

## 8.1 SOCIOECONOMIC IMPACT

**WAC 463-42-535 Socioeconomic impact.** *The applicant shall submit a detailed socioeconomic impact study which identifies primary and secondary as well as negative impacts on the socioeconomic environment with particular attention and analysis of impact on population, work forces, property values, housing, traffic, health and safety facilities and services, education facilities and services, and local economy.*

### 8.1.1 Introduction

This section presents an analysis of existing socioeconomic conditions in Kittitas County, and potential impacts associated with construction and operation of the Kittitas Valley Wind Energy Project (Project). Impacts addressed include population, housing, employment, income, property values, County revenues, community cohesion, and environmental justice.

The evaluation of impacts to employment, income, property values, and County revenues is based on a recent study titled “Economic Impacts of Wind Power in Kittitas County”, prepared for the Phoenix Economic Development Group by ECONorthwest in November 2002 (Exhibit 23). That report addresses two prospective wind energy projects in Kittitas County; thus, the results from that study were adjusted to apply to this Project only. Throughout this document that study is referred to as the “Phoenix Study”.

### 8.1.2 Existing Conditions

#### 8.1.2.1 Housing

Table 8.1.2-1 displays the estimated number of housing units for Kittitas County and for the State of Washington. From 1990 to 2000, housing in the County grew at an average annual rate that was slightly greater than that of the State. Kittitas County’s average annual growth rate was 2.2 percent, and the number of housing units increased from 13,215 in 1990 to an estimated 16,475 in 2000.

Location	Housing Units		% Average Annual Growth	Number of Vacant Units, 2000	
	1990	2000	1990-2000	Total Vacant Units	Seasonal, Recreational, or Occasional Use
Kittitas County	13,215	16,475	2.2%	3,093	1,791
State of Washington	2,032,378	2,451,075	1.9%	179,677	55,832

Source: U.S. Census Bureau, 2002.

According to the 2000 Census, the County has 3,093 vacant housing units. Of the total vacant units, 1,791 were classified as seasonal, recreational, or occasional use. The occasional use units represent approximately 10.9 percent of the total units in the county. These units are generally lake or hunting cabins, quarters for seasonal workers, or time-share units. Nearly 59,000 of the

state's total housing units, or 2.7 percent, were designated as seasonal, recreational, or occasional use units. The higher percentage of occasional use units in the County is attributed to the recreational areas located in the Cascades and other areas of the county.

Of the total units available for rent in the County, the U.S. Census reported a vacancy rate of 6.8 percent for Kittitas County. This vacancy rate is consistent with the vacancy rate reported by the Washington Center for Real Estate Research, which reported an apartment vacancy rate range of as high as 7.0 percent in September 2001 to a low of 3.9 percent in March of 2002. The higher vacancy rate experienced in September could possibly be explained by the fact that Central Washington University's academic year generally begins at the end of September. By comparison, the U.S. Census Bureau reported that the State had a rental vacancy rate of 5.8 percent.

The estimated number of persons per household in the County was 2.3 in 2000, which is less than the State's average of approximately 2.5 persons per household.

### 8.1.2.2 Population

Population estimates for Kittitas County and Washington State are presented in Table 8.1.2-2. In 2000, the population of Kittitas County was 33,362. Since 1990, the County population has increased at an annual rate of 2.2 percent. During the same period, the State's population increased at an annual rate of 1.9 percent.

Washington's Office of Financial Management (OFM) currently projects that County population will continue to grow through the year 2020; however, the rate of growth is projected to slow to approximately 1.1 percent annually. During the same period, the State's population is forecast to grow at an annual rate of about 1.2 percent.

Area	1990	2000	Average Annual Growth, 1990-2000	2020 Forecast	Forecast Average Annual Growth, 2000-2020
Kittitas County	26,725	33,362	2.2%	41,776	1.1%
Washington State	4,866,663	5,894,121	1.9%	7,545,269	1.2%

Source: Washington State Office of Financial Management. 2002.

As shown in Table 8.1.2-3, nearly 92 percent of the County's population is Caucasian. The State's population is 82 percent Caucasian. The study area's population has a lower percentage of persons of Hispanic origin than that of the State. Approximately 5.0 percent of the County's residents are of Hispanic origin, compared to approximately 7.5 percent for the State.

Area	White Persons	African-American	American Indian, Eskimo, or Aleutian	Asian or Pacific Islander	Other Race	Two or More Races
Kittitas County	91.8%	0.7%	0.9%	2.3%	2.3%	2.0%
Washington State	81.8%	3.2%	1.6%	5.9%	3.9%	3.6%

Source: U.S. Bureau of the Census. 2002.

