

## **SECTION 8.1 SOCIOECONOMICS**

### **(WAC 463-42-535)**

This section discusses the effects on the human environment of constructing and operating the Olympic Pipe Line Company's (OPL's) proposed Cross Cascade Pipeline project, including the potential impacts of the project on local populations, work forces, property values, housing and the economy of the pipeline corridor. Section 5.2 Transportation, contains an analysis of the project's potential impacts on traffic, while Section 5.3 Public Services and Utilities, evaluates its impacts on health, safety and educational facilities and services. The following socioeconomic analysis also includes a review of potential fiscal impacts on local governments along the project corridor.

#### **8.1.1 EXISTING CONDITIONS**

##### **8.1.1.1 Population**

###### **Demographic Characteristics**

The project will occupy portions of six counties: from west to east, parts of southern Snohomish County, eastern King County, southern Kittitas and Grant counties, a small area of the southwestern corner of Adams County, and the west-central area of Franklin County, terminating on the Snake River just east of Pasco. The aggregate population of these counties was 2.29 million in 1995 (OFM, 1995). In addition to the rural areas that the pipeline will pass through, this population figure includes metropolitan Seattle and other large urban cities in western King and Snohomish counties that would not be directly affected by the project. The number of residents of unincorporated areas of the corridor counties was an estimated 837,827 persons as of April 1, 1995.

The people most directly affected will be those living in communities close to the right-of-way. Incorporated towns and cities along the right-of-way had 54,444 inhabitants in 1995. Data were not available for the populations of small unincorporated towns along the pipeline right-of-way, but the actual number of people that will be directly impacted by construction activities is estimated not to exceed 100,000<sup>1</sup>. Indirectly, however, the entire population of each of the corridor counties will experience some

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<sup>1</sup> The 100,000 figure is a "best-professional" estimate that attempts to find a common-sense value for the number of people in the study area that would likely have some direct exposure to the project construction. There is no precise method to accurately calculate the number because (a) the project hasn't happened yet, and (b) the number of residents/occupants and travelers on highways and roads passing near/through the project corridor and right-of-way would vary with season and proximity. The total population of the study area counties (2.29 million in 1995) would not be a reasonable estimate because large numbers of residents of the Seattle metropolitan area would not be directly exposed to project construction traffic or activities. Similarly, to project that all residents of unincorporated parts of the study area counties (837,827 in 1995) would experience direct effects (i.e., disturbance of daily living patterns from interaction with on-site construction activities, workers or traffic) would not be reasonable in view of the great distances over which people reside in the study area. Conversely, to suggest that only the residents of incorporated towns along the right-of-way (54,444 in 1995) would be the only ones affected

effects, in part from jobs and income generated by the project, and in part from sales and use taxes accruing to local jurisdictions for procurements of taxable goods and from property taxes on the pipeline lands and facilities.

Table 8.1-1 provides data on the numbers of residents of the corridor counties in 1990 and 1995, distributed among unincorporated and incorporated areas, and also of the incorporated communities adjacent to the proposed right-of-way. Except for King County, the corridor counties' unincorporated area populations grew between 1990 and 1995, continuing trends from the 1970s and 1980s, as did the incorporated communities along the right-of-way. Projections of population for the year 2000 and beyond are unreliable (the Washington Office of Financial Management's (OFM) 1994 projections for 2000 had values generally lower than what the agency subsequently estimated to be the 1995 levels). Trends of population growth during the first half of the 1990s range from less than 1 percent per year to over 4 percent for unincorporated areas (excluding King County, which showed a decline in unincorporated area residents due to incorporation of several communities) as well as for the incorporated communities along the right-of-way.

**TABLE 8.1-1  
POPULATION DISTRIBUTION IN THE PROJECT CORRIDOR COUNTIES<sup>(a)</sup>**

County	1990 <sup>(b)</sup>	1995 <sup>(c)</sup>	AAGR <sup>(d)</sup>
<b>Snohomish - Total</b>	465,628	525,600	2.45
Unincorporated	259,796	269,544	0.74
Incorporated	205,832	256,056	4.46
<b>King - Total</b>	1,507,305	1,613,600	1.37
Unincorporated	513,257	497,403	-0.63
Incorporated	994,048	1,116,197	2.35
Duvall	2,270	3,490	8.98
Carnation	1,243	1,490	3.69
Snoqualmie	1,546	1,540	--
North Bend	2,578	2,825	2.56
<b>Kittitas - Total</b>	26,725	30,100	2.41
Unincorporated	10,418	12,841	4.27

would not be reasonable because: (a) there are many people in the corridor in unincorporated communities and places of less than 2,500 inhabitants that are not tabulated in readily available state and federal statistical sources, but who would experience effects from the project construction, and (b) there are numerous non-local travellers on highways and roads passing through the corridor that would likely experience some exposure to construction activities. The number of persons who could be directly affected by the project lies somewhere between 55,000 and a million or more. A conservative "best-professional" estimate of 100,000 seems reasonable as the number of people that could be directly affected. In the analyst's opinion, numbers above 100,000 would be too high from the point of view of potential significance of the impacts that could occur to individuals with the potential and temporal parameters of the construction corridor.

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**TABLE 8.1-1 (CONTINUED)  
POPULATION DISTRIBUTION IN THE PROJECT CORRIDOR COUNTIES<sup>(a)</sup>**

Incorporated	16,307	17,256	1.14
Roslyn	869	936	1.50
Cle Elum	1,778	1,800	1.25
South Cle Elum	457	501	2.13
Ellensburg	12,360	12,990	1.00
Kittitas	843	1,032	4.13
<b>Grant - Total</b>	54,798	64,500	3.31
Unincorporated	26,406	32,405	4.18
Incorporated	28,392	32,095	2.48
<b>Adams - Total</b>	13,603	15,200	2.24
Unincorporated	6,466	7,364	2.64
Incorporated	7,137	7,836	1.89
Othello	4,638	5,240	2.47
<b>Franklin - Total</b>	37,473	44,000	3.26
Unincorporated	14,712	18,270	4.43
Incorporated	22,761	25,730	2.48
Pasco	20,337	22,500	2.04

<sup>(a)</sup> Source: OFM, 1995

<sup>(b)</sup> Census Bureau data as of 4/01/90.

<sup>(c)</sup> OFM estimate as of 4/01/95.

<sup>(d)</sup> Average annual growth rate (%/year).

The more urbanized counties--Snohomish, King and Kittitas--have higher proportions of their population in the working age years. The more rural eastern counties--Grant, Adams and Franklin--have higher dependency ratios (the ratio of persons under 18 and 65 and older to the total population) than both the other three counties and the state as a whole. This smaller proportion of working-age population is fairly typical of rural counties. In 1990, the statewide average for persons 18 through 64 was 62.3 percent, while the proportions for Snohomish, King and Kittitas counties were higher and those for Adams, Franklin and Grant counties were lower, as indicated in Table 8.1-2.

**TABLE 8.1-2**  
**AGE/DEPENDENCY RATIOS OF PROJECT CORRIDOR COUNTIES (1990)<sup>(a)</sup>**

County	< 18 Years	18 - 64 Years	65+ Years
Snohomish	27.7%	62.8%	9.5%
King	22.6%	66.3%	11.1%
Kittitas	21.1%	65.5%	13.3%
Grant	31.4%	55.9%	12.7%
Adams	34.1%	54.6%	11.3%
Franklin	34.6%	55.4%	10.0%
Washington State	25.9%	62.3%	11.8%

<sup>(a)</sup> Census Bureau, 1995

This suggests that jobs generated by the project for local residents of the eastern project area counties would support relatively more dependents per worker household than would be the case in the western counties.

Table 8.1-3, below, presents data on the race and sex characteristics of the project area counties along with corresponding statewide values. As shown, females outnumber males in the overall project area (although not in the three eastern counties), and whites predominate among the races.

**TABLE 8.1-3  
GENDER AND RACE DISTRIBUTION OF THE PROJECT CORRIDOR  
COUNTY POPULATIONS <sup>(a)</sup>**

County	Population (1993)	Male	Female	White	Black	Native American	Asian & Pacific Islanders	Other
Snohomish	507,900	253,345	254,555	469,286	5,818	7,140	21,596	4,060
King	1,587,700	782,313	805,387	1,320,897	84,368	18,723	145,898	17,814
Kittitas	29,200	14,498	14,702	27,510	156	186	844	504
Grant	60,300	30,535	29,765	49,425	671	673	728	8,803
Adams	14,300	7,218	7,082	9,073	33	65	102	5,027
Franklin	41,100	21,083	20,017	26,668	1,306	302	1,156	11,668
Subtotal	2,240,500	1,108,992	1,131,508	1,902,859	92,352	27,089	170,324	47,876
WA State	5,240,900	2,600,485	2,640,415	4,569,295	170,399	89,970	268,550	142,686

<sup>(a)</sup> OFM, 1993; OPM, 1994.

