

5.3.6 Recreation Resources

a. Affected Environment:

Regional Recreation Opportunities

Tourism and recreation are important to the local economy in the Project area. The reservoirs formed by Wells Hydroelectric Project, Rocky Reach Hydroelectric Project, and Rock Island Hydroelectric Project dams, as well as numerous public parks in the Project area, are popular sites for boating, camping, swimming, hiking, fishing, soccer, softball, and football.

The four tributary rivers (Okanogan, Methow, Entiat, and Wenatchee) are also popular for a variety of recreational pursuits. Recreation activities on these rivers include kayaking, rafting (private and commercial), other boating, fishing, and swimming. The rivers are also important to camping, hiking, bird watching, hunting and similar outdoor activities that are enhanced by a waterfront setting.

Chelan County includes large areas of federally managed lands used for recreation and other purposes. These include the Wenatchee National Forest, North Cascades National Park, Lake Chelan National Recreation Area, BLM lands, WDFW lands and several wilderness areas. The county has trails for hiking, horseback riding, mountain biking and off-road vehicles. Lake Chelan and the Wenatchee and Entiat Rivers are popular for recreation, kayaking and whitewater rafting. Lake Wenatchee and Confluence State Park are popular locations for swimming and boating. Trails and rock climbing at the Peshastin Pinnacles State Park offer views of orchards, the Enchantment Mountain range and the Wenatchee River valley. Ohme Gardens, just outside Wenatchee, offers nine acres of alpine-type gardens built on a rocky bluff overlooking the Wenatchee valley and Columbia River.

Douglas County is located to the east of the Columbia River. There are areas of recreation lands in this county as in Chelan County; however, most of the camping and day-use facilities are located along the Columbia River shoreline. Chelan PUD owns Beebe Bridge, Daroga, Lincoln Rock and Orondo parks. Daroga and Lincoln Rock parks are managed by contract with Washington State Parks.

Similar to Chelan County, Okanogan County, located north of Chelan County, has large areas of federally managed lands used for recreation and other purposes. These include Okanogan National Forest and Pasayten and Lake Chelan-Sawtooth wilderness areas. Travel and recreation have a large effect on the economy in Okanogan County. On the Methow River and below Mazama, most recreational sites are privately operated. Above Mazama, the USDA-FS provides camping and access. The river is used for fishing, rafting, and kayaking. The Okanogan River provides fishing and boating. Most camping facilities on the river are privately operated.

While Washington state fishing regulations for 2002 allow for some recreational fishing in the four tributaries to the Project area, the entire area is currently closed to salmon and steelhead fishing. Washington state regulations also prohibit or limit fishing in the mainstem Columbia River due to the recent listing of threatened and endangered species. The Entiat River, from its mouth to Entiat Falls, is open for whitefish only from

December 1 through March 31. The rest of the year, this section of the Entiat River is closed to recreational fishing.

State Comprehensive Outdoor Recreation Plan

The Interagency Committee for Outdoor Recreation (IAC) has statewide responsibility for assisting local, state, and federal agencies in planning, acquiring, and developing recreational resources. The IAC published the Washington State Comprehensive Outdoor Recreation Planning Document (SCORP) 2002-2005 in October 2002. The SCORP document contains information related to a participant survey, *An Assessment of Outdoor Recreation in Washington State*, to inform decision-makers about issues and opportunities associated with outdoor recreation.

The participant surveys completed in 1999 and 2000 revealed that 53 percent of the respondents participated in walking, 44 percent in outdoor team or individual sports, and 43 percent in nature activities. Sightseeing, bicycle riding, indoor activities, picnicking and water activities were also among the most popular activities.

According to the assessment, there is a need for lands and facilities supporting virtually all outdoor recreation categories. In particular, additional provisions for walking, sightseeing, and bicycling were among those listed. Other activities expected to exhibit growth are non-consumptive human activity interaction with fish and wildlife, such as for photographing the outdoors, especially wildlife. Continued participation in nature-dependent activities of hunting and fishing are expected to decline.

In the assessment, IAC identifies a need to find acceptable means to pay for maintenance and operation, including improved on-the-ground management presence, of public lands and facilities. There is also a need for improved data on public recreation behavior and preferences, as well as an inventory of available facilities, in order to ensure that public resources are more effectively utilized in meeting public needs.

IAC recommends that non-federal hydropower project operators enhance inventory with trails and paths for walking and bicycling, manage dispersed shoreline camping, improve access for on-water recreation, and improve opportunities for non-consumptive interaction with nature including fish and wildlife (IAC SCORP, 2002-2005).

Recreation Comprehensive Plans

The Douglas County Recreation and Open Space Plan (Douglas County Parks and Recreation Department, 2000) lists proposals for development of parks, recreation and open space systems within the Wenatchee Valley for the next 20 years. Included in the list of proposals is the development of almost 100 miles of multi-use trails south of the Rocky Reach Hydroelectric Project area. The proposals also include an extension of the trail system north to Lincoln Rock State Park where a trail head would be developed.

The Master Plan for Entiat Park (DOH Associates, 1992) lists goals related to the park including provision for future expansion of a trail system including a new trail head at the southern most end of the park. These trails would provide access to other lands along the Entiat River to the west.

The Rocky Reach Recreation Inventory (DES and Howe Consulting, Inc., 2001c) identified plans developed by the Washington State Parks and Recreation Commission for a trail extending from Lincoln Rock State Park to the Wenatchee Loop Trail system. The inventory also identified the potential for a trail connecting Chelan Falls Park and Powerhouse Park.

Recreation Resources Within the Rocky Reach Hydroelectric Project Area

Public access to Rocky Reach Hydroelectric Project lands and waters is widely available. Since its construction, the Rocky Reach Hydroelectric Project has provided the region a variety of developed recreation opportunities, including camping, picnicking, swimming, fishing, boating, and water skiing, among other recreational activities.

Chelan PUD developed seven public parks and recreation facilities located in the Project study area. These facilities are shown in Figure 1 and include:

- (1) Rocky Reach Hydroelectric Project dam day-use recreation facilities and Visitors Center (owned and operated by Chelan PUD);
- (2) Lincoln Rock State Park (owned by Chelan PUD, maintained and operated by Washington State Parks);
- (3) Orondo River Park (owned by Chelan PUD and Port of Douglas County, maintained and operated by Port of Douglas County);
- (4) Entiat Park (owned by Chelan PUD and city of Entiat, maintained and operated by city of Entiat);
- (5) Daroga State Park (owned by Chelan PUD, maintained and operated by Washington State Parks);
- (6) Chelan Falls and Powerhouse Parks (owned and operated by Chelan PUD); and
- (7) Beebe Bridge Park (owned and operated by Chelan PUD).

