the PRB Study Area Under the Lower Production Scenario

Source: U.S. Census Bureau 2005a (1990 through 2003 data).

Table ES-3
Projected PRB Study Area Population to 2020 Under the Lower Production Scenario

County	2000	2003	2010	2015	2020	Change 2003 to 2020	CAGR (percent)
Campbell	33,698	36,438	45,925	48,905	50,995	14,557	2.0
Converse	12,104	12,314	13,103	13,671	14,193	1,879	0.8
Crook	5,895	5,986	6,542	6,759	6,989	1,003	0.9
Johnson	7,108	7,554	8,389	8,867	9,326	1,772	1.2
Sheridan	26,606	27,115	28,459	30,016	31,467	4,352	0.9
Weston	6,642	6,671	7,108	7,174	7,208	537	0.5
Six-county Study Area	**92,053**	**96,078**	**109,526**	**115,392**	**120,178**	**24,100**	**1.3**

Source: U.S. Census Bureau 2005b (2000 and 2003 data).

Projected population growth between 2003 and 2020 ranges from a 0.5 percent CAGR in Weston County to 2.0 percent CAGR in Campbell County. In absolute terms, the net change ranges from 537 additional residents in Weston County to a gain of 14,557 residents in Campbell County. The combined population of the six-county study area is projected to climb from 96,078 in 2003 to 120,178 in 2020, a 1.3 percent CAGR.

Population projections for selected communities in the region, corresponding with the county population projections in **Table ES-3**, are shown in **Table ES-4**. Gillette, Sheridan, and Buffalo are anticipated to experience the most growth.

Table ES-4
Projected Population to 2020 for Selected PRB Communities
Under the Lower Production Scenario

Community	2000	2003	2010	2015	2020	Change 2003 to 2020	CAGR (percent)
Gillette	20,499	22,113	29,392	30,810	31,617	9,504	2.1
Wright	1,357	1,418	1,952	1,956	1,989	571	2.0
Douglas	5,302	5,396	5,962	6,242	6,089	707	0.7
Moorcroft	804	826	860	918	981	159	1.0
Sundance	1,155	1,176	1,319	1,387	1,370	222	1.0
Buffalo	3,899	4,221	4,696	5,029	5,291	1,095	1.4
Sheridan	15,803	16,000	17,160	18,119	18,859	2,880	1.0
Newcastle	3,241	3,247	3,318	3,349	3,307	220	0.4

Source: U.S. Census Bureau 2005c (2000 and 2003 data are estimates for July 1 of the respective years).

As with employment, changing development conditions could result in actual population growth varying from that shown in **Table ES-4**. If project schedules or levels of development vary from the projected levels, there could be corresponding effects on population growth (e.g., delays could result in lower growth). Another possibility is that population demographics could change in response to migration and commuting, with relatively more immigrating construction workers being

single-status, rather than being accompanied by families. Another alternative is that the spatial distribution of population growth could shift as a result of housing or labor constraints, such that less growth would occur in Gillette and Campbell County, and more growth would occur elsewhere.

Projected population growth through 2020 under the upper production scenario is approximately 19 percent higher than under the lower production scenario (28,625 compared to 24,100), with the six-county population reaching 124,703 by 2020 (**Table ES-5**). Much of the incremental population growth would occur by 2010, in Campbell County, and in particular in and near Gillette.

Table ES-5
Projected County Population to 2020 under the Upper Production Scenario

County	2000	2003	2010	2015	2020	Change 2003 to 2020	CAGR (percent)
Campbell	33,698	36,438	47,662	51,558	54,943	18,505	2.4
Surrounding Counties[1]	58,355	59,640	63,870	66,922	69,760	10,120	0.9
Total	**92,053**	**96,078**	**111,532**	**118,480**	**124,703**	**28,625**	**1.5**

[1]Includes Converse, Crook, Johnson, Sheridan, and Weston counties.
Source: U.S. Census Bureau 2005b (2000 and 2003 data).