### 8.1.2.3 Employment

Table 8.1.2-4 displays average employment by industry for the County and the State. In 2000, an estimated 11,822 people were employed in the County. Employment in the study area is concentrated in the government, trade, and service sectors. The government sector (including local, state and federal employees) accounts for approximately 31 percent of total employment in the study area, while trade (including wholesale and retail) and services account for 28 and 19 percent, respectively.

Approximately 2 percent of the County's employees are not placed in a particular industry. The "not elsewhere classified" designation is used for confidentiality reasons if fewer than three firms are displayed in a particular sector, or any one firm has 80 percent or more of the employment at any level of detail in a sector.

Industry	Kittitas County		State of Washington	
	Employment	Percent of Total	Employment	Percent of Total
Agricultural, Forestry and Fishing	811	6.9%	91530	3.4%
Construction and Mining	433	3.7%	152,790	5.7%
Manufacturing	683	5.8%	345,830	12.8%
TCU	432	3.7%	139,684	5.2%
Trade	3,279	27.7%	633,936	23.5%
FIRES	2,194	18.6%	880,985	32.6%
Government	3,717	31.4%	458,482	17.0%
Not Elsewhere Classified	273	2.3%	NA	NA
<b>Total</b>	<b>11,822</b>	<b>100.0%</b>	<b>2,703,237</b>	<b>100.0%</b>

Source: State of Washington Employment Security Department. 2002.

Notes:

TCU = Transportation, communication, and utilities

Trade = wholesale and retail

FIRES = Finance, insurance, real estate, and services

Recent unemployment rate trends for Kittitas County and Washington State are shown in Table 8.1.2-5. In 1996, the average unemployment rate for the County exceeded the State's rate by over

2 percentage points, 8.6 percent versus 6.5 percent. By 1999, strong economic growth had resulted in decreases in the unemployment rates for both the County and State to 5.6 percent and 4.7 percent, respectively. With the recent recession, unemployment has risen in both the County and State. The 2001 unemployment rate was 6.5 percent in Kittitas County and 6.4 percent in Washington State, and by September 2002, the unemployment rate for Washington State had risen to 7.4 percent (2002 data for Kittitas County are not yet available).

**Table 8.1.2- 5  
Unemployment Rate Trends in Kittitas County and Washington State, 1996-2001**

Area	1996	1997	1998	1999	2000	2001
Kittitas County	8.6%	6.0%	6.0%	5.6%	5.8%	6.5%
Washington State	6.5%	4.8%	4.8%	4.7%	5.2%	6.4%

Source: State of Washington Employment Security Department. 2002.

#### 8.1.2.4 Income

In 2000, the per capita income of Kittitas County residents of \$21,196 was about 68 percent of the State average of \$31,230 (Table 8.1.2-6). From 1997-2000, the County's per capita income grew at an annual rate of 3.1 percent. Over the same time period, the State's per capita income grew at an annual rate of 4.2 percent.

**Table 8.1.2-6  
Kittitas County Per Capita Income (1997-2000)**

Area	1997	1998	1999	2000	% Average Annual increase (1997-2000)	% of State Total (2000)
Kittitas County	18,781	19,738	20,164	21,196	3.1%	67.9%
State of Washington	26,469	28,285	29,819	31,230	4.2%	

Source: Bureau of Economic Analysis. 2002.

The poverty rate for the County in 1999 was approximately 19.6 percent, which exceeded the State average of 10.6 percent.

#### 8.1.2.5 Local Government Revenue Sources

According to the Washington State Department of Revenue, Kittitas County had an assessed value of approximately \$2.2 billion in 2001. The 2001 average consolidated tax per thousand dollars of assessed value for the County was about \$10.67. Revenues from property taxes are used to fund Kittitas County government, local school districts, local fire departments, libraries, and emergency medical services. These property tax revenues are also a major source of revenue for the local governments. Incorporated into the consolidated tax levy are local levies collected by the County Assessor and returned to the local jurisdictions as general fund revenues.

#### 8.1.2.6 Sales and Other Tax Revenue

Recent trends in taxable retail sales in Kittitas County and Washington State are compared in Table 8.1.2-7. In 2001, retail sales in the County totaled approximately \$388 million. From 1998 to 2001, retail sales in the County increased at an average annual rate of 1.5 percent. Over the

same period, sales statewide increased at an annual rate of 3.4 percent. Both the County and the State experienced a decline in taxable retail sales from 2000 to 2001. This decrease in retail sales is likely attributed to the overall slowdown in the regional and national economies.

