

BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

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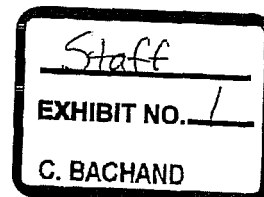
DOCKET NO. EL05-022

SOUTH DAKOTA PUBLIC  
UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION BY OTTER TAIL POWER COMPANY ON  
BEHALF OF BIG STONE II CO-OWNERS FOR AN ENERGY CONVERSION  
FACILITY PERMIT FOR THE CONSTRUCTION OF THE BIG STONE II PROJECT

Direct Testimony of  
Michael K. Madden, Ph.D

May 19, 2006



7732

**BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION  
DIRECT TESTIMONY OF MICHAEL K. MADDEN**

1    **Q:    Please state your name and business address.**

2    A:    Michael K. Madden, 63 Langdon Road, Buffalo, Wyoming 82834

3    **Q:    Describe your educational background.**

4    A:    I received my Bachelor of Science Degree in 1965 from South Dakota State University  
5           with a major in Economics and a minor in Mathematics. I received my Doctorate with a  
6           major in Economics and minor in Statistics from Iowa State University in 1970.

7    **Q:    What is your employment History?**

8    A:    I served as Assistant Professor of Economics at the University of Wyoming from 1968 to  
9           1972, Associate Professor of Economics at South Dakota State University from 1972 to  
10          1975 and Associate Professor, Professor, and Assistant Dean at the University of South  
11          Dakota from 1975 to 1999. From 1999 until 2003, I served as Dean of Graduate Studies  
12          at National American University. During all of this time, I also devoted significant time  
13          to private consulting activities.

14   **Q:    By whom are you now employed?**

15   A:    I am now self employed as a business and economic consultant.

16   **Q:    What work experience have you had that is relevant to your research on this  
17          project?**

18   A:    I have conducted economic impact and feasibility studies for more than two decades in  
19          South Dakota. Industries in which I have performed these analyses include electric  
20          power, mining, agriculture, health, banking and tourism.

21   **Q:    What is the purpose of your testimony?**

22   A:    My purpose in providing this testimony is to report my findings regarding sector impacts  
23          that can be expected in connection with the construction and operation of the proposed  
24          Big Stone II power plant. The study I prepared in providing a basis for this testimony is  
25          entitled "Expected Sector Impacts Associated with Big Stone II" and is identified herein  
26          as *Madden Exhibit 1* for purposes of this testimony.

27   **Q:    Which sectors did you study?**

28   A:    The leisure travel industry and its sub sectors were a focus of the analysis. Other business  
29          sectors that were examined included health, agriculture, manufacturing, housing,  
30          wholesale and retail trade.

31   **Q:    What methodology did you employ?**

A: A primary basis of the analysis involved an examination of changes in economic variables that occurred during the construction cycle of Big Stone I in the early 1970s, and then extrapolating this information into the current Big Stone proposed project. This historical methodology provided a foundation for objective assessments of many of the sectors. Field work involving data collection and personal surveys of representatives from these sectors supplemented the historical statistics.

**Q: Summarize your findings.**

A: The source and direction of impacts within the industries studied are summarized below.

Industry	Source of Economic Impacts	Direction of Impact	Net Impact
Leisure Travel	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	Somewhat Negative	
Health	Revenue	Positive	Positive
	Labor Costs	None Significant	
	Displacement of Traditional Users	None	
Agriculture	Revenue	None	None Significant
	Labor Costs	None Significant	
Manufacturing and Wholesale Trade	Revenue	None Significant	None Significant
	Labor Costs	None Significant	
Retail	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	None	
Housing	Revenue	Positive	Negative
	Displacement/Rent Increases	Negative	

Most sectors are impacted by changes in gross revenues. Agriculture, manufacturing and

1 wholesale trade, however, are not likely to experience any measurable change in revenues.

2  
3 Labor expense is expected to be the major cost component impacted. Labor costs are expected to  
4 rise because of increased unit labor costs as well as increased labor requirements. On balance,  
5 most sectors are projected to experience an economic benefit because increases in revenues will  
6 exceed increased labor expenses.

7  
8 Displacement of traditional leisure travelers by construction workers demanding the same goods  
9 and services is likely to be limited to the summer season. Displacement will occur only during  
10 one or two special summer events that normally attract visitors from outside the area. There also  
11 may be some displacement of those accustomed to visiting Hartland Beach State Park during  
12 summer weekends and holidays because of additional demand placed on the facilities by  
13 construction workers and their families.

14  
15 Increased revenue is expected to be the primary economic impact accruing to the health industry  
16 in connection with the project. Strategic planning has been put in place in Grant County to focus  
17 on committing increased resources in anticipation of the increased demand for services. This  
18 should help assure that existing patients from the community experience no loss in quality of  
19 service.

20  
21 The retail sector is projected to experience growth in revenue. Retail businesses providing goods  
22 that are directly bought by Big Stone construction workers will experience the largest growth.  
23 Other businesses will see revenues grow through indirect spending.

24  
25 An increased demand for labor created by the construction of the power plant will induce higher  
26 local wages. Generally, sectors providing goods and services directly to new construction  
27 workers will experience the highest growth in demand for labor, and will also experience the  
28 largest growth in wage rates.

29  
30 Because of its unique nature, the housing market may be impacted beyond slight changes in  
31 revenue and cost. Housing inventory moves slowly over time, which dictates that market  
32 adjustments are primarily dominated by increased rental costs. Increases in revenues received by  
33 landlords could be seen as a positive economic impact. However, negative impacts may be

1 experienced by existing tenants as competition from temporary construction workers, earning  
2 higher than average wages, takes place. This, in turn, may produce undesirable economic  
3 consequences in the long-run if displaced tenants choose to leave the area permanently.  
4

5 **Q: How can the possible negative impact on the housing market be mitigated?**  
6

7 A: In order to mitigate this negative impact, it is important to adopt strategies that will  
8 disperse workers into other nearby communities and also to encourage as many workers  
9 as possible to acquire living accommodations in regional motels. Policies that can assist  
10 toward this end include:  
11

12 • Bus transportation could be provided for workers from major communities such as  
13 Watertown, S.D. to the job site. This policy would mitigate the otherwise added cost of  
14 transportation to and from work for those living in more distant communities.  
15

16 • Agreements could be negotiated with motels guaranteeing a minimum quantity and price  
17 of lodging rooms throughout the region. These agreements could be negotiated with  
18 consideration given to geographic dispersion and to available capacity throughout annual  
19 cycles.  
20

21 • As an incentive to workers, a wage adjustment could be afforded to workers who acquire  
22 housing in more distant communities to compensate them for commuting time and costs.  
23

24 **Q: Does this conclude your testimony?**

25 A: Yes

**MADDEN EXHIBIT I**  
**EXPECTED SECTOR IMPACTS**  
**ASSOCIATED WITH BIG STONE II**

**Prepared by:**

**Dr. Michael K. Madden**

**May 2006**

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## EXECUTIVE SUMMARY

A sector economic analysis was conducted to help ascertain impacts that may be associated with the construction of the Big Stone II power plant in Grant County, South Dakota. The leisure travel industry and its sub sectors were a focus of the analysis. Other business sectors that were examined included health, agriculture, manufacturing, wholesale trade and retail trade. The housing market was also briefly examined in a separate section.

A primary basis of the analysis involved an examination of changes in economic variables that occurred during the construction cycle of Big Stone I in the early 1970s. This historical methodology provided a foundation for objective assessments of many of the sectors. Field work involving data collection and personal surveys of representatives from these sectors supplemented the historical statistics.

The details of this research are found in the main body of this document. The sources of impacts within these industries are summarized below.

Industry	Source of Economic Impacts	Direction of Impact	Net Impact
Leisure Travel	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	Somewhat Negative	
Health	Revenue	Positive	Positive
	Labor Costs	None Significant	
	Displacement of Traditional Users	None	
Agriculture	Revenue	None	None Significant
	Labor Costs	None Significant	
Manufacturing and Wholesale Trade	Revenue	None Significant	None Significant
	Labor Costs	None Significant	

Continued			
Industry	Source of Economic Impacts	Direction of Impact	Net Impact
Retail	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	None	
Housing	Revenue	Positive	Negative
	Displacement/Rent Increases	Negative	

The travel industry encompasses lodging, eating and drinking, entertainment, recreation and auto related businesses. Because of their diversified nature, actual impacts will vary from one business to another. During the construction of Big Stone I, the most notable increases in revenues occurred in motels, restaurants and drinking establishments. Displacement of traditional leisure travelers by construction workers demanding the same goods and services is likely to be limited to the summer season. Displacement will occur only during one or two special summer events that normally attract visitors from outside the area.

Increased revenue is expected to be the primary economic impact accruing to the health industry in connection with the project. Strategic planning has been put in place in Grant County to focus on committing increased resources in anticipation of the increased demand for services. This should help assure that existing patients from the community experience no loss in quality of service.

The retail sector is projected to experience growth in revenue. Retail businesses providing goods that are directly bought by Big Stone construction workers will experience the largest growth. Other businesses will see revenues grow through indirect spending.

An increased demand for labor created by the construction of the power plant will induce higher local wages. Generally, sectors providing goods and services directly to new construction workers will experience the highest growth in demand for labor, and will also experience the largest growth in wage rates.

Because of its unique nature, the housing market may be impacted beyond slight changes in revenue and cost. Housing inventory moves slowly over time, which dictates that market adjustments are primarily dominated by increased rental costs. Increases in revenues received by landlords could be seen as a positive economic impact. However, negative impacts may be experienced by existing tenants as competition from temporary construction workers, earning higher than average wages, takes place. This, in turn, may produce undesirable economic consequences in the long-run if displaced tenants choose to leave the area permanently.

In order to mitigate this negative impact, it is important to adopt strategies that will disperse workers into other nearby communities and also to encourage as many workers as possible to acquire living accommodations in regional motels. Incentives for accomplishing this goal are found in the main body of this report.

## SECTION I

### INTRODUCTION

The purpose of this report is to provide an economic impact analysis of a number of industry sectors in connection with the proposed construction and operation of the Big Stone II power plant. Potential exists for sectors to experience a net positive or a net negative economic impact. Moreover, it is certain that some sectors will undergo significant impact, while others will see virtually no impact.

The geographical focus of this study consists of Grant and Roberts counties. It has been documented that the sphere of economic impact will extend beyond this area, but parts of these two counties are within a few miles of the project location and thus the potential exists for significant sector impacts within their boundaries.

The time period that is of major interest is the construction phase of the facility. The total span of time required for construction is four years. However, when the phasing in and phasing out of construction activity is considered, the period of time for which significant local impact can be expected is reduced to about three years. This three-year period is projected to begin in the late summer of 2007 and extend to late 2010. The phase in and phase out segments of the four-year window involve less than 100 employees and are therefore not expected to impart substantial local impacts. (Source: Exhibit 5-2, Big Stone II application)

The leisure travel industry is a major focus of this study. Although the travel industry is not the major economic driving force in Grant and Roberts counties, much of the infrastructure that relies on leisure travelers is either proximate to the project location or within towns likely to be impacted by project activity.

Table I provides a general perspective of leisure travel in Grant and Roberts counties as it relates to overall business activity.

TABLE 1

LEISURE TRAVEL AS A PERCENTAGE OF BUSINESS ACTIVITY BY COUNTY, 2005			
	Total Taxable Sales	Leisure Travel Spending	Percent of Total
Grant	95,828,000	2,715,000	2.8%
Roberts	66,765,000	3,315,000	5.0%

The relative significance of travel spending is more pronounced in Roberts County than in Grant County, but both are very minor compared to many other counties in the state.

Other sectors that are analyzed in this document include agriculture, retail trade, wholesale trade, manufacturing, housing, and health services. These sectors vary in size and are somewhat difficult to analyze because individual businesses within these sectors are diverse with respect to location and purpose.

## SECTION II

### METHODOLOGY

#### Methodology

A tour of Grant and Roberts counties was the first required task in the research project. Short interviews with community and business representatives were conducted for the purpose of learning local perceptions of salient issues and seasonal patterns of business activity. This field trip afforded an opportunity to collect basic data. Another purpose was to gain a personal understanding of the spacial features of the economic infrastructure present in the two counties.

#### Methodology of Historical Comparison

An objective assessment of the likely impact in some sectors can be accomplished by historically researching the *actual* impact experienced during the construction of the first Big Stone power plant completed in 1975. Although this activity occurred three decades ago, much insight is gained by studying movements of business volume within sectors during the construction of the first power plant. These inferences can be applied to the current project by making comparisons in workforce requirements and adjusting for the current size of these local economies.

Taxable sales in the two counties within general sectors are tracked during construction of the 1975 power plant (hereafter referred to as Big Stone I) to provide inferences concerning net impacts that can logically be attributed to that activity.

Historical comparisons are performed in regard to movements in employment and wages over the period of construction of Big Stone I in the early 1970s. Inferences concerning expected changes in wage rates and employment levels by sector can be accomplished in this manner.

Evidence gained by historical comparison embodies objective qualities that cannot be gained using other methodologies.

