

Wyoming Industrial Development Information and Siting Act

109 Application Permit

Wygen III Campbell County, Wyoming

Prepared for
Black Hills Corporation

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Prepared By:



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Acronyms and Abbreviations

°F	degree Fahrenheit
AADT	annual average daily traffic
ac-ft/yr	acre-feet/year
ACHP	Advisory Council on Historic Preservation
AQCS	Air Quality Control System
B&W	Babcock and Wilcox
BACT	Best Available Control Technology
BDT	best demonstrated technology
BHC	Black Hills Corporation
BHG	Black Hills Generation
BHP	Black Hills Power
Btu/yr	British thermal units per year
CAIR	Clean Air Interstate Rule
CAMR	Clean Air Mercury Rule
CEMS	continuous emission monitoring system
CFR	Code of Federal Regulations
cfs	cubic feet per second
CIP	Capital Improvements Plan
CLF&P	Cheyenne Light, Fuel and Power
CO	carbon monoxide
CO ₂	carbon dioxide
COMS	continuous opacity monitor systems
COE	U.S. Army Corps of Engineers
CPCN	Certificate of Public Convenience and Necessity
DOE	Wyoming Department of Employment
EPA	U.S. Environmental Protection Agency

ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FGD	flue gas desulfurization
FLM	Federal Land Manager
GAP	Gap Analysis Program
GDP	gross daily product
gpm	gallon per minute
I-90	Interstate 90
IMPLAN	Impact Analysis for Planning
IO	input-output
IRP	Integrated Resource Plan
ISA	Industrial Siting Act
ISC	Industrial Siting Commission
ISD	Industrial Siting Division
km	kilometers
kV	kilovolt
lb/MMBtu	pound per million British thermal units
LNBS	Low NO _x Burners
LOS	level of service
MBFHI	Migratory Birds of High Federal Interest
MBTA	Migratory Bird Treaty Act
MEAN	Municipal Energy Agency of Nebraska
MFI	median family income
mgd	million gallons per day
MSL	mean sea level
MW	megawatt
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NFPA	National Fire Protection Association

NHPA	National Historic Preservation Act
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSR	New Source Review
NWP	Nationwide Permit
O&M	operation and maintenance
OFA	over-fire air
OSHA	Occupational Health and Safety Administration
PAC	Powdered activated carbon
PC	pulverized coal
PCE	personal consumption expenditures
PJFF	pulse-jet fabric filter
PM	particulate matter
PM ₁₀	particulate matter less than 10 microns
Project	Wygen III power plant project
PSD	Prevention of Significant Deterioration
PVRR	present value of revenue requirements
REIS	Regional Economic Information System
REMI	Regional Economic Models Inc.
RIMS II	Regional Industrial Multiplier System II
ROI	region of influence
RV	recreational vehicle
SCR	selective catalytic reduction
SDA/FF	spray dryer absorber and fabric filter
SH	State Highway
SIC	Standard Industrial Code
SO ₂	sulfur dioxide

SPCC	Spill Prevention Containment and Countermeasures
SSURGO	Soil Survey Geographic Database
SWTSD	solid waste treatment, storage, and disposal
TESS	Threatened and Endangered Species
UFC	Uniform Fire Code
US DOC	U.S. Department of Commerce
USBR	U.S. Bureau of Reclamation
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compound
WAPA	Western Area Power Administration
WDEQ	Wyoming Department of Environmental Quality
WECC	Western Electricity Coordinating Council
WGFD	Wyoming Game and Fish Department
WSPHS	Wyoming State Parks and Historic Sites
WYDOT	Wyoming Department of Transportation
WYO 51	Wyoming State Highway 51

Executive Summary

Black Hills Corporation (BHC) is submitting a 109 Permit Application pursuant to Wyoming Statute 35-12-109 of the Industrial Development Information and Siting Act (ISA) for the construction and operation of the Wygen III power plant project (Project).

BHC is proposing to construct, own, and operate a coal-fired generating facility with a 100-megawatt (MW) net capacity. The proposed Project will be an addition to the existing power generation and coal mining facilities at the Neil Simpson Energy Complex. The new Project would take advantage of the considerable amount of existing infrastructure at the site.

This 109 ISA Permit Application addresses the Project description, location, schedule, estimated ad valorem taxes, purpose, need, and benefit. Summary information regarding socioeconomic baseline conditions, analysis of socioeconomic impacts within the area of impact, potential environmental impacts, and plans for alleviating any identified impacts are also addressed. BHC has contacted the potentially affected municipalities, counties, state agencies, and other stakeholders. A list of dates and the local government entity contacted is provided in Section 2.11.

Project Components

The Project facility will consist of one pulverized coal (PC) boiler equipped with low NO_x burners and catalytic reduction system, and will include material handling for coal, lime, flue gas desulfurization (FGD) waste, and flyash. The major components of the Project include boiler, turbine, emission stack, fabric filter dust collectors, lime/silo hydrator, circulating dry scrubber, selective catalytic reduction reactor, mercury reduction system, waste load out silo, boiler building, turbine building, transformer area, air-cooled condenser, ammonia tank, auxiliary cooling water heat exchanger, pre-fabricated electrical building, plant coal feed conveyors, and a warehouse and office building.

The boiler will be an indoor-type, subcritical, PC-fired boiler designed for base load operation. The primary fuel will be sub-bituminous coal obtained from the adjacent Wyodak mine.

Project Location

The Project will be constructed at the existing Neil Simpson Energy Complex approximately 8 miles east of Gillette in Campbell County. The Neil Simpson Energy Complex is a heavily industrialized site that contains five coal-fired power plants, two gas-fired turbines, and the Wyodak mine. The Project will be located on private fee lands owned by Wyodak Resources Development Corporation, a wholly owned subsidiary of Black Hills Corporation. The Project will occupy approximately 65 acres of a 160-acre parcel within Sections 22 and 27 of Township 50 North and Range 71 West.

Schedule and Cost

The Project construction is scheduled to begin in early 2008, pending the result of permitting activities. The Project is scheduled to be operational in 2010. BHC conducted a jurisdictional meeting with the Industrial Siting Division (ISD) on May 9, 2007. ISD reviewed the financial budget for the Wygen III Project and determined that the cost of the Project exceeded the current statutory dollar threshold¹.

Construction Workforce Requirements

BHC anticipates that the Project construction workforce will vary from a low of 15 to a high of 315 construction workers during peak construction activities. BHC anticipates a 29-month construction period for the Project. Site preparation, pile driving, and foundations will commence during the month of February 2008 and begin nearing completion by September 2008. Based on the received Letter of Intent from Hladky Construction, Inc., this local contractor will initiate and complete a majority of these tasks in 2008. It is assumed that Hladky Construction, Inc., will use approximately 146 local construction tradesmen (106 Hladky Construction, Inc. plus 40 local subcontractors) during this period of Project construction. It is assumed that these local construction tradesmen will be local residents (e.g., within 100 miles of the Project). During 2009, the main balance of plant construction activities will be initiated, including the erection of the mechanical/piping, electrical/instrument controls, turbine installation, steam generator, steel chimney liner, air quality control systems, architectural, and heating ventilation. BHC estimates a peak of 260 non-local construction employees will be required to complete the balance of plant construction activities in 2009. Upon construction completion, operation of the plant will require approximately 15 to 18 full-time employees.

Comprehensive Housing Plan

Based on a Letter of Intent received from Hladky Construction, Inc., it is estimated that this local contractor based in Gillette, Wyoming, will supply 146 local construction jobs (including 40 subcontractors). The local construction and operating workforce would originate from a six-county area and would not require permanent housing. Conversely, it is envisioned that the balance of the general contracts will be issued to non-local general contractors, and BHC estimates that up to a peak of approximately 260 workers will represent an imported workforce and require temporary housing during the 2009 calendar year.

BHC's comprehensive workforce housing plan focused on obtaining proven temporary housing options for the non-local construction workforce. BHC's housing plan will be initiated in a phased approach and will have a capacity to support the total housing needs of the non-local construction tradesmen from mid- 2008 through early 2010. Specifically, the non-local workforce housing plan centers on providing proven housing stock for the non-local construction workforce using a combination of two primary options: securing motel

¹ Permits are required via W. S. 35-12-102(vii) for any industrial facility with a final construction cost in excess of \$163 million.

contracts, and development of a worker camp on BHC or other suitable private lands using manufactured housing units.

Socioeconomic Impacts

A socioeconomic baseline and impact analysis was conducted to evaluate the benefits and impacts to the social and economic resources in the study area, including the benefits related to the tax structure, direct employee opportunities, and indirect employment benefits. In addition, Impact Analysis for Planning (IMPLAN) modeling was conducted to detail the anticipated secondary economic impacts in the local study area economy.

The analysis of the impacts included the effects on the following:

- Housing
- Public safety and security
- Municipal services
- Educational facilities
- Health resources
- Transportation systems

To measure potential impacts, the analysis compared the expected future conditions in the “study area” with and without the Project. The study area was defined as comprising the following six adjacent counties:

- Campbell
- Converse
- Sheridan
- Crook
- Johnson
- Weston

The counties included in the study area were determined in cooperation with the Industrial Siting Division.

Because existing motels and a worker camp on BHC lands will be developed for a majority of the temporary housing, the Project will place minimal demands on new water, sewer, roads, electrical lines, or other infrastructure. In addition, there would be little measurable increase in non-basic employment, as these jobs are generated from ongoing employment of the existing base of construction workers and would be maintained through the continued employment of local construction workers. Therefore, construction and operation of the Project would not significantly affect the various public and non-public facilities and services described above from the in-migration of workers for non-basic employment opportunities.

Economic benefits identified to the communities in the potential impact area include the following:

- Increased and stable employment
- Increased need for goods and services
- Increased sales and use taxes on materials required for construction
- Increased ad valorem property tax revenue

Environmental Impacts

Environmental impacts due to construction, operation, and maintenance of the Project were analyzed. Resource data were collected or reviewed to identify the characteristics of and to evaluate impacts on the natural environment, including:

- Air quality and noise
- Soil resources
- Cultural resources
- Vegetation
- Geological hazards
- Surface and groundwater resources
- Land use and recreation
- Wetland resources
- Visual resources
- Wildlife resources
- Mineral resources
- Threatened, endangered, proposed, and candidate species

BHC obtained an air permit from the Wyoming Department of Environmental Quality (WDEQ) - Division of Air Quality on February 5, 2007. The Project will be fired with low-sulfur coal from the adjacent Wyodak mine and will utilize dry scrubbing technology for SO₂ control (both controlling SO₂ emissions and conserving water), selective catalytic reduction for NO_x control, and a baghouse for particulate control. BHC has tested and is currently evaluating mercury emission control technology as required by the air permit and will be selecting equipment that will enable this Project to meet the mercury standards and permit limits as signed by the U.S. Environmental Protection Agency (EPA) and the DEQ - Division of Air Quality.

The Project will utilize the considerable amount of existing infrastructure at the Neil Simpson Energy Complex. Specifically, the Project will utilize existing access roads, transmission interconnection facilities, coal supply facilities, water supply, water discharge facilities, and other existing facilities at the Neil Simpson Energy Complex. Potential environmental impacts are expected to be negligible as a result of the Project due to use of existing infrastructure, previous disturbances, and the existing industrial uses at the Neil Simpson Energy Complex.

1.0 Purpose, Need, and Benefit

Black Hills Corporation (BHC) recently completed the 2007 Integrated Resource Plan (IRP) for the Wygen III power plant project (Project). Load forecasts were developed for the Black Hills Power (BHP) system; for Cheyenne Light, Fuel and Power (CLF&P), for the City of Gillette, Wyoming; and for the Montana Dakota Utility Sheridan service territory. These load forecasts were then combined for the IRP to determine the coincident peaks for the combined system.

Although there is no specified requirement for planning reserves by the Western Electricity Coordinating Council (WECC), prudent utility practice dictates that BHC plan for enough capacity to provide adequate reserves to ensure that electricity can continue to be provided under outages of the largest generating unit and/or the largest transmission line. Historically across the country, the level of planning reserve margin has generally varied from 15 to 20 percent. BHC's 2007 IRP assumed the planning reserve margin to be 15 percent.

Table 1-1 compares BHC's existing resources with the combined system load obligations and includes Wygen II as a supply side resource starting in 2010.

TABLE 1-1
Combined System Peak Demand and Available Resources 2008-2027

Year	Peak Demand (megawatt [MW])	Reserve Margin (MW) ^a	Total Load with Reserve Margin (MW)	Existing Supply Side Resources ^b	Surplus or Deficit
2008	603	87	690	650	-40
2009	624	91	715	650	-65
2010	635	92	727	750	23
2011	645	94	739	750	11
2012	662	96	758	750	-8
2013	655	98	753	717	-36
2014	670	101	771	717	-54
2015	682	102	784	717	-67
2016	695	104	799	717	-82
2017	707	106	813	717	-96

Source: BHC, 2007.

^a Does not included reserves for a 20-megawatt sale to Municipal Energy Agency of Nebraska (MEAN).

^b Includes Wygen III commencing operation in 2010.

For BHC's IRP process, new resources are selected to ensure that the system satisfies applicable operating and planning reserve criteria. No resources were screened out of consideration in the modeling process. Therefore, all potential conventional and renewable resources were examined. The combination of resources that provides the lowest present value of revenue requirements (PVRR) to the BHC customers while satisfying the reliability criteria was selected and is referred to as the Base Plan.

IRP modeling was performed by Global Energy Decisions, a leading provider of resource planning information and software, using MIDAS Gold® software and its Markets, Portfolio, Capacity Expansion, Financial, and Risk Modules. Modeling results indicated that Wygen III is the lowest cost resource addition and should be targeted for completion by summer peak in 2010.

1.1 Benefits

Communities near the power plant Project will realize economic benefits, including:

- Job creation and stable employment
- Increased sales tax revenues from temporary and permanent employees during construction and operation
- Increased need for goods and services
- Increased property tax revenues
- Increased sales and use tax revenue from material used in power plant construction

1.1.1 Employment

Employment opportunities will be offered by the Project and may consist of:

- Cement workers
- Boilermakers
- Carpenters
- Electricians
- Ironworkers
- Surveyors
- Laborers
- Millwrights
- Operating engineers
- Painters
- Pipefitters
- Sheet metal workers

1.1.2 Operations Workforce

Upon completion, the operation of the plant will require approximately 15 to 18 full-time employees. A long-term benefit of the Project comes from permanent employees who will operate the power plant. These employees will add beneficial income to the local economy. In addition, the taxes paid by BHC and these employees contribute to the economic health of the region. It is anticipated that Project will have initial operation workforces in early- to mid-2010. The estimated 15 to 18 full-time job classifications and number of each are displayed in **Table 1-2**.

TABLE 1-2
Estimated Operations Workforce Summary by Job Classification

Job Classification	Number of Personnel
Unit Operators	5
Plant Operators	7 (high estimate of 10)
Instrument Technician	1
Administration	1
Plant Engineer	1

Source: BHC, 2007.

1.1.3 Purchase of Goods and Services

The construction and operation of the power plant will result in the purchase of goods and services, both for the power plant itself and for the needs of workers. Goods and services during construction will be obtained from various local and national vendors. The point of delivery for the Project will be the Neil Simpson Energy Complex.

1.1.4 Point of Delivery

BHC anticipates the majority of the Project components will be trucked to the Neil Simpson Energy Complex. The Project site will also use the previous Wygen II construction laydown area for storing and staging areas for equipment during the construction phase. Therefore, Campbell County will be the primary point of delivery for the Project.

1.1.5 Taxes

The property taxes that BHC will pay for the Project will contribute to the economic health of the region. The taxes assessed on the Project will depend on a number of factors, including industrial property valuation, mill levy, pollution control equipment exemptions, allocation factor, and obsolescence factor.

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2.0 Request for a 109 Permit Application

BHC intends to construct and operate a 100-megawatt (MW) coal-fired generating facility in the Neil Simpson Energy Complex adjacent to the Wygen II Project near Gillette, Wyoming. Because the estimated capital cost of the Wygen III Project is in excess of the current statutory threshold of \$163 million (W. S. 35-12-102(vii)), BHC is required to obtain a permit, or waiver of permit, prior to construction as specified by Wyoming Industrial Development and Information Siting Act (ISA).

2.1 Applicant Information

The applicant is:

Black Hills Corporation
Neil Simpson Energy Complex
13151 Highway 51
Gillette, Wyoming 82718

BHC is a diversified energy company with headquarters based in Rapid City, South Dakota. BHC is structured as a both non-regulated and regulated energy company. Wholesale non-regulated energy activity is conducted through the subsidiary Black Hills Energy. Black Hills Energy consists of power generation, coal mining, natural gas and oil production, and energy marketing. Retail operations include Cheyenne Light, Fuel and Power, an electric and gas distribution utility serving the Cheyenne, Wyoming, vicinity and Black Hills Power (BHP), the electric utility serving western South Dakota and parts of Wyoming and Montana.

The following managers have been designated by BHC to be responsible for permitting and constructing Wygen III:

Mr. Mark Lux
Black Hills Generation
350 Indiana Street
Suite 400
Golden, Colorado 80401

Mr. Richard Kaysen
Black Hills Consultant
223 Stetson Drive
Cheyenne, Wyoming 82009

Mr. Vern Schild
Director of Power Generation
Black Hills Power
Neil Simpson Complex
13151 Highway 51
Gillette, Wyoming 82718

Mr. Shawn Lesmeister
Wygen III Startup and O&M Manager
Black Hills Power
1717 East Interstate Avenue
Neil Simpson Complex
13151 Highway 51
Gillette, Wyoming 82718

2.2 Facility Description

The Project consists of a new 100-MW baseload coal-based power plant and associated transmission interconnection. Appendix F contains a drawing of the site layout. The power plant will be a mine-mouth facility using coal combustion technology and dry cooling. The Project will be supplied by sub-bituminous coal from the adjacent Wyodak mine. The Project will be similar to the recently constructed Wygen II facility, and the new Project will share the control center and the existing fuel handling system.

The Project will be part of the Neil Simpson Energy Complex, where subsidiaries of BHC own and operate Neil Simpson 1 and 2, Neil Simpson Combustion Turbines 1 and 2, Wygen I, Wygen II, and 20 percent of Wyodak. **Figure 2-1** depicts the Project site location.



FIGURE 2-1
Site Location

The Project will be constructed by numerous local and non-local contractors, and BHP will run daily operations upon Project startup.

2.3 General Power Plant Process Description

The generating plant produces electricity by combusting coal to produce heat to convert water to steam. The steam powers turbines attached to electric generators. Generators convert mechanical energy supplied by a turbine into electrical energy that is delivered to customers via high-voltage electric transmission lines. Each boiler/turbine/generator combination is referred to as a unit.

In a typical fossil fuel boiler, water-containing tubes line the inside of the furnace walls. Fuel is ignited and burned as it enters the furnace. The burning fuel releases thermal energy, which is absorbed by the water in the tubes. As the temperature of the water rises, the water begins to boil, and steam is produced. The steam is piped from the boiler to the steam turbine.

The steam turbine comprises blades attached to a rotating shaft. Steam turbines have stationary and rotating blades. As the high-pressure fluid from the boiler passes through the turbine blades, the steam and thermal energy of the steam are converted to mechanical energy. The mechanical energy causes the rotating set of blades to move, thus rotating the shaft of the turbine. The steam turbine shaft is coupled to the shaft of the electrical generator. The generator converts mechanical energy into electric energy.

As the steam passes through the turbine, it flows into the condenser. In the condenser, the steam is cooled and condensed back into water. The water is then pumped back to the boiler through a series of low-pressure condensate heaters, a de-aerator, boiler feed pumps, and then through several high-pressure feed water heaters. Then the cycle begins again.

The complete loop from the boiler, through the turbine, into the condenser, through the condensate and feed water systems, and back to the boiler is called the condensate-feedwater-steam cycle. All of the components and systems involved in the condensate-feedwater-steam cycle are generally referred to as one generating unit.

The major component systems of the proposed Wygen III are as follows:

- Fuel Handling
- Emissions Control Equipment
- Generating Unit
- Material Handling

Wygen III will use the existing fuel handling system available at the Wygen II facility. The summary description for Wygen III provided below includes a description of those systems that contain or affect the facility's air emissions. Other systems not containing or impacting air emissions or those systems with air emissions deemed insignificant by the Wyoming Department of Environmental Quality (WDEQ) are not included in this process description.

2.3.1 Wygen III Boiler

The proposed Wygen III boiler will be an indoor-type, subcritical, pulverized coal (PC) fired boiler designed for base load operation. The proposed primary fuel will be sub-bituminous coal from the Powder River Basin of Wyoming. The Wygen III coal heat input at full load is

estimated at 1.1×10^{13} British thermal units per year (Btu/yr) at 100 percent capacity factor and $1,300 \times 10^6$ Btu/hr. Natural gas will be used for light off, startup, and flame stabilization. Coal and natural gas burner configurations and combustion control systems will be designed to provide high-combustion efficiency and to control the production of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOCs) in the flue gas.

Flue gas from Wygen III will pass through a series of post-combustion emission control devices, and discharge through one 397-foot stack. A continuous emission monitoring system (Part 60 and part 75 CEMS) and continuous opacity monitor systems (COMS) will be provided to monitor emissions.

2.3.2 Emissions Control Equipment (Boiler)

The following sections detail the emission control equipment primarily associated with the boiler.

2.3.2.1 Flue Gas Desulfurization System

The Wygen III boiler unit will be equipped with dry scrubber flue gas desulfurization (FGD) system. The FGD system, located upstream from the fabric filter, removes sulfur dioxide (SO_2) and other sulfur compounds from the flue gas stream.

The FGD system will be designed to achieve a consistently controlled SO_2 emission rate of 0.12 pound per million British thermal units (lb/MMBtu) consistently on a 3-hour block average basis. The installation of a dry scrubber FGD system on Wygen III will result in sufficient SO_2 removal efficiency to meet a permit emission rate of 0.09 lb/MMBtu (30-day rolling average).

2.3.2.2 Low NO_x Burners and Selective Catalytic Reduction

Wygen III will have Low NO_x Burners (LNBS) to reduce the formation of NO_x in the combustion process in the boiler. Low NO_x burners control the formation of NO_x by staging the combustion of the coal to keep the peak flame temperature below the threshold for NO_x formation. The burner initially introduces the coal into the boiler with less air than is needed for complete combustion. The flame is then directed toward an area where additional combustion air is introduced from over-fire air (OFA) ports allowing final combustion of the fuel. Wygen III will also be equipped with a selective catalytic reduction (SCR) reactor to reduce NO_x emissions from the boiler. SCR is the state-of-the-art technology for the reduction of NO_x from flue gas streams.

NO_x emissions from the boiler (prior to the SCR) will be controlled with LNBS and OFA while maintaining acceptable levels of CO and VOC. The SCR will be designed to reduce the NO_x concentration to meet a permit emission limit of 0.075 lb/MMBtu (30 day rolling average).

2.3.2.3 Fabric Filters

A fabric filter dust collector system (or "baghouse") will be provided for Wygen III to remove particulate matter from the boiler flue gas stream. The fabric filter system will

consist of a number of compartments containing fabric filter bags fitted over a wire cage and suspended from a horizontal tube sheet in the compartment.

The fabric filter system will be designed to achieve a maximum filterable particulate matter less than the permitted 10 microns (PM₁₀) emission rate of 0.012 lb/MMBtu with a design collection efficiency of greater than 99 percent.

2.3.3 Material Handling

The material-handling system for Wygen III consists of coal handling, ash handling, and lime handling.

2.3.3.1 Coal Handling

Coal will be conveyed from the adjacent Wyodak mine to existing coal storage silos. Through a series of conveyors, coal will be transferred to the coal bunkers located in the boiler building. The conveyor transfer points will be equipped with dustless fogging systems that result in no air emissions. The bin vent filter from the coal silo will be manifolded to the main Wygen III boiler baghouse. The boiler baghouse, with removal efficiency of greater than 99 percent, will provide an additional level of particulate emissions control beyond the bin vent filters, thereby reducing the emissions to negligible levels.

2.3.3.2 Lime Handling

The lime-handling system will consist of lime storage and a preparation building. Lime is delivered to the plant via trucks and pneumatically transferred to the unloading silo. The silo will be equipped with a bin vent filter for particulate emissions control. In the lime preparation building, lime will be conveyed to mixer chambers where the lime is hydrated before it is sent to the hydrated lime grinder. This hydrated lime, together with flyash from the boiler baghouse, is utilized by the FGD system to remove SO₂ from the flue gas stream. BHC will manifold the vents from the lime-handling sources to the main Wygen III boiler baghouse, which will provide an additional level of control for particulate emissions.

2.3.3.3 Ash Handling

Flyash entrained in the hot boiler flue gas will be removed from the flue gas using a fabric filter baghouse. Ash will also be collected from other various locations throughout the duct work system by means of ash hoppers. Ash will be transferred from the hoppers to the storage silo. As the storage silo becomes full, ash will be periodically removed from the silo for disposal. Emissions from these operations will be controlled with bin vent filters. As a secondary level of emission control, vents from the ash-handling sources will also be manifolded into the Wygen III boiler baghouse. The boiler baghouse, with removal efficiency of greater than 99 percent, will provide an additional level of particulate emissions control beyond the bin vent filters, thereby reducing the emissions to negligible levels.

2.4 Transmission Interconnection

BHC will build a new transmission interconnection and interconnect to the new Donkey Creek substation. Wygen III will utilize existing transmission capacity with only a 1/4-mile interconnection needed to connect Wygen III to the Donkey Creek 230-kilovolt (kV) substation.

2.5 Water Supply

Pursuant to ISA Statute 35-12-108, a project applicant is required to obtain a Wyoming State Engineer's Office water supply and water yield analysis if the project requires the use of 800 or more acre feet per year (ac-ft/yr) of waters of the State of Wyoming.

BHC has provided preliminary water balance calculations for the power plant. It is important to note that the Project will use a dry cooling system, which substantially reduces the water requirements by approximately 3,000 gallons per minute (gpm). A significant portion of the annual water needs of the Project is associated with the pollution abatement systems. An estimated 34 to 48 ac-ft/yr (65 to 75 gpm) is used annually for the sulfur removal process, and the ash-loading system will use approximately 8 to 16 ac-ft/yr (15 to 30 gpm). The steam generator will use an estimated 48 ac-ft/yr (30 gpm) for soot blowing and boiler blow down.

Based on water balance calculations developed by BHC, the Project will require an estimated 210 to 242 ac-ft/yr of groundwater at full operation. The estimated 210 to 242 ac-ft/yr of Project water requirement is well below the statutory 800 ac-ft/yr threshold. Consequently, BHC previously submitted a letter asking for a satisfactory recommendation from the State Engineer's Office stating that the Project is not statutorily required to submit a water supply and water yield analysis.

The Project will obtain the necessary water supply from existing groundwater wells and Well 15, which has been approved for construction and operation.

2.6 Wastewater Discharge

Wastewater will be derived primarily from boiler blow down and scrubber wastes. The Project will discharge wastewater to the existing ash pond jointly owned by PacifiCorp and BHC's subsidiaries.

The existing ash pond on the floor of the Peerless Pit at the Wyodak mine will be used to dispose of wastewater from the Project. It consists of two cells, an ash cell and a clear water cell, separated by a divider dike. The clarified slurry water flows through the divider dike via a multiple-stage, controlled outlet system into the clear water pond for secondary settling.

The disposal pond has a maximum storage capacity of 464,156 cubic yards or 287.7 ac-ft. The embankment crest is at approximately 4,350 feet above mean sea level (MSL), and the pond bottom is at elevation 4,315 feet above MSL, which is also the bottom elevation of the coal seam. The emergency spillway has an invert elevation of 4,615 feet above MSL. There are

approximately 5 feet of freeboard between elevation 4,345 (emergency spillway invert) and elevation 4,350 (embankment crest). Approximately 0.5 foot is needed to convey the 100-year, 6-hour event of 3.4 inches.

An associated National Pollutant Discharge Elimination System (NPDES) permit allows the discharge of any excess water into Donkey Creek under specific effluent limits. However, the majority of the water that enters the disposal pond is recycled by the adjacent power plants, and discharges are rare. Alternatively, surplus water may be discharged into the low point of the Peerless Pit for disposal or as a source of future makeup water.

2.7 Safety

Safety and emergency systems will be incorporated into the design and construction of the facility to ensure safe and reliable operation. Worker safety programs will be developed for both construction and operation and implemented to ensure compliance with all federal and state occupational safety and health requirements.

2.8 Life of Power Plant Operation

On-life schedule of the Wygen III power plant is projected to be between 30 and 44 years, but may be extended depending on market conditions and overall condition of Project infrastructure.

2.9 Project Decommissioning/Reclamation

Decommissioning is a step-by-step, methodical deconstruction process that involves removing and disposing of Project infrastructure and appurtenant facilities.

If the Project were to terminate operations in the future, the Applicant would obtain the necessary authorization from the appropriate regulatory agencies to decommission the facilities. Generally, power plant projects that are decommissioned contain a high “scrap value” due to the materials and equipment contained in the Project infrastructure (steel infrastructure, electric generators, and copper).

In general, the decommissioning of the Project would result in a demolition of all foundations and any unsalvageable material would be disposed at authorized sites. The soil surface would be restored as close as reasonably possible to its original condition. The Project substation is generally valuable, and if the overhead power lines could not be used by BHC, all structures, conductors, and cables would be removed.

Reclamation procedures would be based on site-specific requirements and techniques commonly employed at the time the area is to be reclaimed, and would include regrading, adding topsoil, and revegetation of all disturbed areas. Revegetation would be done with appropriate seed mixes, based on native plant types in the Project area, and in consultation with the authorized agencies. Lastly, demolition or removal of equipment and facilities should meet environmental and health regulations and attempt to salvage economically recoverable materials or to recycle the Project site for future uses.

2.10 Legal/Permit Requirements

Permits may be required from local, state, or federal governments for the construction and operation of the Wygen III electric generation facility. **Table 2-1** provides a summary list of potentially required permits to construct and operate the facility.

TABLE 2-1

List of Potentially Required Permits to Construct and Operate the Wygen III Project

Issuing Agency	Permit	Status
Wyoming Department of Environmental Quality (WDEQ) – Division of Air Quality; Issuing Agency	Prevention of Significant Deterioration Construction Permit	Issued February 5, 2007.
U.S. Environmental Protection Agency (EPA); Reviews For Comment		
WDEQ – Division of Air Quality	Acid Rain Air Permit (Title IV)	Application submitted July 9, 2007.
WDEQ – Division of Air Quality; Issuing Agency	Title V Permit (Section 112(b))	Apply within 12 months of startup.
EPA; Reviews for Comment		
EPA	Safe Drinking Water Act	Potable water system at the plant. Water system, certified operator, and sampling/operating plan already in place.
WDEQ - Division of Water Quality	National Pollutant Discharge Elimination System (NPDES) requirements and other conditions as set by the state.	Permit in existence in the name of PacifiCorp. Needs modification prior to commencing operation to add Wygen III discharges. Application submittal anticipated early 2009.
WDEQ – Division of Water Quality	Storm Water Program - General Construction Permit - Industrial Permit	Site Construction Permit obtained; modifications will need to be submitted to WDEQ prior to commencement of construction.
WDEQ – Division of Industrial Siting	Industrial Siting Permit	In progress; to be submitted October, 2007.
Department of the Army Corps of Engineers (COE)	Permit to Discharge Dredged or Fill Material (Section 404 Permit)	For Wygen II, the COE issued a Nationwide Permit 33 for the temporary placement of fill in an unnamed tributary to Donkey Creek, and 0.21 acre of wetland adjacent to the unnamed tributary. No changes anticipated for Wygen III.
Federal Aviation Administration	Notice of Proposed Construction or Alteration	Approximate 60-day process for application development and approval. Work will begin in early 2008.

TABLE 2-1
List of Potentially Required Permits to Construct and Operate the Wygen III Project

Issuing Agency	Permit	Status
Campbell County	Building Permits	Past projects have been exempted by Campbell County. A letter will be submitted in late 2007 to request the same exemption.
U.S. Fish and Wildlife Service	Endangered Species Act Compliance (Section 7 Consultation)	COE conducts ESA Section 7 Consultation during Nationwide Permit review. However, Section 7 Consultation with USFWS was not warranted.
EPA	EPA ID number issued; assigned as a Conditionally Exempt Small Quantity Generator	Site already has ID number.
WDEQ – Division of Land Quality	Ash Disposal	Wyodak Mine anticipates amending existing permit early 2009.
Wyoming State Historic Preservation Office	Section 106, National Historic Preservation Act (1966) (If a federal nexus exists) Undertakings proposed on federal lands	BHC submitted a letter to the SHPO asking for a satisfactory recommendation to the ISD in October 2007.
Wyoming Public Service Commission	Certificate of Public Convenience and Necessity	Anticipate submittal in October 2007.

Source: BHC, 2007.

2.11 Public Involvement

BHC engaged in a comprehensive and proactive public involvement process, and has fulfilled the ISA statutory requirements to conduct meetings with state agencies and local government officials. BHC has been active in the communities that may be affected by the Project. BHC representatives participated in numerous informational meetings and presentations, served on committees, and actively sought out potentially affected municipalities, counties, state agencies, and other stakeholders to discuss potential environmental and socioeconomic issues and recommendations.

2.11.1 ISA Statute Meeting Activities

BHC representatives conducted ISA regulatory statute meetings as part of the pre-application filing process to meet with and receive comments from state agencies and local government officials. The Project study area, as identified by the WDEQ - ISD during the Jurisdictional Meeting, defined those local officials to whom BHC provided meeting invitations and sought to engage.

The meeting format and the information provided at the meetings for state agencies were generally the same as that provided at the meetings with local government officials.

Appendix D provides copies of state agency correspondence. The format and information consisted of the following:

- An overview of the Project
- A map of the proposed Project location
- An aerial map of the general facility footprint
- Information on Project benefits (e.g., classification of new job opportunities, estimate of tax revenue)
- Environmental considerations
- A tentative project schedule
- Information on the ISA permit application process

Copies of the presentational materials were provided to participants and a general question-and-answer session followed the presentation. Appendix C contains local jurisdiction meeting sign-in sheets and materials provided at these meetings. The following types and nature of the questions posed were similar across the meetings.

- The ISA process and impact assistance
- Socioeconomic issues (jobs/employment, available workforce, housing, tax revenue)
- Environment
- Housing
- Technical aspects
- Business viability and business aspects
- Local agency service and infrastructure survey results
- Transmission capacity and constraints

BHC representatives hand delivered a Letter of Introduction of the Project, and the Industrial Siting Division (ISD) Level of Service and Infrastructure Checklist Survey to each of the nineteen local governments in the study area on July 2 and July 3, 2007. A copy of the local agency level of service and infrastructure survey is attached as Appendix E. The purpose of the survey was to gather general information from the local governments that could be relevant to the Project and ISA application. Survey responses were shared with the ISD. In addition, an e-mail communication was provided to the local governments on August 17, 2007, that included an electronic copy of the above mentioned survey and the due date for the survey, and a copy of the ISD Procedures for Impact Assistance. On September 20, 2007, an email communication was provided to local governments on the updated Project construction schedule, a revised projected workforce estimate, and announcing there would be a delay in filing of the ISA with a new targeted filing date in mid-October 2007. Appendix A contains letters of support from various organizations. The information presented in **Table 2-2** is a summary list of public involvement activities.

TABLE 2-2
Wygen III – Local Government Jurisdiction Meetings

Organization	Date	General Discussion
Wyoming Department of Environmental Quality - Industrial Siting Division - Jurisdictional Meeting	May 9, 2007	Overview of Project; Industrial Siting Application process; Project benefits; workforce requirements; construction schedule; address local issues, concerns and questions.
State Engineer's Office	July 25, 2007	The general meeting content described above was used at all of the presentations.
Wyoming Department of Transportation	July 26, 2007	
Wyoming Game and Fish Department	July 26,2007; August 29, 2007	
Campbell County and City of Gillette (joint meeting)	August 16, 2007	
City of Newcastle	August 20, 2007	
Weston County	August 21, 2007	
Town of Hulett	August 21, 2007	
Town of Wright	August 27, 2007	
City of Sheridan	August 28, 2007	
Town of Kaycee	August 28, 2007	
Johnson County and City of Buffalo joint meeting	August 29, 2007	
Sheridan County	August 29, 2007	
Crook County and Town of Sundance joint meeting	September 4, 2007	
Converse County and City of Douglas joint meeting	September 5, 2007	
Town of Clearmont	September 9, 2007	
Town of Moorcroft	September 24, 2007	
Town of Pine Haven	September 24, 2007	
Town of Upton	September 25, 2007	
Campbell County Fire Department	October 1, 2007	
Campbell County Public Works	October 1, 2007	
Gillette Chamber of Commerce	October 1,2007	
Campbell County Sheriff	October 1,2007	
Campbell County Emergency Management Agency	October 1,2007	
City of Gillette Police Chief	October 1,2007	
Campbell County Conservation District	October 2,2007	
Campbell County Economic Development	October 2,2007	
Campbell County Memorial Hospital	October 2,2007	
Campbell County School District	October 2,2007	
Gillette College	October 2,2007	
Wyoming Department of Environmental Quality – Industrial Siting Division – Pre-application Meeting	October 8, 2007	

Source: BHC, 2007.

2.12 Comprehensive Workforce Housing Plan

During the planning phase of the Project, BHC made strong efforts to obtain contracts from local general contractors and subcontractors to ease the potential impacts associated with hiring a large, non-local workforce. BHC feels that the hiring of local contractors is advantageous for several reasons. A primary benefit of hiring local contractors is that a majority of the contractor's employees are permanent residents of the local communities. These permanent residents help to relieve pressures on both the temporary and long-term housing needs in the area of impact. In addition, the generation of local sales and use taxes and a highly skilled construction workforce located in the communities provides a local net benefit.

BHC has solicited Letters of Intent for nine major contracts. To date, BHC has received a signed Letter of Intent from a local general contractor, Hladky Construction, Inc. of Gillette, Wyoming. Hladky Construction, Inc. will perform rolled steel section piles installation, civil works including foundations, air cooled condenser installation, and architectural finishes. Letters of Intent were issued to non-local general contractors to complete electrical, mechanical, steam generator, chimney, and structural steel contracts. BHC anticipates receipt of these Letters of Intent after submittal of the ISA application.