<b>Area</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>Avg. Annual % Change 1998-2001</b>
Kittitas County	365,318	367,900	392,536	387,724	1.5%
Washington State	73,865,218	79,683,553	84,747,510	84,356,940	3.4%

Source: Washington State Department of Revenue. 2002.

### **8.1.2.7 General Fund Revenues**

In 2001, the Kittitas County general fund had revenues of about \$11 million. As shown in Table 8.1.2-8, approximately 38 percent of the revenue is expected to come from taxes. Other sources of revenue include licenses and permits, fines and forfeits, and intergovernmental transfers. Real and personal property taxes are forecast to be the largest contributors to revenues. Property taxes, which account for about 28 percent of total revenues, generated about \$3.1 million in revenues. Sales and use taxes are expected to total approximately \$2 million in 2001, providing approximately 18 percent of total revenues for the general fund.

<b>Resources</b>	<b>2001</b>	<b>Percent of Total Resources</b>
General Property Tax	\$3,113,040	28.0%
Sales and Use Tax	\$2,010,140	18.1%
Other Local Taxes	\$241,668	2.2%
Licenses and Permits	\$593,398	5.3%
Charges and Fees for Service	\$823,701	7.4%
Interest on Investments	\$596,142	5.4%
Fines and Forfeits	\$1,387,397	12.5%
Miscellaneous	\$208,728	1.9%
Intergovernmental Revenues	\$2,131,520	19.2%
<b>Total Resources</b>	<b>\$11,105,734</b>	<b>100.0%</b>

Source: Washington State Auditor, Local Government Financial Reporting System

## **8.1.3 Impacts**

### **8.1.3.1 Population and Housing**

The Project is not expected to result in a substantial increase of population in the county; the Project is expected to require 16 to 18 total workers during operations, and some of them may be persons already residing in Kittitas County. Less than 15 additional workers are projected from additional spending (multiplier effects) in the County.

During major construction projects, there is always a chance that an influx of temporary workers requiring overnight accommodations will outstrip the supply of temporary housing. During construction, the Project would require up to 160 workers during a four-month period when construction activity is at its peak, and up to 90 workers for a couple of months on each end of the peak. Many of these workers would not require overnight lodging as construction crews could come from the local area, or may commute from the Yakima metropolitan area (within a one-hour drive), or the Seattle-Tacoma metropolitan area (a one and one-half to two hour drive).

For those workers that would require overnight lodging, the results of a recent telephone survey conducted by the Applicant of hotel, motel, RV Park, and campgrounds in Kittitas County indicates that there are 1,150 rooms or sites available in the county. The results indicate further that during the peak summer season, there are typically about 240 rooms or sites vacant at any one time. During the non-summer months, vacancy rates are much higher and it is estimated that there are usually around 760 rooms or sites vacant at any one time. As discussed above, there are also more than 1,000 vacant, non-seasonal housing units in Kittitas County. There are also many overnight lodging opportunities in the greater Yakima area, which had a population of 224,500 in 2000, which are within a one-hour drive of the Project. Thus, there appears to be an adequate supply of temporary housing available to accommodate non-local workers.

### **8.1.3.2 Employment and Income**

Construction of the Project would result in increased employment and spending in Kittitas County. As mentioned above, the extent of those impacts are based on the analysis included in the Phoenix Study, adjusted to apply to this Project. The extent of the impacts is estimated using an input-output (I-O) model of Kittitas County. Input-output analysis is a commonly used technique that examines the relationships within a local economy between businesses and between businesses and their customers. I-O analysis includes a model of transactions in the local economy that allows an analyst to track how a change in final demand ripples through the economy in the form of direct, indirect, and induced spending.

In the I-O framework, a project or action that results in new spending for final demand, or a reduction in existing spending, is called a direct effect. The businesses that make the final sales must in turn purchase goods and services from other businesses. These indirect purchases are called indirect effects, which continue until leakages from the region in the form of imports, wages, or profits to persons outside the region end the cycle. Finally, workers at the producing businesses spend their wages in the local economy and purchase additional goods and services. These purchases are referred to as induced effects. The total economic impact of an action is the sum of the direct, indirect, and induced effects. I-O models generate multipliers that can be applied to direct purchases to represent the total direct, indirect, and induced effect of an action to different sectors of the economy.

