

3.12 Population, Housing and Economics

This section is based on the findings contained in the Technical Report on Population, Housing and Economics, Appendix L. This Appendix provides additional supporting baseline data for conclusions presented in this section regarding the potential for impacts.

For purposes of this section on population, housing and economics, the study area is defined as Whatcom and Skagit Counties, primarily those communities within a 50-mile radius of the Cogeneration Project site at Cherry Point. This follows the recommendation contained in the Potential Site Study. The majority of project construction and operations workers are expected to commute from within this 50-mile radius.

The Lummi Indian Reservation lies 5 miles to the south of the Cogeneration Project site, and the Nooksack Reservation 23 miles to the east. The incorporated cities of Blaine, Ferndale, Bellingham, Everson and Lynden are within a 25-mile radius, as are the two smaller cities of Sumas and Nooksack. A number of other unincorporated small communities are found within commuting distance of the project site. Further south, crossing from Whatcom County into Skagit County, but still within a 50-mile radius of the project site, are the cities of Anacortes, Burlington, Mount Vernon and Sedro-Woolley, as well as a number of smaller incorporated and unincorporated communities.

In addition, a number of Canadian jurisdictions lie within the 50-mile radius of the Cogeneration Project site, including the larger urban centers of Vancouver and Victoria, British Columbia. Based on BP's past experience with large construction and maintenance projects, however, most of the economic and social impacts would be experienced in Whatcom and Skagit counties, rather than in Canadian communities. Appendix L includes information on the nearby Canadian jurisdictions.

3.12.1 Existing Conditions

3.12.1.1 Population

Much of the population of Whatcom and Skagit Counties is found in the western third of each county, along the Interstate 5 corridor. The eastern two thirds of both counties is largely dedicated to National Park and National Forest and have relatively few permanent residents. Whatcom County has 2.8% of Washington State's population and Skagit County has 1.7%. Table 3.12-1 presents population data for Whatcom and Skagit Counties, with Washington State data provided for comparison purposes.

TABLE 3.12-1

Population Data

Jurisdiction	Population 1990	Population 2000	% Change 1990- 2000 Actual	% Change 2000-2010 Forecast	% Change 2010-2020 Forecast
Washington St.	4,866,692	5,894,121	21.1	18.8	18.1
Whatcom County	127,780	166,814	30.5	22.0	21.1
Unincorporate d	59,187	76,060	28.5	n/a	n/a
Incorporated	68,593	90,754	32.3	n/a	n/a
Skagit County	79,545	102,979	33.8	21.3	21.8
Unincorporate d	37,841	44,506	17.6	n/a	n/a
Incorporated	41,704	58,473	40.2	n/a	n/a

Source: Office of Financial Management [OFM], 2000a, for 1990 Population and Forecasts. Census Bureau (CB), 2001a, for 2000 Population

The data on race show that in 2000, Caucasians made up approximately 88.4% and 86.5% of the populations in Whatcom and Skagit Counties respectively, as compared to 81.8% for Washington State overall. Representation of other races are generally low across both counties, although Mount Vernon and nearby Burlington are significantly more diverse, with a relatively higher proportion of Hispanics.

The race data also demonstrate that over the last decade, the non-white and Hispanic groups have grown at accelerated rates compared to Caucasians. However, this growth has been from such a comparatively small base that whites continue to make up the largest percentage of the total population. The exception to a strong pattern of growth for non-white populations is Native Americans, whose numbers are increasing at a slower rate than even that for whites. The two counties are less racially diverse than Washington State as a whole.

Washington State's population increased approximately 21.1% from 1990 to 2000 with faster growth occurring early in the decade. In Whatcom County, the population growth rate was higher than that of the state, at approximately 30.5% during this same period, with steady annual growth. Over three quarters of this growth has been the result of immigration (OFM, 2001c), a response to the booming economy of the early 1990s. In Skagit County, the pattern of high steady growth, with net migration accounting for almost 80%, is repeated.

Population growth forecasts were last published in 1995. In Whatcom and Skagit Counties, growth is forecast to be 21-22% over the decades to 2010 and 2020, which is similar to growth rates during the latter part of the 1990s. If these forecasts are correct the population growth rate in Whatcom and Skagit counties will continue to outpace that of Washington State.

Assuming a construction start date of early 2004, peak construction employment would occur in early 2005. At this time the population of Whatcom County is expected to be 185,053. This estimate represents an increase of 18,239 people, or 10.9% over the actual 2000 population.

The Cogeneration Project would become fully operational some twelve months later, early in 2006. At a constant rate of annual growth in Whatcom County of 1.9% the population would grow by approximately 3,500 people between 2005 and 2006¹.

3.12.1.2 Employment

Major Industries and Top Employers

Table 3.12-2 provides employment data by sector for Whatcom and Skagit Counties. For both counties, Services is the largest sector based on number of people employed, followed by Retail Trade, Government and Manufacturing.