## SECTION III

### HISTORICAL FOUNDATION

Experience gained during the construction of Big Stone I will be of considerable benefit. Although much time has passed since this project was constructed, the basic economic infrastructure of these two counties has remained the same. It is also noted that similarities on the relative impact from the standpoint of the local labor market are similar when comparing the two construction projects as shown in the following table.

TABLE 2

RELATIVE EMPLOYMENT IMPACT, BIG STONE I AND II		
	Big Stone I	Big Stone II
Wage and Salary Employment	2,466	3,993
Plant Peak Const. Employment	900	1,500
Const. Emp. as percent of Private	36.5%	37.6%

Sources: Bureau of Economic Analysis and Big Stone II planning documents

Wage and salary employment in the table pertains to Grant County, the location of the proposed project. The inclusion of Roberts County data does not affect the stability of the percentages. The focus is on Grant County because of its proximity to the project and also because a considerable number of wage and salary employees work in government sectors in Roberts County.

Information in the above table shows that the proposed Big Stone II power plant project is forecast to hire 600 more workers during peak construction activity. Job growth in the area over the last three or more decades suggests that the *relative* labor market impact in the region is virtually the same for both projects. The 1,500 units of peak labor required for Big Stone II construction amounts to 37.6 percent of current employment. To the extent that the sector makeup of today's local economy mirrors that which existed in the early 1970s, inferences based on what actually



occurred during that era will be valid predictors of what is likely to happen during Big Stone II.

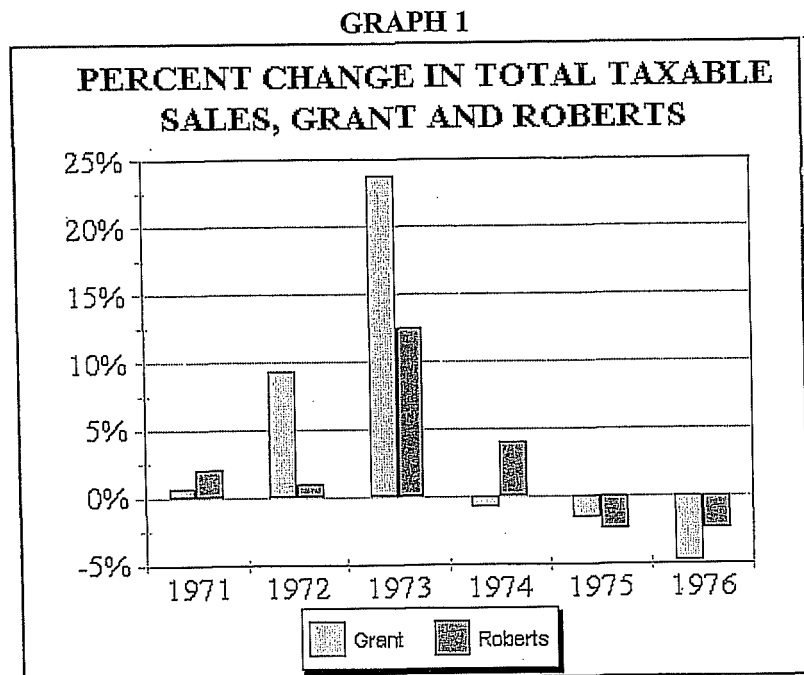
An analysis of movements in sector revenues and labor costs was conducted to determine the impact that took place in the local economy during construction of Big Stone I. Emphasis will be placed on *percentage changes* in the variables of interest because absolute wage rates and revenue measures of the 1970s bear little relationship to levels that are familiar today. The remainder of this section contains a summary of these findings.

### Changes in Taxable Sales

The year-by-year real changes in taxable sales from 1971 to 1976 are illustrated in Graph 1.

The percentage changes are deflated by the inflation rate for each year. Inflation rates varied from a high of 11 percent in 1974 to 3.2 percent in 1972. The impact on commerce, particularly in Grant

County, began as construction was accelerating in 1972. Annual growth maximized in 1973 with nearly a 24 percent growth in taxable sales. The next two years, 1974 and 1975, show that *growth* in taxable sales was near zero which means that *the level of total taxable sales* remained almost constant from 1973 to 1975. Thereafter, sales fell as the local economy adjusted to a normal environment. The essential observation is that growth in total taxable sales in Grant County amounted to a



combined 35 percent when the growth phase of construction activity began in 1972. The combined impact over these two years in Roberts County was around 13 percent, showing that the impact in that county was relatively minor when compared to Grant County.

In the 1970 to 1975 time period, taxable sales were not categorized with the common Standard Classification codes that are used today. However general categories that are quite self descriptive were employed by the South Dakota Department of Revenue.

Impacts in individual sectors as they were then defined are shown in Table 3.

**TABLE 3**

<b>REAL CHANGE IN TAXABLE SALES BY SECTOR AND COUNTY, 1971 TO 1974</b>		
	Grant	Roberts
Retail Durables	51%	37%
Tourism Group	30%	38%
Food Group	50%	6%
Construction & Manufacturing	23%	58%

Source: South Dakota State Data Center

The broad sector of retail durables during this period included hardware, furniture, apparel and other durable products. The tourism group included service stations, other automobile businesses, hotels, and eating and drinking establishments. The food group included grocery stores, bakeries and stores selling unprepared food products. The conclusion here is that spending directly or indirectly traced to the construction project produced the greatest impacts on food and retail durable sales.

It is possible to further analyze spending within the tourism group, as it was defined in the 1970s. The largest growth in taxable sales occurred in motels and

restaurants. These findings are important regarding impacts in the leisure travel sector since these businesses are basic to the travel sector. Similar results also occurred in Roberts County, but the data in that county was skewed due to the construction of a new motel and truck stop in 1973.

Impacts in individual sectors are shown in Table 4. During this era, service stations represented the major component within the tourism group in terms of taxable sales. Since spending in service stations was likely dominated by local customers, the growth in taxable sales for the tourism group as a whole is lower than expected.

**TABLE 4**

<b>REAL CHANGE IN TAXABLE SALES TOURISM GROUP BY COUNTY, 1971 TO 1974</b>		
	Grant	Roberts
Service Stations	27%	37%
Garages	7%	68%
Restaurants	43%	29%
Hotels & Motels	62%	82%

Source: South Dakota State Data Center

## Labor Market

As expected, the dramatic growth in employment during construction of Big Stone I produced equally dramatic changes in the overall local labor market. Wages per job in Grant County rose substantially more than in other areas as shown in Table 5.

**TABLE 5**

<b>PERCENT CHANGE IN AVERAGE WAGE PER JOB BY COUNTY AND STATE, 1971-1974</b>	
Grant	41.6%
Roberts	14.8%
South Dakota	13.3%

Source: Bureau of Economic Analysis

Data compiled by the Bureau of Economic Analysis is according to place-of-work. Since the place-of-work regarding Big Stone I was a Grant County location, wages within the construction sector exerted its impact on average wages in only Grant County. It is noted that the impact on the average wage per job did not spill over significantly into Roberts County.

The number of workers employed by place-of-work mirrors what was found to be true concerning the average wage per job. See Table 6, below.

TABLE 6

PERCENTAGE CHANGE IN EMPLOYMENT BY COUNTY AND YEAR		
	Grant	Roberts
1971	7%	-6%
1972	3%	1%
1973	10%	-3%
1974	10%	1%
1975	-12%	-5%

Source: Bureau of Economic Analysis

As one would expect, the number of employed workers increased dramatically in Grant County reflecting the direct and induced employment caused by the construction project. From 1970 to 1974, the employment in that county rose by more than 33 percent. In Roberts County, employment decreased and may have been caused by people who normally worked in that county switching to jobs in Grant County. Negative changes in employment occurring in 1975 are included to reflect the job impact that took place as the Big Stone I project approached completion.

The employment impact in Grant County by sector shown in Table 7 reveals that most of the changes occurred through direct jobs in the construction industry. Sectors other than construction experienced more moderate gains. The mining

sector recorded a net reduction in employment. This could have been due to workers migrating from the mining sector to the construction sector, or simply due to a reduction in labor requirements in the mining industry. It is also noted that sectors such as agricultural services, farm workers and wholesale trade were not impacted with respect to employment. The growth in the number of jobs *outside* the construction sector totaled 459 workers or about 20 percent greater than prior to plant construction. Growth in direct employment within the construction sector was 716. Thus, the total county employment impact that occurred over these years amounted to 1,175 workers.

**TABLE 7**

<b>EMPLOYMENT IMPACT BY SECTOR, 1971 to 1974, GRANT COUNTY</b>	
Agricultural Services	0.0%
Mining	-9.4%
Construction	476.0%
Manufacturing	39.3%
Transportation and Public Utilities	15.2%
Wholesale Trade	5.2%
Retail Trade	14.4%
Finance, Insurance, and Real Estate	34.9%
Services	21.3%
Farm Employment	4.1%

Source: Bureau of Economic Analysis

The excess demand that apparently existed over the early 1970s produced upward pressure in wages as labor market theory would suggest. The following table records the increase in wages occurring in each of these sectors from 1971 to 1974. The data has been adjusted to reflect the increase in earnings that *would have* occurred from 1971 to 1974 if price level changes then were as they are in 2006. In other words, today's rise in prices is being substituted for what actually occurred in the 1970s to make the results more meaningful in today's environment.

TABLE 8

PERCENT CHANGE IN EARNINGS PER JOB BY SECTOR, 1971 TO 1974	
Agricultural Services	2.0%
Mining	14.9%
Construction	68.3%
Manufacturing	13.1%
Transportation and Public Utilities	12.2%
Wholesale Trade	28.3%
Retail Trade	13.0%
Finance, Insurance, and Real Estate	37.5%
Services	14.5%

Source: Bureau of Economic Analysis

The information in the table provides estimates of growth in earnings per job that may occur over a three-year window during the construction of Big Stone II. For example, workers in the retail trade sector would experience an increase in earnings of an estimated 13 percent over the three-year peak employment construction period. This is about 4 percent per year if inflation conditions are as they exist presently.

The reason for higher than expected growth in earnings in wholesale trade and finance, insurance and real estate is not readily apparent. Perhaps earnings accruing to these workers are directly based on business volume. In the case of the financial sector, it is also possible that a major insurance business in Milbank was experiencing a growth pattern independent of the construction of Big Stone I.

The impact on population is important for a number of reasons. Impacts on the type of housing demanded will be affected by the proportion of workers that become residents as opposed to those who are in the area on a strictly temporary basis. Population changes that were recorded during the construction of Big Stone I, as

seen in Table 9, provide some inference about what may occur during the proposed project.

TABLE 9

POPULATION OF GRANT COUNTY BY YEAR	
1970	9,085
1971	9,011
1972	9,047
1973	9,320
1974	9,440
1975	9,016
1976	9,009

Source: Bureau of Economic Analysis

During the construction of Big Stone I, it appears that an increase of about 400 to 450 residents took place during the peak period of activity. It is impossible to determine if this number is dominated by individual workers or by dependents of workers.

### Section Summary

The information developed in this section suggests that the relative impact that can be expected during construction of Big Stone II is correlative with Big Stone I in terms of the change in workforce requirements. Significant growth in sales in various types of businesses can be expected. Foremost among these are grocery stores, businesses that sell durable goods, eating and drinking establishments, and lodging properties. Other sectors experienced increases in sales that would not have occurred in the absence of the Big Stone I project.

Sector employment and earnings were also impacted. During a three-year window, employment in all sectors other than construction increased 20 percent. Smaller changes in earnings occurred, generally equating to about 1 or 2 percentage points above the change in the overall price level.

## SECTION IV

### TRAVEL SECTOR

In this section, a general inventory of the infrastructure pertaining to the travel sector will be identified. Information concerning available capacity, current utilization rates and seasonal patterns of the industry will be discussed. A number of special visitor events will also be identified.

The actual impact that was observed within travel-related sectors during the construction of Big Stone I will be used in providing inferences in connection with the construction of Big Stone II.

#### **Travel Industry Infrastructure**

The travel industry infrastructure in Grant and Roberts counties is comprised of a number of private businesses and some public entities. They are geographically dispersed in the county seat towns of Milbank and Sisseton and near Big Stone Lake. Leisure activities relate heavily to outdoor recreation activities that are afforded by area lakes. Fishing, swimming, boating and hunting activities are of high quality in these two counties as well as neighboring counties to the west. These natural attributes have directly influenced the type of infrastructure that supports the traveling public. There are fewer hotels, motels and restaurants than are found per capita in other regions in South Dakota, but more resorts, beaches, camping facilities and convenience stores that offer supplies to outdoor enthusiasts.

Historical and cultural events and facilities in the area, particularly in Roberts County, complement the outdoor recreation base of the leisure travel industry. A gaming facility east of Sisseton provides entertainment activities to visitors vacationing in the area.



A general enumeration of the travel infrastructure is summarized in Table 10. There are numerous other support businesses such as specialty shops, convenience stores, bait shops, sporting good outlets and other establishments that provide goods and services to leisure travelers.