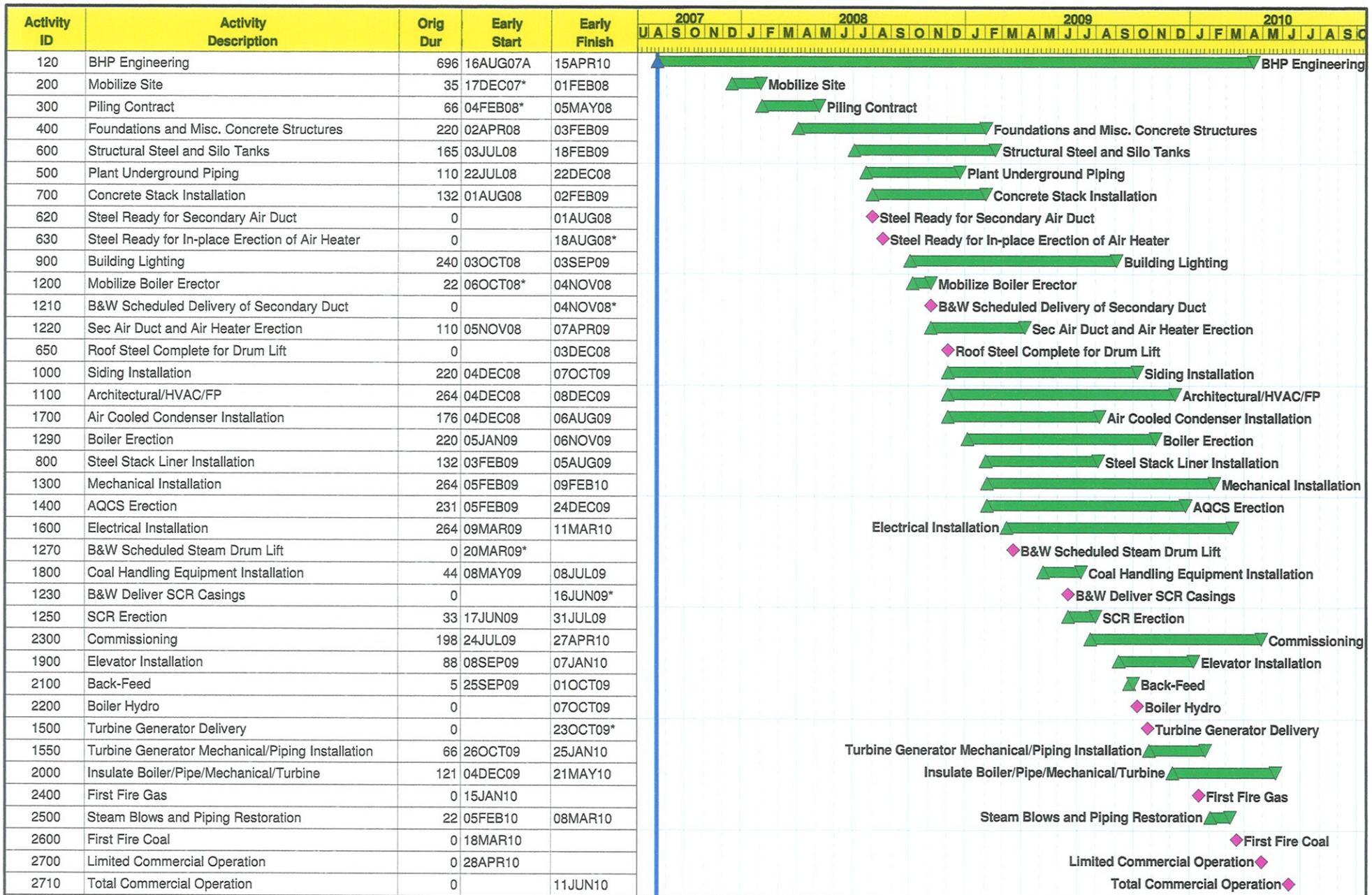
BHC's comprehensive workforce housing plan focused on obtaining proven temporary housing options for the non-local construction workforce. BHC's housing plan will be initiated in a phased approach and will have a capacity to support the total housing needs of the non-local construction tradesmen from mid- 2008 through early 2010. Specifically, the non-local workforce housing plan centers on providing proven housing stock for the non-local construction workforce using a combination of two primary options: securing motel contracts, and development of a worker camp on BHC or other suitable private lands using manufactured housing units. Each of the housing options is discussed in more detail in the following sections. BHC did not develop housing plan options for the anticipated local workforce that will primarily consist of Hladky Construction, Inc. employees and additional local subcontractors.

2.12.1 Project Schedule and Workforce Curve

BHC has completed estimates for both the Project timeline and estimates of the construction workforce by month. The following sections provide detail on both the Project schedule and construction workforce including the peak construction time period.

2.12.1.1 Project Schedule

The current Project schedule is summarized in **Figure 2-2**. BHC anticipates that site mobilization and construction will start in the first quarter of 2008 with 90 percent construction completion occurring in the fourth quarter of 2009. Startup and commissioning will follow with commercial operation expected in early 2010.



Start Date 28JUL07
 Finish Date 11JUN10
 Data Date 16AUG07
 Run Date 25AUG07 11:55



WYG3
 Black Hills Generation
 Wygen 3 Unit 5 1009 Turbine Delivery
 Preliminary Baseline Schedule

Sheet 1 of 1

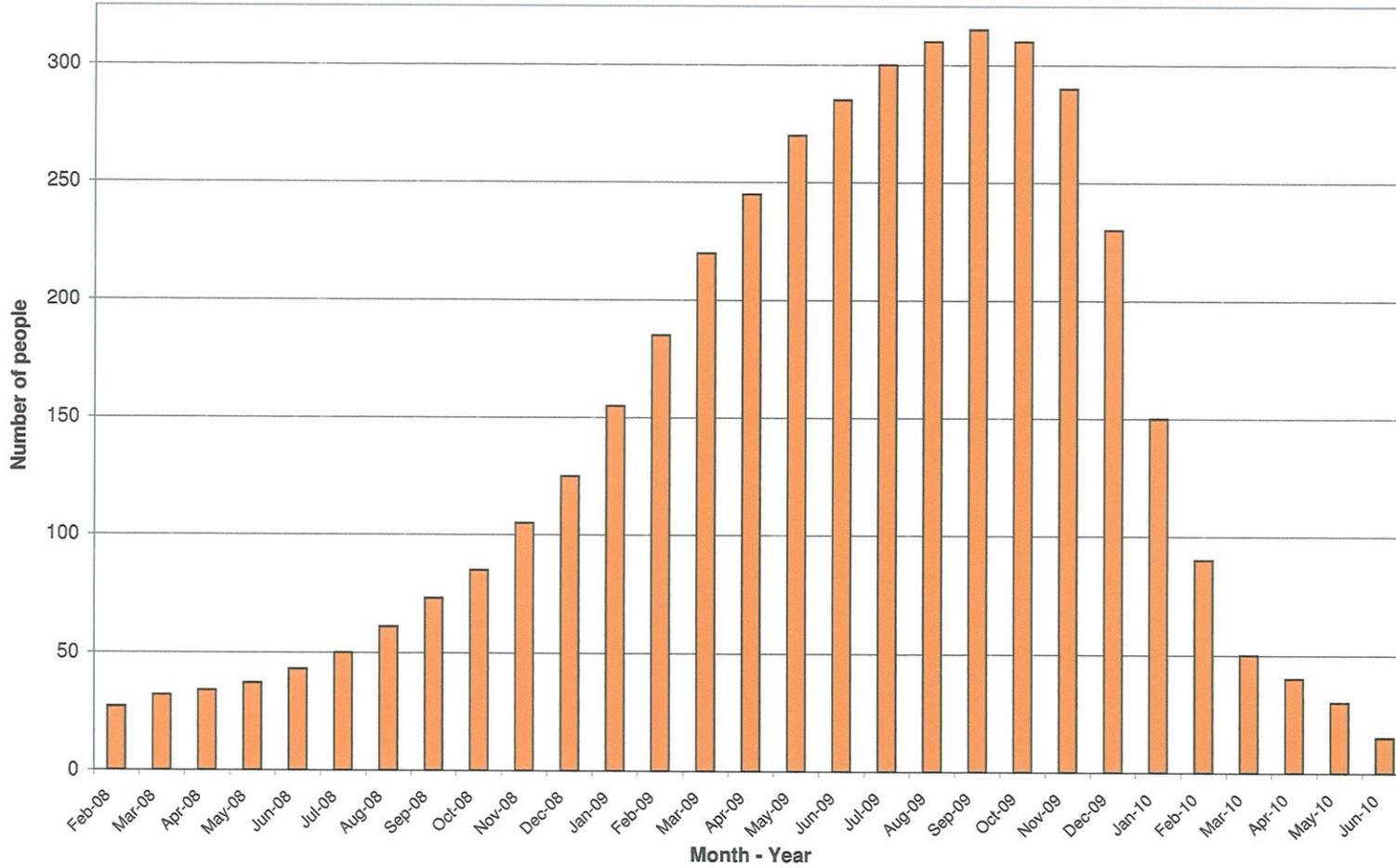
Date	Revision	Checked	Approved

2.12.1.2 Construction Workforce Estimate

The estimated number of Wygen III construction workers is detailed in **Figure 2-3**. BHC anticipates that an average of 145 workers and a peak workforce of 315 construction workers will be employed during the proposed 29-month Project construction period. The estimated workforce will peak in September 2009. The Project will have a 9-month period where the construction workforce will exceed 250 workers and a 5-month period where it will exceed 300 workers.

Site preparation, pile driving, and foundations will commence during the month of February 2008 and begin nearing completion by September 2008. Based on the received Letter of Intent from Hladky Construction, Inc., this local contractor will initiate and complete a majority of these tasks in 2008. It is assumed that Hladky Construction, Inc., will use approximately 146 local construction tradesmen (106 Hladky Construction, Inc. plus 40 local subcontractors) during this period of Project construction. It is assumed that these local construction tradesmen will be local residents (e.g., within 100 miles of the Project). During 2009, the main balance of plant construction activities will be initiated, including the erection of the mechanical/piping, electrical/instrument controls, turbine installation, steam generator, steel chimney liner, air quality control systems, architectural, and heating ventilation. BHC estimates a peak of 260 non-local construction employees will be required to complete the balance of plant construction activities in 2009.

Wygen 3 Unit 5 Projected Manpower



Month	Number of People
1 Feb-08	27
2 Mar-08	32
3 Apr-08	34
4 May-08	37
5 Jun-08	43
6 Jul-08	50
7 Aug-08	61
8 Sep-08	73
9 Oct-08	85
10 Nov-08	105
11 Dec-08	125
12 Jan-09	155
13 Feb-09	185
14 Mar-09	220
15 Apr-09	245
16 May-09	270
17 Jun-09	285
18 Jul-09	300
19 Aug-09	310
20 Sep-09	315
21 Oct-09	310
22 Nov-09	290
23 Dec-09	230
24 Jan-10	150
25 Feb-10	90
26 Mar-10	50
27 Apr-10	40
28 May-10	30
29 Jun-10	15



2.12.2 Construction Plan

BHC is committed to start the construction of Wygen III immediately after receiving the Industrial Siting Council permit and the Certificate of Public Convenience and Necessity approval from the Wyoming Public Service Commission. BHC has presently committed to purchase major equipment including the steam generator, turbine/generator, and air-cooled condenser. BHC's engineering contractors are presently completing all initial engineering activities.

The large majority of the work will be concentrated in a 14-month period during which the primary balance of the Project will be constructed and the steam turbine will be installed. The workforce would peak in September 2009 when it is expected that 315 workers would be on site throughout the month. Construction will take place over a number of phases as follow and last approximately 29 months:

- **Site Civil Work and Steel Erection (12-month duration)** - Hladky Construction mobilization on site; site civil; driven piles and foundations; steel erection; and underground piping. Period of construction occurs from February 2008 to February 2009, and an estimated phase-specific peak construction workforce of 106.
- **Chimney (12-month duration)** - construct power plant chimney stack, and steel liner. Period of construction occurs from August 2008 to July 2009, and an estimated peak construction workforce of 6.
- **Building Lighting (11-month duration)** - interior and exterior power plant lighting. Period of construction occurs from October 2008 to August 2009, and an estimated peak construction workforce of 3.
- **Air Duct/Air Heater (6-month duration)** - air duct and air heater installation secondary air ducts out of boiler. Period of construction occurs from November 2008 to April 2009, and an estimated peak construction workforce of 15.
- **Cladding (10-month duration)** - construction and finish building siding. Period of construction occurs from December 2008 to September 2009, and an estimated peak construction workforce of 15.
- **Architectural Finishes (13-month duration)** - construction of control room, windows, rooms, and painting of exposed surfaces. Period of construction occurs from December 2008 to December 2009, and an estimated peak construction workforce of 10.
- **Air Cooled Condenser (9-month duration)** - construct air cooled condenser (condenses exhaust steam from the steam turbine and returns condensate to the boiler). Period of construction occurs from December 2008 to August 2009, and an estimated peak construction workforce of 30.
- **Steam Boiler (13-month duration)** - construct steam boiler (furnace in which fuel is burned and the heat is used to produce steam). Period of construction occurs from December 2008 to December 2009, and an estimated peak construction workforce of 55.

- **Mechanical / Piping (13-month duration)** - balance of plant mechanical plant equipment piping of the plant. Period of construction occurs from December 2008 to December 2009, and an estimated peak construction workforce of 55.
- **Coal Handling (3-month duration)** - construction of the coal handling facility. Period of construction occurs from May 2009 to July 2009, and an estimated peak construction workforce of 8.
- **Air Quality Control Systems [AQCS] (11-month duration)** - pollution control and air monitoring systems. Period of construction occurs from February 2009 to December 2009, and an estimated peak construction workforce of 50.
- **Electrical / Instrumentation (15-month duration)** - instrument controls and all power plant electrical. Period of construction occurs from March 2009 to May 2010, and an estimated peak construction workforce of 65.
- **Insulation / Lagging (7-month duration)** - site insulation and lagging. Period of construction occurs from October 2009 to April 2010, and an estimated peak construction workforce of 40.
- **Scrubber [SCR] (2-month duration)** - scrubber installation. Period of construction occurs from June 2009 to July 2009, and an estimated peak construction workforce of 10.
- **Commissioning (10-month duration)** - site commissioning. Period of construction occurs from July 2009 to April 2010, and an estimated peak construction workforce of 10.

2.12.2.1 2008 Construction Plan

Starting in February 2008, BHC will complete the installation of piles, foundations, structural steel, chimney erection, and initial activities of the steam generator and building siding erection. The key goal during 2008 will be to substantially complete all required civil construction activities to allow the closing (cladding) of the steam generator and turbine/generator building structures.

A review of the construction schedule shows site preparation, pile driving, foundations, and underground utilities, which will commence during the month of February 2008 and complete a majority of the contracts by September 2008. Based on the Letter of Intent from Hladky Construction, Inc., the local contractor will complete these two tasks and will use local construction tradesman during this period of Project construction. BHC will proceed to erect the structural steel, chimney, and initial boiler during the latter part of 2008. These construction tasks are expected to require approximately 50 non-local construction tradesman who will temporarily reside in the Gillette area and require housing. The 50 motel beds BHC has secured will house the anticipated non-local construction tradesman during 2008.

2.12.2.2 2009 Construction Plan

During 2009, the main balance of plant construction activities will be initiated, including the erection of the mechanical/piping, electrical/instrument controls, turbine installation, steam generator, steel chimney liner, air quality control systems, architectural, and heating ventilation. Construction activities will peak during 2009 with the key scheduled dates of

the turbine generator delivery in October 2009, and the steam generator hydrostatic test planned in October 2009. The initial commissioning of the plant equipment will start in July 2009 and continue throughout the remaining months of 2009.

2.12.2.3 2010 Construction Plan

The completion of all construction and commissioning activities will occur during 2010, and the following are key milestone completion dates for Wygen III:

- First Fire on Gas January 15, 2010
- Steam Blows February 5, 2010
- First Fire on Coal March 18, 2010
- Limited Commercial Operation April 28, 2010
- Total Commercial Operation June 11, 2010

2.12.3 Local Construction Workforce

Hladky Construction, Inc. is a local general contractor specializing in commercial and industrial construction and provides construction specialties in concrete, steel erection, architectural finishing and pile driving. BHC estimates that Hladky Construction, Inc. will provide an estimated 146 local construction jobs (including local subcontractors) to complete the contracts issued for the Project. A majority of the Hladky Construction, Inc. contracts will be initiated and substantially completed in 2008. Therefore, a large majority of the 2008 Project workforce is assumed to reside either temporarily or permanently in the area of impact and previously obtained either temporary or permanent housing options. Those employees residing outside of the area of impact, which could include both temporary and permanent laborers employed by Hladky Construction, Inc, were also assumed to be local workers that have obtained either temporary or permanent housing options. Therefore, it is assumed that all local construction workers employed by Hladky Construction, Inc. would be within a 100-mile commute distance.

2.12.4 Non-Local Construction Workforce

As stated previously, BHC submitted Letters of Intent for the balance of the nine major contracts including structural steel, chimney, steam generator, mechanical, and electrical to non-local general contractors. A majority of these contracts relate to the balance of plant construction activities that will initiate the latter part of 2008 and continue throughout 2009. BHC estimates that these construction contracts will require a peak of approximately 260 non-local construction tradesmen who would require temporary housing, primarily during the peak construction schedule that occurs in 2009.

2.12.4.1 Senior Management/Supervisor Workforce

A review of the Wygen II data shows that approximately 30 non-local senior management/supervisor workforce relocated with their families during the construction period. Because the construction schedule for the Project is approximately 29 months, we have assumed that the senior management/supervisors that will spend in excess of 18 months employed on the Project will require long-term housing options. Because the Project workforce will be similar in size, we assumed an estimate of 30 family housing units

will be required for the senior management and senior supervisors employed by the general contractors and BHC construction management personnel.

A review of the Wygen II data shows that the senior management/supervisor non-local workforce accompanied by family members will seek to relocate primarily to the City of Gillette and the Town of Moorcroft. This is primarily due to the choice of several temporary and affordable longer term rental housing options and close proximity to the Project site.

2.12.4.2 Single Worker

Based on the type of labor required to complete construction contracts on the power plant, a majority of the workforce is anticipated to be single and male. Because the majority of the workforce will be relocating as a single entity, BHC looked to secure motel/hotel and multi-dwelling temporary housing options for this majority group.

2.12.5 Housing Plan Options

BHC is committed to making temporary housing options available for the single, non-local construction tradesmen during the construction of the Project. BHC's housing plan will be initiated in a phased approach and will have the capacity to support the total housing needs of the non-local construction tradesmen from mid-2008 through early 2010. BHC plans to phase the provision of housing based on the need as it arises, as the non-local construction tradesmen do have the final right to choose where they obtain their housing, and could do so, if other more attractive, economical accommodations exist within an acceptable commuting distance during their tenure on the Project.

BHC proposes to monitor housing requirements by reviewing the ISA permit condition, which requires documentation of construction workforce at both place of residency at hire and during hiring. Decisions to implement the housing phases and ordering of the single-section Housing and Urban Development (HUD) code home units will be developed in consultation with the ISD. BHC has negotiated an option agreement for securing single-section HUD code homes from a local supplier.

BHC plans to implement the housing plan in two phases:

- Phase 1: Install up to 25 single-section HUD code home units providing between 50 and 75 beds (final number will be determined by availability of two- or three-bedroom single-section HUD code home units at the time of purchase). This will be determined by need and support for the peak non-local workforce and will be ready for occupancy by September 1, 2008. This will supplement the 50 secured motel beds, totaling up to 125 available beds by September 1, 2008.
- Phase 2: Install increments of five single-section HUD code home units providing between 10 and 15 beds. This will be determined by need and support for the peak non-local workforce, which will increase during the execution of balance of plant contracts including mechanical, boiler, and electrical (includes insulators and cladding) contracts in 2009. Based on the Project workforce curve and construction schedule, the peak of the Project non-local workforce will occur primarily during the period from November 2008

to January 2010. It is anticipated that Phase I and potentially Phase II would be initiated concurrently during this period of the construction schedule.

2.12.5.1 Motel/Hotel Temporary Housing Option

The motel and hotel housing plan focused on securing contracts for a set number of beds to provide proven housing stock for the single, non-local workforce. A primary tenet of the motel/hotel housing option was to find suitable properties that were at or near a subsistence rate of approximately \$40 per day per bed. In developing the plan, BHC contacted hotels and motels within a radius of 100 miles to determine availability and owner interest in providing accommodations for the non-local workforce. Viable motels were selected from those offering accommodations, based on an evaluation of quality and cleanliness, daily subsistence rates, and proximity to the construction site, and negotiations were entered by BHC. Based on this evaluation process, BHC has obtained a contractual commitment for up to 50 beds.

2.12.5.2 Worker Camp Temporary Housing Option

In this option, BHC has committed to provide additional beds, as needed to meet the main housing needs of the non-local construction tradesmen through the primary workforce peak period in 2009 and 2010. This will be accomplished by installing temporary two- or three-bedroom single-section HUD code home units (or their equivalent) on BHC property or at an acceptable alternate location. BHC has negotiated an option agreement with a local manufactured home sales group.

The manufactured home development would consist of 880 to 1,152 square feet, two- or three-bedroom, one- or two- bath homes placed on either BHC private fee lands or other acceptable private lands. The larger homes could accommodate up to six workers; however, for the purposes of this application, a maximum occupancy of three per single-section HUD code home unit is assumed. In addition, this analysis assumes that Phase II would be required to accommodate the high-employment periods anticipated to occur between December 2008 and October 2009.

As stated previously, the worker camp accommodations would be developed on either BHC lands or private lands and would provide both room and board for the workers and parking lots for employee vehicles. To gain a better understanding of the requirements to develop a worker camp, BHC has engaged the services of a local Gillette engineering firm. The local engineering firm has developed preliminary cost estimates, plot plans including preliminary layout of required infrastructure, and list of required permits to develop a worker camp in Campbell County. In addition, the engineering firm evaluated and screened two private properties for the most suitable worker camp. **Figure 2-4** provides a schematic presentation of the preliminary worker camp site layout on BHC-owned lands.

3.0 Baseline Data and Analysis of Socioeconomic Impacts

The purpose of the socioeconomic analysis is to identify and quantify impacts associated with the construction and operation of the power plant that are likely to affect communities and other political entities. The results of this analysis will provide the Wyoming Industrial Siting Council with an estimation of socioeconomic impacts and associated mitigation measures. The analysis will also assist in efforts to ensure that statutory-issued impact assistance funding is provided to communities and political subdivisions impacted by the construction of the power plant.

The socioeconomic analysis evaluated the potential benefits and impacts to social and economic resources in the Project study area, including the benefits derived from increased tax revenue, direct employee opportunities, and indirect employment benefits.

The socioeconomic analysis includes an assessment of the present and future baseline conditions (without the Project) in an area of influence referred to as the study area. The majority of Project-related impacts are expected to occur within a narrower geographic region called the area of impact. The baseline conditions include the identification of the capacity of the resources involved, including the current standards for carrying capacities and the number of people currently served.

Impacts are based on the effects that additional workers and any accompanying family members could have on community resources. A determination is made of whether or not the systems in place, or the anticipated expanded systems in the future (based on current plans), will be able to satisfy the anticipated additional demand created by the Project. Mitigation efforts are proposed for those resources that are deemed unlikely to be able to meet the additional demands of the additional population associated with the Project. The methodology employed in the socioeconomic impact assessment process is presented in **Figure 3-1**.

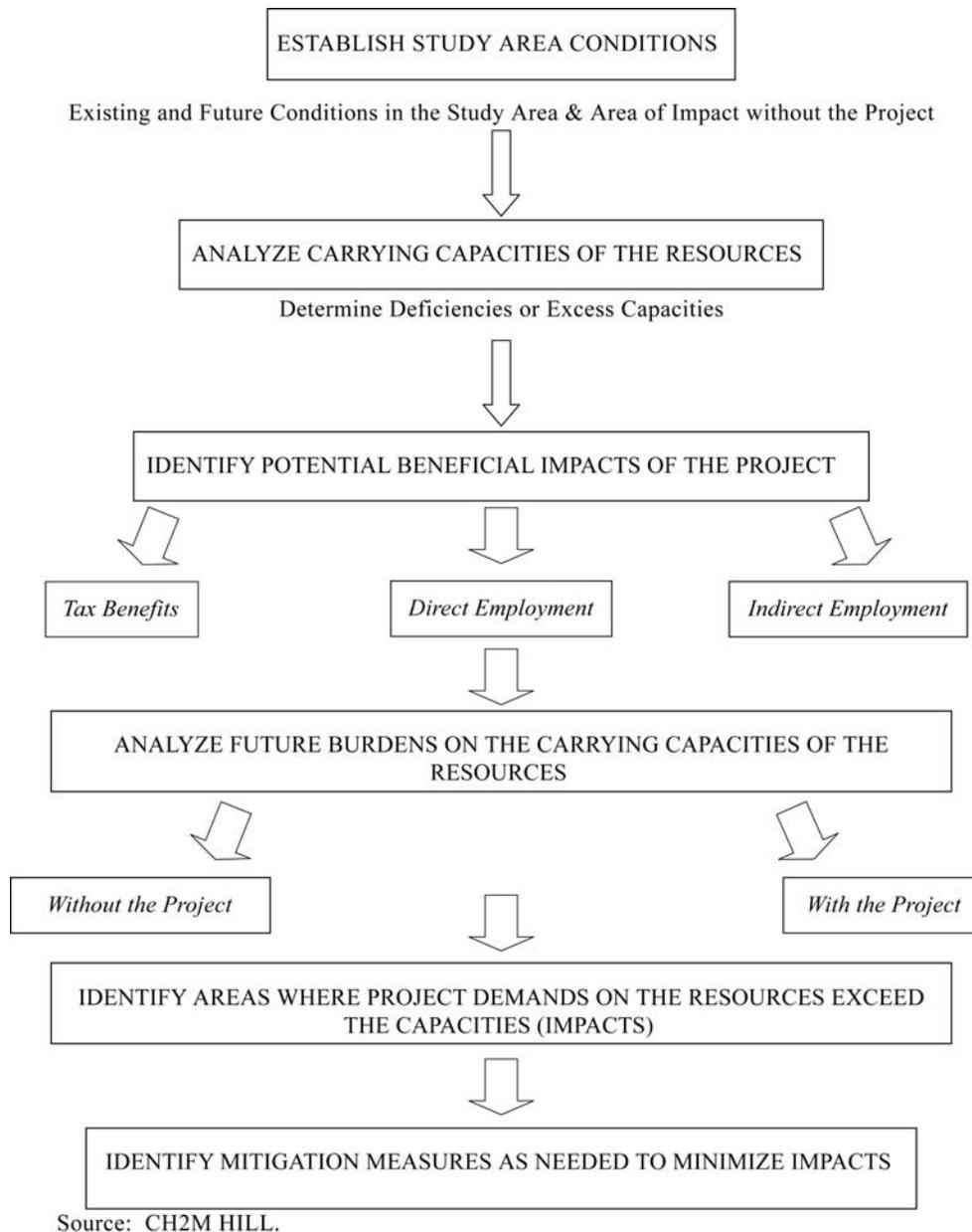


FIGURE 3-1
Socioeconomic Process

3.1 Study Area

The study area for the proposed Project site in Campbell County is comprised of six counties and a number of incorporated places. The counties include the following:

- Campbell
- Converse
- Sheridan
- Crook
- Johnson
- Weston

These counties were identified in cooperation with the Industrial Siting Division staff. They are the potential places of residence of workers who would occupy temporary or permanent housing and commute to the Project site. A map of the study area is shown in **Figure 3-2**.



FIGURE 3-2
Study Area

3.2 Baseline Socioeconomic Conditions within the Study Area

The purpose of the socioeconomic impact analysis is to provide information to the Wyoming Industrial Siting Council regarding socioeconomic impacts and associated mitigation efforts associated with construction and operation of the power plant.

Existing conditions for the following socioeconomic resources (i.e., baseline conditions) in the study area are described in detail:

- Population
- Economic activity
- Housing
- Education
- Public safety
- Health care
- Municipal services
- Transportation

The analysis includes an assessment of the present and future baseline conditions (without the Project) in the study area as well as in a narrower geographic region referred to as the area of impact. Baseline conditions include the identification of the capacity of the resources involved, including the current standards for carrying capacities and the number of people currently served.

3.2.1 Population

Pertinent characteristics of the past and present population in the study area are presented in the following section. The population factors that will be the most important in determining the location and availability of the local labor force include the location of the population centers and the age distribution of the population (i.e., the identification of areas where persons of working age reside). Population forecasts are presented for the years 2008 and 2010 because these years coincide with the anticipated start and end of construction activities for the Project.

3.2.1.1 Past Population Trends

According to the City of Gillette *2006 Housing and Demographic Survey January-December 2006*, the city has grown from 10,236 people in 1975 to 27,533 people in 2006. This is an average population growth of 3.01 percent per year. Campbell and Converse Counties have experienced the most dramatic population increases of the six counties comprising the study area. While the number of residents in Crook, Johnson, and Weston County has also grown, Campbell and Converse Counties have registered the largest growth, increasing from 5,233 and 7,871 persons, respectively, in 1920 to 33,698 and 12,052 residents, respectively, in 2000. Between 1920 and 1990, Sheridan County had the largest population in the six-county area, until 1990, when the population of Campbell County surpassed that of Sheridan County when its number of residents climbed to 29,370 persons.

Table 3-1 displays population by county from 1920 to 2000.

TABLE 3-1
Population Trends in the Study Area

County	1920	1930	1940	1950	1960	1970	1980	1990	2000
Campbell	5,233	6,720	6,048	4,839	5,861	12,957	24,367	29,370	33,698
Converse	7,871	7,145	6,631	5,933	6,366	5,938	14,069	11,128	12,052
Crook	5,524	5,333	5,463	4,738	4,691	4,535	5,308	5,294	5,887
Johnson	4,617	4,816	4,980	4,707	5,475	5,587	6,700	6,145	7,075
Sheridan	18,182	16,875	19,255	20,185	18,989	17,852	25,048	23,562	26,560
Weston	4,631	4,673	4,958	6,733	7,929	6,307	7,106	6,518	6,644
Total	46,058	45,562	47,335	47,135	49,311	53,176	82,598	82,017	91,916

Source: State of Wyoming, Department of Administration and Information, Economic Analysis Division, 2007
http://eadiv.state.wy.us/demog_data/cntyctcity_hist.htm

The greatest population growth in Campbell County occurred in the 1960s and 1970s. The Campbell County population has increased by 121 percent from 1960 to 1970 and 88 percent

from 1970 to 1980. Converse County also saw substantial growth in population in the 1970s, when the number of residents in the county rose 137 percent. Sheridan County, meanwhile, has seen very modest growth (or slight declines) in population between 1920 and 1980. However, between 1970 and 1980, Sheridan County posted a significant 40 percent increase in population. The years from 1970 to 1980 and from 1990 to 2000 mark the only decades in which all of the counties in the study area registered population increases. The growth in population from 1970 to 1980 is generally attributed to the energy boom occurring during that decade. Growth in the years from 1990 to 2000 has been modest, ranging from 2 percent in Weston County to 13 percent in Sheridan County and 15 percent in Campbell and Johnson Counties. Overall, population growth doubled in the study area from 1920 to 2000.

Crook County's population has been flat or posted modest decreases in the decades from 1920 to 1940, 1950 to 1970, and from 1980 to 1990. Crook County registered a significant population decrease from 1940 to 1950 and substantial increases from 1970 to 1980 and from 1990 to 2000.

Johnson County saw modest increases and decreases in population until 1950, when a decade of growth was followed by a decade of stability. The population in Johnson County rose 16 percent from 1950 to 1960, 20 percent from 1970 to 1980, and 15 percent from 1990 to 2000. Population change in the county during the interim years ranged from a 2 percent increase between 1960 and 1970, and an 8 percent loss between 1980 and 1990.

Sheridan County experienced a modest growth or slight decline in population over the past 80 years with the decades from 1920 to 1930, 1950 to 1960, 1960 to 1970, and 1980 to 1990 witnessing 4 to 7 percent decadal declines. The decades from 1930 to 1940, 1940 to 1950, 1970 to 1980 and 1990 to 2000 saw a growth in population of 14, 5, 40, and 13 percent, respectively.

Weston County has also seen uneven growth over the past 80 years, with the largest population increases coming in the decades from 1940 to 1950 (36 percent), 1950 to 1960 (18 percent), and 1970 to 1980 (13 percent). The interim decades for Weston County saw either a modest growth in population (1 to 6 percent) or a moderate decline (-8 percent).

Overall, the study area has seen modest growth or decline in population over the period 1920 to 2000 with the exception of significant growth (55 percent) in the 1970s and stable growth (12 percent) in the 1990s. **Table 3-2** shows the percentage change in population by county by decade.

TABLE 3-2
Percent Growth by County by Decade

County	1920 to 1930	1930 to 1940	1940 to 1950	1950 to 1960	1960 to 1970	1970 to 1980	1980 to 1990	1990 to 2000
Campbell	28%	-10%	-20%	21%	121%	88%	21%	15%
Converse	-9%	-7%	-11%	7%	-7%	137%	-21%	8%
Crook	-3%	2%	-13%	-1%	-3%	17%	0	11%
Johnson	4%	3%	-5%	16%	2%	20%	-8%	15%
Sheridan	-7%	14%	5%	-6%	-6%	40%	-6%	13%
Weston	1%	6%	36%	18%	-20%	13%	-8%	2%
Total Study Area	-1%	4%	-0.4%	5%	8%	55%	-0.7%	12%

Source: State of Wyoming, Department of Administration and Information, Economic Analysis Division, 2007.

3.2.1.2 Present Population Trends - Density and Location of the Population

The most important factors in determining the location and availability of the local labor force are the location of the population centers and the age distribution of the population. Of the six counties in the study area, Campbell, Converse, and Sheridan Counties accounted for 79 percent of the total 2000 population, with 33,698, 12,052, and 26,560 persons, respectively. These counties also contain the three largest cities in the study area: Gillette, Douglas, and Sheridan.

The 2000 population, number of households, and average household size of the 24 cities in the study area are displayed in **Table 3-3** below.

TABLE 3-3
Existing Population, Households, and Average Household Size in the Study Area, 2000

City	Population	Number of Households	Average Household Size
Campbell County			
Gillette	19,646	7,390	2.6
Wright	1,347	475	2.8
Converse County			
Douglas	5,288	2,118	2.5
Glenrock	2,231	925	2.4
Lost Springs	1	1	1
Rolling Hills	449	135	3.3
Crook County			
Hulett	408	173	2.4
Moorcroft	807	325	2.5
Pine Haven	222	102	2.2
Sundance	1,161	476	2.3
Johnson County			
Buffalo	3,900	1,718	2.2
Kaycee	249	103	2.4
Sheridan County			
Clearmont	115	50	2.3
Dayton	678	277	2.4
Ranchester	701	277	2.5
Sheridan	15,804	7,005	2.2
Weston County			
Newcastle	3,065	1,253	2.4
Upton	872	359	2.4
TOTAL	56,944	23,162	2.4

Source: 2000 U.S. Census

With a 2000 census population of 19,646 and an estimated 2006 population of 27,533, Gillette is the largest city in the study area, followed by Sheridan, Douglas, Newcastle, and Buffalo. The average household size in the study area is 2.4 persons per household.

3.2.1.3 Age of the Population

Table 3-4 compares the existing population, by age, in the study area counties and the State of Wyoming. The age distribution in Campbell County is consistent with the age distribution for the State of Wyoming as a whole. The other counties have slightly lower percentages of the age cohort from 20 to 39 and slightly higher percentages of the age cohort from 40 to 64.

TABLE 3-4
Year 2000 Population in Wyoming and Study Area Counties by Age and Age Cohort Percent of the Total

Geographic Area	Age						Total
	0 to 9	10 to 19	20 to 39	40 to 64	65 to 79	80+	
Wyoming							
Number	65,067	80,279	129,791	160,952	43,151	14,542	493,782
Percent	13%	16%	26%	33%	9%	3%	
Campbell County							
Number	5,241	6,245	9,375	11,066	1,397	374	33,698
Percent	16%	18%	28%	33%	4%	1%	
Converse County							
Number	1,685	2,043	2,800	4,195	1,044	285	12,052
Percent	14%	17%	23%	35%	9%	2%	
Crook County							
Number	699	1,027	1,199	2,094	646	222	5,887
Percent	12%	17%	20%	36%	11%	4%	
Johnson County							
Number	834	1,042	1,332	2,592	948	327	7,075
Percent	12%	15%	19%	37%	13%	5%	
Sheridan County							
Number	3,049	4,103	5,877	9,410	2,922	1,199	26,560
Percent	11%	15%	22%	35%	11%	5%	
Weston County							
Number	705	1,090	1,447	2,366	745	291	6,644
Percent	11%	16%	22%	36%	11%	4%	

Source: U.S. 2000 Census.

3.2.1.4 Future Population

It is important to estimate future population growth in the study area to assist in the determination of the effects of the additional population created as a result of the construction and operation of the facility. Construction is anticipated to occur from 2008 to 2010. Therefore, baseline population forecasts focus on the period from 2000 to 2010.

3.2.1.5 Population Projections

Population projections for the study area show moderate growth in Campbell and Johnson Counties, slow growth in Converse, Crook, and Sheridan Counties, and little to no growth in Weston County. **Table 3-5** displays the population projections for the study area.

TABLE 3-5
Future Baseline Population Projections in the Study Area (Without the Project)

County	2000	2008 Projection	2010 Projection	% Increase 2000 to 2008	% Increase 2008 to 2010	Average Annual Projected Percent Increase 2000 to 2010
Campbell	33,698	41,040	43,090	2.5	2.5	2.5
Converse	12,052	13,160	13,400	1.1	0.9	1.1
Crook	5,887	6,380	6,520	1.0	1.1	1.1
Johnson	7,075	8,400	8,780	2.2	2.2	2.2
Sheridan	26,560	28,310	28,750	0.8	0.8	0.8
Weston	6,644	6,740	6,730	0.2	-0.1	0.1

Source: State of Wyoming, Department of Administration and Information, Economic Analysis Division, 2006
<http://eadiv.state.wy.us/pop/wycandsc20.htm>.

Campbell and Johnson Counties are projected to grow at an average annual rate of 2.8 and 2.4 percent, respectively, over the period 2000-2010. Sheridan County is projected to grow at an average annual rate of 0.8 percent. Both Converse and Crook Counties are anticipated to grow at an average annual rate of 1.1 percent while growth in Weston County is expected to remain virtually flat.

According to State of Wyoming forecasts, the future age distribution of the population in the study area is anticipated to remain generally the same through 2010. After 2010, it is projected that Wyoming will follow national trends as the baby boom generation moves into retirement years.

Based on population forecasts prepared by the Wyoming Economic Analysis Division, the population of the City of Gillette is expected to reach 26,062 by 2010 while the population of the Town of Moorcroft is expected to be 892.

3.3 Economic Conditions

The economy of the region is based heavily on the mineral-based energy sector. The largest employment sector in Campbell County is the mining sector, which includes coal mining, oil and gas extraction, crude, petroleum-natural gas, oil and gas field service, and nonmetallic minerals as defined by the U.S. Bureau of Labor Statistics. Employment by federal, state, and local governments is also high, and accounts for approximately 20 percent of the Campbell County employment. The construction sector of the local economy has exhibited strong growth since 2003. Most of the remaining employment was in the services sectors.

3.3.1 Labor

The labor force in the six-county study area was 59,438 persons (as of May 2007), with 57,705 employed persons. This represents an unemployment rate of slightly less than 3 percent. Campbell County has the largest workforce (26,451) followed by Sheridan County

(15,721). The majority of the workforce in the study area is employed in the following sectors:

- Government services (22 percent)
- Mining (19 percent)
- Retail trade (10 percent)

The Research and Planning Department of the Wyoming Department of Employment (DOE) provided estimates of employment and wage levels at the county level. Current information for construction specialty trade areas including Campbell County is presented in **Table 3-6**.

TABLE 3-6
Hourly Compensation for Selected Construction Trades in Campbell County, 2007

Occupation	Estimated Employment	Mean Wage (\$)	10 th Percentile (\$)	25 th Percentile (\$)	50 th Percentile (Median \$)	75 th Percentile (\$)
Carpenters	NA	39,919	32,210	35,263	40,603	45,729
		19.19	15.49	16.95	19.52	21.99
Cement Masons and Concrete Finishers	50	33,226	25,472	31,097	33,930	36,618
		15.97	12.25	14.95	16.31	17.6
Construction Laborers	150	29,872	23,043	25,905	29,357	34,540
		14.36	11.08	12.45	14.11	16.61
Electricians	390	46,113	32,881	39,227	48,171	53,838
		22.17	15.81	18.86	23.16	25.88
Plumbers, Pipefitters, and Steamfitters	40	41,287	33,295	36,304	40,825	46,390
		19.85	16.01	17.45	19.63	22.3
Structural Iron and Steel Workers	40	34,373	18,692	30,273	34,951	40,678
		16.53	8.99	14.55	16.8	19.56
Surveyors	40	48,098	34,178	38,470	45,395	58,557
		23.12	16.43	18.5	21.82	28.15
Civil Engineers	70	53,342	37,693	42,155	47,852	68,952
		25.65	18.12	20.27	23.01	33.15
Electronics Engineers, Except Computer	10	66,755	50,385	57,744	69,794	76,964
		NA	NA	NA	NA	NA
Civil Engineering Technicians	40	32,105	26,112	27,949	30,664	35,129
		15.44	12.55	13.44	14.74	16.89
Surveying and Mapping Technicians	50	34,583	24,011	28,553	33,809	38,082
		16.63	11.54	13.73	16.25	18.31

Source: CH2M HILL Personal Communication with Research and Planning Department of the Wyoming DOE, September 2007.

3.3.2 Future Economic Conditions

The following description is derived from the report entitled *10 Year Outlook Wyoming Economic and Demographic Forecast 2007 to 2016* prepared by the Economic Analysis Division of the Wyoming Department of Administration and Information in 2007.

3.3.2.1 Economic Projections

Wyoming's economy is largely driven by natural resources and in 2005 the mining industry contributed approximately one-third of both the state's total earnings growth and job growth. In addition, the multiplier effect associated with the mining industry results in stimuli in many other industries such as wholesale trade, transportation, and professional and business services. The total job growth rate of 4.9 percent in 2006 was the second highest in the nation and the personal income growth rate of 10.4 percent in 2006 was virtually the highest. The mining industry provides high-paying jobs, and as such, its strong presence in Wyoming means that income growth in the state is always closely associated with mining activity. Housing permits in Wyoming have outpaced the West and the United States since 2003. Residential construction is expected to slow down; however, housing in the state is expected to remain very affordable compared to the national average.