However, large job losses in the Manufacturing sector in 2001, particularly in Whatcom County, will likely have resulted in the total employment share of this sector falling below 10% subsequent to 1999, the year to which the data in Table 3.12-2 refer.

TABLE 3.12-2

Employment by Sector, 1999

SECTOR	EMPLOYMENT		% OF TOTAL EMPLOYMENT		
	Whatcom	Skagit	Whatcom	Skagit	Washington
Total Private	77,308	45,425	87.0	84.3	84.3
Agriculture, Forestry and Fishing	2,486	1,999	2.8	3.7	1.8
Construction	8,457	4,519	9.5	8.4	6.3
Manufacturing	10,135	5,838	11.4	10.8	11.3
Transportation and Public Utilities	3,408	2,154	3.8	4.0	4.7
Wholesale Trade	4,035	1,836	4.5	3.4	4.9
Retail Trade	17,402	11,162	19.6	20.7	17.1
Finance, Insurance and Real Estate	6,179	3,445	7.0	6.4	7.8
Services	25,206	14,472	28.4	26.9	30.4
Government	11,505	8,470	13.0	15.7	15.7
Total Employment	88,813	53,895	100.0	100.0	100.0

Source: Bureau of Economic Analysis [BEA], 2001

Washington State Economic Security Department (2001c) published projections on employment growth by sector for Whatcom County indicate that Services and Government will grow the fastest, at rates of over 16% over the five-year period 1998-2003. Because these sectors employ large numbers of people, they will grow the most in absolute terms as well. Employment growth in these sectors is significantly higher than the expected population growth over the same period. Construction and Retail, two sectors closely aligned with population growth, are forecast to grow at an approximate

¹ This figure is in fact not published, but calculated from forecasts for 2005 and 2010, assuming a constant rate of growth over the period.

rate of 10%, more or less equal to expected population growth. Other economic sectors will likely see growth rates of less than 5

BP is one of the top employers in Whatcom County, with 400 proprietary employees and an average of 400 contract employees. BP's use of contract maintenance employees peaks at approximately 2,400 during major Refinery maintenance activities every few years. Other significant employers in Whatcom County are St. Joseph Hospital (1,700), Western Washington University (1,292), Bellingham School District (1,200), Alcoa Intalco Works (925), and the Whatcom County government (700) (BWEDC, 2001a). The employment figures in parentheses include both full and part time employees.

Significant full and part time employers in Skagit County are Affiliated Health Services (1,039), Skagit Valley College (790), Mount Vernon School District (638), Sedro-Woolley School District (590), Draper Valley Farms (500), Island Health Northwest (466), Brown and Cole, Inc, retail food (410), Skagit County government (408), Anacortes School District (374), and Skagit Valley Medical Center (354) (Economic Development Association of Skagit County [EDASC], 2001a). These largest employers employ about 5,500 people, a third of whom work part time. The above employers account for about 10% of Skagit County employment. Seasonal employment, predominantly by farms and agro industry, add other entities to the list of major Whatcom County and Skagit County employers.

For example, EDASC reports that the Alf Christianson Seed Company had recently hired over 1,000 seasonal workers and Skagit County government had hired over 700.

Employment and Wages

In 1999,² average Whatcom County wages were consistently lower than in Washington State as a whole, about 30% lower in the private sector and about 14% lower in the public, government sector. The gap was somewhat less in Skagit County – comparable figures are 19% and 11%. The wage differentials are to be expected given the large urban concentration in Seattle/Tacoma.

In Whatcom County, the construction industry paid an average wage of about \$34,577 in 1999 (WSESD, 2001g), with only the Finance, Real Estate and Insurance sectors having a higher average wage. This compared to an average private sector wage of \$25,185 and an average public sector wage of about \$31,910.

Selected employment and income data are presented in Table 3.12-3. Unemployment rates fluctuated in Whatcom and Skagit Counties during the 1990s but overall the trend has been downward in both counties; rates in 1999 matched the lowest levels seen in the past 30 years. Fluctuations arise because almost half of private sector workers are in businesses that are seasonal, cyclical or suffering from long term decreases in employment (WSESD, 2001d). Data from Whatcom County in 1997 demonstrate that at least in that year, women, blacks and Hispanics experienced higher unemployment than whites (WSESD, 2001d).

² The most recent available data is from 1999.