### 8.1.1.2 Housing

Data on housing characteristics in the project area counties and statewide are presented in Table 8.1-4 from the 1990 census of population and housing. The data show that household sizes (persons per household) were generally higher in Kittitas County and the three eastern, rural counties, while the median values of owner-occupied dwellings were lower, relative to the two westernmost counties and the statewide average. Vacancy rates in Kittitas County and the three eastern counties also tended to be higher than in King and Snohomish counties and statewide. However, it is likely that in the eastern, rural parts of King and Snohomish counties, vacancy rates and median values were probably more comparable to the other counties' figures. Housing market conditions in the big cities tend to be tighter than in the rural areas.

**TABLE 8.1-4  
HOUSING CHARACTERISTICS OF THE PROJECT CORRIDOR COUNTIES <sup>(a)</sup>**

County	Total Units	Occupied Units	Vacant Units	Percent Vacant	Owner-Occupied	Renter-Occupied	Persons per Household	Median Value <sup>(b)</sup>
Snohomish	183,935	171,713	12,222	6.6	113,775	57,938	2.68	\$127,200
King	647,301	615,792	31,509	4.9	362,038	253,754	2.40	\$140,100
Kittitas	13,214	10,460	2,754	20.8	5,979	4,481	2.33	\$60,500
Grant	22,807	19,745	3,062	13.4	12,757	6,988	2.74	\$51,600
Adams	5,263	4,586	677	12.9	3,004	1,582	2.94	\$45,900
Franklin	13,664	12,196	1,468	10.7	7,277	49,119	3.03	\$56,000
Subtotal	886,184	834,492	51,692	--	504,830	373,862	--	--
WA State	2,032,284	1,872,431	159,853	7.9	1,171,580	700,851	2.53	\$93,400

<sup>(a)</sup> Census Bureau, 1995.

<sup>(b)</sup> Of owner-occupied dwellings.

### 8.1.1.3 Employment and Income

The project corridor counties have differing economic bases. King and Snohomish counties have large manufacturing, financial, business and personal services, and wholesale/retail trade sectors, while the other four are weighted more towards natural resource utilization (farming, forestry, fishing and mining). Table 8.1-5 presents data on the six counties' composition of employment and earnings in 1993. King and Snohomish counties' large urban/industrial bases bias their data aggregates towards the manufacturing, financial and business services industries, but in the rural, eastern parts of the counties, agriculture is a relatively more important economic activity. King and Snohomish counties have large construction workforces, and may be expected to supply some of the skilled trades to be used in construction of the pipeline.

**TABLE 8.1-5**  
**PROJECT CORRIDOR COUNTIES' EMPLOYMENT AND INCOME (1993)<sup>(a)</sup>**  
**(Earnings in Thousands of Dollars)**

County		Agriculture, forestry, fishing	Mining, construction	Manufacturing	Transpt., commun., utilities	Wholesale, retail trade	Financial, other services	Government	Total
Snohomish	Jobs	5,959	17,397	56,418	7,446	50,141	71,105	28,837	237,303
	Earnings	\$145	\$539	\$2,564	\$260	\$927	\$1,389	\$841	\$6,664
	Per Capita Earnings	\$24.3	\$31.0	\$45.4	\$34.9	\$18.5	\$10.5	\$20.2	\$28.1
King	Jobs	14,797	62,098	157,385	66,761	264,374	466,317	145,308	1,177,040
	Earnings	\$526	\$2,280	\$7,028	\$2,840	\$6,532	\$14,731	\$4,619	\$38,556
	Per Capita Earnings	\$35.5	\$36.7	\$44.7	\$42.5	\$24.7	\$31.6	\$31.8	\$32.8
Kittitas	Jobs	1,414	483	921	572	3,540	3,472	3,878	14,280
	Earnings	\$27	\$11	\$22	\$18	\$54	\$45	\$99	\$276
	Per Capita Earnings	\$10.1	\$22.8	\$23.9	\$31.5	\$15.3	\$13.0	\$23.5	\$19.3
Grant	Jobs	6,114	1,991	3,302	1,141	6,349	5,610	5,619	30,126
	Earnings	\$191	\$46	\$95	\$34	\$104	\$81	\$157	\$708
	Per Capita Earnings	\$31.2	\$23.1	\$28.8	\$29.8	\$16.4	\$14.4	\$27.9	\$23.5
Adams	Jobs	2,162	178	1,066	439	1,697	1,476	1,363	8,381
	Earnings	\$90	\$4	\$31	\$10	\$29	\$21	\$31	\$215
	Per Capita Earnings	\$41.6	\$22.5	\$20.1	\$22.8	\$17.1	\$14.2	\$22.9	\$25.7
Franklin	Jobs	4,228	1,039	1,351	1,292	5,039	5,410	3,887	22,246
	Earnings	\$143	\$27	\$36	\$50	\$103	\$98	\$104	\$561
	Per Capita Earnings	\$33.8	\$26.0	\$26.6	\$38.7	\$20.4	\$18.1	\$26.8	\$25.2

<sup>(a)</sup> Bureau of Economic Analyses, 1994. Earnings by place of work; includes proprietors' earnings.

Table 8.1-6 presents a variety of data on the socioeconomic conditions of the project corridor counties, including per capita income, incidence of poverty, unemployment rates, percentages of population on various forms of public assistance, and enrollment levels in elementary and high schools. Data for the state are also presented for comparisons. As the table shows, King and Snohomish counties differ from the other four counties with respect to levels of income, unemployment, poverty and public assistance. The two western counties have higher levels of per capita income and lower incidences of unemployment, poverty, and public assistance than the eastern counties. This reflects the more robust urban/industrial conditions generated by the Seattle metropolitan and other urbanized areas of the region. The data suggest that the rural counties of the project corridor would benefit relatively more from jobs and income generated by the project than would King and Snohomish counties with their larger and broader economic bases.

**TABLE 8.1-6  
PROJECT AREA SOCIOECONOMIC INDICATORS <sup>(a)</sup>**

Parameter	Snohomish	King	Kittitas	Grant	Adams	Franklin	WA Statewide
Per capita income (1989)	\$15,769	\$18,587	\$10,781	\$10,376	\$10,083	\$10,407	\$14,923
Population (4/01/89)	444,460	1,463,301	26,029	52,044	13,570	37,221	4,728,076
No. families below poverty level (1989)	29,334	117,064	5,258	10,318	2,375	8,561	515,360
Percent families below poverty level (1989)	6.6%	8.0%	20.2%	19.6%	17.5%	23.0%	10.9%
Unemployment rate (1991)	5.6%	4.6%	10.5%	10.1%	13.4%	12.8%	6.3%
Number unemployed (1991)	13,180	40,350	1,330	2,875	1,020	2,225	157,370
Public Assistance (average number of persons per month and percent population, FY 1995):							
AFDC - number	21,741	68,447	1,209	4,304	1,483	4,069	289,199
AFDC - percent	4.14	4.24	4.02	6.67	9.76	9.25	5.33
General assistance - number	1,765	6,297	71	186	41	118	20,796
General assistance - percent	0.34	0.39	0.24	0.29	0.27	0.27	0.38
Food stamps	4.0%	5.3%	6.9%	5.4%	8.5%	18.5%	7.5%
Food stamps - number	35,130	11,052	2,104	7,012	2,732	6,891	476,474
Food stamps - percent	6.68	6.88	6.99	10.87	17.97	15.66	8.78
Medical assistance - number	33,768	104,225	1,624	7,165	3,119	6,633	451,071
Medical Assistance - percent	6.42	6.46	5.40	11.11	20.52	15.08	8.31
Public School Attendance (K-12, 1994-95):							
Avg. annual attendance	85,588	222,067	4,448	14,202	3,510	9,041	885,668
No. of districts	14	19	6	10	5	4	296

<sup>(a)</sup> Census Bureau, 1995; OFM, 1995.

#### **8.1.1.4 Local Government Finances**

The pipeline project will have a positive impact on local government finances. Purchases of materials and equipment for construction will generate sales and use taxes, while the expansion of OPL's land holdings and facilities (i.e., its real and personal property) may add to local jurisdictions' assessed valuations and property taxes. Table 8.1-7 presents the sources and levels of revenues collected in 1992 by county governments and school districts in the project corridor counties. These figures will be referred to later in the analysis of potential fiscal impacts.