Wyoming's population is aging rapidly and is expected to continue to do so. In 2000, the median age of 36.2 in the state passed the national average of 35.3. By 2010, the expected median age of 39.3 for Wyoming will be 2.3 years older than the U.S. level, and the size of the older population (age 65 and over) will reach over 81,000 by 2014, compared to today's 61,000.

Although mining jobs are expected to slow to more sustainable levels, the increased demand for the natural resources in the state from national markets will help provide a steady source of mining jobs and revenues for the state. Outside of the mining industry, however, the state's future prospects will be somewhat limited by a job market that fails to attract high-growth job opportunities. Although migration has recently reversed to a positive trend, many younger workers will move to other states with more versatile job opportunities. Wyoming is the least diversified state in the nation in terms of employment distribution across industries in comparison to the nation.

3.3.2.1.1 Mineral Industry

The mining sector has been the most significant economic and revenue player in Wyoming's recent history. After it experienced a boom in the late 1970s, the following bust in the mid-1980s, and a slow and steady decline in the 1990s, the mining sector has demonstrated strong growth since 2000. The 33,000 mining jobs in 1981 were the highest level on record, and tallied 14.7 percent of total Wyoming non-agricultural wage and salary employment. However, by 1999, the number shrank to only 15,500. The employment increased 5.6 percent in 2000 and another 13 percent in 2001, holding up well in 2003 as mining prices rebounded. The number of mining jobs went up again over 10 percent annually in 2004. The energy-driven growth continues, as low industrial diversity ties the state's fortunes to mining extraction, which is dominated by natural gas production recently. This sector is responsible for 40 percent of net payroll gains recently. Multiplier effects are also creating jobs in transportation, distribution, construction, and consumer-related industries, and the state is

benefiting from a surge in mineral revenue. The outlook for future revenue and jobs from the state's mining industry looks strong with consistent growth anticipated.

The state benefits from increased mining activity in many ways. First, increased demand for oil, natural gas, and coal means increased mineral production revenue and sales and use tax collections for both state and local governments. In addition, because mining job salaries are over twice as much as the average for all industries, increased demand for mining employment trickles down into the economy through increased per capita income and therefore increased levels of consumer spending. On the other hand, the state's economy and revenue also fluctuate violently along with the rise and fall of mining prices.

3.3.2.1.2 Construction

Nationally, strong real estate and housing industries have been constant throughout the economy's ebbs and flows in recent years. The housing boom's economic contribution has been enormous, accounting for approximately one-fourth of real gross daily product (GDP) growth over the past 5 years. The direct effects from housing are through construction activity, real estate transactions, and mortgage finance. The multiplier benefits are substantial, such as demand in numerous supplying industries, and the income earned from construction-related industries drive spending elsewhere in the economy. As the fastest growing sector in the 1990s, the construction industry in Wyoming added 7,100 jobs in that decade at an annual average rate of 5.2 percent. Again for 2002, the construction sector remained the strongest industry in the state, expanding by 1.9 percent due to historically low interest rates.

The substantial job growth in the general building and specialty trades subsectors is directly caused by the residential construction boom. From 1992 to 2002, total residential home permits averaged nearly 1,800 units per year, compared to an annual range of 500 to 800 units during the period of 1987-1991. However, the number of permits expanded dramatically to 2,877 in 2003 and 3,318 in 2004. The single-family permits nearly doubled from 1,485 houses in 2001 to 2,815 in 2004, and 2,328 permits issued in 2003 broke the record set in 1980. Housing units authorized for the first 6 months of 2005 showed another 14 percent increase over the same period the previous year. While the large amount of new housing construction in the early 1980s was driven by an oil industry boom accompanied by an inflow of migrants, the current housing market in the state is largely driven by price appreciations, much like the national trend. The annual net migration (in-migration less out-migration) to Wyoming was over 10,000 in the late 1970s and early 1980s, but only a couple of thousand in recent years. A few local markets in the state are trying to meet additional worker demand due to the booming mining exploration such as in Rock Springs, Pinedale, and Casper. On the other hand, in certain areas, rental markets are getting soft as a result of additional new housing. Many residents have taken advantage of low mortgage rates and moved to new houses, leaving their previous homes for sale or rent. In Laramie County, for instance, the number of residential units for sale in the first quarter of 2005 was more than twice as many as 2003, and the number of vacant units for rent almost tripled during the same period. Consequently, rental rates declined.

Overall, job growth in the construction industry increased in 2005 after it declined 3.4 percent in the previous 2 years, albeit at a slower rate of around 4 percent annually. Total employment in construction will surpass the mining industry again by the end of forecasting period, and 1,700 new jobs are expected be created during this time span.

3.3.2.1.3 Retail Sales

As the third largest sector in Wyoming's economy, the retail trade industry (North American Industry Classification System [NAICS]) experienced fast job growth in the first half of the 1990s, averaging nearly 2 percent each year. However, it has slowed down to only about 1 percent annually since then, largely due to out-migration from the state. After experiencing a 3.3 percent rise in 2000, the industry lost over 400 jobs during the past 3 years. In the near future, employment in this sector is expected to expand at a modest rate of less than 1 percent a year. While the average increase rate for the fiscal year 1991 to 2000 period was 7.3 percent, the annual non-auto taxable retail sales were up only 3.1 percent from fiscal year 2001 to fiscal year 2003. However, mostly driven by strong natural gas exploration, expanding housing market, and net migration, the retail sales were robust again. For fiscal year 2004, both the taxable non-auto and auto retail sales recorded significant expansions, at 15.1 and 12.9 percent, respectively. The non-auto retail sales continued the strong pace in fiscal year 2005 and increased another 7.2 percent from the previous year's level. However, seemingly dragged down by the high gasoline prices, the automobile sales in the state almost came to a virtual stall, and only edged up a mere 1.4 percent during the past fiscal year. Much like the nation, the real concern for many retailers in the state is how to continue competing with remote sellers who do not have to charge sales tax.

3.3.2.1.4 Services

The economy has been and is continuing its long-term trend of shifting more toward a service-oriented than goods-oriented one. Much like the nation, the service industries grew continually in the state, even during the 1980s recession. The upward pace accelerated in the 1990s, at an annual rate of 3.3 percent. Despite the slowdown of the economy, total employment for various service industries still increased 2.5 and 2.2 percent in 2001 and 2002, respectively. Mainly caused by the slowdown in food services and administrative services, overall employment increased only 1.6 in 2003 and 2.1 percent in 2004. The services sectors are forecasted to be the fastest growing industry, both in terms of growth rate and total number of new jobs. Business, social assistance, and health services will be the main drivers. Despite the structural difference between the Wyoming and national economies, the growing pace in services is similar for both. The service industry was and will be the fastest growing sector in the national economy as it continues to undergo a structural shift from goods producing to service producing economy. Wyoming's various services sectors are expected to add 20,330 jobs in the next 10 years.

3.3.2.1.5 Tourism

With over \$1 billion in direct expenditures and 28,000 jobs, Wyoming's travel and tourism industry is an important part of the overall economy, particularly for the northwest region of the state. The primary attractions for tourists are the world's oldest national park, Yellowstone National Park, and the scenic Grand Teton National Park. Each year, millions of people from all over the world visit them. However, tourism itself is not classified as an independent or separate economic sector, but mainly included in accommodation and food services sector. Its economic effect crosses many retail trade and services-related sectors such as gasoline stations, general merchandise stores, arts, entertainment, and recreation services. Unfortunately, most jobs directly connected with tourism are mostly lower skilled and lower paying by nature.

Looking into the future, travel and tourism for Wyoming may not deviate much from the past trend, i.e., an extremely slow increase. However, there are at least a few factors that could work to the advantage of the state's tourism industry. First, the weakened American currency may attract more international tourists. Second, the baby-boom generation (born between 1946 and 1964) is starting to retire or will retire in the next few years, assuming the elderly population is more interested in natural amenities than the younger generation. Third, the state's rising revenue and budget surplus are creating an opportunity to protect the state's attractiveness and enhance area attractions. However, the jobs created in the tourism industry are mostly seasonal, and typically low-paying, offering little in the way of long-term growth for the state.

3.3.2.1.6 Government

As the largest employment sector for Wyoming, the government jobs sector is one of the mainstays in the state's economy, particularly in the southeast region. It also serves as a big stabilizer to the overall economy. During Wyoming's economic bust period of the 1980s, government employment only experienced a 1-year decline in 1986, while the state's total employment suffered 18 percent contraction from 1981 to 1987.

Because of the nature of a sparsely distributed population, state and local governments have to hire a relatively large number of employees to serve the residents, from public schools, fire districts, to road maintenance. The proportion of Wyoming's state and local government full-time employees was the highest in the country in 2003, at 869 per 10,000 population, while the national average was 542 employees. Other states with higher state/local government employee rates were also states with big land areas and low population such as Alaska, New Mexico, and Nebraska. The lower proportions of government employment are states with high population density such as Pennsylvania and Florida. Wyoming also ranked the third highest in terms of per capita state and local government expenditures in 2002.

In 2004, the government sector contributed 64,590 jobs, or one fourth of the total, to Wyoming's economy. However, it was one of the slowest growing industries in the 1990s, but has performed well since 2000. It will remain a consistent and steady source for new jobs in the future. From 1990 to 2000, government in Wyoming created 5,500 jobs for an annual growth rate of 1 percent, compared with the overall growth rate of 1.9 percent for the state as a whole. Nearly all of the new jobs added were in local government, which includes K-12 education and hospitals. State government experienced only a slight increase while Federal government recorded a minor decline during the same period. Since 2000, state government jobs increased 3.1 percent annually due to the accelerating revenues from mineral production.

Over the forecast period, the government sector is expected to add 4,870 new jobs, for a total of 69,460 jobs in 2014. Most of the growth is projected to occur in local government, with slower growth for state government and contraction for federal government.

3.3.2.2 Future Employment Growth

Over the period 2004 through 2014, nonagricultural employment in the state is forecast to increase at 1.3 percent annually, on average, as shown in **Table 3-7**. A number of industrial sectors are expected to exceed this rate of increase: education and health care (3.9 percent annual compound rate); wholesale trade (1.9 percent); leisure and hospitality (1.9 percent); and professional and business services (1.7 percent). Sectors with the lowest growth rates include manufacturing (0.05 percent); natural resources and mining (0.1 percent); and government (0.7 percent). As a result of these differing growth rates, the share that each sector contributes to total non-farm employment will change as shown in **Table 3-7**.

TABLE 3-7
Wyoming Nonagricultural Wage and Salary Employment (2004-2014)

Employment Sector	2004	2014	Change			Share of Total	
			Numeric	Percent	Av. Ann. %	2004	2014
Natural Resources and Mining	20,190	20,400	210	1.04%	0.10%	7.91%	7.05%
Construction	19,220	20,920	1,700	8.84%	0.85%	7.53%	7.23%
Manufacturing	9,480	9,530	50	0.53%	0.05%	3.71%	3.29%
Wholesale Trade	7,360	8,890	1,530	20.79%	1.91%	2.88%	3.07%
Retail Trade	29,870	32,240	2,370	7.93%	0.77%	11.70%	11.14%
Transportation, Warehousing and Utilities	11,860	12,820	960	8.09%	0.78%	4.64%	4.43%
Information	4,300	5,010	710	16.51%	1.54%	1.68%	1.73%
Financial Activities	10,480	11,310	830	7.92%	0.77%	4.10%	3.91%
Professional and Business Services	15,270	18,130	2,860	18.73%	1.73%	5.98%	6.27%
Education and Health Care	21,550	31,480	9,930	46.08%	3.86%	8.44%	10.88%
Leisure and Hospitality	31,440	37,750	6,310	20.07%	1.85%	12.31%	13.05%
Other Services	9,780	11,410	1,630	16.67%	1.55%	3.83%	3.94%
Government	64,590	69,460	4,870	7.54%	0.73%	25.29%	24.01%
Federal	7,580	7,370	-210	-2.77%	-0.28%	2.97%	2.55%
State	15,460	16,540	1,080	6.99%	0.68%	6.05%	5.72%
Local	41,550	45,550	4,000	9.63%	0.92%	16.27%	15.74%
Total Nonagricultural Employment	255,390	289,350	33,960	13.30%	1.26%		

Source: Employment Outlook: 2010, Wyoming Department of Employment, 2003.

During the period 2000 to 2004, real personal income in the state increase by 3.4 percent annually, on average. During the period 2004 to 2014, it is forecast to increase at a lower rate of 2.1 percent annually, as seen in **Table 3-8**. The rate of increase in real per capita income is also projected to decline from 2.7 percent annually to 1.5 percent annually over the corresponding time periods. The civilian labor force and employment are also projected to grow less rapidly.

TABLE 3-8
Wyoming Personal Income, Wage and Salary Earnings, Labor Force, Employment and Unemployment (2000, 2004, 2014)

	2000	2004	2014
Total Personal Income (Then-year \$)	\$14,063,160	\$17,379,250	\$26,064,030
Real Personal Income (2000-year \$)	\$14,062,800	\$16,061,040	\$19,736,730
Per Capita Personal Income (Then-year \$)	\$28,468	\$34,310	\$48,620
Per Capita Personal Income (2000-year \$)	\$28,467	\$31,708	\$36,817
Median Household Income (Then-year \$)	\$39,329	\$44,790	\$59,442
Wages and Salaries	\$6,763,300	\$8,418,250	\$13,160,770
Civilian Labor Force	266,860	281,850	305,810
Number Employed	256,620	270,810	295,210
Number Unemployed	10,240	11,040	10,600
Unemployment Rate (%)	3.84%	3.92%	3.47%

Source: Employment Outlook: 2010, Wyoming Department of Employment, 2003.

Growth in the construction sector is highly sensitive to both population growth and governmental spending on infrastructure. Population growth in Wyoming is expected to slow in the next decade. Therefore, growth in construction employment is also expected to decline, slowing from 5.1 percent on an average annual basis to 1.2 percent. **Table 3-9** displays employment forecasts for the construction industry in Wyoming to 2010.

TABLE 3-9
Construction Employment in Wyoming, 1990, 2000, and 2010

	1990	2000	2010 Projected	Change 1990 to 2000	Projected Change 2000 to 2010	Average Annual Change 1990 to 2000	Projected Average Annual Change 2000 to 2010
General Contractors	2,099	4,285	5,242	2,186	957	7.4%	2%
Heavy Construction	3,866	5,301	5,408	1,435	107	3.2%	.2%
Special Trade Contractors	4,815	8,085	9,291	3,270	1,206	5.3%	1.4%
Total Construction	10,779	17,671	19,941	6,892	2,270	5.1%	1.2%

Source: Employment Outlook: 2010, Wyoming Department of Employment, 2003.

Projections also indicate that the industry mix in construction will change as the numbers of general contractors and specialty trade contractors are expected to grow more than the construction industry as a whole.

3.3.2.3 Ad Valorem Taxes

Ad valorem taxes (property taxes) support a variety of county and municipal operations including airports, fire protection, hospitals, libraries, museums, public health, recreational systems, special districts, and education. Assessed property values are the basis upon which ad valorem taxes are computed. According to the Wyoming Department of Revenue, total assessed land values in 2006 for the study area were \$6,016,987,431. Campbell County has

the highest assessed property values in the study area, with a total of \$4,263,561,953. The major share of assessed land valuations in Campbell County are the mineral properties assessed at \$3,697,804,946 followed by industrial land assessed at \$286,185,768. Mill levies are then applied to assessed property values to determine the property taxes. Average mill levies range from 58.9 in Campbell County to 70.3 in Johnson County.

3.3.2.4 Sales and Use Taxes

The State of Wyoming levies a 4 percent sales and use tax. Counties have the option of levying additional sales and use taxes up to 2 percent and a lodging option tax. All the counties in the study area levy an additional 1 percent general purpose county option tax. Campbell and Crook Counties have an additional specific purpose county option tax of .25 and 1 percent, respectively. Campbell County is the only county not to have a lodging option tax rate. Crook and Johnson County have a 2 percent lodging tax rate, Converse has 3 percent, and Sheridan and Weston Counties have 4 percent. Sales and use tax revenues for the study area as of July 2007 totaled \$19,907,978.98.

3.3.3 Housing Stock in the Study Area

There were a total of 35,380 occupied housing units in the six-county study area at the time of the 2000 U.S. Census. Campbell County had the greatest number of occupied housing units with 12,207, followed by Sheridan County with 11,167 units. Most of the housing stock is owner- rather than renter-occupied, with anywhere from 69 to 79 percent of the units being owner-occupied.

Potential housing needs developed by the Wyoming Housing Database Partnership for each county through 2015 indicates that Campbell, Converse, and Johnson Counties will experience housing shortfalls in the near future. Without additional private-sector investment, Campbell County is estimated to experience a housing shortage of 189 units in 2005 and 5,153 units in 2015. The majority of this gap is a shortfall in homeowner units. Johnson County would experience a gap in housing in 2010, continuing through 2015. Similar to Campbell County, the majority of the shortfall is in homeowner units. The housing gap in Converse and Johnson Counties begins in the year 2015 with a shortfall of 156 and 791 units, respectively. Crook, Johnson, and Weston Counties have a projected surplus of both renter and homeowner units through the year 2015.

A detailed housing assessment was prepared for the Campbell County Economic Development Corporation by the Community Strategies Institute. According to the *Campbell County Housing Needs Assessment* published in January 2005, single-family units comprise the majority of the county's housing stock. Most of the rental units in the county are concentrated in Gillette, with only one rental unit complex located in the Town of Wright. The study states that single-family housing and manufactured housing in unincorporated areas of the county are expected to continue to be the major sources of housing growth in the county. This is expected to be buoyed by expanded subdivision development. Most of the rental units in the county were built in the 1970s and 1980s, with the newest rental projects being financed using Low-Income Housing Tax Credits and other federal subsidies.

3.3.3.1 City of Gillette Housing Stock

The City of Gillette has experienced a growth in housing over the past several years. As discussed in the *City of Gillette 2006 Housing and Demographic Survey January-December 2006*, the housing stock increased beyond 10,000 units in 2006. This is the result of increased single-family detached housing units being permitted. Detached single-family dwellings units occupy 49 percent of the housing stock with multi-family housing units representing 20 percent. In 2006, there were 10,194 housing units, and it is estimated that of these units, 3,364 are rental units and 6,830 are homeowner units. Between 2005 and 2006, the average number of housing permits increased by 4.9 percent. Based on this rate of change, it is estimated that in 2009 the housing stock will number 11,693. Of these 11,693 housing units, 3,859 are rental units and 7,834 are homeowner units.

The annual *2006 Housing and Demographic Survey January-December 2006*, rental properties in the City of Gillette had a vacancy rate of 0.15 percent during the months of March, June, September, and December 2006. Also the *City of Gillette Development Summary - Third Quarter 2007* provides detail on vacancy rates for 2005 to 2007, which shows that the rates were 1.1, 0.1, and 0.1 in 2005, 2006, and 2007, respectively.

According to the *City of Gillette Development Summary - Third Quarter 2007*, residential building permits are increasing at a significant pace. By the end of the third quarter of 2007, 979 residential building permits had been issued, which is more than the total number of building permits issued for all of 2006. The number of housing units in the subdivision review pipeline continues to increase. Such an increase in residential units is likely to provide some relief to the current housing shortage in Gillette and could help move vacancy rates to more normal levels.

3.3.3.1.1 Campgrounds

Many recreational vehicle (RV) campgrounds in the region provide accommodation for long-term visits of weeks or months. Two campgrounds in the Gillette area provide a total of 1,902 RV hookup sites. In addition, the Town of Wright has one campground with 76 RV hookup sites and the Town of Moorcroft also has one campground with five RV hookups. **Table 3-10** displays the number of RV site hookups for year-round camping within the six-county study area. Vacancy rates are not currently available for temporary accommodations.

TABLE 3-10
Year-Round Campground Accommodations

County	Facility	Number of Sites
Campbell County		1,902
Gillette	CAM-PLEX Multi-Event Facilities	1,761
Gillette	High Plains Campground	65
Wright	Sagebluff RV Park	76
Converse County		137
Glenrock	Deer Creek Village RV Park	50
Douglas	Douglas KOA Campground	87
Crook County		154
Hulett	Fort Devils Tower	50
Moorcroft	Rangeland Court Motel and RV Park	5
Pine Haven	Cedar Ridge RV Park	25
Sundance	Bearlodge Campground	8
	Cook Lake Campground	32
	Reuter Campground	24
	Sundance Campground and Trailhead	10
Johnson County		185
Buffalo	Buffalo KOA Campground	72
	Indian Campground	80
Kaycee	KC RV Park	18
	Powder River Cabins and Campground	15
Sheridan County		185
Dayton	Bear Lodge Resort	24
Ranchester	Lazy R Campground and RV Park	33
Sheridan	Bramble Motel and RV Park	NA
	Sheridan Big Horn Mountain KOA	128
Weston County		30
Newcastle	Auto Inn Motel and RV Park	30

Source: <http://wyomingtourism.org>

3.3.3.1.2 Single-section HUD Code Homes

The Gillette Chamber of Commerce identified nine single-section HUD code home courts in the City of Gillette and information on five of the nine courts is available. Ninety-eight single-wide homes were identified at three of the five single-section HUD code home courts as available; the other two courts had zero vacancy. In addition, of the available single-section HUD code home courts, Foothills Mobile Home Park was identified to have the highest vacancy rate of 22 percent. Of the 379 total lots, 83 lots were available in the latest reporting period of August 2007.

3.3.3.1.3 Local Motel/Hotels Vacancy Rates

Three independent sources of information (Gillette Chamber of Commerce, Rocky Mountain Lodging, and Smith Travel Research) were used to determine local motel and hotel vacancy rates. The following sections provide vacancy rate summary data from each data source.

The Gillette Chamber of Commerce has collected local hotel and motel vacancy information for the past 14 months for a reporting period of 2006 to 2007. Twenty local hotels and motels took part in the survey. Data collected to date show that an overall occupancy rate of 79.1 percent has been realized by the 20 local hotels and motels. **Figure 3-3** details the average vacancy rate for the 20 local Gillette motels and hotels.

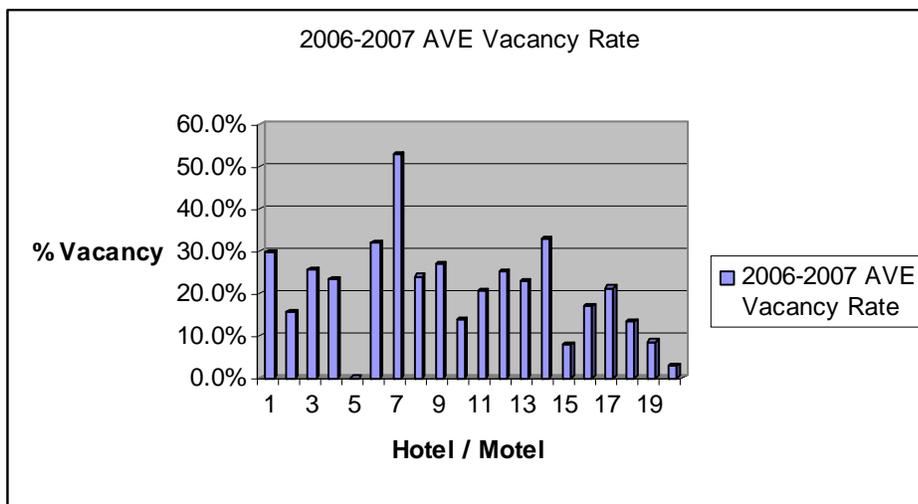


FIGURE 3-3
2006-2007 Average Vacancy Rate, Gillette Area Hotels/Motels

Source: Smith Travel Research

Rocky Mountain Lodging also compiles data for local hotels in the Gillette area. Data in the reporting period from 2006 to 2007 indicate that of the 1,430 total rooms in the data source, the average vacancy rate is 20.9 percent.

Smith Travel Research compiled data from 2001 to 2007 for hotel and motel occupancies in Gillette and some surrounding area communities. A composite of the percent of vacant rooms in the area is shown in **Table 3-11**.

TABLE 3-11
Hotel Summary Data

	Gillette Chamber of Commerce (2006-2007)	Rocky Mountain Lodging (2006-2007)	Smith Travel Research (2006-2007)	Average
Total Rooms in database	1,345	1,430	1,386	1,387
Average Vacancy Rate	20.9%	20.9%	31%	24.2%
Vacant Rooms	281	299	430	337

Source: Gillette Chamber of Commerce, 2006, 2007; Rocky Mountain Lodging Report, 2006, 2007; Smith Travel Research, 2006, 2007.

As detailed in **Table 3-11**, the motel/hotel vacancy rate fluctuates by month. Generally, the beginning and ending months of the year have the highest vacancy rates compared to the months of June, July, and August, which have the lowest vacancies.

A review of the three data sources indicates that of the reporting motels and hotels, an average of 24.2 percent of the rooms are vacant over the course of the calendar year, resulting in an average of 337 available rooms.

3.3.3.2 Housing Costs and Affordability

According to the *Campbell County Housing Needs Assessment*, 61 percent of county residents surveyed are concerned about the condition of existing housing units and 86 percent think that the availability and affordability of housing in Gillette and Campbell County are important local issues. This is reflected in a housing gap analysis provided in the study, which determines the housing gap based on median family income (MFI). The MFI was \$66,300 for a family of four in 2004. **Tables 3-12** and **3-13** provide a breakdown of the housing gap analysis for both renters and homeowners.

As shown in **Table 3-12**, when median household income is taken into account for rental units, there is currently a deficit of 290 units in the 0 to 30 percent of MFI category and a deficit of 767 units in the 51 to 80 percent of MFI category. In contrast, there is a surplus of units in the 31 to 51 percent of MFI category. This trend continues through 2020. It should be noted that these figures do not represent the actual number of units available for rent, but the number of units that have rents that fall into each particular income level.

Table 3-13 indicates that the housing gap for potential homeowners in Campbell County is much worse than that for renters. According to the study, there is currently a deficit of 2,956 units, which is projected to increase to just over 4,400 units by 2020. However, these housing gap numbers for both renters and potential homeowners do not take into account projected added housing stock, so it is likely they will improve as more subdivisions and rental units are built in response to the increasing demand.

TABLE 3-12
Rental Housing Gap 2004-2020

Rental Housing Gap	Maximum Annual Income as a Percentage of MFI	Maximum Annual Income in Range 2004	Affordable Monthly Rent as a Percentage of Maximum Income	Affordable Monthly Rent Payment	Number of Renter Households in 2004	Estimated Units in Market 2004	Current Inventory Gap	Projected Inventory Gap 2010	Projected Inventory Gap 2015	Projected Inventory Gap 2020
0-30% MFI	25.50%	\$16,905	2.03	\$343	662	372	-290	-301	-291	-277
31-50% MFI	42.50%	\$28,175	2.21	\$624	554	2,297	1,743	1,734	1,743	1,754
51-80% MFI	67.99%	\$45,080	2.32	\$1,047	927	160	-767	-783	-768	-748
81-95% MFI	80.74%	\$53,533	2.35	\$1,258	387	7	None	None	None	None
Over 95% MFI	over 81%	over \$53,533	over 2.35	over \$1,258	1,060	0	None	None	None	None
Total					3,590	2,836	686	650	707	729

Source: *Campbell County Housing Needs Assessment*. Prepared for Campbell County Economic Development Corporation. January 2005.
Note: Renter household income was based upon a 2.5-person household, reflective of the average renter household size.

TABLE 3-13
Homeowner Housing Gap 2004-2020

Owner Housing Gap	Maximum Annual Income as a Percentage of MFI	Maximum Annual Income in Range 2004	Affordable Price as a Percentage of Maximum Income	Affordable Price	Number of Renter Households that are Likely Candidates for Home Ownership in 2004	Estimated Units For Sale in 2004	Current Inventory Gap	Projected Inventory Gap 2010	Projected Inventory Gap 2015	Projected Inventory Gap 2020
0-30% MFI	27.01%	\$17,910	400.09	\$71,656	662	21	-641	-676	-696	-714
31-50% MFI	45.02%	\$29,850	400.09	\$119,427	554	134	-420	-471	-500	-526
51-80% MFI	72.04%	\$47,760	400.09	\$191,083	927	316	-611	-719	-780	-835
81-95% MFI	85.54%	\$56,715	386.09	\$218,972	387	31	-356	-423	-461	-495
Over 95% MFI		over \$56,715	over 386.09	over \$219,000	1,060	132	-928	-1,372	-1,624	-1,849
Total					3,590	634	-2,956	-3,661	-4,061	-4,419

Source: *Campbell County Housing Needs Assessment*. Prepared for Campbell County Economic Development Corporation. January 2005.

According to *A Profile of Wyoming Demographics, Economics and Housing Semiannual Report, Ending December 31, 2006*, Campbell County rental costs for an average apartment in 2006 was \$649 a month. Rental prices for a single-section HUD code home lot are \$266 a month, a house is \$867 a month and single-section HUD code home on a lot is \$786. The average annual percentage increase for rental units of an apartment, house, single-section HUD code home plus a lot, and single-section HUD code home lot are 4.7 percent, 3.6 percent, 5.2 percent, and 2.1 percent, respectively. These vary with the state average annualized increases of 3.4 percent, 3.8 percent, 3.3 percent, and 2.3 percent for rental prices, respectively.

Smith Travel Research performed a lodging report for the City of Gillette and surrounding communities. The lodging report data indicated that the average daily rate of rooms fluctuated depending on the month in the year. **Figure 3-4** displays the average daily rate for each month from 2001 to 2007.

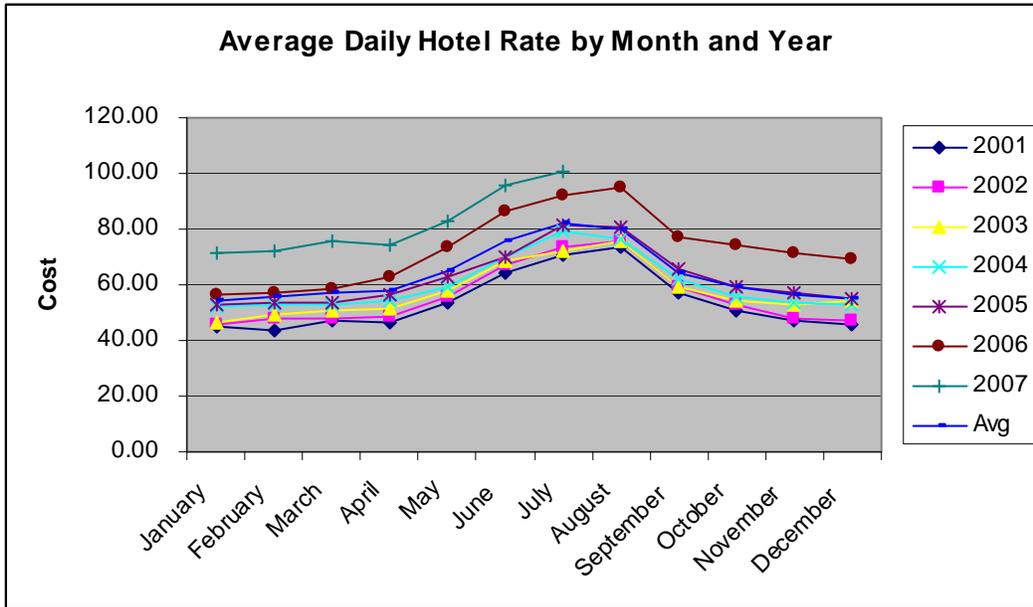


FIGURE 3-4
Smith Travel Research: 6 Year Summary of Average Daily Hotel Rates in the Gillette Area

The hotel rates generally remain constant from November April. The rate then gradually increases peaking in July and August, decreasing again to November. From 2002 to 2005, the average hotel rate increased approximately 3.5 percent a year or an average of \$2. In 2006, the price increased \$10 from the previous year resulting in a 15.4 percent increase. **Table 3-14** displays the average daily hotel rate and percent change per year.

TABLE 3-14
Average Daily Hotel Rates

Year	Average Cost (\$)	Percent Change
2001-2002	59.05	4.3
2002-2003	60.96	3.2
2003-2004	62.80	3.0
2004-2005	65.11	3.7
2005-2006	75.10	15.4
2006-2007 ^a	83.63 ^a	11.4 ^a

Source: Smith Travel Research, 2001 – 2007.

^a Data compiled year-to-date through July 2007

3.3.3.3 Owner-occupied and Rental Units Vacancy Rates

Based on the *City of Gillette, Wyoming 2006 Housing and Demographic Survey January-December 2006* the vacancy rate for rental units was 0.15 percent. The vacancy rate for owner-occupied units was not available for the City of Gillette and therefore was determined from the *Task 1C Report for the Powder River Basin Coal Review Current Social and Economic Conditions, March 2005* (Bureau of Land Management, 2005). This source indicated that Campbell County had a 4 percent homeowner vacancy rate in 2000. Applying these rates to current housing stock (excluding manufactured housing), there was an estimated average of five rental units and 273 homeowner units available in 2007 in the City of Gillette. These estimates are based on no new housing developments. **Table 3-15** displays the housing breakdown and availability.

TABLE 3-15
Available Housing in the City of Gillette (2007)

Total Housing Stock in City of Gillette ^{a,c}	Rental Units (33%) ^b	Homeowner Units (67%) ^b	Rental Units Available (.15% Vacancy Rate) ^a	Homeowner Units Available (4 percent Vacancy Rate) ^c
10,194	3,364	6,830	5	273

Sources:

- ^a. City of Gillette Wyoming 2006 Housing and Demographic Survey January-December 2006
- ^b. Percentage of homeowner and rental units was determined from the Campbell County Housing Needs Assessment, January 2005
- ^c. Bureau of Land Management, *Task 1C Report for the Powder River Basin Coal Review Current Social and Economic Conditions*, March 2005.

3.3.4 Education

There are 10 school districts in the study area, operating a total of 82 educational facilities. The majority of the 82 facilities are elementary schools (47), followed by 17 junior high/middles schools, and 18 high schools. There have been declines in the actual

enrollment and in the percentage of the population enrolled, which is indicative of the aging population.

As a whole, the pupil-teacher ratios, which can be used as an indicator of school quality, within the study area tend to be better than the state and national standards. The National Student -Teacher Ratio has essentially remained unchanged since 2000 and is approximately 15.9 students per teacher.

There are currently 7,337 students enrolled in Campbell County with a teacher-pupil ratio of 13.0 in 2005. It was determined that 5,742 students could be added to the study area schools before the U.S. standard teacher-pupil ratio is exceeded. Specifically, 1,628 students could be added to the Campbell County district before the standard was exceeded.

Crook County School District #1 was contacted in order to determine the availability of student enrollment. Exact numbers for each school were unavailable although the following information was identified:

Moorcroft schools are very limited with capacity, but anticipate the possibility of a new junior high to be built. Currently, there are two educational facilities in Moorcroft with combined grades of K-6 and 7-12. If a new junior high were to be built, the junior high would have a greater capacity in addition to alleviating room in the 7-12th grade building; which would then be high school students only.

Hulett has a new facility that was built and plenty of capacity to accept new students; approximately 50. If new students would be added, additional teachers would need to be hired.

Sundance has the capacity to accept approximately 20 additional students to the elementary school and approximately 22 students to the high school.

3.3.5 Public Safety

Campbell County has nearly 100 law enforcement officials and 200 fire fighters, most of whom are located in the City of Gillette. To determine the carrying capacity of public safety within Campbell County and the City of Gillette, the ratio of residents to law enforcement officials and fire fighters in the county was compared with state and national standards.

The ratio of residents to law enforcement officers in Campbell County would decline from 2.9 officers per 1,000 residents in 2000 to 2.3 officers per 1,000 residents during peak employment in 2009. This ratio is computed under the assumption that there is no change in the number of law enforcement officers over this time period. For 2009, this is just below the State of Wyoming and United States ratio of 2.5. The City of Gillette ranges from 4.0 officers per 1,000 residents in 2000 to 2.9 officers per 1,000 residents in 2009. This is above the state and national standard of 2.5.

The ratio of fire fighters per 1,000 residents is excellent in Campbell County and the City of Gillette compared to the 1.8 ratio standard established by the National Fire Protection Administration. In Campbell County, from 2000 to 2009, the ratio was 5.5 to 4.4 firefighters per 1,000 residents. In addition, the City of Gillette greatly exceeds the national standard, which ranged from 6.7 to 4.8 firefighters per 1,000 residents. As with

law enforcement officers, these ratios do not account for any change in the number of fire fighters.

3.3.5.1 Crime in Campbell and Crook Counties (2000-2006)

Crimes are usually reported using a classification system that distinguishes between Part I and Part II crimes. The total Part I crimes against both persons and property are referred to as index crimes and are considered of a more serious nature. They are listed below in **Table 3-16**. Part II crimes are considered less serious and are greater in number and the types are also listed in **Table 3-16**.

TABLE 3-16
Classification of Crimes, Part I and Part II

Part I	Part II
Murder and non-negligent manslaughter	Manslaughter by Negligence
Forcible rape	Arson
Robbery	Other Assaults
Aggravated assault	Forgery and Counterfeiting
Burglary	Fraud
Larceny – theft	Embezzlement
Motor vehicle theft	Stolen Property: Buy, Receive, Possess
	Vandalism
	Weapons: Carry, Possess, etc.
	Prostitution and Commercialized Vice
	Sex Offenses (Except Rape and Prostitution)
	Drug Abuse: Sale/Manufacture
	Drug Abuse: Possession
	Gambling Offenses
	Offenses Against Family and Children
	Driving Under the Influence
	Liquor Laws
	Drunkenness
	Disorderly Conduct
	Vagrancy
	All Other (Except Traffic)

Source: State of Wyoming, Office of Attorney General, 2007

Information compiled by the State of Wyoming Office of the Attorney General regarding the number of arrests by type of crime is available for all law enforcement agencies in the state of Wyoming. In the area of impact, information is available for the service areas of the

following law enforcement agencies: Campbell County Sheriff, City of Gillette, Crooke County Sheriff, Town of Moorcroft, and Town of Sundance. By summing the reported arrest for each agency in a single county, it is possible to derive the total arrests made annually throughout the county on an annual basis. To directly compare the incidence of crime in areas with different populations, the crime rate is calculated. This rate is defined as the number of arrests per 1,000 residents.

As can be seen from the arrest information presented in **Figure 3-5**, the total number of arrests for Part I crimes in Campbell County varies between 132 and 180 over the period between 2000 and 2006. Generally over this period the number of arrests for Part I crimes declined. However, the number of arrests for Part II crimes rose steadily each consecutive year from 2,284 in 2000 to 4,786 in 2006.