**TABLE 10**

<b>ENUMERATION OF TRAVEL RELATED ENTITIES</b>	
Restaurants (All types of prepared food)	16
Motels	8 (194 rooms)
Private Resorts/Campgrounds	9

Most of the private resorts are situated on Big Stone Lake and are accessible from Highway 109 traversing northwest from Big Stone City to Hartford Beach State Park. A wide variety of amenities are provided collectively by these facilities and include lodging, camping, boating, guiding services and dining.

Public facilities include Hartford Beach State Park located at Big Stone Lake. This park is located about 15 miles north of Milbank and the same approximate distance northwest of the Big Stone II project site. Visitors to the park can camp, swim, fish, and hike along historical and scenic trails. The park contains 43 camp sites. Lodging is available adjacent to the park. Big Stone Island, located a few miles southeast of Hartford Beach, consists of a 100-acre scenic and historic area. It is accessible only by boat and affords no visitor facilities.

Sica Hollow State Park is located 15 miles northwest of Sisseton. It is one of the most scenic aspects of the Coteau Des Prairies geological formation in northeast South Dakota. The park provides opportunities for hiking, horseback riding and picnicking. The park is well-known for its "Trail of the Spirits," which has been designated a National Recreation Trail.

Together, Grant and Roberts counties contain dozens of waterfowl and game production areas that contribute greatly to visitor volume through enhanced hunting opportunities.

The Nicollet Tower and Interpretive Center, located about three miles west of Sisseton, commemorates the mapping of the area by Joseph Nicollet. The 75-foot tower is accessible to area visitors and complemented by a visitor center containing historical artifacts and artwork.

### **Regional Events**

One of the main summer events in Roberts County is the Sisseton Wahpeton Oyate Pow-Wow. This three-day event is around the first of July and is held at Agency Village. According to business people in the community, impacts surrounding this event are concentrated near Agency Village with only moderate spending impacts occurring in Sisseton. Another local event in Sisseton is the annual Horse and Buggy Days. This event is attended mainly by local residents and consists of a parade, rodeo and activities at the Stavig Museum.

Most events in Grant County are local one-day events that do not generate significant numbers of visitors from outside the region. An exception is the annual Milbank Train Festival held in August. This event attracts train enthusiasts and others to Milbank with displays in the museum, an art festival and model train display. Train rides from Milbank to Corona have been part of past festivals.

### **Potential Big Stone II Travel Industry Impacts**

Components of the travel infrastructure are likely to experience varied impacts. Individual establishments and events can potentially be affected by:

- changes in revenues
- changes in costs
- changes in the makeup of their customer base

From the standpoint of revenues, motels, restaurants, and drinking establishments can be the most readily analyzed. On average, approximately 40 to 50 percent of leisure travel spending occurs in these establishments in South Dakota, with the balance dispersed over many other sectors.

The construction of Big Stone I demonstrated that construction workers demand many of the same goods and services as do leisure travelers. In Grant County, lodging establishments experienced a 62 percent increase in sales from the year prior to construction until the peak year of construction. Year-over-year increases varied from 12 percent to more than 30 percent during this four-year period.

In 2005, taxable sales in Grant County lodging establishments totaled \$808,000. If taxable sales grew by a similar amount as was experienced during the construction of Big Stone I, it is projected that these businesses will generate an additional \$501,000 during the third year of construction. The revenue impact over the life of the project would amount to an additional \$1.44 million in lodging establishment sales.

Costs will be impacted through increased labor requirements for lodging establishments. Only a portion of labor inputs vary with changes in capacity utilization. Based on experience gained in the 1970s, wage rates are also expected to increase by about 14 percent. The actual outcome will depend on the area's available labor supply in 2007 as opposed to the early 1970s.

Since labor costs are a relatively small percentage of gross revenues for lodging establishments, it is readily apparent that the net economic impact for lodging businesses is positive.

Much the same pattern exists for eating and drinking establishments. During the construction of Big Stone I, revenues rose by 43 percent in these establishments. In 2005, these businesses experienced taxable sales of \$6.2 million. This means that a similar impact during the peak year of construction of Big Stone II would produce

an additional \$2.6 million. Over the life of the project the impact on total sales would equate to nearly \$4 million. In the case of restaurants there is ease of entry for new businesses which means that capacity impacts for existing eating establishments will not be an enduring factor.

In eating and drinking establishments, labor requirements increase as business volume grows. Past experience shows that unit labor costs may increase by 13 percent with an undetermined number of additional workers required. Since labor costs in eating and drinking establishments are generally around 20 to 30 percent of total revenues, it is clear the net economic impact is positive.

Other types of businesses as well as outdoor attractions may experience less direct impacts that can be traced to the construction of the power plant. Amenities and businesses located proximate to lakes that are located some distance from the project and are accessed via several alternate routes may experience negligible effects during the construction of Big Stone II. However, some of the resorts and other facilities located on Highway 109 northwest of Big Stone City are likely to experience net benefits, similar to properties in Milbank offering similar goods and services.

Aside from the previously mentioned properties on Highway 109, most of the other travel-related properties in Roberts County are concentrated in Sisseton. Local residents express the opinion that the impact on these properties during the construction of Big Stone I was minimal. This seems plausible because of the relatively long 55-mile driving distance from Sisseton to the project location. Several other communities in Minnesota and South Dakota, including Watertown, S.D., are not as far from the project as is Sisseton. However, it is probable that any residual impact that Sisseton does receive will be positive for reasons discussed earlier in this section.

## Public Facilities

Hartford Beach State Park, located less than 15 miles from the project location, is the primary publicly-owned facility that is likely to experience impacts. Use of the 43-unit campground is comprised of 66 percent South Dakota residents and 34 percent non residents. Occupancy rates for camping facilities at Hartford Beach average 85 percent during weekends and holidays, but only 16 percent on weekdays. This implies that on many weekends and holidays during the summer season, the campground is presently used to maximum capacity. (Source: South Dakota Game, Fish and Parks Department, Occupancy Statistics)

This means that if only a few of the 1,500 workers and family members exhibit a demand for recreational opportunities offered at Hartford Beach, the campground capacity will be exceeded more often during weekends and holidays. Therefore, a "crowding out" impact will be produced by the temporary residents associated with Big Stone II construction. This may encourage those accustomed to leisure activities at Hartford Beach to select other camping and recreation alternatives in the region. A positive revenue impact will be experienced by the camping facilities and other park concessions no matter what the user adjustments are.

Negative impacts occurring to Hartford Beach related to traffic associated with the construction project are expected to be minimal. Access to the park by South Dakota residents originates predominately from the west and south from Interstate 29, exit 213, a route that is not expected to carry significant traffic related to Big Stone II.

Of course, mitigative opportunities exist through appropriate marketing to encourage these temporary workers (as well as others) to make use of the park on weekdays when ample capacity exists. Obviously, this is a park administrative decision that ultimately depends upon management goals and objectives.

There are many other public campgrounds and parks located in counties to the west of Grant and Roberts counties. They quite likely will experience positive utilization impacts, but any such impacts will be dispersed as distance from the project activity increases.

### **Special Events**

One event hosted by the City of Milbank annually is the Train Festival. This weekend event hosts people from outside the area and according to local hospitality properties, generates a number of overnight visitors. The potential exists that during the peak period of construction, accommodations for an undetermined number of visitors to this event will be displaced by workers residing temporarily in lodging establishments in the Milbank area.

Class and family reunions are also reported to be popular summer activities in Milbank. These reunions are typically weekend events that require overnight stays in local motels. These events may be impacted due to capacity limitations created by temporary workers in the area during the one or two summers of peak construction activity.

The degree to which special community events and other activities will be displaced with respect to lodging is largely a management decision. Property managers interviewed during the course of this research indicated that they are disposed to reserve a portion of their rooms to accommodate regular guests, but also indicated that some occupancy pressure will likely take place during seasonal peaks.

The two main events in or near Sisseton are the annual Sisseton Wahpeton Oyate Pow-Wow and Horse and Buggy Days. Interviews with travel industry property owners indicate that Pow-Wow attendees predominately stay at camping facilities at Agency Village or nearby state campgrounds. The Horse and Buggy Days'

attendees are predominately local people within driving distance of Sisseton. Significant impacts on these two events are not expected.

### **Section Summary**

Considerable evidence exists that hospitality properties will experience significant positive economic impacts because construction workers demand many of the same goods and services as do traditional leisure travelers. Labor costs, however, are expected to rise because of increased labor requirements and rising local wage rates. On balance, the net impact is expected to be positive.

Some alterations in use patterns are expected in the case of outdoor recreation participants who normally utilize Hartford Beach State Park. Weekend and holiday use is near or at capacity during the camping season. This will require changes in use patterns away from weekends and to week days, or the selection of alternative facilities.

Other customary local events such as visitors to the Train Festival and various family and class reunions will likely find usual accommodations unavailable.

## SECTION V

### HEALTH INDUSTRY

The availability and capacity of basic health care is a matter of importance in connection with the proposed construction of Big Stone II. Since a peak employment level of 1,500 workers is contemplated for the project, some impact can be expected in regard to health care services. However, the expected age and gender demographics of workers, together with the fact that a considerable number will not have dependents living in Grant County, suggest that the demand for health services will not grow proportionate to the employment impact.

Grant and Roberts counties, as well as adjacent communities appear to have an extraordinary health care infrastructure which is perhaps accounted for by sparsity factors and age demographics of the population. Hospitals are found in Sisseton and Milbank, S.D. and Ortonville, Minn. These hospitals provide outreach clinics and facilities in numerous smaller communities within their respective service areas. Medical facilities in Milbank and Ortonville plan on expanding services in connection with the proposed power plant. Other hospitals are available in neighboring counties.

Given the number of hospitals within close proximity, it would appear that considerable choice in hospital care is enjoyed by residents of these counties.

Milbank and Sisseton both accommodate physician clinics, eye care clinics and chiropractic offices.

A brief description of the health care environment in both communities and their capacity to respond to potential added demand for health care services will be presented in this section.



## **Milbank**

Milbank Area Hospital contains 35 patient beds and provides a wide variety of medical services. These include emergency room, surgical, maternity, pediatrics, chemotherapy, radiology and several other services. The primary service area is considered to consist of Grant County with about 7,600 residents. Services are also provided to patients living in Minnesota, southern Roberts, and parts of Deuel and Day counties, all of which are considered its secondary service area. When these areas are included, the population served totals about 22,000. Significant available capacity exists in this hospital for providing services to temporary construction workers and their dependents, according to the hospital administrator.

Physician and other para professional care providers are located in the Milbank Medical Center near the hospital campus. Currently there are five full-time physicians and three physician assistants or nurse practitioners affiliated with the medical center. General medicine, obstetrical care, surgery, cardiology, and laboratory testing are some of the services available at the medical center.

Outreach clinics that are associated with the Milbank Medical Center are currently located in Waubay, Wilmot and Reville, S.D. These clinics are regularly staffed by physician assistants and nurse practitioners.

Plans have been finalized to open a similar satellite facility in Big Stone City in the next few months. A decision was partially precipitated by the anticipated growth in the demand for services in conjunction with the Big Stone II project, according to the hospital administrator. This new facility will be staffed by a physician assistant or nurse practitioner.

A strategic goal in the Milbank medical community is to be proactive in regard to their response to economic changes in the area. A related goal is to be able to provide services to new residents without reducing the quality of service and response time for existing clients.

It appears that when considering available capacity in conjunction with strategic planning in the medical community, the prospect of additional numbers of people needing medical service will result in a positive impact in the health industry.

### **Sisseton**

Because of the distance between Sisseton and the site of the project, an influx of a significant number of temporary residents is in some doubt. It has also been learned from businesses and residents of the town that there are few residential properties available for rent or sale in the community. Accordingly there is some doubt as to whether any significant impact will be experienced by health care providers in Sisseton.

For completeness, an interview with the Sisseton Coteau Des Prairies Hospital and Clinic was conducted. Hospital administrators consider their primary service area to be Roberts County with an estimated population of about 10,000 in 2004. A clinic is also maintained by this organization in Wilmot, S.D. The secondary service area includes Browns Valley in Minnesota where a clinic is maintained as well as some areas in eastern Marshall and Day counties, west of Sisseton.

The clinic is served by five physicians and one nurse practitioner. This facility is integral to the hospital.

Excess capacity has grown in the hospital as the length of patient stays have declined in recent years. Some excess capacity exists for physician care in the clinic, although not as much as the hospital. In assessing the possible impact that could be generated by an in migration of construction workers, it is the opinion of the administrator that any such growth in demand for health services could be accommodated by existing staff and physical plant.

## Section Summary

It appears that between the two counties, medical facilities in Grant County will experience the bulk of any growth in demand for health services. It is apparent that administrators are prepared for an increase in the demand for health services and have taken a proactive strategy to help assure that the level of service for existing residents is not compromised. An outreach clinic is to open soon in Big Stone City, partially in response to the prospect of additional demands for service that may be encountered in connection with the proposed construction of Big Stone II.