**TABLE 8.1-7**  
**PROJECT CORRIDOR COUNTY AND SCHOOL DISTRICT REVENUES (1992)<sup>(a)</sup>**  
**(In Millions of Dollars)**

Jurisdiction	Property Taxes	Sales & Use Taxes	Other Taxes	Inter-Govt. Transfers	Charges for Services	All Other	Total Revenues
<b>Snohomish County</b>							
County	55.51	21.37	17.57	44.35	47.34	29.15	215.27
Schools	70.88	--	20.82	394.64	--	1.25	487.59
Total	\$120.39	\$21.37	\$38.39	\$438.97	\$47.34	\$30.40	\$702.86
<b>King County</b>							
County	320.20	226.17	106.78	219.74	366.84	291.01	1,530.74
Schools	259.28	--	50.88	1,028.86	--	--	1,339.01
Total	\$579.48	\$226.17	\$157.66	\$1,248.60	\$366.84	\$291.01	\$2,869.75
<b>Kittitas County</b>							
County	1.62	0.04	0.87	6.04	1.23	2.74	12.52
Schools	2.68	--	0.90	22.46	--	--	26.04
Total	\$4.30	\$0.04	\$1.77	\$28.50	\$1.23	\$2.74	\$38.56
<b>Grant County</b>							
County	7.65	2.72	0.90	14.12	3.32	7.69	36.41
Schools	6.95	--	1.73	70.89	--	--	79.57
Total	\$14.60	\$2.72	\$2.63	85.02	\$3.32	\$7.70	\$115.98
<b>Adams County</b>							
County	2.28	0.39	0.35	6.57	1.08	1.40	12.26
Schools	2.09	--	0.58	19.64	--	--	22.32
Total	\$4.37	\$0.39	\$0.93	\$20.21	\$1.08	\$1.40	\$34.58
<b>Franklin County</b>							
County	4.65	1.38	0.87	8.31	1.88	8.72	25.80
Schools	5.13	--	0.92	48.85	--	--	54.90
Total	\$9.77	\$1.38	\$1.78	\$57.16	\$1.88	\$8.72	\$20.70

<sup>(a)</sup> OFM (1995).

As the table shows, school districts collect the majority of local revenues, with intergovernmental transfers (primarily from the state) accounting for the bulk of income. Local property taxes typically account for 10 to 20 percent of total revenues for both types of jurisdiction, with the higher share occurring in Snohomish and King counties with their larger residential and business property tax bases. Intergovernmental transfers account for a smaller share of county government revenues in Snohomish and King counties than in the more rural counties.

### 8.1.2 IMPACTS

This section evaluates the local socioeconomic effects of the Cross Cascade Pipeline project. One important issue is the extent to which the construction project could stress local communities as a result of increased demand for local manpower, locally produced materials and equipment, and public and private services. Both short-term and long-term economic impacts will mainly be positive, but the possibility exists for temporary strains on local community resources due to such factors as worker relocation and fluctuations in business demand. This possibility is assessed based on descriptions provided by OPL's design consultants of the magnitude and timing of construction activities and their associated resource requirements, and on the use of a regional economic impact model (IMPLAN) which generates projections of multiplier effects on employment, income, output, and local taxes in each of the project corridor counties.

The primary direct economic benefit of this project to local businesses and governments is during the construction phase. As described below, OPL estimates that sales and use taxes on the goods consumed in constructing the project will amount to nearly \$7.6 million. The majority of the jobs associated with this proposal are with the construction phase of approximately 911 workers. If the project is not constructed, those jobs would be lost along with the direct revenue and taxes from the purchase of construction materials. The no-action alternatives would not create construction jobs or construction-related revenue. During the construction phase of the pipeline project, the transport of petroleum product by barge would continue and jobs associated with that activity would continue.

### 8.1.2.1 Construction Phase

#### The Project's Resource Requirements and Schedule

Details of the construction schedule, manpower loading and capital costs are provided in Section 2.12 Construction and Operation Activities of this application. Of particular interest to the socioeconomics analysis are 1) the numbers of workers that will be hired locally from communities along the right-of-way, versus transferred in from out of the region, thus requiring temporary housing and other services; 2) the wages and salaries that will be paid (of which a portion will be spent locally, thus benefitting local merchants; and 3) the procurements of local construction materials and services (also benefitting local suppliers as well as generating sales taxes).

The total costs of materials, equipment, labor and local taxes for the project are estimated to be \$105 million, of which approximately \$26 million will be for major procurements of pipe, pumping facilities and other operating equipment, \$58 million will be for construction activities and manpower, \$14 million for land and right-of-way, and \$7 million for local sales and use taxes.<sup>2</sup>

Geographically, the total costs of the project are distributed among the six counties containing the right-of-way as shown in Table 8.1-8. A significant factor in the socioeconomic impact of the project is the amount and distribution of local expenditures, which consist of workers' wages and salaries, locally procured materials (notably motor fuels and aggregates), and services (e.g., engineering, equipment leasing and repair, transportation, and security). These local expenditures, which are estimated to total approximately \$28 million, are the principal factor generating secondary employment and income in communities along the right-of-way. The direct, indirect, and induced effects of the project are assessed in the next subsection.

**TABLE 8.1-8  
CROSS CASCADE PIPELINE PROJECT COSTS, BY COUNTY**

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<sup>2</sup> See Table 8.1-9, below. It should be noted that these are preliminary estimates, and that the estimation of the local component expenditures and their geographical allocation is based on a variety of data sources and assumptions. OPL provided total costs of pipe and pipeline construction, valves and fittings, and land and right-of-way, which were proportioned among the six counties on the basis of pipeline length. Costs of other facilities were assigned on the basis of location-specific data from OPL.

**TABLE 8.1-8 (CONTINUED)**  
**CROSS CASCADE PIPELINE PROJECT COSTS, BY COUNTY**

County	Component	Cost	Pipeline Mileage
Snohomish	14" Pipeline	\$5,550,662	14.0
	Pump station (Thrasher)	\$941,166	
	Subtotal	\$6,491,829	
[of which estimated direct local area expenditures:		\$1,939,544] <sup>(a)</sup>	
King	Pipeline (14")	\$17,246,701	43.5
	Pump station	\$921,995	
	Subtotal	\$18,168,696	
[of which estimated direct local area expenditures:		\$5,125,922] <sup>(a)</sup>	
Kittitas	Pipeline (14" )	\$26,307,081	66.8
	Pipeline (12")	\$10,197,466	25.7
	Terminal/pump station	\$11,098,372	
	Subtotal	\$47,602,919	
[of which estimated direct local area expenditures:		\$12,282,310] <sup>(a)</sup>	
Grant	Pipeline (12")	\$12,216,877	30.5
[of which estimated direct local area expenditures:		\$3,386,607] <sup>(a)</sup>	
Adams	Pipeline (12")	\$3,768,704	9.4
[of which estimated direct local area expenditures:		\$936,730] <sup>(a)</sup>	
Franklin	Pipeline (12")	\$16,219,858	41.1
	Delivery facility	\$650,463	
	Subtotal	\$16,870,321	
[of which estimated direct local area expenditures:		\$4,332,763] <sup>(a)</sup>	
Total Pipeline Sections		\$91,507,350	230.3
Total Other Facilities		\$13,611,997	
Grand Total		\$105,119,347	
[of which estimated direct local area expenditures:		\$28,003,875] <sup>(a)</sup>	

<sup>(a)</sup> Labor costs, site acquisition costs and local-area procurements (see Table 8.1-9, Panel B). Excludes major non-local material and equipment costs (e.g., pipe, coatings, pumping and control equipment costs) and state/local sales taxes.

### **Direct and Indirect/Induced Effects**

The principal factors driving local socioeconomic impacts are the money flows involved in mobilizing and deploying manpower and material resources to construct and operate the pipeline system and the associated movements of people in and out of the project area. Communities and residents in the project corridor will experience both beneficial and negative effects from a number of factors, including:

- C temporary relocation of non-local workers
- C hiring of local residents for the project
- C procurement of locally-supplied goods and services for use in the project
- C spending by project personnel in local markets
- C payment of sales and use taxes on taxable goods consumed by the project and property taxes on the right-of-way and improvements

These activities, in turn, will generate spending in the regional economy by enterprises and individuals earning income from the project, which will have multiplier effects on local income and employment. During the construction phase (estimated to last 12 months from clearing to revegetation) there will be a buildup of impacts as the project's activities expand, be followed by a contraction of activity and economic stimulus as the work winds down. After completion of construction, operation of the pipeline system will generate a small but steady flow of income, employment, and taxes in the project corridor counties.