TABLE 3.12-3

Employment and Income, 1990-2000

	Population	Unemployment Rate	Number Of Unemployed	Average Wage	Median Household Income
Washington State					
1991	5,021,335	6.4	162,290	23,936	34,374
2000	5,894,121	5.2	158,458	37,038	50,152
% Growth	17.4	n/a	-2.4	54.7	45.4
Whatcom County					
1991	132,576	6.5	4,472	19,866	32,001
2000	166,814	5.7	4,650	26,295	41,300
% Growth	25.8	n/a	4.0	32.4	29.1
Skagit County					
1991	82,882	8.3	3,336	19,481	30,748
2000	102,979	6.9	3,560	26,634	41,585
% Growth	24.2	n/a	6.7	36.7	35.2

Source: WSESD, 2001a, 2001b, and 2001c

Whatcom County experienced an unemployment rate of 5.7% in 2000, representing approximately 4,500 unemployed persons. More recently, unemployment has risen in 2001, surpassing 6.0% in Whatcom County (Business Pulse, 2001). Skagit County has an unemployment rate of 6.9%, representing approximately 3,500 unemployed. In both counties, although the unemployment rate has fallen overall over the decade, very rapid population growth has meant that the fall has not been sufficient to reduce the number of unemployed – they have in fact increased in number. In comparison, the statewide rate for Washington was 5.2% in 2000, and the total number of unemployed as fallen.

The average annual wage in 2000 was \$26,295 in Whatcom County, and a slightly higher \$26,634 in Skagit County, both lower than the average of \$37,038 for Washington State. The pattern is repeated for median household income (the income at which half of the households have a higher and half a lower income). Both average wages and median household income increased steadily over the decade for both counties, although at a somewhat slower rate than they did for Washington State as a whole.

3.12.2 Impacts of the Proposed Action

3.12.2.1 Project Construction Workforce and Trades

BP has developed preliminary manpower requirements for the construction phase of the Cogeneration Project. During construction, which would last about 23 months, monthly employment on site would average 372 people, with peak employment of 706

individuals. There would be a total labor requirement of 8,566 person months, equivalent to 714 jobs of 1-year duration.

As Figure 3.12-1 demonstrates, the labor force would vary from month to month, rising fairly slowly from an initial core construction team of 45 people. The workforce numbers would then rise as increasing numbers of craft workers are needed, over a 12-month period to a peak of 706, and then fall over the remaining 11 months until the last month of construction when only 23 people would be employed on site. Figure 3.12-1 assumes a February 2004 construction start date; BP would start construction up to 12 months sooner than that date, if possible. The construction profile and duration would not be affected by this change. .

Table 3.12-4 provides information on labor force requirements by trade. Highest craft demand will be for pipefitters, electricians, carpenters, millwrights and boilermakers in that order. Demand over the construction schedule for individual crafts generally follows that for total labor demand, although there are some departures from this pattern. Demand for carpenters and ironworkers tends to peak earlier, for example, while painters and insulation workers are not required until the 19th month.

