

Socioeconomics

a. Affected environment:

Wenatchee, the largest city in Chelan County and the county seat, is located about 7 miles south of the Rocky Reach Hydroelectric Project. Wenatchee is the regional transportation hub with air and rail service.

In Chelan County, agriculture is the largest sector in terms of employment, although not in terms of wages paid due to the seasonal nature and large number of relatively low-skilled jobs (Table 3-XX). Fruit, led by apples, is the major crop. The primary fruit growing areas are along river valleys, where water is available for irrigation. In the manufacturing sector, aluminum is the largest industry. This industry is made possible by the availability of large quantities of low-cost electricity.

Table XX. Percent total employment and wages paid for selected sectors, 1998
(Source: Washington State Office of Financial Management 2000)

| | Washington State | | Chelan County | | Douglas County | | Okanogan County | |
|---------------------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|--------------------|-------------------|
| | % Total Employment | % of Average Wage | % Total Employment | % of Average Wage | % Total Employment | % of Average Wage | % Total Employment | % of Average Wage |
| Agriculture, Forestry, Fishing, | 3.7 | 47.2 | 23.5 | 55.1 | 34.0 | 65.2 | 31.2 | 55.7 |
| Manufacturing | 14.4 | 127.7 | 7.2 | 147.8 | 2.3 | 108.7 | 5.4 | 139.4 |
| Retail | 17.8 | 54.2 | 16.9 | 68.1 | 17.3 | 75.1 | 12.6 | 72.4 |
| Services | 26.1 | 108.5 | 19.0 | 106.4 | 13.2 | 114.5 | 18.0 | 102.2 |
| Government | 17.0 | 102.4 | 16.2 | 148.5 | 19.7 | 156.1 | 20.3 | 163.5 |

Wages in manufacturing are relatively high and contribute substantially to Chelan County's economy. In the service sector, health care is the leading industry and accounts for almost half of the sector's employment. This industry also pays relatively high wages. Hotels and lodging are also important in the services sector. Chelan County attracts a relatively large number of tourists and recreationalists, making lodging the second-largest industry in the sector. However, this industry is seasonal and pays relatively low wages, reducing its importance to the local economy.

The tourist industry also supports a substantial portion of the retail sector in Chelan County. In the government sector, local government related to education

accounts for half of the employment. State government employment is split roughly between community colleges and the Washington Department of Transportation. Federal employment is mostly related to land and wildlife management in the Wenatchee National Forest. All government-sector jobs are relatively well paid.

Agriculture dominates Douglas County employment. As in Chelan County, fruit growing is very important along river valleys, primarily the Columbia. Douglas County also has large areas on the Columbia plateau where wheat is grown. Wheat production is both dry land and irrigated. Little manufacturing is based in Douglas County; however, some persons employed in manufacturing in the Wenatchee area (Chelan County) live across the Columbia in East Wenatchee (Douglas County).

As in Chelan County, most service-sector employment is in health care. Other service-sector and retail employment supports local businesses and residents and is less dependent on tourism than Chelan County. Government is the largest non-agricultural sector in Douglas County, and 87 percent of government employment is in local government, most of which is devoted to education.

Regional economy

The economy of the north central Washington region encompassing Chelan and Douglas counties is based primarily on agriculture. Chelan County provides 80 percent of the jobs in the two-county area and contains 75 percent of the total number of employers. Apples, pears, cherries, and other fruits are important crops in the Columbia River basin. The region's economy is also supported by other types of agriculture (wheat, hay, and potatoes) retail trades, services, manufacturing, recreation and tourism. The development of recreation facilities along the Columbia River and Lake Chelan by Chelan PUD has increased recreation and tourism activities, such as boating and camping, in Chelan and Douglas County.

