
8.1

Socioeconomic Impact (WAC 463-42-535)

WAC 463-42-535 HUMAN ENVIRONMENT — SOCIOECONOMIC IMPACT.

The applicant shall submit a detailed socioeconomic impact study which identifies primary and secondary and positive 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.

[Statutory Authority: RCW 80.50.040(1) and chapter 80.50 RCW. 81-21-006 (Order 81-5), §463-42-535, filed 10/8/81. Formerly WAC 463-42-620.]

8.1 SOCIOECONOMIC IMPACT (WAC 463-42-535)

8.1.1 EXISTING CONDITIONS

Phase II of the Satsop Combustion Turbine (CT) Project would affect the local socioeconomic environment due to impacts to population, work forces, property values, housing, and the economy. An analysis of traffic impacts attributable to the project is presented in Section 5.2 - Transportation, WAC 463-42-372. Analyses of potential impacts to health and safety, and educational facilities and services, attributable to the project are contained in Section 5.3 - Public Services and Utilities, WAC 463-42-382.

8.1.1.1 Population

Demographic Characteristics

The proposed project site is located in Grays Harbor and Thurston counties in western Washington. In April 2000, the combined population of the two counties was approximately 274,500 individuals, or 4.7 percent of the statewide population of approximately 5.9 million. Table 8.1-1 shows the population distribution in Grays Harbor and Thurston counties' communities, including both incorporated cities and unincorporated area, and in Washington state.

Approximately 62 percent of the Grays Harbor County population lives in incorporated cities, while 45 percent of Thurston County's population lives in incorporated cities. Thurston County's population is more than three times the population of Grays Harbor County. Approximately 40 percent of the population of each of the two counties resides in the counties' respective central population areas, Olympia/Lacey/Tumwater in Thurston County, and Aberdeen/Hoquiam/Cosmopolis in Grays Harbor County (Table 8.1-1; WSOFM 2001a).

The ratios of working-age persons (age 15 to 64) to younger and older residents in Grays Harbor and Thurston counties affect both the supply of labor and the level and distribution of income. Sixty-one percent of the population in Grays Harbor County is of working age, while Thurston County's population is 63 percent working age (Table 8.1-2; WSOFM 2001a). The Washington state population, in comparison, is 67 percent working age. Thurston County has a higher percentage of residents over 65 when compared to the state and Grays Harbor County, and Grays Harbor County has more residents under the age of 14 when compared to the two other areas. Rural counties such as Grays Harbor County tend to have a lower percentage of working age residents compared to residents over 65 due to (1) less in-migration of younger working-age residents (new entrants to the labor force), and (2) the increasing life-span of the general population. Rural communities also often experience an influx of retired persons seeking lower cost housing in a more rural setting.

**TABLE 8.1-1
POPULATION DISTRIBUTION IN THE PROJECT VICINITY**

| Jurisdiction | Population, April 2000 |
|---------------------|-------------------------------|
| Grays Harbor County | 67,194 |
| Unincorporated | 25,578 |
| Incorporated | 41,616 |
| Aberdeen | 16,461 |
| Cosmopolis | 1,595 |
| Elma | 3,049 |
| Hoquiam | 9,097 |
| McCleary | 1,454 |
| Montesano | 3,312 |
| Oakville | 675 |
| Ocean Shores | 3,836 |
| Westport | 2,137 |
| Thurston County | 207,355 |
| Unincorporated | 114,061 |
| Incorporated | 93,294 |
| Bucoda | 628 |
| Lacey | 31,226 |
| Olympia | 42,514 |
| Rainier | 1,492 |
| Tenino | 1,447 |
| Tumwater | 12,698 |
| Yelm | 3,289 |
| Washington State | 5,894,121 |
| Unincorporated | 2,379,012 |
| Incorporated | 3,515,109 |

Source: WSOFM 2001a

**TABLE 8.1-2
POPULATION AGE DISTRIBUTION IN THE PROJECT VICINITY, 2000**

| Jurisdiction | Age 14 and Under | | Age 15 to 64 | | Age 65 and Over | |
|---------------------|-------------------------|----------------|---------------------|----------------|------------------------|----------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Grays Harbor County | 4,657 | 28 | 10,064 | 61 | 1,707 | 10 |
| Thurston County | 4,278 | 21 | 12,918 | 63 | 3,355 | 16 |
| Washington State | 1,255,051 | 21 | 3,976,922 | 67 | 662,148 | 11 |

Source: WSOFM 2001a

In 2000, Grays Harbor County had slightly more males than females, while the opposite was true for Thurston County and for Washington state as a whole (Table 8.1-3; WSOFM 2001a). Both counties' populations were predominantly white, with 88 and 86 percent white residents, respectively. Compared to state percentages, the two-county area has more white residents and

slightly fewer Hispanic/Latino residents. The second-most common races are American Indian/Alaska Native in Grays Harbor County (5 percent of population) and Asian in Thurston County (4 percent of population)¹ (Table 8.1-3; WSOFM 2001a).