FIGURE 3.12-1

Total Workforce Demand

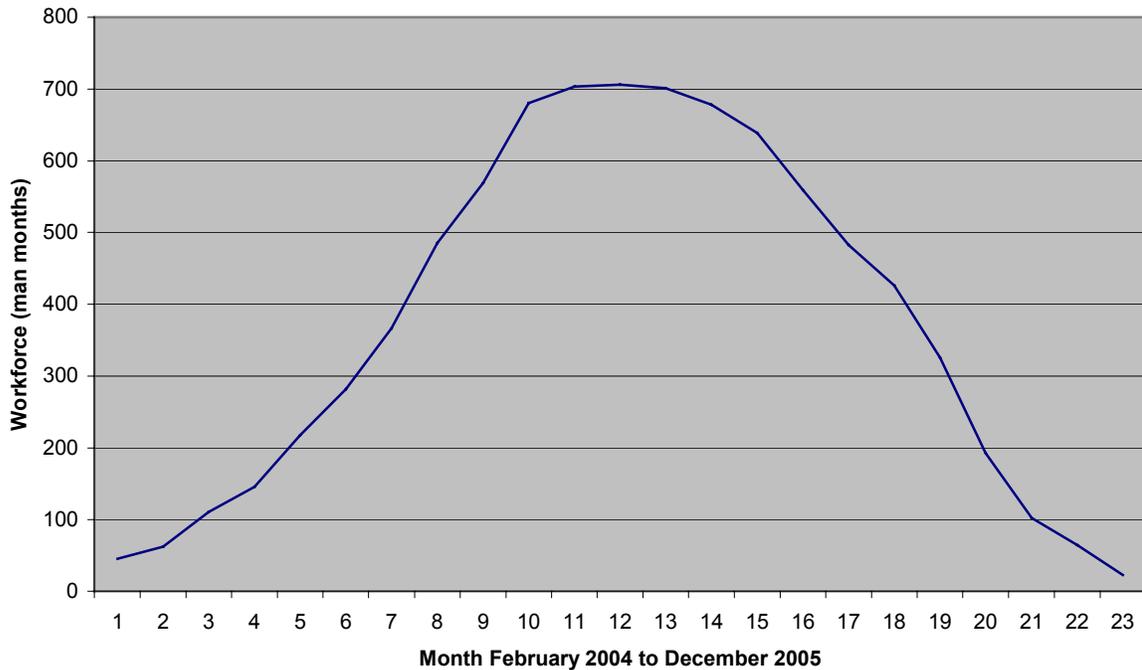


TABLE 3.12-4

Total Workforce Demand, by Trade

Trade	Project Workforce (Person Months)	Project Workforce (Number Of Jobs)
Boilermakers	632	53
Carpenters	845	70
Electricians	1,441	120
Ironworkers	329	27
Laborers	512	43
Pipefitters	1,851	154
Painters/Insulators	159	13
Bricklayers/Masons	117	10
Millwrights	671	56
Operating Engineers	534	45
Teamsters	236	20
Mechanical	110	9
Civil	146	12
Field Staff	983	82
Total	8,566	714

Source: BP

The above numbers refer to direct employment. Construction of the Cogeneration Project will also create indirect employment, through disbursements made for materials and services required for construction. Applying a 0.3 multiplier (Weber and Howell, 1982 have calculated multipliers for indirect employment) gives an approximate estimate for indirect employment in the study area of 2,600 person months, equivalent to 210 jobs of one-year duration over the life of the construction phase.

These types of projects are also important sources of induced employment, the employment that results from the increased economic activity that occurs when construction workers and local suppliers and their employees have increased disposable income as a result of the construction activity. In an economy such as that of Whatcom County, which is characterized by much seasonal employment (related not only to a strong construction industry, but also to tourism, and to a lesser extent agriculture and fisheries), induced employment tends to be absorbed. That is, rather than mobilizing and demobilizing to service particular projects or seasonal events; the local economy and infrastructure can absorb and respond to temporary economic events. Swings in revenue are experienced by local businesses for example, and are important to the overall economic health of the county, but do not necessarily result in constant hiring and firing. On this assumption, impacts from induced employment expected from Cogeneration Project construction are not considered to be significant, although local businesses are likely to experience increases in income.

Project Operation Workforce and Trades

During operation of the Cogeneration Project, BP anticipates employing approximately 30 staff on a permanent basis. Plant management and technical staff comprise about one third of the prospective workforce; two thirds of employees would be operation and maintenance technicians. The workforce breakdown by skill is shown in Table 3.12-5. Staff will work in shifts to run the plant 24 hours per day, seven days per week.

TABLE 3.12-5

Expected Operations Workforce

Position	Workforce
Plant Manager	1
Business Manager	1
Business Analyst	1
Scheduler	1
Plant Engineer	1
Operations Supervisor	1
Operations Foremen	4
Operations Technicians	11
Maintenance Supervisor	1
Maintenance Technicians	6
Health and Safety Specialist	1
Controls Engineer	1
Total	30

Source: BP

In addition to the permanent workforce, maintenance periods varying from two weeks per year to 18 weeks every six years will increase the workforce on a temporary basis. The maintenance schedule would repeat on a six-year cycle, and over the cycle a total of 50 person-months, or four jobs of one-year duration, of maintenance work will be required.

Indirect employment as a result of the operation of the Cogeneration Project, using a multiplier of 0.7 on the basis of historical studies completed by Weber and Howell (1982), is estimated to result in an additional 21 jobs.

Labor Availability and Relocated Labor

Based on BEA figures, in 2000, there were 8,457 employed construction workers in Whatcom County and 4,519 in Skagit County, for a total of close to 13,000. The average construction workforce for the project at 372 workers is equal to 2.9% of employed construction workers in the two counties. The peak workforce at 706 workers is equal to 5.5%. Given the seasonal nature of the construction work, the locally available

construction workforce in Whatcom and Skagit Counties should be sufficient, pending availability of specific skills.

On the basis of unemployment insurance claims, an estimated 2,880 construction workers in Whatcom County, and approximately another 2,000 in Skagit County, experienced a period of unemployment in 1999-2000. Because the number of claims does not equate to the number of unemployed over a year, it is likely that the number of unemployed construction workers at any particular point in time is significantly less than the number of claims; that is, significantly less than the almost 5,000 people who reported unemployment at some time over the year 1999-2000.

If the number of unemployed was as high as 5,000 people, then the average construction workforce for the Cogeneration Project at 372 workers would be equal to 7% of unemployed construction workers in the two counties. The peak workforce at 706 workers is about 14% of locally unemployed workers. But the Project's potential impact on construction workers experiencing unemployment will be higher than these percentages suggest. The impact is further strengthened because the project is of comparatively long duration and will provide some security of employment to construction workers.

The project is therefore expected to both find labor available, and provide a needed source of employment for unemployed construction workers within Whatcom and Skagit Counties. The local construction industry should be able to supply the largest fraction of workers. Further, not all construction jobs are skilled, and new entrants to the labor force, as well as workers in other economic sectors, are also a source of manpower.