During the construction phase, the economic impacts are estimated based on the following assumptions about Project construction that were provided by the applicant:

- 40 full and part time *local* construction jobs (for workers from Kittitas County) including construction management;
- \$2,708,000 in local spending on construction materials such as gravel and concrete;
- \$375,000 in spending on food and lodging by non-local labor in Kittitas County.

The construction impacts are expected to occur over approximately a one-year period. The direct, indirect, and induced economic impacts during construction are shown in Table 8.1.3-1 for total income and jobs. Total income consists of personal income in the form of wages, profits and other income received by workers and business owners, plus income from other sources such as royalty payments to land owners who lease land for the turbines. Jobs are the number of full and part time jobs expected to result from the Project and from the increase in spending in other sectors of the economy. As shown, the construction phase of the Project is projected to result in \$5.3 million in total income and 78 jobs in Kittitas County.

Landowner Royalty Income

The operation of the Project will generate revenues for landowners with Project facilities on their land. It is estimated that the Project will generate an approximate long-term average of approximately \$600,000 annually in land owner royalties or approximately \$11,000,000 over the 20 year life of the Project. As a participating landowner, the Washington Department of Natural Resources (DNR) with approximately one quarter of the wind turbines on its land will collect an annual income of approximately \$ 150,000, or \$3,000,000 over a 20 year period.

<b>Table 8.1.3-1 Economic Impacts in Kittitas County During Project Construction (2002\$)</b>		
<b>Impact Type</b>	<b>Total Income</b>	<b>Jobs</b>
Direct	\$4,161,000	40
Indirect	\$471,000	13
Induced	\$638,000	25
<b>Total</b>	<b>\$5,270,000</b>	<b>78</b>

Source: ECONorthwest, *Economic Impacts of Wind Power in Kittitas County*. For the Phoenix Economic Development Group. October 2002. Modified for the Kittitas Valley Wind Power Project by CH2M HILL, November 2002.

**8.1.3.3 Operations**

During operations, it is estimated that 9 local workers from Kittitas County would be employed to operate and manage the wind plant. There would also be spending on equipment and other materials that would be necessary to operate and maintain the wind turbines. The Phoenix Study conservatively estimated that \$544,000 per year in income would be received by property owners that lease land for the wind turbines. The annual direct, indirect, and induced income and jobs created by the Project during operations are shown in Table 8.1.3-2. As shown, the Project is projected to result in an estimated \$1.8 million per year in added income and 23 additional jobs in Kittitas County.

<b>Impact Type</b>	<b>Total Income</b>	<b>Jobs<sup>a</sup></b>
Direct	\$1,354,000	9
Indirect	\$54,000	1
Induced	\$397,000	12
<b>Total</b>	<b>\$1,805,000</b>	<b>23</b>

<sup>a</sup>Total may not add because of rounding.

Source: ECONorthwest, *Economic Impacts of Wind Power in Kittitas County*. For the Phoenix Economic Development Group. October 2002. Modified for the Kittitas Valley Wind Power Project by CH2M HILL, November 2002.

### **8.1.3.4 Property Values**

Concerns have been expressed that wind energy projects can have a negative effect on property values by detracting from the views experienced by other property owners. The Phoenix Study includes the results of interviews with tax assessors in counties throughout the U.S. that have wind energy projects in place, and includes the results of a literature review of academic journals into this matter. For comparison purposes, the study also reported on studies that have been done about the impacts of electric transmission lines on property values.

The assessor's survey covered 22 projects in 13 counties. Of those 13 counties, six had residential properties with views of a wind farm, six had no residential properties with views of a wind farm, and one reported that the wind project was too new to assess any property value impact. All six of the counties with residential views of wind projects reported that the turbines have not altered the value of those properties. Of the six counties with no residential views, five reported that there was no impact on property values, while a sixth (Kern County, California) reported that land parcels with turbines on them have increased in value in response to changing the land from a grazing zone to a "wind-energy" zone.

The results of the literature review found only one study that specifically addressed the impact of wind turbines on property values. The study investigated impacts to residential properties in Denmark. The results were based on a small sample of homes, and were not significant statistically.

Because of the paucity of available literature on potential property value impacts of wind energy projects, the Phoenix Study also reported on the published literature about the impact of transmission lines on property values. Unlike wind farms, which some people find attractive, transmission lines are almost universally perceived as unattractive. Thus, the impacts of transmission lines may give an indication of the maximum possible impact that could be experienced by a wind energy project if such a negative impact exists. The results of the literature about the impact of transmission lines on property values can be summarized that their effect on property values is at most about a 10 percent reduction in value, and those impacts are short-lived i.e., the effects diminish over time.