## SECTION VI

### AGRICULTURE

Production agriculture is dominated by traditional family farm units in both Grant and Roberts counties. There are about 550 farms in Grant County, and 860 in Roberts County, which is proportionately larger in geography. The acreage utilized for farming in Grant County is 350,299 and in Roberts, 592,893. Crops include corn, soybeans, wheat, oats and hay, among others.

Beef and dairy production represent the major income sources from livestock production. Grant County is ranked first among all South Dakota counties in dairy production and Roberts County is ranked 11th.

The following table summarizes the breakdown of employment in the two counties in 2003, the latest year for which data is available.

**TABLE 11**

<b>FARM EMPLOYMENT, GRANT AND ROBERTS COUNTIES, 2003</b>			
	Farm Proprietors	Hired Farm Workers	Total
Grant	553	89	642
Roberts	861	71	932
Total	1,414	160	1,574

Source: Bureau of Economic Analysis

In 2003, hired farm workers comprised 14 percent of total farm employment in Grant County and only about 7.5 percent in Roberts County. The remainder consisted of owner-operators of farm units. This points to the fact that the vast majority of farm units do not employ external farm workers.

In assessing the possible impacts on the agricultural sector, it is apparent that no revenue effect is likely because agricultural products are exported into national markets. Likewise, non labor inputs are not expected to be in any way affected since they are for the most part imported from other regions.

Any impact that would be experienced by agriculture would relate to hired labor because of the added competition in the local labor market that would be associated with the construction of Big Stone II. Unfortunately, earnings data pertaining to hired farm workers is difficult to obtain. However, given the experience gained during the construction of Big Stone I in the 1970s, a general increase in wages of about 15 to 20 percent occurred in sectors other than construction. There is a possible impact of higher production costs for the minority of farm units that utilize hired farm workers as part of their operation.

#### **Dairy Industry**

In Grant County, a major component of hired farm labor arises in the case of large dairy operations. A more detailed study of this aspect of agriculture was performed to better understand the impacts that might occur among large dairy operations.

There are presently 39 grade A dairy producers in Grant County. Although many of these may require one or two hired employees, most are operated exclusively by farm proprietors and family members. Four large dairy operations require significant numbers of hired workers. These operations milk from 500 to 2,000 cows, using modern technology. Based on information gained during a field visit, it is estimated that these dairies collectively require from 45 to 50 hired production workers in addition to 15 to 20 management workers.

The latter group of workers are not expected to have transferrable skills for construction employment and labor market impacts related to the construction of Big Stone II would not affect them.

It was learned that most of the production labor in these large dairies consists of foreign nationals that are imported from outside South Dakota. Their purpose of coming to the area is specifically to work in the large dairies. It is the opinion of those in the industry that little likelihood exists that adverse impacts would occur within these operations with respect to labor availability and wages.

### **Agricultural Land**

The final issue to be considered is the impact that the construction of Big Stone II will bear upon available agricultural land. Otter Tail Power currently owns 2,200 acres of land contiguous to the existing plant. If the Big Stone II project proceeds, an additional 620 acres will be converted from agricultural use. (Source: Permit Application for Siting Permit, Big Stone II Project) This amounts to about 0.17 percent of the land that is currently utilized for agricultural purposes in Grant County. The impact to the agricultural sector in the county is equivalent to the value added in farm production that would otherwise have taken place on this 620 - acre parcel.

### **Section Summary**

Economic impacts within the agricultural sector are likely to be minimal in connection with the proposed power plant. Since agricultural outputs are exported outside the local economy, no revenue impact can be expected by farm operators. Labor costs are not likely to change significantly for the agricultural sector. Except for a number of large dairies, most farms in the area are owner-operator units requiring very limited outside labor. The large dairy operations largely rely on labor that is imported into the area for the express purpose of working in these dairy businesses. The quantity of land diverted from agricultural production in Grant County is projected to be virtually unaffected by the construction of the proposed power plant.

## SECTION VII

### MANUFACTURING AND WHOLESALE TRADE

Employment totals for manufacturing and wholesale trade in Grant and Roberts counties appear in Table 12.

**TABLE 12**

<b>EMPLOYMENT, MANUFACTURING AND WHOLESALE TRADE, 2003</b>		
	Grant County	Roberts County
Manufacturing	509	219
Wholesale Trade	137	160
Total	646	379

In comparison with other counties of like size in South Dakota, Grant County enjoys a much higher than expected level of manufacturing employment. This is largely due to the presence of two significant dairy product manufacturing establishments. Additional manufacturing employment occurs in Grant County in the area of building structures and agricultural equipment.

Wholesale trade in Grant County is dominated by agricultural activity since many grain merchandisers and other businesses specializing in agricultural inputs are classified as wholesale entities.

The bulk of locally manufactured dairy products are exported from the region into national markets so no impact can be expected from the standpoint of revenues in connection with the construction of Big Stone II. However, potential impacts via labor costs do exist.

The two dairy product manufacturing businesses employ a combined 340 of the 509 manufacturing workers in Grant County. Field visits to these dairy manufacturing

businesses were conducted for the purpose of learning some of the nuances of the local labor market from their perspective.

Nearly all employees of these establishments reside in the general area of Ortonville, Minn., Big Stone City and Milbank, S.D. The vast majority of workers are originally from the area as opposed to originating from other regions. Employment levels in these businesses have been quite stable over recent years and there are no significant seasonal fluctuations. Expansion of production capacity in one of the establishments will require an additional 40 employees just prior to construction of the Big Stone II plant. Labor costs represent a significant component of total costs for both companies.

Experience in recent years has proven that labor turnover is not problematic, especially for workers with three or more years of tenure. One of the businesses indicated that turnover is high among newer employees - a problem that may be intensified with additional competition in the labor market. Both companies attribute low turnover rates to providing a reasonable wage and above average employee benefits. Representatives from both companies are not overly concerned about losing employees in the face of competitive labor market forces, but appear willing to respond with improved wages if the need should arise.

During the construction of Big Stone I, the manufacturing and wholesale trade sectors experienced differing labor cost outcomes. In the case of manufacturing, wages rose 15 percent over the 1971 to 1974 period, an amount that is little more than would have been expected given price level and worker productivity changes. In the case of wholesale trade, wage rates rose by 28 percent, an increase that is twice as high as what otherwise would have been expected. There is no way to be certain that the large increase in earnings for workers in the wholesale trade sector was related to Big Stone I construction activity or some other exogenous factors in this industry.



The number of employees in the wholesale trade sector was quite stable, increasing by only 5 percent during the construction of Big Stone I. However, the number of workers within the manufacturing sector rose by 39 percent. Because manufactured goods for the most part leave the local economy for export, this outcome should not be attributed to the construction of Big Stone I. However, it does indicate that adding manufacturing employees during intensive construction activity has been achievable in Grant County in the past.

### **Section Summary**

Revenues received by manufacturing and wholesale trade businesses are not expected to be influenced by the construction and operation of the proposed power plant. Because many manufacturing workers may possess skills that are transferrable to the construction industry, upward pressure on wages is a possible outcome. Experience during the construction of Big Stone I showed that manufacturing wages increased about 15 percent over a three-year period.

## SECTION VIII

### RETAIL SECTOR

Retail trade is a diverse sector. Grocery, hardware, furniture, jewelry, apparel and general merchandise of all types fall within the retail trade sector. Clearly, any economic impacts generated in this sector by the proposed project will vary widely from one product line to another. Retail goods that are demanded directly by construction employees will experience larger impacts than goods purchased through induced economic activity. Similarly, employment requirements will vary from one retail sector to another.

#### Retail Sales

It is possible to review historical impacts in retail sectors as they were defined by the South Dakota Revenue Department in the 1970s. Unfortunately, in 1974, retail sectors were redefined and some earlier sectors were combined into more aggregative sectors. The last year for which detailed data is available in this era is 1973. The percent changes in taxable sales in retail sectors over the three-year period, 1970 to 1973, appear in Table 13.

It would have been preferable to have these percentages calculated over the 1970 to 1974 interval, as has been done elsewhere in this report, but detail in the retail sectors was lost after 1973. Most of the growth in the data series studied in this report was nearly completed in 1973, with only small incremental increases occurring in 1974. Accordingly, the data in Table 13 depicts most of the change in taxable sales associated with the construction of Big Stone I.

TABLE 13

PERCENT CHANGE IN RETAIL SALES BY COUNTY, 1970 TO 1973		
	Grant	Roberts
Apparel Group	9.4%	15.6%
Food Group *	63.8%	13.4%
Furniture Group	36.7%	36.5%
General Merchandise *	71.0%	16.8%
Unclassified Retail *	47.9%	4.0%
* Average	60.9%	11.4%

The sectors marked with an asterisk ( \* ) are large and comprised 95 percent of taxable sales within these five categories in 1973. The averages found in the last row represent the county average growth in retail sales of these three largest sectors. The moderate 11.4 percent change in taxable sales in Roberts County is largely explained by overall changes in the price level from 1970 to 1973.

Clearly, establishments in Grant County received the major impact on taxable sales during the early 1970s. Earlier in this report, it was determined that in terms of county wide employment, the Big Stone II project will have virtually the same relative impact on the Grant County economy as did Big Stone I. Thus, it would appear reasonable that one could expect the same relative impact on other economic phenomena such as retail sales.

The following table lists the taxable sales that were actually generated during 2005 in the sectors listed in Table 13. The table also contains the *growth* in taxable sales in 2005 dollars that could occur as peak employment is approached during the construction of Big Stone II, *assuming* relative impacts are similar to the 1970s.

TABLE 14

TAXABLE SALES IN 2005 AND GROWTH IN TAXABLE SALES TWO YEARS AFTER FACILITY CONSTRUCTION HAS BEGUN				
	Grant (2005)	Grant (Growth)	Roberts (2005)	Roberts (Growth)
Apparel Group	540,000	51,000	484,000	75,000
Food Group *	6,039,000	3,852,000	9,602,000	1,291,000
Furniture Group	2,105,000	773,000	825,000	301,000
Gen. Merchandise *	14,143,000	10,038,000	5,342,000	900,000
Unclass. -Retail *	4,232,000	2,027,000	8,600,000	344,000
	\$27,059,000	\$16,741,000	\$24,853,000	\$2,911,000

The reader is reminded that the growth columns represent the sector increase *two years* beyond the beginning of major construction. In other words, some sales growth will also occur the first year of construction activity and as well as the third year.

After two years of construction, the impact on retail sales is projected to be almost \$17 million in Grant County and in Roberts County the growth will amount to about \$3 million. Since the increase in taxable sales occurring in Roberts County is projected to be only slightly higher than what can be explained by general inflation, it can be concluded that the impact on retail sales in that county due to Big Stone II activity will probably not be significant.

### Retail Employment

From Tables 7 and 8 earlier in this document, it has been shown that retail sector employment grew by 14.4 percent and employee earnings grew by 13 percent in Grant County during the construction of Big Stone I. It therefore follows that retail establishments collectively experienced an increase in labor costs of about 29 percent.

If fundamentals in today's labor market are similar to those in the 1970s, then it can be expected that increases in labor costs will average about 30 percent during the construction of Big Stone II.

### **Section Summary**

Based on statistical evidence gained during the construction of Big Stone I, impacts on retail sales, retail employment and wages in Roberts County are not expected to be significant. In Grant County, general retail sales are expected to experience substantial growth. Some types of retail sales may rise by as much as 60 to 70 percent on an annual basis as peak construction employment is reached. Retail labor requirements may increase about 15 percent with like increases in unit labor costs as excess demand in the local labor market intensifies.

## SECTION IX

### HOUSING IMPACTS

Market adjustments within the housing sector differ from other sectors in several important ways. First the inventory of housing is relatively fixed over the short run. This means that market adjustments produced by significant short-run changes in housing demand are reflected primarily in changes in the rental price of housing.

Second, since units of housing possess a useful life of 40 or more years, any contemplated increase in the supply of housing must be analyzed by investors over a long-run period. This means that an expected two or three year expansion in the demand for housing associated with Big Stone II will be an insufficient stimulant for generating new housing construction. Some types of housing, such as mobile homes, are associated with shorter useful lives and are also transportable to other regions when demand recedes to normal levels. By contrast, most other goods demanded by Big Stone construction workers will be provided through market adjustments that involve increased supplies on the part of vendors, with only moderate increases in prices.

Third, housing is a commodity that exhibits a high degree of excludability in consumption. This means that the consumption of a unit of housing by one renter renders it unavailable to others. This is in contrast to the demand for other services. In the case of health services, for example, the demand for certain medical procedures by one person does not exclude others from consuming the same type of service.

All of these factors lead to the conclusion that significant potential exists for impacts on market rental rates. Other impacts can also persist beyond the completion of the construction project. If a large component of the construction workforce displaces existing tenants through price competition, some may be forced to leave the area. Also, any addition to the local housing inventory due to exceptional rental returns during the construction of Big Stone II will potentially

produce an excess supply of rental housing for many years. The balance of this section analyzes factors that will affect the degree of this impact.

Prior research in the Big Stone II area includes a housing inventory assessment. (Source: Community Impact Section of Application for Energy Facility Siting Permit, and Big Stone II Final Report on the Social and Economic Assessment, 2005) These findings, compiled in 2005, are repeated in the following table. The number of motel beds has been adjusted to reflect the construction of a new lodging property near Watertown, S.D. The other seven types of housing encompass communities in Grant County and Ortonville, Minn.