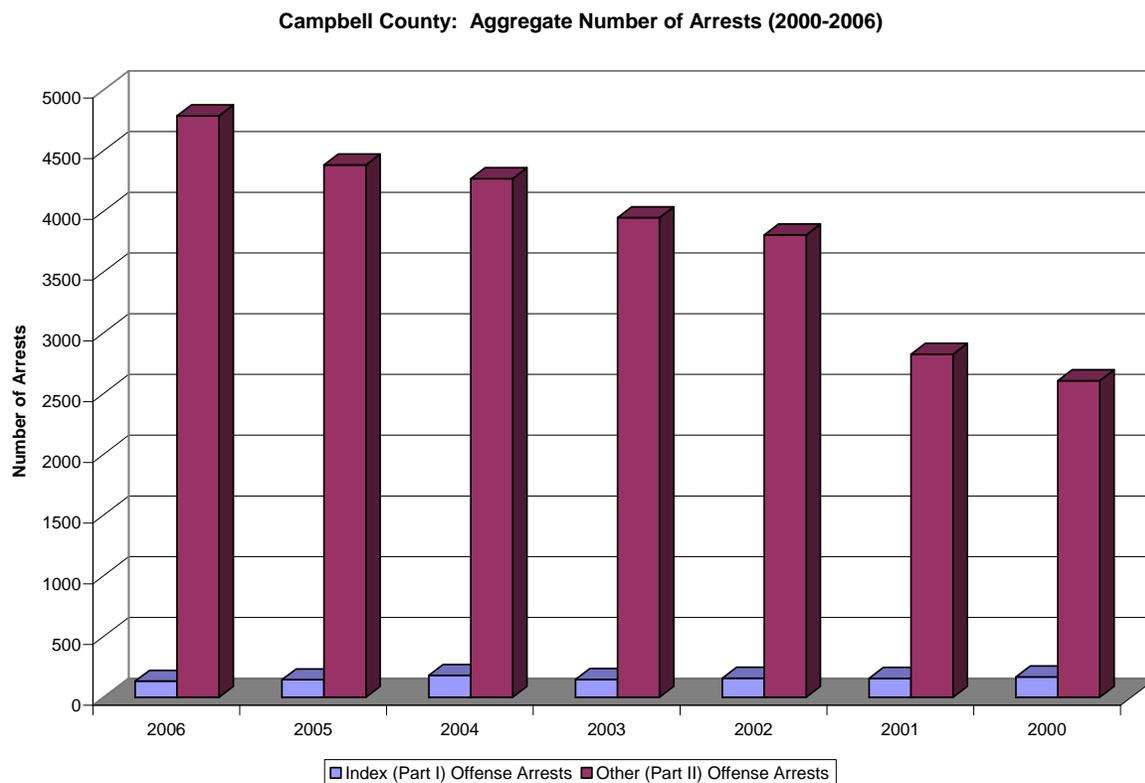


FIGURE 3-5
Campbell County: Aggregate Number of Arrests (2000 – 2006)

Changes in the number of arrests can be deceiving, especially if changes in the number of residents in the service area also change. Thus, in order to hold the potential influence of population size and change constant, arrest rates are calculated. These rates express the number of arrests per 1,000 residents of the service area. As can be seen from the information presented in **Figure 3-5**, arrests have increased more rapidly than population. The arrest rate for Part I crimes has fallen from 5.0 to 3.4 while the rate for Part II crimes has risen from 77 to 123.

Arrests for the City of Gillette exhibit the same pattern as those for Campbell County (of which they comprise the large proportion). The arrest rate for Part I crimes has fallen from 6.0 per 1,000 residents in 2000 to 3.5 in 2006. Arrest rates for Part II crimes have risen from 84 in 2000 to 155 in 2006. These patterns can be seen in **Figures 3-6 and 3-7**.

The increases in both number of arrests and arrest rates are, in large part, attributable to a small range of crimes. These include: assaults, drug abuse, driving under the influence, drunkenness, and buying, receiving, and possessing stolen property.

Campbell County Aggregate: Arrest Rate (2000-2006)

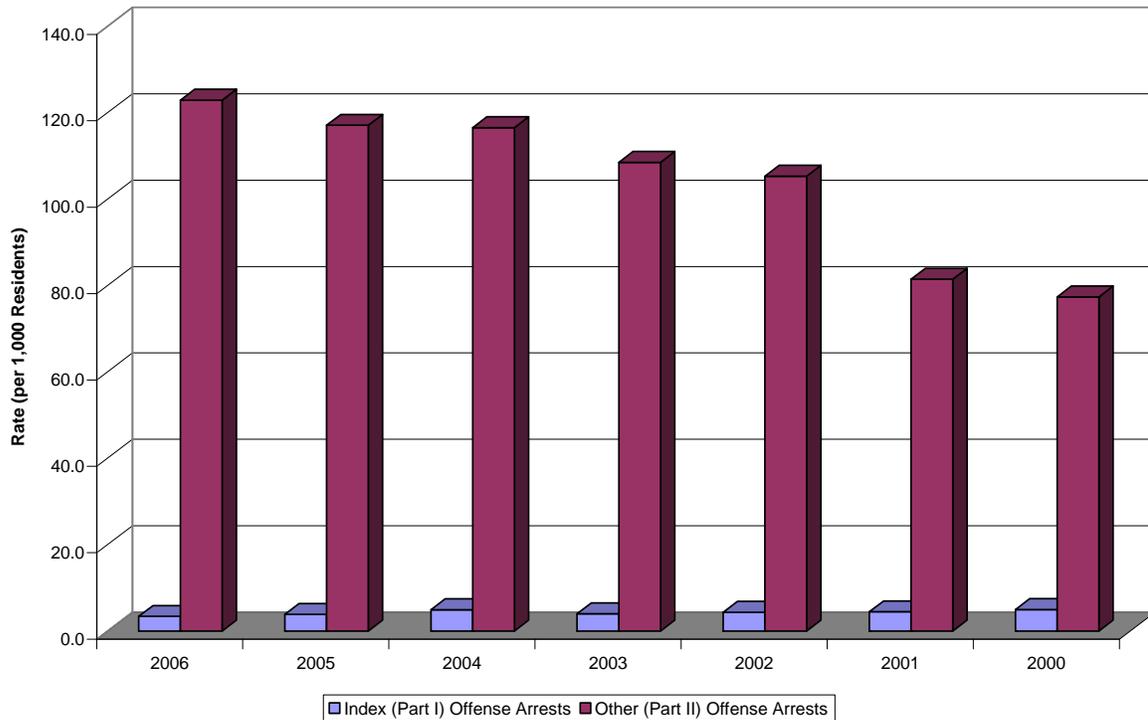


FIGURE 3-6
Campbell County Aggregate: Arrest Rate (2000 – 2006)

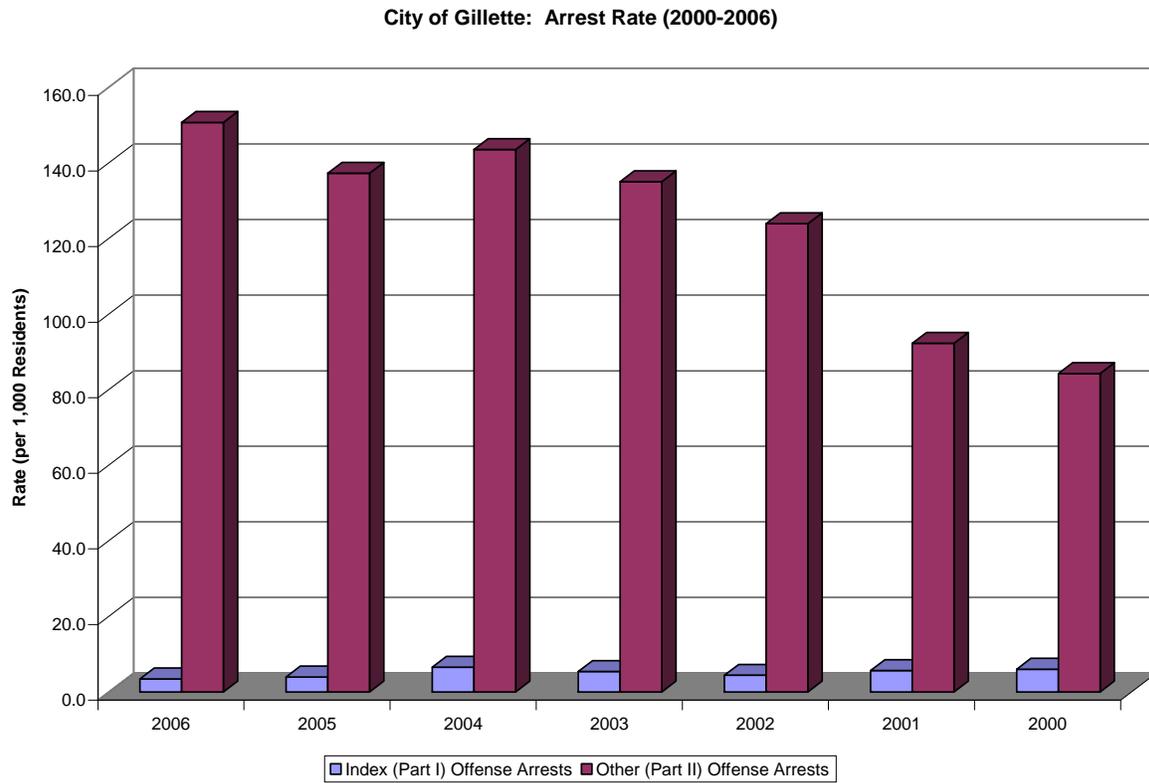


FIGURE 3-7
City of Gillette: Arrest Rate (2000 – 2006)

For Crook County, the pattern of arrest rates is different from that experienced in Campbell County. Campbell County experienced a steady, consistent increase in arrest rate whereas Crook County saw relatively small variation in arrest rate between 2000 and 2005 and then a sudden rise in 2006 as can be seen from the information presented in **Figure 3-8**.

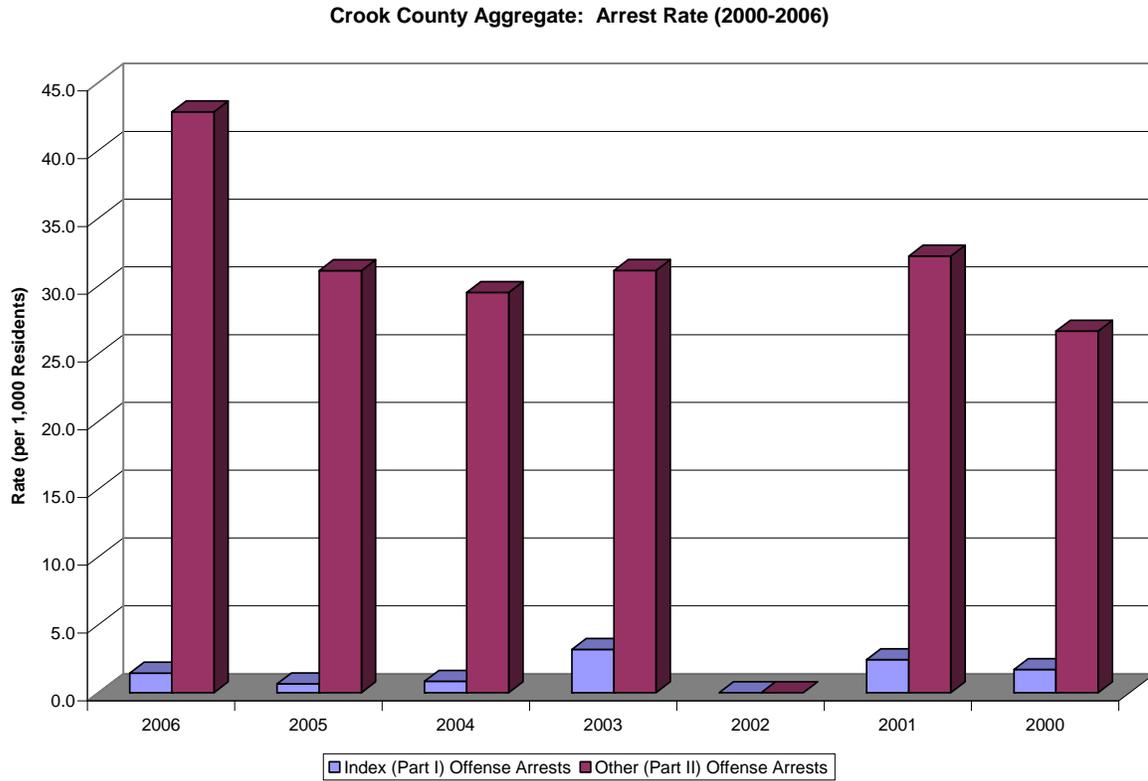


FIGURE 3-8
Crook County Aggregate: Arrest Rate (2000 – 2006)

The change in arrest rates (expressed as the average annual percent change) over time for both Part I and Part II crimes is shown in **Table 3-17** for each of the law enforcement agencies and communities in Campbell and Crook Counties comprising the area of impact. The rate of change in the population of the respective service areas is also shown. In all cases, the increase in Part II arrests far outpaces changes in population.

TABLE 3-17
Change in Crime Rate and Population (2000-2006)

Jurisdiction/Aggregate	Population	Part I Crime Arrests	Part II Crime Arrests
Campbell County Aggregate	2.44	-3.94	10.66
Campbell County Sheriff	2.44	1.06	4.74
City of Gillette	2.77	-6.22	13.23
Crook County Aggregate	1.02	-1.74	9.32
Crook County Sheriff	1.19	0.00	7.54
Town of Moorcroft	0.95	NA*	33.52
Town of Sundance	0.47	-20.63	15.71

Source: State of Wyoming, Office of Attorney General, 2007

3.3.6 Health Care

There are seven hospitals in the study area: two in Sheridan County and one in each of the remaining counties in the study area. Campbell County Memorial Hospital is the largest hospital in the study area. There are 15 ambulances servicing Campbell County. All counties have shortages of physicians when compared to national standards, which is common in most rural areas.

Currently, the level of service provided by each county's health services appears adequate. Expansions are planned in Crook and Weston Counties. Residents are generally satisfied with Campbell County Memorial Hospital, with over 62 percent of residents ranking the facility as excellent or good in 2004. It is noteworthy to mention that the level of service may be impacted because of an increase in demand for health services in the near future due to the aging population in the study area, which is estimated to begin in 2010. This corresponds to the baby boom generation moving into retirement years. Therefore, it is likely that the issue of health care quality will become of increasing importance in the near future in the study area.

3.3.7 Municipal Services

Water in the study area is provided through municipal water services in the cities and the more densely populated areas. In Campbell County, the City of Gillette operates the municipal water supply. The annual average water production is 4.4 million gallons per day (mgd) and peak water production is 13.9 mgd. The rural portion of the study area is serviced primarily by private wells. The Capital Improvements Plan (CIP) for the City of Gillette shows planned improvements to the water system totaling more than \$31 million.

The primary water source for the city is Madison Formation wells, located north of Moorcroft, moving approximately 8,800 gpm between the Pine Ridge storage reservoir and the Donkey Creek Pump Station. Between Donkey Creek Pump Station and the City of Gillette, the transmission pipeline conveys 10,500 gpm. In addition, the Madison Pump Station has the capacity to pump about 8,950 gpm and Donkey Creek Pump Station has a capacity of approximately 9,150 gpm.

Sewers systems collect residential, commercial, and industrial sources of wastewater and convey them to the Gillette Wastewater Treatment Facility. With recent upgrades completed in early 2007, the plant capacity has increased from 3.85 mgd to 5.12 mgd and treats an average of 2.5 mgd. Wastewater in rural areas is discharged to private leaching fields or septic tanks. The CIP for the City of Gillette shows planned improvements to the sewer system totaling more than \$18 million.

There are a variety of different waste disposal facilities including: industrial landfills; solid waste treatment, storage, and disposal (SWTSD); Type I municipal waste; and Type II municipal waste. Campbell County has the most facilities with 18 and Johnson and Crook Counties have the least with six each.

3.3.8 Transportation

There are two interstate highways that run through the study area: Interstate I-90 runs east-west through Crook, Campbell, Johnson, and Sheridan Counties; and I-25 runs

north-south through Converse and Johnson Counties. Campbell County had the second largest total annual average daily traffic (AADT) volume with 60,500, and Sheridan County had the largest with 63,510.

The study area also has a rail infrastructure consisting of 4,400 miles of freight rail track. Converse County has the largest rail infrastructure with 1,654 miles of track, followed by Campbell County with 1,093 miles. Burlington Northern-Santa Fe Railroad and Union Pacific are the two largest rail operators in the study area.

3.4 Analysis of Socioeconomic Impacts

The following sections provide analysis of potential socioeconomic and tax impacts associated with the construction of the Project.

3.4.1 Area of Impact

Based on secured housing options and received general contractor Letters of Intent, the primary area of impact for the Project can be narrowed to the City of Gillette and the Town of Moorcroft, located in Campbell and Crook Counties, respectively. The Project team desires to maximize the benefits of the Project to the local communities while containing the impacts as much as possible. Every attempt will be made to house the non-local workforce within these cities, thereby minimizing or eliminating potentially negative impacts to the surrounding communities.

The Project team believes that the more the workforce is integrated into the local community, the fewer associated social problems will result. This is due to the fact that social problems related to a transient workforce are generally related to isolation of the workforce.

To help define potential impacts within the area of impact for the Project, BHC has developed a comprehensive housing plan that centered on three primary tasks: secure Letters of Intent from local general contractors, secure proven housing stock by entering into motel contracts for a designated number of beds, and enter into an option agreement for single-section HUD code homes that will be placed on BHC-owned or other private lands.

While the intent of the Project team is to ensure that adequate housing is available within Gillette and Moorcroft for its workforce, it is recognized that some members of the temporary workforce may choose to reside outside of the primary area of impact. Therefore, a secondary area of impact is defined as Campbell and Crook Counties.

3.5 IMPLAN Socioeconomic Impact Modeling

A major facet of the socioeconomic impacts of large capital infrastructure projects is the total economic impact on specific local economic sectors and the impact of various changes in the local economy. The changes in employment or output often occur locally as a result of new business locations and community events, and such changes have implications for other parts of the local economy.

Impact Analyses and Planning (IMPLAN) is a computer software package that consists of procedures for estimating local input-output models and associated databases. IMPLAN was originally developed by the U.S. Forest Service in cooperation with the Federal Emergency Management Agency (FEMA) and the U.S. Department of the Interior's Bureau of Land Management to assist in land and resource management planning.

3.5.1 The Role of Basic and Service Industries

Export base theory provides a general framework for understanding a local economy and assessing the total impacts of specific local changes in economic activity. This approach holds that a local economy consists of two parts or two distinct types of activities: (1) basic industries that sell goods and services to markets located outside the local area, and (2) service industries that provide goods and services to local businesses and residents. Basic industries attract money from outside into the local economy; this money then circulates within the local area through spending and re-spending by local service industries and employees of local businesses. Money generated by the basic industries starts the spending chain that supports the services segment of the local economy. New dollars eventually are lost from the local economy (leakages) in the form of tax payments to state and federal government, savings, profits that accrue to non-residents, and payments for goods and services imported from outside the local area.

3.5.1.1 Basic Industry

The key to identifying basic industries at the local level is the location of markets served, a distinction more important than the nature of the goods or services involved. Typically, basic industries are associated with activities such as agriculture, mining, or manufacturing. However, almost any type of local business may be classified as a basic industry if its products or services are sold outside the local area or if it attracts customers from other areas.

3.5.1.2 Service Industry

Service industries, unlike basic industries, consist of business firms that serve local markets. Examples include the full range of retail and service establishments that serve local residents as well as firms that provide goods and services (inputs) to businesses engaged in basic activities. Again, the key factor that distinguishes basic from service activity is the location of the market served and not the type of goods or services provided. Any of the activities characterized above as basic may, in fact, be service activities if they are serving local markets.

The basic-service industry dichotomy from export base theory provides the framework within which total economic impacts can be estimated. The key is to determine the division between basic and service activities within a local area and then to assess the relationship between changes in the basic components of the economy and the resulting changes in the service components. An increase or decrease in production and employment within a local area has a "multiplier" effect as other sectors of the local economy are impacted by the changes in local spending. For a given industry, the size of the multiplier depends on the level of local spending; firms that purchase more local inputs have higher multipliers. The total impact for an industry also depends on the level of sales outside the local region; firms

with greater external sales have greater impacts. The estimation of the multiplier effect for each sector is the objective of economic impact analysis.

3.5.2 Regional Economic Analysis

Regional economics is the study of the economy of a small region, and input-output (IO) analysis estimates the dollar value of change in regional economic activity associated with economic linkages and leakages. Input-output analysis can also be viewed as a technique for tracing resources and products within an economy. The economic system consisting of producers and consumers is divided into various branches, which are defined in terms of the resources they require as inputs and what they produce as outputs. The quantities of input and output for a given time period, usually expressed in monetary terms, are entered into an input-output matrix within which one can analyze what happens within and across various sectors of an economy, where growth and decline take place, and what effects various policies may have.

A number of regional economic analysis modeling systems (consisting of data as well as analytical software) are available for use in regional economic analysis (e.g., Regional Economic Models Inc. [REMI], Regional Industrial Multiplier System II [RIMS II], and IMPLAN). IMPLAN is a computer database and modeling system used to create IO models for any combination of U.S. counties. For this Project, IMPLAN was used to estimate the indirect and induced impacts associated with the Project.

The IMPLAN package includes (1) estimates of final demands and final payments for counties developed from government data, (2) a national average matrix of technical coefficients, (3) mathematical tools that help the user make the IO model, and (4) tools that allow the user to change data, conduct impact analysis, and generate reports.

The IMPLAN database includes county-level final demands and final payments developed from a variety of sources, but especially the U.S. Department of Commerce (US DOC), Bureau of Economic Analysis' Regional Economic Information System (REIS). New construction activities in any REIS industry were moved to the IMPLAN construction sector, so REIS data do not necessarily match the IMPLAN data. Also, data from the US DOC's Census of Agriculture were used for some estimates in the agricultural sector. Federal purchases were based on county data from the Federal Procurement Data Center. Personal consumption expenditure estimates were created using data from a Consumer Expenditure Survey which were modified to match totals provided in the Survey of Current Business. Much of the data on employment and income, available from the two-digit Standard Industrial Code (SIC) code classification, were disaggregated (broken out into more categories) to be consistent with IMPLAN's 509 economic sectors.

3.5.3 Wygen III Regional Economic Model

The region of influence (ROI) for the proposed Project is assumed to be Campbell County, Wyoming. Thus, an IMPLAN IO model was built for the region comprising this county. This is the model used to evaluate the regional economic impacts resulting from the construction and operation of the Project. Additionally, because the data in IMPLAN is for 2004 and the input estimates are in 2010 dollars, the model results were adjusted to reflect output in 2010. Thus, all estimates reported in this analysis are in 2010 dollars.

3.5.3.1 Construction Impact Analysis

In addition to providing a stimulus in the form of expenditures on materials and supplies (procurements), the proposed Project will employ construction workers who, in turn, are expected to spend a portion of their income (personal consumption expenditures [PCE]) in Campbell County thus stimulating additional output in the various sectors that provide consumer goods and services. As a result of both the Project procurements and construction worker PCE, the proposed Project is expected to result in a temporary increase in employment and income within Campbell County during the 29-month construction period.

The following assumptions were used in the IMPLAN model that evaluates the proposed Project-related impacts on the local economy:

1. Total construction cost = \$231.6 million
2. Total local (within Campbell County) construction procurements = \$23.5 million
3. Total construction worker PCE = \$51.45 million
4. Local construction labor costs as a proportion of total construction labor costs = 33 percent
5. Construction duration = 29 months
6. Total cumulative construction workforce = 4,075
7. Average monthly number of construction workers = 145
8. Annual procurements during construction = \$10.07 million
9. Construction workers, by virtue of their pay (including benefits), are assumed to be members of the \$50k-\$75k household income category
10. Because the IMPLAN model is a short-term annual model, the construction impact analyses are evaluated for a 1-year period. Thus, all costs are averaged over the 29-month construction duration and multiplied by 12 months to arrive at an annual estimate of potential changes to the county's economy.

Construction of the Project would result in temporary secondary economic impacts (indirect and induced impacts) within Campbell County. Indirect and induced employment effects include the purchase of goods and services by firms involved with construction, and induced employment effects include construction workers spending their income within the county.

Construction of the Project would be expected to result in an estimated annual indirect and induced employment of 125 and 39 jobs, respectively. These additional jobs result from the \$10.07 million in annual local construction expenditures as well as the \$4,093,550 in annual spending by local construction workers. The \$4,093,550 represents the disposable portion of the average annual construction payroll (here assumed to be 70 percent of the \$7,276,500). Indirect and induced income impacts were estimated at \$4,391,180 and \$1,286,000, respectively.

3.5.3.2 Operation Impact Analysis

Operation of the Wygen III power plant would require a total of 18² workers at an annual operation and maintenance (O&M) payroll of approximately \$2,501,725. About 87 percent (or \$2,176,500) of O&M payroll is assumed to be spent within Campbell County because 87 percent of the O&M workers are assumed to reside within Campbell County. In addition to the new O&M payroll associated with the Wygen III power plant, there will be an annual O&M expenditure of \$5.98 million, about 10 percent (or \$598,000) of which is assumed to be spent locally within Campbell County. Using these direct expenditures, the indirect and induced employment and income associated with the operation of the power plant were estimated using an IMPLAN model of Campbell County.

Operation of the proposed power plant would result in long-term indirect and induced economic impacts that would occur within Campbell County. The indirect and induced impacts would result from annual expenditures on payroll as well as those on O&M procurements.

The estimated annual indirect and induced employment (in addition to the direct annual employment of 18 workers) within Campbell County would be two and seven permanent jobs, respectively. Indirect and induced income impacts were estimated at \$142,190 and \$225,070, respectively. These additional jobs and income result from the \$2,774,500 (\$2,176,500 in annual O&M payroll as well as the \$598,000 in annual local O&M expenditures) in annual operational budget.

3.6 Housing Impact of Non-local Workforce

Information derived from the Wygen II project showed that the non-local construction workers temporarily resided in five general categories of housing in the following proportions: recreational vehicles (11 percent), apartments (21 percent), single-family homes (27 percent), mobile homes (11 percent), and motels/hotels rooms (29 percent).

For this analysis, a primary assumption is that the Wygen III Senior Supervisor/Management non-local workforce will occupy temporary housing options in the same percentages as Wygen II construction workforce. **Table 3-18** provides the Wygen III housing requirement estimates for the additional peak 30 non-local construction workers (i.e., number of temporary housing needs for the peak workforce above the 50 beds contracted for by BHC in local motels/hotels).

² IMPLAN model input assumed high estimate of 18 full-time employees for operation of Wygen III.

TABLE 3-18
Wygen III Workforce Housing Breakdown

Housing Preference Option ^a	Percent	Housing Unit Requirement for Peak Non-local Workforce
Recreational Vehicle	11	3
Apartment	21	6
House	27	9
Mobile Home	11	3
Motel/Hotel	29	9

Source: BHC: Wygen II Data, 2007.

^a Information derived from the Wygen II project showed that the non-local construction workers temporarily resided in five general categories of housing in the following proportions: recreational vehicles (11 percent), apartments (21 percent), single-family homes (27 percent), mobile homes (11 percent), and motels/hotels rooms (29 percent).

A review of **Table 3-18** shows that the additional peak of the 30 Senior Supervisor/Management non-local construction workforce will require housing options in relatively low quantities. It is also concluded that the Senior Supervisor/Management's non-local worker's choice of final housing will be driven by a mixture of variables including the type of rental contract terms, commute distance, monthly cost, and monthly subsistence payment.

3.6.1.1 Effects on Vacancies of Local Motel/Hotels

Based on an estimated requirement of nine motel/hotel rooms (**Table 3-18**), the overall impact on local motel/hotel vacancy rates would approximate less than 1 percent reduction in the vacancy rate in the Gillette area.

3.6.1.2 Effects on Apartments and Rental Homes Vacancy Rates

As shown in **Table 3-18**, the numbers of apartments and houses needed are six and nine, respectively. Due to limited data collection for apartment and housing statistics, the numbers were consolidated and broken down between renter and homeowner housing. Vacancy rates of homes and apartments are currently estimated at 0.1 percent. Therefore, it is estimated that the City of Gillette contains five vacant rental units, thus, resulting in a shortfall of 11 units.

3.6.1.3 Effects on Recreational Vehicle/Campground Vacancy Rates

The City of Gillette has two campgrounds with a total of 1,826 RV lots, and the Town of Moorcroft has one campground with five RV lots. Although information on vacancy rates is not currently available, only six RV lots are required. With 1,831 total RV lots in Gillette and Moorcroft, it is reasonable to assume that three units will be available for the construction workers. The rental of three recreational vehicle/campground units will not result in a significant impact.

3.6.1.4 Effects on Mobile Home Vacancy Rates

Ninety-eight single-wide homes were available at three of the five single-section HUD code home courts as available in August 2007. Two other courts had no vacancies. With only three single-section HUD code home units required, the supply is adequate to meet the construction worker demand, and will not result in a significant impact.

3.6.1 Area of Impact Housing Summary

Based on the comprehensive housing plan, the primary temporary housing impacts will be limited to the rental and hotel/motel availabilities in the area of impact. **Table 3-19** shows the distribution of housing needs for each housing option and the place of potential residency for the non-local workforce.

TABLE 3-19
Housing Needs

Housing Option	Number of Housing Needed	Number of Available Housing in Gillette	Number of Available Housing in Moorcroft	Housing Surplus (+) or Deficit (-)
Campground Lots for 5 th Wheels	3	1,826 ^a	5 ^a	+1,828
Rental Home/Apartment	15	5 ^b	Unknown	-10
Single-section HUD Code Home	3	98 ^c	Unknown	+95
Hotel	9	457 ^d	Combined with Gillette information	+323

Sources:

- ^a Vacancy rates are not currently available for temporary accommodations. With over 1,000 RV lots in Gillette and Moorcroft, it is estimated that six will be available for the construction workers.
- ^b Based on renter vacancy rate of 0.15 percent from 2006 Housing and Demographic Survey for City of Gillette.
- ^c Gillette Chamber of Commerce for Month of August 2007.
- ^d Consolidated hotel information from Gillette Chamber of Commerce, Rocky Mountain Lodging, and Smith Travel Research. Locations of hotels vary depending on study. This number includes the 120-room motel contract.

Based on data collected for the Wygen II project and vacancy data obtained from various local sources, the Gillette area does appear to have adequate housing resources for the additional 30-person peak workforce that does not have secured temporary motel/hotel and worker camp housing.

3.7 Education

There are currently 7,588 students enrolled in Campbell County School District #1 and 1,112 in Crook County School District #1. **Table 3-20** shows the location and enrollment for individual schools within a primary area of impact and a larger secondary area of impact.

It is estimated that 30 construction workers will be accompanied by family members. Using an average household size of 2.7 (that for Campbell County in 2000), it is estimated that about 22 of the family members will be of school age and would enroll in local public schools. Such an increase in enrollment would comprise only 0.3 or 1.9 percent of the enrollment in the schools of the Campbell and Crook County school districts, respectively. This increase in an enrollment would be a less than significant impact.

TABLE 3-20
Selected Characteristics of Schools in the Study Area

Schools	Grades Served	City	County	Enrollment (2006)
Primary Area of Impact				
Campbell County High School	10-12	Gillette	Campbell	1,436
Westwood High School	9-12	Gillette	Campbell	105
Sage Valley Junior High School	7-9	Gillette	Campbell	768
Twin Spruce Junior High School	7-9	Gillette	Campbell	782
4-J Elementary	K-6	Gillette	Campbell	41
Conestoga Elementary	K-6	Gillette	Campbell	393
Hillcrest Elementary	K-6	Gillette	Campbell	322
Lakeview Elementary	K-6	Gillette	Campbell	348
Meadowlark Elementary	K-6	Gillette	Campbell	294
Paintbrush Elementary	K-6	Gillette	Campbell	450
Pronghorn Elementary	K-6	Gillette	Campbell	459
Rawhide Elementary	K-6	Gillette	Campbell	169
Stocktrail Elementary	PK-6	Gillette	Campbell	248
Sunflower Elementary	K-6	Gillette	Campbell	435
Wagonwheel Elementary	K-6	Gillette	Campbell	389
Moorcroft High School	9-12	Moorcroft	Crook	164
Moorcroft Junior High School	7-8	Moorcroft	Crook	93
Moorcroft Elementary	K-6	Moorcroft	Crook	267
TOTAL				7,163
Secondary Area of Impact				
Wright Jr. and Sr. High School	7-12	Wright	Campbell	252
Little Powder Elementary	K-8	Weston	Campbell	21
Recluse School	K-8	Recluse	Campbell	36
Cottonwood Elementary	PK-6	Wright	Campbell	294
Rozet Elementary	K-6	Rozet	Campbell	346
Bear Lodge High School	8-12	Sundance	Crook	19
Hulett High School	9-12	Hulett	Crook	83
Sundance High School	9-12	Sundance	Crook	118

TABLE 3-20
Selected Characteristics of Schools in the Study Area

Schools	Grades Served	City	County	Enrollment (2006)
Hulett Junior High School	7-8	Hulett	Crook	29
Sundance Junior High School	7-8	Sundance	Crook	58
Hulett Elementary	K-6	Hulett	Crook	104
Sundance Elementary	K-6	Sundance	Crook	177
TOTAL				1,537

Source: CH2M HILL Personal communication, 2007.

3.8 Public Safety

To determine whether the carrying capacity of public safety within Campbell County and the City of Gillette would be impacted by the Project, the ratios of law enforcement officials and fire fighters in the county were compared with state and national standards.

3.8.1 Community Law Enforcement and Fire Protection

Without the Project, the citizen to police ratio per 1,000 residents in Campbell County through 2009 was projected to be 2.3, just below the 2.5 ratio for Wyoming and the United States. Without the Project, the citizen to fire fighter ratio per 1,000 residents in Campbell County through 2009 was projected to be 4.4, which greatly exceeds the 1.8 ratio for Wyoming and the United States. With the additional workers, the citizen to police and citizen to fire fighter ratios per 1,000 residents remain constant at 2.3 and 4.4, respectively.

For the City of Gillette, without the Project, the citizen to police ratio per 1,000 residents through 2009 was projected to be 2.9, just above the 2.5 ratio for Wyoming and the United States. Without the Project, the citizen to fire fighter ratio per 1,000 residents through 2009 was projected to be 4.9, which greatly exceeds the 1.8 ratio for Wyoming and the United States. With the additional workers, the citizen to police and citizen to fire fighter ratios per 1,000 residents remain constant at 2.9 and 4.8, respectively.

Neither ratio changes with the addition of the imported workers and associated household members; therefore, the Project will have negligible impact on the level of public safety in Campbell County or the City of Gillette.

3.8.2 Fire Hazards

During construction and operation of the proposed Project, there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard or flammable liquids, explosions, and over-heated equipment may cause small fires. Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Fires and explosions of natural gas or other flammable gases or liquids are also rare. Compliance with all related laws and federal and state statutes will be adequate to ensure protection from all fire hazards.

The Project will rely on both onsite fire protection systems and local fire protection services. The onsite fire protection system provides the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, would be provided by the Campbell County Fire Department.

3.8.2.1 Construction

During construction, portable fire extinguishers will be located throughout the site, and safety procedures and training will be implemented. In addition, the Campbell County Fire Department will provide fire protection backup for larger fires that cannot be extinguished using the portable suppression equipment.

3.8.2.2 Operation

The Project intends to meet the fire protection and suppression requirements of the Wyoming Fire Code, all applicable recommended National Fire Protection Association (NFPA) standards (including Standard 850 addressing fire protection at electric generating plants), and all Occupational Safety and Health Administration (OSHA) requirements. Fire suppression elements in the proposed plant will include both fixed and portable fire extinguishing systems.

A carbon-dioxide (CO₂) fire protection system will be provided for the combustion turbine generators and accessory equipment. The system will have fire detection sensors that will trigger alarms, turn off ventilation, close ventilation openings, and automatically release the CO₂.

In addition to the fixed fire protection system, smoke detectors, flame detectors, temperature detectors, and appropriate class of service portable extinguishers and fire hydrants must be located throughout the facility at code-approved intervals. These systems are standard requirement by the NFPA and the Uniform Fire Code (UFC), and they help to ensure adequate fire protection.

3.8.3 Emergency Medical Response

Incidents at power plants that require fire or other emergency response are infrequent and represent a negligible impact on local fire departments, except for rare instances where a rural fire department has mostly volunteer fire-fighting staff.

A review of the potential for the construction and operation of Project combined with existing industrial facilities and expected new facilities to result in impacts on the fire and emergency service capabilities of Campbell County determined that the Project's contribution to cumulative impacts is less than significant. Given the industrial area where the Project is proposed to be built and the lack of unique fire hazards associated with a modern coal-fired power plant, the Project will not impose any significant incremental burden on the local fire department's ability to respond to a fire or medical emergency.

3.9 Health Care

Without the Project, the physician-patient ratio of Campbell County Memorial Hospital does not meet recommended national standards. The national standard is 1 physician to

every 433 (according to the Bureau of Health Professionals) or 514 persons (according to the Graduate Medical Education National Advisory Committee). The projected ratio in 2009 is one physician for every 961 people, which is higher than the ratio for Wyoming and the United States.

With the added population from the construction of the Project, the ratio changes slightly for 2009, but the incremental population change would not result in a measurable change to the physician-patient ratio.

3.10 Municipal Services

With a peak workforce of 260 non-local workers, 26 of those workers bringing their families, and a 2.7-person average household size, it is estimated that 304 people would relocate to the area of impact. The projected additional people will not impact the carrying capacity of the City of Gillette or the Town of Moorcroft's municipal water supply or wastewater treatment facilities. With Gillette's Water Master Plan and the Wastewater Facilities Evaluation Project projecting adequate capacity for 20 years, the additional people will have negligible impact on capacity.

Table 3-21 provides information on population served, total maximum capacity, average day use, and peak day use compiled from the *State of Wyoming 2004 Water System Survey* (Wyoming Water Development Commission, 2004). Based on peak day use, the majority of the water systems below have available capacity. The water districts within the City of Gillette fluctuate between -33 percent to a high of 97 percent available use. Although the City of Gillette water system is shown to have -27 percent at maximum use, the average daily use can increase by 41 percent before reaching capacity.

TABLE 3-21
Community Water Systems in the Study Area

Water System Name	Population Served	Total Maximum Capacity (gpd)	Average Day Use (gpd)	Peak Day Use (gpd)	Available GPD	Percent Available Before Reaching Maximum Capacity
City of Gillette						
American Road Water and Sewer D	215	165,600	25,000	NA	140,600	85%
Cedar Hills Water Association	258	259,200	2,731	6,581	252,619	97%
Central Campbell CO ISD	1400	878,400	NA	NA	NA	NA
Cook Road Water District	256	172,800	NA	NA	NA	NA
Countryside Water Users, Inc.	360	259,200	20,000	NA	239,200	92%
Crestview Estates Subdivision	482	172,800	76,000	230,000	-57,200	-33%
Eight Mile Subdivision	87	108,000	6,660	43,200	64,800	60%
Force Road Joint Powers Board	244	165,600	30,000	144,000	21,600	13%
Gillette, City of	24,999	10,730,880	4,450,000	13,580,000	-2,849,120	-27%
Green Valley Estates Imp. Dis.	70	144,000	53,000	97,000	47,000	33%
Heritage Village Subdivision	750	531,360	61,250	296,138	235,222	44%
Means Imp. and Service Dist.	410	288,000	NA	NA	NA	NA
People's Improvement and Svc Dist.	114	79,200	33,000	44,000	35,200	44%
Southfork Estates	138	86,400	10,000	75,000	11,400	13%
Wessex I&S	16	28,800	3150	6300	22,500	78%
Westridge Water Users Assoc.	264	151,200	70,000	140,000	11,200	7%
Wright Water and Sewer District	1,500	1,944,000	15,000	108,000	1,836,000	94%
Town of Moorcroft						
Town of Moorcroft*	807	485,280	300,000	350,000	135,280	28%

Source: State of Wyoming 2004 Water System Survey Report (The total maximum capacity was converted from gpm to gpd).

The percent available before reaching maximum daily capacity was based on peak day use.

*Other sources identified for Moorcroft: Madison Pipeline.

Electric power, natural gas, telephone, and cable services are readily available in the City of Gillette, Town of Moorcroft, Campbell County, and Crook County. These services have sufficient capacity to meet the additional short-term population growth associated with the construction of the Project coupled with the current and future population growth of the county and city.

According to the City of Gillette Wastewater Division, for the month of September 2007, the maximum effluent was 2.48 mgd, the minimum effluent was 2.02 mgd, and the average effluent was 2.33 mgd. Although this is 1 month of data, Gillette staff indicated the effluent to be similar throughout the year. In February 2007, new upgrades were made to the treatment facility increasing the treatment capabilities from 2.7 mgd to 5.12 mgd. This is adequate to serve a population of approximately 50,000.

The Town of Moorcroft has one wastewater treatment plant.

3.10.1 Town of Moorcroft Water Needs

Currently, the Town of Moorcroft is concerned about its groundwater wells meeting the service area water needs. Specifically, the Town of Moorcroft can currently meet water needs in winter months; however, the capacity to serve the summer months demand is constrained. According to the Town of Moorcroft Assistant Public Works Director, the primary concern for the Town of Moorcroft is the development of new permanent housing developments and the requirements for water above the current service capacity (Sweeney, 2007).

The Town of Moorcroft is currently in negotiations with the City of Gillette to expand its existing agreement for additional treated water; however, the volumes and length of contract agreements have not been reached. In the interim period, the Town of Moorcroft has drilled a new water well, and is in the process of conducting the engineering feasibility, design, and development of cost options for a new transmission pipeline to deliver water from the new well source. Two primary issues have been identified, the lack of available funding and requirements to obtain private land owner right-of-way easements. Depending on the availability of funding and resolution of right-of-way easements, the City of Gillette water agreement may not be required.