Combined, the seven recreation facilities occupy 397 acres of public land along the reservoir and provide widely available public access to Rocky Reach Hydroelectric Project lands and waters. The facilities all have restrooms with showers. A variety of other amenities such as RV and tent camp sites, RV sewage dump stations, boat launches and docks, picnic shelters with power, amphitheaters, landscaping and lawns, swimming beaches, athletic fields, and concession buildings are variously available at the seven facilities. Table 13 summarizes the existing facilities at the recreation sites in the Project study area.

Five out of the seven recreation sites in the study area have camping facilities. These include Lincoln Rock State Park, Orondo River Park, Entiat Park, Daroga State Park, and Beebe Bridge Park. These sites have a total of 292 campsites and two group sites.

Six out of the seven parks in the Rocky Reach Hydroelectric Project study area have public boating facilities including a total of 11 launch lanes, 17 boat tie-up docks and 250 boat trailer parking spaces. Orondo River Park also has a marina with marine gas available. Rocky Reach Hydroelectric Project dam and Visitor Center is the only recreation site that does not have boating facilities. There are also approximately 120 private docks and 43 private boat ramps within the Project area.

All seven public recreation sites in the study area have day-use facilities. Currently 942 day-use parking spaces, around 438 picnic tables, a total of 1,975 linear feet of swimming beaches, and approximately five miles of developed trails/walkways are provided at Project recreation sites.

Six of the seven Project recreation sites currently provide playground equipment. Entiat Park was partially developed by community volunteers and the playground equipment was donated by Big Toys and installed by Kompan. Orondo Park playground equipment was removed during recent park renovations. Additional facilities such as horseshoe pits, baseball fields, volleyball courts, tennis courts, basketball courts, and open court areas are also provided at all sites, although available facilities vary from site to site.

The Rocky Reach Hydroelectric Project dam site has a visitor center and history and interpretive museum and provides concessions, tours of the dam and a fish bypass system and fish viewing. A historical museum is located at the north end of Entiat Park.

Americans with Disabilities Act (ADA)

ADA accessible facilities currently exist at all Rocky Reach Hydroelectric Project recreation sites (Table 13). Recent upgrades and improvements for ADA accessibility have occurred at Orondo, Beebe Bridge and Chelan Falls parks. ADA accessible facilities are provided at all Project recreation sites as existing facilities are improved or replaced.

Table 13. Existing facilities at public recreation sites in Project study area

Site	Acres	Camping	Picnic & Day-Use Facilities	Boating Facilities	Swimming Beach	Trails/Walkways	Interpretation Facilities	ADA Facilities
Rocky Reach Hydroelectric Project Dam and Visitor Center	38	No	20 picnic tables, 2 shelters formal gardens, visitor center, museum, playground equipment 2 horseshoe pits 3 restrooms 241 parking spaces	No	No	0.45 mi.	Yes	Yes
Lincoln Rock State Park	65	94 RV/tent spaces RV dump	166 picnic tables, 3 shelters, amphitheater, playground equipment, baseball field volleyball courts 2 tennis courts 2 basketball courts 3 horseshoe pits 1 open court area concession building 6 restrooms/44 toilets/ 12 showers 148 day-use parking spaces	3 launch lanes 6 tie up docks 102 boat trailer parking spaces	175 linear feet	.94 mi.	No	Yes
Orondo River Park	5	14 RV/tent sites Grassy area: 10-15 tents	14 picnic tables, 1 shelter 1 volleyball court 1 horseshoe pit 1 restroom/4 toilets/4 showers 22 day-use parking spaces	1 launch lane 3 tie up docks marina overnight moorage 14 boat trailer parking spaces	225 linear feet	No	No	Yes
Entiat Park	40	31 RV sites 50 tent sites allowed (1991) in day-use area reduced to 25 tents allowed in 2001	108 picnic tables, 1 shelter playground equipment 2 horseshoe pits restrooms/12 toilets/4 showers 43 day-use parking spaces	1 launch lane 2 tie up docks 17 boat trailer parking spaces	250 linear feet	No	Museum	Yes

Table 13. Existing facilities at public recreation sites in Project study area

Site	Acres	Camping	Picnic & Day-Use Facilities	Boating Facilities	Swimming Beach	Trails/Walkways	Interpretation Facilities	ADA Facilities
Daroga State Park	140	28 RV/tent campsites + 17 boat/walk-in tent sites 2 group camping areas (total capacity 100 people) RV dump station	75 picnic tables, 3 shelters playground equipment 1 baseball field 1 soccer field tennis courts 2 basketball courts 1 open court area restrooms/38 toilets/12 showers 114 day-use parking spaces	2 launch lanes 3 tie up docks 76 boat trailer parking spaces	475 linear feet	2.5 miles	No	Yes
Chelan Falls and Powerhouse Parks	53	No	11 picnic tables + 16 in 2 shelters playground equipment 2 softball fields 1 soccer field 2 volleyball courts 1 tennis court 1 basketball court 2 horseshoe pits 2 open court areas 3 restrooms/24 toilets/4 showers 178 parking spaces	2 launch lanes 2 tie up docks 25 boat trailer parking spaces	375 linear feet	0.2 mile	No	Yes
Beebe Bridge Park	56	46 RV/tent sites	14 picnic tables + 14 in 1 shelter playground equipment 1 baseball field 1 soccer field 1 volleyball court 2 tennis courts 1 open court area 3 restrooms/24 toilets/6 showers 196 day-use parking spaces	2 launch lanes 3 tie up docks 16 boat trailer parking spaces	475 liner feet	0.6 mile	No	Yes

Existing Recreation Plan

In April 1963, the Federal Power Commission (now FERC) issued new regulations (Article 44) requiring development of Exhibit R plans aimed at full public utilization of project lands and water. Article 44 was added to the Rocky Reach Hydroelectric Project license on May 1968 in a FERC Order approving a Project expansion proposal to add four additional units (License Amendment No. 5).

Existing Recreation Use in the Project Area

Existing recreation use is based on field data that was collected in the peak-season from May 30 to September 9, 1999 (highest use months are July and August). Off-season data collection was conducted in the fall from September 10 to October 31, 1999, and in the spring from April 1 to May 26, 2000. To supplement monitoring data collection, historical recreation visitor use statistics (1995-2000) were collected from the Washington State Parks, Port of Douglas County, city of Entiat and other recreation facility managers in the areas where available. Based on use data collected, most of the recreation use in the Rocky Reach Hydroelectric Project area occurs during the months of July and August. The 1999/2000 data collection and monitoring efforts are presented in the Recreation Use Assessment Report (DES and Howe Consulting, Inc, 2001d). Based on the 1999/2000 monitoring, the seven Project recreation sites combined accommodated an estimated average of almost 3,500 people per day during the peak-season (Memorial Day through Labor Day). In the off-seasons, Project recreation sites accommodated an estimated average of 1,500 people per day during in the fall and an average of approximately 1,135 people per day in the spring.