**TABLE 8.1-3
RACE AND SEX COMPOSITION OF AREAS IN THE PROJECT VICINITY**

| Category | Grays Harbor County | | Thurston County | | Washington State | |
|---|---------------------|------------|-----------------|------------|------------------|------------|
| | Number | Percent | Number | Percent | Number | Percent |
| Male | 33,390 | 51.1 | 101,543 | 47.7 | 2,934,300 | 49.8 |
| Female | 33,804 | 48.9 | 105,812 | 52.3 | 2,959,821 | 50.2 |
| One Race Only: | | | | | | |
| White | 59,335 | 88.3 | 177,617 | 85.7 | 4,821,823 | 81.8 |
| Black or African American | 226 | 0.3 | 4,881 | 2.4 | 190,267 | 3.2 |
| American Indian and Alaska Native | 3,132 | 4.7 | 3,143 | 1.5 | 93,301 | 1.6 |
| Asian | 818 | 1.2 | 9,145 | 4.4 | 322,335 | 5.5 |
| Native Hawaiian, Other Pacific Islander | 73 | 0.1 | 1,078 | 0.5 | 23,953 | 0.4 |
| Some other race | 1,527 | 2.3 | 3,506 | 1.7 | 228,923 | 3.9 |
| Two or more races | 2,083 | 3.1 | 7,985 | 3.9 | 213,519 | 3.6 |
| Hispanic or Latino (of any race) | 3,258 | 4.8 | 9,392 | 4.5 | 441,509 | 7.5 |
| Total Population | 67,194 | 100 | 207,355 | 100 | 5,894,121 | 100 |

Source: WSOFM 2001a

Growth Trends

On average, Washington state's population growth rate was 1.8 percent per year between 1960 and 2000, slightly higher in the 1970s and 1990s than in the 1960s and 1980s. On average, Grays Harbor County grew slower (0.7 percent annually) and Thurston County grew faster (3.5 percent annually) than the state during the same 40-year period (Table 8.1-4; WSOFM 2001b).

¹ The Hispanic/Latino category is not included in this count because Hispanic/Latino is an ethnicity and can include all races.

**TABLE 8.1-4
POPULATION GROWTH TRENDS AND PROJECTIONS
FOR THE PROJECT AREA VICINITY**

| Year | Grays Harbor County | Thurston County | Washington State |
|---------------------------|----------------------------|------------------------|-------------------------|
| 1960 | 54,465 | 55,049 | 2,853,214 |
| 1970 | 59,553 | 76,894 | 3,413,250 |
| 1980 | 66,314 | 124,264 | 4,132,353 |
| 1990 | 64,175 | 161,238 | 4,866,692 |
| 2000 | 71,848 | 214,767 | 5,849,891 |
| 1960 – 2000 Number Change | 17,383 | 159,718 | 2,996,677 |
| 1960 – 2000 AARG | 0.7% | 3.5% | 1.8% |
| 1990 – 2000 Number Change | 7,673 | 53,529 | 983,199 |
| 1990 – 2000 AARG | 1.1% | 2.9% | 1.9% |
| 2010 Forecast | 76,821 | 267,988 | 6,693,329 |
| 2000 – 2010 Number Change | 4,973 | 53,221 | 843,438 |
| 2000 – 2010 AARG | 0.7% | 2.2% | 1.4% |
| 2020 Forecast | 86,309 | 324,911 | 7,610,090 |
| 2010 – 2020 Number Change | 9,488 | 56,923 | 916,761 |
| 2010 – 2020 AARG | 1.2% | 1.9% | 1.3% |

AARG = Annual Average Rate of Growth

Source: WSOFM 2001b

The Thurston County population has grown consistently since 1960, with average annual growth rates over 2.5 percent during each decade between 1960 and 2000, and a current (2000) population that has doubled since 1960. In particular, average annual growth rates in the 1960s and 1970s were 3.4 percent and 4.9 percent, respectively. Between 1990 and 2000, Thurston County's average annual population growth rate was more than double that of Grays Harbor County, and was 1 percentage point higher than the state's rate. Historically, Thurston County's population has consistently grown faster than Grays Harbor County, due to the location of the capital city of Olympia in Thurston County and the accompanying high government employment and supporting economic activity. In contrast, Grays Harbor County has experienced relatively slow growth in general, and in fact experienced a population decline in the 1980s, due in part to a timber industry downturn and related economic slowing.