Due to the concentration of activities in a 12-month period, the construction phase will generate the bulk of the project's overall socioeconomic effects. As described in detail in Section 2.12 Construction and Operation Activities, construction will proceed simultaneously in three locations, divided among three construction spreads. Spread No. 1 will operate over three counties: Snohomish (14.0 miles), the northeastern part of the right-of-way in King (18.4 miles), and the central part of Kittitas (46.0 miles); it will have a peak workforce of 375 persons. Spread No. 2 will operate primarily in eastern King and western Kittitas counties (covering 24.6 miles and 18.4 miles, respectively); it will handle the mountainous segment of the project over (and through) Snoqualmie Pass as well as major river crossings. Its peak workforce will number 159 persons. Spread No. 3 will operate in the eastern part of Kittitas County (28.1 miles) and in Grant (30.5 miles), Adams (9.4 miles) and Franklin (41.1 miles) counties. Its peak workforce will number 375 persons.

After regular operations commence, the project will employ approximately 8 to 10 fulltime employees.

## Impact Modeling

The IMPLAN system of input-output modeling was used to project the multiplier effects of construction. Some adjustments had to be made to the model to make it applicable to the Cross Cascade Pipeline Project.

The IMPLAN modeling database does not have a specific scenario for pipeline construction. The nearest database is a scenario for public utility facilities construction (IMPLAN Industry No. 50), which is heavily weighted by the inputs involved in constructing fossil-fueled power plants. Power plant construction involves much more design and construction management services than pipelines so an impact analysis of a pipeline project using IMPLAN's Industry No. 50 data base results in the project area economy appearing to be over-stimulated to supply such services. To correct for this bias, two steps were taken: the first was to adjust the IMPLAN Industry No. 50 scenario database to reduce the weight of architect-engineering activities; the second was to estimate the shares of construction elements that would be procured within the project corridor counties (as distinct from those, such as pipe, coatings and pumping equipment, that would be procured from suppliers elsewhere in the United States). Based on discussions with OPL cost estimators, it was projected that approximately 10 percent of the non-labor construction materials and services to be consumed on-site would be procured from suppliers located within the project corridor counties.

### Non-Labor Local Procurements

Table 8.1-9 presents a breakdown of the project's construction costs allocated among the six corridor counties on the basis of pipeline mileage and construction spread location. The table is composed of two panels: Panel A identifies all major cost elements by county, while Panel B derives an estimate of labor and non-labor costs that would be incurred specifically within the corridor counties. The non-labor totals in Panel B were entered into the modified IMPLAN model of Industry No. 50 (Public Utilities Construction) to develop projections of the impacts of procurements of locally-supplied goods and services in the corridor counties. The local non-labor procurements during the construction phase are projected as follows:

C Snohomish County	\$289,700
C King County	886,600
C Kittitas County	2,755,200
C Grant County	617,400
C Adams County	209,000
C Franklin County	878,100
<b>C Total Non-Labor Procurements</b>	<b>\$5,636,100</b>

### Local Consumption Spending

The other component of the IMPLAN analysis was to account for the effects of project workers' local spending. Purchases of food, lodging, entertainment, and other expenses, both by locally hired and non-local transient workers hired elsewhere for the project, will stimulate incomes and employment of local merchants and other providers of goods and services in the corridor counties. For the analysis it was first necessary to estimate the wages and salaries of the workforce (divided among the three spreads over the six counties) and project the portions of their earnings that would be expended in the project region. These projections are illustrated in Tables 8.1-10 and 8.1-11. Table 8.1-10 shows the composition of crafts by spread for the peak level of employment (Panel A) and the projected numbers of project corridor resident workers to be hired (Panel B), which amounts to approximately 30 percent of the total workforce.

Table 8.1-11 shows the monthly manpower loading for the overall construction project and the associated wages and salaries of its workers. The average wage/salary assumed for this project is \$200 per day, or \$25 per hour, before taxes and net of fringe benefits. This wage rate yields an overall construction payroll of \$17.2 million. Including fringe benefits (assumed to be 30 percent), the total labor cost of the project is projected to be about \$22.4 million.

**TABLE 8.1-9**

**CROSS CASCADES PIPELINE PROJECT: PRELIMINARY COST ESTIMATE**

<b>PANEL A: ESTIMATED DISTRIBUTION OF TOTAL COSTS, BY COUNTY*</b>								
		Estimated Distribution of All Costs*						Totals
		Snohomish	King	Kittitas	Grant	Adams	Franklin	
		14.0	43.5	92.5	30.5	9.4	41.1	231
FERC Category	Project Element	6.06%	18.83%	40.04%	13.20%	4.07%	17.79%	100.00%
		Cost (\$)	Cost (\$)	Cost (\$)	Cost (\$)	Cost (\$)	Cost (\$)	Cost (\$)
151	Land	22,022	68,425	145,500	47,976	14,768	64,649	363,358
152	Right of Way	807,861	2,510,140	5,337,654	1,759,983	542,421	2,371,650	13,329,709
153	API Line Pipe	1,346,435	4,183,567	8,896,090	2,933,305	904,035	3,952,749	22,216,181
154	Valves & Fittings	64,709	200,364	426,061	140,485	43,297	189,309	1,064,000
155	Pipeline Construction	2,975,706	9,245,943	19,660,914	6,482,788	1,997,974	8,735,822	49,099,148
156	Buildings & Facilities	50,000	50,000	0	0	0	150,000	250,000
158	Pumping Equipment	200,000	200,000	200,000	0	0	0	600,000
160	Kittitas Terminal Construction	0	0	9,000,000	0	0	0	9,000,000
160	Metering Equipment	200,000	0	200,000	0	0	200,000	600,000
160	Other Station Equipment	333,333	333,333	333,334	0	0	0	1,000,000
Subtotal		5,999,842	16,791,771	44,199,553	11,364,537	3,502,513	15,664,180	97,522,396
--	State/Local Sales Tax Rates	8.2%	8.2%	7.7%	7.5%	7.6%	7.7%	
--	State/Local Sales Taxes	491,987	1,376,925	3,403,366	852,340	266,191	1,206,142	7,596,951
Total Costs		6,491,829	18,168,696	47,602,919	12,216,877	3,768,704	16,870,321	105,119,347

(cont.)

**TABLE 8.1-9 (cont.): PANEL B: ESTIMATED DISTRIBUTION OF LOCAL CONSTRUCTION EXPENDITURES, BY COUNTY\***

		Estimated Distribution of Local Expenditures*					
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Project Element	Snohomish	King	Kittitas	Grant	Adams	Franklin	Totals
Pump Station	941,166	921,995	11,098,372	0	0	0	12,961,533
14" Pipeline	5,550,662	17,246,701	26,307,081	0	0	0	49,104,444
12" Pipeline	0	0	10,197,466	12,215,877	3,768,704	16,219,858	42,402,905
Delivery Facilities	0	0	0	0	0	650,463	650,463
Total Costs	6,491,828	18,168,696	47,602,919	12,215,877	3,768,704	15,870,321	105,119,345
Less Sales Taxes	491,987	1,376,925	3,403,366	852,340	266,191	1,206,142	7,596,951
Equals Costs before Sales Taxes	5,999,841	16,791,771	44,199,553	11,364,537	3,502,513	15,664,179	97,522,394
Of which Direct On-Site Procurements***	4,546,723	13,105,777	37,079,385	8,943,526	2,817,630	12,235,740	78,728,781
<b>Less Construction Wages &amp; Salaries</b>	<b>1,649,858</b>	<b>4,239,271</b>	<b>9,527,079</b>	<b>2,769,171</b>	<b>727,741</b>	<b>3,454,655</b>	<b>22,367,775</b>
Equals Total Non-Labor Procurements	2,896,865	8,866,506	27,552,306	6,174,355	2,089,889	8,781,085	56,361,006
<b>Less Local Procurements (10%)</b>	<b>289,686</b>	<b>886,651</b>	<b>2,755,231</b>	<b>617,436</b>	<b>208,989</b>	<b>878,108</b>	<b>5,636,101</b>
Equals Non-Local Procurements	2,607,178	7,979,856	24,797,076	5,556,920	1,880,900	7,902,976	50,724,906

\* Dames & Moore estimates based on OPL 1995a, 1995b. Local expenditures include construction workers' wages and salaries and locally procured materials and services.

\*\*Construction wages by county are estimated in Table 8.1-3, below.

\*\*\*Olympic Pipeline Co. estimate.

\*\*\*\*Table 8.1-12.