These findings indicate that the Project is not likely to result in a negative impact to property values.

### 8.1.3.5 County Revenues

The Project would result in a substantial increase in annual property tax revenue to the County. Based on an estimate of \$750,000 per turbine and the 1.35 percent property tax rate in Kittitas County, it is estimated that the Project would result directly in an increase of \$1,136,000 in property tax revenue to Kittitas County. In addition, development of this Project would result in increasing the value of other properties because of the increase in wages and overall economic activity in Kittitas County. The Phoenix Study estimated that this secondary effect would result in an additional \$85,000 in property taxes annually in the County. Thus it is estimated that Kittitas County would receive an estimated total of \$1,221,000 in added property tax revenue each year from the Project.

Assuming that revenue would be distributed consistent with the spending patterns in the County's 2002 budget, the added revenue would be distributed as shown in Table 8.1.3-3. As shown, the largest beneficiaries of the added revenue would be local and state schools, followed by county government, county roads, local communities, and hospitals and other local services.

<b>Spending Category</b>	<b>Amount</b>
Local schools	\$370,000
State schools	\$342,000
Fire districts	\$73,000
Local communities	\$102,000
County roads	\$123,000
County government	\$153,000
Hospitals and other local services	\$58,000
<b>Total</b>	<b>\$1,221,000</b>

Source: ECONorthwest, *Economic Impacts of Wind Power in Kittitas County*. For the Phoenix Economic Development Group. October 2002. Modified for the Kittitas Valley Wind Power Project by CH2M HILL, November 2002.

It is possible that the effect of the added tax base would be to reduce other taxes and the increase in tax revenue would be less than shown. Initiative I-747 recently passed in Washington State. This initiative limits total property tax revenue increases to one percent per year. The Phoenix Study conservatively estimated that \$500,000 of the value of a wind turbine would be assessed as personal property, thus the installation of 110 windmills would increase the total property value of the County by \$55 million, which is a 2.3 percent increase. Because this is greater than the one percent increase limit imposed by I-747, it is possible that other taxes would need to decline to remain under the one percent limitation. Regardless of whether the new turbines would result in an increase in property tax revenue or enable a reduction in other taxes, it is clear that the Project would bring substantial property tax benefits to Kittitas County.

There would be other fiscal benefits that Kittitas County would receive from the Project such as increased sales and use taxes, license and permit fees, and charges for services. Based on an analysis presented in the Phoenix Study, the additional tax revenues shown in Table 8.1.3-4 are projected to be received by the County. In addition to \$276,000 in property taxes for county government and roads, the County would receive \$17,000 in other sources, which represents about a 0.2 percent annual increase.

**Table 8.1.3-4  
Additional Kittitas County Government Tax Revenues**

<b>Spending Category</b>	<b>Amount</b>
Property taxes – county government and roads	\$277,000
Sales and use taxes	\$3,000
All other taxes	\$1,000
Licenses and permits	\$1,000
Charges for services	\$4,000
Fines and forfeits	\$1,000
State collected taxes distributed to County	\$7,000
<b>Total</b>	<b>\$294,000</b>

Source: ECONorthwest, *Economic Impacts of Wind Power in Kittitas County*. For the Phoenix Economic Development Group. October 2002. Modified for the Kittitas Valley Wind Power Project by CH2M HILL, November 2002.

### **8.1.4 Summary of Socioeconomic Impacts**

This analysis of the socioeconomic impacts of the Project results in the following conclusions:

- No impacts are expected to population, housing, property values, community cohesion, or environmental justice;
- During construction, the Project is expected to add 78 jobs and \$5.3 million in income to the local economy. During operations the Project is expected to add 22 jobs and \$1.8 million per year in income to the local economy;
- It is estimated that the Project would result in \$1.2 million in added property tax revenue to taxing districts in the County, plus a small amount of additional revenues from sales taxes and other fees. Because of the recently passed Initiative 747, which limits total property tax increases in Washington State, it is possible that this benefit would be received in the form of lower taxes for other property owners rather than an increase in tax revenues.
- It is estimated that the Project will contribute an average of approximately \$600,000 annually in landowner royalties to local landowners including Washington DNR, which would receive an annual income royalty of approximately \$150,000. The DNR income contributes to the benefit of the state school fund.