Washington state is expected to grow by approximately 14 percent (843,450 individuals), or 1.4 percent annually between 2000 and 2010. During the same period, Grays Harbor County and Thurston County are expected to grow at annual rates of 0.7 percent and 2.2 percent respectively, which is generally consistent with prior years.

During the decade 2010 to 2020, the state is again expected to grow by an additional 14 percent (916,800 individuals), or 1.3 percent per year. The Thurston County population growth rate is expected to have slowed from the prior decade, while the Grays Harbor County rate is expected

to have risen (Table 8.1-4; WSOFM 2001b). The two counties' growth rates are expected to approach one another after decades of substantial difference.

8.1.1.2 Housing

In 2000, Grays Harbor County had over 32,000 housing units (1.3 percent of the state of Washington's housing units) and Thurston County had over 86,000 housing units (3.5 percent of Washington's housing units). Housing availability in the incorporated cities could be lower than the stated percentages, since higher housing demand generally exists within incorporated areas when compared to the counties overall. The vacancy rate in Grays Harbor County (17 percent) was 10 percentage points higher than the state's rate (7 percent), indicating more availability, while the vacancy rate in Thurston County (6 percent) was slightly lower than the rate for Washington state (Table 8.1-5; WSOFM 2001b). However, vacancy rates of over 5 percent are considered to generally indicate a relatively relaxed real estate market. An analysis of existing housing stock based on age and value was not performed because the project is not expected to have a significant impact on housing in the project area (see Subsection 8.1.2 for further discussion). Housing unit trends will likely follow future population trends in the two counties.

**TABLE 8.1-5
HOUSING CHARACTERISTICS IN THE PROJECT VICINITY, 2000**

| Jurisdiction | Total Housing Units | Total Occupied Units | Vacancy Rates | Owner Occupied | Renter Occupied | Average Household Size |
|---------------------|----------------------------|-----------------------------|----------------------|-----------------------|------------------------|-------------------------------|
| Grays Harbor County | 32,489 | 26,808 | 17% | 18,495 | 8,313 | 2.48 |
| Thurston County | 86,652 | 81,625 | 6% | 54,371 | 27,254 | 2.50 |
| Washington State | 2,451,075 | 2,271,398 | 7% | 1,467,009 | 804,389 | 2.53 |

8.1.1.3 Source: WSOFM 2001a Employment and Income

Employment and income in Grays Harbor and Thurston counties indicate the health, character, and direction of the local economy, and to an extent, are a determining factor in the welfare and quality of life of area residents.

In 1999, the median household income in Grays Harbor County (\$29,259) was approximately 61 percent of Washington state's median household income (\$48,289). The same measure for Thurston County (\$43,475) was 90 percent of that of Washington state. Similarly, the per capita income in 1999 in Grays Harbor County (\$21,004) and in Thurston County (\$25,760) were 69 percent and 85 percent of Washington state's per capita income (\$30,380), respectively (Table 8.1-6; WSOFM 2001c; WSESD 2001a). Lower incomes in Grays Harbor County are consistent with the County's percentage of persons below poverty level in 1989 (16.4 percent) that was over 4 percentage points higher than the state's percentage (10.9 percent). Thurston County's percentage of persons below poverty level in 1999 (10.1 percent) was slightly below that of the state.

**TABLE 8.1-6
PROJECT AREA INCOME AND LABOR FORCE INDICATORS**

| Economic Indicator | Grays Harbor County | Thurston County | Washington State |
|--|------------------------|--------------------|---------------------|
| Median Household Income, 1999 ¹ | \$29,259 | \$43,475 | \$48,289 |
| Per Capita Income, 1999 ² | \$21,004 | \$25,760 | \$30,380 |
| Persons Below Poverty Level, 1989 ³ | 10,306 | 15,907 | 517,933 |
| Percent Below Poverty Level, 1989 ³ | 16.4% | 10.1% | 10.9% |
| Total Civilian Labor Force, 2000 ² | 25,580 | 99,200 | 3,045,000 |
| Male Percentage of Civilian Labor Force, 1990 ³ | 58.5% | 52.3% | 55.0% |
| Female Percentage of Civilian Labor Force, 1990 ³ | 41.5% | 47.7% | 45.0% |
| Overall Unemployment Rate (Age 16 and over), 2000 ² | 9.9% | 5.0% | 5.2% |
| Unemployment Rate, Males Age 16 and Over, 1990 ³ | 9.8% | 7.4% | 5.7% |
| Unemployment Rate, Females Age 16 and Over, 1990 ³ | 8.7% | 6.3% | 5.8% |

¹ Source: WSOFM 2001c

² Source: WSESD 2001a

³ Source: United States Census Bureau 2001. Note that 2000 census data for persons below poverty level were not available in September 2001.