Community population growth under the upper production scenario generally would mirror growth under the lower production scenario (**Table ES-4**) but with higher growth in Wright, Douglas, and Newcastle due to the effects of higher coal production and power generation concentrated in the southern portion of Campbell County.

The cumulative population projections under either RFD scenario point to a period of strong growth in the PRB. The magnitude and timing of the growth is such that it raises concerns about other potential social and economic impacts.

Housing

Either RFD scenario would give rise to strong demand for housing across the six-county study area. Net new housing requirements under the lower production scenario would include approximately 11,270 units through 2020, a 26 percent increase above the total existing inventory in 2003 (**Figure ES-3**). New housing requirements under the upper production scenario are estimated at 13,060 units, a 31 percent increase compared to the 2003 inventory and 1,790 units more than under the lower production scenario. From 2003 to 2010, the demand for new housing under the lower production scenario would concentrate in Campbell County, as approximately 60 percent of the overall demand for additional housing under either RFD scenario would occur in Campbell County, and approximately two-thirds of that (between 4,300 and 5,000 additional units) would be needed within the next 3 to 5 years.

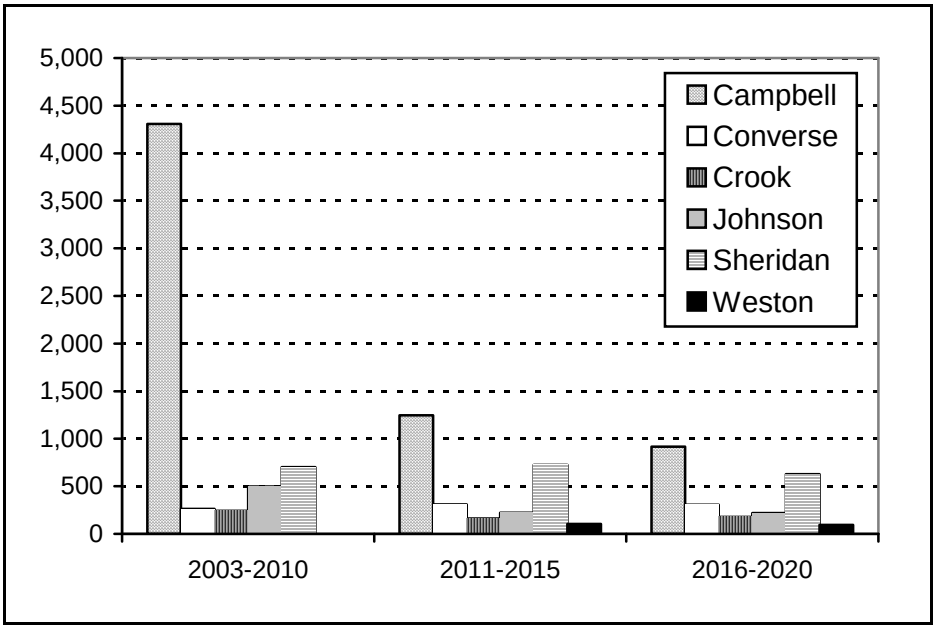

Figure ES-3. Projected Housing Demand in the PRB Study Area Under the Lower Production Scenario

A substantial portion of the near-term demand in Campbell County would be associated with the assumed concurrent construction of three power plants. If that occurs, one or more project sponsors may be required by the Wyoming Industrial Siting Administration to pro-actively provide housing (e.g., a construction-camp for single-status workers). Such actions could temper the needs for additional housing; however, the remaining needs would nonetheless be substantial, straining public and private sector residential development capacity. Although smaller in scale than those in Campbell County, housing demands in the surrounding counties also could strain the capabilities of the residential construction sector. Furthermore, residential contractors would be competing for available labor, contributing to the population growth and housing demands, and fueling increases in construction costs and housing prices.