Table 14 shows the estimated visitor use Rocky Reach Hydroelectric Project recreation sites based on 1999/2000 monitoring efforts (Chelan PUD, 2001a). Estimated visitor use at each recreation site is broken out into camping, boating and non-boating activities.

Visitor Use by Activity

Table 15 provides a summary of the estimated average number of people per day that participate in a wide variety of activity categories at the seven developed public recreation sites in the Project area.

As shown in Table 15, during the peak-season, camping facilities received the most visitor use followed by picnicking. Boating was the third most popular activity on weekends, whereas, on weekdays walking was third and boating had the fourth highest use.

During the fall-season, camping had the highest average use followed by “other activity” then visiting the dam/visitor center. On fall weekdays, “other activity” had the highest use followed by camping, whereas on weekends camping had the highest use followed by other activity.

During spring-season monitoring, picnicking had the highest average visitor use followed by camping, then visiting the dam/visitor center. On spring weekends, picnicking had the highest use followed by camping, then visiting the dam/visitor center.

Table 14. Estimated average daily use of Rocky Reach Hydroelectric Project recreation sites¹

SITE	Peak-Season (1999) May 30 - September 9 Average # People/Day			Fall (1999) September 10 - October 31 Average # People/Day			Spring (2000) April 1 - May 26 Average # People/Day			Overall Totals
	Avg. Peak	Weekday	Weekend ²	Avg. Peak	Weekday	Weekend ²	Avg. Peak	Weekday	Weekend ²	
	Rocky Reach Dam Recreation Facilities and Visitor Center (Day-Use):	568	530	660	331	305	390	359	335	
Subtotal:	568	530	660	331	305	390	359	335	425	3,903
Lincoln Rock State Park:										
Camping/Overnight:	337	285	455	215	185	285	124	100	170	
Boating:	89	72	132	15	0	54	7	0	24	
Non-Boating Day-Use:	552	458	773	256	255	256	172	165	196	
Subtotal:	978	815	1360	486	440	595	303	265	390	5,632
Oroondo River Park:										
Camping/Overnight:	63	50	90	8	5	15	14	10	20	
Boating:	20	19	25	2	0	12	0	0	0	
Non-Boating Day-Use:	131	101	205	23	10	53	17	15	30	
Subtotal:	214	170	320	33	15	80	31	25	50	938
Entiat Park:										
Camping/Overnight ³ :	RV 59	RV 43 Tent 42	RV 92 Tent 88	All 40	All 25	All 80	All 2	All 0	All 5	
Boating:	Tent 56	42	90	4	0	12	3	0	12	
Non-Boating Day-Use:	55	183	390	107	80	163	50	10	153	
Subtotal:	244	310	660	151	105	255	55	10	170	2,130
Daroga State Park:										
Camping/Overnight (Group):	69	55	97	12	0	38	0	0	0	
Camping/Overnight (Other):	120	97	175	58	40	95	34	25	49	
Boating:	60	54	78	8	6	15	2	0	6	
Non-Boating Day-Use:	285	256	352	83	69	110	101	85	149	
Subtotal:	534	462	702	161	115	258	137	110	204	2,683
Chelan Falls/Powerhouse Parks:										
Boating:	6	5	8	0	0	0	1	0	2	
Non-Boating Day-Use:	281	250	352	115	100	145	122	115	148	
Subtotal:	287	255	360	115	100	145	123	115	150	1,650

Table 14. Estimated average daily use of Rocky Reach Hydroelectric Project recreation sites¹

SITE	Peak-Season (1999)			Fall (1999)			Spring (2000)			Overall Totals
	May 30 - September 9			September 10 - October 31			April 1 - May 26			
	Average # People/Day			Average # People/Day			Average # People/Day			
	Avg. Peak	Weekday	Weekend ²	Avg. Peak	Weekday	Weekend ²	Avg. Peak	Weekday	Weekend ²	
Beebe Bridge Park:										
Camping/Overnight:	159	135	210	38	25	75	12	8	20	
Boating:	68	60	90	5	0	21	1	0	2	
Non-Boating Day-Use:	275	220	405	181	180	179	114	110	128	
Subtotal:	502	415	705	224	205	275	127	118	150	2,721
TOTAL	3497	2957	4767	1501	1285	1998	1135	978	1539	19,657

¹ Refer to Recreation Use Assessment Report (DES and Howe Consulting, Inc., 2001d)

² Weekend refers to Friday and Saturday nights for camping/overnight and Saturday and Sunday for day-use.

³ Differentiation between RV and tent camping at Entiat Park during peak-season based on on-site surveys. No data available to separate fall- and spring- season RV and tent camping.

Table 15. Estimated average daily use by activity of Rocky Reach Hydroelectric Project recreation sites

Activity	Peak-Season (1999)			Fall (1999)			Spring (2000)		
	May 30 - September 9			September 10 - October 31			April 1 - May 26		
	Average # People/Day			Average # People/Day			Average # People/Day		
	All	Weekday	Weekend	All	Weekday	Weekend	All	Weekday	Weekend
Camping	863	707	1207	371	280	588	186	143	264
Boating	298	252	423	34	6	114	14	0	46
Visiting Dam/Visitor Center	245	220	302	231	214	273	180	161	234
Shore Fishing	2	3	1	0	0	0	3	2	6
Visiting Beach/Sunbathing	117	90	176	0	0	0	23	10	50
Swimming/Wading	99	67	174	0	0	0	10	4	20
Nature Study/Photography	3	4	0	0	0	0	14	24	0
Hang Gliding	8	4	14	0	0	0	8	0	16
Walking	336	338	330	227	259	162	117	97	159
Skating	5	2	10	0	0	0	14	17	10
Jogging	50	58	34	0	0	0	0	0	0
Picnicking	598	450	945	183	131	260	261	160	498
Off-road vehicle riding	0	0	0	11	15	6	0	0	0
Bicycling on-road	8	8	7	5	2	8	29	17	40
Bicycling off-road	98	94	108	40	34	56	0	0	0
Sightseeing	185	180	200	30	8	76	13	6	20
Using Playgrounds	210	225	175	13	0	44	50	82	30
Group Activity	213	127	415	0	0	0	84	84	83
Other activity	159	128	246	356	336	411	129	171	63
Total:	3497	2957	4767	1501	1285	1998	1135	978	1539