**TABLE 8.1-10  
MANPOWER LOADING**

<b>PANEL A: LOADING, BY SPREAD AND CRAFT</b>				
<b>Personnel</b>	<b>Spr. #1</b>	<b>Spr. #2</b>	<b>Spr. #3</b>	<b>Total</b>
Superintendent	3	1	3	7
Assistant Supt.	0	2	0	2
Office Manager	2	2	2	6
Safety Coordinator	1	2	1	4
Payroll Clerk	2	1	2	5
Materials Manager	2	1	2	5
Foreman	20	10	20	50
Mechanic	12	10	12	34
Welder	30	12	30	72
Journeyman	6	6	6	18
Operator	112	36	112	260
Welder Helper	60	24	60	144
Driver	30	12	30	72
Laborer, skilled	20	10	20	50
Laborer, unskilled	75	30	75	180
<b>Total</b>	<b>375</b>	<b>159</b>	<b>375</b>	<b>910</b>
<b>PANEL B: ESTIMATED LOCAL HIRING</b>				
Operator (25%)	28	9	28	65
Welder Helper (10%)	6	2	6	14
Driver (25%)	8	3	8	18
Laborer (75%)	71	30	71	173
<b>Total Local Hires</b>	<b>113</b>	<b>44</b>	<b>113</b>	<b>270</b>
Pct. Locals of Total	30.1%	27.6%	30.1%	29.6%

**TABLE 8.1-11**  
**ESTIMATED MONTHLY MANPOWER LOADING AND WAGES**<sup>(a)</sup>

Monthly Loading		Man-Days per Mo.	Gross Wages @ \$260.00 (\$'000)	Net Wages @ \$200.00 (\$'000)
Month	No. Workers			
1	10	217	56.34	43.34
2	40	867	225.37	173.36
3	60	1,300	338.05	260.04
4	200	4,334	1,126.84	866.80
5	950	20,587	5,352.49	4,117.30
6	950	20,587	5,352.49	4,117.30
7	950	20,587	5,352.49	4,117.30
8	350	7,585	1,971.97	1,516.90
9	200	4,334	1,126.84	866.80
10	200	4,334	1,126.84	866.80
11	50	1,084	281.71	216.70
12	10	217	56.34	43.34
		86,030	\$22,368	\$17,206

<sup>(a)</sup> Based on Dames & Moore estimates of average wage rates.

The next step was to estimate the amount of local consumption spending by the construction workers. Based on household budget data from the Census Bureau, it is estimated that local residents spend approximately 80 percent of their before-tax earnings for consumption, and the balance for taxes and savings. Non-local transient workers are estimated to spend about 35 percent of their before-tax earnings. Based on the number of local hires estimated in Table 8.1-10 (Panel B), it is possible to estimate the amount of consumption spending in each county. This analysis is presented in Table 8.1-12.

**TABLE 8.1-12  
ESTIMATED LOCAL SPENDING BY WORKERS**

Estimated Distribution of Spending, by County <sup>(a)</sup> (Thousands of dollars)							
Avg. Max. Spending		Snohom.	King	Kittitas	Grant	Adams	Franklin
per Spread Loadings-->		65.89	169.30	380.47	110.59	29.06	137.96
(Percent Distrib.)--->		7.38%	18.95%	42.59%	12.38%	3.25%	15.44%
Total (\$'000)		(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)	(\$'000)
1	20.94	1.54	3.97	8.92	2.59	0.68	3.23
2	83.77	6.18	15.88	35.68	10.37	2.73	12.94
3	125.65	9.27	23.81	53.52	15.56	4.09	19.41
4	418.84	30.89	79.38	178.40	51.85	13.63	64.69
5	1,989.48	146.75	377.06	847.38	246.30	64.73	307.27
6	1,989.48	146.75	377.06	847.38	246.30	64.73	307.27
7	1,989.48	146.75	377.06	847.38	246.30	64.73	307.27
8	732.97	54.06	138.92	312.19	90.74	23.85	113.21
9	418.84	30.89	79.38	178.40	51.85	13.63	64.69
10	418.84	30.89	79.38	178.40	51.85	13.63	64.69
11	104.71	7.72	19.85	44.60	12.96	3.41	16.17
12	20.94	1.54	3.97	8.92	2.59	0.68	3.23
	8,313.93	613.24	1,575.70	3,541.14	1,029.28	270.50	1,284.07

<sup>(a)</sup> Assumes locals spending at 80 percent of net wages, non-locals at 35 percent net wages. Percentage distribution is based on pipeline mileage and pump station locations.

Source: Dames & Moore estimates based on Tables 8.1-10 and 8.1-11.

The analysis determined that the construction workers' local consumption spending would amount to about \$8.3 million over the 12 months of construction among the six pipeline corridor counties. The figures reflect the estimate (shown in Table 8.1-10, Panel B) that the majority of the workers will be non-local, higher skilled craftspersons hired from outside of the project region. The totals for local consumption spending in each county were entered into the IMPLAN model's personal consumption impacts scenario to estimate the indirect and induced income and employment that would be generated by the workers' direct spending. In this manner the potential economic impacts of the project were accounted for, by disaggregating the local money flows originating from project procurements and worker earnings.

## Local Economic Impacts of Construction

The construction project will generate temporary increases in economic activity in the pipeline corridor counties in the form of increased business for local businesses, expanded employment, increased personal income, and additional tax revenues. Projected changes in local industry output (i.e., gross sales of all economic entities), personal income, and jobs are presented in Tables 8.1-13, 8.1-14 and 8.1-15, respectively.

### Economic Output

Table 8.1-13 shows the dollar increase in local gross sales of goods and services stimulated by the local procurements and worker spending associated with pipeline construction over a 12-month period. The table shows the direct, indirect plus induced, and total value of new business generated by procurement and spending activity. The initial amount of direct procurements and worker spending in each county that sets off the multiplier effects on total county output is indicated in a memo block at the bottom of the table (procurements data from Table 8.1-9; Panel B; worker spending from Table 8.1-12).

Overall, the impact of the pipeline construction on the project corridor counties' economies is projected to amount to a short-term increase of about \$20 million in total local business (i.e., gross sales). The initial infusion of \$13 million in project workers' spending plus procurements of locally-supplied construction materials and services would recycle through the local economy, causing multiplier effects which would eventually generate another \$7.5 million in indirect and induced effects. Ultimately, the effect of the project-related spending that remains in the project corridor counties would be to expand overall business to about \$20.5 million. The distribution of business increases among the counties' major economic sectors at each stage of the expenditure cycle is indicated in Table 8.1-13. Approximately two-thirds of the incremental business gains would accrue to the trade and services sectors (including transportation and utilities and government). For the project region as a whole, the output multiplier for the project-related local spending would be 1.58: for every \$1.00 in local area project-related spending another \$0.58 worth of business would be stimulated secondarily as a result of the recycling of the construction work spending.

The largest share of the output increase would occur in Kittitas County, which has the most mileage and project expenditures for materials and labor. Kittitas County would accrue nearly one-half of the project's economic impacts. Adams County would experience the least effects, having only about 10 miles of pipeline within its boundaries. The magnitude of the output multiplier effect is greatest in Snohomish and King counties, due to their greater depth and diversity of economic activity compared to the other four counties. As a result, a higher proportion of the project's and workers' requirements for supplies can be acquired in those two counties, and the money introduced by their expenditures circulates longer and affects a higher ratio of businesses.

**TABLE 8.1-13  
INDUSTRY OUTPUT IMPACTS**

<b>Direct Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	6,915	12,175	49,445	23,252	7,450	7,774	107,011
Mining	19,645	7,599	23,253	43,843	4,581	68,305	167,226
Construction	657	2,002	7,260	1,548	876	1,568	13,911
Manufacturing	246,777	752,549	2,206,014	605,089	146,140	394,478	4,351,047
Trans., Comm., & Utilities	42,663	129,565	351,464	92,407	31,165	46,076	693,340
Trade	160,873	423,335	1,163,680	273,176	110,585	131,164	2,262,813
Fin., Insur., & Real Estate	142,194	365,625	918,127	229,071	82,724	78,490	1,816,231
Services	258,970	718,911	1,443,246	303,263	82,201	391,155	3,197,746
Government	24,232	50,590	133,881	75,068	13,766	29,599	327,136
Total Direct	902,926	2,462,351	6,296,370	1,646,717	479,488	1,148,609	12,936,461
<b>Indirect and Induced Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	7,122	8,764	109,367	35,402	6,300	11,216	178,171
Mining	231	945	713	7,849	11	2,817	12,566
Construction	38,204	102,145	185,571	41,986	9,975	26,483	404,364
Manufacturing	48,394	186,780	147,410	37,996	6,861	12,585	440,026
Trans., Comm., & Utilities	43,700	187,980	360,342	71,899	33,670	56,422	754,013
Trade	170,031	432,861	810,803	169,952	67,997	110,896	1,762,540
Fin., Insur., & Real Estate	180,703	433,967	681,669	140,039	56,547	72,376	1,565,301
Services	207,886	575,370	880,885	180,441	58,877	140,379	2,043,838
Government	41,439	85,573	134,216	73,064	3,752	37,122	375,166
Total Indirect + Induced	737,710	2,014,385	3,310,976	758,628	243,990	470,296	7,535,985
<b>Total Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	14,037	20,939	158,812	58,654	13,750	18,990	285,182
Mining	19,876	8,544	23,966	51,692	4,592	71,122	179,792
Construction	38,861	104,147	192,831	43,534	10,851	28,051	418,275
Manufacturing	295,171	939,329	2,353,424	643,085	153,001	407,063	4,791,073
Trans., Comm., & Utilities	86,363	317,545	711,806	164,306	64,835	102,498	1,447,353
Trade	330,904	856,196	1,974,483	443,128	178,582	242,060	4,025,353
Fin., Insur., & Real Estate	322,897	799,592	1,599,796	369,110	139,271	150,866	3,381,532
Services	466,856	1,294,281	2,324,131	483,704	141,078	531,534	5,241,584
Government	65,671	136,163	268,097	148,132	17,518	66,721	702,302
Total	1,640,636	4,476,736	9,607,346	2,405,345	723,478	1,618,905	20,472,446
<b>Memo: Direct Local Construction Expenditures (Tables 8.1-10, -11):</b>							
Project Procurements	289,686	886,651	2,755,231	617,436	208,989	878,107	5,636,100
Worker Spending	613,240	1,575,704	3,541,142	1,029,279	270,500	270,500	7,300,365
Total Local Direct	902,926	2,462,355	6,296,373	1,646,715	479,489	1,148,607	12,936,465