The relative scale of the housing needs may be evaluated in comparison to past growth in the study area. One comparative benchmark is the rapid growth in the PRB during the 1970s. During that decade, the number of housing units in the six-county study area grew by approximately 14,900 units, approximately 1,500 units per year on average compared to the 850 to 975 new units per year projected under these scenarios through 2010. The rapid pace of development in the 1970s also coincided with a period of economic expansion and strained the region's construction trade and building supplier industries. Although the underlying economies of the region are larger now, the projected needs would tax the ability of communities to respond. Signs of strain are apparent in Gillette and could surface elsewhere as relatively more housing need would arise in the remaining counties of the six-county study area during the second 5-year period under the lower scenario.

Projected housing demands under either scenario, although lower than what Campbell County and the region experienced in the "boom" years of the 1970s, would exert substantial pressure on

housing markets, prices, and the real estate development and construction industries, all at a time when demand for labor and other resources would be high overall.

Public Education

Communities across the PRB study area would see population growth due to economic migration; however, the effect on public school enrollments would vary. As the demographic structure of the population changes, school districts in the PRB would be affected by new trends. In some counties, the size of that population (generally aged 5 to 17 years) may even trend in the opposite direction of total population in the short-term due to underlying demographics of the established resident population.

The demographic forecasts developed from the RFD scenarios project growth in the elementary school enrollments in Campbell County through 2010 and for almost all PRB school districts beyond 2010. Under the lower production scenario, Campbell County School District #1 (Campbell #1) would experience substantial growth in school enrollments through 2020 (an additional 1,587 students or 22 percent above recent levels). The impacts on Campbell #1 would be composed of two elements: a substantial increase in grades K-8 and small increases in grades 9-12. School districts in the surrounding counties are projected to experience declining elementary and middle school enrollments through 2010 and declining high school enrollments through 2015 under the lower production scenario. Thereafter, growth and the associated influences on demographics would generate renewed enrollment growth, particularly in the elementary grades in Johnson, Sheridan, and Converse counties. **Figure ES-4** illustrates projected school enrollments in Campbell #1 and the surrounding districts under the lower production scenario.

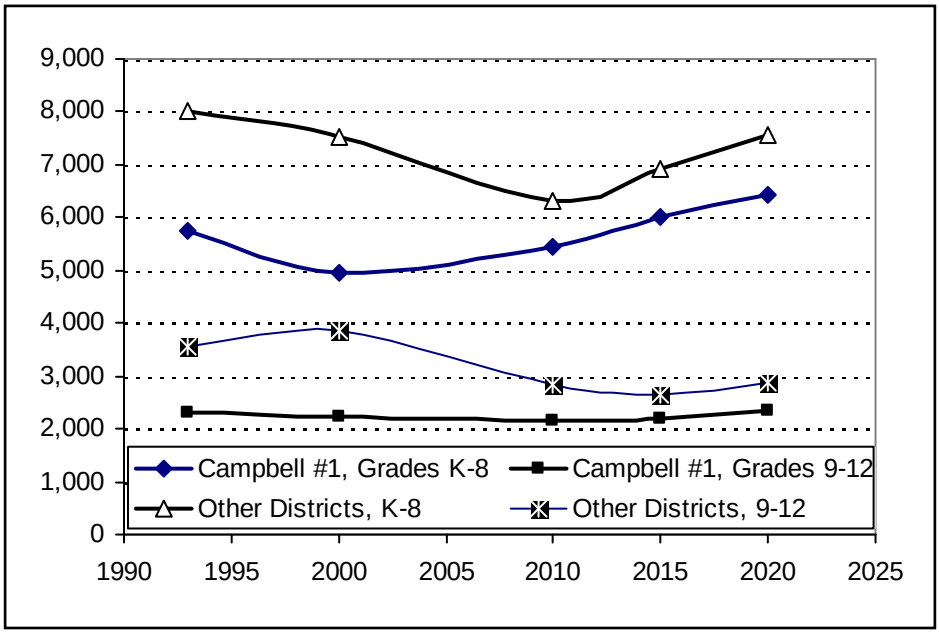

Figure ES-4. Projected School Enrollment Trends to 2020 Under the Lower Production Scenario

Source: Wyoming Department of Education 1975-2003 (1990 through 2003 data).