3.10.1.1 Impact

BHC has obtained a contract with a motel operator in the Town of Moorcroft for up to 50 beds. A similar contract existed for the construction of the Wygen II Project. Based on the foregoing, there would be no measurable increase in water usage or requirements, because the motel's water use is part of the Town's baseline requirements, and similar usage occurred during the construction of Wygen II. The workforce occupying the 50 motel beds (via the motel contract) would not require additional demands for treated water in the Town of Moorcroft. Therefore, it is concluded that the water demand attributed to the 50 workers represents baseline use and is not a significant impact.

3.11 Transportation

The Project will utilize existing infrastructure at the site including access roads. The application process includes a traffic analysis to determine impacts to adjacent roadways during the construction and operations phase. This section documents the analysis process along with its assumptions and conclusions.

3.11.1 Adjacent Roadway Facilities

The Project is located approximately 8 miles east of Gillette. The site is accessed from the north via the Interstate 90 (I-90) interchange with American Road and from the American Road intersection with Wyoming State Highway 51 (WYO 51) from the south. WYO 51 is a two-lane, undivided major collector road that serves as a commuting route to and from Gillette. A review of the current Wyoming Department of Transportation's (WYDOT) *2008 State Transportation Improvement Program* indicates there are no planned roadway improvements for any of these facilities in the near future.

3.11.2 Potentially Affected Roads and Highways

Personnel and truck traffic will use I-90 and WYO 51 to American Road to access the energy complex and Project site. WYO 51 is a highway that may be affected by the Project. In addition, the I-90 interchange intersections with American Road may be affected by the Project. Although I-90 will be used during Project construction and operations, it is not expected to be affected permanently by the Project.

During Project construction, roads and highways may be impacted by vehicles hauling materials to and from the site. Contractors will comply with existing federal, state, and local requirements and restrictions to protect the road network and the traveling public. In addition, load limits will be observed at all times to prevent damage to existing paved road surfaces. If necessary, arrangements to transport oversized loads will be coordinated with and approved by WYDOT.

3.11.2.1 Personnel Access Routes

Based on information collected during construction of the Wygen II power plant, these personnel are expected to live in various locations and use the following access routes:

- I-90 from the east
- I-90 from the west
- WYO 51 from the east
- WYO 51 from the west

When construction is complete, the power plant operations will require up to 18 personnel split with 12 working rotating shifts and 3 working day shift. Similar to the construction period, the site will be accessed from American Road via I-90 and WYO 51. It is assumed that 75 percent of the operations workforce will live in Gillette while the other 25 percent live in various locations within Campbell County. It is assumed that all operations personnel will drive their own vehicles to the power plant site. These personnel are expected to use the following access routes:

- I-90 from the east (nine personnel)
- WYO 51 from the west (nine personnel)

3.11.2.2 Truck Access Routes

While some of the construction materials will be delivered to the energy complex by rail, it is expected that most of them will be trucked to the site. The items delivered by rail will be trucked to the Project site within the energy complex, so these trucks will not travel on the adjacent roadway network. The construction trucks are all expected to access the Project site from I-90 and the American Road interchange.

3.11.3 Operations Analysis of Potentially Affected Roads and Highways

In order to assess the potential traffic impacts associated with the proposed Project, existing and future traffic conditions were analyzed both with and without the Project for three time periods: existing, construction, and operations.

The operating conditions, or level of service (LOS), provided by the highway and the three intersections were assessed using *Highway Capacity Manual* (National Research Council,

2000) two-lane highway and unsignalized intersection methodologies. LOS is a term used to describe operating conditions qualitatively in a traffic stream and motorists' perceptions of those conditions. Six LOS classifications are given a letter designation from A to F, with A representing the best operating conditions and F the worst. LOS D is typically considered desirable for peak-hour operations.

For two-lane highways, LOS is defined in terms of average travel speed and percent time spent following another vehicle. For unsignalized intersections, LOS is defined in terms of average delay per vehicle for the stop-controlled movements. The method incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side street stop-controlled intersections, delay is typically represented in seconds for each movement from the minor approaches and the left turns from the major street.

3.11.3.1 Existing Peak Hour Levels of Service

Volumes and roadway/intersection geometries are inputs to the analysis methodologies. WYDOT provided 2006 and 2016 average daily traffic volumes and truck percentages for the interstate, interstate ramps, and the highway. An annual growth factor was calculated from these two volumes and applied to the 2006 volumes to determine the 2007 volumes. The directional distribution is assumed to be a 50/50 split. The peak hour is estimated to be 10 percent of the daily volume for all roadways. Based on this assumption, the peak-hour volume on the highway will be the same for both the morning and evening peak hour. Therefore, one peak hour is analyzed using the two-lane highway methodology.

The intersection turning movement counts for the peak hours were estimated based on various factors. At the WYO 51/American Road intersection, information from the Campbell County road and bridge department suggested the distribution is split 70 percent to the east and 30 percent to the west. WYDOT provided daily volumes on American Road for locations north and south of its interchange with I-90. Based on these volumes, the turn movement distribution is assumed to be 67 percent to the north and 33 percent to the south of the interchange. As with the highways, the peak hour is estimated to be 10 percent of the daily volume. **Table 3-22** shows the existing highway and intersection volumes and corresponding LOS. The intersection LOS is shown for both morning and evening peak hours.

TABLE 3-22
Existing Peak Hour Operating Conditions (2007)

Facility	Average Daily Volume	Peak Hour Volume	Percent Trucks	Peak Hour LOS
Highway				
WYO 51	3620	362	5	C
Intersections				
I-90 WB Ramps and American Road				
Westbound Left	N/A	9/9	12	A/A
Northbound Left	N/A	39/39	12	A/A
I-90 EB Ramps and American Road				
Eastbound Left	N/A	77/77	12	A/A
Southbound Left	N/A	13/13	10	A/A
WYO 51 and American Road				
Eastbound Left	N/A	17/17	5	A/A
Southbound Left	N/A	39/39	5	B/B

Source: CH2M HILL, 2007.

The facilities operate at acceptable levels of service during the peak hours. On the highway, the average travel speed is reasonable and the percent time spent following another vehicle about half. At the intersection, the left turning movements experience an average delay of less than 12 seconds per vehicle. Hence, there were no roadways or intersections identified in the vicinity of the Project that are presently over capacity.

3.11.3.2 Construction Period Peak Hour Levels of Service

The potentially affected highway and intersections were analyzed with and without the Project to determine impacts to the facilities due to the construction Project. The construction will take place in the years 2008 and 2009, so 2009 is the analysis year to represent the worst-case scenario for background traffic.

Background Analysis - The highway and interchange ramp volumes were grown by the same annual growth rate to obtain 2009 background volumes. It is assumed that the truck percentage does not grow. **Table 3-23** shows the 2009 background highway and intersection volumes and corresponding LOS. The intersection LOS is shown for both morning and evening peak hours.

TABLE 3-23
Construction Period Peak Hour Background Operating Conditions (2009)

Facility	Average Daily Volume	Peak Hour Volume	Percent Trucks	Peak Hour LOS
Highway				
WYO 51	3800	380	5	C
Intersections				
I-90 WB Ramps and American Road				
Westbound Left	N/A	9/9	12	B/B
Northbound Left	N/A	41/41	12	A/A
I-90 EB Ramps and American Road				
Eastbound Left	N/A	82/82	12	A/A
Southbound Left	N/A	14/14	10	A/A
WYO 51 and American Road				
Eastbound Left	N/A	18/18	5	A/A
Southbound Left	N/A	41/41	5	B/B

Source: CH2M HILL, 2007.

The facilities operate at acceptable levels of service during the peak hours. On the highway, the average travel speed is reasonable and the percent time spent following another vehicle about half. At the intersection, the left turning movements experience an average delay of less than 12 seconds per vehicle. Even though the level of service decreases by one letter designation for the westbound left at the westbound ramps intersection, the projected average delay experienced by drivers is less than 1 second.

Total Analysis – Adding the site generated traffic to the background traffic yields the volumes for the analysis of the construction period with the Project. The trip generation and distribution process used the following assumptions to calculate the additional highway and turn movement volumes due to the construction Project:

- Construction will occur in one shift.
- The workers all arrive in the morning peak hour and depart in the evening peak hour.
- Personnel will not leave the site during the shift.
- The average vehicle occupancy is 1.3 people per vehicle.
- All truck trips approach the I-90 and American Road interchange on I-90 from the east and west – two-thirds from the west and one-third from the east.
- All truck deliveries arrive and depart in the morning peak hour.

These assumptions result in the estimation of 49 additional cars and five trucks traveling to the American Road interchange from the west and 54 cars and three trucks from the east in the morning peak hour on I-90. In the evening peak hour, the assumptions result in the estimation of 49 additional cars traveling west on I-90 and 54 traveling east on I-90 from the

American Road interchange. These assumptions also result in the estimation of 47 additional cars traveling to the WYO 51 intersection with American Road from the west and one car from the east per peak hour on WYO 51.

Table 3-24 shows the 2009 total highway and intersection volumes and corresponding LOS. The intersection LOS is shown for both morning and evening peak hours. The evening peak hour reflects the operating conditions with the addition of only the personnel vehicles because all truck deliveries are assumed to occur in the morning peak hour. The morning peak hour truck percentages increase for some of the intersection turn movements at the interchange due to the additional construction trucks.

TABLE 3-24
Construction Period Peak Hour Total Operating Conditions (2009)

Facility	Average Daily Volume	Peak Hour Volume	Percent Trucks	Peak Hour LOS
Highway				
WYO 51	3900	428	5	C
Intersections				
I-90 WB Ramps and American Road				
Westbound Left	N/A	66/9	20	B/B
Northbound Left	N/A	46/90	22	A/A
I-90 EB Ramps and American Road				
Eastbound Left	N/A	82/82	12	B/B
Southbound Left	N/A	14/14	10	A/A
WYO 51 and American Road				
Eastbound Left	N/A	65/18	5	A/A
Southbound Left	N/A	41/42	5	B/B

Source: CH2M HILL, 2007.

All of the facilities operate at acceptable levels of service during the peak hours with the addition of the construction-generated traffic. The analysis predicts the projected average travel time along this segment of WYO 51 will increase by just over 1 minute; however the same level of service is maintained during the peak construction period. With the exception of the eastbound left at the I-90 eastbound off ramp intersection, the level of service provided to the left turning movements remains constant with the additional volume. The eastbound left experiences an average delay increase of less than one second from 9.7 to 10.3 seconds, which will be barely perceptible to drivers. The threshold of the A to B level of service designation is at 10 seconds.

3.11.3.3 Operations Period Peak Hour Levels of Service

The potentially affected highway and intersections were analyzed with and without the Project to determine impacts to the facilities due to the operations of the Project when construction is complete. The operations will begin in late 2009 or 2010, so the analysis year is 2010.

Background Analysis - The highway and interchange ramp volumes were grown by the same annual growth rate to obtain 2010 background volumes. It is assumed the truck percentage does not grow. **Table 3-25** shows the 2010 background highway and intersection volumes and corresponding LOS. The intersection LOS is shown for both morning and evening peak hours.

TABLE 3-25
Operations Period Peak Hour Background Operating Conditions (2010)

Facility	Average Daily Volume	Peak Hour Volume	Percent Trucks	Peak Hour LOS
Highway				
WYO 51	3900	390	5	C
Intersections				
I-90 WB Ramps and American Road				
Westbound Left	N/A	9/9	12	B/B
Northbound Left	N/A	42/42	22	A/A
I-90 EB Ramps and American Road				
Eastbound Left	N/A	84/84	12	A/A
Southbound Left	N/A	14/14	10	A/A
WYO 51 and American Road				
Eastbound Left	N/A	18/18	5	A/A
Southbound Left	N/A	43/43	5	B/B

Source: CH2M HILL, 2007.

The facilities operate at acceptable levels of service during the peak hours. On the highway, the average travel speed is reasonable and the percent time spent following another vehicle about half. At the intersection, the left turning movements experience an average delay of less than 12 seconds per vehicle.

Total Analysis - Adding the site-generated traffic to the background traffic yields the volumes for the analysis of the operations period with the Project. The trip generation and distribution process used the following assumptions to calculate the additional highway and turn movement volumes due to the operation of the Project:

- Workforce will operate in two 12-hour shifts.
- All personnel will travel in their own vehicles to the power plant site.
- Personnel will not leave the site during the shift.
- One truck delivery, or two truck trips, per peak hour.
- All truck trips are distributed west to Gillette.

These assumptions result in the estimation of 14 additional cars and one truck traveling to the WYO 51 and American Road intersection from the west and four additional cars traveling to the I-90 and American Road interchange from the east per peak hour.

Table 3-26 shows the 2010 total highway and intersection volumes and corresponding LOS. The intersection LOS is shown for both morning and evening peak hours.

TABLE 3-26
Operations Period Peak Hour Total Operating Conditions (2010)

Facility	Average Daily Volume	Peak Hour Volume	Percent Trucks	Peak Hour LOS
Highway				
WYO 51	3940	406	5	C
Intersections				
I-90 WB Ramps and American Road				
Westbound Left	N/A	11/11	12	B/B
Northbound Left	N/A	42/42	12	A/A
I-90 EB Ramps and American Road				
Eastbound Left	N/A	84/84	12	A/A
Southbound Left	N/A	14/14	10	A/A
WYO 51 and American Road				
Eastbound Left	N/A	17/17	5	A/A
Southbound Left	N/A	39/39	5	B/B

Source: CH2M HILL, 2007.

The facilities operate at acceptable levels of service during the peak hours. On the highway, the average travel speed is reasonable and the percent time spent following another vehicle about half. At the intersection, the left turning movements experience an average delay of 12 seconds or less per vehicle. The additional volume generated by the Project operations does not decrease the level of service nor degrade the operational performance of the adjacent roadway facilities.

In conclusion, the analysis predicts the additional vehicle trips generated by the construction and operations of the power plant Project will have a negligible impact on the operations of the adjacent roadway network. Thus, no roadway improvements are recommended for the intersections at the American Road interchange with I-90 or for WYO 51 and its intersection with American Road.

3.12 Project Taxes

Project benefits from a tax perspective would occur based on the ad valorem taxes that would be collected and the state and local sales and use taxes on purchases of goods required to complete the construction. Indirectly, the Project would also increase the coal mined in the area of impact so that mineral severance taxes would also increase

after commencement of operation of the Project. Appendix B provides an ISD Impact Assistance Payment Calculation.

3.12.1 Tax Implications

Table 3-27 summarizes the estimate of expenditures that will be made for facilities and equipment required for the construction of the Project facility over the 29-month construction period. These items constitute improvements made to the facility property that would be assessed at the current rate, as established by the state for industrial properties. The expenditures for facilities and equipment summarized in **Table 3-27** represent the fair market value, which is an estimated \$146.8 million.

TABLE 3-27
Wygen III Estimate of Cost of Facilities and Equipment

Component Description	Calendar Year				Total
	2007	2008	2009	2010	
Boiler	\$2,580,000	\$15,500,000	\$3,300,000	\$7,320,000	\$28,700,000
Turbine/Generator	\$3,440,000	\$10,600,000	\$8,860,000	\$0	\$22,900,000
Air Cooled Condenser	\$4,510,000	\$18,090,000	\$0	\$0	\$22,600,000
Major Balance of Plant Equip.	\$4,800,000	\$8,720,000	\$10,300,000	\$8,370,000	\$32,700,000
Minor Balance of Plant Equip.	\$5,310,000	\$588,000	\$882,000	\$0	\$1,470,000
Valves	\$0	\$842,000	\$127,000	\$0	\$969,000
Piping	\$0	\$2,070,000	\$9,420,000	\$3,910,000	\$15,400,000
Electrical/Instrumentation	\$0	\$14,400,000	\$3,480,000	\$6,120,000	\$24,000,000
Misc. Supplies	In Items				In Items
AQCS/Fabric Filter	\$970,000	\$4,970,000	\$2,260,000	\$2,800,000	\$11,000,000
Total Net Cost for Ad Valorem	\$16,810,000	\$75,780,000	\$38,629,000	\$28,520,000	\$159,739,000
Value of Pollution Controls Reduction	\$7,985,000	\$35,933,000	\$18,330,000	\$13,508,000	\$75,756,000
Total Project Cost	\$24,795,000	\$111,713,000	\$56,959,000	\$42,028,000	\$235,495,000

Source: BHC, 2007.

3.12.1.1 Ad Valorem Taxes

Ad valorem taxes support a variety of county and municipal operations including airports, fire protection, hospitals, libraries, museums, public health, recreational systems, special districts, and education. Assessed property values are the basis for ad valorem taxes. Property values are assessed at both the local (county) and state level.

For the period 2008 through 2102, it is estimated that the Project will generate a total ad valorem tax revenue of approximately \$9,830,000. The estimate incorporates the pollution control equipment exemption and a mill levy estimate based on the actual 2007 mill levy of 0.058937 for Wygen II. The annual ad valorem tax estimate is shown in **Table 3-28**.

TABLE 3-28
Wygen III Ad Valorem Tax Estimate on Cost of Facilities and Equipment

Actual Wygen II – Ad Valorem Tax		Wygen III – Ad Valorem Tax Estimate							
2007	2007	2008	2008	2009	2009	2010	2010	2011	2011
Actual Total Taxable Value	Tax Liability	Estimated Total Taxable Value ^c	Estimated Tax Liability ^b	Estimated Total Taxable Value	Estimated Tax Liability ^b	Estimated Total Taxable Value	Estimated Tax Liability ^b	Estimated Total Taxable Value	Estimated Tax Liability ^b
\$4,540,513	\$271,545 ^a	\$788,112 ^d	\$47,133	\$4,340,944 ^d	\$259,610	\$6,152,007 ^d	\$367,921	\$7,489,124 ^d	\$447,887
Actual Mill Levy	0.059805 ^e	Mill Levy	0.059805 ^e	Mill Levy	0.059805 ^e	Mill Levy	0.059805 ^e	Mill Levy	0.059805
Subtotal	\$271,545		\$47,133		\$259,610		\$367,921		\$447,887
								Total	\$1,122,551

Source: BHC, 2007.

^a The Assessed Taxable Value Percent of 4.688 percent is used to project future years and is based on 2007 Actual Assessed Taxable Value of Wygen II to the actual additional Wygen II CWIP IN 12-31-06 Financials: 2007 Wygen II Assessed Taxable Value = \$4,540,513; 2006 Wygen II CWIP = \$96,846,704. Net of Pollution Exemptions 4.688 percent.

^b Construction is to begin 4th qtr 2007 and to be completed 1st qtr 2010 (basis for our 2011 annual prop declaration and tax liability) and for purposes of this estimate, we will assume additional tax liability in tax years 2008 – 2011.

^c Total cost to complete is estimated at \$235,495 (total company owned). This amount does not include the \$20M contingency.

^d Costs will be phased in based on the CWIP balance being included in the assessment valuation:

2007 CWIP	24,795,000								
	<u>7,985,000</u>	less Pollution and Fire Exemptions							
	16,810,000	x 4.688% =	788,112	Estimated 2008 assessed taxable value					
2008 CWIP	136,508,000								
	<u>43,918,000</u>	less Pollution and Fire Exemptions							
	92,590,000	x 4.688% =	4,340,944	Estimated 2008 assessed taxable value					
2009 CWIP	193,467,000								
	<u>62,248,000</u>	less Pollution and Fire Exemptions							
	131,219,000	x 4.688% =	6,152,007	Estimated 2010 assessed taxable value					
2010 CWIP	235,495,000								
	<u>75,756,000</u>	less Pollution and Fire Exemptions							
	159,739,000	x 4.688% =	7,489,124	Estimated 2011 assessed taxable value					

^e The Mill Levy will be estimated based on the actual 2007 Mill Levy of .058937 for Wygen II. Because the Mill Levy has remained fairly constant over the past 4 years, we will leave it at this rate through 2010.

2007 (actual)	0.059805
2006 (actual)	0.058937
2005 (actual)	0.058885
2004 (actual)	0.058918

3.12.1.1.1 Sales and Use Tax

The State of Wyoming levies a 4 percent sales tax and a 4 percent use tax. All the counties in the study area levy an additional 1 percent county sales and use tax and a 3 percent lodging option tax (with the exception of Johnson County, which levies a 2 percent lodging option tax and Campbell County, which levies a 1-1/4 percent sales and use tax, but does not levy a lodging option tax). Sales and use tax revenues for the study area totaled \$141,668,708 in 2004. Approximately 54 percent of the total sales and use taxes collected in 2004 went to the State's general fund, and 46 percent was redistributed locally.

The estimated total sales and use taxes that will be paid on the materials purchased for the construction of this Project is estimated to total \$5,800,000.

4.0 Potential Environmental Impacts

Potential environmental impacts associated with the construction, operation, and maintenance of the Project are detailed below. Resource data were collected and impact analyses were conducted to evaluate impacts on the natural environment. Methods of mitigating potential impacts will be implemented as part of the Project and have been incorporated into the impact analysis. Unless otherwise stated, the area of analysis for the various resources evaluated consisted of the plant site and adjoining area.

4.1 Air Quality

BHC previously applied for an air quality permit for the construction of the Project, a 100-MW electric net capacity power generation facility. The WDEQ Division of Air Quality completed final review of the BHC's application to construct the 100-MW coal fired electric power generation station. Air Quality Permit Number CT-4517 was issued with conditions by the WDEQ Division of Air Quality on February 5, 2007.

The Project will be a Prevention of Significant Deterioration (PSD) major source under the New Source Review (NSR) program.

A "top-down" Best Available Control Technology (BACT) analysis in accordance with U.S. Environmental Protection Agency (EPA) guidance was conducted for SO₂, NO_x, CO, PM, and PM₁₀. The criteria air pollutant emission rates defined in Air Quality Permit Number CT-4517 are detailed in **Table 4-1**.

TABLE 4-1
Wygen III Criteria Air Pollutant Emission Rates Defined in Air Quality Permit Number CT-4517

Pollutant	lb/MMBtu	lb/MW-hr	lb/hr	TPY
NO _x	0.05 (12-month rolling)	1.0 (30-day rolling) ^a	65.0 (30-day rolling)	285
SO ₂	0.09 (12-month rolling)	1.4 (30-day rolling) ^a	156.0 (3-hr block) 117.0 (30-day rolling)	512
PM/PM ₁₀	0.012 ^b	---	15.6	68
CO	0.150	---	195.0	854
Hg	---	97 x 10 ⁻⁶ (12 month rolling) ^a	---	0.04

Source: Wyoming Department of Environmental Quality - Division of Air Quality, 2007.

^a NSPS Subpart Da Limit

^b Filterable PM/PM₁₀

The air quality impact analysis for the Project included the sources from the recently permitted Wygen II Project at the request of the WDEQ Division of Air Quality.

The Project is located within 250 kilometers (km) of three areas in South Dakota and Montana that are classified as Class I areas for the protection of air quality. These include Wind Cave and Badlands National Parks in South Dakota, which are located approximately 170 and 210 km, respectively, to the east-southeast of the Project.

The Northern Cheyenne Indian Reservation in southern Montana is located approximately 170 km northwest of the Project. Badlands and Wind Cave are mandatory Class I areas as designated by Congress and are under the management of the National Park Service. The Northern Cheyenne Indian Reservation is not a mandatory Class I area, but was instead declared Class I by EPA after the Northern Cheyenne Tribe followed the mechanism in the Clean Air Act and petitioned to become Class I. The Class I status of the reservation is managed by EPA Region 8.

Far-field (CALPUFF) modeling was conducted to determine the modeled impacts at the Class I areas in question for visibility, criteria pollutants, and deposition. The raw modeled visibility impacts for the Project that exceeded the Federal Land Manager (FLM) threshold of 5 percent at Wind Cave and Badlands all occur on days that are accompanied by pronounced natural obscuration. All raw visibility impacts greater than 5 percent at Northern Cheyenne Indian Reservation were also accompanied by pronounced natural obscuration with the exception of a single day within the 3-year block of meteorology used to model the impacts.

Criteria pollutant impacts were below the EPA-proposed Class I area modeling significance levels at Wind Cave and Badlands. Modeled results for SO₂ impacts exceeded the EPA-proposed significance level at Northern Cheyenne Indian Reservation, but a cumulative analysis of all increment-consuming sources in the area demonstrates that the Class I increment will not be consumed.

Results of the near-field modeling for the combined sources were below the Class II area modeling significance levels with the exception of SO₂. As with the Class I area modeling, a cumulative analysis that included all applicable sources in the area demonstrated that the total modeled impacts will be below the PSD increments and National Ambient Air Quality Standards (NAAQS).

The WDEQ Air Quality Division issued Air Permit CT-4517 on February 5, 2007, for the Project. A copy of the air permit is available upon request from the WDEQ Air Quality Division in Cheyenne, Wyoming.

4.1.1 Mercury

The Project will be subject to the Clean Air Mercury Rule (CAMR), which was issued by the EPA on March 15, 2005. Emission control units that will be used for the Project, including reagent injection system for mercury control, fabric filter for particulate control, dry scrubbing for SO₂ control and selective catalytic reduction (SCR) for NO_x control represent best demonstrated technology (BDT) for control of mercury for this type of unit according to the CAMR. BHC will comply with the mercury emissions limits established under the CAMR.

Mercury emissions are to be addressed by conducting a 1-year optimization study at Wygen II, with a target emission rate of no more than 20 X 10⁻⁶ lb/MW/hr. Study

results are due to the WDEQ Air Quality Division at least 180 days prior to the startup of Wygen III.

4.1.1.1 Mercury Pollutant Emission Control Study

In 2006, BHC, Babcock and Wilcox (B&W), and the University of Wyoming partnered to fund and perform a full-scale demonstration of a patented, alternative means of enhancing the mercury control performance of the single spray dryer absorber and fabric filter (SDA/FF) system with the challenging low-chlorine PRB coal. This study evaluated enhanced mercury control options for Wygen I. Two approaches to reduce stack mercury emissions were demonstrated: chloride solution injection with the coal and powdered activated carbon (PAC) sorbent injection upstream of SDA module. The objective was to achieve 80 percent mercury capture with minimal or no PAC injection. Three weeks of extended testing were conducted in March at optimum reduction conditions using only chloride solution injection (assuming >80 percent mercury capture). Unit outage work in March involved changes to the burners, SCR system, and pulse-jet fabric filter (PJFF). Stack mercury testing following the outage indicated a significant change in the mercury control performance of the base AQCS equipment.

The coal mercury content during the demonstration program averaged 0.24 part per million dry. This level of coal mercury would result in a projected uncontrolled mercury emission rate of approximately 180 lb/year. The February/March baseline tests indicated a projected emissions level of just under 40 lb/year for the AQCS equipment without Cl or PAC addition. Both the PAC addition and Cl addition were able to reduce the projected emissions to less than 20 lb/year.

SO₂ and NO_x emissions during the mercury control demonstration project were well within the unit operating permit level. Based on the hourly emissions data, SO₂ emissions averaged 0.132 lb/MMBtu and NO_x emissions averaged 0.133 lb/MMBtu over this 1-month period. Periodic coal sampling over this period indicated a coal sulfur content range of 0.63 percent to 0.78 percent. The average SO₂ emission level represents a reduction in potential SO₂ emissions of approximately 92.5 percent.

Results of the study showed that the Wygen I AQSC system has demonstrated long-term compliance with the operating permit SO₂, NO_x, and particulate emissions and opacity levels with the installed AQCS equipment. The initial tests showed a significant amount of base mercury capture (55 to 65 percent) in the SCR/SDA/FF system without the Cl or PAC injection. The enhanced mercury control tests successfully demonstrated the feasibility and performance of the Cl addition technology in conjunction with the SCR/SDA/PJFF system for achieving low-mercury emissions when firing a Powder River Basin coal. Injecting Cl solution and/or PAC increased the mercury capture to upwards of 90 percent.

BHC and B&W have been successful in the quantification of the beneficial effects of calcium chloride and PAC injection on mercury, SO₂ and NO_x emissions.

Similar mercury control and multi-pollutant control strategies will be applied at the Project. Based on the study results for Wygen I, it is anticipated that the annual

mercury removal coats for the Project will be \$487,500 per year for the life of the plant. A one-time capital equipment investment of \$850,000 will be required.

4.1.1.2 Compliance with CAMR

The EPA has conducted extensive analyses on mercury emissions from coal-fired power plants and subsequent regional patterns of deposition to U.S. waters. Those analyses conclude that regional transport of mercury emission from coal-fired power plants in the United States is responsible for very little of the mercury in U.S. waters (EPA, 2007). Small contributions from coal-fired plants will be significantly reduced after EPA's Clean Air Interstate Rule (CAIR) and Clean Air Mercury Rule (CAMR) are implemented. The EPA recognized that mercury can be transported thousands of miles in the atmosphere and set effective exposure reduction regulations that require reductions on a global scale.

The Project will comply with the mercury emissions limits established under the CAMR. Additionally, the Project will be in compliance with all current state and federal regulations for air emission and green house gases. BHC is a proponent of good environmental stewardship, and has been practicing environmental stewardship at the Neil Simpson 1 and 2, and Wygen I and II facilities. BHC is currently evaluating mercury emission control technology and will be selecting equipment that will enable this Project to meet the mercury standards as signed by the EPA. The Project has sustainable plans, compliance strategy, and systems in place to remove mercury. The CAMR emission limits established by EPA will mitigate impacts from mercury emissions to surrounding environment and provide effective controls at the Project facility.

Mercury emissions from the Project will be protective of the environment as established under CAMR. The proposed Project will not have an adverse effect on Donkey Creek or adjacent water bodies due to compliance with Clean Water Act regulations. These wind frequency statistics indicate the prevailing wind direction from the Project site will be northwest and southwest, and not east towards Donkey Creek and Keyhole Reservoir.

The various ash byproducts generated at the Neil Simpson Energy Complex and other offsite power plants owned by BHC are either slurried or trucked to the Peerless Pit at the Wyodak Mine for disposal in the backfill. This disposal method is authorized by the WDEQ - Land Quality Division through Permit 232-T6. A permit amendment will be submitted in 2009 to include ash generated at the Wygen III facility in the disposal plan. Ash from Wygen III will be trucked to the Peerless Pit and commingled with ash from other sources.

4.1.1.3 Impacts

Mercury cycles in the environment as a result of natural and human (anthropogenic) activities. The amount of mercury mobilized and released into the biosphere has increased since the beginning of the industrial age. Most of the mercury in the atmosphere is elemental mercury vapor, which circulates in the atmosphere for up to 1 year, and hence can be widely dispersed and transported thousands of miles from likely sources of emission. Most of the mercury in water, soil, sediments, or plants and animals is in the form of inorganic mercury salts and organic forms of mercury (e.g., methylmercury). The inorganic form of mercury, when bound to airborne particles or in a gaseous form, is readily removed from the atmosphere by precipitation and is also dry deposited. Wet deposition is the

primary mechanism for transporting mercury from the atmosphere to surface waters and land. Even after it deposits, mercury commonly is emitted back to the atmosphere either as a gas or associated with particles to be re-deposited elsewhere. As it cycles between the atmosphere, land, and water, mercury undergoes a series of complex chemical and physical transformations, many of which are not completely understood.

Mercury accumulates most efficiently in the aquatic food web. Predatory organisms at the top of the food web generally have higher mercury concentrations. Nearly all of the mercury that accumulates in fish tissue is methylmercury. Inorganic mercury, which is less efficiently absorbed and more readily eliminated from the body than methylmercury, does not tend to bioaccumulate.

On March 15, 2005, the EPA issued the Clean Air Mercury Rule to cap and reduce mercury emissions permanently from coal-fired power plants. This rule, combined with EPA's Clean Air Interstate Rule (CAIR), significantly reduced emissions from the nation's largest remaining source of human-caused mercury emissions. According to the 2002 United Nations Environment Programme - Chemicals, Global Mercury Assessment, the U.S. anthropogenic mercury emissions are estimated to account for roughly 3 percent of the global total, and emissions from the U.S. power sector are estimated to account for about 1 percent of total global emissions. In addition, the EPA has estimated that about one-third of U.S. emissions are deposited within the contiguous United States, and the remainder enters the global cycle. Current estimates are that less than half of all mercury deposition within the United States comes from U.S. sources. However, there are regional differences in these numbers. Based on the mercury emission limits established in the Wygen III WDEQ - Division of Air Quality issued air permit, the Project will significantly reduce mercury emissions, resulting in a significant reduction in impacts to both aquatic and terrestrial life.

4.2 Noise

Industrial Siting Regulations state that noise is an issue that must be taken into account in the siting process, but numeric limits are not specified at the state level in Wyoming. In addition, there are no existing county regulations that directly address sound levels in Campbell County.

Based on a review of aerial photographs, there are no residences or other sensitive receptors within 1 mile of the Project site.

Construction of the Project will occur during daytime hours, and no significant construction noise impacts are anticipated.

Operation of the Project would not directly impact any residences or other sensitive receptors. Therefore, construction and operation of the Project will not result in any significant impact to sensitive noise receptors.

4.3 Soil Resources/Geologic Hazards

The area surrounding the Project site can be described as a dissect plane (or peneplain) separated from a higher plateau by an irregular, east-facing escarpment; this escarpment is commonly referred to as the Rochelle Hills. The escarpment owes its presence and preservation to a protective capping of porcellanite (referred to locally as “scoria,” “clinker,” or “red dog”). East of the escarpment, the land surface is broken and dissected by steep-walled, narrow stream channels. West of the escarpment, the surface is a rolling grass-covered prairie in which a few porcellanite-capped buttes rise about 100 feet above the base level. Several extensive depressions, as well as numerous minor ones, are present in the area. The origin of these depressions is discussed below.

The immediate Project site location is near the western boundary of the Rochelle Hills escarpment in topography characteristic of a rolling prairie. The existing Wyodak, Neil Simpson I/II, and Wygen I plants are located on alluvial terraces along the bottomland of Donkey Creek, an artificially perennial stream that receives treated effluent from the City of Gillette.

The detailed discussion of the site geology is limited to the Fort Union and Wasatch Formations of Tertiary age. These are the only formations directly affecting foundation and groundwater conditions at the plant site.

The Paleocene Fort Union Formation in the site area consists of grey clays, grey silty clays, interbedded fine-grained grey sandstones, and beds of coal and carbonaceous shales. The formation outcrops about ¼ mile eastward from the site. The immediate site area is extensively capped by red porcellanite, tentatively identified as lower Wasatch Formation baked by burning of the Wyodak-Anderson coal seams. The upper contact of the Fort Union has been placed at the top of the Wyodak-Anderson coal.

The Eocene Wasatch Formation consists of lenticular fine-grained sandstones, clays, and silty clays with interbeds of shale and coal. With the exception of the sandstone lenses, the formation is typically unlithified to poorly cemented. The sandstone lenses range from poorly cemented to very well-cemented and are typically grey to yellowish brown in color. All individual lithologic units within the formation are discontinuous when considered on a regional basis; porcellanite beds are common in the immediate vicinity of the site. The Wasatch/Fort Union contact is considered to be slightly east of Wygen III. The original thickness of the Wasatch is believed to be 1,000 feet in the Wygen III area; erosion has removed at least 700 feet of the formation.

Several structural/stratigraphic relationships existing at and near the plant site are somewhat unusual. The so-called “clinker” (porcellanite) beds, produced by baking of overlying sediments by burning the Wyodak-Anderson coal bed, have collapsed into the space once occupied by the coal. Because the coal bed is, in places, about 100 feet thick and relatively shallow (10 to 80 feet below present ground surface), these collapsed structures have resulted in numerous surface depressions, similar in appearance to the karst topography of limestone regions. Ditto Lake, about 2 miles northwest of the Project, is an example of one of these depressions. Some of the depressed areas are as much as 1 mile across, and the bottoms are occasionally occupied by permanent ponds.

Porcellanite is limited from the area immediately east of the Project. Any structures located in this area are free of potential hazards from the type of collapse structure mentioned above. The absence of porcellanite is explained by the fact that the Wyodak-Anderson coal seam simply is not present in this particular area and was not present at the time of burning in the seam. This was confirmed by borings during the early phases of the foundation for Wyodak. The area discussed above is only about 100 feet east of the Wyodak Mine Peerless Pit, where the combined thickness of the Wyodak-Anderson coal approaches 100 feet. The disappearance of the unit of such thickness over a short distance is explained as follows: Water and oil exploratory wells in the area, as well as surficial outcrops, show only continuous and relatively undisturbed, regionally dipping strata, thus ruling out the possibility of faulting. The absence of porcellanite in the area suggests that the removal of the coal by burning cannot be the explanation. It appears that the area is the location of an ancient stream channel that eroded away the coal deposits.

Surficial deposits at the Neil Simpson I site include approximately 25 to 35 feet of fine sand, sandy silt, or sandy sand, and minor gravelly sand and silt. The depth to the water table is 10 to 20 feet. Neil Simpson I lies over a buried stream channel that eroded away the Wyodak-Anderson coal during Eocene time. During construction of Neil Simpson I drilled pier foundations were installed to distribute the loads in these stream channel deposits, and it is anticipated that a similar foundation design with steel piles will be applied to the Project. The location of the proposed power plant was chosen after conducting soil drilling and to avoid jurisdictional wetlands and waters of the U.S. The Project site is believed to be free of any thick coal seams. Two distinct bearing strata were recognized during the design and construction of Wyodak. These were a dark grey shaley claystone and a light grey sand siltstone. There appears to be a lateral gradation between the two units, presumably related to the geometry and energy of the ancient stream channel. Generally, the claystone occurs adjacent to the subcrop limit of the coal seam and probably represents a shallow low-energy environment. In one area, coal overlaps these strata, suggesting that the stream channel deposits may be contemporaneous with the coal formation, rather than later, as is generally assumed. In the claystone, shaley cleavage is poorly developed and generally horizontal. Very hard lenses are rare, and the material is easily excavated with an open-flight auger. Water inflow can be expected to be very small, provided the excavations are cased to the top of the unit.

The predominant material under the proposed plant site is a light grey sandy siltstone. This material appears to be the result of moderate-energy deposits in mid-channel. The lenticular nature and complex interbedding are suggestive of braided stream deposits. These sands are typically dense, with poor cementation, although lenses of very well cemented, very hard siltstone or fine sandstone exist. In the construction of Wyodak, drilled pier installation in the siltstone was complicated by excessive water inflows and caving, as well as by the excessively hard lenses, which proved to be very difficult to excavate.

The only active mining operation within 1 mile of the Project site is the Wyodak Mine, which supplies coal to the existing generating facilities. It is located adjacent to the proposed plant site. The thickness of the seam approaches 100 feet. Overburden above the seam is typically thin, commonly less than 20 feet in the vicinity of the plant.

Only thin coal seams are present at depths beneath the plant site. They are too deep and thin to be mined economically. Water wells drilled north of the site typically show only streaks

of coal to depths of as much as 700 feet below the base of the Wyodak-Anderson seam. One well struck about 5 feet of coal at a depth of 440 feet below the Wyodak-Anderson seam. Because other nearby wells show no corresponding thickness, this must represent a localized lens and it is not an economical deposit. Other studies indicate that thin coal seams may be present about 550, 1,375, and 1,525 feet below the base of the Wyodak-Anderson seam. None of these seams are being worked or have been worked in the past.

The baked sedimentary rock, known as “clinker” (scoria or porcellanite), is widely distributed in the area and is used as road material. There are several small quarries in the vicinity of the site. However, none are currently operational.

4.3.1 Soil Resources

The Soil Survey Geographic Database (SSURGO) for Campbell County, Wyoming, was used to confirm soil characteristics on the Project site. Soils present on the site include 10 soil complexes with mostly loam characteristics. No soils present on the Project site meet the state and federal criteria of prime farmland soils. No soils exceed the K-factor limit of 0.37 set by the Natural Resource Conservation Service (NRCS) as a limiting factor for erosion hazard. Hydric soils are present in the southeast corner of the site. Wyoming does not maintain a list of soils of statewide concern.

No adverse impacts on soil resources will occur. Mitigation measures will be implemented during construction and operation of the Project to ensure that excessive erosion and other adverse impacts on area soils will not occur.

4.4 Cultural Resources

Cultural resources consist of prehistoric and historic archaeological sites that are listed on, or are eligible to be listed on the National Register of Historic Places (NRHP).

- Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of an area. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. In California, the prehistoric period began over 10,000 years ago and extended until 1769, the time when the first Europeans settled the plains.
- Historic-period resources are those materials, archaeological and architectural, usually associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, structures, traveled ways, artifacts, or other evidence of human activity. Under federal and state requirements, historical cultural resources must be greater than 50 years old to be considered of potential historic importance. A resource less than 50 years of age may be historically important if the resource is of exceptional importance.