Females comprised a lower percentage of the civilian labor force in 1990 in Grays Harbor County (41.5 percent) when compared to Thurston County (47.4 percent) and Washington state (45.0 percent). In 2000, the total civilian labor forces in Grays Harbor County (25,580) and in Thurston County (99,200) were less than 1 percent and 3 percent of the Washington state civilian labor force, respectively. The unemployment rates in 2000 for Grays Harbor County, Thurston County, and Washington state were 9.9 percent, 5.0 percent, and 5.2 percent, respectively; Thurston County and Washington state's rates are similar while Grays Harbor County's rate is slightly higher, consistent with other economic conditions discussed in this section (Table 8.1-6; WSESD 2001a).

In 2000, non-agricultural employment was 23,840 in Grays Harbor County and 84,700 in Thurston County (WSESD 2001a). In 1998, Grays Harbor County's employment was highest in government (21.3 percent of total employment), services (21.2 percent of total employment), retail trade (20.4 percent of total employment), and manufacturing (19.8 percent of total employment). Wages were relatively higher in the manufacturing and government sectors, representing 29.3 percent and 23.6 percent of total wages paid, respectively (Table 8.1-7; WSOFM 2001d).

**TABLE 8.1-7
1998 AVERAGE MONTHLY EMPLOYMENT AND TOTAL WAGES
GRAYS HARBOR COUNTY**

| Industry | Average Number of Employees | Percent of Total | Wages Paid (\$1,000s) | Percent of Total |
|--|------------------------------------|-------------------------|------------------------------|-------------------------|
| Agriculture, Forestry, Fishing | (a) | (a) | (a) | (a) |
| Mining | (a) | (a) | (a) | (a) |
| Construction | 1,042 | 4.5 | 30,083 | 5.34 |
| Manufacturing | 4,567 | 19.8 | 164,834 | 29.26 |
| Transportation, Communication, Utilities | 857 | 3.7 | 26,500 | 4.7 |
| Wholesale Trade | 561 | 2.4 | 15,682 | 2.78 |
| Retail Trade | 4,717 | 20.4 | 65,565 | 11.64 |
| Finance, Insurance, Real Estate | 951 | 4.1 | 20,784 | 3.69 |
| Services | 4,909 | 21.2 | 94,256 | 16.73 |
| Government (Federal, State, Local) | 4,912 | 21.3 | 132,932 | 23.59 |
| Other Industries | 598 | 2.6 | 12,771 | 2.27 |
| Total | 23,114 | 100 | 563,405 | 100 |

(a) = data suppressed for confidentiality. The sum of the (a) entries equals the entry for "Other."
Source: WSOFM 2001d

In 1998, most employment in Thurston County was in government (39.7 percent), due to the state capital's location in the city of Olympia; services (22.3 percent); and retail trade (17.4 percent). Government employees earned almost one-half (49.4 percent) of the total wages earned in the County (Table 8.1-8; WSOFM 2001d).

**TABLE 8.1-8
1998 AVERAGE MONTHLY EMPLOYMENT
AND TOTAL WAGES THURSTON COUNTY**

| Industry | Average Number of Employees | Percent of Total Employees | Wages Paid (\$1,000s) | Percent of Total Wages Paid |
|---|------------------------------------|-----------------------------------|------------------------------|------------------------------------|
| Agriculture, Forestry, Fishing | 1,938 | 2.5 | 34,320 | 1.59 |
| Mining | 76 | 0.1 | 2,180 | 0.1 |
| Construction | 3,184 | 4.0 | 81,103 | 3.77 |
| Manufacturing | 4,250 | 5.4 | 133,951 | 6.22 |
| Transportation, Communication, Public Utilities | 1,908 | 2.4 | 60,783 | 2.82 |
| Wholesale Trade | 2,092 | 2.7 | 65,555 | 3.04 |
| Retail Trade | 13,744 | 17.4 | 210,738 | 9.79 |
| Finance, Insurance, Real Estate | 2,817 | 3.6 | 79,527 | 3.69 |
| Services | 17,560 | 22.3 | 421,996 | 19.6 |
| Government (Federal, State, Local) | 31,280 | 39.7 | 1,062,859 | 49.37 |
| Other Industries (a) | 0 | 0 | 0 | 0 |
| Total | 78,849 | 100 | 2,153,013 | 100 |

(a) = No data are suppressed, therefore all entries in the "Other Industries" category are zero.

Source: WSOFM 2001d

Although the Grays Harbor County economy has historically been dependent on manufacturing (including timber), services and trade, local economic growth has slowed in recent years, likely due to environmental pressure to reduce logging operations in the Olympic National Forest. Between 1990 and 1995, four of nine industries for which employment was reported experienced a decline in employment (Table 8.1-9; WSESD 2001b).² Between 1995 and 1999, manufacturing, transportation/public utilities, retail trade, and other industries declined by 5.3 percent, 8.0 percent, 3.9 percent and 13.2 percent, respectively. Services experienced an increase during that period. Employment growth overall has not been strong during the 1990s; total Grays Harbor County employment declined from 1990 to 1995 and grew by just 0.4 percent over the period 1995 to 1999 (an average annual rate of growth of 0.1 percent).