**TABLE 15**

<b>AVAILABLE HOUSING INVENTORY</b>	
Motel Beds	2,335
Houses for sale	140
Houses for rent	23
Apartments for rent	140
Mobile Homes for Sale	10
Mobile Homes for rent	18
Mobile Home Pads for rent	119
RV Pads for rent	83

Peak employment is projected to involve up to 1,500 workers. Since most of the workers are expected to be imported to the area on a temporary basis, it is clear that the stock of available houses, apartments and mobile homes in Grant County is inadequate. The data in the preceding table does not take into account the undetermined number of housing units that are being constructed or rehabilitated by the private sector in preparation of construction activity. Regardless of this number, it is apparent that workers will depend heavily on motels for lodging accommodations during peak construction activity. It is also likely that apartments or other rental housing will be utilized within other nearby towns and cities.

For a variety of reasons workforce members, in general, prefer a short distance between job location and residence. This suggests that adverse rental impacts will be more pronounced in the nearby communities of Big Stone City, Milbank, and Ortonville compared to more distant cities and towns. The location advantage for these communities assures that existing rentals will be heavily demanded.

From the standpoint of the local market, impacts on rents will be reduced *if* housing for workers is dispersed from these three communities as much as possible and if a substantial number of workers utilize area motel accommodations.

There are several policies that can be effective in reducing the negative impact on rental rates in the immediate area of Big Stone II. One obvious strategy would involve building temporary living quarters for workers at or near the job site, but there are other policies that would be much more cost effective and also distribute economic benefit over a wide region.

All such policies should be directed in providing incentives for the utilization of residential units in communities *other than* Milbank, Big Stone City and Ortonville or encouraging the utilization of motels within a 60-mile radius of the job site. Some strategies that could be considered individually or in combination include:

- The public utility companies or the general contractor could sponsor bus transportation for workers from major communities such as Watertown, S.D. to the job site. This policy would mitigate the otherwise added cost of transportation to and from work for those living in more distant communities.
- The companies could negotiate agreements with motels guaranteeing a minimum quantity and price of lodging rooms throughout the region. Any such agreements could be tailored to the variation in worker numbers over the project duration. These agreements would presumably be negotiated with consideration given to geographic dispersion and to available capacity throughout annual cycles.



- As an incentive to workers, a wage adjustment could be afforded to workers who acquire housing in more distant communities to compensate them for commuting time and costs.

Each of these strategies and perhaps others would provide incentives for workers to acquire housing in a more orderly fashion in the region, thereby reducing negative impacts that would otherwise be experienced in the communities lying closest to the project.

### Section Summary

Housing is unique among all business sectors in the sense that housing supply changes slowly over time because industry decisions must be evaluated over the life of the investment. Because of this, short-term changes in the demand for housing are largely reflected in higher housing rents rather than expanded housing capacity. Although positive revenue impacts accrue to landlords, negative impacts occur to existing renters who must now compete for local rental housing through higher rent costs.

It is possible to reduce this negative impact by employing policies that *insulate* the local rental housing market as much as possible from temporary construction workers. These policies need to maximize the utilization of hotel and motel lodging for workers within reasonable driving distance of the work site and to provide effective economic incentives for workers to rent housing units in more distant communities.

# **EXPECTED SECTOR IMPACTS ASSOCIATED WITH BIG STONE II**

**Prepared by:**

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**May 2006**

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## EXECUTIVE SUMMARY

A sector economic analysis was conducted to help ascertain impacts that may be associated with the construction of the Big Stone II power plant in Grant County, South Dakota. The leisure travel industry and its sub sectors were a focus of the analysis. Other business sectors that were examined included health, agriculture, manufacturing, wholesale trade and retail trade. The housing market was also briefly examined in a separate section.

A primary basis of the analysis involved an examination of changes in economic variables that occurred during the construction cycle of Big Stone I in the early 1970s. This historical methodology provided a foundation for objective assessments of many of the sectors. Field work involving data collection and personal surveys of representatives from these sectors supplemented the historical statistics.

The details of this research are found in the main body of this document. The sources of impacts within these industries are summarized below.

Industry	Source of Economic Impacts	Direction of Impact	Net Impact
Leisure Travel	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	Somewhat Negative	
Health	Revenue	Positive	Positive
	Labor Costs	None Significant	
	Displacement of Traditional Users	None	
Agriculture	Revenue	None	None Significant
	Labor Costs	None Significant	
Manufacturing and Wholesale Trade	Revenue	None Significant	None Significant
	Labor Costs	None Significant	

Continued			
Industry	Source of Economic Impacts	Direction of Impact	Net Impact
Retail	Revenue	Positive	Positive
	Labor Costs	Negative	
	Displacement of Traditional Users	None	
Housing	Revenue	Positive	Negative
	Displacement/Rent Increases	Negative	

The travel industry encompasses lodging, eating and drinking, entertainment, recreation and auto related businesses. Because of their diversified nature, actual impacts will vary from one business to another. During the construction of Big Stone I, the most notable increases in revenues occurred in motels, restaurants and drinking establishments. Displacement of traditional leisure travelers by construction workers demanding the same goods and services is likely to be limited to the summer season. Displacement will occur only during one or two special summer events that normally attract visitors from outside the area.

Increased revenue is expected to be the primary economic impact accruing to the health industry in connection with the project. Strategic planning has been put in place in Grant County to focus on committing increased resources in anticipation of the increased demand for services. This should help assure that existing patients from the community experience no loss in quality of service.

The retail sector is projected to experience growth in revenue. Retail businesses providing goods that are directly bought by Big Stone construction workers will experience the largest growth. Other businesses will see revenues grow through indirect spending.

An increased demand for labor created by the construction of the power plant will induce higher local wages. Generally, sectors providing goods and services directly to new construction workers will experience the highest growth in demand for labor, and will also experience the largest growth in wage rates.

Because of its unique nature, the housing market may be impacted beyond slight changes in revenue and cost. Housing inventory moves slowly over time, which dictates that market adjustments are primarily dominated by increased rental costs. Increases in revenues received by landlords could be seen as a positive economic impact. However, negative impacts may be experienced by existing tenants as competition from temporary construction workers, earning higher than average wages, takes place. This, in turn, may produce undesirable economic consequences in the long-run if displaced tenants choose to leave the area permanently.

In order to mitigate this negative impact, it is important to adopt strategies that will disperse workers into other nearby communities and also to encourage as many workers as possible to acquire living accommodations in regional motels. Incentives for accomplishing this goal are found in the main body of this report.

## SECTION I

### INTRODUCTION

The purpose of this report is to provide an economic impact analysis of a number of industry sectors in connection with the proposed construction and operation of the Big Stone II power plant. Potential exists for sectors to experience a net positive or a net negative economic impact. Moreover, it is certain that some sectors will undergo significant impact, while others will see virtually no impact.

The geographical focus of this study consists of Grant and Roberts counties. It has been documented that the sphere of economic impact will extend beyond this area, but parts of these two counties are within a few miles of the project location and thus the potential exists for significant sector impacts within their boundaries.

The time period that is of major interest is the construction phase of the facility. The total span of time required for construction is four years. However, when the phasing in and phasing out of construction activity is considered, the period of time for which significant local impact can be expected is reduced to about three years. This three-year period is projected to begin in the late summer of 2007 and extend to late 2010. The phase in and phase out segments of the four-year window involve less than 100 employees and are therefore not expected to impart substantial local impacts. (Source: Exhibit 5-2, Big Stone II application)

The leisure travel industry is a major focus of this study. Although the travel industry is not the major economic driving force in Grant and Roberts counties, much of the infrastructure that relies on leisure travelers is either proximate to the project location or within towns likely to be impacted by project activity.

Table 1 provides a general perspective of leisure travel in Grant and Roberts counties as it relates to overall business activity.



TABLE 1

LEISURE TRAVEL AS A PERCENTAGE OF BUSINESS ACTIVITY BY COUNTY, 2005			
	Total Taxable Sales	Leisure Travel Spending	Percent of Total
Grant	95,828,000	2,715,000	2.8%
Roberts	66,765,000	3,315,000	5.0%

The relative significance of travel spending is more pronounced in Roberts County than in Grant County, but both are very minor compared to many other counties in the state.

Other sectors that are analyzed in this document include agriculture, retail trade, wholesale trade, manufacturing, housing, and health services. These sectors vary in size and are somewhat difficult to analyze because individual businesses within these sectors are diverse with respect to location and purpose.

## SECTION II

### METHODOLOGY

#### Methodology

A tour of Grant and Roberts counties was the first required task in the research project. Short interviews with community and business representatives were conducted for the purpose of learning local perceptions of salient issues and seasonal patterns of business activity. This field trip afforded an opportunity to collect basic data. Another purpose was to gain a personal understanding of the spacial features of the economic infrastructure present in the two counties.

#### Methodology of Historical Comparison

An objective assessment of the likely impact in some sectors can be accomplished by historically researching the *actual* impact experienced during the construction of the first Big Stone power plant completed in 1975. Although this activity occurred three decades ago, much insight is gained by studying movements of business volume within sectors during the construction of the first power plant. These inferences can be applied to the current project by making comparisons in workforce requirements and adjusting for the current size of these local economies.

Taxable sales in the two counties within general sectors are tracked during construction of the 1975 power plant (hereafter referred to as Big Stone I) to provide inferences concerning net impacts that can logically be attributed to that activity.

Historical comparisons are performed in regard to movements in employment and wages over the period of construction of Big Stone I in the early 1970s. Inferences concerning expected changes in wage rates and employment levels by sector can be accomplished in this manner.

Evidence gained by historical comparison embodies objective qualities that cannot be gained using other methodologies.

### SECTION III

## HISTORICAL FOUNDATION

Experience gained during the construction of Big Stone I will be of considerable benefit. Although much time has passed since this project was constructed, the basic economic infrastructure of these two counties has remained the same. It is also noted that similarities on the relative impact from the standpoint of the local labor market are similar when comparing the two construction projects as shown in the following table.

TABLE 2

RELATIVE EMPLOYMENT IMPACT, BIG STONE I AND II		
	Big Stone I	Big Stone II
Wage and Salary Employment	2,466	3,993
Plant Peak Const. Employment	900	1,500
Const. Emp. as percent of Private	36.5%	37.6%

Sources: Bureau of Economic Analysis and Big Stone II planning documents

Wage and salary employment in the table pertains to Grant County, the location of the proposed project. The inclusion of Roberts County data does not affect the stability of the percentages. The focus is on Grant County because of its proximity to the project and also because a considerable number of wage and salary employees work in government sectors in Roberts County.

Information in the above table shows that the proposed Big Stone II power plant project is forecast to hire 600 more workers during peak construction activity. Job growth in the area over the last three or more decades suggests that the *relative* labor market impact in the region is virtually the same for both projects. The 1,500 units of peak labor required for Big Stone II construction amounts to 37.6 percent of current employment. To the extent that the sector makeup of today's local economy mirrors that which existed in the early 1970s, inferences based on what actually

occurred during that era will be valid predictors of what is likely to happen during Big Stone II.

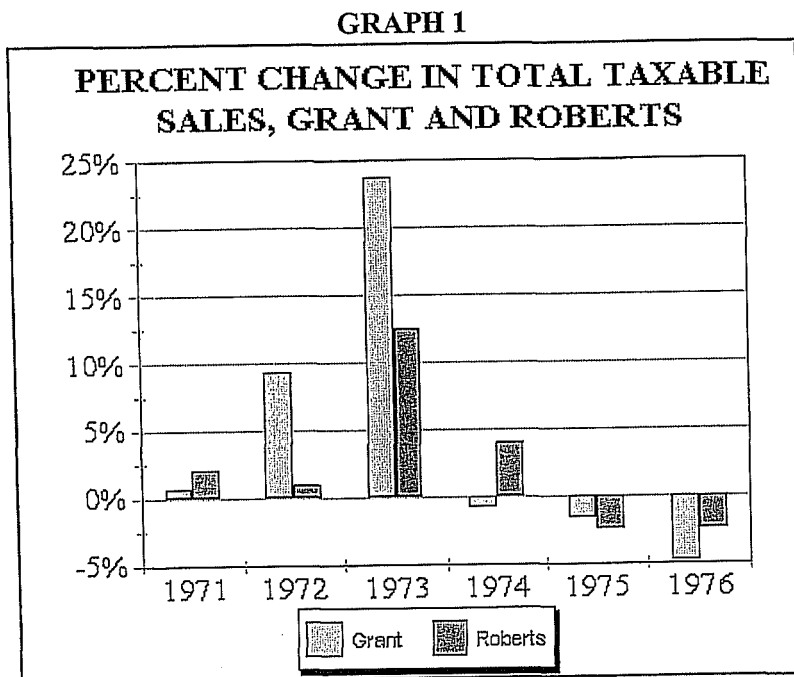
An analysis of movements in sector revenues and labor costs was conducted to determine the impact that took place in the local economy during construction of Big Stone I. Emphasis will be placed on *percentage changes* in the variables of interest because absolute wage rates and revenue measures of the 1970s bear little relationship to levels that are familiar today. The remainder of this section contains a summary of these findings.