There may be labor shortages, however, related to specific trades. Boilermakers and pipefitters are in particularly short supply in Whatcom County specifically and in Washington State more generally.

Labor availability for indirect employment is similarly unconstrained, given local unemployment rates. The construction phase of the Cogeneration Project has the potential to create at least 210 indirect jobs. This is significant employment creation, but a small number relative to the total number of unemployed in the two counties.

Labor availability for indirect employment is similarly unconstrained, given local unemployment rates.

Relocated Labor

Whatcom and Skagit Counties have large skilled and available construction workforces. The skills called for are fairly typical of those employed in other local industrial projects over recent years. The expectation is that about 85 to 90% of the construction workforce would come from the study area, and that the remaining 10 to 15%, required to meet specific skill requirements, may come from other parts of Washington and the western

United States. This has been the pattern on major maintenance and capital projects at the Refinery that have involved up to 2,400 temporary workers. Therefore, relocation to the project area is not expected to exceed 106 individuals at the project peak, or an average of 56 people over the almost 2 year construction period. This calculation assumes a conservatively “high estimate” of 15% out of area hiring.

An alternative way of estimating relocating labor is to look at availability of local labor by trade required for the construction stage of the project. This approach compares the number of persons currently employed by trade within the local labor pool, with number required during construction of the Cogeneration Project. Where the construction requirements for a specific trade approaches or exceeds the number of currently locally employed, some relocation to offset potential labor shortages can be assumed. Table 3.12-6 provides estimated labor requirements by trade for construction of the Cogeneration Project, relative to the total number of employed within each trade over the study area³, in the year 2000.

TABLE 3.12-6

Labor Requirements and Employment

Trades	Construction Workforce Requirement (Jobs)	Total Employment 2000
Boilermakers	53	53
Carpenters	70	2,696
Electricians	120	1,297
Laborers	43	2,241
Pipefitters	154	100
Painters/Insulators	13	959
Bricklayers	10	149
Millwrights	56	217
Operating Engineers	45	117
Truck Drivers	20	1,859

Sources: BP and WSESD, 2001e

A comparison of the numbers in Table 3.12-6 suggests a requirement to relocate particularly boilermakers and pipefitters, but also perhaps operating engineers and millwrights. On the assumption that workers from these trades may have to relocate, the relocation requirement could be as high as 150 workers.

The indirect workforce associated with the construction stage was estimated at 210 people. Unlike construction labor, which may be recruited from outside the study area in face of trade specific shortages, indirect labor is more likely to be locally recruited, by local businesses benefiting from increased expenditures by the construction workforce. If the conservatively “high estimate” of 15% of indirect labor were recruited from outside the study area, this is equivalent to approximately 30 people. The “high

³ The total employment by trade figures is in fact for the four counties of Whatcom, Skagit, San Juan and Island. Whatcom and Skagit make up 75% of the four county populations.

estimate” out of study area recruitment would total about 180 direct or indirect workers, who could choose to relocate to the study area.

The Cogeneration Project operational workforce of 30 people is very small relative to the local population size and will likely be staffed by residents of the study area, with the possible exception of some specialized management staff. Assuming that some specialized management staff may be recruited from outside of the area, it is possible that up to 10 people may be recruited as direct hires and another 5 as indirect hires, for a total potential relocated labor force of 15 during operation of the Cogeneration Project.

Relocated Labor Family Size

Depending on the type of employment offered workers out of commuting distance, the choice as to whether or not to relocate as a commuter on a weekly basis or as a resident in the project area, with or without family, will vary. Because few jobs will extend throughout the school year, in fact 90% of the construction jobs will last less than one year, it is expected that relocating workers able to do so will prefer to commute on a weekly basis, leaving family behind. In the unlikely event that 180 direct and indirect hires did relocate, no more than 20 would be expected to have family members with them. On the basis of average household size figures for Washington State, these 20 workers would bring only 26 family members with them. This would be insignificant relative to the County population.

During operation of the Cogeneration Project, relocating operational personnel and associated out-of-area indirect hires would likely move to Whatcom County permanently, and therefore, would be expected to distribute themselves between owned and rental accommodation according to prevailing housing patterns. Using Washington State family size figures for owners and renters, the relocation of a maximum of 15 workers is likely to result in an increase in the county population by approximately 38 people. Again, this represents an insignificant increase in County population.

3.12.2.2 Housing

Given the small numbers provided above for potential relocations, and the yet smaller numbers for potential relocations for durations long enough to warrant bringing family, housing availability will not be significantly affected, nor will housing prices. There were for example over 2,572 vacant rental and owned properties in Whatcom County in 2000 and over 1,173 in Skagit County.