Similar to Grays Harbor County during the period 1990 to 1995, employment in Thurston County's manufacturing and transportation/public utilities sectors decreased; however, total employment increased during this period by 15.5 percent (1.5 percent per year, on average). Between 1995 and 1999, overall employment increased by 11.3 percent, but was accompanied by decreases in agriculture, forestry and fishing; and mining. comparatively, Washington state manufacturing employment also decreased during the period 1990 to 1995, but total employment still grew by 10.6 percent. Between 1990 and 1995, Washington state employment grew by 13.0 percent with decreases in the mining sector. Thurston County grew slightly slower than the state as a whole between 1995 and 1999, while Grays Harbor County grew much slower (Table 8.1-10; WSESD 2001b).

Projections for the larger area that includes Grays Harbor, Lewis, Mason, Pacific and Thurston counties indicate future growth of 1.3 percent per year in employment by occupation between 2000 and 2008, with increases expected in 49 of 542 occupations.

8.1.2 IMPACTS

Impacts to the local socioeconomic environment attributable to the proposed project would include increased local employment and associated income, spending for local services and materials, and tax revenues. Due to the relatively short construction period of 22 months and the small size of the construction crew and operation staff, computerized economic modeling or other similar quantitative methodologies are not warranted. Instead, impacts were estimated by reviewing the components of the proposed action and comparing the impacts to existing conditions. Specific quantitative data are presented in support of the conclusions.

² Manufacturing declined by 19.1 percent; transportation/public utilities declined by 12.2 percent; services declined by 7.8 percent, and other industries declined by 6.1 percent.

**TABLE 8.1-9
GRAYS HARBOR COUNTY AVERAGE MONTHLY EMPLOYMENT GROWTH**

| Industry | 1990 | 1995 | 1990-1995 | | 1999 | 1995-1999 | |
|------------------------------------|-----------------------------|-----------------------------|---|--|-----------------------------|---|--|
| | Average Number of Employees | Average Number of Employees | Change in Number of Employees (Numerical) | Change in Number of Employees (Percentage) | Average Number of Employees | Change in Number of Employees (Numerical) | Change in Number of Employees (Percentage) |
| Agriculture, Forestry, Fishing | 573 | 626 | 53 | 9.2 | (a) | (b) | (b) |
| Mining | (a) | (a) | (b) | (b) | (a) | (b) | (b) |
| Construction | 948 | 988 | 40 | 4.2 | 1075 | 87 | 8.8 |
| Manufacturing | 5,594 | 4,528 | -1066 | -19.1 | 4286 | -242 | -5.3 |
| Transportation, Public Utilities | 951 | 835 | -116 | -12.2 | 768 | -67 | -8.0 |
| Wholesale Trade | (a) | (a) | (b) | (b) | 674 | (b) | (b) |
| Retail Trade | 4,356 | 5,036 | 680 | 15.6 | 4,839 | -197 | -3.9 |
| Finance, Insurance, Real Estate | 763 | 916 | 153 | 20.1 | 1,029 | 113 | 12. |
| Services | 5,036 | 4,643 | -393 | -7.8 | 5,023 | 380 | 8.2 |
| Government (Federal, State, Local) | 4,154 | 4,660 | 506 | 12.2 | 4,718 | 58 | 1.2 |
| Other Industries | 693 | 651 | -42 | -6.1 | 565 | -86 | -13.2 |
| Total | 23,068 | 22,883 | -185 | -0.8 | 22,977 | 94 | 0.4 |

Note: Totals do not include "not reported" items.

(a) Indicates "not reported."

(b) Not available due to unreported data.