Projected enrollments in Campbell #1 would be approximately 10 percent higher by 2020 under the upper production scenario, with those in the surrounding districts only approximately 1 percent higher. However, several districts would have total enrollments in 2020 that are below current levels, as growth from 2010 to 2020 would not offset recent declines or those projected to occur before 2010.

Under either scenario, forecasted enrollments may cause short-term school capacity shortages, depending on the specific grade-levels and geographic distributions of the additional students. Under Wyoming School Facilities Commission planning guidelines, impacted school districts generally would be expected to accommodate minor capacity shortages through temporary facilities, such as portable classrooms. For larger, more long-term increases, the Commission's policy is to fund capital expansion where warranted by projections developed during annual updates of school districts' 5-year plans. Presently, the Commission has approved $88.1 million for 31 school replacement and major improvement projects within the six-county study area (**Table ES-6**).

Table ES-6
Approved Capital Construction Budgets for Public Education

School District	Schools in Operation	Approved 5-year Capital Construction Funding (millions)	Number of New Schools and Remodeling and Improvement Projects
Campbell #1	20	$23.7	7
Surrounding Counties (9 Districts)	62	$64.4	24
Six-county Study Area	**82**	**$88.1**	**31**

Source: Wyoming School Facilities Commission 2005.

Facilities and Services

The RFD scenarios have the potential to affect local government facilities and services in two ways. First, population increases in affected counties and communities generally result in across the board increases in demand on services, and second, each RFD activity may result in increased demand for specific services (e.g., road maintenance, law enforcement, and emergency response).

Although energy development has the potential to affect all local government facilities and services, particularly in Campbell County, this report focuses on water supply and wastewater systems, two essential services that are costly and have the longest lead times to develop, and law enforcement, emergency response, and road maintenance, three services that typically are most affected by energy development.

Water supply and wastewater systems in all communities would have the capacity to accommodate the cumulative population growth associated with either RFD scenario through 2020, assuming ongoing or currently planned improvements are completed. In Gillette, the timing of planned water supply system improvements relative to growing demand may be an issue, as completion of improvements in the 2005 to 2009 period would occur when substantial growth is anticipated to

occur under both RFD scenarios. Consequently, Gillette may experience water shortages in summer during the 2003 to 2010 period, particularly under the upper development scenario.

The ability to provide desired levels of other public services to the anticipated energy-related population and development is less clear in Campbell County, Gillette, Wright, and outlying rural communities. Campbell County and its communities would experience a 25 percent increase in population between 2003 and 2010 under the lower production scenario and 30 percent under the upper production scenario. This growth would be fueled by a ramp-up of oil, natural gas, and CBNG drilling, coupled with the construction or reopening of a coal mine and construction of three power plants. Responding to the growth in service demand associated with these assumed developments would be challenging. The county is likely to have substantial revenues from current ad valorem property taxes on energy production, given recent increases in commodity prices; however, municipalities and most other service providers do not have access to property taxes on production and could have difficulty in funding service expansions. Moreover, the county and its municipalities would need to recruit, train, and equip service personnel, sometimes before the growth in RFD-related revenues begin accruing and at a time where they would be competing for employees in a tight job market. There have been times in the past when such conditions have posed a challenge to recruit and retain staff, given the higher wage scales in the energy industries and competition for trained staff in other communities.

Finally, if the ramp-up in oil and gas development and power plant construction projects were to occur simultaneously within the 2003 to 2010 period, Campbell County and its municipalities may need to add capacity in agencies that provide services to a transient, single-status population and agencies that provide human services to newcomers and established residents alike.

Growth rates and the resultant facility and service demand in other counties within the study area would be substantially less during the 2003 to 2010 period under either scenario; all communities other than Johnson County and Buffalo would grow substantially less than 10 percent during the period. The populations of Johnson County and Buffalo would increase 10 percent by 2010, driven primarily by CBNG development.

Growth rates and resultant increases in service demands would slow substantially during both the 2011 to 2015 and 2016 to 2020 periods under either RFD scenario. In most communities except Sheridan County and the City of Sheridan, there would be little difference in population growth and service demand between the two RFD scenarios.