* Based on 1999/2000 data collection and field monitoring. Refer to Recreation Use Assessment Report (DES and Howe Consulting, Inc., 2001d)

Fishing

Angling activity specific to the Rocky Reach Hydroelectric Project reservoir was documented in the 1999/2000 Recreational Use Assessment Study Report (DES and Howe Consulting, Inc., 2001d). Boat run, car run, and on-site interviews were conducted during mid-day and early afternoons, and creel surveys were conducted in the early morning and late afternoon/early evening. In summary, relatively few anglers were observed in Rocky Reach Hydroelectric Project reservoir or along undeveloped shorelines. During the peak season, an average of less than two people per day were observed shore angling at public recreation sites, with most of the people observed during weekday periods. During peak-season, people in about 5 percent of the boats were observed angling. An average of approximately 1.5 boats per weekday and an average of 6 boats per weekend day were observed being used for angling. During the fall season boat runs, approximately 40 percent of the boats observed were used for angling. An average of almost five anglers per day were observed along undeveloped shorelines during peak-season weekends. No anglers were observed along undeveloped shorelines during weekday boat runs. The most angling activity that was observed during monitoring efforts was during late summer, when summer/fall chinook salmon fishing was open on the Columbia River (opened August 10 and closed October 21, 2000).

A major limiting factor to fishing as a recreation activity the study was that Washington state regulations prohibited fishing for or retaining salmonids (salmon, trout, or char) in both 1999 and 2000. Salmon fishing was only allowed in the Rocky Reach Hydroelectric Project tailrace in the late fall to early winter. However, fishing was prohibited within 400 feet of the downstream end of the fish ladders at the dam. As a result, very little fishing effort was observed on Rocky Reach Hydroelectric Project reservoir. Fishermen were targeting walleye and smallmouth bass, although a large percentage of anglers were also seeking northern pikeminnow.

Hunting/Wildlife Viewing

The Swakane, Entiat and Chelan Butte Wildlife Recreation Areas, managed by WDFW, are located in Chelan County just west and northwest of the Rocky Reach Hydroelectric Project reservoir. In 1963 Chelan PUD, as mitigation resulting from Rocky Reach Hydroelectric Project, provided funds for the purchase of 17,502 acres of lands. These lands were for inclusion in the Swakane, Entiat and Chelan Butte Wildlife areas, to be managed by WDFW for hunting and deer and upland bird game habitat. These areas are popular for hunting upland birds, deer and big horn sheep. Wildlife viewing is also engaged in these areas.

Watercraft Use

Monitoring in 1999 and 2000 indicated that watercraft use in the Rocky Reach Hydroelectric Project area during the busiest time of the year (average peak-season weekend) is well below the maximum capacity standard recommended by the State Organization for Boating Access (SOBA). The boater capacity standards recommended by SOBA are conservative and generally applicable to rural areas. However, it should be noted that even though the Rocky Reach Hydroelectric Project reservoir extends upriver about 43 miles, boating activity is generally concentrated near popular park and recreation areas.

Information from the Rocky Reach Recreation Needs Forecast and Analysis (DES and Howe Consulting, Inc., 2001e) indicates that the standard recommended by SOBA is based on a typical 8,000-acre lake. For that size of a lake, the SOBA recommends that the lake will support 240 boats at one time, or approximately 33 acres per boat (NRPA, 1970). The surface area in the Rocky Reach Hydroelectric Project reservoir is approximately 8,235 acres. Using the SOBA standards, the recommended maximum number of watercraft the area can support at one time is about 250. Based on 2000 observations as noted in the 1999/2000 Recreational Use Assessment Study Report (DES and Howe Consulting, Inc., 2001d) during the peak-season, an average of 42.5 watercraft were on Rocky Reach Hydroelectric Project reservoir at one time on weekdays, and an average of 101.5 watercraft were on the Rocky Reach Hydroelectric Project reservoir at one time on weekends. The current (2000) average number of peak-season watercraft on Rocky Reach Hydroelectric Project reservoir is well below the recommended maximum capacity standard. Future projections of peak-season watercraft use within Rocky Reach Hydroelectric Project reservoir indicate that in 2020 an average of 57 weekday and almost 137 weekend watercraft can be expected in Rocky Reach Hydroelectric Project reservoir at one time. The projected average watercraft use on Rocky Reach Hydroelectric Project reservoir would equal approximately 21 and 50 percent utilization of the SOBA recommended maximum capacity for weekdays and weekends, respectively. Boat counts made during a holiday weekend observation, however, exceeded recommended standards on Rocky Reach Hydroelectric Project reservoir in the reach between Daroga State Park and Beebe Bridge. It is expected that some peak-season weekends in July and August and holidays will exceed recommended capacity standards in the future. Current and future increases in residential growth consisting of new homes with boat docks along the Rocky Reach Hydroelectric Project reservoir will further add to the increase in watercraft use in the reservoir.

During the peak-season, motorboats made up nearly 70 percent of the watercraft use, personal watercraft (jet-skis) made up 29 percent, non-motorboats made up one percent, and airplanes and windsurfers made up less than one percent of the watercraft use. During the fall-season, all watercraft observed were motorboats and during the spring-season 80 percent were motorboats, 14 percent were jet-skis and 6 percent were non-motorized.

Based on the SOBA recommended maximum capacity standards for a waterbody the size of the Rocky Reach Hydroelectric Project reservoir, there is adequate public vehicle/trailer parking spaces.

Dispersed Use

The greatest number of people observed along undeveloped shorelines (dispersed use), occurred during peak-season weekends with an average of 65 people per day observed (DES and Howe Consulting, Inc., 2001d). An average of only 34 people per day were observed along undeveloped shorelines on peak-season weekdays and little to no activity was observed along undeveloped shorelines during the off-season. Most dispersed shoreline use was observed at a beach on Chelan PUD-owned Turtle Rock Island, Chelan PUD and BLM owned undeveloped shorelines between Daroga State Park and Beebe Bridge, and on private lands. A few people were observed on the Entiat River sandbar and undeveloped shoreline areas owned by Chelan PUD and managed by WDFW

between Beebe Bridge and Wells dam. Dispersed use areas are used for landing small boats and swimming.