Regional population

The region is sparsely populated. Statistics from the Washington State Office of Financial Management estimate the population in Chelan County in 2001 was 67,100 people; Douglas County, 32,800 people; and the population of the entire state of Washington, 5.8 million people. The largest community on the Rocky Reach Hydroelectric Project reservoir is the city of Entiat, with a 2001 estimated population of 975. The cities of Wenatchee (2001 population estimate of 27,930) and East Wenatchee (2001 population estimate of 5,430) are located seven miles south of Rocky Reach Hydroelectric Project dam.

Population change in Chelan and Douglas counties

Chelan County grew 11.8 percent over a five-year period from 1995 to 2001. Douglas County experienced a 10.8 percent increase in population. The city of Entiat, the largest community within the Rocky Reservoir, experience rapid growth during the 1990's and grew nearly 76 percent from 1995 to 2001. More than a third of the population growth in Entiat was attributable to annexations.

Population growth in Douglas County roughly paralleled that of Chelan County, increasing 10.8 percent from 1995 to 2001.

b. Environmental impacts and recommendations:

The Rocky Reach Project is operated to optimize use of the water resource to produce electric energy while taking into account the irrigation, recreation, fish and wildlife, flood control and other beneficial uses of the resource. The Rocky Reach Project provides low cost power to its customer/owners and power purchasers.

Through the relicensing process, the Social Sciences Working Group developed a study plan to document current and recent historical economic conditions, as well as the impacts of continued operations of the Rocky Reach Dam within the Project area comprised of Chelan and Douglas counties located in the central portion of Washington state. The resulting Socioeconomic Study Report (Chelan PUD 2000) focuses on the influence of the Rocky Reach Dam on specific industrial sectors and communities within the two-county region.

The study identifies the industrial sectors that have been impacted significantly by the Rocky Reach Dam to include the agricultural, basic metals (aluminum) manufacturing, tourism and recreation, and public utilities sectors. Communities within the Rocky Reach Project area that have been most affected by the dam include the city of Entiat (Chelan County) and the unincorporated community of Orondo (Douglas County). Other communities in the two-county region have also been affected by the Project, although as a consequence of indirect economic activity associated with spending by Chelan PUD and induced activity associated with the re-spending of direct and indirect earnings by employees of the public utility and other firms engaged in direct and indirect activities attributable to the Rocky Reach Project.

The analysis performed in a Socioeconomic Study Report indicates that the agriculture sector, which receives water from the reservoir behind Rocky Reach Dam for irrigation, contributed total (direct, indirect, and induced) output in 1999

amounting to \$166.3 million to the two-county impact region. Total employment and earnings associated with that production amounted to 2,550 jobs and \$47.9 million in earnings, with average annual earnings of \$18,803.

The basic metals manufacturing sector, which directly obtains electricity from the Rocky Reach Dam, was estimated to generate total output of \$254.9 million in 1999. The associated employment and earnings amounted to 1,365 jobs and \$53.5 million, respectively, with average earnings of \$39,198.

Public utilities and electric services providers in the two-county region contributed a total of 307 jobs (including direct, indirect, and induced employment components) and \$11.4 million in earnings in 1999 associated with power distributed to other industrial customers from direct allocations (approximately 15 percent of power generated is allocated to Chelan PUD and Douglas PUD) of electricity generated at the Rocky Reach Dam.

Tourism and recreation industries, which depend on facilities at Rocky Reach Dam and the reservoir behind the dam, were estimated to generate total (direct, indirect and induced) output of \$42.9 million in 1999. The associated employment and earnings amounted to 1,108 jobs and \$15.3 million, respectively, with average earnings of \$13,802.