TIO Multipliers	1.82	1.82	1.53	1.46	1.51	1.41	1.58
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Source: Dames & Moore estimates.

### Personal Income

Personal income would be affected positively by the construction work. Table 8.1-14 presents the estimates of the amounts and distribution of earnings accruing to local residents and businesses on a place of work basis. Personal income is one component of the value created by production of goods and services.

According to the IMPLAN regional model, the \$12.9 million in local direct procurements and worker spending would generate about \$4.7 million in local personal income for employees and proprietors of local businesses serving the project. Their spending, in turn, would stimulate another \$2.9 million in induced spending by households deriving income from project-related spending. The combined effect of these flows would add approximately \$7.6 million to the level of personal income in the project region during the construction phase.

### Employment

Jobs in the project corridor counties would temporarily expand in response to the income stimulus as businesses increased their payrolls to accommodate the rise in demand (over and above the direct construction jobs on site). Table 8.1-15 provides the estimate of the change in employment among businesses in the project corridor counties during the construction phase. The IMPLAN model analysis projects that in addition to the 330 direct construction jobs on the pipeline project, another 205 jobs would develop in the region as a result of the project's stimulus to the local economy.<sup>3</sup> With over 900 workers involved during the middle three months of the project, local businesses would not be expected make any long-term hiring decisions to meet the demands of the project; instead, workers and owners would put in overtime and businesses would hire temporaries to handle the spike in demand. Kittitas County would experience the largest increment of employment due to its having the largest components of the project.

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<sup>3</sup> It should be noted that the data in Table 8.1-15 are for annualized fulltime equivalent employment, which means that the number of workers per month and their man-hours to be worked were "levelized" to an equivalent annual level of employment.

**TABLE 8.1-14  
INCOME (PLACE OF WORK) IMPACTS**

<b>Direct Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	2,025	3,615	14,264	6,937	2,265	2,276	31,382
Mining	6,900	2,696	8,087	3,311	1,410	10,405	32,809
Construction	269	791	3,210	978	333	944	6,525
Manufacturing	64,843	177,639	728,390	138,914	29,296	122,854	1,261,936
Trans., Comm., & Utilities	13,073	38,390	122,112	28,626	8,710	13,810	224,721
Trade	80,414	207,443	629,414	125,221	51,091	64,146	1,157,729
Fin., Insur., & Real Estate	19,828	48,974	140,011	29,499	8,703	11,227	258,242
Services	144,672	393,427	751,550	138,277	37,996	210,533	1,676,455
Government	7,323	18,049	42,906	17,416	3,329	7,777	96,800
<b>Total</b>	<b>339,347</b>	<b>891,024</b>	<b>2,439,944</b>	<b>489,179</b>	<b>143,133</b>	<b>443,972</b>	<b>4,746,599</b>
<b>Indirect and Induced Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	3,364	5,225	39,686	12,683	2,130	3,123	66,211
Mining	83	310	235	623	3	325	1,579
Construction	15,535	40,144	81,626	19,620	3,747	8,973	169,645
Manufacturing	11,222	44,564	33,260	7,528	1,613	2,363	100,550
Trans., Comm., & Utilities	14,110	54,551	119,988	20,606	8,604	15,235	233,094
Trade	85,099	211,998	437,002	75,518	31,695	52,366	893,678
Fin., Insur., & Real Estate	27,993	65,345	85,128	24,596	6,713	6,907	216,682
Services	109,078	307,167	457,000	85,613	29,344	69,060	1,057,262
Government	12,836	32,484	43,706	21,456	2,841	10,334	123,657
<b>Total</b>	<b>279,320</b>	<b>761,788</b>	<b>1,297,631</b>	<b>268,243</b>	<b>86,690</b>	<b>168,686</b>	<b>2,862,358</b>
<b>Total Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	5,389	8,840	53,950	19,620	4,395	5,399	97,593
Mining	6,983	3,006	8,322	3,934	1,413	10,730	34,388
Construction	15,804	40,935	84,836	20,598	4,080	9,917	176,170
Manufacturing	76,065	222,203	761,650	146,442	30,909	125,217	1,362,486
Trans., Comm., & Utilities	27,183	92,941	242,100	49,232	17,314	29,045	457,815
Trade	165,513	419,441	1,066,416	200,739	82,786	116,512	2,051,407
Fin., Insur., & Real Estate	47,821	114,319	225,139	54,095	15,416	18,134	474,924
Services	253,750	700,594	1,208,550	223,890	67,340	279,593	2,733,717
Government	20,159	50,533	86,612	38,872	6,170	18,111	220,457
<b>Total</b>	<b>618,667</b>	<b>1,652,812</b>	<b>3,737,575</b>	<b>757,422</b>	<b>229,823</b>	<b>612,658</b>	<b>7,608,957</b>

Source: Dames & Moore estimates.

**TABLE 8.1-15  
JOBS IMPACTS (FTE)**

<b>Direct Effects of Local Procurements + Workers' Personal Spending</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	0.1	0.2	0.5	0.3	0.1	0.1	1.3
Mining	0.1	0.0	0.1	0.1	0.0	0.3	0.6
Construction	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Manufacturing	1.6	4.2	12.3	3.0	0.6	3.2	24.9
Trans., Comm., & Utilities	0.3	0.8	1.8	0.7	0.2	0.4	4.2
Trade	3.2	8.6	15.3	6.9	1.7	2.7	38.4
Fin., Insur., & Real Estate	0.5	1.6	2.3	1.6	0.3	0.6	6.9
Services	3.4	11.1	15.9	6.2	1.1	5.8	43.5
Government	0.3	0.8	1.0	1.0	0.4	0.2	3.7
<b>Total</b>	<b>9.5</b>	<b>27.3</b>	<b>49.2</b>	<b>19.8</b>	<b>4.4</b>	<b>13.3</b>	<b>123.5</b>
<b>Indirect and Induced Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	0.1	0.2	1.3	0.6	0.0	0.1	2.3
Mining	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Construction	0.4	1.0	1.1	0.5	0.1	0.3	3.4
Manufacturing	0.3	1.1	0.6	0.3	0.0	0.1	2.4
Trans., Comm., & Utilities	0.3	1.2	1.8	0.5	0.1	0.4	4.3
Trade	3.3	8.3	9.9	4.2	1.1	2.4	29.2
Fin., Insur., & Real Estate	0.9	2.4	2.0	1.1	0.2	0.5	7.1
Services	3.2	10.7	9.1	3.7	0.7	2.7	30.1
Government	0.4	0.8	0.7	0.8	0.1	0.3	3.1
<b>Total</b>	<b>8.9</b>	<b>25.7</b>	<b>26.5</b>	<b>11.7</b>	<b>2.3</b>	<b>6.9</b>	<b>82.0</b>
<b>Total Effects of Local Procurements + Workers' Personal Spending (\$1995)</b>							
<b>Sector</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>	<b>6-County Totals</b>
Ag., Forestry & Fisheries	0.2	0.4	1.8	0.9	0.1	0.2	3.6
Mining	0.1	0.0	0.1	0.1	0.0	0.4	0.7
Construction	0.4	1.0	1.1	0.5	0.1	0.3	3.4
Manufacturing	1.9	5.3	12.9	3.3	0.6	3.3	27.3
Trans., Comm., & Utilities	0.6	2.0	3.6	1.2	0.3	0.8	8.5
Trade	6.5	16.9	25.2	11.1	2.8	5.1	67.6
Fin., Insur., & Real Estate	1.4	4.0	4.3	2.7	0.5	1.1	14.0
Services	6.6	21.8	25.0	9.9	1.8	8.5	73.6
Government	0.7	1.6	1.7	1.8	0.5	0.5	6.8
<b>Total</b>	<b>18.4</b>	<b>53.0</b>	<b>75.7</b>	<b>31.5</b>	<b>6.7</b>	<b>20.2</b>	<b>205.5</b>
<b>Memo: Direct Project Jobs (Annualized Full Time Equivalent)</b>							
	24	63	140	41	11	51	330

Source: Dames & Moore estimates.