Visitor Demographics

Recreation facilities along the Rocky Reach Hydroelectric Project reservoir are of local and statewide significance providing water access, camping and picnicking facilities, and athletic fields. Most visitors to recreation sites in the Rocky Reach Hydroelectric Project area are from the Puget Sound Basin metropolitan area, drawn to eastern Washington by the warm and dry weather patterns. During peak-season monitoring, over 60 percent of visitors were from the Puget Sound Basin metropolitan area and 21 percent were from the local area (Chelan and Douglas counties) (DES and Howe Consulting, Inc., 2001d). Approximately 40 percent of fall-season visitors were from the Puget Sound Basin metropolitan area and 25 percent of park visitors were from the local area. Approximately 40 percent of spring-season visitors were from the Puget Sound Basin metropolitan area, while 31 percent of spring visitors were from Chelan and Douglas counties.

Seasonal Distribution of Recreation Use

Based on 1999/2000 monitoring, the month of August received the most visitor use. Summer months received more than twice as many visitors per day at recreation sites in the study area than the fall months and the fall months received more use than the spring months. For all seasons, average weekend use was about one and one-half times greater than weekday use.

Site Specific Distribution of Recreation Use

In general, of the seven recreation sites in the study area, Lincoln Rock State Park receives the greatest average number of visitors followed by Rocky Reach Hydroelectric Project dam day use area, Daroga State Park, Beebe Bridge Park, Entiat Park. Chelan Falls/Powerhouse parks and Orondo River Park generally received the lowest amount of use respectively. Actual daily use numbers by facility and season are presented in Table 14.

Estimated Use Versus Estimated Physical Capacity at Existing Developed Sites

Visitor use at all recreation sites monitored is generally well below site capacities on peak-season weekdays and during fall and spring seasons. During average peak-season weekends (May 30 to September 9, 1999), Lincoln Rock State Park campground is near 100 percent of its capacity, Beebe Bridge campground is over 90 percent of its capacity, and Daroga State Park is over 80 percent of its capacity. The capacity of the Entiat Park day-use area is exceeded during peak-season weekends, due to the number of tent campsites allowed in the day-use area. The estimated number of visitors participating in day-use activities exceeds the parking capacity at Orondo River Park during peak-season weekends. Peak-season visitor use is generally below estimated site capacities at other sites, except on some holidays and exceptionally busy weekends.

Visitor Satisfaction with Existing Developed Sites

Visitors are generally very satisfied with the recreation sites in the Project area. During on-site interviews, visitors were asked to rate the site they were visiting on a scale of 1 to 10, with 10 being the most satisfied (Appendix D). Figure 8 summarizes the average rating given for each of the recreation sites. Numbers in parentheses next to the site names indicate the number of interview responses.

All seven of the recreation sites were given very high ratings with five of the parks given average ratings of 9 or above. Orondo River Park and Entiat Park were just below 9 with ratings of 8.7 and 8.5, respectively.

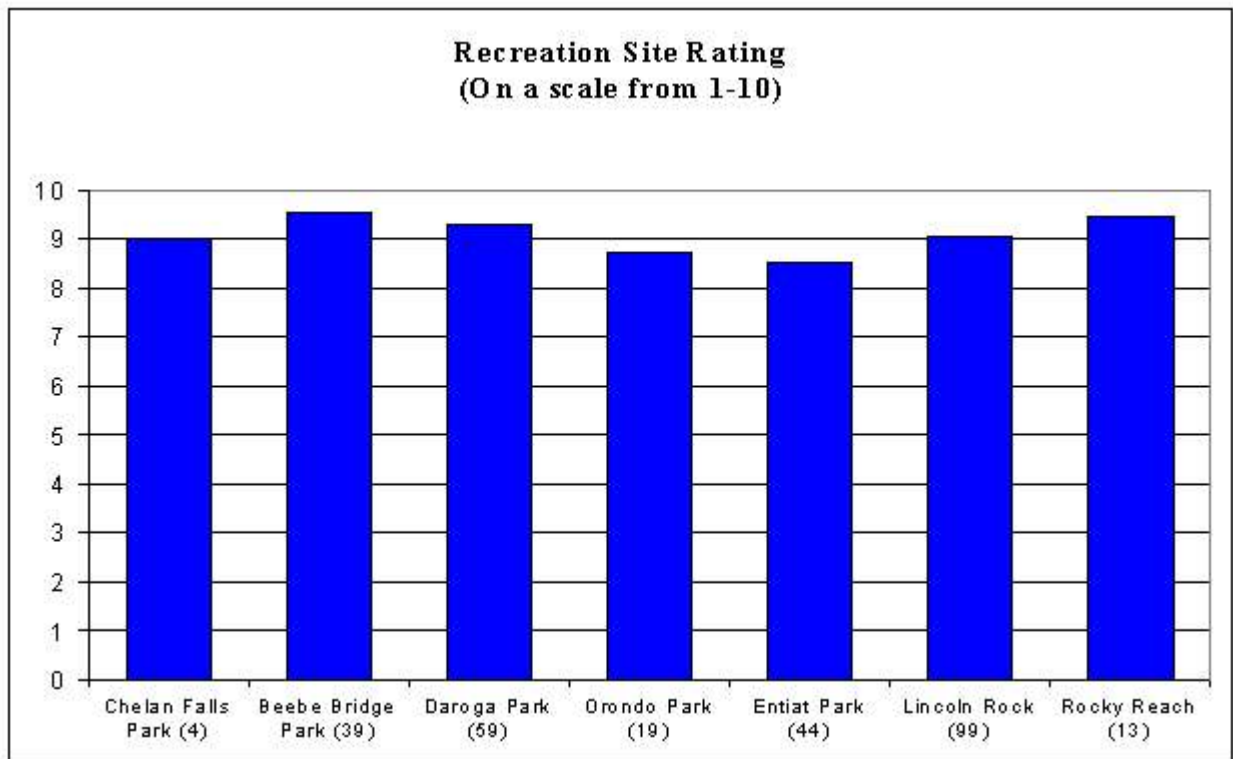


Figure 8. Recreation site rating (number of people surveyed are indicated in the parentheses below park name)

During on-site interviews, visitors were asked to choose from a list of items that could make the site better. Of items that were on the list, cleaner facilities and more docks received the most responses. Comments that were reported most frequently under “something else” included cleaner, better maintained, more, closer and free bathrooms/showers; taller and more trees; more sewer hookups, power, water, facilities; more privacy, larger campsites and more camp sites; more moorage, fix docks, open both sides of some docks; more, less and reposition sprinklers; more dumpsters, garbage cans, recycling bins; better beaches, swimming areas and less seaweed; fewer geese and smell; concession stands and convenient store, less bees, allow dogs; and more phones. Overall, the parks rated very high. Although some improvements were suggested, they were relatively small compared to the overall public satisfaction.

b. Environmental Impacts and Recommendations:

Planning associated with the development of proposals for a Recreation Resources Management Plan (RRMP) was a three-year process that included identification of recreation issues, studies, baseline recreation use monitoring, recreation needs analysis, and identification of recreation enhancement options. Agency and public involvement has been an integral part of this process. Early in the relicensing process, a Social Sciences Working Group was formed to develop, review and complete recreation studies, as well as to propose potential recreation protection, mitigation and enhancement measures. The Social Sciences Working Group was comprised of representatives from the USDA-FS, NPS, BLM, IAC, city of Entiat, Entiat Focus Group (Entiat community members), and other interested parties. Nearly 29 working group meetings have occurred since 1999.