The NHPA is the principal federal law with respect to the treatment of cultural, archaeological, and historic resources. Section 106 (16 United States Code [USC] 470f) of the NHPA requires federal agencies, prior to taking action to implement an undertaking, to take into account the effects of their undertaking on historic properties and to give the Advisory Council on Historic Preservation (ACHP) and State Historical Preservation Office

a reasonable opportunity to comment regarding the undertaking. Historic properties are “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places” (16 USC 470w (5)). The criteria used to evaluate the NRHP eligibility of properties affected by federal agency undertakings are contained in 36 Code of Federal Regulations (CFR) 60.4. Development of any area that is predominantly federal surface or federal minerals requires a complete cultural resource inventory in compliance with Section 106 of the NHPA.

A Class I and III cultural resource report of the site was prepared by the Wyoming State Archaeologist’s Office in 1981 that covered 3,275 acres within and adjacent to the current Wyodak Mine permit boundary, including the proposed project site. It was based on surveys conducted by the Wyoming Recreation Commission in 1975 and the office of the Wyoming State Archaeologist in 1981. A review of the Class III survey shows that no isolated finds or historic or pre-historic archaeological sites were found or documented at the proposed Project site. Therefore, the Project will have no direct or indirect effect on cultural resources, and no mitigation measures would be required.

4.5 Vegetation Resources

The climate is semi-arid, with an average annual precipitation of approximately 15 inches. Snowfall at Gillette 9ESE, the closest U.S. Weather Bureau Station, averages 57 inches per year. Evaporation exceeds annual precipitation, with relatively short, warm summers and longer, cold winters. The average daily mean temperature is 45.1 degrees Fahrenheit (°F). The highest recorded hourly temperature at Gillette 9ESE since 1925 is 107°F and the lowest is -40°F. August is the warmest month, with a mean daily temperature of 69°F, and December is the coldest (21.3°F). The frost-free period is between 100 and 125 days.

The general area is characterized by flat to gently sloping rolling uplands at an elevation of approximately 4,500 feet above MSL. It is dominated by native vegetation typical of the grassland-sagebrush communities found throughout northeastern Wyoming. Trees are rare and are usually located along drainages. Although there are remnant patches of native vegetation within the Project site itself, the primary vegetation community is composed of non-native introduced grass and forb species.

Data from the Wyoming Gap Analysis Program (GAP) predicted the vegetation community on the Project site to be Wyoming big sagebrush. Due to past land use, land cover on the site consists of grassland with scattered and remnant patches of Wyoming big sagebrush communities. The Project site is located within a heavily disturbed industrial energy complex. Previous disturbance activities have resulted from the railroad, access roads, employee housing, and construction of the numerous existing power plants. Adjacent industrial uses include the following power plants; Neil Simpson, Wyodak, Neil Simpson II, Wygen I, Wygen II, two gas-fired turbines, and the Wyodak Coal Mine. Vegetation resources in the Project area may include remnant patches of steppe vegetation. However, due to the disturbed nature of the area, the primary vegetation community is composed of non-native introduced grass and forb species.

Impacts to any remnant plant communities may include soil disturbance, which could lead to an invasive non-native species (weed) infestation. Timely revegetation of all

disturbed areas with a native-species seed mixture will mitigate impacts associated with construction disturbances. Additionally, a weed-monitoring program could be implemented if any noxious weed infestations occur on any previously disturbed construction areas. Overall, impacts to native vegetation will be negligible.

4.6 Surface Water Resources

The Project area is in the Belle Fourche River watershed. Drainage is predominantly to the south via Donkey Creek, a prominent perennial watercourse whose headwaters occur in the uplands southwest of the Project area. An unnamed ephemeral tributary flows from the northeast to Donkey Creek within the Project area. Donkey Creek is a Class 3B surface water tributary to Belle Fourche River that flows east, into Keyhole Reservoir. Class 3B waters are designated for the following beneficial uses: recreation, wildlife, agriculture, industry, scenic value, and other aquatic life (WDEQ, 2007). None of the drainages to Donkey Creek within the Project area are permanent water sources and only flow briefly along portions of their courses during periods of heavy rainfall or snowmelt.

Other springs/seeps may occur in previously inventoried areas, but none are identified on United States Geological Survey (USGS) topographic maps. No surface water will be used for the Project. No direct impacts to surface water features within the Project site will occur.

FEMA 100-year floodplain data identify a 100-year floodplain in the southern part of the Project site. However, the Project will not occur nor be constructed within the designated 100-year floodplain.

4.7 Groundwater Resources

The major sources of groundwater in the eastern Powder River Basin, which includes the proposed Project site, are the Fox Hills sandstone and sandstone units in the Lance, Fort Union, and Wasatch Formations. Wells in these formations are used for all purposes: stock, domestic, municipal, and industrial water supplies. Because of the numerous sandstone aquifers separated by impermeable shales, the groundwater situation in these formations is very complex. This is further complicated by the fact that most wells are completed in several aquifers. In the immediate vicinity of the site, the Fox Hills Sandstone and the aquifers in the Lance Formation are deeply buried and are not usually tapped by many wells in this area. It is unlikely that these aquifers would be disturbed by plant construction, because they are isolated from the maximum depth of possible construction activity by a number of aquicludes.

The Fort Union Formation yields water from sandstone beds, jointed coal seams, and occasional scoria beds. Maximum yields are about 150 gpm, although Fort Union wells at the Neil Simpson Energy Complex presently produce much less. The Fort Union Formation outcrops immediately east of the proposed Project site. The highest producing wells at the Neil Simpson Energy Complex are completed in the lower Fort Union and in the Lance/Fox Hills Formations. A sandstone aquifer in the Fort Union occurs about 400 feet beneath the plant site. This is the shallowest aquifer locally exploited by the water supply wells, including four industrial supply wells of the Neil Simpson Energy Complex.

The Wasatch Formation is an important aquifer, which outcrops at and to the west of the Wyodak site. The Wasatch consists of grey shales and claystones, thin sandstone lenses, thin coal seams, and clinker beds. At the Neil Simpson I site, the formation is only about 30 feet thick; the upper units have been removed by erosion. This small depth would not provide significant groundwater yields.

Localized alluvial deposits in the vicinity of the proposed Project site have little storage volume and would be rapidly depleted. They are also very susceptible to seasonal variation and are not considered a reliable source of major groundwater supplies.

The Madison Limestone (stratigraphically equivalent to the Pahasapa Limestone) is an excellent, high-yield source of groundwater. At the proposed plant site, it is approximately 10,400 feet below ground surface, which economically restricts its use as a source of water supply; it is also isolated from any effects of the plant construction or operation due to the depth.

The sandstone-shale-coal sequence present in the Powder River Basin provides for a complex groundwater situation in which numerous relatively thin aquifers are separated by impermeable layers. In terms of the construction of the proposed power plant, this is seen as an advantage, because aquifer disturbance during dewatering and excavation will be effectively limited by underlying aquicludes so that only the aquifer directly encountered during construction will be affected. The Eocene stream channel deposits in which the proposed plant will be founded are not thought to be laterally extensive. Compared to the effects of surface mining and wells at the existing plants, construction of the proposed plant will have a negligible effect on local groundwater.

No liquid wastes from the proposed Project will be discharged in a manner that would allow plant wastes to mix with local aquifers.

4.7.1 Water Rights

Water for the proposed Project will be obtained from the Neil Simpson Complex's network of permitted groundwater wells that supply the industrial and domestic/sanitary needs of BHC's existing, contiguous power plants. These same wells also supply the domestic/sanitary needs and a portion of the industrial water needs of PacifiCorp's Wyodak Plant located adjacent to the proposed Project.

The Project proposes to use water from existing groundwater wells and Well 15, which has been approved by the State Engineer's Office for construction. Overall, the Project will consume 210-242 ac-ft/yr (130-150 gpm) of groundwater with a potential peak demand of 180-190 gpm. The pollution abatement systems will use a significant portion of the water on this Project. An estimated 34-48 ac-ft (65-75 gpm) is used per year in the sulfur removal process based on typical design coal having a sulfur limit of 0.8 percent. Additional use in this area is the ash loading system, which uses 7.8 to 15.8 ac-ft/yr (15 to 30 gpm). Because the Project will use air cooled condensers, this results in a net water savings of approximately 3,000 gpm. The steam generator will use approximately 48 ac-ft/yr (30 gpm) for soot blowing and boiler blow down.

The 242 ac-ft of annual consumption of groundwater is well below the threshold for Wyoming Environmental Quality Act and Industrial Development Information and Siting

Act statutory guidelines of 800 ac-ft to require a State Engineer's Office water supply and yields analysis. The 242 ac-ft of annual consumption of groundwater is well below the threshold for Wyoming Environmental Quality Act and Industrial Development Information and Siting Act statutory guidelines of 800 ac-ft to require a State Engineer's Office water supply and yields analysis. Therefore, no water supply or yield analysis report is necessary. Sufficient water exists in the Neil Simpson Energy Complex System to supply the necessary quantity of water to the Project.

The yield of the existing well network is sufficient to supply the proposed plant while exceeding the water use requirements of all existing facilities. In addition, BHC holds a valid water right to drill an additional, high-yield, industrial supply well to augment, as necessary, the production of the existing well network. Through agreements with PacifiCorp, BHC's Neil Simpson Energy Complex has also used, and will continue to use, as an emergency back-up supply, Gillette's sewage effluent pumped by PacifiCorp to the Wyodak Plant. All necessary permits have been obtained to the satisfaction of the Wyoming State Engineer's Office to secure PacifiCorp's future rights to the effluent. BHC has secondary rights to the piped effluent through agreements signed with PacifiCorp. The Wyodak Plant consumptively uses the effluent at a rate of about 200 gpm, although the effluent may be pumped to the plant at up to approximately 1,800 gpm. In addition to serving as an emergency back-up supply for the Neil Simpson Energy Complex, a portion of the treated effluent piped to the Wyodak Plant is demineralized by PacifiCorp at its plant and often piped to BHC's Neil Simpson 2 Plant. This reduces the normal peak use rate at the Neil Simpson Energy Complex some 60 gpm, from 640 gpm to 580 gpm. No direct impacts to water rights within the Project site will occur.

4.8 Recreation

Recreational resources within and adjacent to the area of primary impact include a mixture of city, county, and state parks. Other recreational resources within the area of primary impact include numerous local city and county parks, museums and cultural attractions, greenbelts which may include hiking/bike trails (primarily in Gillette), big game hunting, and various fishing at local reservoirs.

4.8.1 Local City and County Parks

Given that the Project workforce represents only a very small percentage of the total population of the area of primary impact, any use of local city and county would not result in a significant net increase in usage and visitation. Therefore, it is concluded that no significant impacts would occur to city and county recreational resources from the small incremental increase in usage by Project workforce.

4.8.2 Keyhole State Park

Keyhole State Park is located at the western edge of the Black Hills in Crook County, Wyoming. The nearest major population center is the City of Gillette, located approximately 48 miles to the west, in Campbell County. The park centers on Keyhole Reservoir, which includes approximately 14,720 acres, of which 9,340 are water and 5,380 are land. The U.S. Bureau of Reclamation (USBR) built the reservoir in the early 1950s under authorization

of the Flood Control Act of 1944 for irrigation water storage, fish and wildlife conservation, recreation, sediment and pollution control, and industrial water supply. Wyoming State Parks and Historic Sites (WSPHS) manage the recreation facilities within the Project boundaries under an agreement with the USBR. Keyhole State Park will have an estimated 226,565 to 297,152 visitors in the 2008 calendar year.

Keyhole State Park is the only major water-based recreation area that is a relatively convenient travel distance to the area of primary impact. The next closest major reservoirs are located more than 115 miles away at Glendo State Park in Wyoming and Belle Fourche Reservoir in South Dakota. Other major recreation resources in the region include Devil's Tower National Monument and the Black Hills National Forest. These areas do not provide the water-based activities that are Keyhole's main attraction. Their proximity to the park; however, may account for a minor amount of visitation by the Project workforce who otherwise might not be attracted to this geographical area.

4.8.2.1 Keyhole State Park Recreation Master Plan

The emphasis of the 2002 Keyhole State Park Recreation Master Plan (Plan) is the identification and prioritization of improvements to Keyhole State Park with the goal of encouraging and accommodating recreational usage while protecting the natural resource and surrounding habitat.

The primary goals of the Plan included:

- Accommodate expected visitor numbers to grow to 397,000 by 2023 and accommodate changing visitor needs and prepare for future uses;
- Improve safety and circulation within the Park; and
- Preserve the Park's natural environment.

4.8.2.1.1 Highway Access to Keyhole State Park

Keyhole State Park can be accessed from I-90 at Moorcroft Exits 153 and 154 and also at Exit 165, east of Moorcroft. To enter the park from I-90, travelers take State Highway 14 north to Moorcroft where they join State Highway 113, which travels along the southern edge of park property to the junction with Pine Haven.

According to the Plan, State Highway (SH) 113 from Moorcroft to the Pine Haven park entrance road was paved and in fair condition at the time of the plan (USBR, 2002). In addition, the Plan detailed that the Pine Haven turnoff to the intersection with Pine Ridge Road, pavement on SH 113 was replaced by gravel and is sometimes poorly maintained (USBR, 2002). Lastly, the Plan detailed that Pine Ridge Road from the interstate was paved, although patched and in relatively poor condition (USBR, 2002).

4.8.2.1.2 Visitor Usage and Area of Origination

The Plan used a 1997 visitor survey data to determine visitor area of origination. Results from the 1997 visitor survey indicated the percentage of resident visitors from neighboring counties and determined that approximately 75 percent of users originated from Campbell County, nearly 17 percent from Crook County, 5 percent from Weston County, and 3 percent from other counties.

4.8.3 Alter or Degrade Dedicated Keyhole State Park Recreational Activities

The Project would temporarily increase the population in the area of primary impact. Specifically, the construction workforce would result in a maximum increase of approximately 315 people over the 29-month construction schedule. It is anticipated that a limited number of workers may visit the park.

For the purposes of this analysis, it is assumed that every Project construction employee will use the Keyhole State Park recreational facilities once a year. Based on projections developed in the Plan, a range of estimated visitations were provided for the 2008 calendar year: low growth of 1.5 percent = 226,565; moderate growth 3.0 percent = 254,778; and high growth 5.0 percent = 297,152 visitors (USBR, 2002). Therefore, if we estimate an increase of 315 annual visits by the Project construction workforce, the resulting increase would range from a low of 0.10 percent to a high of 0.13 percent.

When compared to an annual increase visitation rate of 7.5 percent (USBR, 2002) and the projected yearly visitation estimates, any additional usage the Project construction workers would not represent a significant increase in park usage. Therefore, the negligible increase would not exceed the annual growth rate estimates of the Plan and would not result in a significant increase in visitor impacts to the park.

4.8.3.1 Traffic

The transportation analysis (see Section 3.10) concluded that the additional vehicle trips generated by the construction and operations of the Project will have a negligible impact on the operations of the adjacent roadway network. In addition, the Wyoming Department of Transportation has provided written comment concluding that the Project will not result in any significant traffic impacts. Therefore, traffic on state roads and federal interstates is not considered further.

Based on the assumed number of workforce park visitations, the Project will result in a very slight incremental increase in traffic on Crook County roads used to access the Keyhole State Park. However, the additional traffic volume generated by the Project does not decrease the level of service nor degrade the operational performance of the adjacent roadway facilities and will not result in any significant impacts to Crook County roadways that are used to access the park.

4.8.4 Cumulative Impacts

The increase in construction and operation personnel for the Project would not result in a significant recreational usage and visitor increases and would not result in a significant impact. Therefore, impacts associated with degradation of any dedicated recreational activities or facilities of the regional recreational resources including the Keyhole State Park would be less than significant.

4.9 Land Use

The dominant existing land use at and adjacent to the proposed site location is energy development, which includes the Neil Simpson Energy Complex consisting of five coal-fired power plants, two gas-fired turbines, and the Wyodak Mine. Other principal land uses

within the area of Project influence are livestock grazing, wildlife habitat, utility corridors, highway/railroad corridors, oil and gas collection and processing, and dispersed recreation activities such as hunting and off-road vehicle use.

4.9.1 Consistency with Land Use Plans

Much of Campbell County outside of municipal boundaries is not currently zoned. Zoning districts are generally developed within the county as needed to accommodate growth. These districts include numerous subdivisions, and designated suburban and rural residential districts. Planned land uses within Campbell County are addressed in the City of Gillette/Campbell County Comprehensive Planning Program and shown on the Campbell County Zoning District Map, and are regulated through the Campbell County Zoning Regulations. There is currently no zoning district applied to the Project site (Campbell County Building and Planning Department 2005). The zoning regulations do not apply to developments in un-zoned areas. The Project would not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project; disrupt or divide the physical arrangement of the established community; contribute to a cumulative adverse effect on land use; preclude or unduly restrict existing or planned future uses; or convert agricultural land or resources to nonagricultural uses.

4.10 Wetland/Waters of the United States (U.S.) Resources

The U.S. Army Corps of Engineers (COE) enforces Section 404 of the Clean Water Act, which regulates the discharge of dredged or fill material into all waters of the U.S., including wetlands. Such waters are known as “jurisdictional waters of the U.S.” and have been defined to include not only obvious water bodies such as rivers, lakes, harbors, and bays, but also less obvious bodies of water such as intermittent streams and wetlands. It is acknowledged that if impacts, including discharge of dredged or fill material into jurisdictional waters (including wetlands), are proposed, a permit should be obtained from the COE. If proposed impacts are less than 0.5 acre, authorization under a Nationwide Permit (NWP) would likely apply. If impacts are greater than 0.5 acre, an individual 404 permit process would be necessary.

Two wetland inventories covering the Project site and adjacent lands were submitted to the COE and verified in 2004. No jurisdictional wetlands or waters of the U.S. were identified within the Project perimeter. Therefore, no additional Clean Water Act Section 404 permits are required for the Project.

4.11 Visual Resources

Campbell County was contacted to determine potential visual restrictions or height regulations that may apply to the installation of a Project smoke stack. There are no existing county regulations that directly address building codes or standards for height or visual standards.

The following is a discussion of the Project’s visual impacts analyzed using three visual measures pertaining to aesthetics.

4.11.1 Scenic Vista

A review of the area shows that there are no scenic vistas in the proposed Project area. Therefore, the proposed Project would not have a substantial adverse effect on a scenic vista.

4.11.2 Scenic Resources

A review has determined that there are no state scenic highway corridors in the Project vicinity. Therefore, the proposed Project would not substantially damage scenic resources within a state scenic highway corridor. In addition, no other scenic resources were identified that could be substantially damaged by the Project.

4.11.3 Visual Character or Quality

The Project was evaluated to determine whether the visual character or quality of the site and its surroundings. Based on the existing visual character of the highly industrialized Neil Simpson Energy Complex, neither construction nor operation of the proposed Project would cause significant direct or cumulative visual character or quality impacts.

4.11.4 Light Glare

During the Project's construction and startup phases, some activities would occur 6 days a week and up to 16 hours a day. If nighttime construction activities are undertaken, illumination that meets state and federal worker safety regulations would be required. As a result, there may be times when the Project would appear as a brightly lit area. To limit light disturbance and to the extent feasible and consistent with worker safety codes, construction lighting should be directed to the center of the facility and shielded to prevent light from straying offsite.

During the operational stage, the proposed power plant would require onsite nighttime lighting for safety and security purposes. The plant may periodically operate 24 hours a day, 7 days a week. Lighting associated with the Project stacks and open site areas would be visible to surrounding areas. However, offsite visibility and potential glare would be limited by use of non-glare fixtures and control of lighting direction. Lastly, the overall change in ambient lighting as viewed from nearby locations and from vantage points in the surrounding higher elevations overlooking the Project would be less than significant.

4.12 Wildlife Resources

The Project area is characterized by flat to gently sloping rolling uplands at an elevation of approximately 4,500 feet. The Project is located within the drainage basin of Donkey Creek, an easterly flowing tributary of the Belle Fourche River.

Wildlife species of concern that may be found in proximity to the Project site include greater sage grouse, various species of big game, and raptors.

4.12.1 Sage Grouse

Greater sage grouse (*Centrocercus* spp.) may occur in proximity to the Project area, but primarily as transients. Greater sage grouse surveys conducted for the Wyodak Coal Mine

and annual monitoring have not identified any active leks in the Project area. Based on the lack of the four key habitat types used by sage grouse (e.g., winter use areas, leks, nesting habitat, and brood rearing areas), effects to the sage grouse will be negligible.

4.12.2 Big Game

Big game species within the Project area may include pronghorn antelope (*Antilocapra americana*), mule deer (*Odocoileus hemionus*), and white-tailed deer (*Odocoileus virginianus*). Antelope and mule deer are found throughout the area, while white-tailed deer congregate along Donkey Creek, south of the Project area. Based on the results of annual monitoring, population densities of these three species are relatively low in the Project area.

4.12.2.1 Loss or Degradation of Habitats

The direct habitat removal of approximately 65 acres is expected to have negligible impacts on big game mammals, especially due to the proximity to the highly industrialized energy complex. Overall, the level of big game mammal use is low in the Project area due to the proximity to industrial uses and the quantity and quality of habitat available. The direct loss of the ruderal grass and forb habitat would not result in any loss of wintering range, fawning areas, or impact a major corridor in the region. Therefore, the direct loss of habitat caused by construction of the Project is not anticipated to have any significant adverse effects to big game mammals.

4.12.2.2 Displacement

Disturbances from construction of the Project may affect utilization of habitat(s) immediately adjacent to this affected area. It is envisioned that most big game mammal responses will consist of avoidance of areas proximal to the construction and operational areas, with most individuals carrying out normal activities of feeding and bedding within adjacent suitable habitats. However, big game mammals are adaptable and generally adjust to non-threatening, predictable human activity. It is anticipated that the magnitude of displacement would decrease over time as: (1) the animals have more time to adjust to the operational circumstances, and (2) the extent of the most intensive construction activities are generally short-term activities. By the time the Project is fully operational, construction activities will have ceased, and traffic and human activities in general would be greatly reduced. As a result, this impact would be greatly reduced and it is unlikely that big game mammals would be significantly displaced under full Project development.

4.12.2.3 Vehicle Collisions

Increased vehicle traffic is anticipated in association with all phases of the Project. The potential for vehicle collisions with big game would be directly correlated with the volume of traffic. The volume of Project-related traffic is expected to be greatest during the construction phase and to diminish gradually during the operational phase. Speed limits set for Project roads would reduce the potential for collisions; however, most collisions are anticipated to occur on county roads and highways, where speeds are higher and are regulated by the state. The incidence of vehicle collision impacts to big game mammals is anticipated to occur infrequently, and no long-term adverse effects are expected.

Implementation of speed limits on access roads, educating employees and contractors on wildlife laws, and prohibiting the possession of firearms by employees and contractors would further minimize potential big game impacts.

4.12.3 Raptors

Populations of raptor species present in the region vary seasonally. These include red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Buteo lagopus*), American kestrel (*Falco sparverius*); northern harrier (*Circus cyaneus*), golden eagle (*Aquila chrysaetos*), Swainson's hawk (*Buteo swainsoni*), and great horned owl (*Bubo virginianus*).

Impacts to raptors include the potential for mortality caused by collisions with vehicles and adverse affects associated with noise and human activities such as construction, operation, and maintenance of the facility. Typical nesting periods for raptor species extend from February through the end of July. Raptor nests could occur in nearby undisturbed upland or in large trees in the vicinity of the Project area. These impacts can be mitigated and minimized by imposing a speed limit on access roads and by implementing raptor nest protection stipulations as detailed in the "Monitoring and Mitigation Plan for Raptors and Species of High Federal Interest" included in Addendum MP-C of the Wyodak Mine 232-T6 permit document.

Surveys for raptors and Migratory Birds of High Federal Interest (MBFHI) are conducted in accordance with guidelines established during the Wyodak Coal Mine application process, for which U.S. Fish and Wildlife Service (USFWS) was a consulting agency. Presence and use of the Wyodak Coal Mine permit area is documented and submitted as an annual report. Based on previous recommendations, if any MBFHI is found to concentrate, nest, or roost within 0.5 mile of Project area, the USFWS is contacted for development and implementation of appropriate mitigation measures.

4.13 Threatened and Endangered Species

Those species classified as threatened or endangered are protected under the Endangered Species Act, and enforced by the USFWS. Threatened or endangered species are considered "federally listed" or "listed" when a final rule has been published in the Federal Register.

Endangered species are those plant and animal species, subspecies, or varieties that are in danger of extinction throughout all or a significant portion of their range. The threatened category comprises plant and animal species, subspecies, or varieties likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

Federal candidate species, subspecies, or varieties are those plant and animal species being considered for listing as endangered or threatened, but for which a proposed regulation has not yet been published in the Federal Register.

A search of the USFWS Threatened and Endangered Species (TESS) database determined that there are 16 federally listed or candidate species (13 animals and three plants) within

Wyoming. Wyoming does not have an endangered species act³; therefore, only those species with federal designation are protected under the federal Endangered Species Act (ESA). A review of the USFWS (TESS) website identified the bald eagle (*Haliaeetus leucocephalus*), black-footed ferret (*Mustella nigripes*), and Ute ladies' tresses orchid (*Spiranthes diluvialis*) as potentially occurring federally listed species within the Project area. In addition, the potential impacts on these three endangered or threatened species were evaluated in the 232-T6 permit document for the Wyodak Mine.

It is important to note that no known populations or locations of these three threatened and endangered species have been identified during the baseline vegetation and wildlife inventories completed by the Wyodak Mine or during wetland inventories completed in 2004. Known historic and recent occurrence data for these species were used in the evaluation of suitable locations for proposed facilities and infrastructure within the Project area. Based on further evaluation including site visits, it was determined that none of the above listed species is likely to occur within the Project site and therefore will not be impacted by the Project.

There are no prairie dog towns in the Project site; therefore, the Project site does not contain any potential or suitable black-footed ferret habitat. The Project will have no effect on the black-footed ferret.

The USFWS made a final decision to remove the bald eagle from the federal list of threatened and endangered species on June 29, 2007. It is important to note that even though the USFWS removed the bald eagle from the threatened and endangered species list, it is still protected by the Migratory Bird Treaty Act (MBTA) and the Bald Eagle Protection Act. Bald eagles currently are listed as threatened in Wyoming. The USFWS issued guidelines on how the bald eagle will continue to be protected by federal law under a series of actions designed to govern management of eagles if they are removed from ESA protection. The USFWS is in the process of finalizing modifications to the regulatory definition of "take" under the Bald Eagle Protection Act. The USFWS also recently announced a set of National Bald Eagle Management Guidelines that provide guidance to landowners and others on how to ensure that actions they take on their property are consistent with the Bald Eagle Protection Act and the MBTA. In addition, USFWS just recently opened a public comment period on a proposal to establish a permit program under the Bald Eagle Protection Act that would allow a limited take of bald and golden eagles while ensuring that populations are not significantly affected.

Bald eagles can be a common winter inhabitant in the Powder River Basin. However, no large bodies of water and adjacent large trees are used for winter roost sites within the Project area. Therefore, the Project will have no effect on the bald eagle.

Wetlands may provide potential habitat for the Ute ladies' tresses orchid. Suitable habitat for this species consists of wetland sites that typically have hydrology (either surface or ground) well into the growing season. However, based on the wetland delineations completed in 2004, wetlands do not occur within the Project area. In addition, the Ute ladies' tresses orchid has not been recorded on the Project site or adjacent lands during wetland

³ The State of Wyoming has a state list of sensitive species that are ranked relative to rarity. Although these species are not protected by statute, the Wyoming Game and Fish Department (WGFD) encourages conservation efforts.

inventories or specific baseline plant surveys, nor recorded in Campbell County. Therefore, the Project will have no effect on the Ute ladies' tresses orchid.

5.0 Cumulative Housing

The Industrial Siting Commission (ISC) previously issued permits for the Two Elk Generation Partners (Two Elk) and the Basin Electric Dry Fork Station Unit 1 (Dry Fork) Projects in 1997 and 2006, respectively.

Implementation of these projects would create both primary and secondary cumulative employment opportunities, contribute significant growth to the local economy including the service sectors, and provide a substantial source of revenues for local governments through the collection of ad valorem and sales and use taxes. The potential for short- and long-term impacts associated with implementation of these projects on socioeconomic resources would depend in part on the timing of construction and mineral extraction activities occurring in the study area.

In addition to the salaries of permanent employees generated by these three energy projects, additional revenue would be collected at the county level through increased sales and use taxes. The additional state sales and use tax, and ad valorem tax revenues would be distributed by the state and counties for schools, roads, and other community infrastructure. Further expansion of the coal and coal bed methane gas activities and other mineral development in the region will continue to add jobs to the growing economies and generate additional tax revenues. The sustained employment and economic development resulting from these three energy projects can have both positive and negative impacts on the quality of life of residents and on environmental and socioeconomic resources.

5.1 Two Elk Generation Partners

The Two Elk Project is a 310-MW coal-fired power plant adjacent to Arch Coal's Black Thunder Mine near the Town of Wright in southern Campbell County. The power plant would burn "waste," or lower-grade coal, from the Black Thunder Coal Mine.

The Two Elk project was originally permitted by the Industrial Siting Commission in 1997. An updated construction workforce estimate including a break down of the local and non-local workers was developed in 2007 and is presented in **Table 5-1**.

TABLE 5-1
Two Elk Generation Partners: Local and Non-local Construction Workforce

Construction Year	2007		2008				2009				2010				2011			
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Calendar Quarter																		
Local	6	9	20	38	64	98	120	130	153	192	206	220	200	140	96	71	54	28
Non-local	9	13	30	58	96	147	181	195	229	288	309	330	300	211	144	107	81	42
Total	15	22	50	96	160	245	301	325	382	480	515	550	500	351	240	178	135	70

Source: Two Elk Generation Partners, 2007.

A review of **Table 5-1** shows that the Two Elk Project construction workforce would peak at 550 in the second quarter of 2010. There would be a workforce in excess of 300 throughout 2009 and 2010. It is assumed that the split between local and non-local workers would be 40 percent and 60 percent, respectively. Therefore, the Project will employ a peak of 220 local and 330 non-local construction workers in the second quarter of 2010. Following construction, approximately 45 full-time employees would operate and maintain the power plant.

5.2 Basin Electric Dry Fork Station Unit 1

The Dry Fork Project is a 422-gross MW coal-based electric generation facility located north of the City of Gillette in Campbell County. The project will be constructed and operated by Basin Electric. The construction start date for the project is dependent upon issuance of the WDEQ Air Quality Division air permit and Record of Decision by the Rural Utilities Service. The latest available construction workforce schedule supplied by Basin Electric is shown in **Table 5-2**.

TABLE 5-2
Two Elk Generation Partners Estimate of Local and Non-local Construction Workforce

Construction Year	2007		2008				2009				2010				2011	
	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
Calendar Quarter																
Local ^a	3	41	63	37	44	70	178	165	209	228	226	208	116	130	61	13
Non-local ^b	11	147	223	133	155	247	632	586	741	807	801	736	411	463	218	48
Total	14	188	286	170	199	317	810	751	950	1035	1027	944	527	593	279	61

Source: Basin Electric, 2007.

^a The estimate for local workers was based on multiplying the total workforce by the 22 percent estimate in the ISA application.

^b The estimate for non-local workers was based on multiplying the total workforce by the 78 percent estimate in the ISA application.

A review of **Table 5-2** shows that a peak of 1,035 construction workers would occur in the fourth quarter of 2009. There would be in excess of 300 construction workers for nine consecutive quarters commencing in the fourth quarter of 2009. Basin Electric anticipates that approximately 78 percent of the workers (a peak of 807) would consist of a non-local workforce, and approximately 22 percent of the workers (a peak of 228) would be local workers who are assumed to reside in Gillette and surrounding areas. Following completion of construction, operation and maintenance of the power plant will require approximately 75 full-time employees.

5.3 Wygen III

The Project is anticipated to begin construction in the first quarter of 2008. However, the construction start date is dependent upon the issuance of the ISD permit and obtaining the CPCN. **Figure 2-3** details the estimated construction workforce for the Project.

5.3.1 Cumulative Workforce Estimates

Table 5-3 and **Figure 5-1** provide a detailed composite view of the most up-to-date quarterly construction workforce estimates for the Wygen III, Two Elk Generation, and Dry Fork Projects.

TABLE 5-3
Cumulative Workforce Estimates of Wygen III, Dry Fork, and Two Elks Power Plant Projects

Time Period	Two Elk	Dry Fork	Wygen III	Total
Third Quarter 2007	15	14	--	29
Fourth Quarter 2007	22	188	--	210
First Quarter 2008	50	286	26	395
Second Quarter 2008	96	170	65	380
Third Quarter 2008	160	199	106	543
Fourth Quarter 2008	245	317	141	877
First Quarter 2009	301	810	236	1,347
Second Quarter 2009	325	751	309	1,385
Third Quarter 2009	382	950	315	1,442
Fourth Quarter 2009	480	1,035	314	1,829
First Quarter 2010	515	1,027	219	1,761
Second Quarter 2010	550	944	38	1,532
Third Quarter 2010	500	527	--	1,027
Fourth Quarter 2010	351	593	--	944
First Quarter 2011	240	279	--	519
Second Quarter 2011	178	61	--	239
Third Quarter 2011	135	--	--	135
Fourth Quarter 2011	70	--	--	70

Source: Two Elk Generation Partners, Basin Electric, and BHC, 2007.

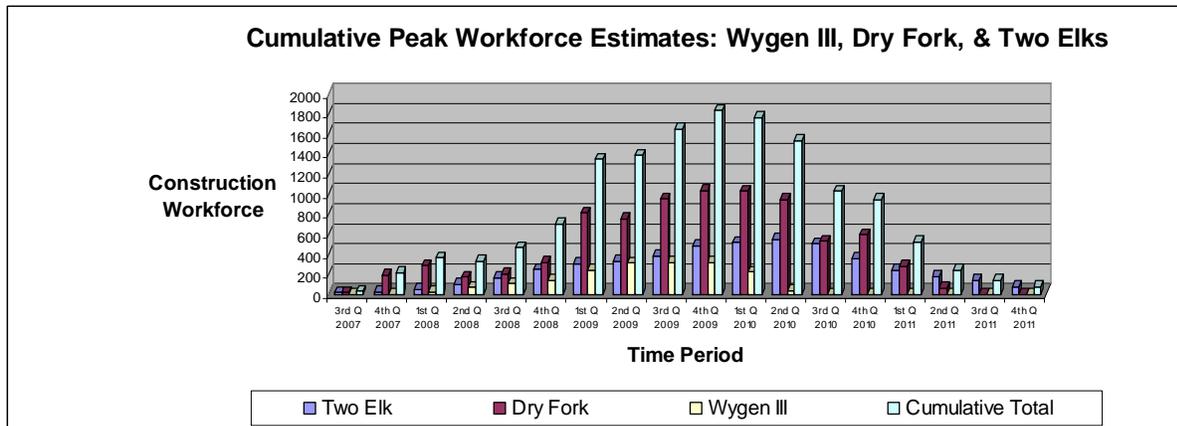


FIGURE 5-1
Cumulative Peak Workforce Estimates of the Wygen III, Dry Fork, and Two Elk Projects

A review of **Figure 5-1** and **Table 5-3** shows that the three projects' estimated cumulative construction workforces will peak in the fourth quarter of 2009 with an estimated 1,829 workers. In addition, the peak workforce will exceed 1,000 employees over a seven-quarter period starting in the first quarter of 2009 and continuing until the third quarter of 2010.

The cumulative workforces would gradually decrease through the fourth quarter in 2011 until the completion of the Two Elk Project in the fourth quarter in 2011. The Wygen III and Basin Electric Projects are scheduled for completion in the second quarters of 2010 and 2011, respectively. The Wygen III Project will be past its peak workforce and almost at completion by the time the Two Elk construction begins to peak. The Dry Fork peak construction begins in the fourth quarter of 2009, just one quarter after the Wygen III Project construction workforce begins to decline and two calendar quarters before the Two Elk Project reaches peak construction.

5.4 Housing

In the 1970s, the study area population grew by approximately 55 percent and the housing stock grew by almost 78 percent (BLM, 2005). Housing growth was especially rapid during the 1970s in Campbell County, where population grew by 88 percent, and the housing stock grew by 140 percent. In 2000, the housing inventory in the Powder River Basin was 41,203 units.

The expansion in housing supply, combined with the slow down in the rate of population growth in the late 1980s and early 1990s, produced double-digit vacancy rates for rental housing. At the same time, vacancy rates for owned housing remained tight. After growth resumed in the mid-1990s, most county-level vacancy rates for owned units were at or below the state levels in 2000. Vacancy rates for rental units have declined even sharper. By 2000, rental vacancy rates in Campbell County were below the state average and were well below the average in Johnson and Sheridan counties.

Temporary housing resources are available in the 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. Many of these housing resources, supplemented by pockets of persistently vacant apartments, townhouses, and mobile home spaces in the City of Gillette and the Town of Wright, have accommodated temporary housing needs associated with natural resource and energy projects in the past.

5.5 Housing Conditions in the City of Gillette

The City of Gillette began inventorying and monitoring land use in the mid-1970s and has continued to track land use and housing development and their determinants closely through the present. In 1995, the City's data on housing trends indicated that Gillette's housing market had adjusted from the over-building of earlier years and that the economy had normalized, becoming less influenced by boom forces (BLM, 2005). By 2001, the housing market had resumed a gradual growth trend, with the overall vacancy in the housing stock at about 1 percent in both the City and in the surrounding Urban Service Area (Task 1C Report). The growth trend noted by the City of Gillette in 2001 has continued and strengthened through 2007, driven by increased economic activity in several economic sectors. The City began observing tightness in the housing market in 2001 that has continued until the present as indicated by a continued overall vacancy rate of below 1 percent in 2006 and 2007.

The City of Gillette commissioned a study designed to address the housing of short-term workers. The resulting report, entitled *Housing for Short-Term Workers in Gillette: Approaches and Solutions*, was published in May 2007. Many of the observations and recommendations contained in this report are germane to the issue of cumulative housing resources and are presented below.

The City of Gillette has an impressive number of housing units in various states of the construction and approval process, and some of these will be available to serve the needs of short-term workers. Housing currently in the pipeline involves three stages of approval:

- *Units that are currently approved, requiring only a building permit for construction.*
- *Units in developments in the final plat approval process, likely to come on line within one to two years.*
- *Units in developments in the preliminary plat approval process, requiring financing and final platting. These units are likely to become available within two to four years.*

Based on these stages of development, all units currently pending in the City may be built out, given sufficient demand, at about the time that short-term worker demand reaches its maximum.

Special Housing Needs for Short-Term Workers

The new rental supply (rental duplexes, multi-family, and mobile home spaces) are most likely to be options for short-term workers. Up to 1,352 rental units are in the pipeline as of the spring 2007.

Base housing demand without short-term workers is about 400 units annually in Gillette, based on a blending of the forecasts in the Gillette comprehensive plan, the Community Development

Department's quarterly and annual development reviews, and recent experience. During 2006, Gillette issued 631 permits, although previous years have seen fewer housing starts.

Of these, the existing rental market is likely to produce a demand for 200 additional units annually. Beyond this, Gillette's extremely low vacancy rates (below 1-percent, according to the city's 2006 development review) keeps substandard or poorly maintained units occupied out of necessity. With the completion of new apartments now in the pipeline, current tenants will move out of these units, which will ultimately either be upgraded or leave the housing supply. This accounts for a potential replacement demand for 50 to 100 units annually. These vacated units may also be available to accommodate short-term employees.

Based on these assumptions, the local market is likely to absorb 250 to 300 rental units annually, or a total of 750 to 900 units during the next three years. If the existing rental pipeline is fully built out at about 1,350 potential units. About 450 to 600 of these units might be available to house short-term workers. Gradually, local demand will catch up and fill units that might be vacated with the eventual departure of these, combined with ongoing development activity.

As a result, projects on-line will generate a peak need for between 725 and 875 accommodation units by 2009.

Affordability Ranges of Housing for Short-Term Workers

In addition to actual need, it is important to establish the ability of short-term workers to pay for housing. This determines both whether housing produced in the Gillette market is affordable to workers, and how new accommodations should be priced. This analysis adjusts existing 2001 data for construction trades wage rates to 2007, and calculates supportable monthly housing costs at two levels: 30-percent and 20-percent of gross income. The lower standard is used because a significant number of workers may be supporting a household, with related housing costs, whose other members live elsewhere.