The largest majority of relocating workers will likely seek temporary housing. Temporary housing is widely available in Whatcom County, where most of these weekly commuting or temporarily relocating workers are expected to seek accommodation. Over 120 facilities are to be found within a 25-mile radius of the Cogeneration Project, including at least 60 motels and hotels, and 21 bed and breakfasts. There are also 15 RV parks and more than 15 campgrounds available, although campgrounds are less likely to be used during winter when the largest fraction of relocating labor may be seeking housing.

With an estimated total of over 4,000 rooms or other types of short term accommodation in the project area 180 relocating workers seeking temporary housing would represent

about 5% of supply. This figure is well within typical vacancy rates of over 10% even in the peak summer months.

Economics

Construction

Total construction costs for the Cogeneration Project are estimated to be approximately \$580 million.⁴ Of this total, approximately \$465 million will be for the direct cost of the materials, services and labor during construction. It is estimated that another \$115 million will be spent for project development, permitting, project management, owner’s costs, taxes, and used for contingency.

Although actual wage costs will not be known until BP selects its EPC Contractor, it is expected that wage rates would approximate typical wages paid for various construction trades in Whatcom County. Table 3.12-7 presents data on average wages in Whatcom County for those trades that will be required for construction of the Cogeneration Project. Average wages for Washington State are also presented for comparison purposes.

TABLE 3.12-7

Mean Hourly and Annual Wages by Trade

TRADE	WHATCOM		WASHINGTON		PROJECT JOBS	TOTAL WAGES
	Mean (hr)	Mean (yr)	Mean (hr)	Mean (yr)		
Boilermakers	23.66	49,200	24.16	50,260	53	2,591,200
Carpenters	18.11	37,670	19.50	40,560	70	2,652,596
Electricians	20.61	42,880	21.99	45,740	120	5,149,173
Ironworkers	n/a	42,646	21.58	44,890	27	1,169,197
Laborers	16.95	35,250	16.71	34,750	43	1,504,000
Pipefitters	21.14	43,970	22.91	47,650	154	6,782,373
Painters/Insulation Workers	17.12	35,610	16.08	33,440	13	471,833
Bricklayers/Masons	n/a	46,712	23.64	49,170	10	455,437
Millwrights	n/a	42,190	21.35	44,410	56	2,359,096
Operating Engineers	17.82	37,080	21.85	45,440	45	1,650,060
Teamsters	15.59	32,420	16.63	34,600	20	637,593
Mechanical	19.84	41,261	21.45	44,609	9	378,226
Civil	19.84	41,261	21.45	44,609	12	502,009
Field Staff	23.66	49,200	27.44	57,080	82	4,030,300
Total					714	30,333,093
Average Wage	18.19	37,830	20.15	41,920		42,493

Sources: BEA 2001

Of the \$465 million estimated direct construction costs, Golder estimates approximately \$30 million will be paid as wages.

The percentage of the \$30 million wage bill that will be expended in Whatcom and Skagit Counties will be strongly related to the percentage of the workforce that is resident here. It is estimated that because most of the construction workers will be recruited in the study area, approximately \$19 to \$20 million of the wage will be expended locally by construction stage workers.

⁴ [Estimated capital costs for the Cogeneration Project will fluctuate throughout its development as the design is finalized and equipment and labor is procured. For example, at present, the change from an air cooling system to the proposed water cooling system may reduce capital costs by approximately \\$30 million. When capital costs decrease or increase, associated economic and socio-economic impacts from the project will also fluctuate.](#)

Sourcing of equipment, materials, and services for the Cogeneration Project will be determined when the EPC contractor is selected and materials contracts awarded. However, given the nature of the project, some broad conservative estimates can be provided at this time.

The equipment costs for the project, estimated to be approximately \$300 million, will likely be spent out of the study area because the vendors of electrical generation and associated equipment are located elsewhere in the United States.

The balance of direct construction costs, approximately \$135 million, will be spent on services and materials related to architectural designs, engineering, construction of civil works, building materials such as paint, pipe and insulation, and construction management. Possibly 10% or \$13 million may be spent within the project area and throughout Washington State.

In addition, tax revenue will accrue to the Whatcom County and Washington State. The state imposes a 6.5% sales or use tax on products sold or used within the state and Whatcom County imposes an additional 1.1%. Because the project is in an unincorporated area, the full amount of this 1.1% would go to county revenue. This total of 7.6% tax on the \$300 million in equipment costs is equivalent to \$22.8 million, of which \$3.3 million would flow to Whatcom County and the balance to Washington State.

Of the \$165 million estimated costs for services and materials associated with construction, perhaps \$65 million of this would pay for materials. At the combined 7.6% sales tax rate, \$4.9 million in revenue would be generated, of which \$700,000 would accrue to Whatcom County and the balance would flow to the state.

The fiscal benefit to Whatcom County would be slightly higher than the \$4 million the above calculations suggest. State revenue, which includes the taxes paid on this project, is in part distributed to counties according to annual plans at the state level. As well, part of the expenditures by construction workers as well as by individuals benefiting from indirect employment creation, whether resident or commuting, will be subject to sales tax. The state also will benefit from the range of taxes that are imbedded in the prices of consumer items purchased as a result of increased incomes as a result of the project.