Components of the Recreation Resources Management Plan are presented in Table 16 below:

Management and Operation of Existing Recreation Facilities Within the Rocky Reach Hydroelectric Project Reservoir

Chelan PUD would continue to own and operate Beebe Bridge Park, Chelan Falls Park, Powerhouse Park, and Rocky Reach Hydroelectric Project Visitor Center and Park.

Chelan PUD would continue to own and be responsible for the oversight of related operation and maintenance agreements with Washington State Parks for Lincoln Rock State Park and Daroga State Park.

Entiat Park would continue to be owned in part by Chelan PUD and the city of Entiat, and Chelan PUD would continue to be responsible for the oversight of related operation and maintenance agreement with the city of Entiat. Chelan PUD would also develop and implement an updated master plan for Entiat Park.

Orondo Park would continue to be owned in part by Chelan PUD and the Port of Douglas County with operation and maintenance performed by the Port of Douglas County.

Chelan PUD would assess the feasibility and need of providing improvements, replacement and/or renovation to the existing parks.

Table 16. Recreation Resources Management Plan for the Rocky Reach Hydroelectric Project

Project	Description	Estimated Costs	Implementation Schedule
(1) Management and operation of existing facilities within the Rocky Reach Reservoir including capital improvements and enhancements	Ongoing O & M and capital improvements and enhancements for Rocky Reach Hydroelectric Project Visitor Center and Park, Beebe Bridge Park, Chelan Falls Park, Chelan Powerhouse Park	\$2 million per year 50 years \$100 million	Ongoing throughout the life of the license
(2) Expanded facilities at Lincoln Rock State Park	The addition of group camping	\$3.5 million	Implemented 5 years after receipt of the new license (timeline could be adjusted by monitoring and evaluation team based on need)
(3) Expanded facilities at Daroga State Park	The addition of convenience camping on the northern ledge above the current park	\$5.4 million	Implemented 10 years after receipt of the new license (timeline could be adjusted by monitoring and evaluation team based on need)
(4) Revitalization of Entiat Park	Through community input, a revitalized master plan has been developed including park enhancements and capital improvements	\$8.1 million	The implementation would occur in 2 phases – Phase 1 - South End Park within 2 years after receipt of the license Phase 2 – North End Park immediately following completion of Phase 1
(5) Transition of ownership of 22 shoreline acres in Entiat	Chelan County PUD owns 22 acres of shoreline land north of Entiat Park. This land is to be sold to financial benefit to the City of Entiat.		
(6) Interpretative/nature trails/signage/ displays on lands adjacent to Project waters	Entiaqua trail Trail link from Entiat Park to Fire Breaks Interpretative Center WDFW Interpretative Trail Daroga State Park Interpretative Trail Lincoln Rock State Park	\$1 million \$500,000	Trails to be completed within the first 5 years of the license
(7) Trail link from Lincoln Rock State Park to an education/interpretive trail being developed by Washington State Parks	This trail link is being done in partnership with Washington State Parks. It is the last 1 mile of the 5 mile trail that will end at Odebashion Bridge just north of Wenatchee.	\$500,000	Money will be made available to Washington State Parks when they have completed their planning and permitting process.

Table 16. Recreation Resources Management Plan for the Rocky Reach Hydroelectric Project

Project	Description	Estimated Costs	Implementation Schedule
(8) Chelan PUD Recreation Enhancement Fund (REF)	The purpose of the Chelan PUD REF is to make funds available for community projects that provide public access and recreational and educational enhancements on lands adjacent to the Rocky Reach Hydroelectric Project.	\$1 million – year 1 \$85,000 (approximately) every year thereafter throughout the license (amount is based on “above” or “below” average water release from Grand Coulee Dam) \$5.165 million throughout 50 years of the license (amount calculated in today’s dollars)	Year 1 of the license: \$1 million awarded Every year thereafter: \$85,000 (approximately) placed in the fund.
(9) Recreation Use Study	Chelan PUD would establish a Rocky Reach Recreation Forum to review and evaluate recreation practices, needs, trends and dispersed recreation within the Rocky Reach Hydroelectric Project area for the term of the new license.	\$100,000	Beginning in the 20 th year of the effective date of the new license, and finishing in the 23 rd year, Chelan PUD shall conduct this study.
(10) Ongoing monitoring and evaluation	Chelan PUD would establish a Recreation Resources Advisory Committee to review and evaluate recreation practices, needs, trends and dispersed recreation within the RR Hydroelectric Project area for the term of the new license.		The Recreation Resources Advisory Committee would meet within six months of Chelan PUD’s submittal to FERC of the Licensed Hydropower Development Recreation Report (Form 80).

(1) Management and Operation of Existing Recreation Facilities Within the Rocky Reach Hydroelectric Project Reservoir

Chelan PUD would continue to own and operate Beebe Bridge Park, Chelan Falls Park, Powerhouse Park, and Rocky Reach Hydroelectric Project Visitor Center and Park.

Chelan PUD would continue to own and be responsible for the oversight of related operation and maintenance agreements with Washington State Parks for Lincoln Rock State Park and Daroga State Park.

Entiat Park would continue to be owned in part by Chelan PUD and the city of Entiat, and Chelan PUD would continue to be responsible for the oversight of related operation and maintenance agreement with the city of Entiat. Chelan PUD would also develop and implement an updated master plan for Entiat Park.

Orondo Park would continue to be owned in part by Chelan PUD and the Port of Douglas County with operation and maintenance performed by the Port of Douglas County.

Chelan PUD would assess the feasibility and need of providing improvements, replacement and/or renovation to the existing parks.

(2) Expanded Facilities at Lincoln Rock State Park

Chelan PUD would work closely with Washington State Parks to develop group camping on the southwest portion of Lincoln Rock State Park. This addition to the park would continue to strengthen the experience for community members and visitors who enjoy the camping experience at Lincoln Rock State Park. Chelan PUD would contribute up to \$3.5 million to implement these expanded facilities. It is anticipated that this implementation would take place based on information gathered by the monitoring and evaluation team at five years after the license is secured.