## Tax Revenues

OPL estimates that sales and use taxes on the goods consumed in constructing the project will amount to nearly \$7.6 million. Based on current sales and use tax rates in each of the corridor counties (see Table 8.1-9), the counties would receive the following additional sales tax revenues:

C Snohomish County	491,987
C King County	1,376,925
C Kittitas County	3,403,366
C Grant County	852,340
C Adams County	266,191
C Franklin County	1,206,142
<b>C Total</b>	<b>\$7,596,951</b>

Property taxes will be due and payable when the state determines the assessable value of the facilities improvements. Since construction is to take just one year, no property taxes would likely be assessed during that phase. After operations commence, however, the facility will be assessed and local jurisdictions will levy their taxes. The state will also impose other taxes on operations.

## Population, Housing and Services

All of the estimates presented in the preceding tables are based on projections of manpower loading and local procurements which may differ in practice; but, because of the relatively short term of the project and because much of the construction work will progress fairly rapidly, the project's impacts on any given community will be brief. Worker relocation is not expected to be a significant problem, because transient accommodations are widely available throughout the project corridor. At least one-fourth of the workforce should be able to commute on a daily basis from their homes in nearby communities or counties. Kittitas County will experience the largest number of direct workers, with about 42 percent of the total project workforce. At peak, that would amount to about 400 workers, of whom an estimated 120 would be locally-hired residents. The 280 transient workers would represent less than 1 percent of the county's total 1995 population and only 2 percent of the population of Ellensburg, its principal city. Accordingly, the impact of non-local workers will be insignificant in terms of requiring housing and other local services. It is not expected that the supply of transient accommodations in Kittitas and the other counties will be strained to meet the non-local workers' housing needs. The impacts of the project's transient workers in the other five counties will be even less than in Kittitas County, due to the smaller workforce numbers involved in the other locations. In addition, apart from the temporary and small increases in local populations from transient workers, no permanent population changes are expected to occur as a result of the construction phase activities because workers generally do not bring dependents along on jobs with moving worksites.

While there may be an indirect displacement of usual recreational users at camping sites, transient workforce would not use the above maximum percentages of campsites as they would have to compete for those spaces along with recreational users. The reservation system and the occupancy limits typically imposed by public agencies on public campgrounds would tend to work in favor of recreational users over

the transient workforce. Most publicly-owned campgrounds (State Parks, DNR and Forest), limit stays to a maximum of 10 days. There are two state parks near Interstate 90 in Kittitas County which provide overnight camping, Lake Easton near Stampede Pass and Wanapum near Vantage on the Columbia River. Lake Easton uses the State Park's reservation system, and usual recreational users would likely be more knowledgeable about the use of the reservation system and park availability. Wanapum does not take reservations, and is available on a first-come first-served basis. Due to its close proximity to the Gorge Concert site, the impacts to usual recreational users are more often displaced by concert-goers on weekends from mid-May to late September unless the recreational users arrive there first.

If spaces are not available in Kittitas County, the workers would more likely look for campsites in Yakima (a distance of approximately 30 miles from Ellensburg via Interstate 82) than to go to Wenatchee. A search of the Washington State Department of Community Trade and Economic Development's Web page and information from the Yakima Valley Tourism Bureau provides a listing of one state park with camping in Yakima (Yakima Sportsmen), eight privately owned campgrounds in the vicinity of Yakima, four bed and breakfasts, and fourteen hotels and motels (see attached printout from the Internet). If campsites are not available in either Kittitas or Yakima counties, workers would seek low-cost motels.

The current construction schedule, based on the estimated time for obtaining state and federal approvals, shows construction beginning in . Based on Table 8.1-16, the peak of construction workers in Kittitas County would begin in the fifth month of construction and continue to the seventh month. Based on the May start date, the fifth through seventh months of construction would be September, October and November, which are after the peak camping months in Washington state.

Table 8.1-16, below, was derived from Tables 8.1-9 and 8.1-11 to show how the estimate was developed of the maximum number of transient workers likely to need temporary accommodations for the project.

**TABLE 8.1-16  
PROJECTED DISTRIBUTION OF CROSS-CASCADE PROJECT  
CONSTRUCTION WORKERS**

		<b>County 6</b>	<b>Snohomish</b>	<b>King</b>	<b>Kittitas</b>	<b>Grant</b>	<b>Adams</b>	<b>Franklin</b>
		<b>% Dist. of Wkrs. 6</b>	<b>7.4%</b>	<b>19.0%</b>	<b>42.6%</b>	<b>12.4%</b>	<b>3.3%</b>	<b>15.4%</b>
<b>Month</b>	<b>Wkrs/Mo.</b>	<b>% Distrib.</b>	<b>Number of Workers per Month (Total)</b>					
1	10	0.3	1	2	4	1	0	2
2	40	1.0	3	8	17	5	1	6
3	60	1.5	4	11	26	7	2	9
4	200	5.0	15	38	85	25	7	31
5	950	23.9	70	180	405	118	31	147
6	950	23.9	70	180	405	118	31	147
7	950	23.9	70	180	405	118	31	147
8	350	8.8	26	66	149	43	11	54
9	200	5.0	15	38	85	25	7	31
10	200	5.0	15	38	85	25	7	31
11	50	1.3	4	9	21	6	2	8
12	10	0.3	1	2	4	1	0	2
<b>Month</b>	<b>Wkrs/Mo.</b>	<b>% Distrib.</b>	<b>Number of Transient Workers per Month (at 70%)</b>					
1	7	0.3	1	2	3	1	0	1
2	28	1.0	2	5	12	3	1	4
3	42	1.5	3	8	18	5	1	6
4	140	5.0	10	27	60	17	5	22
5	665	23.9	49	126	283	82	22	103
6	665	23.9	49	126	283	82	22	103
7	665	23.9	49	126	283	82	22	103
8	245	8.8	18	46	104	30	8	38
9	140	5.0	10	27	60	17	5	22
10	140	5.0	10	27	60	17	5	22
11	35	1.3	3	7	13	4	1	5
12	7	0.3	1	1	3	1	0	1

Source: Tables 8.1-9 and 8.1-11

Projected numbers of transient workers for each of the six study area counties in the peak three months and second and third highest months are summarized as follows:



**TABLE 8.1-17**  
**SUMMARY OF ESTIMATED NUMBER OF TRANSIENT WORKERS NEEDING**  
**TEMPORARY ACCOMMODATIONS**

COUNTY	PEAK	2ND HIGHEST	3RD HIGHEST
Snohomish	49	18	10
King	126	46	27
Kittitas	283	104	60
Grant	82	30	17
Adams	22	8	5
Franklin	103	38	22

These figures establish the context for evaluating the adequacy of transient housing in the project corridor. One further consideration is the type of housing that is needed. Construction workers for linear projects like pipelines, highways and transmission lines almost universally use recreational vehicles, trailers or motorhomes for housing on jobs away from home. Out-of-pocket running costs, including rental of RV park pads or campground space, are much lower than staying in motels or hotels<sup>4</sup>, and relocation is much easier as the project work progresses along the right-of-way. In some instances workers may pool resources and rent a house or condominium or apartment, however mobile accommodations are preferred for relatively short-term jobs. Accordingly, statistics on vacancy rates and costs for single- and multi-family housing are not of much use in assessing the transient capacity of the study area. More relevant is that status of RV parks, campgrounds and mobile home parks as an indicator of an area's ability to accommodate transient workers.

For the Cross Cascade Project, non-local and out-of-state workers employed on the western segments of the project will find numerous RV parks and campgrounds as well as motels and other accommodations within reasonable commuting time of the project. King and Snohomish counties, as well as major portions of the Seattle metropolitan area, have extensive stocks of transient accommodations. A commercial listing of RV parks and campgrounds identifies over 1,100 RV pads and campground sites in the communities of Everett, Lynnwood, Bothell, Sultan, Issaquah, Fall City, North Bend, and adjacent portions of the Mount Baker National Forest.<sup>5</sup> The 175 peak phase non-local workers projected for the Snohomish and King county segments of the project would represent a small increment of the demand for the area's transient accommodations, and it seems reasonable to assume that they could be absorbed with negligible impact.