Sales and use tax revenue from the purchase of Project construction materials and from the expenditures of construction workers are a one-time benefit to Whatcom County and state. They are significant, especially at the county level. For comparison purposes, total sales and use taxes in Whatcom County are expected to be \$8.2 million in 2002 (Whatcom County, 2001c). Sales and use tax revenue generated from the Project would represent almost a 25% increase in this tax revenue at the County level.

In addition, property taxes are applied to construction sites on the basis of an evaluation of work completed to date in each year. The actual amount paid will depend not only on levy rates at the time the construction is underway, but also on the construction schedule relative to the timing of evaluation. However, overall it will increase the total tax revenue to Whatcom County and the state by several million dollars.

Operations and Maintenance

It is expected that salaries, wages and benefits for Cogeneration Project employees would total about \$1.8 million per year. The average project wage would be significantly higher than the average Whatcom County wage of \$26,295. It is likely that all personnel would be residents of Whatcom County, and these employees would likely spend a large part of their annual wages locally.

In addition, temporary labor would likely be contracted from within the study area. The annual estimated cost of wages and benefits paid for these services would be about \$200,000, which brings the annual Cogeneration Project labor cost to approximately \$2 million.

Annual operation and maintenance costs for the Cogeneration Project, excluding the cost natural gas, are estimated at \$18.2 million. Of this, \$2 million is for wages and benefits and \$6 million is for materials for maintenance and repair, and water and chemical costs. The potential for purchase of materials in the study area is limited, and would not likely exceed 5% of the total. A further \$3 million would be spent on contractors hired to complete specialized maintenance activities that cannot be undertaken by permanent staff. Annual property tax to Whatcom County could be up to \$6 million. The balance of \$1.2 million would be spent on insurance and other costs.

Tax revenue during operations will derive from brokerage tax imposed on natural gas purchases, property taxes on the Cogeneration Project, sales and use taxes on materials purchased in the course of operating and maintaining the plant, and finally from sales tax on expenditures by the 30 employees who will take up new jobs created by the project. Washington State applies a brokerage tax of 3.852% on purchase of natural gas. BP has estimated gas consumption at between 39,240,000 and 46,110,000 MMBtu/yr HHV on the assumption of a plant capacity utilization of 80-94%. Assuming a natural gas price of \$3.00 per MMBtu HHV, brokerage tax revenue accruing to the state would therefore be between \$4.5 and \$5.3 million annually. This figure will vary with fluctuations in the price of natural gas, and with the volume of gas purchased on an annual basis by the plant.

In 2001, Whatcom County levied total property taxes of \$149.7 million for property with a cumulative assessed value of \$11,547 million⁵. Assuming an assessed value for the

⁵ “2002 Annual Tax Booklet”, Whatcom County Assessor
<http://www.co.whatcom.wa.us/assessor/taxinfo/taxbook/KWTXBKo2.pdf>

Cogeneration Project equal to its \$465 million construction cost, total assessed value of taxable property in the county would increase by approximately 4%. At the time of project completion, total property taxes could be up to \$6 million annually using the 2001 average tax rate. Of this, approximately \$0.7 million would accrue directly to Whatcom County, \$1.5 million to Washington State, and the balance of \$3.8 million to the county's school, fire, hospital, water, recreation and port districts and to its incorporated cities.

During operation, the Cogeneration Project would also pay business and occupation (B&O) and public utility tax to the state of Washington. The B&O tax is levied on product revenues at a rate of 0.484%. The Public Utility tax is levied on the basis of gross operating revenue at a rate of 3.873%. The total tax paid will depend not only on the tax rate, but also on the tax classification of the power plant, available exemptions, deductions and credits associated with the Cogeneration Project operation, the volume of production, the location of sale of the energy, and the price of energy. Nevertheless, taken together these taxes are likely to be in the order of several million dollars per year.

Overall Economic Benefits

Table 3.12-8 provides a summary of indicative, conservative, economic benefits associated with the construction and operation of the Cogeneration Project. In fact, economic benefits are likely to be much greater. Table 3.12-8 does not include the fiscal effects of indirect employment or of the B & O and Utility taxes; the employment, income or fiscal effects of induced economic activity of the project; or taxes imbedded in sale prices of consumption items. It does not include benefits to Whatcom County as a result of distribution to counties of state revenue, and does not include limited benefits to Skagit County.