(3) Expanded Facilities at Daroga State Park

Chelan PUD would work with Washington State Parks to develop convenience camping on the northern ledge above the current park. This addition to the park is in response to a growing need identified by Washington State Parks for small convenience cabin opportunities in the Wenatchee Valley. Chelan PUD would partner with Washington State Parks to implement this new camping opportunity based on information gathered by the monitoring and evaluation team at ten years after the license is secured. Chelan PUD would contribute up to \$5.4 million to this project.

(4) Revitalization of Entiat Park

Chelan PUD would work collaboratively with the city of Entiat to develop and implement a revitalized master plan for Entiat Park. This project would be divided into two phases, revitalization of the south end of the park and then immediately following, the north end of the park. This revitalization would be based on extensive community input and planning. Implementation would begin following the receipt of the new license and Chelan PUD would contribute up to \$8.1 million for this project.

(5) Transition of Ownership of 22 Shoreline Acres in Entiat

Chelan PUD would work collaboratively with the city of Entiat on the transition of ownership of 22 shoreline acres of land. This acreage is owned by the Chelan PUD and is located north of Entiat Park. Chelan PUD and the city of Entiat would work together cooperatively to determine the best use of this land and develop a land-use plan that could provide long range benefits to the city of Entiat.

(6) Interpretative/Nature Trails on Lands Adjacent to Project Waters

Chelan PUD would work closely with federal, state and local agencies to research and determine land use designations that allow public access through nature trails and activities such as for photography and wildlife viewing. Chelan PUD would contribute \$1.5 million to develop and implement these trails.

(7) Trail Link from Lincoln Rock State Park

Chelan PUD would work with Washington State Parks and community members in the development of an educational/interpretive trail. This trail will extend from Odebashion Bridge just north of Wenatchee, north to Lincoln Rock State Park. Chelan PUD will provide funds for the completion of the last mile into Lincoln Rock State Park. Chelan PUD would contribute \$500,000.

(8) Chelan PUD Recreation Enhancement Fund

Chelan PUD would provide a Recreation Enhancement Fund dedicated to enhancing public access to the Columbia River and its tributaries and recreation and education opportunities. The Recreation Enhancement Fund, to be distributed through a grant process, would be governed by an Advisory Committee appointed by the Chelan PUD Commissioners. The fund amount would be variable based on run-off at Grand Coulee dam into the Rocky Reach Hydroelectric Project guaranteeing a minimum of \$50,000 and a maximum of \$500,000 per year. The first year of the new license, \$1 million would be put into the fund for distribution.

(9) Recreation Use Study

Beginning in the 20th year of the effective date of the New License, and finishing in the 23rd year, Chelan PUD shall conduct a study assessing recreational use and needs within the Rocky Reach Hydroelectric Project reservoir, at a cost not to exceed \$100,000.

The purpose of the Recreation Use Study is to define the existing recreational use in the Rocky Reach Hydroelectric Project reservoir including number of visits, recreational activity types, high use locations, and temporal trends. The Recreation Use Study will also evaluate recreation demand in the Rocky Reach Hydroelectric Project reservoir to determine whether demand is accommodated by existing facilities. Results from the study will aid resource agencies in developing continued concepts for the coordinated development and utilization of the reservoir's recreational resources.

As part of the Recreation Use Study, data will be collected in years 21 and 22 of the New License on recreation use in the Project area. A Recreation Use Assessment

report will be completed in year 23 of the New License. The study area will include all public recreational resources within the Project boundary. The Recreation Use Study methodology may include, but is not limited to:

- (1) Review of existing recreation resources assessment work;
- (2) Summary of current management plans and policies of agencies;
- (3) Inventory of existing public and private recreation resources;
- (4) Analysis of recreational activities and demand for facilities;
- (5) Analysis of recreational resource capacity for recreation development; and
- (6) Recreation resource mapping.

(10) Recreation Resources Monitoring and Evaluation Program

Chelan PUD would establish a Rocky Reach Recreation Forum to review and evaluate recreation practices, needs, trends and dispersed recreation within the Rocky Reach Hydroelectric Project area for the term of the new license. The Recreation Resources Advisory Committee would be composed of representatives of federal, state, and local agencies, Chelan PUD, and other interested parties. Chelan PUD would be responsible for convening meetings of the group, including providing adequate notice of scheduled meetings and funding basic administrative services (e.g, copying and meeting room costs). The Recreation Resources Advisory Committee would meet within six months of Chelan PUD's submittal to FERC of the Licensed Hydropower Development Recreation Report (Form 80).

Our Analysis

The proposed Recreation Resources Management Plan has the support of the Social Sciences Working Group and provides for the continuation and/or development of recreational opportunities within the Project boundary. Currently, existing recreation facilities within the Project area include seven park facilities that occupy nearly 400 acres of public land along the reservoir and provide widely available public access to Project lands and waters. Federal, state and local recreation studies, as well as recreation studies conducted through the relicensing process indicate increased future demands for trails, boating access, natural areas, water viewpoints and sports fields. The Recreation Resources Management Plan would address recreation management goals and recreation enhancements as identified by the Social Sciences Working Group.

ADA accessible facilities exist at all Rocky Reach Hydroelectric Project recreation sites. The Recreation Resources Management Plan proposes that upgrades and improvements for ADA accessibility will be provided as project recreation sites are improved or replaced.

Chelan PUD has demonstrated a strong commitment to public access through the development of the seven park facilities within the Project area. Chelan PUD has proposed to continue that commitment through the following:

- (1) continuing ownership and/or operation of existing Chelan PUD recreation facilities at Rocky Reach Hydroelectric Project Park, Beebe Bridge Park, Chelan Falls Hydro Park, Powerhouse Park, Entiat Park, Lincoln Rock and Daroga State parks, and Orondo Park;
- (2) developing and implementing an updated master plan for Entiat Park and implementing a land-use plan for shoreline property in Entiat owned by Chelan PUD;
- (3) collaboratively working with federal, state and local agencies to provide land use designations that allow public access through nature trails and activities, such as for photography and wildlife viewing;
- (4) assessing the feasibility for a paved multi-use trail from Lincoln Rock State Park to an area just below the Rocky Reach Hydroelectric Project dam;
- (5) assessing the feasibility and developing a Recreation Enhancement Fund for recreational facilities and recreational and/or environmental education programs in communities adjacent to Project waters along the Columbia River and its tributaries between Rock Island and Wells Hydroelectric Project dams; and
- (6) establishing a Recreation Resources Advisory Committee to review and evaluate recreation practices, needs, trends and dispersed recreation within the Project area.