Source: WSESD 2001b

**TABLE 8.1-10
THURSTON COUNTY AVERAGE MONTHLY EMPLOYMENT GROWTH**

| Industry | 1990 | 1995 | 1990-1995 | | 1999 | 1995-1999 | |
|------------------------------------|-----------------------------|-----------------------------|---|--|-----------------------------|---|--|
| | Average Number of Employees | Average Number of Employees | Change in Number of Employees (Numerical) | Change in Number of Employees (Percentage) | Average Number of Employees | Change in Number of Employees (Numerical) | Change in Number of Employees (Percentage) |
| Agriculture, Forestry, Fishing | 1,632 | 1,858 | 226 | 13.8% | 1,831 | -27 | -1.5% |
| Mining | 36 | 68 | 32 | 88.9% | 61 | -7 | -10.3% |
| Construction | 2,982 | 2,982 | 0 | 0.0% | 3,738 | 756 | 25.4% |
| Manufacturing | 4,241 | 4,131 | -110 | -2.6% | 4,257 | 126 | 3.1% |
| Transportation, Public Utilities | 1,720 | 1,705 | -15 | -0.9% | 2,152 | 447 | 26.2% |
| Wholesale Trade | 1,871 | 2,058 | 187 | 10.0% | 2,155 | 97 | 4.7% |
| Retail Trade | 11,330 | 13,316 | 1,986 | 17.5% | 14,520 | 1,204 | 9.0% |
| Finance, Insurance, Real Estate | 2,125 | 2,635 | 510 | 24.0% | 3,071 | 436 | 16.5% |
| Services | 11,699 | 15,884 | 4,185 | 35.8% | 18,732 | 2,848 | 17.9% |
| Government (Federal, State, Local) | 26,813 | 29,807 | 2,994 | 11.2% | 32,373 | 2,566 | 8.6% |
| Other Industries | 0 | 0 | 0 | 0.0% | 0 | 0 | 0.0% |
| Total | 64,449 | 74,444 | 9,995 | 15.5% | 82,890 | 8,446 | 11.3% |

Source: WSESD 2001d

Subsections, 8.1.2.1 and 8.1.2.2 discuss potential socioeconomic impacts on population, housing, and property values that would be attributable to the proposed project. A traffic impact discussion is presented in Section 5.2 – Transportation, WAC 463-42-372 and discussions of health and safety impacts and education impacts are presented in Section 5.3 – Public Services and Utilities, WAC 463-42-382.

8.1.2.1 Construction

Local Economy

Phase II construction would have beneficial impacts on the local socioeconomic environment of Grays Harbor and Thurston counties, including additional employment and associated income and spending at local merchants' establishments.

The Phase II construction period would begin in October 2002 and would last approximately 22 months (through July 2004). Peak employment for Phase II would occur during the months October 2002 through February 2004. The construction workforce would consist of boilermakers, carpenters, cement masons, electricians, insulators, ironworkers, laborers, millwrights, operating engineers, painters, and pipefitters, in addition to non-craft staff. Table 8.1-11 shows the breakdown between the craft and non-craft workforce. The construction workforce for Phase II would be identical to the workforce for Phase I, construction of which would be 7 months away from completion when Phase II construction begins. Table 8.1-12 shows the total construction workforce on site by month. As shown in Figure 8.8-1, the peak construction period for Phase I would have just ended when the construction period for Phase II would begin.

It is intended that the Phase I workforce already mobilized for construction would be used for Phase II. To ensure that the Phase II construction workforce originates from the local labor pool to the extent possible, the Certificate Holder would require construction contractors to advertise positions locally and to hire local workers where practicable and possible. Although some construction skills are specialized and might not be available within the local or state labor pools, top hiring priority for construction would be given to qualified local and in-state construction workers. Therefore, most of the work force for construction of the plants would probably come from inside the state of Washington.

The influx of the out-of-area construction workers into communities near the proposed project would generate additional spending and business activity for temporary housing establishments such as hotels and motels, recreational vehicle parks, and campgrounds. Other service providers and retailers such as gas stations and food stores/restaurants would experience an increase in revenues during the construction phase due to construction workers' spending during the day. Many of the purchases and rental of required construction materials and equipment would also be made locally, thus generating additional revenue for local suppliers.

**TABLE 8.1-11
POWER PLANT CONSTRUCTION WORKFORCE,
PHASE II CRAFT AND NON-CRAFT**

| Month | | Craft | Non-Craft (Project Management) | Total Workforce |
|----------------|----|-------|-----------------------------------|-----------------|
| December 2002 | 1 | 19 | 11 | 30 |
| January 2003 | 2 | 28 | 17 | 45 |
| February 2003 | 3 | 52 | 20 | 72 |
| March 2003 | 4 | 78 | 22 | 100 |
| April 2003 | 5 | 98 | 28 | 126 |
| May 2003 | 6 | 130 | 30 | 160 |
| June 2003 | 7 | 162 | 36 | 198 |
| July 2003 | 8 | 196 | 37 | 233 |
| August 2003 | 9 | 225 | 42 | 267 |
| September 2003 | 10 | 288 | 42 | 330 |
| October 2003 | 11 | 376 | 42 | 418 |
| November 2003 | 12 | 438 | 43 | 481 |
| December 2003 | 13 | 480 | 50 | 530 |
| January 2004 | 14 | 487 | 52 | 539 |
| February 2004 | 15 | 505 | 52 | 557 |
| March 2004 | 16 | 487 | 48 | 535 |
| April 2004 | 17 | 433 | 48 | 481 |
| May 2004 | 18 | 306 | 45 | 351 |
| June 2004 | 19 | 203 | 42 | 245 |
| July 2004 | 20 | 105 | 34 | 139 |
| August 2004 | 21 | 16 | 27 | 43 |
| September 2004 | 22 | 0 | 12 | 12 |

Note: The peak construction period is shaded.