### Changes in Taxable Sales

The year-by-year real changes in taxable sales from 1971 to 1976 are illustrated in Graph 1.

The percentage changes are deflated by the inflation rate for each year. Inflation rates varied from a high of 11 percent in 1974 to 3.2 percent in 1972. The impact on commerce, particularly in Grant

County, began as construction was accelerating in 1972. Annual growth maximized in 1973 with nearly a 24 percent growth in taxable sales. The next two years, 1974 and 1975, show that *growth* in taxable sales was near zero which means that *the level of* total taxable sales remained almost constant from 1973 to 1975. Thereafter, sales fell as the local economy adjusted to a normal environment. The essential observation is that growth in total taxable sales in Grant County amounted to a



combined 35 percent when the growth phase of construction activity began in 1972. The combined impact over these two years in Roberts County was around 13 percent, showing that the impact in that county was relatively minor when compared to Grant County.

In the 1970 to 1975 time period, taxable sales were not categorized with the common Standard Classification codes that are used today. However general categories that are quite self descriptive were employed by the South Dakota Department of Revenue.

Impacts in individual sectors as they were then defined are shown in Table 3.

**TABLE 3**

<b>REAL CHANGE IN TAXABLE SALES BY SECTOR AND COUNTY, 1971 TO 1974</b>		
	Grant	Roberts
Retail Durables	51%	37%
Tourism Group	30%	38%
Food Group	50%	6%
Construction & Manufacturing	23%	58%

Source: South Dakota State Data Center

The broad sector of retail durables during this period included hardware, furniture, apparel and other durable products. The tourism group included service stations, other automobile businesses, hotels, and eating and drinking establishments. The food group included grocery stores, bakeries and stores selling unprepared food products. The conclusion here is that spending directly or indirectly traced to the construction project produced the greatest impacts on food and retail durable sales.

It is possible to further analyze spending within the tourism group, as it was defined in the 1970s. The largest growth in taxable sales occurred in motels and

restaurants. These findings are important regarding impacts in the leisure travel sector since these businesses are basic to the travel sector. Similar results also occurred in Roberts County, but the data in that county was skewed due to the construction of a new motel and truck stop in 1973.

Impacts in individual sectors are shown in Table 4. During this era, service stations represented the major component within the tourism group in terms of taxable sales. Since spending in service stations was likely dominated by local customers, the growth in taxable sales for the tourism group as a whole is lower than expected.

**TABLE 4**

<b>REAL CHANGE IN TAXABLE SALES TOURISM GROUP BY COUNTY, 1971 TO 1974</b>		
	Grant	Roberts
Service Stations	27%	37%
Garages	7%	68%
Restaurants	43%	29%
Hotels & Motels	62%	82%

Source: South Dakota State Data Center

## **Labor Market**

As expected, the dramatic growth in employment during construction of Big Stone I produced equally dramatic changes in the overall local labor market. Wages per job in Grant County rose substantially more than in other areas as shown in Table 5.

**TABLE 5**

<b>PERCENT CHANGE IN AVERAGE WAGE PER JOB BY COUNTY AND STATE, 1971-1974</b>	
Grant	41.6%
Roberts	14.8%
South Dakota	13.3%

Source: Bureau of Economic Analysis

Data compiled by the Bureau of Economic Analysis is according to place-of-work. Since the place-of-work regarding Big Stone I was a Grant County location, wages within the construction sector exerted its impact on average wages in only Grant County. It is noted that the impact on the average wage per job did not spill over significantly into Roberts County.

The number of workers employed by place-of-work mirrors what was found to be true concerning the average wage per job. See Table 6, below.

TABLE 6

PERCENTAGE CHANGE IN EMPLOYMENT BY COUNTY AND YEAR		
	Grant	Roberts
1971	7%	-6%
1972	3%	1%
1973	10%	-3%
1974	10%	1%
1975	-12%	-5%

Source: Bureau of Economic Analysis

As one would expect, the number of employed workers increased dramatically in Grant County reflecting the direct and induced employment caused by the construction project. From 1970 to 1974, the employment in that county rose by more than 33 percent. In Roberts County, employment decreased and may have been caused by people who normally worked in that county switching to jobs in Grant County. Negative changes in employment occurring in 1975 are included to reflect the job impact that took place as the Big Stone I project approached completion.

The employment impact in Grant County by sector shown in Table 7 reveals that most of the changes occurred through direct jobs in the construction industry. Sectors other than construction experienced more moderate gains. The mining



sector recorded a net reduction in employment. This could have been due to workers migrating from the mining sector to the construction sector, or simply due to a reduction in labor requirements in the mining industry. It is also noted that sectors such as agricultural services, farm workers and wholesale trade were not impacted with respect to employment. The growth in the number of jobs *outside* the construction sector totaled 459 workers or about 20 percent greater than prior to plant construction. Growth in direct employment within the construction sector was 716. Thus, the total county employment impact that occurred over these years amounted to 1,175 workers.

TABLE 7

EMPLOYMENT IMPACT BY SECTOR, 1971 to 1974, GRANT COUNTY	
Agricultural Services	0.0%
Mining	-9.4%
Construction	476.0%
Manufacturing	39.3%
Transportation and Public Utilities	15.2%
Wholesale Trade	5.2%
Retail Trade	14.4%
Finance, Insurance, and Real Estate	34.9%
Services	21.3%
Farm Employment	4.1%

Source: Bureau of Economic Analysis

The excess demand that apparently existed over the early 1970s produced upward pressure in wages as labor market theory would suggest. The following table records the increase in wages occurring in each of these sectors from 1971 to 1974. The data has been adjusted to reflect the increase in earnings that *would have* occurred from 1971 to 1974 if price level changes then were as they are in 2006. In other words, today's rise in prices is being substituted for what actually occurred in the 1970s to make the results more meaningful in today's environment.

TABLE 8

PERCENT CHANGE IN EARNINGS PER JOB BY SECTOR, 1971 TO 1974	
Agricultural Services	2.0%
Mining	14.9%
Construction	68.3%
Manufacturing	13.1%
Transportation and Public Utilities	12.2%
Wholesale Trade	28.3%
Retail Trade	13.0%
Finance, Insurance, and Real Estate	37.5%
Services	14.5%

Source: Bureau of Economic Analysis

The information in the table provides estimates of growth in earnings per job that may occur over a three-year window during the construction of Big Stone II. For example, workers in the retail trade sector would experience an increase in earnings of an estimated 13 percent over the three-year peak employment construction period. This is about 4 percent per year if inflation conditions are as they exist presently.

The reason for higher than expected growth in earnings in wholesale trade and finance, insurance and real estate is not readily apparent. Perhaps earnings accruing to these workers are directly based on business volume. In the case of the financial sector, it is also possible that a major insurance business in Milbank was experiencing a growth pattern independent of the construction of Big Stone I.

The impact on population is important for a number of reasons. Impacts on the type of housing demanded will be affected by the proportion of workers that become residents as opposed to those who are in the area on a strictly temporary basis. Population changes that were recorded during the construction of Big Stone I, as

seen in Table 9, provide some inference about what may occur during the proposed project.

TABLE 9

POPULATION OF GRANT COUNTY BY YEAR	
1970	9,085
1971	9,011
1972	9,047
1973	9,320
1974	9,440
1975	9,016
1976	9,009

Source: Bureau of Economic Analysis

During the construction of Big Stone I, it appears that an increase of about 400 to 450 residents took place during the peak period of activity. It is impossible to determine if this number is dominated by individual workers or by dependents of workers.

### Section Summary

The information developed in this section suggests that the relative impact that can be expected during construction of Big Stone II is correlative with Big Stone I in terms of the change in workforce requirements. Significant growth in sales in various types of businesses can be expected. Foremost among these are grocery stores, businesses that sell durable goods, eating and drinking establishments, and lodging properties. Other sectors experienced increases in sales that would not have occurred in the absence of the Big Stone I project.

Sector employment and earnings were also impacted. During a three-year window, employment in all sectors other than construction increased 20 percent. Smaller changes in earnings occurred, generally equating to about 1 or 2 percentage points above the change in the overall price level.

## **SECTION IV**

### **TRAVEL SECTOR**

In this section, a general inventory of the infrastructure pertaining to the travel sector will be identified. Information concerning available capacity, current utilization rates and seasonal patterns of the industry will be discussed. A number of special visitor events will also be identified.

The actual impact that was observed within travel-related sectors during the construction of Big Stone I will be used in providing inferences in connection with the construction of Big Stone II.

#### **Travel Industry Infrastructure**

The travel industry infrastructure in Grant and Roberts counties is comprised of a number of private businesses and some public entities. They are geographically dispersed in the county seat towns of Milbank and Sisseton and near Big Stone Lake. Leisure activities relate heavily to outdoor recreation activities that are afforded by area lakes. Fishing, swimming, boating and hunting activities are of high quality in these two counties as well as neighboring counties to the west. These natural attributes have directly influenced the type of infrastructure that supports the traveling public. There are fewer hotels, motels and restaurants than are found per capita in other regions in South Dakota, but more resorts, beaches, camping facilities and convenience stores that offer supplies to outdoor enthusiasts.

Historical and cultural events and facilities in the area, particularly in Roberts County, complement the outdoor recreation base of the leisure travel industry. A gaming facility east of Sisseton provides entertainment activities to visitors vacationing in the area.

A general enumeration of the travel infrastructure is summarized in Table 10. There are numerous other support businesses such as specialty shops, convenience stores, bait shops, sporting good outlets and other establishments that provide goods and services to leisure travelers.

**TABLE 10**

<b>ENUMERATION OF TRAVEL RELATED ENTITIES</b>	
Restaurants (All types of prepared food)	16
Motels	8 (194 rooms)
Private Resorts/Campgrounds	9

Most of the private resorts are situated on Big Stone Lake and are accessible from Highway 109 traversing northwest from Big Stone City to Hartford Beach State Park. A wide variety of amenities are provided collectively by these facilities and include lodging, camping, boating, guiding services and dining.

Public facilities include Hartford Beach State Park located at Big Stone Lake. This park is located about 15 miles north of Milbank and the same approximate distance northwest of the Big Stone II project site. Visitors to the park can camp, swim, fish, and hike along historical and scenic trails. The park contains 43 camp sites. Lodging is available adjacent to the park. Big Stone Island, located a few miles southeast of Hartford Beach, consists of a 100-acre scenic and historic area. It is accessible only by boat and affords no visitor facilities.

Sica Hollow State Park is located 15 miles northwest of Sisseton. It is one of the most scenic aspects of the Coteau Des Prairies geological formation in northeast South Dakota. The park provides opportunities for hiking, horseback riding and picnicking. The park is well-known for its "Trail of the Spirits," which has been designated a National Recreation Trail.

Together, Grant and Roberts counties contain dozens of waterfowl and game production areas that contribute greatly to visitor volume through enhanced hunting opportunities.

The Nicollet Tower and Interpretive Center, located about three miles west of Sisseton, commemorates the mapping of the area by Joseph Nicollet. The 75-foot tower is accessible to area visitors and complemented by a visitor center containing historical artifacts and artwork.

### **Regional Events**

One of the main summer events in Roberts County is the Sisseton Wahpeton Oyate Pow-Wow. This three-day event is around the first of July and is held at Agency Village. According to business people in the community, impacts surrounding this event are concentrated near Agency Village with only moderate spending impacts occurring in Sisseton. Another local event in Sisseton is the annual Horse and Buggy Days. This event is attended mainly by local residents and consists of a parade, rodeo and activities at the Stavig Museum.

Most events in Grant County are local one-day events that do not generate significant numbers of visitors from outside the region. An exception is the annual Milbank Train Festival held in August. This event attracts train enthusiasts and others to Milbank with displays in the museum, an art festival and model train display. Train rides from Milbank to Corona have been part of past festivals.

### **Potential Big Stone II Travel Industry Impacts**

Components of the travel infrastructure are likely to experience varied impacts. Individual establishments and events can potentially be affected by:

- changes in revenues
- changes in costs
- changes in the makeup of their customer base

From the standpoint of revenues, motels, restaurants, and drinking establishments can be the most readily analyzed. On average, approximately 40 to 50 percent of leisure travel spending occurs in these establishments in South Dakota, with the balance dispersed over many other sectors.

The construction of Big Stone I demonstrated that construction workers demand many of the same goods and services as do leisure travelers. In Grant County, lodging establishments experienced a 62 percent increase in sales from the year prior to construction until the peak year of construction. Year-over-year increases varied from 12 percent to more than 30 percent during this four-year period.

In 2005, taxable sales in Grant County lodging establishments totaled \$808,000. If taxable sales grew by a similar amount as was experienced during the construction of Big Stone I, it is projected that these businesses will generate an additional \$501,000 during the third year of construction. The revenue impact over the life of the project would amount to an additional \$1.44 million in lodging establishment sales.