Transient accommodations in Kittitas county are less abundant than in the Seattle metropolitan area. *Woodall's '96 Western Campground Directory* lists 399 RV pads and campground sites with hookups in Ellensburg, Easton and Cle Elum plus another 153 campground sites without hookups or showers in two campgrounds in the Wenatchee National Forest for a grand total of 552 sites. Daily rates for the privately-owned facilities range from \$12 to \$16 per vehicle. The American Automobile Associate's 1996 Tourbook for Washington identifies four motels plus a small bed-and-breakfast establishment in Ellensburg for a total

<sup>4</sup> RV parks typically charge \$10-\$15 per vehicle per night versus \$40 to over \$60 for hotel or motel rooms outside of the metropolitan area.

<sup>5</sup> *Woodall's '96 Western Campground Directory*. Woodall Publications Corp., Lake Forest, IL.

of 251 rooms, plus another four motels in Cle Elum with a total of 109 rooms--in all 360 rooms. Daily rates run approximately \$35 to \$60 depending upon single or double occupancy. In total, Kittitas County has over 900 RV sites and motel rooms available versus a projected peak demand for temporary accommodations from approximately 280 Cross Cascade Project non-local workers--a requirements equivalent to approximately 30% of the indicated supply.<sup>6</sup> The RV parks and motels recommend making reservations, so it is possible that project workers might displace some visitors on high-demand holiday weekends like the Fourth of July and Labor Day. Alternatively, some workers might have to settle for more distant locations for some periods of time if they did not secure appropriate reservations for the peak weekends. Such instances would be an inconvenience but not a major cause of hardship for the affected travelers, so it does not seem reasonable to call for mitigating measures,

The eastern segments of the Cross Cascade Project would have a peak of approximately 100 non-local/transient workers in Grant and Adams counties and another 100 in Franklin County. They would have the choice of several RV parks and campgrounds along the project route as well as a large number of motel rooms. The RV facilities that would be most convenient for workers in Grant and Adams counties, according to *Woodall's '96 Campground Directory*, are located in the towns of Vantage and Moses Lake. Vantage has a KOA RV park with 75 pads plus the Wanapum State Park with 50 campsites. Moses Lake has three RV parks (one a nudist colony) with 430 pads plus the Potholes State Park with 120 campsites. Altogether, there are 675 RV pads and campsites serving Grant and Adams Counties. Daily rates in the RV parks run \$15 to \$19.

The Franklin County workers would be most conveniently served by RV parks in Pasco, Richland, and Kennewick (with a total of 332 pads) and three Corps of Engineers campgrounds in Burbank with 184 campsites, for a grand total of 516 pads and campsites.<sup>7</sup> Daily RV park rates run \$12 to \$30.

For motels serving the Grant and Adams counties area, the AAA *TourBook* for Washington lists one motel in Othello with 52 rooms (\$35-\$44 per night) and four motels in Moses Lake with 369 rooms (\$45-\$77 per night), for a total of 421 rooms. For the Pasco/Richland/Kennewick area, the *TourBook* lists 20 motels with over 1,900 rooms, with rates ranging from the mid-\$30s to the mid-\$70s per room, depending upon the number of occupants.

The available supply of transient accommodations for the eastern segments of the project vastly exceeds the maximum number of non-local workers likely to need them, so no significant adverse impacts on temporary housing resources are anticipated nor are any mitigation measures required.

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<sup>6</sup> The actual number of RV sites or other transient accommodations required could be smaller, to the extent that workers double up (as is a common practice).

<sup>7</sup> *Woodall's '96 Western Campground Directory*.

## Property Values

Since the Cross Cascades pipeline will be buried at all locations except for the pump stations, it should have no impact on property values along the right-of-way. Above-ground facilities will be located in non-sensitive settings (e.g., not in residential or recreation areas), and their effects will be further diminished through landscaping and structural design features.

### 8.1.2.2 Operation

Operation of the Cross Cascades Pipeline will generate negligible employment and income impacts, due to its very small workforce (estimated at 8 to 10 personnel). Their impacts on host communities will be virtually undiscernible. The project's principal impact will be fiscal, through property taxes levied by local governments.

OPL has prepared an estimate of the property taxes that would be levied on the project, shown in Table 8.1- 18. As shown, total annual property taxes for the new facility in the six corridor counties would amount to approximately \$310,000. About two-thirds of the taxes would be divided among the six corridor counties on the basis of pipeline distance in each, with the remaining one-third based on other facilities located in each county. To summarize the property taxes estimate, the additional annual revenues are projected as follows:

C Snohomish County	\$ 24,512
C King County	56,062
C Kittitas County	164,044
C Grant County	26,293
C Adams County	8,315
C Franklin County	31,058
<b>C Total</b>	<b>\$310,284</b>

**TABLE 8.1-18**

**CROSS CASCADES PIPELINE: ESTIMATED PROPERTY TAXES**

<b>Distribution by County:</b>	Snohomish	King	Kittitas (West)	Kittitas (East)	Grant	Adams	Franklin	Totals
<b>Parameter:</b>								
Pipe Size (inches)	14.00	14.00	14.00	12.00	12.00	12.00	12.00	
Mileage	13.50	42.50	50.20	38.40	32.30	8.70	41.40	227.00
1" Equivalent	\$189.00	\$595.00	\$702.80	\$460.80	\$387.60	\$104.40	\$496.80	\$2,936.40
100% Value -- Pipeline <sup>(a)</sup>	\$1,594,652.48	\$5,020,202.25	\$5,929,744.77	\$3,887,914.61	\$3,270,303.18	\$880,855.65	\$4,191,657.94	24,775,330.89
Tax Ratio	91.60	92.70	78.30	78.30	80.40	94.40	68.80	
Tax Rate	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
PIPELINE -- Tax (100% value x								
tax ratio x tax rate):	\$14,607.02	\$46,537.27	\$46,429.90	\$30,442.37	\$26,293.24	\$8,315.28	\$28,838.61	\$201,463.69
100% Value -- Other Facilities <sup>(b)</sup>	\$810,928.00	\$810,928.00	\$9,000,000.00	\$0.00	\$0.00	\$0.00	\$150,000.00	\$10,771,856.00
OTHER FACILITIES -- Tax <sup>(b)</sup> :	\$9,905.09	\$9,524.42	\$87,171.39	\$0.00	\$0.00	\$0.00	\$2,219.11	\$108,820.01
Total Estimated Prop. Taxes	\$24,512.11	\$56,061.69	\$133,601.29	\$30,442.37	\$26,293.24	\$8,315.28	\$31,057.72	\$310,283.70
			\$164,043.66					

<sup>(a)</sup> Equals 1" equivalent factor multiplied by a state-assessed valuation factor of \$8,437,315 per mile of pipe.

<sup>(b)</sup> OPL estimate.

Other than the taxes that would be incurred by OPL in constructing and operating the pipeline, OPL has no information on the existing tax revenue in Franklin County that may be affected by the approval of this project. Therefore it is not possible for OPL to estimate the amount of existing taxes that may be offset by the proposed pipeline project.

While there would be a decrease in the barge transport of fuel on the Columbia River if this project is constructed, there is no evidence to indicate that there would be an overall decrease in barge traffic and jobs associated with barging. Petroleum product barges are **Atrailed®** along with other barges hauling other products. The barge company, Tidewater Barge, would continue to own and operate its facility in Pasco, so there would be no decrease in property taxes paid in Franklin County as an offset to the proposed project.

The socioeconomic benefit of the proposed project has been measured in terms of revenue impacts to local businesses and government. Profits to Olympic Pipe Line from the operation of the project have not been factored into the benefits. Any loss of revenue to the barge company would not offset the stated economic benefit of the proposed project.

Tanker trucks that currently are used to transport product across the Cascade Mountains would likely be used to make more local deliveries from the proposed Kittitas Terminal into central and eastern Washington markets.

### **8.1.3 MITIGATION**

The socioeconomic effects of the proposed action will be predominately beneficial, in the form of temporary increases in jobs, personal income, and sales taxes during the construction phase. On any large project, the winding down of construction work can have a depressive effect upon some community economies which have built up business activity in support of the project, but it is unlikely in this case, because of the project's short duration and mobile worksites. The magnitude of each spread's work relative to the scope and depth of economic activity in the surrounding areas is unlikely to be large enough to be destabilizing. No mitigating measures are therefore recommended.

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