TABLE 3.12-8

Indicative Economic Benefits

INDICATIVE ECONOMIC/FISCAL BENEFIT	WHATCOM COUNTY	WASHINGTON STATE
Construction Phase		
Direct Jobs	606	108
Indirect Jobs	180	30
Increased Direct Wages (\$M)	25	5
Sales and Use Tax (\$M)	4	23.7
Property Tax (\$M)	6	2
Total Construction Jobs	786	138
Total Construction Taxes (\$M)	10	25.7
Operation Phase		
Direct Jobs	30	0
Indirect Jobs	21	0
Increased Direct Wages (\$M)	2	0
Sales Tax (\$M)	0.1	0.4
Brokerage Tax (\$M)	N/A	4.5-5.3
Property Tax (\$M)	4.5	1.5
Total Operations Jobs	51	0
Total Operations Taxes (\$M)	4.6	6.4-7.2

Note: Jobs are expressed in number of jobs of one-year duration; wages and taxes are expressed in millions of dollars. Washington State figures exclude Whatcom County benefits.

The Cogeneration Project will not place additional demands on local social service delivery infrastructure, and thus no impacts on government service costs either from project construction or operation have been identified. No increased pressure on local recreation, fire, police, and emergency medical or educational services is expected during construction and operation of the Cogeneration Project. Thus, the net fiscal balance will remain positive throughout the project life cycle.

It is to be noted that BP's intent in proceeding with this project is that it will contribute to the continue cost-effectiveness and competitiveness of the Cherry Point Refinery by ensuring a reliable supply of energy at reasonable cost. This in turn will help safeguard the existing employment of over 800 people. Further, as described in Section 2, BP plays an important social role in the county, through its environmental initiatives, memberships in community organizations, sponsorships of social and community events, and donations to non-governmental and cultural organizations. The social and economic benefit the Refinery brings to the economic well being of both Whatcom County and the State of Washington is therefore made more secure through the implementation of this project.

Environmental Justice

Data on race are provided in Appendix L.

Whatcom County, in 1997, had a poverty rate of approximately 11.4%, equal to 17,650 people. The Lummi Reservation has been identified as a "low income" census tract area, reflective of more than 20% of the population having incomes less than national poverty rates. The Nooksack Reservation has been identified as a "distressed community" by the US Federal Government, meaning that more than 30% of the population has incomes below the national poverty rate, and unemployment rates greater than the national average of 1.5%. The only other area in Whatcom County to be identified as either low income or distressed is the sparsely populated rural southwest corner south of Bellingham. The Indian Reservations are therefore disadvantaged relative to the rest of country jurisdictions, with poverty rates two to three times higher and significantly more unemployment.

Construction and operation of the Cogeneration Project will not displace any population, including any low income or minority people or people living on the reservations. Nor will it have any disproportionately negative impacts on these people. On the contrary, construction and operation of the Cogeneration Project may create direct and/or indirect employment opportunities for minority populations.

3.12.2.3 Conclusions

Construction and operation of the Cogeneration Project will bring net overall social and economic benefits to Whatcom County, Skagit County, and the State of Washington:

- The project is more in the nature of an expansion of the existing Refinery and related facilities, which themselves are located in an area of heavy industrial economic activity, rather than an intrusion of a new facility into an area that does not have long experience of such operations.
- The construction industry is an important component of the local economy and experiences periods of temporary unemployment, which will be moderated by the

proposed large construction project with employment of comparatively long duration by construction industry standards.

- BP's previous experience with larger construction workforces in the past, in combination with the availability of labor in the study area indicate that relocating labor that might exert pressure on local resources will be kept to numbers small enough to be easily absorbed.
- There are significant economic, social and fiscal benefits of increased employment during the construction but also during the operations and maintenance phases of the project.
- The project will bring a measure of security to the competitiveness of the operations of the Refinery, and the economic and social role of BP in the community of Whatcom County.
- There are no negative social or economic benefits to minority or economically disadvantaged groups within the Whatcom County jurisdiction, but rather increased employment opportunities have the potential to benefit these communities.

3.12.3 Impacts of the No Action Alternative

As indicated above, impacts of the proposed project are positive impacts related to increased wages spent in the study area; increase in business activities from both direct and indirect purchases and increased tax revenues to local and state government. In the no action alternative these benefits do not accrue to the local economy of Whatcom and Skagit Counties.

3.12.4 Mitigation

No mitigation measures are necessary with regard to impacts on population, housing and the economies of either the study area or the State of Washington. There are no significant adverse impacts to the population, but rather the increase in local employment at an average wage above that prevailing in both the county and the construction industry, and the additional tax revenue that will be generated by the project provide significant positive benefits.

3.12.5 Cumulative Impacts

With the current high unemployment and the closure of several industrial operations, including Bellingham Cold Storage and the Georgia Pacific facility, the construction and operation of the Cogeneration Project will help reverse recent loss of jobs and revenue in the county. There will not be a significant cumulative impact on population growth or the availability of housing.

3.12.6 Unavoidable Significant Adverse Impacts

The construction and operation of the Cogeneration Project does not have any unavoidable significant adverse impacts on the population, housing, or economics.