At the 30-percent of income level, housing costs supportable by projected wages vary between \$541 and \$1,069 (including utilities and related costs) depending on the specific trade, with an average of about \$870. At the 20-percent of income level, these costs vary between \$361 and \$713, with an average of \$582.

A sampling of 12 existing multi-family properties in Gillette indicates monthly rental ranges between \$430 and \$760. Only apartments at the top of this range include utilities within rents. Market rate developments in the pipeline will probably yield higher rents, likely to be in the range of \$800 to \$1,000. However, in general, it appears that the Gillette rental supply is priced affordably for short-term construction workers.

Potential Solutions

The City of Gillette is currently working with private market developers of conventional multi-family housing, including rezonings and project approvals on sites that are consistent with the city's comprehensive plan. Recently, a building permit was issued to Burlington Northern-Santa Fe railroad to construct a large bunkhouse that will temporarily house additional railroad workers as they transit in and out of Gillette. For many years, Gillette has produced relatively little multi-family housing (other than recent tax-credit assisted projects). Two pending projects (RC Ranch and Remington) will represent the largest additions to the apartment stock of the City in recent years.

The City of Gillette compiles a quarterly summary development for residential and commercial properties. The resulting report, entitled *City of Gillette Development Summary Third Quarter 2007 - July 1 - September 30, 2007* contained the following summary of development activities in the City.

City of Gillette 2007 Year to Date Building Permit Summary

At the end of the First Quarter 2007 there 128 residential permits issued. At the end of the second quarter there were 611 residential permits issued. By the end of the third quarter 979 residential permits were issued. The 979 new housing permits represent an increase in the City's housing stock of 9.6 percent just during the current year. This has impacts on public infrastructure, schools, police, fire, parks, social services, medical/health services and roads. There are more housing choices being developed in the marketplace; which means that the housing inventory is not only growing, it is maturing to address a wider range of housing needs. The third quarter vacancy rates are lower than the second quarter meaning that the availability of rental housing is difficult at best. As more housing comes onto the market it will be important to pay attention to the vacancy rate to determine if the 552 multi-family units permitted this year will have an effect upon it.

In January of 2007 there were 915 housing units that could receive a permit. On September 30, 2007 there were 631 units eligible to receive a permit. In January of this year there were 1,482 single-family detached, duplex, multi-family and manufactured homes in the subdivision review pipeline. At the end of the third quarter, September 30, 2007 there were 1,594 housing units in the subdivision review pipeline. The comparison serves as a signal for future housing development.

5.6 Conclusion

The cumulative effect of the three energy projects would result in the majority of construction activity and demand for temporary housing occurring over a period of seven calendar quarters in 2009 and 2010. The Two Elk project is in the process of providing an updated socioeconomic report to the ISD, and it is anticipated that this Project will explore the implementation of a worker camp onsite or close to the site. Despite the number of construction workers likely to relocate temporarily to the study area, and the overlap over the next 4 years of the three energy projects, implementation of a number of approaches to providing housing will help to reduce the potential impacts on the local housing markets, especially during the peak of the construction workforce in 2009 and 2010. These approaches include securing motel contracts with designated numbers of beds, providing project worker camps, and completing additional housing stock in various stages of planning and completion.

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6.0 Plans for Alleviating Impacts

Various mitigation measures will be implemented to alleviate impacts related to Project construction and operation. These mitigation measures are described in the following paragraphs and are organized by resource topic.

6.1 Aesthetics

BHC and its contractors shall exercise care to preserve the natural landscape and shall conduct construction operations (including all construction-related activities and designated access roads/trails and staging areas) to prevent any unnecessary damage to, or destruction of, natural features.

Construction trails not required for maintenance access shall be restored to the original contour and made impassable to vehicular traffic. The surfaces of such construction trails shall be scarified and bladed as needed to minimize compaction and to provide a condition that will facilitate natural revegetation, provide proper drainage, and prevent erosion.

6.2 Air Quality

BHC and its contractors shall use such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants.

Construction-related dust disturbance shall be controlled by the periodic application of water to all disturbed areas along the right-of-way and access roads.

Vehicles and equipment showing excessive emission of exhaust gases due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective adjustments or repairs are made.

6.3 Biological Resources

Removal of vegetation will be limited to that necessary for construction of the Project.

Erosion and sedimentation controls will be used to prevent runoff of particulates into wetlands and waterways.

On completion of the work, all work areas, except any permanent access roads/trails, shall be regraded, as required, so that all surfaces drain naturally, blend with the natural terrain, and are left in a condition that will facilitate natural revegetation, provide for proper drainage, and prevent erosion. All construction materials and debris shall be removed from the Project site in a timely manner.

6.4 Cultural Resources

Should any previously unknown historic/prehistoric sites or artifacts be encountered during construction, all land-altering activities at that location will be immediately suspended and the discovery left intact until such time that BHC is notified and appropriate measures are taken to ensure compliance with the National Historic Preservation Act and enabling legislation. Should any additional cultural resources be discovered during construction, the Wyoming State Historic Preservation Officer will be immediately contacted at:

Wyoming State Historic Preservation Office
2301 Central Avenue, Barrett Building, Third Floor
Cheyenne, Wyoming 82002
307-777-6311

6.5 Wildlife Resources

To reduce employee-wildlife incidents, new construction workers will receive information on wildlife awareness during their new employee-orientation program. Each construction worker will sign an Affidavit to verify they have successfully completed this orientation. The program will include, at a minimum:

- Information regarding restricts or the prohibiting of construction employees' access to sensitive wildlife activity areas:
- Information regarding applicable wildlife laws and resident hunting requirements
- Information regarding policies and laws penalizing wildlife harassment and poaching
- Statement prohibiting the possession of firearms on the site
- Reporting procedures and requirements for vehicle collisions with wildlife
- Reporting procedures and requirements for incidental observation of wildlife including threatened or endangered species
- Posted and enforced speed limits to minimize wildlife vehicle collisions

6.6 Fire Prevention/Control

Construction vehicles shall be equipped with government-approved spark arresters. The contractor shall maintain in all construction vehicles a current list of local emergency response providers and methods of contact/communication.

6.7 Land Use

The contractor shall limit movement of crews, vehicles, and equipment on the right-of-way and approved access roads to minimize damage to property and disruption of normal land use activity.

The contractor shall maintain all fences and gates during the construction period. Any fence or gate damaged during construction will be repaired immediately by the contractor.

The contractor shall eliminate, at the earliest opportunity, all construction ruts that are hazardous to agricultural operations and/or movement of vehicles and equipment. Such ruts shall be leveled, filled, and graded or otherwise eliminated in an approved manner. Damage to ditches, tile drains, culverts, terraces, local roads, and other similar land use features shall be corrected, as necessary, by the contractor. The land and facilities shall be restored as nearly as practicable to their original condition.

BHC will maintain all production facilities and associated properties in a clean and usable condition. Structures that are no longer required for the operation of the power plant will be maintained in a clean and usable condition until such time as they are dismantled.

6.8 Noise

Construction vehicles and equipment shall be maintained in proper operating condition and shall be equipped with manufacturers' standard noise control devices or better (e.g., mufflers, engine enclosures).

Noise-attenuating materials will be incorporated into the design of the plant equipment and structure to minimize impacts during operation.

6.9 Soils

Administered through Project specifications and job supervision, the following erosion control measures will be implemented to minimize the impacts to soils during and after construction:

- An erosion control plan will be prepared by the contractor that addresses excavation, grading, and erosion control measures during and after construction.
- Limits of construction and areas to be disturbed will be defined and managed by onsite inspectors and construction managers.
- Periodic inspection will be made of erosion control measures by project managers, especially after storms. Measures will be repaired or replaced as necessary.
- Berms and other water-channeling measures will be used to direct water to appropriate detention ponds.
- Barriers and other measures consisting of hay bales, silt fences, and straw mulches will be used to minimize and control soil erosion.
- All disturbed areas will be restored and reclaimed using certified weed-free native grasses.
- Side slopes created by grading will not exceed the soil characteristic limits, as prescribed by a soils engineer. As may be necessary in steep slope conditions, a retaining wall may be installed.

6.10 Traffic

The contractor shall make all necessary provisions for conformance with federal, state, and local traffic safety standards and shall conduct construction operations to offer the least possible obstruction and inconvenience to public traffic.

6.11 Surface Water Resources

Potential impacts to surface water from erosion and sedimentation will be prevented by measures to control runoff during construction and operation of the Project. A pollution prevention plan will be developed and implemented to minimize impacts on water resources during long-term operation of the Project. All requirements of the Storm Water Permit will be administered and adhered to during and after construction.

6.11.1 Spill Prevention Containment and Countermeasures/Storm Water Plan

BHC facilities fall under Spill Prevention Containment and Countermeasures (SPCC)/Storm Water Plan requirements. The facility grounds are defined as inside the fences located around the entire facilities or the entire facility in general. Any contractor activities within these boundaries are required to meet the following requirements:

- No lubricant/chemical/compound in any form will be discharged from its original/intended container onto plant grounds/facilities or into storm water or treatment systems without direct permission from plant or project management personnel (this includes significant volumes of water).
- No lubricant/chemical/compound in any form in any container will be left unattended in any area where a potential exists for damage from activities (i.e., vehicle traffic, persons working, spillage, uncovered where rain/snow will overflow, temperature extremes, etc.).
- No lubricant/chemical/compound in any form will be located where, if container leakage or overflow occurs, the contents will enter the storm water or plant treatment systems. Therefore, lubricants or chemicals onsite will be required to be stored properly in solid, well-maintained containments that function properly (i.e., equipment engines, hydraulic systems, fuel systems, oil/lube containers, chemical containers/equipment).
- If large storage quantities of any lubricant/chemical/compound are required for contractor's operation, BHC maintains containment areas that may be used by contractors (with permission). Please inquire as to whether you fall under this classification. If you are unsure about your material, please inquire with BHC's contract coordinator.
- If a spill or leakage occurs, the contractor shall immediately contact the BHC plant shift supervisor (when on the plant site) or contract coordinator (when off the plant site).

6.12 Water Quality

Construction activities shall be performed by methods that prevent entrance or accidental spillage of solid matter, contaminant debris, and other objectionable pollutants and wastes into flowing streams or dry water courses, lakes, and underground water sources. Such pollutants and wastes include, but are not restricted to, refuse, garbage, cement, concrete, sanitary waste, industrial waste, radioactive substances, oil and other petroleum products, aggregate processing tailings, mineral salts, and thermal pollution.

Borrow pits shall be so excavated that water will not collect and stand therein. Before being abandoned, the sides of borrow pits shall be brought to stable slopes, with slope intersections shaped to carry the natural contour of adjacent, undisturbed terrain into the pit or borrow area, giving a natural appearance. Waste piles shall be shaped to provide a natural appearance.

Dewatering work for structure foundations or earthwork operations adjacent to, or encroaching on, streams or water courses shall not be performed without prior approval by the applicable land managing agency or landowner.

Excavated material or other construction materials shall not be stockpiled or deposited near or on stream banks, lake shorelines, or other water course perimeters where they can be washed away by high water or storm runoff or can, in any way, encroach upon the actual water source itself.

Waste waters from construction operations shall not enter streams, water courses, or other surface waters without the use of such turbidity control methods as settling ponds, gravel filter entrapment dikes, approved flocculating processes that are not harmful to fish, recirculation systems for washing of aggregates, or other approved methods. Any such waste waters discharged into surface waters shall be essentially free of settleable material. Settleable material is defined as that material that will settle from the water by gravity during a 1-hour quiescent period.

6.13 Paleontologic Resources

Due to the lack of fossils of specific scientific significance in the proposed mine permit area, no specific mitigation plan is warranted, and no recommendations have been made. However, to reduce the potential for adverse impacts and to foster beneficial impacts from the discovery of fossil resources, the following mitigation measures will be implemented:

- A qualified paleontologist will be notified if fossils of potential significance are uncovered during ground disturbance. Activities that might adversely affect such fossils will cease within 100 ft of the discovery or, if possible, the fossils will be set safely aside until their scientific significance can be determined.
- Unaffected/undisturbed portions of the mine permit area will remain available for scientific study by qualified researchers subject to landowner approval.
- Any significant fossil specimens collected as the result of unanticipated discovery will be prepared, identified, and curated along with associated geologic information into the retrievable data collections of a museum repository, such as the Geology Museum in the Department of Geology and Geophysics at University of Wyoming.

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7.0 References

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APPENDIX A

Letters of Support



City of Newcastle

10 W. Warwick
Newcastle, WY 82701
307-746-3535

August 24, 2007

Tom Shroeder, Program Principal
State of Wyoming
Department of Environmental Quality
Industrial Siting Division
Herschler Building, 4W
122 West 25th Street
Cheyenne, WY 82002

Dear Mr. Schroeder,

As you may be aware the City of Newcastle has been contacted by Black Hills Corporation as part of their permitting process for their WYGen III Project. Mr. Rick Kaysen appeared before the City Council of Newcastle of Monday evening, August 20, 2007 to present specific information regarding the proposed WYGen III project. During his visit with the Council, Mr. Kaysen was very clear and straight-forward regarding BH Corp's plans and anticipated effects of this project.

On behalf of the residents of the City, I and all the members of the Newcastle City Council, realize that this power plant will have a certain socioeconomic impact on our city. We have already begun to see impact in the loss of workers to Campbell County industries and at times have trouble retaining an adequate workforce for our needs. At the same time we are realizing a greater need for housing which has an impact on the infrastructure of our city. We continue with needed infrastructure work to our streets and have also been making significant attempts to help ease the housing needs in our community. We continue to see increased needs to our community due to the influx of people we are beginning to see move into Newcastle. We also continue to see higher and higher costs of contracting our projects due to mobilization costs and the difficulty of getting contractors to come to our area.

At the same time, we see great opportunities through this to improve the future of Newcastle. Added people in our community will provide added business and financial opportunities to the businesses within our city. During the Council meeting on Monday, August 20th, a motion was made and approved to send this letter of support for BH Corp's project. Therefore, we offer this letter of support on behalf of BH Corp's proposal to build their WYGen III plant. We feel that even though our resources will be "stretched to the limit" this additional industrial site BH Corp proposes will have a positive long-run effect on our city.

Sincerely,

Ed Wagoner, Mayor
City of Newcastle

Cc: Rick Kaysen

CLERK OF COURT
SANDRA WALFORD
COUNTY ATTORNEY
DONALD B. HANSEN
COUNTY SHERIFF
BILL WARE

COUNTY COMMISSIONERS
TED ERTMAN, CHAIRMAN
ALAN L. TODD
TOM W. BRUCE
GLEN HUTT
JERRY SHEPPERSON

COUNTY CLERK
PAULETTE THOMPSON
COUNTY ASSESSOR
TINA CONKLIN
COUNTY TREASURER
JOYCE AVERY

COUNTY OF WESTON

1 WEST MAIN STREET
NEWCASTLE, WYOMING 82701

August 27, 2007

Industrial Siting Division
Tom Schroeder, Program Principal
Herschler Building, 4W
122 West 25th St.
Cheyenne, WY 82002

Dear Mr. Schroeder:

Black Hills Corporation is proposing to build a coal-fired power plant east of Gillette. The project is the Wygen III Power Plant. The Weston County Commissioners took action at their August 21, 2007, meeting to support this project. The proposed power plant will be environmentally friendly and will not need new roads or have access issues. It is projected to provide many new jobs in the short term and approximately 20 full-time positions when operational.

The Weston County Commissioners believe that this project will be a benefit to the Northeastern area of Wyoming, and because of this the Commissioners support the project. We do believe that our county will feel the impact of this project and we will be actively participating in the permitting process. We hope to ensure that the county residents do not bear the entire cost of providing services for the over-flow of people that we expect to reside in this bordering county.

Black Hills Corporation has proven to be a responsible partner in the past and we look forward to maintaining this relationship as we continue to see economic development and growth.

Sincerely,

WESTON COUNTY COMMISSIONERS



Ted J. Ertman
Chairman

City Of

COLIN BETZLER CITY PLANNER

GARY C. (ANDY) ANDERSON MAYOR
CITY COUNCIL:
R. L. HANCOCK
KATE HOLT
RUSS HUMPHREY
MICHAEL R. JOHNSON

September 11, 2007

To Whom It May Concern:

This letter signifies the City of Buffalo's initial support for the proposed WYGEN III Project of the Black Hills Corporation, which will be located at the existing Neil Simpson Energy Complex east of Gillette within Campbell County.

The City of Buffalo met with Rick Kaysen, Siting Coordinator for the Black Hills Corp. on August 29th, 2007 to be educated on the WYGEN III project. The City of Buffalo is of the opinion that the WYGEN III project will result in a net benefit for NE Wyoming, and will add value to our economy while maintaining strict environmental quality controls during power generation.

While the City of Buffalo does give preliminary support for the WYGEN III facility, we do so with some hesitancy as a result of the last major project that went forward in this manner, Basin Electric's Dry Fork Station. We are anxious to see how the impact assistance process for WYGEN III will differ from the Basin Electric process, and hope that under the new allocation system, there is much less contention and a more just allocation of impact funds.

During our informational session with Rick Kaysen, the Siting Coordinator was interested to hear some of the issues that both the City of Buffalo and Johnson County sited as significant impacts to our immediate area as a result of the WYGEN III project (we are still unsure as to why we were not contacted regarding WYGEN I or WYGEN II). I do not think that they are new issues to member of the Industrial Siting Committee, or Campbell County, but I did want to include a list of impacts mentioned which we will quantify with dollar amounts depending on the outcome of the impact assistance allocation.

- Displacement of tourism dollars into our economy, being replaced with similar lodging money, but with a much greater impact to city services (police, rescue, sewer, water, traffic)
- Impact on our recreation and parks system (trail system, swimming pool, Tie Hack recreation facility)
- Impact to our local workforce-normal maintenance services like electric, plumbing etc. become hard to find and extremely expensive because of leakage of our native, skilled workforce migrating to work on these projects and the need to compete with the higher wages offered for working on these types of projects.

Thank you for your time.

Sincerely,



Mayor Gary "Andy" Anderson



Town of Pine Haven

24 Waters Drive
Pine Haven, WY 82721-9761

Telephone (307) 756-9807
Fax (307) 756-3378

September 25, 2007

Tom Schroeder, Program Principal
State of Wyoming
Department of Environmental Quality
Industrial Siting Division
Herschler Building, 4W
122 West 25th Stgreet
Cheyenne, WY 82002

Dear Tom:

At our scheduled town council meeting held September 24, 2007, we had the privilege of having Mr. Rick Kaysen, Siting Coordinator on our agenda. Mr. Kaysen shared the vision and plans thus far on the WyGen III project. It is the intention of the town of Pine Haven to fully support this project. The long term results will bring economic stability to this region in a variety of ways.

Respectfully submitted,


Robert Sieveke, Mayor
Town of Pine Haven

Cc: All council members

Rick Kaysen
Siting Coordinator
223 Stetson Drive
Cheyenne, WY 82009

Robert Sieveke, Mayor, Council Members: Jerald Joslyn - Joe Slattery - Regan Lefdahl, Vern Fundenberger
Dianna Driskill - Clerk/Treasurer, Carol Thomas - Deputy Clerk/Treasurer, Dwayne Ellerton - Public Works
Operator

September 26, 2007

Mr. Tom Schroeder, Program Principal
State of Wyoming
Department of Environmental Quality
Industrial Siting Division
Herschler Building, 4W
122 West 25th Street
Cheyenne, Wyoming 82002

Re: WYGEN III Unit V Project

Dear Mr. Schroeder,

I am writing on behalf of the Town of Upton, Wyoming, to express my and the town council's support of the Wygen III Power Plant project in Campbell County, Wyoming. Upton, The Best Town On Earth, has been a supporter of economic development in northeast Wyoming for many years and is pleased to see its effort coming to fruition. Upton is a growing, progressive community located approximately forty-five miles from Gillette. Based upon past experience with Wygen I and Wygen II, Upton will experience economic impact and growth when the Wygen III project begins. We look forward to the challenges and the opportunities this project will present for our town.

Sincerely,


Don Sharkey
Mayor, Town of Upton, Wyoming

DS:cr
c.c. Rick Kaysen



SHERIDAN COUNTY COMMISSION

TERRY L. CRAM - STEVE MAIER - ROBERT L. ROLSTON

October 11, 2007

Tom Schroeder, Program Principal
Wyoming Department of Environmental Quality
Industrial Siting Division
122 W. 25th Street - Herschler Building, 4W
Cheyenne, Wyoming 82002

RE: WYGEN III Project, Impact Mitigation

Dear Mr. Schroeder:

The Sheridan County Commissioners, and staff, have completed survey forms concerning the impact of the WYGEN III project on Sheridan County. We also met with a representative of the Black Hills Corporation where this project, and its potential impact, was discussed. One of the Commission's primary areas of concern is the loss of skilled labor from a workforce which is already stretched to the limit. The Commission believes that law enforcement, medical services and housing will also be impacted, but to a lesser extent.

That being said, the Sheridan County Commission does not oppose the WYGEN III project and has no plans to contest it. The Commission also feels, through past experience, that the Wyoming Department of Environmental Quality's Industrial Siting Division, and the Industrial Siting Council, will be fair in their determinations and recommendations when it comes to financial mitigation of the above mentioned impacts expected to result from the WYGEN III project. Therefore, the County Commission will accept, without opposition or complaint, whatever financial mitigation decision the Council makes regarding this project's impact on Sheridan County.

If you have any questions or concerns regarding this matter, please do not hesitate to contact this office.

Sincerely,

A handwritten signature in black ink, appearing to read "Terry L. Cram".

Terry L. Cram
Chairman
Sheridan County Commission

C: Rick Kaysen, Siting Coordinator

JOHNSON COUNTY COMMISSIONERS



15C: 10-18.07

Gerald E. Fink

Delbert Eitel

Smokey Wildeman

October 12, 1007

Tom Schroeder, Program Principal
State of Wyoming Department of Environmental Quality
Industrial Siting Division
Herschler Building, 4W
122 West 25th Street
Cheyenne, WY 82002

Re: WYGen III Unit V Project

Dear Mr. Schroeder,

Rick Kaysen, Siting Coordinator for Black Hills Corporation met with us recently to outline and discuss the plans for the WYGen III project. We are very appreciative of Black Hills Corporation's effort to provide us with information about the project.

The Johnson County Commissioners are basically supportive of the project as explained to us by Mr. Kaysen. We do recognize that the development and construction of the plant will have some impacts in Johnson County, mainly in the areas of recreational use of local facilities, associated law enforcement and emergency services and roads used by recreation users i.e. hunters, fisherman, sightseers etc. Some impact may also be seen in the housing sector as some worker may be expected to live at Buffalo and commute to the construction site. It is hoped that the effect of these impacts will be dealt with through the industrial siting process.

Sincerely,

A handwritten signature in cursive script that reads "Gerald E. Fink".

Gerald Fink
Chairman

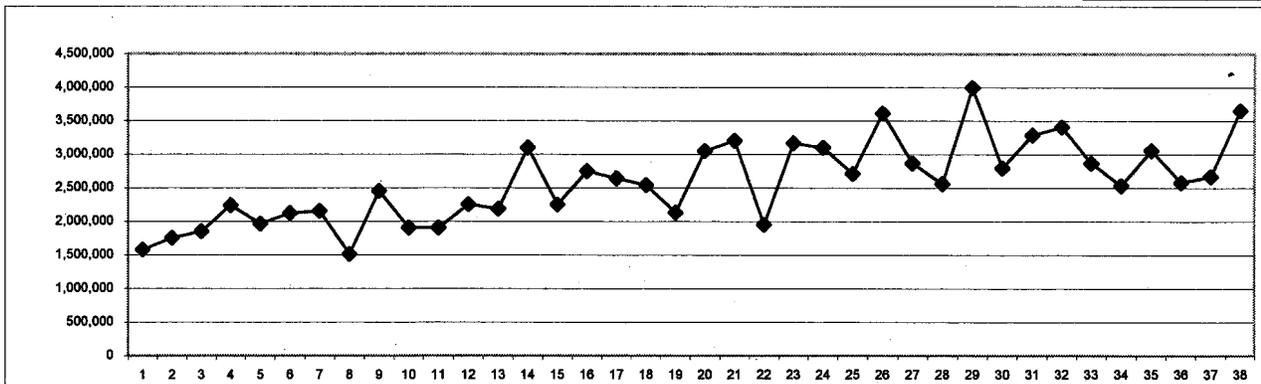
cc: Rick Kaysen

APPENDIX B
ISD Impact

Campbell
IAP Estimator

Histroy of State Sales and Use Taxes Given to Campbell County Local Governments

Serial	Month	State Share Given			State Share Given to Muni's			Total
		Sales	Use	Total	Sales	Use	Total	
1	July 04	19,214	1,492	20,706	1,493,209	66,992	1,560,201	1,580,907
2	Aug 04	26,858	2,573	29,431	1,600,175	123,065	1,723,240	1,752,671
3	Sep 04	27,170	2,061	29,231	1,679,376	147,269	1,826,645	1,855,876
4	Oct 04	26,810	2,204	29,014	2,046,228	163,305	2,209,533	2,238,547
5	Nov 04	27,212	2,499	29,711	1,788,048	147,049	1,935,097	1,964,808
6	Dec 04	24,507	2,457	26,964	1,842,499	252,541	2,095,040	2,122,004
7	Jan 05	22,546	1,888	24,434	1,926,691	203,212	2,129,903	2,154,337
8	Feb 05	24,214	1,759	25,973	1,367,870	122,216	1,490,086	1,516,059
9	Mar 05	26,788	2,285	29,073	2,238,129	187,671	2,425,800	2,454,873
10	Apr 05	20,949	2,230	23,179	1,695,332	186,743	1,882,075	1,905,254
11	May 05	24,262	3,530	27,792	1,771,057	107,283	1,878,340	1,906,132
12	Jun 05	25,271	2,985	28,256	2,036,692	191,984	2,228,676	2,256,932
13	Jul 05	24,351	2,847	27,198	1,921,262	238,753	2,160,015	2,187,213
14	Aug 05	39,913	3,312	43,225	2,819,956	233,878	3,053,834	3,097,059
15	Sep 05	28,414	2,910	31,324	1,986,228	230,344	2,216,572	2,247,896
16	Oct 05	32,345	3,022	35,367	2,571,060	143,783	2,714,843	2,750,210
17	Nov 05	28,606	2,879	31,485	2,403,964	207,730	2,611,694	2,643,179
18	Dec 05	27,171	2,991	30,162	2,222,240	291,293	2,513,533	2,543,695
19	Jan 06	28,025	2,292	30,317	1,996,844	104,423	2,101,267	2,131,584
20	Feb 06	30,196	3,007	33,203	2,743,016	277,549	3,020,565	3,053,768
21	Mar 06	33,732	2,590	36,322	2,909,204	255,592	3,164,796	3,201,118
22	Apr 06	21,888	2,512	24,400	1,813,627	114,087	1,927,714	1,952,114
23	May 06	33,135	5,201	38,336	2,918,503	212,058	3,130,561	3,168,897
24	Jun 06	31,963	4,412	36,375	2,697,308	366,019	3,063,327	3,099,702
25	Jul 06	29,199	3,345	32,544	2,411,128	266,494	2,677,622	2,710,166
26	Aug 06	42,718	5,272	47,990	3,221,708	341,478	3,563,186	3,611,176
27	Sep 06	33,391	4,160	37,551	2,493,909	334,220	2,828,129	2,865,680
28	Oct 06	33,211	4,924	38,135	2,309,982	214,965	2,524,947	2,563,082
29	Nov 06	39,672	5,918	45,590	3,466,546	481,198	3,947,744	3,993,334
30	Dec 06	30,081	4,697	34,778	2,417,870	346,277	2,764,147	2,798,925
31	Jan 07	34,144	4,032	38,176	2,809,964	437,885	3,247,849	3,286,025
32	Feb 07	32,011	4,598	36,609	3,071,970	295,082	3,367,052	3,403,661
33	Mar 07	29,967	3,725	33,692	2,527,289	306,922	2,834,211	2,867,903
34	Apr 07	27,668	3,205	30,873	2,147,152	352,804	2,499,956	2,530,829
35	May 07	34,154	4,746	38,900	2,658,911	360,856	3,019,767	3,058,667
36	June 07	28,029	3,774	31,803	2,291,090	258,916	2,550,006	2,581,809
37	July 07	34,483	5,735	40,218	2,290,296	340,252	2,630,548	2,670,766
38	Aug 07	40,418	6,146	46,564	3,197,082	408,214	3,605,296	3,651,860
Base Period Amount =								3,022,712



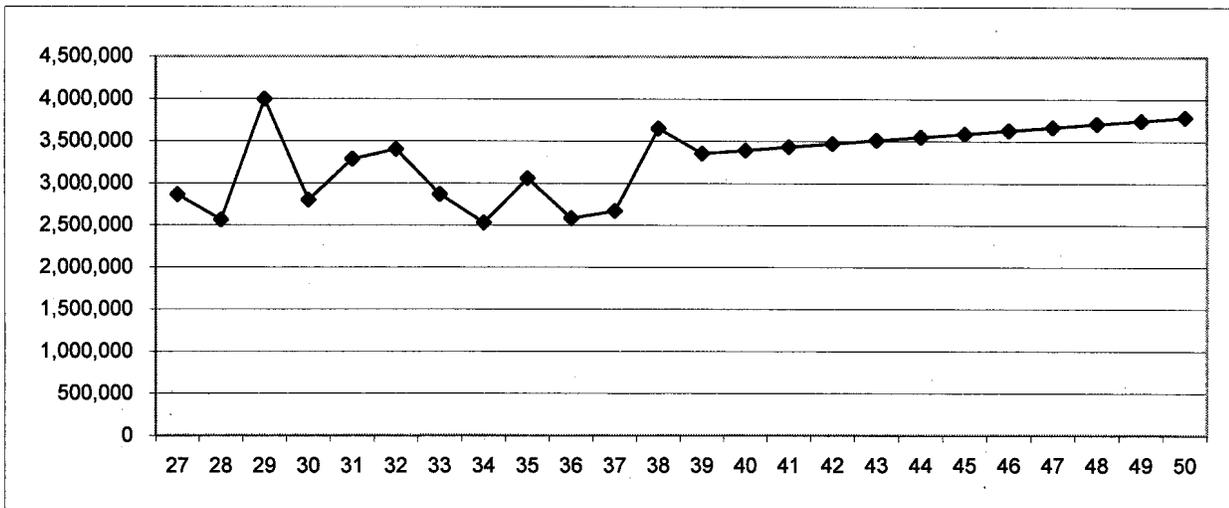
Campbell
IAP Estimator

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

Forecast of Payments of State Shares and Impact Assistance

Serial	Month	SLR	BasePeriod	Impact Assistance	State Shares to Campbell County Last Year & One Year Forecast
39	Sept 2007	3,353,048	3,022,712	330,336	27 2,865,680 Sept 06
40	Oct 2007	3,392,234	3,022,712	369,522	28 2,563,082
41	Nov 2007	3,431,420	3,022,712	408,709	29 3,993,334
42	Dec 2007	3,470,607	3,022,712	447,895	30 2,798,925
43	Jan 2008	3,509,793	3,022,712	487,081	31 3,286,025
44	Feb 2008	3,548,980	3,022,712	526,268	32 3,403,661
45	Mar 2008	3,588,166	3,022,712	565,454	33 2,867,903
46	Apr 2008	3,627,352	3,022,712	604,640	34 2,530,829
47	May 2008	3,666,539	3,022,712	643,827	35 3,058,667
48	June 2008	3,705,725	3,022,712	683,013	36 2,581,809
49	July 2008	3,744,911	3,022,712	722,200	37 2,670,766
50	Aug 2008	3,784,098	3,022,712	761,386	38 3,651,860
					39 3,353,048 Sept 2007
	Average IAP			545,861	40 3,392,234
	Total IAP			6,550,331	41 3,431,420
					42 3,470,607
	State share growth rate =			1.129	43 3,509,793
					44 3,548,980
					45 3,588,166
					46 3,627,352
					47 3,666,539
					48 3,705,725
					49 3,744,911
					50 3,784,098 Aug 2008

State Sales and Use Taxes Given to Campbell County Local Governments



APPENDIX C

Public Involvement Information

W Y G E N I I I U N I T V P R O J E C T

OVERVIEW

Black Hills Corporation (BHC) is proposing to build a new, 100 megawatt gross nominal coal-fired power plant at its existing Neil Simpson Energy Complex east of Gillette.

NEED FOR PROJECT

BHC's self-build, coal-fired generation resource will provide long-term stable rates, based upon fuel supply stability provided from mine-mouth generation under a long-term coal supply agreement. BHC received a certificate of completion for a 100 MW air permit that may be used for Wygen III. BHC intends to commence construction soon after the industrial siting application is approved by the Industrial Siting Council.

PROJECT DESCRIPTION

The proposed BHC project is the Wygen III Power Plant, which will be located approximately five miles east of the city of Gillette, in Campbell County, Wyoming. Wygen III will be a 90 megawatt net, in-door type, sub-critical, air-cooled, pulverized coal-fired, steam electric generating plant, equipped with state of the art pollution control equipment. Wygen III will be constructed on lands owned by Wyodak Resources Development Corp. at the existing Neil Simpson Energy Complex. The Wygen III Power Plant will be located adjacent to the Wygen II Power Plant that is nearing construction completion. The two Power Plants will share and benefit from a common control center.

The coal supply for Wygen III will come from the adjacent Wyodak Resources coal mine. Wygen III will employ the latest emission control technology to comply with air quality laws and regulations. Specifically, the Power Plant will be constructed with fabric filter dust collectors, a scrubber, selective catalytic reduction (SCR) and a mercury control system. The scrubber will be a spray dryer absorber similar to the system installed on the adjacent Wygen II Power Plant.

The Power Plant will be interconnected either to the 230 kV bus at the Wyodak Substation or directly to a new 230 kV line in the construction planning stages.

BENEFIT

The construction of Wygen III aligns with the goals of Governor Freudenthal in promoting Wyoming based coal-fired generation as well as BHC's Integrated Resource Planning goals; providing cost effective and reliable electric supply with stable rates for customers in northeastern Wyoming and beyond, who are served by Black Hills Power, Montana Dakota Utilities, and Municipal Energy Agency of Nebraska. Expansion of these vital resources also supports the transmission grid and the electric suppliers for this part of Wyoming.

WYGEN III UNIT V - FACT SHEET

- Estimated Construction Costs = ±\$240 Million
- Operation of the Power Plant is anticipated to employ 20 permanent positions
- Project will yield ±\$1,200,000 in Ad Valorem Taxes
- Project will have minimal environmental consequences
 - Will utilize existing access roads, transmission interconnection facilities, coal supply facilities, water supply, and water discharge facilities

REGULATORY REVIEW PROCESS

The Industrial Siting Division administers the Wyoming Industrial Information and Siting Act Permits which are required of all projects with construction cost of \$163 million or more.

- Wygen III capital costs exceed the statutory dollar threshold
- BHC intends to apply for a permit from the Wyoming Industrial Siting Council in late August or early September 2007

The Wyoming Public Service Commission (WPSC) is the regulatory body charged with authorizing electrical generation projects within the state. BHC is required to apply to the WPSC for a Certificate of Public Convenience and Necessity (CPCN). The CPCN application conducts a multi-disciplinary regulatory review to determine if the project is needed and its impact on the local environment and community(s).

ENVIRONMENTAL COMMITMENT

BHC's environmental commitment is built upon its core values – service to our customers, honesty, social responsibility, stakeholder inclusion, financial and environmental sustainability, and respect for its employees and customers. BHC supports sustainable environmental policies and actions by balancing stewardship with financial considerations, engineering and maintenance requirements and societal impacts.

LABOR

- Project construction work force varies from a low of 10 to a high of 250
 - 35 month construction period
- Work force is estimated to average 117 workers
- Peak level of 250 workers occurs in August 2009
- Projected 33% local construction workforce
 - Workforce and contractors anticipated to be very similar to Wygen II

For more Information, contact:

Rick Kaysen
Siting Coordinator
223 Stetson Drive
Cheyenne, WY 82009
307-214-1687 (Cell)
307-632-5104

Vern Schild
Director of Power Generation
13151 Hwy. 51
Gillette, WY 82716
307-682-3771, ext 2210

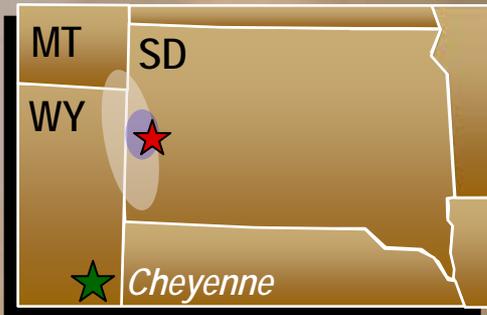


ENERGY FOR THE WEST

Wygen III Power Plant

Black Hills Corporation - Overview

Retail Operations



- Black Hills Power
- Cheyenne Light Fuel & Power

Focus: utility and operations

Wholesale Operations



- Black Hills Generation (IPP)
- Black Hills E&P (oil & gas)
- Wyodak Resources (coal mining)
- Enserco Energy (gas & oil marketing)

Focus: generation and fuel assets optimized through marketing and transportation expertise

Black Hills Corp. - Local History



- ***Long-standing Gillette Corporate Citizen***
 - *51 years in Gillette*
 - *Employs 200 people in Gillette*
- ***Neil Simpson Energy Complex Founded 1969***
 - *Wyodak Resources Development Corp. – 1956*
 - *± 4.5 million tons of annual coal production*
 - *Neil Simpson I – 1969*
 - *20 Megawatt (MW) Power Plant*
 - *Wyodak Power Plant – 1978*
 - *330 MW (20% Black Hills)*
 - *Neil Simpson II – 1995*
 - *80 MW Power Plant*
 - *Wygen I – 2003*
 - *80 MW Power Plant*
 - *Wygen II Unit IV – 2007*
 - *100 MW Power Plant*
 - *Natural Gas Fired Turbines – 2000*
 - *Two @ 40 MW Simple Cycle Combustion Units*

Wygen III Power Plant– Overview

- **100 MW Coal-fired Power Plant**
 - *Gross nominal 100 MW capacity and 90 MW net capacity*
 - *Sister plant to Wygen II*
- **Project located at the existing Neil Simpson Energy Complex (east of Gillette)**
- **Plant will employ the latest emission control technology**
 - *fabric filter dust collectors*
 - *scrubber*
 - *selective catalytic reduction (SCR)*
 - *mercury control system*

Wygen III Power Plant – Overview (cont.)

- ***Mine-mouth operation fueled by pulverized low-sulfur coal from adjacent Wyodak Mine***
- ***Construction Duration – January 2008 to December 2010 (35 months)***
- ***Begin commissioning - October 2009***
- ***First Fire Coal – September 2010***
- ***Commercial Operation – December 2010***

**Wygen III
Proposed
Location**



Industrial Siting Permit Process

- **The Industrial Siting Division administers the Wyoming Industrial Information and Siting Act**
 - *Permits are required of all projects with construction cost of \$163 million or more.*
 - *Wygen III Unit V capital costs exceed the statutory dollar threshold*
 - *Black Hills intends to apply for a permit from the Wyoming Industrial Siting Council in September 2007*

Industrial Siting Application Process

- **The form and content of the application is specified by state law and Rules of the Industrial Siting Council**
- **The application will contain socio-economic data of local governments affected by the project**
- **The Application will present:**
 - *published socioeconomic data*
 - *housing and lodging data*
 - *issues and recommendations identified from local government meetings*
- **The Applicant is required by law to meet with local governments to describe and discuss the project and discover any impact to the local government**
- **The Applicant also coordinates with state agencies, which issues recommendations and guidance**

Wygen III Power Plant - Benefits

- ***Estimated Construction Costs are ±\$240 Million***
- ***Operation of the Project is anticipated to employ 20 permanent positions***
- ***Project will yield ±\$1,200,000 in Ad Valorem Taxes***
- ***Approximately 250 workers are estimated during the peak of construction***
 - ***Will employ approximately 33-percent of local construction workforce***
 - ***Will utilize several local contractors***

Wygen III Power Plant - Benefits Cont.