The communities of Orondo and Entiat, which are located at opposite sides of the Rocky Reach Dam reservoir (Lake Entiat), derive economic and social benefits from the existence of the reservoir. Orondo is a small rural center located on the east side of the Rocky Reach Dam reservoir in the unincorporated portion of Douglas County. The community is dependent on agriculture, tourism and recreation. The community of Entiat, is located on the west side of the Rocky Reach Dam reservoir in Chelan County. Entiat, however, was adversely affected by the Project, as a result of the necessity to relocate the downtown core when the Project was first developed. During the period of 1958 through 1961, when Rocky Reach Dam began operations, Chelan PUD compensated land owners affected by the dam construction and subsequent inundation from the filling of the reservoir and, in addition, provided infrastructure at the uplands areas of the town site. Chelan PUD paid approximately \$3.1 million to property owners in the area adjacent to the Columbia River. Chelan PUD also provided planning assistance to the city of Entiat and, in addition, made payments for legal assistance and infrastructure development totaling approximately \$426,000. However, relocation of the community changed the character and the economic welfare during subsequent decades. The community has experienced modest improvements in economic conditions, particularly in the real estate market, during the most recent decade (1990s). A detailed analysis of the impact of the Rocky Reach Project on

the city of Entiat and Entiat School District No. 127 is provided in the appendix of the Socioeconomic Study Report (Chelan PUD 2000).

Orondo is a small rural center located on the east side of the Rocky Reach Dam reservoir in the unincorporated portion of Douglas County. The community is dependent on agriculture, tourism and recreation.

Analysis of historical and projected conditions regarding the operations of the Rocky Reach Dam was also undertaken as part of this study. The analysis concluded that there would likely be no significant changes in the operating parameters of the dam itself, although there will be increased costs associated with relicensing, fish mitigation, and normal increases in plant operations. Energy generation at Rocky Reach Dam is anticipated to continue at current levels. Also, it is anticipated that there would be no significant changes in the operation of the Columbia River and, thus, there would be no detrimental effects on the cost structure associated with dam operations above those indicated.

Under the anticipated future operation of the Columbia River and fish mitigation measures, water levels of the Rocky Reach Dam reservoir are not expected to significantly change from current operating conditions.

As a result, the impacts of continued operations of the Rocky Reach Dam are expected to be insignificant with respect to the following:

Agriculture (Water Extraction or Diversion)

Modest changes in water levels of the Rocky Reach Dam reservoir would have no significant effect on agricultural production from irrigated lands in the region. Water levels would have to fall to extremely low levels before there would be detrimental impacts on existing major water withdrawal or pumping systems.

Tourism and Recreation

Modest changes in water levels of the Rocky Reach Dam reservoir, not to exceed two or three feet from existing operating levels during summer months, would have no significant effect on tourism and recreation activities in the region. Reductions in water levels beyond this magnitude would result in the need for lakeside infrastructure improvements ensuring access to the reservoir.

Basic Metals Manufacturing

Modest changes in the water budget for the Columbia River would have no significant effect on basic metals manufacturing. Under conditions in which dam operations are limited by reduced water flow, basic metals manufacturing could be impacted by increased replacement power costs.

Public Utilities

Modest changes in the water budget for the Columbia River and/or changes in energy generated from Rocky Reach Dam would have no significant effect on the operations of the Chelan PUD and Douglas PUD, local electricity service providers, and basic (export-oriented) firms that receive electricity supplied by the Project in the two-county region.

General Economic Activity and Population Changes

Modest changes in the water budget for the Columbia River and/or changes in energy generated from Rocky Reach Dam would have no significant effect on the population and economic activity within the two-county impact region.

At this time, the Social Sciences Working Group has made no proposals that pertain directly to socioeconomic resources within the Rocky Reach Hydroelectric Project boundary.

Our analysis

As described in the paragraphs above, the Rocky Reach Project has had a positive socioeconomic impact on the agricultural, basic metals (aluminum) manufacturing, tourism and recreation industries and on the region. The city of Entiat was most impacted by the development of the Rocky Reach Project. During the period of 1958 through 1961 when Rocky Reach Project began operations, Chelan PUD compensated impacted property owners monetarily and provided funding for planning assistance. The environmental and recreation enhancements proposed through the new license period would further strengthen Chelan PUD support of the community providing positive benefits to Entiat and the region. None of the Project related enhancements proposed or recommended by any party would have a negative socioeconomic impact on the Rocky Reach Hydroelectric Project area.

c. Unavoidable adverse impacts:

None.