Costs will be impacted through increased labor requirements for lodging establishments. Only a portion of labor inputs vary with changes in capacity utilization. Based on experience gained in the 1970s, wage rates are also expected to increase by about 14 percent. The actual outcome will depend on the area's available labor supply in 2007 as opposed to the early 1970s.

Since labor costs are a relatively small percentage of gross revenues for lodging establishments, it is readily apparent that the net economic impact for lodging businesses is positive.

Much the same pattern exists for eating and drinking establishments. During the construction of Big Stone I, revenues rose by 43 percent in these establishments. In 2005, these businesses experienced taxable sales of \$6.2 million. This means that a similar impact during the peak year of construction of Big Stone II would produce

an additional \$2.6 million. Over the life of the project the impact on total sales would equate to nearly \$4 million. In the case of restaurants there is ease of entry for new businesses which means that capacity impacts for existing eating establishments will not be an enduring factor.

In eating and drinking establishments, labor requirements increase as business volume grows. Past experience shows that unit labor costs may increase by 13 percent with an undetermined number of additional workers required. Since labor costs in eating and drinking establishments are generally around 20 to 30 percent of total revenues, it is clear the net economic impact is positive.

Other types of businesses as well as outdoor attractions may experience less direct impacts that can be traced to the construction of the power plant. Amenities and businesses located proximate to lakes that are located some distance from the project and are accessed via several alternate routes may experience negligible effects during the construction of Big Stone II. However, some of the resorts and other facilities located on Highway 109 northwest of Big Stone City are likely to experience net benefits, similar to properties in Milbank offering similar goods and services.

Aside from the previously mentioned properties on Highway 109, most of the other travel-related properties in Roberts County are concentrated in Sisseton. Local residents express the opinion that the impact on these properties during the construction of Big Stone I was minimal. This seems plausible because of the relatively long 55-mile driving distance from Sisseton to the project location. Several other communities in Minnesota and South Dakota, including Watertown, S.D., are not as far from the project as is Sisseton. However, it is probable that any residual impact that Sisseton does receive will be positive for reasons discussed earlier in this section.



## Public Facilities

Hartford Beach State Park, located less than 15 miles from the project location, is the primary publicly-owned facility that is likely to experience impacts. Use of the 43-unit campground is comprised of 66 percent South Dakota residents and 34 percent non residents. Occupancy rates for camping facilities at Hartford Beach average 85 percent during weekends and holidays, but only 16 percent on weekdays. This implies that on many weekends and holidays during the summer season, the campground is presently used to maximum capacity. (Source: South Dakota Game, Fish and Parks Department, Occupancy Statistics)

This means that if only a few of the 1,500 workers and family members exhibit a demand for recreational opportunities offered at Hartford Beach, the campground capacity will be exceeded more often during weekends and holidays. Therefore, a "crowding out" impact will be produced by the temporary residents associated with Big Stone II construction. This may encourage those accustomed to leisure activities at Hartford Beach to select other camping and recreation alternatives in the region. A positive revenue impact will be experienced by the camping facilities and other park concessions no matter what the user adjustments are.

Negative impacts occurring to Hartford Beach related to traffic associated with the construction project are expected to be minimal. Access to the park by South Dakota residents originates predominately from the west and south from Interstate 29, exit 213, a route that is not expected to carry significant traffic related to Big Stone II.

Of course, mitigative opportunities exist through appropriate marketing to encourage these temporary workers (as well as others) to make use of the park on weekdays when ample capacity exists. Obviously, this is a park administrative decision that ultimately depends upon management goals and objectives.

There are many other public campgrounds and parks located in counties to the west of Grant and Roberts counties. They quite likely will experience positive utilization impacts, but any such impacts will be dispersed as distance from the project activity increases.

### **Special Events**

One event hosted by the City of Milbank annually is the Train Festival. This weekend event hosts people from outside the area and according to local hospitality properties, generates a number of overnight visitors. The potential exists that during the peak period of construction, accommodations for an undetermined number of visitors to this event will be displaced by workers residing temporarily in lodging establishments in the Milbank area.

Class and family reunions are also reported to be popular summer activities in Milbank. These reunions are typically weekend events that require overnight stays in local motels. These events may be impacted due to capacity limitations created by temporary workers in the area during the one or two summers of peak construction activity.

The degree to which special community events and other activities will be displaced with respect to lodging is largely a management decision. Property managers interviewed during the course of this research indicated that they are disposed to reserve a portion of their rooms to accommodate regular guests, but also indicated that some occupancy pressure will likely take place during seasonal peaks.

The two main events in or near Sisseton are the annual Sisseton Wahpeton Oyate Pow-Wow and Horse and Buggy Days. Interviews with travel industry property owners indicate that Pow-Wow attendees predominately stay at camping facilities at Agency Village or nearby state campgrounds. The Horse and Buggy Days'

attendees are predominately local people within driving distance of Sisseton. Significant impacts on these two events are not expected.

### **Section Summary**

Considerable evidence exists that hospitality properties will experience significant positive economic impacts because construction workers demand many of the same goods and services as do traditional leisure travelers. Labor costs, however, are expected to rise because of increased labor requirements and rising local wage rates. On balance, the net impact is expected to be positive.

Some alterations in use patterns are expected in the case of outdoor recreation participants who normally utilize Hartford Beach State Park. Weekend and holiday use is near or at capacity during the camping season. This will require changes in use patterns away from weekends and to week days, or the selection of alternative facilities.

Other customary local events such as visitors to the Train Festival and various family and class reunions will likely find usual accommodations unavailable.

## SECTION V

### HEALTH INDUSTRY

The availability and capacity of basic health care is a matter of importance in connection with the proposed construction of Big Stone II. Since a peak employment level of 1,500 workers is contemplated for the project, some impact can be expected in regard to health care services. However, the expected age and gender demographics of workers, together with the fact that a considerable number will not have dependents living in Grant County, suggest that the demand for health services will not grow proportionate to the employment impact.

Grant and Roberts counties, as well as adjacent communities appear to have an extraordinary health care infrastructure which is perhaps accounted for by sparsity factors and age demographics of the population. Hospitals are found in Sisseton and Milbank, S.D. and Ortonville, Minn. These hospitals provide outreach clinics and facilities in numerous smaller communities within their respective service areas. Medical facilities in Milbank and Ortonville plan on expanding services in connection with the proposed power plant. Other hospitals are available in neighboring counties.

Given the number of hospitals within close proximity, it would appear that considerable choice in hospital care is enjoyed by residents of these counties.

Milbank and Sisseton both accommodate physician clinics, eye care clinics and chiropractic offices.

A brief description of the health care environment in both communities and their capacity to respond to potential added demand for health care services will be presented in this section.

## **Milbank**

Milbank Area Hospital contains 35 patient beds and provides a wide variety of medical services. These include emergency room, surgical, maternity, pediatrics, chemotherapy, radiology and several other services. The primary service area is considered to consist of Grant County with about 7,600 residents. Services are also provided to patients living in Minnesota, southern Roberts, and parts of Deuel and Day counties, all of which are considered its secondary service area. When these areas are included, the population served totals about 22,000. Significant available capacity exists in this hospital for providing services to temporary construction workers and their dependents, according to the hospital administrator.

Physician and other para professional care providers are located in the Milbank Medical Center near the hospital campus. Currently there are five full-time physicians and three physician assistants or nurse practitioners affiliated with the medical center. General medicine, obstetrical care, surgery, cardiology, and laboratory testing are some of the services available at the medical center.

Outreach clinics that are associated with the Milbank Medical Center are currently located in Waubay, Wilmot and Reville, S.D. These clinics are regularly staffed by physician assistants and nurse practitioners.

Plans have been finalized to open a similar satellite facility in Big Stone City in the next few months. A decision was partially precipitated by the anticipated growth in the demand for services in conjunction with the Big Stone II project, according to the hospital administrator. This new facility will be staffed by a physician assistant or nurse practitioner.

A strategic goal in the Milbank medical community is to be proactive in regard to their response to economic changes in the area. A related goal is to be able to provide services to new residents without reducing the quality of service and response time for existing clients.

It appears that when considering available capacity in conjunction with strategic planning in the medical community, the prospect of additional numbers of people needing medical service will result in a positive impact in the health industry.

## **Sisseton**

Because of the distance between Sisseton and the site of the project, an influx of a significant number of temporary residents is in some doubt. It has also been learned from businesses and residents of the town that there are few residential properties available for rent or sale in the community. Accordingly there is some doubt as to whether any significant impact will be experienced by health care providers in Sisseton.

For completeness, an interview with the Sisseton Coteau Des Prairies Hospital and Clinic was conducted. Hospital administrators consider their primary service area to be Roberts County with an estimated population of about 10,000 in 2004. A clinic is also maintained by this organization in Wilmot, S.D. The secondary service area includes Browns Valley in Minnesota where a clinic is maintained as well as some areas in eastern Marshall and Day counties, west of Sisseton.

The clinic is served by five physicians and one nurse practitioner. This facility is integral to the hospital.

Excess capacity has grown in the hospital as the length of patient stays have declined in recent years. Some excess capacity exists for physician care in the clinic, although not as much as the hospital. In assessing the possible impact that could be generated by an in migration of construction workers, it is the opinion of the administrator that any such growth in demand for health services could be accommodated by existing staff and physical plant.

## Section Summary

It appears that between the two counties, medical facilities in Grant County will experience the bulk of any growth in demand for health services. It is apparent that administrators are prepared for an increase in the demand for health services and have taken a proactive strategy to help assure that the level of service for existing residents is not compromised. An outreach clinic is to open soon in Big Stone City, partially in response to the prospect of additional demands for service that may be encountered in connection with the proposed construction of Big Stone II.

## SECTION VI

### AGRICULTURE

Production agriculture is dominated by traditional family farm units in both Grant and Roberts counties. There are about 550 farms in Grant County, and 860 in Roberts County, which is proportionately larger in geography. The acreage utilized for farming in Grant County is 350,299 and in Roberts, 592,893. Crops include corn, soybeans, wheat, oats and hay, among others.

Beef and dairy production represent the major income sources from livestock production. Grant County is ranked first among all South Dakota counties in dairy production and Roberts County is ranked 11th.

The following table summarizes the breakdown of employment in the two counties in 2003, the latest year for which data is available.

**TABLE 11**

<b>FARM EMPLOYMENT, GRANT AND ROBERTS COUNTIES, 2003</b>			
	<i>Farm Proprietors</i>	<i>Hired Farm Workers</i>	<i>Total</i>
Grant	553	89	642
Roberts	861	71	932
Total	1,414	160	1,574

Source: Bureau of Economic Analysis

In 2003, hired farm workers comprised 14 percent of total farm employment in Grant County and only about 7.5 percent in Roberts County. The remainder consisted of owner-operators of farm units. This points to the fact that the vast majority of farm units do not employ external farm workers.



In assessing the possible impacts on the agricultural sector, it is apparent that no revenue effect is likely because agricultural products are exported into national markets. Likewise, non labor inputs are not expected to be in any way affected since they are for the most part imported from other regions.

Any impact that would be experienced by agriculture would relate to hired labor because of the added competition in the local labor market that would be associated with the construction of Big Stone II. Unfortunately, earnings data pertaining to hired farm workers is difficult to obtain. However, given the experience gained during the construction of Big Stone I in the 1970s, a general increase in wages of about 15 to 20 percent occurred in sectors other than construction. There is a possible impact of higher production costs for the minority of farm units that utilize hired farm workers as part of their operation.

### **Dairy Industry**

In Grant County, a major component of hired farm labor arises in the case of large dairy operations. A more detailed study of this aspect of agriculture was performed to better understand the impacts that might occur among large dairy operations.

There are presently 39 grade A dairy producers in Grant County. Although many of these may require one or two hired employees, most are operated exclusively by farm proprietors and family members. Four large dairy operations require significant numbers of hired workers. These operations milk from 500 to 2,000 cows, using modern technology. Based on information gained during a field visit, it is estimated that these dairies collectively require from 45 to 50 hired production workers in addition to 15 to 20 management workers.

The latter group of workers are not expected to have transferrable skills for construction employment and labor market impacts related to the construction of Big Stone II would not affect them.

It was learned that most of the production labor in these large dairies consists of foreign nationals that are imported from outside South Dakota. Their purpose of coming to the area is specifically to work in the large dairies. It is the opinion of those in the industry that little likelihood exists that adverse impacts would occur within these operations with respect to labor availability and wages.

### **Agricultural Land**

The final issue to be considered is the impact that the construction of Big Stone II will bear upon available agricultural land. Otter Tail Power currently owns 2,200 acres of land contiguous to the existing plant. If the Big Stone II project proceeds, an additional 620 acres will be converted from agricultural use. (Source: Permit Application for Siting Permit, Big Stone II Project) This amounts to about 0.17 percent of the land that is currently utilized for agricultural purposes in Grant County. The impact to the agricultural sector in the county is equivalent to the value added in farm production that would otherwise have taken place on this 620 - acre parcel.