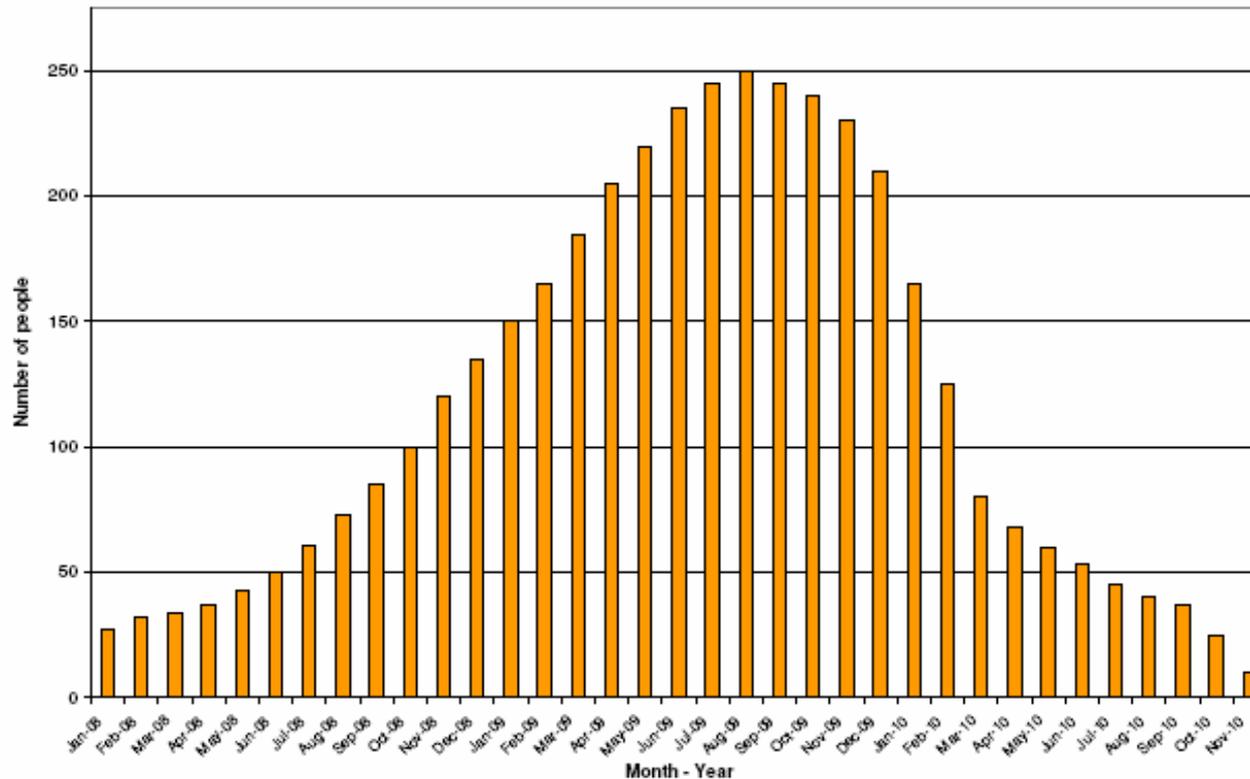
- *Plant will utilize approximately 500,000 tons of Wyoming mined coal*
 - *Coal will be mined at adjacent Wyodak Mine*
- *Project will have minimal environmental consequences*
 - *Project will utilize:*
 - *existing access roads*
 - *transmission interconnection facilities*
 - *coal supply facilities*
 - *water supply*
 - *water discharge facilities.*
- *Will benefit from Wyodak Mine's economical, low sulfur fuel, and provide cost effective, reliable electric supply with stable rates for customers*

Labor

- **Approximately 250 workers are estimated during the peak of construction of the Project**
 - **Construction work force varies from a low of 10 to a high of 250 over the 35 month construction period**
 - **Work force is estimated to average 117 workers**
 - *Peak level of 250 workers occurs in August 2009*
 - **Construction workforce is anticipated to be very similar to Wygen II**

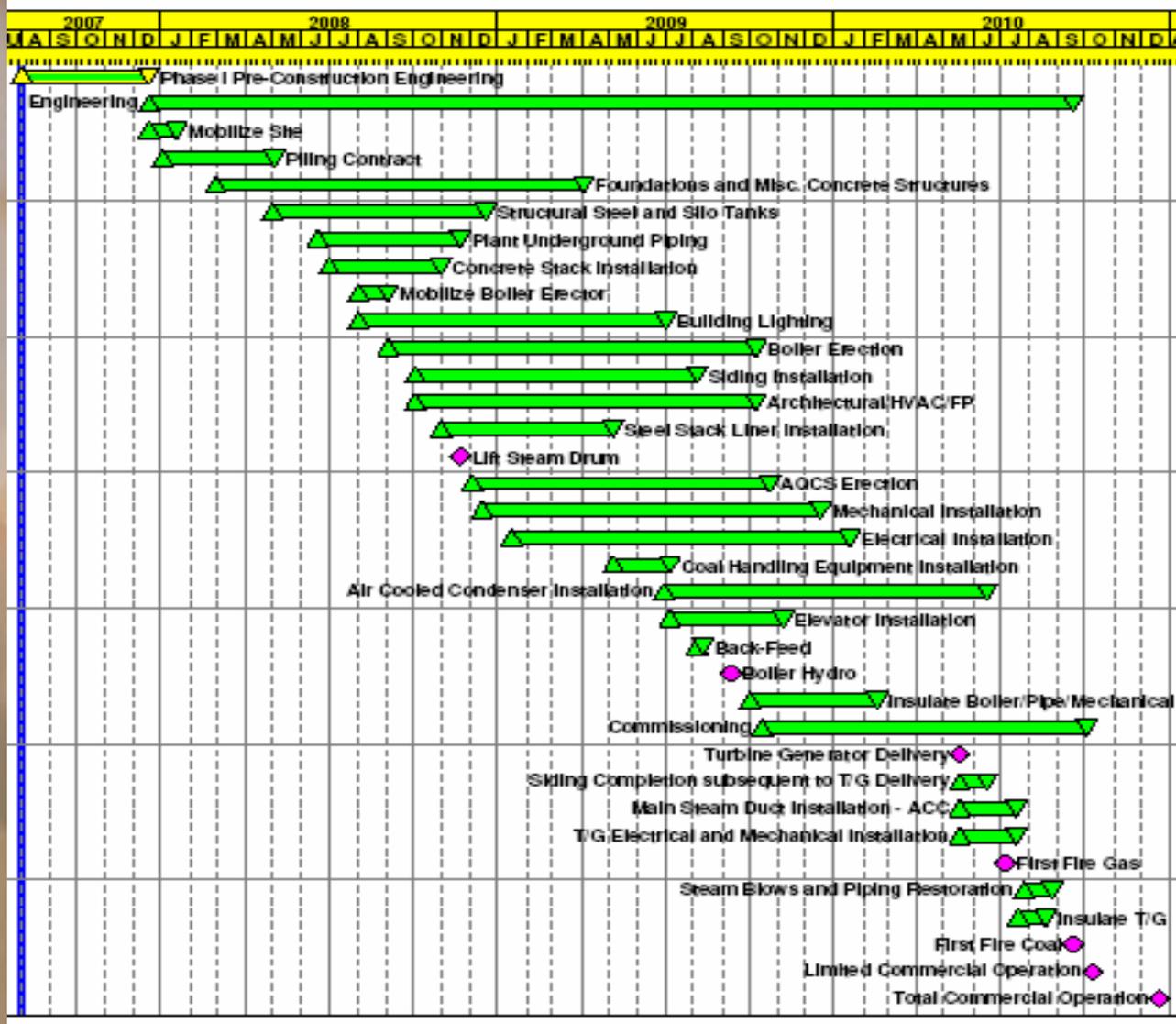
Labor Workforce Estimate

Wygen 3 Unit 5 Projected Manpower



Month	Number of People
1 Jan-08	27
2 Feb-08	32
3 Mar-08	34
4 Apr-08	37
5 May-08	43
6 Jun-08	50
7 Jul-08	61
8 Aug-08	73
9 Sep-08	85
10 Oct-08	100
11 Nov-08	120
12 Dec-08	135
13 Jan-09	150
14 Feb-09	165
15 Mar-09	185
16 Apr-09	205
17 May-09	220
18 Jun-09	235
19 Jul-09	245
20 Aug-09	250
21 Sep-09	245
22 Oct-09	240
23 Nov-09	230
24 Dec-09	210
25 Jan-10	165
26 Feb-10	125
27 Mar-10	80
28 Apr-10	68
29 May-10	60
30 Jun-10	53
31 Jul-10	45
32 Aug-10	40
33 Sep-10	37
34 Oct-10	25
35 Nov-10	10

Preliminary Schedule



BLACK HILLS CORPORATION
WYGEN III Presentation
City of Gillette/Campbell County
August 16, 2007

8/16
1:00 PM.

City of Gillette - Campbell County Joint Meeting
Wygen III

NAME/TITLE

REPRESENTING

KELLY HAND: MAYOR

TOWN of WRIGHT

CHRISTY HALE / Clerk / Treasurer

Town of Wright

BOB PALMER - Director

Campbell County

Ray Edwards

Campbell County

CAROL Seeger

Campbell County

Patricia Davidsmeier

City of Gillette

Duane EVERSON

Mayor of Gillette

Robin Kurtz

City of Gillette

BRET FONES

CITY OF GILLETTE

Dan Coolidge

Campbell County

BLACK HILLS CORPORATION
WYGEN III Presentation
City of Newcastle
August 20, 2007

NAME/TITLE

REPRESENTING

Greg James, City Council	Newcastle City
Annette C. Hawk, City Council	Newcastle City
Iskarita Brunner, Clerk/Treasurer	City of Newcastle
JAMES W. BUNCH, City Council	City of Newcastle
Roger K. Hespe, City Council	City of Newcastle
Robert Hartley, City Engineer	City of Newcastle
Todd Quigley, City Council	City of Newcastle
_____	NPD City of Newcastle

BLACK HILLS CORPORATION
WYGEN III Presentation
Weston County
August 21, 2007

NAME/TITLE

REPRESENTING

Ted Krtman	Weston County Commissioner
ALAN Todd	Weston Co. Commissioner
Jerry Shepperson	Weston Co Commissioner
Gene Hutt	Weston Co Commissioner
Adam Bruce	Weston Co Commissioner
Paulette Trampsd, County Clerk	- Weston County

BLACK HILLS CORPORATION
WYGEN III Presentation
City of Sheridan
August 28, 2007

Dave Kinskey Mayor City of Sheridan

Robert Briggs Planning Director

BLACK HILLS CORPORATION
WYGEN III Presentation

Town of Kaycee

August 28, 2007

Crosby Taylor - Council Member
Eileen Kennedy - Council Member
Becky Schiermiester - Deputy Clerk
Tom Knapp City Council
Janet Collee City Council
Diana Cornthwaite Town Clerk

ROBERT BENNETT CIVIL ENGINEERING PROF-CASPER
Robert Perry
Barry Crago Town Attorney

BLACK HILLS CORPORATION
WYGEN III Presentation
Sheridan County
August 29, 2007

Steve Mayer	County Commissioner
BOB ROLSTON	COUNTY Commissioner
Terry Cram	Sheridan "
Katie Fetterly	Sheridan medig 1
MIKE MACKAY	SHERIDAN COUNTY

BLACK HILLS CORPORATION
WYGEN III Presentation
City of Sundance/Crook County
September 4, 2007

Stormy Burch	Crook Co. Commissioner
John A. Moline Jr	" " "
June Hooley	"
Connie D. Tschetter	Crook County Clerk
Joseph M. Baron	Crook County Attorney
Van BLAKEMAN	Crook County Public Works Director
STEVE BLAKEMAN	TOWN OF MOORCROFT
Frank Tschetter	Sundance Mayor
Tim Lyons	CROOK COUNTY GROWTH & DEVELOPMENT

BLACK HILLS CORPORATION
WYGEN III Presentation
City of Douglas/Converse County
September 5, 2007

Lucille Taylor	Converse Co. Clerk
Ed Werner	County Commissioner
Jim Wilcox	County Commissioner
Mark Cash	Converse County Commissioner
Joe Coyne	CANDO
Jim Schneider	Mayor - Douglas
Michael Roy	City of Douglas - Community Dev. Dept.
PAUL W. MOSSELMAN	SPECIAL PROTECTS CONVERSE COUNTY
Brendan Burnett-Kuriz	Douglas Budget
Marilyn WERNER	City Council of Douglas

BLACK HILLS CORPORATION
WYGEN III Presentation
Town of Clearmont
September 10, 2007

Jessie J. Swell - Mayor
Dana Louvalka - Town Council
Leah Randall - town Council
Gary Roebing - town Council
Louis Harnish - Sheridan County Sheriff's Office

BLACK HILLS CORPORATION WYGEN III Presentation

Town of Moorcroft

September 24, 2007

James J. Reyford	councilman	moorcroft
STEVE BLAKEMAN	COUNCILMAN	MOORCROFT
Rosalie Brimmer	Mayor	Moorcroft
Owen Mathews	Councilman	Moorcroft
GAIL PILCHER	CLERK/TREASURER	"
ED RABUSO	CHIEF OF POLICE	MOORCROFT
BOB FEEHAN	Dir Public Works	MOORCROFT
Ashley Schunickl	College Government Student	Moorcroft
Rachel Helmer	College Government Student	Moorcroft
Lexi Smith	College Government Student	Moorcroft
Joe Coyne	NEWEDC	
Tina Sandlin	Sandler Sandler	
Barb Steen	Sander Sandler	Gillette
STEVE NOAKES	Good Guys Construction	MOORCROFT
Jan Bruce	M.V.F.P.	MOORCROFT
JEFF HOUSON	MUFD	
PAUL BLAKEMAN	Crook County	
Theresa M. Dewitt	MUFD	MOORCROFT
Barb Jeffrey	Citizen	MOORCROFT
Jack Fall	Sander SAK	moorcroft
Hindsey Massie	Citizen/gov. Student	moorcroft
Seamus J. Jiv	Citizen/gov. Student	moorcroft
Laura Schelling	Citizen/gov. Student	Moorcroft
William Bartz	Citizen/gov. Student	Moorcroft
Melinda Percutfield	College Government	Moorcroft
Sarah Garber	College Government	Moorcroft
Treavor Hanson	College Government	Rozet
Amanda Hucklin	Citizen/gov. Student	Moorcroft
Nikki Nelson	Citizen/gov. Student	Moorcroft

9

BLACK HILLS CORPORATION

WYGEN III Presentation

Town of Pine Haven

September 24, 2007

Regan Lefdel

Vernon Funderberger

Robert Sievek

Diana Oriskany

Joe Matthey

John Bell

Wendy Johnson

Paul Miller

Sara Johnson

Brad Aron

Dorothy Johnson

CHUCK TESCH

Myrna Tesch

Darrell Tidwell

Dwayne Erickson

AK7 STETSON

BLACK HILLS CORPORATION

WYGEN III Presentation

Town of Upton

September 25, 2007

Lisa LeVasseur

Don Hauser

Roxas Barker

James Montgomery

Sam Rastorff

Gene Stephens

Don Stober

David Hubert

Ronald Hubert

Councilwoman

Attorney

Clerk

Deputy Clerk

Councilman

Councilman

Meyer

Councilwoman

Chief of Police



As previously shared with City of Gillette officials, Black Hills Corporation is proposing to construct Wygen III, a state of the art coal fired electric generation, to be located east of Gillette, Wyoming.

Attached is a revised Construction Schedule as compared to the Preliminary Construction that was previously provided. The construction schedule has been modified to a twenty-nine month schedule from a preliminary thirty-five month schedule with commercial operation expected in June 2010. Black Hills has been able to secure critical equipment for Wygen III sooner than originally forecasted that allows for a shorter construction period.

As a result of the shorter construction period, a revised Labor Workforce Estimate has also been completed. Attached is the revised workforce estimate reflecting a peak workforce of 315 as compared to the initial estimate of a 250. Although there is an increase, Black Hills does not anticipate any additional community effects as experienced with Wygen II.

Thank you once again for your hospitality during my prior visit with City of Gillette officials to share information regarding Wygen III, and I trust this update is beneficial. As discussed during our visit, Black Hills certainly appreciates your consideration of a letter of support for the Wygen III project. The letter of support should be addressed to:

Tom Schroeder, Program Principal
State of Wyoming
Industrial Siting Division
Department of Environmental Quality
122 West 25th Street, 4W
Cheyenne, WY 82002

with a courtesy copy to:

Rick Kaysen, Siting Coordinator
Black Hills Corporation
223 Stetson Drive
Cheyenne, WY 82009

If I may be of further service, please do not hesitate to contact me.

Sincerely,

Rick Kaysen
307-214-1687

APPENDIX D

State Agency Communications



Vern Schild
Director of Power Generation

307-682-3771 ext. 2210
vschild@bhgen.com

September 14, 2007

Mr. John R. Harju
State of Wyoming
State Engineer's Office
Ground Water Division
Herschler Building
122 West 25th Street, 4th Floor East
Cheyenne, WY 82002

Wygen III Industrial Siting Permit Water Supply and Yield Analysis

Dear Mr. Harju,

Thank you for letting us share information about the Wygen III project on July 25, 2007. As we detailed at our meeting, Wygen III proposes to use water from existing ground water wells and Well 15, which has been approved for construction.

The pollution abatement systems use a significant portion of the water on this project. An estimated 34-48 acre feet (65-75 gpm) is used per year in the sulfur removal process. Additional use in this area is the ash loading system which uses 7.8 to 15.8 acre feet per year (15-30 gpm).

Since the project uses air cooled condensers, this saves 3,000 gallons per minute of water. The steam generator utilizes about 48 acre feet per year (30 gpm) for sootblowing and boiler blowdown.

Overall, this project will consume 210-242 acre feet per year (130 -150 gallons per minute) of ground water. The 242 acre feet is well below the threshold for Wyoming Environmental Quality Act and Industrial Development Information and Siting Act statutory guidelines of 800 acre feet to require a State Engineer's Office water supply and yields analysis.

By submittal of this letter, we would like to afford your office with the information for a satisfactory recommendation to the Industrial Siting Division. Please submit your satisfactory recommendation to Mr. Tom Schroeder, Program Principal, Department of Environmental Quality, Industrial Siting Division, Herschler Building, 122 West 25th Street, 4W, Cheyenne, WY 82002.

Should you have any questions, please contact me at (307) 682-3771 and extension 2210.

Sincerely,


Vern Schild

Xc: Mark Lux
Rick Kaysen
Shawn Lesmeister

Mr. Jeremy Manley-State Engineer's Office
Mr. Tom Schroeder-Industrial Siting Division



Mark L. Lux
Vice President Power Delivery

350 Indiana Street, Suite 400
Golden, CO 80401

October 15, 2007

Ms. Mary Hopkins
Deputy SHPO
Department of State Parks and Cultural Resources
2301 Central Avenue
Barrett Building
Cheyenne, WY 82002

RE: Industrial Siting Application – Wygen III Project

Dear Ms. Hopkins,

Black Hills Corporation is proposing to construct and operate the Wygen III electric generation project east of Gillette, Wyoming in Campbell County. The Project will occupy approximately 65 acres of a 160 acre parcel within portions of Section 22 and 27 of Township 50 North and Range 71 West.

Because the Wyodak Resources mine permit (“action”) involved federal subsurface mineral rights, the Wyoming Department of Environmental Quality Land Quality Division (lead state agency), which administers the land and minerals for the Office of Surface Mining, determined the level and scope of the Section 106 cultural resource inventory required for the Wyodak Resources mine permit. Prior to mining, Wyodak Resources, as the mine operator, was required to conduct both a Class I file search and a Class III pedestrian survey to document and record cultural resources within the mine permit boundary. Results of the Class III cultural resource report were prepared and submitted to the Wyoming State Archaeologist’s Office in 1981. The study area encompassed 3,275 acres within and adjacent to the current Wyodak Coal Mine Permit boundary, which included the proposed Wygen III project site.

A review of the Class III survey shows that no isolated finds or archaeological sites were found or documented at the proposed Wygen III Project site. Therefore, the Project will have no effect on cultural resources.

By submittal of this letter, we would like to afford your office with the information for a satisfactory recommendation to the Industrial Siting Division.



Mark L. Lux
Vice President Power Delivery

350 Indiana Street, Suite 400
Golden, CO 80401

We appreciate your time and we would like to thank you, in advance, for your attention to this matter. If you have any questions or if you need any additional information, please feel to contact me at 303-568-3241.

Sincerely,

A handwritten signature in cursive script that reads "Mark L. Lux".

Mark L. Lux

THE STATE



OF WYOMING

Dave Freudenthal, Governor

John F. Cox, Director

Department of Transportation

10 EAST BRUNDAGE LANE

SHERIDAN, WYOMING 82801

September 25, 2007

Mr. Tom ~~Schroeder~~
Industrial Siting Division
~~Department of Environmental Quality~~
Herschler Building
112 West 25th Street
Cheyenne, WY 82002

Re: Black Hills Corporation
Wygen III Power Plant
Gillette, WY

Dear Mr. ~~Schroeder~~,

On August 29, 2007, Mr. Rick Kaysen, Siting Coordinator for the proposed Wygen III Power Plant, contacted the Wyoming Department of Transportation, District Four offices in Sheridan. He presented information concerning the projected impact from the construction and operation of the Wygen III Power Plant to the surrounding area.

The information indicated the impact would be similar to that experienced by the Wygen II Power Plant currently nearing completion in the same area. We have considered the information supplied to us, and find that the impact to the State highway systems in the area should not pose any different impact than that experienced thus far. We therefor have no concerns that need consideration at this time.

If you have any questions or need further information from WYDOT, please contact us anytime.

Respectfully,

A handwritten signature in cursive script that reads "Donald R. Phillips".

Donald R. Phillips, P.E.
District Traffic Engineer

cc: Mark Gillett, P.E., District Engineer, WYDOT, Sheridan, WY
→ Rick Kaysen, Siting Coordinator, 223 Stetson Drive, Cheyenne, WY 82009
file; Campbell County, Traffic Correspondence

APPENDIX E

Local Agency LOS and Infrastructure Survey

WYGEN III PROJECT

Local Agency Level of Use and Infrastructure Checklist Survey

Contact List

Name of Agency	Contact/Address	When Delivered	When Received Back
Campbell County and Incorporated Municipalities			
Campbell County	Jackie Clough, Senior Administrative Assistant 500 S. Gillette Ave., Suite 110 Gillette, WY 82716 307-687-6390 rpp01@ccgov.net	July 2, 2007 – Hand Delivered	September 21, 2007 via email from Brent Jones Bret A. Jones City Administrator City of Gillette, WY P.O. Box 3003, 82717 Office (307) 686-5203 Fax (307) 686-1593
City of Gillette	Bret Jones City Administrator, and Tom Langston, Director, Community Development P.O. Box 3003 Gillette, WY 82717 307-686-5203 gillette@ci-gillette.wy.us	July 2, 2007 – Hand Delivered	August 28, 2007
Town of Wright	Christy Hale, Treasurer P.O. Box 70 Wright, WY 82732 307-464-1666 clerk@vcn.com	July 3, 2007 – Hand Delivered	No receipt to date.
Converse County and Incorporated Municipalities			
Converse County	Converse County Commissioners 107 North 5th Street Douglas, WY 82633 307-358-2244 ccclerk@communicomm.com	July 3, 2007 – Hand Delivered Fill in clerk, did not provide a name. However, the County Clerk (no name provided) will be contacting Rick regarding the drop off materials.	August 29, 2007
City of Douglas	Bobbe Fitzhugh, City Administrator P.O. Box 1030 Douglas, WY 82633 307-358-3462 bfitzhugh@cityofdouglas.org	July 3, 2007 – Hand Delivered	October 18, 2007
Crook County and Incorporated Municipalities			
Crook County	Connie Tschetter P.O. Box 37 Sundance, WY 82729 307-283-1323 conniet@crookcounty.wy.gov	July 2, 2007 - Hand Delivered	August 28, 2007
Town of Hulett	Shawn Tabke, Mayor P.O. Box 278 Hulett, WY 82720 307-467-5771 toh@rtconnect.net	July 2, 2007 - Mailed from Black Hills Corporate Headquarters, Rapid City	August 28, 2007
Town of Moorcroft	Rosalie Brimmer, Mayor P.O. Box 70 Moorcroft, WY 82721 307-756-3526 townm@rtconnect.net	July 2, 207 - Hand Delivered	August 28, 2007
Town of Pine Haven	Bob Sieveke, Mayor 24 Waters Drive Pine Haven, WY 82721 307-756-9807 pinehav@collinscom.net	July 2, 2007 - Hand Delivered (Note: Office was closed for the day so package was deposited in their mail drop box)	August 28, 2007

WYGEN III PROJECT

Local Agency Level of Use and Infrastructure Checklist Survey

Contact List

Name of Agency	Contact/Address	When Delivered	When Received Back
Town of Sundance	Fred Tschetter, Mayor P.O. Box 542 Sundance, WY 82729 307-283-3451 sundancewy@rangeweb.net	July 2, 207 - Hand Delivered	August 28, 2007
Johnson County and Incorporated Municipalities			
City of Buffalo	Mayor Gary Anderson 46 North Main Street Buffalo, WY 82834 307-684-5566 cityhall@vcn.com	July 3, 2007 – Hand Delivered	September 11, 2007
Johnson County	Johnson County Commissioners Peggy Sullivan 76 North Main Street Buffalo, WY 82834 307-684-7555 commissioners@johnsoncowy.us	July 3, 2007 – Hand Delivered	September 4, 2007
Town of Kaycee	Diana Cornthwaite Town Clerk/Treasurer P.O. Box 265 Kaycee, WY 82639 307-738-2301 townkc@rtconnect.net	July 3, 2007 – Hand Delivered	September 1, 2007
Sheridan County and Incorporated Municipalities			
Town of Clearmont	Annlea Redding Town Clerk/Treasurer P.O. Box 127 Clearmont, WY 82835 307-758-4465 townhall@rangeweb.net	July 2, 2007 – Hand Delivered (Note: Town Hall was closed at 4:45 p.m., placed informational package in mail slot)	No receipt to date.
City of Sheridan	Robert Briggs P.O. Box 848 Sheridan, WY 82801 307-674-6483 mayor@city-sheridan-wy.com	July 3, 2007 – Hand Delivered	August 29, 2007
Sheridan County	Mike Mackey Sheridan County Commissioners 224 South Main Street Sheridan, WY 82801 307-674-2900 bocc@sheridancounty.com	July 3, 2007 – Hand Delivered	August 29, 2007
Weston County and Incorporated Municipalities			
Town of Upton	Connie Montgomery P.O. Box 203 Upton, WY 82730 307-468-2441 uptonwy@rtconnect.net	July 2, 2007 – Hand Delivered	July 24, 2007
Weston County	Paulette Thompson, Weston County Clerk 1 West Main Street Newcastle, WY 82701 307-746-2684 wcclerk@rtconnect.net	July 3, 2007 – Hand Delivered	August 27, 2007
City of Newcastle	Charita Brunner 10 West Warwick Newcastle, WY 82701 307-746-3535 cityofnewcastle@rtconnect.net	July 3, 2007 – Hand Delivered	August 24, 2007

Level of Service and Infrastructure Checklist - Survey

Name of County/Municipality:	Survey Notes:
Date of Interview:	
Address:	
Phone Number:	
Name of Interviewee:	
Job Title:	

Demographics of the Area	Response/Comment	Department to Contact
What is the current total population count?		Planning Department
What are the future total population projections?		
Do you estimate or count residents?		
What is the estimated population commuting into the area?		
Economic Conditions of the Area	Response/Comment	Department to Contact
Do you know what the governmental revenues are?		County Assessor or Treasurer
Ad Valorem Taxes: What is the total assessed property value of the area?		
Is there a designated sales and use tax specific for the area?		
What is the County Sales and Use Tax Revenue?		
Do you foresee changes in your property tax rates in the next two years?		
Do you foresee changes in the local option sales/use tax rates in the next two years?		
What are the enterprise funds or utility companies?		
Funded by user fees or special tax levy or loans?		
What is the County Lodging and Tax Revenue?		
What is the future employment growth of the area?		
Two biggest problems or areas of concern are:		

Level of Service and Infrastructure Checklist - Survey

Public Safety - Location and Characteristics of Police, Fire, and Emergency Services		Department to Contact
Fire	Response/Comment	
How many fire stations are located in your area?		Local Fire Departments
Number of fire-training centers?		
How many full-time paid firefighters are on staff?		
How many volunteer firefighters are there?		
Who provides Services for your area? City or County		
If a call is made for service, what is the response time? (If not known give the miles or an estimate of time)		
Are there any isolated areas or areas that are hard to get to - don't get good coverage?		
(If local) does the function have a certification or rating?		
Two biggest problems or areas of concern are (choose):		
No local equipment, response time, personnel needed, operations budget, facilities & equipment, other_____.		
Law Enforcement – Police	Response/Comment	Department to Contact
How many police stations are located in your area?		Local Police Departments
Number of sworn police officers		
Number of non-sworn police officers		
Total number of police employees		
Citizen to police ratio per 1000 citizens		
Number of Sworn deputies?		
Number of non-sworn deputies?		
Total number of law enforcement employees?		
Is law enforcement provided by a contract with another entity (such as the county sheriff)? Who?		
Number of County Sheriffs?		
Number of Sheriff's Stations?		
Do you have resident law enforcement for your jurisdiction? If a substation, give the hours that it is operational.		
If a call is made for service, what is the response time? (If not known give the miles or an estimate of time)		

Level of Service and Infrastructure Checklist - Survey

Are there any shortcomings in housing for the area? If so, what are the 2 biggest problems?		
Two biggest problems are (choose)		
No local officers, response time, sworn officers needed, operations budget, facilities & equipment, other_____.		
Emergency Medical Services		
		Department to Contact
Who provides ambulance service?		Local Fire & EMS Departments
Are they state certified?		
If an EMS call is made, where would the ambulance come from?		
If a call is made for service, what is the response time? (If not known give the miles or an estimate of time)		
Two biggest problems or areas of concern are:		
Health - Location and Characteristics of Health	Response/Comment	Department to Contact
Number of hospitals in the area		
Number of acute care beds		
Average bed occupancy		
Number of acute admissions per year		
Number of long-term admissions per year		
Number of outpatient visits		
Number of inpatients		
Number of emergency room visits per year		
Number of swing beds		
Total number of physicians		
Total number of medical staff		
Number of medical staff vacancies		
Two biggest problems or areas of concern are:		

Level of Service and Infrastructure Checklist - Survey

Municipal Services - Location and Characteristics of Municipal Facilities	Response/Comment	Department to Contact
What type of municipal services are provided to citizens in your area?		Public Works or Planning Department
Does the County provide the services or are they provided by the local municipalities?		
Electricity provider?		
Natural gas provider?		
Water		
Is the water system a municipal or rural system? Septic tanks, individual wells, domestic system?		Public Works or Planning Department
Water – primary water source type: Groundwater, surface or both?		
Degree of control (department, utility fund, joint powers board)		
What type of treatment do you have? (ground or surface)		
What is the current water consumption within the county or city? Do you have an estimate?		
What is the current treatment capacity of the system?		
What is the current capacity of the transmission/distribution system		
water source, capacity, lines (delivery), quality, facility, treatment methods, transmission, budgetary, other _____		
Facing you today, what are the two biggest problems(choose):		
source, capacity, lines(delivery), facility, treatment method, budget, regulatory other _____		
Anticipated changes in next two years?		
Wastewater/Sewer System		
How are residents provided wastewater services? Nearby municipality, private wastewater utility, county provider, or onsite - septic tank, or combination of the above?		Public Works or Planning Department
Type of facility?		
What is the wastewater flow? Estimate?		
What is the current treatment capacity of the system?		
What is the current capacity of the collection/conveyance system		
How is the treated effluent disposed?		

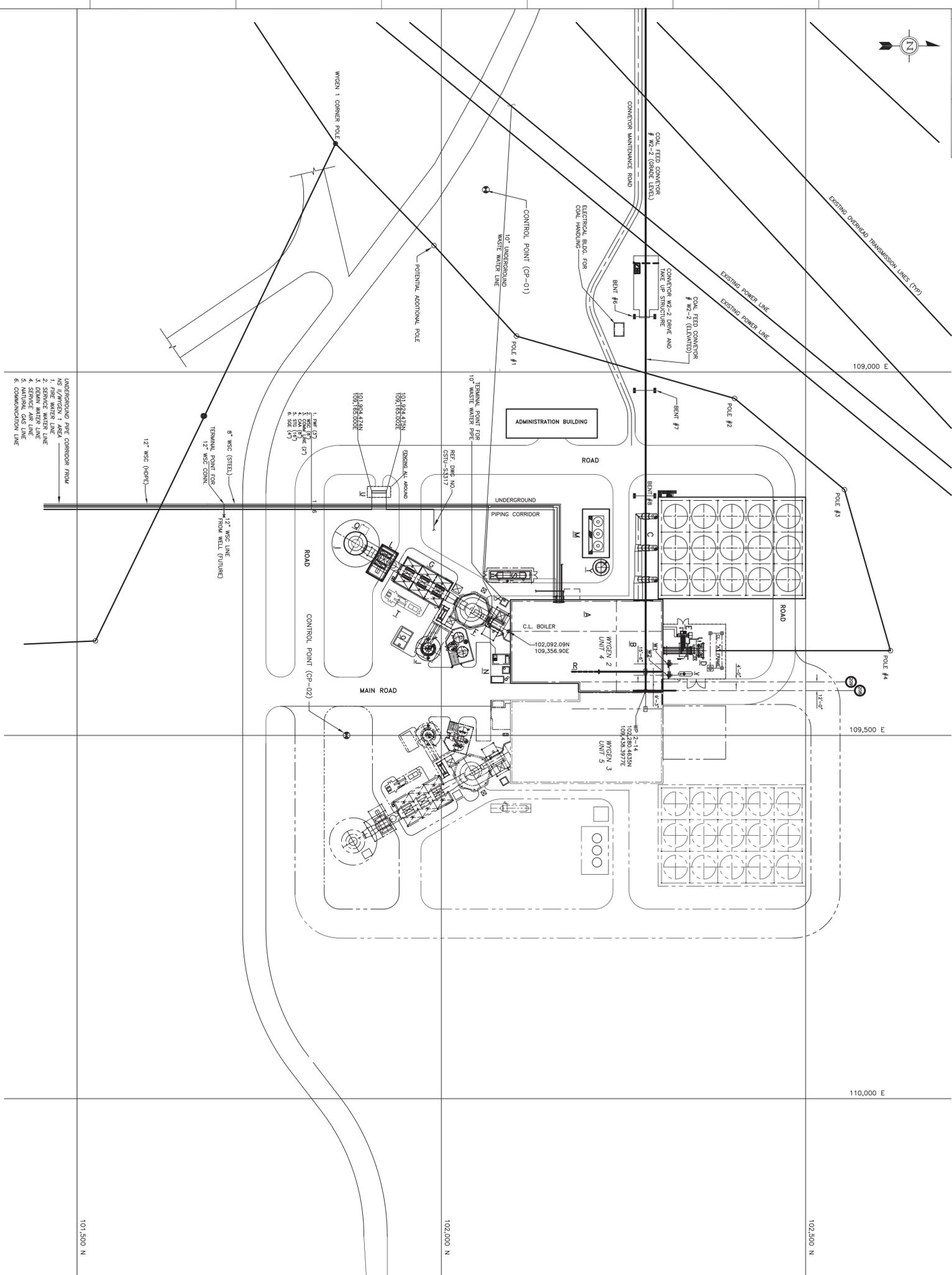
Level of Service and Infrastructure Checklist - Survey

How is wastewater sludge handled and disposed?		
Facing you today, what are the two biggest problems are (choose):		
capacity, lines - conveyance, facility, treatment method, budget, solids handling, other_____		
Anticipated changes in next two years?		
Who receives these services? Local citizens, commercial facilities, institutional facilities		
Solid Waste Collection		
Is there a solid waste collection system such as a private or public system?		Public Works or Planning Department
Who is the managing organization/entity?		
Anticipated changes in next two years?		
Transportation - Identification of Major Facilities	Response/Comment	Department to Contact
Who takes care of the roads for county, local, jurisdictional?		Local Road and Bridge Departments
Are there any problem areas such as road segments that have high crash rates, difficult access, or poor roadway conditions?		
Annual maintenance budget		
Two biggest problems or areas of concern are (choose):		
Budget, employee availability, equipment availability, materials availability, drainage, signage, design, overweight trucks, new roadway construction, dust due to traffic, other_____.		
Miles of Roadway/Streets		
Freight Rail Infrastructure		
Company		
Miles of Track		

Level of Service and Infrastructure Checklist - Survey

Code Enforcement (construction permits, plan review)	Response/Comment	Department to Contact
Who provides for building permits?		Planning & Zoning Department
Who provides for sewer inspections?		
Who provides for plan review?		
(If local) Does the function have a certification, or staff have a certification?		
(For counties:) Do you have land use regulations?		
The two biggest problems or areas of concern.		
(For counties:) Do you require use permits (special, conditional)?		
Recreation	Response/Comment	Department to Contact
Do you have an organized and staffed recreation programs?		Planning Department
How many acres of parks do you maintain?		
The two biggest problems or areas of concern are (choose):		
Maintenance, needed structures, staff for programs, extra budget, law enforcement, access road maintenance, other_____.		

APPENDIX F
Site Layout



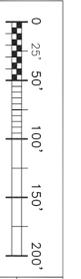
FACILITIES LEGEND

Bldg. ID	WYGEN 2 STATION	ROOMS
A	STEAM GENERATOR AREA	
B	TURBINE GENERATOR AREA	
C	AIR-COOLED CONDENSER	
D	GENERATOR STEP UP TRANSFORMER	
E	MAIN AUX TRANSFORMER	
F	SPRAY DRY ABSORBER (SDA)	
G	PULSE JET BAG HOUSE	
H	LINE SUPPLY SILO AND STORAGE TANK	
I	CHIMNEY	
J	ASH SILO	
K	ASH SILO	
L	ID FAN	
M	AUXILIARY COOLING WATER HEAT EXCHANGER	
N	WASTEWATER SUMP, OIL FAT AND SEWAGE TREATMENT PLANT AREAS	
O	ASH SILO SUMP	
P	RECYCLE ASH SILO	
Q	STACK EMISSION MONITORING UNIT	
R	COAL CONVEYOR W2-3 TO SILOS	
S	AMMONIA STORAGE TANK	
T	ELECTRICAL ROOM	
U	IONTOR GAS PRESSURE REDUCING STN. OVERGROUND	
V	LUBE OIL EMERGENCY SPILL CONTAINMENT TANK (UNDERGROUND)	
W1	SUS-11 TRANSFORMER	
W2	SUS-12 TRANSFORMER	
X	ELECTRICAL MANHOLE	
Y	CALCIUM CHLORIDE SOLUTION STORAGE TANK	

SURVEY LEGEND

ID	DESCRIPTION	LOCATION COORDINATES	ROOMS
CP-01	CONTROL POINT	102,061.20 108,744.03	0
CP-02	CONTROL POINT	101,870.00 109,500.00	0

KTB



CERTIFIED BY :
RONALD S. SZOSTAK
WYOMING REGISTRATION NO.
9101

REV.	DESCRIPTION	DATE	APPROVAL
0	RELEASED FOR CONSTRUCTION	05.31.06	SP
1	GENERAL REVISION	02.27.06	SP
2	REVISION	02.27.06	SP
3	REVISION	02.27.06	SP
4	REVISION	02.27.06	SP
5	REVISION	02.27.06	SP
6	REVISION	02.27.06	SP
7	REVISION	02.27.06	SP
8	REVISION	02.27.06	SP
9	REVISION	02.27.06	SP
10	REVISION	02.27.06	SP
11	REVISION	02.27.06	SP
12	REVISION	02.27.06	SP
13	REVISION	02.27.06	SP
14	REVISION	02.27.06	SP
15	REVISION	02.27.06	SP
16	REVISION	02.27.06	SP
17	REVISION	02.27.06	SP
18	REVISION	02.27.06	SP
19	REVISION	02.27.06	SP
20	REVISION	02.27.06	SP

BLACK HILLS GENERATION
WYGEN 2 - UNIT 4

THE KUJAN CORPORATION
ENGINEERS, ARCHITECTS & CONSULTANTS
P.O. BOX 1000
SIOUX FALLS, SD 57108

PLOT PLAN

SCALE: 1"=50'-0"
DRAWN BY: [Signature]
CHECKED BY: [Signature]
DATE: 02.27.06

485A-M1000 0