Total construction employment would account for approximately \$22 million in pre-tax wages and salaries (labor income). With much of the construction labor on the project expected to come from local sources, it is expected that a large portion of the wages and salaries earned during construction would be spent locally, or in other parts of the state.

Local non-salary expenditures associated with construction are expected to total about \$28 million, with about \$20 million for materials and supplies and about \$8 million for subcontracted services. These expenditures would likely occur within a radius of approximately 50 miles from the site. The remainder of the construction cost would likely be spent outside the state on high capital cost items such as turbine generators, heat recovery steam generators, and civil and mechanical structures. Total project-related expenditures are expected to generate approximately \$30 million in total sales taxes during construction, based on a sales tax rate of 8 percent and a total construction cost of \$400 million, with a portion of this amount to be paid as Washington state and local sales taxes. These positive impacts to Thurston and Grays Harbor counties would be temporary, lasting until construction is complete.

**TABLE 8.1-12
PHASE I AND PHASE II
ESTIMATED CONSTRUCTION WORKFORCE
CRAFT AND NON-CRAFT**

| Month | Phase II Workforce | | | Phase I and Phase II Combined Workforce | | |
|-----------------------------------|--------------------|-----------|-------|---|----------|-------|
| | Craft | Non-Craft | Total | Phase I | Phase II | Total |
| February 2002 | | | | 233 | 0 | 233 |
| March 2002 | | | | 267 | 0 | 267 |
| April 2002 | | | | 330 | 0 | 330 |
| May 2002 | | | | 418 | 0 | 418 |
| June 2002 | | | | 481 | 0 | 481 |
| July 2002 | | | | 530 | 0 | 530 |
| August 2002 | | | | 539 | 0 | 539 |
| September 2002 | | | | 557 | 0 | 557 |
| October 2002 (Phase II begins) | | | | 535 | 0 | 535 |
| November 2002 | | | | 481 | 0 | 481 |
| October 2002 | 19 | 11 | 30 | 351 | 30 | 381 |
| November 2003 | 28 | 17 | 45 | 245 | 45 | 290 |
| December 2003 | 52 | 20 | 72 | 139 | 72 | 211 |
| January 2003 | 78 | 22 | 100 | 43 | 100 | 143 |
| February 2003 | 98 | 28 | 126 | 12 | 126 | 138 |
| March 2003 | 130 | 30 | 160 | 0 | 160 | 160 |
| April 2003 | 162 | 36 | 198 | 0 | 198 | 198 |
| May 2003 | 196 | 37 | 233 | 0 | 233 | 233 |
| June 2003 | 225 | 42 | 267 | 0 | 267 | 267 |
| July 2003 | 288 | 42 | 330 | 0 | 330 | 330 |
| August 2003 | 376 | 42 | 418 | 0 | 418 | 418 |
| September 2003 | 438 | 43 | 481 | 0 | 481 | 481 |
| October 2003 | 480 | 50 | 530 | 0 | 530 | 530 |
| November 2004 | 487 | 52 | 539 | 0 | 539 | 539 |
| December 2004 | 505 | 52 | 557 | 0 | 557 | 557 |
| January 2004 | 487 | 48 | 535 | 0 | 535 | 535 |
| February 2004 | 433 | 48 | 481 | 0 | 481 | 481 |
| March 2004 | 306 | 45 | 351 | 0 | 351 | 351 |
| April 2004 | 203 | 42 | 245 | 0 | 245 | 245 |
| May 2004 | 105 | 34 | 139 | 0 | 139 | 139 |
| June 2004 | 16 | 27 | 43 | 0 | 43 | 43 |
| July 2004 | 0 | 12 | 12 | 0 | 12 | 12 |

Note: "Phase I and Phase II Combined Workforce" assumes that Phase II would begin construction in December, 2002.

Population and Housing

Up to 20 percent of the construction workforce for the plant (approximately 100 workers, measured during the peak month) would be from outside of the local area. The presence of 100 workers is a “worst-case” scenario because the number 100 is based on the peak number of workers, and some percentage of the 100 non-local workers would likely continue to reside in their permanent residence and commute daily throughout the construction period. A small percentage of these 100 workers could bring their families with them while working on the project, and would commute daily from their new, temporary residence. However, most of these workers are expected to live in western Washington and would likely commute on a weekly basis³. A temporary increase in population would occur in the local area during the week due to the construction workforce.