### **Section Summary**

Economic impacts within the agricultural sector are likely to be minimal in connection with the proposed power plant. Since agricultural outputs are exported outside the local economy, no revenue impact can be expected by farm operators. Labor costs are not likely to change significantly for the agricultural sector. Except for a number of large dairies, most farms in the area are owner-operator units requiring very limited outside labor. The large dairy operations largely rely on labor that is imported into the area for the express purpose of working in these dairy businesses. The quantity of land diverted from agricultural production in Grant County is projected to be virtually unaffected by the construction of the proposed power plant.

## SECTION VII

### MANUFACTURING AND WHOLESALE TRADE

Employment totals for manufacturing and wholesale trade in Grant and Roberts counties appear in Table 12.

TABLE 12

EMPLOYMENT, MANUFACTURING AND WHOLESALE TRADE, 2003		
	Grant County	Roberts County
Manufacturing	509	219
Wholesale Trade	137	160
Total	646	379

In comparison with other counties of like size in South Dakota, Grant County enjoys a much higher than expected level of manufacturing employment. This is largely due to the presence of two significant dairy product manufacturing establishments. Additional manufacturing employment occurs in Grant County in the area of building structures and agricultural equipment.

Wholesale trade in Grant County is dominated by agricultural activity since many grain merchandisers and other businesses specializing in agricultural inputs are classified as wholesale entities.

The bulk of locally manufactured dairy products are exported from the region into national markets so no impact can be expected from the standpoint of revenues in connection with the construction of Big Stone II. However, potential impacts via labor costs do exist.

The two dairy product manufacturing businesses employ a combined 340 of the 509 manufacturing workers in Grant County. Field visits to these dairy manufacturing

businesses were conducted for the purpose of learning some of the nuances of the local labor market from their perspective.

Nearly all employees of these establishments reside in the general area of Ortonville, Minn., Big Stone City and Milbank, S.D. The vast majority of workers are originally from the area as opposed to originating from other regions. Employment levels in these businesses have been quite stable over recent years and there are no significant seasonal fluctuations. Expansion of production capacity in one of the establishments will require an additional 40 employees just prior to construction of the Big Stone II plant. Labor costs represent a significant component of total costs for both companies.

Experience in recent years has proven that labor turnover is not problematic, especially for workers with three or more years of tenure. One of the businesses indicated that turnover is high among newer employees - a problem that may be intensified with additional competition in the labor market. Both companies attribute low turnover rates to providing a reasonable wage and above average employee benefits. Representatives from both companies are not overly concerned about losing employees in the face of competitive labor market forces, but appear willing to respond with improved wages if the need should arise.

During the construction of Big Stone I, the manufacturing and wholesale trade sectors experienced differing labor cost outcomes. In the case of manufacturing, wages rose 15 percent over the 1971 to 1974 period, an amount that is little more than would have been expected given price level and worker productivity changes. In the case of wholesale trade, wage rates rose by 28 percent, an increase that is twice as high as what otherwise would have been expected. There is no way to be certain that the large increase in earnings for workers in the wholesale trade sector was related to Big Stone I construction activity or some other exogenous factors in this industry.

The number of employees in the wholesale trade sector was quite stable, increasing by only 5 percent during the construction of Big Stone I. However, the number of workers within the manufacturing sector rose by 39 percent. Because manufactured goods for the most part leave the local economy for export, this outcome should not be attributed to the construction of Big Stone I. However, it does indicate that adding manufacturing employees during intensive construction activity has been achievable in Grant County in the past.

### **Section Summary**

Revenues received by manufacturing and wholesale trade businesses are not expected to be influenced by the construction and operation of the proposed power plant. Because many manufacturing workers may possess skills that are transferrable to the construction industry, upward pressure on wages is a possible outcome. Experience during the construction of Big Stone I showed that manufacturing wages increased about 15 percent over a three-year period.

## **SECTION VIII**

### **RETAIL SECTOR**

Retail trade is a diverse sector. Grocery, hardware, furniture, jewelry, apparel and general merchandise of all types fall within the retail trade sector. Clearly, any economic impacts generated in this sector by the proposed project will vary widely from one product line to another. Retail goods that are demanded directly by construction employees will experience larger impacts than goods purchased through induced economic activity. Similarly, employment requirements will vary from one retail sector to another.

#### **Retail Sales**

It is possible to review historical impacts in retail sectors as they were defined by the South Dakota Revenue Department in the 1970s. Unfortunately, in 1974, retail sectors were redefined and some earlier sectors were combined into more aggregative sectors. The last year for which detailed data is available in this era is 1973. The percent changes in taxable sales in retail sectors over the three-year period, 1970 to 1973, appear in Table 13.

It would have been preferable to have these percentages calculated over the 1970 to 1974 interval, as has been done elsewhere in this report, but detail in the retail sectors was lost after 1973. Most of the growth in the data series studied in this report was nearly completed in 1973, with only small incremental increases occurring in 1974. Accordingly, the data in Table 13 depicts most of the change in taxable sales associated with the construction of Big Stone I.

TABLE 13

PERCENT CHANGE IN RETAIL SALES BY COUNTY, 1970 TO 1973		
	Grant	Roberts
Apparel Group	9.4%	15.6%
Food Group *	63.8%	13.4%
Furniture Group	36.7%	36.5%
General Merchandise *	71.0%	16.8%
Unclassified Retail *	47.9%	4.0%
* Average	60.9%	11.4%

The sectors marked with an asterisk (\*) are large and comprised 95 percent of taxable sales within these five categories in 1973. The averages found in the last row represent the county average growth in retail sales of these three largest sectors. The moderate 11.4 percent change in taxable sales in Roberts County is largely explained by overall changes in the price level from 1970 to 1973.

Clearly, establishments in Grant County received the major impact on taxable sales during the early 1970s. Earlier in this report, it was determined that in terms of county wide employment, the Big Stone II project will have virtually the same relative impact on the Grant County economy as did Big Stone I. Thus, it would appear reasonable that one could expect the same relative impact on other economic phenomena such as retail sales.

The following table lists the taxable sales that were actually generated during 2005 in the sectors listed in Table 13. The table also contains the *growth* in taxable sales in 2005 dollars that could occur as peak employment is approached during the construction of Big Stone II, *assuming* relative impacts are similar to the 1970s.

TABLE 14

TAXABLE SALES IN 2005 AND GROWTH IN TAXABLE SALES TWO YEARS AFTER FACILITY CONSTRUCTION HAS BEGUN				
	Grant (2005)	Grant (Growth)	Roberts (2005)	Roberts (Growth)
Apparel Group	540,000	51,000	484,000	75,000
Food Group *	6,039,000	3,852,000	9,602,000	1,291,000
Furniture Group	2,105,000	773,000	825,000	301,000
Gen. Merchandise *	14,143,000	10,038,000	5,342,000	900,000
Unclass. -Retail *	4,232,000	2,027,000	8,600,000	344,000
	\$27,059,000	\$16,741,000	\$24,853,000	\$2,911,000

The reader is reminded that the growth columns represent the sector increase *two years* beyond the beginning of major construction. In other words, some sales growth will also occur the first year of construction activity and as well as the third year.

After two years of construction, the impact on retail sales is projected to be almost \$17 million in Grant County and in Roberts County the growth will amount to about \$3 million. Since the increase in taxable sales occurring in Roberts County is projected to be only slightly higher than what can be explained by general inflation, it can be concluded that the impact on retail sales in that county due to Big Stone II activity will probably not be significant.

### Retail Employment

From Tables 7 and 8 earlier in this document, it has been shown that retail sector employment grew by 14.4 percent and employee earnings grew by 13 percent in Grant County during the construction of Big Stone I. It therefore follows that retail establishments collectively experienced an increase in labor costs of about 29 percent.



If fundamentals in today's labor market are similar to those in the 1970s, then it can be expected that increases in labor costs will average about 30 percent during the construction of Big Stone II.

### **Section Summary**

Based on statistical evidence gained during the construction of Big Stone I, impacts on retail sales, retail employment and wages in Roberts County are not expected to be significant. In Grant County, general retail sales are expected to experience substantial growth. Some types of retail sales may rise by as much as 60 to 70 percent on an annual basis as peak construction employment is reached. Retail labor requirements may increase about 15 percent with like increases in unit labor costs as excess demand in the local labor market intensifies.

## SECTION IX

### HOUSING IMPACTS

Market adjustments within the housing sector differ from other sectors in several important ways. First the inventory of housing is relatively fixed over the short run. This means that market adjustments produced by significant short-run changes in housing demand are reflected primarily in changes in the rental price of housing.

Second, since units of housing possess a useful life of 40 or more years, any contemplated increase in the supply of housing must be analyzed by investors over a long-run period. This means that an expected two or three year expansion in the demand for housing associated with Big Stone II will be an insufficient stimulant for generating new housing construction. Some types of housing, such as mobile homes, are associated with shorter useful lives and are also transportable to other regions when demand recedes to normal levels. By contrast, most other goods demanded by Big Stone construction workers will be provided through market adjustments that involve increased supplies on the part of vendors, with only moderate increases in prices.

Third, housing is a commodity that exhibits a high degree of excludability in consumption. This means that the consumption of a unit of housing by one renter renders it unavailable to others. This is in contrast to the demand for other services. In the case of health services, for example, the demand for certain medical procedures by one person does not exclude others from consuming the same type of service.

All of these factors lead to the conclusion that significant potential exists for impacts on market rental rates. Other impacts can also persist beyond the completion of the construction project. If a large component of the construction workforce displaces existing tenants through price competition, some may be forced to leave the area. Also, any addition to the local housing inventory due to exceptional rental returns during the construction of Big Stone II will potentially

produce an excess supply of rental housing for many years. The balance of this section analyzes factors that will affect the degree of this impact.

Prior research in the Big Stone II area includes a housing inventory assessment. (Source: Community Impact Section of Application for Energy Facility Siting Permit, and Big Stone II Final Report on the Social and Economic Assessment, 2005) These findings, compiled in 2005, are repeated in the following table. The number of motel beds has been adjusted to reflect the construction of a new lodging property near Watertown, S.D. The other seven types of housing encompass communities in Grant County and Ortonville, Minn.

**TABLE 15**

<b>AVAILABLE HOUSING INVENTORY</b>	
Motel Beds	2,335
Houses for sale	140
Houses for rent	23
Apartments for rent	140
Mobile Homes for Sale	10
Mobile Homes for rent	18
Mobile Home Pads for rent	119
RV Pads for rent	83

Peak employment is projected to involve up to 1,500 workers. Since most of the workers are expected to be imported to the area on a temporary basis, it is clear that the stock of available houses, apartments and mobile homes in Grant County is inadequate. The data in the preceding table does not take into account the undetermined number of housing units that are being constructed or rehabilitated by the private sector in preparation of construction activity. Regardless of this number, it is apparent that workers will depend heavily on motels for lodging accommodations during peak construction activity. It is also likely that apartments or other rental housing will be utilized within other nearby towns and cities.

For a variety of reasons workforce members, in general, prefer a short distance between job location and residence. This suggests that adverse rental impacts will be more pronounced in the nearby communities of Big Stone City, Milbank, and Ortonville compared to more distant cities and towns. The location advantage for these communities assures that existing rentals will be heavily demanded.

From the standpoint of the local market, impacts on rents will be reduced *if* housing for workers is dispersed from these three communities as much as possible and if a substantial number of workers utilize area motel accommodations.

There are several policies that can be effective in reducing the negative impact on rental rates in the immediate area of Big Stone II. One obvious strategy would involve building temporary living quarters for workers at or near the job site, but there are other policies that would be much more cost effective and also distribute economic benefit over a wide region.

All such policies should be directed in providing incentives for the utilization of residential units in communities *other than* Milbank, Big Stone City and Ortonville or encouraging the utilization of motels within a 60-mile radius of the job site. Some strategies that could be considered individually or in combination include:

- The public utility companies or the general contractor could sponsor bus transportation for workers from major communities such as Watertown, S.D. to the job site. This policy would mitigate the otherwise added cost of transportation to and from work for those living in more distant communities.
- The companies could negotiate agreements with motels guaranteeing a minimum quantity and price of lodging rooms throughout the region. Any such agreements could be tailored to the variation in worker numbers over the project duration. These agreements would presumably be negotiated with consideration given to geographic dispersion and to available capacity throughout annual cycles.

- As an incentive to workers, a wage adjustment could be afforded to workers who acquire housing in more distant communities to compensate them for commuting time and costs.

Each of these strategies and perhaps others would provide incentives for workers to acquire housing in a more orderly fashion in the region, thereby reducing negative impacts that would otherwise be experienced in the communities lying closest to the project.

### **Section Summary**

Housing is unique among all business sectors in the sense that housing supply changes slowly over time because industry decisions must be evaluated over the life of the investment. Because of this, short-term changes in the demand for housing are largely reflected in higher housing rents rather than expanded housing capacity. Although positive revenue impacts accrue to landlords, negative impacts occur to existing renters who must now compete for local rental housing through higher rent costs.

It is possible to reduce this negative impact by employing policies that *insulate* the local rental housing market as much as possible from temporary construction workers. These policies need to maximize the utilization of hotel and motel lodging for workers within reasonable driving distance of the work site and to provide effective economic incentives for workers to rent housing units in more distant communities.