It is important to note that communities in Crook, Weston and Converse counties that typically host a portion of mine and power plant construction work forces would receive no direct revenues from these facilities to fund any increases in service demand. It is possible that they could receive Impact Assistance Payments under the provisions of the Wyoming Industrial Information and Siting Act.

Fiscal

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 coal and oil and gas infrastructure, real estate improvements, retail trade, and other economic activity supported by energy development provide additional sources of revenue to support public facilities and services. Revenues related to energy and mineral production benefit not only those jurisdictions within which

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

At the foundation of the mineral development revenue projections are projected levels of future energy and mineral resource production. The projected total value of annual mineral production under the lower production scenario will climb by $3.69 billion (nominal dollars) over 2003 levels, reaching $8.75 billion by 2020, a 73 percent increase over the current (2003) value. The aggregate value of energy and mineral resource production under the upper production scenario would increase to $9.42 billion in 2020. The incremental difference, compared to the value under the lower production scenario, would be $668 million per year, all of which represents the value of higher annual coal output.

As at present, the overwhelming majority of future mineral production value is anticipated to be in Campbell County. Over time, the future value of production in Sheridan and Johnson counties would climb. Total annual mineral production value by 2020 is projected to reach $6.5 billion in Campbell County and $2.3 billion in the surrounding counties.

Between 2005 and 2020, total receipts derived from the key selected sources range between $21.1 and $22.6 billion for the lower and upper production scenarios, respectively. Receipts derived from coal production would account for the majority of the totals under either scenario, with Federal Mineral Royalties on coal of $4.9 to $5.7 billion being the single largest source. Severance taxes of $6.3 to $6.7 billion levied on coal, oil, and gas would accrue to the state (**Tables ES-7** and **ES-8**).

Table ES-7
Summary of Mineral Development Tax Revenues Associated with Energy Resource Production Under the Lower Production Scenario
(millions of nominal dollars)

Industry and Taxes	2005-2010	2011-2015	2016-2020	Total
Coal[1]	$3,164.8	$3,178.9	$3,756.3	$10,100.0
CBNG	$2,915.2	$3,076.4	$3,288.7	$9,280.3
Conventional Oil and Gas	$568.5	$576.4	$614.0	$1,759.0
Totals	**$6,648.5**	**$6,831.7**	**$7,659.0**	**$21,139.3**
Severance Tax	$1,995.9	$2,012.4	$2,249.3	$6,257.6
Federal Mineral Royalties	$2,754.1	$2,839.4	$3,166.3	$8,759.8
State Mineral Royalties	$233.5	$225.8	$251.4	$710.7
Ad Valorem Tax (Counties)	$417.6	$443.0	$502.8	$1,363.3
Ad Valorem Tax (Schools)	$1,247.5	$1,311.1	$1,489.3	$4,047.9
Totals	**$6,648.6**	**$6,831.7**	**$7,659.1**	**$21,139.3**

[1]Does not include coal lease bonus bids due to the uncertainty regarding timing.

Table ES-8
Summary of Mineral Development Tax Revenues Associated with Energy Resource Production Under the Upper Production Scenario
(millions of nominal dollars)

Industry and Taxes	2005-2010	2011-2015	2016-2020	Total[1]
Coal[1]	$3,538.0	$3,703.0	$4,350.0	$11,591.0
CBNG	$2,915.2	$3,076.4	$3,288.7	$9,280.3
Conventional Oil and Gas	$568.5	$576.4	$614.0	$1,759.0
Totals	**$7,021.7**	**$7,355.8**	**$8,252.7**	**$22,630.3**
Severance Tax	$2,104.1	$2,159.0	$2,415.4	$6,678.5
Federal Mineral Royalties	$2,946.3	$3,099.9	$3,461.4	$9,507.6
State Mineral Royalties	$233.5	$225.8	$251.4	$710.7
Ad Valorem Tax (Counties)	$435.8	$472.0	$535.0	$1,442.8
Ad Valorem Tax (Schools)	$1,302.3	$1,398.9	$1,589.8	$4,291.0
Totals	**$7,022.0**	**$7,355.6**	**$8,253.0**	**$22,630.6**

[1]Does not include coal lease bonus bids due to the uncertainty regarding timing.