As described in the recreation portion of Section 5.1 – Land Use, WAC 463-42-362, the use of recreation facilities by construction workers would be temporary and is not expected to result in a significant impact. Housing vacancy rates in Thurston and Grays Harbor counties are 6 percent and 17 percent, respectively, indicating that sufficient housing is available in the general area for the portion of the non-local construction workforce that could choose to live in permanent housing. Workers could find temporary housing in Montesano, Satsop, Elma, and McCleary, as well as in the Aberdeen-Hoquiam area and the Olympia-Tumwater area. Due to (1) the large number of recreational facilities and the availability of sufficient housing in the general area, (2) the relatively low number of construction workers from outside the local area that would seek temporary housing, and (3) the relatively short 7-month period of peak construction, construction of the proposed project is not expected to result in a significant impact on housing. Furthermore, the plant would be constructed on an existing plant site and would not displace or directly affect surrounding residences.

Property Values

The potential for long-term impacts of the project on property values is addressed below in Subsection 8.1.2.2, Operation. Construction activities may result in a temporary and minor impact on property values for property owners attempting to sell property located in the vicinity of the plant site during the peak periods of construction. However, the impact on property values in the area would be temporary and is expected to be minor.

8.1.2.2 Operation

Local Economy

Operation of the proposed project would result in a positive economic impact to Grays Harbor and Thurston counties and the state due to increased tax revenues, employment, and local expenditures. After completion of construction, the value of the Phase II project would be

³ Weekly commuters would drive to the job site on Monday morning, stay in nearby temporary housing during the week, and return home on Friday evening.

approximately \$400 million. Operation of the project would involve approximately 22 employees working either two 12-hour shifts or three 8-hour shifts, with a maximum of 26 employees working on site at any time (see Table 8.1-13). The operational labor force would include the following positions: plant manager, operations supervisor/engineer, control operators, auxiliary operators, maintenance supervisor, mechanical and electrical technicians, and clerks. Efforts would be made to hire local individuals to staff the project as much as practicable.

**TABLE 8.1-13
POSSIBLE PLANT SHIFT SCHEDULES**

| Schedule | Shifts | Personnel and Hours |
|----------|---------------------|---|
| Option 1 | Two 12-hour shifts | 26 people working from 6:00 a.m. to 6:00 p.m. |
| | | 4 people working from 6:00 p.m. to 6:00 a.m. |
| Option 2 | Three 8-hour shifts | 26 people working from 8:00 a.m. to 4:00 p.m. |
| | | 4 people working from 4:00 p.m. to 12:00 a.m. |
| | | 4 people working from 12:00 a.m. to 8:00 a.m. |

The plant would be operated “base loaded,” which would require a scheduled major maintenance outage during the sixth year of operation. During maintenance outage, 50 additional workers would be on site for 28 days during the day shift. Thus, the presence of additional on-site daytime employment (maintenance crews) would increase local spending during this period.

Total operating and maintenance costs for the two-plant configuration would be approximately \$14 million per year. Of this, about \$2.2 million per year would be in salaries and wages. Generating and Business and Occupation taxes are expected to total approximately \$2 million per year.

Population and Housing

Operation of Phase II would require a maximum of approximately 22 employees. Efforts would be made to hire local individuals to staff the project as much as practicable. Operation employees would likely choose to reside in various areas from Aberdeen to Olympia, based on an approximately 40-minute drive to work. Even if all 22 employees come from outside of the local area, and they all bring families (22×2.5 persons per household = 55), the potential impact area is sufficiently large (with a population of over 286,000 and over 10,500 estimated available housing units as shown in Tables 8.1-4 and 8.1-5) that the project would not have an adverse impact on population or housing in the area (WSOFM 2001e). The number of vacant housing units was estimated by applying the vacancy rate ($1 - \text{occupancy rate} = \text{vacancy rate}$) to the number of housing units.

Property Values

The values of homes near the Satsop Development Park property have been affected by the nearby nuclear power plants and related facilities. The values of homes nearest the proposed

plant site have been affected by three major conditions: (1) the presence of the BPA transmission line right-of-way, which is adjacent to many of the residences and includes two rows of steel transmission towers and a row of wooden power poles; (2) the presence of the construction laydown area for the nuclear plants, an area that includes steel buildings, graveled storage areas, chain link fencing, and stockpiled materials; and (3) the presence of the nuclear plants, cooling towers, and associated facilities about 1 mile to the southeast. In addition, property values have been influenced by Grays Harbor County's growth plans that include use of the Satsop Development Park property for commercial and industrial development.

As a result of the existing influences on the value of homes and property in the vicinity of the proposed plant site, it is not likely that the expansion of the Satsop CT Project would result in a significant impact on property values.