The federal and state governments also would benefit from coal lease bonus bids derived from future coal leasing. Bonus bids have risen over time, with recent bids in the $0.60 to $1.00 per ton range. There is no guarantee of that trend continuing, and uncertainty exists with respect to the timing and scale of future leases, although leasing of 2.5 to 3.0 billion tons by 2020 is reasonably foreseeable under the lower production scenario. That level of leasing could generate $1.5 to $3.0 billion in bonus bid revenues based on recent bids. Net an administrative processing fee, these revenues accrue on a 50/50 basis to the Federal Treasury and the State of Wyoming.

Taxes and mineral royalties levied on energy and mineral resource production accruing to the state are disbursed to the Permanent Water Development Trust Fund, Wyoming School Foundation and Capital Facilities funds, state and local facilities capital construction fund, and other programs according to a legislatively-approved formula. Through these funds, the revenues derived from resource development benefit the entire state, not just agencies, businesses, and residents of the PRB.

County governments and school districts would realize benefits from future energy and mineral resource development in the form of property taxes. Such taxes, estimated on the basis of future coal, oil, and natural gas production, are estimated to range between $5.4 billion and $5.7 billion through 2020. Those sums do not include future property taxes levied on the new power plants, expanded rail facilities, or new residential and commercial development associated with future growth, or sales and use taxes levied on consumer and some industrial purchases. These latter revenues are not estimated, but they would be substantially lower than those on resource production.

Local governments would benefit from property taxes on new development, as well as from sales and use taxes on taxable sales within their boundaries. Such revenues are not estimated for this study due to the large number of jurisdictions and other analytical considerations.

Community and Social Effects

Cumulative energy development in the PRB, as expressed in the two RFD scenarios, has the potential to generate both beneficial and adverse effects on community social conditions. Social effects of RFD activities in the PRB would vary from county to county and community to community under the production scenarios developed for this study, based on the existing social setting and the type of development that would occur.

Beneficial social effects would be associated with an expanding economy and employment opportunities associated with energy development and resulting improvements in living standards for those employed in energy-related industries. Adverse social effects could occur as a result of conflicts over land use and environmental values. Negative social effects also could occur if the pace of growth exceeds the abilities of affected communities to accommodate energy-related employees and their families with housing and community services.

In the PRB, social conditions in Campbell County, the City of Gillette, and the Town of Wright are most likely to be affected, because the county would host much of the cumulative energy development work force, and the county and its municipalities would receive the largest increments in population growth. Campbell County and its municipalities have a long history of energy development, and they have developed infrastructure and management systems to plan for and manage growth; consequently, major adverse social effects would not be anticipated. However, under either scenario, the county and the two municipalities may face challenges in providing adequate housing and expanding community services in anticipation of population growth thru 2010, particularly if several power plant construction projects and a coal mine re-opening occur simultaneously. As municipalities receive only sales and use tax revenues directly from development and purchases made within their boundaries, Gillette and Wright could face challenges in securing the necessary funding to improve municipal facilities and services. Housing shortages and limitations in public services could contribute to adverse community social effects in these communities.

Many of the people who would immigrate to Campbell County for energy-related jobs are likely to share characteristics with much of the current population; therefore, few barriers to social integration are anticipated.

Social effects on other communities in the PRB are likely to be minimal to moderate. Energy-related population growth is anticipated to be moderate in other communities. Sheridan County, also familiar with coal mining, is the only other county anticipated to host a major construction project under the development assumptions used for either RFD scenario. Converse, Weston, and Crook counties could experience spillover growth from projects in Campbell County.

Johnson, Sheridan, and Campbell counties could experience continued conflict over split estate and water issues associated with CBNG development, and the pace and scale of energy development across the PRB is likely to continue to generate social and political conflict over environmental issues under either scenario.