The proposals for improvements, replacement and/or renovation to the existing Chelan PUD parks within the Project boundary will protect the existing recreation assets and ensure public access to the Columbia River well into the future.

The city of Entiat is located adjacent to the Rocky Reach Hydroelectric Project reservoir at the confluence of the Entiat River and the Columbia River. Within the city of Entiat, Chelan PUD owns approximately 22 acres of shoreline, portions of Entiat Park and a small ball field. The Social Sciences Working Group proposal for Chelan PUD to develop a land-use plan that incorporates Entiat Park, Chelan PUD-owned shoreline and ball field property, and current and future development plans of the city of Entiat would provide a benefit to the city of Entiat and address land-use issues for Chelan PUD.

The proposal for Chelan PUD to work with federal, state and local agencies to provide land use designations that allow public access through nature trails and activities addresses the identified needs of the IAC study.

The proposal for a trail from Lincoln Rock State Park to the Rocky Reach Hydroelectric Project dam, as well as the integration of trails into land use and park planning at Entiat would address the identified IAC recommendations for non-federal hydropower project operators to enhance their inventory with trails and paths for walking and bicycling. The Social Sciences Working Group will also work closely with the Wildlife Working Group in developing an access management plan for wildlife viewing opportunities and other interpretive and educational opportunities, in addition to the more traditional hunting uses.

c. Unavoidable Adverse Impacts:

None.

5.3.7 Socioeconomics

a. Affected Environment:

Regional Population

The region is sparsely populated. Statistics from the Washington State Office of Financial Management (2002) 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. The city of Entiat, the largest community within the Rocky Reach Hydroelectric Project reservoir (1999 population of 935), experienced rapid growth during the 1990s. From 1995 to 1999, Entiat's population grew by 13.9 percent, almost double the 1990 population level. One 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.

Regional Economy

The economy of the north central Washington region encompassing Chelan and Douglas counties is based in tourism, agriculture, government and education. Chelan County provides 70 percent of the jobs in the two-county area and contains 65 percent of the total number of employers. Apples, pears, cherries, and other fruits are important crops in the Columbia River basin. An increasing number of vineyards are being planted as well, a relatively new agricultural product to the valley. 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 counties.

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

In Chelan County, the service industry (i.e., hotels, lodging, healthcare, professional services, recreation) is the largest sector in terms of employment and wages paid. Chelan PUD plays a major role in this sector not only because of its significant employment, but because of its impact on the county's economy. Low cost power and

reliability have encouraged businesses to move to the county and have inspired business growth and expansion. The fruit industry is the second largest employment sector, government is third. Fruit, led by apples, is the major crop. The primary fruit growing areas are along river valleys where water is available for irrigation.

Table 17. Employment and wages by industry, 1998 (Source: Washington State Office of Financial Management, 2000)

	Chelan County		Douglas County		Okanogan County	
	Employ- ment	Wages	Employ- ment	Wages	Employ- ment	Wages
<u>Total by County:</u>	36,021	\$860,009,112	8,910	\$187,016,602	17,021	\$335,463,182
<u>Top Three Business Sectors:</u>						
Service industry	7,472	\$182,070,758	1,223	\$21,758,936	3,626	\$72,464,629
Agriculture	7,281	\$107,768,316	2,716	37,142,025	4,166	\$51,125,898
Government	6,151	\$203,175,772	1,877	60,953,160	3,934	\$112,690,641

Wages in manufacturing are relatively high and also contribute 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 and a significant portion of this sector's wages. Hotels and lodging are also important in the service sector. Chelan County attracts a large number of tourists and recreationalists, making lodging the second-largest industry in this sector with relatively low wages paid.

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 local school districts and a community college with multiple locations in the county and the Washington Department of Transportation. Federal employment is mostly related to land and wildlife management in the Wenatchee National Forest (McHugh and Associates, 2000). Most government-sector jobs are relatively well paid.

Agriculture dominates Douglas County employment. Fruit growing is very important along river valleys, primarily the Columbia River. Douglas County also has large areas on the Columbia plateau where wheat is grown. Wheat production is both dry land and irrigated. Minimal manufacturing is based in Douglas County; however, the area is currently being heavily marketed outside the valley for this industry. Because of the close proximity of Chelan and Douglas counties and Wenatchee (Chelan County) and East Wenatchee (Douglas County), many people live in one county and work in the other.

In 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.

b. Environmental Impacts and Recommendations:

The Rocky Reach Hydroelectric 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 Hydroelectric 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 Hydroelectric Project dam within the Project area comprised of Chelan and Douglas counties located in the central portion of Washington state. The resulting Socioeconomic Study Report (McHugh, 2000) focuses on the influence of the Rocky Reach Hydroelectric Project 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 Project dam to include the agricultural, basic metals (aluminum) manufacturing, tourism and recreation, and public utilities sectors. Communities within the Rocky Reach Hydroelectric 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).

The analysis performed in the Socioeconomic Study Report indicates that the agriculture sector, which receives water from the reservoir behind Rocky Reach Hydroelectric Project 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 obtains electricity directly from the Project, 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 Project.

Tourism and recreation industries, which depend on facilities at Project 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.

Orondo is a small rural center located on the east side of the Project reservoir in the unincorporated portion of Douglas County. The community is dependent on agriculture, tourism and recreation. The lands in the area of Orondo impacted by the Project were classified as river-related irrigated agricultural. These lands were used almost exclusively for the production of hard and soft fruit products. Land and subsequent inundation from the filling of the reservoir were compensated.

The community of Entiat, is located on the west side of the Project reservoir in Chelan County. Entiat 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 the Project 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 a total of approximately \$3.1 million during 1956-1961 in compensation 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. Relocation of the community changed the character and the economic welfare during subsequent decades. The community experienced modest improvements in economic conditions, particularly in the real estate market, during the 1990s. A detailed analysis of the impact of the Rocky Reach Hydroelectric Project on the city of Entiat and Entiat School District No. 127 is provided in the appendix of the Socioeconomic Study Report (McHugh, 2000) and Economic Analysis of the Impact of the Rocky Reach Dam and Reservoir on the City of Entiat and Entiat School District No. 127 (ECONorthwest, 2003).

Analysis of historical and projected conditions regarding the operations of the Project 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 the Project 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 Project reservoir are not expected to significantly change from current operating conditions.

Currently, Chelan PUD 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 Hydroelectric Project has had a very 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 Hydroelectric Project. During the period of 1958 through 1961 when the 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.

5.3.8 Land Use

a. Affected Environment:

The Rocky Reach Hydroelectric Project boundary encompasses approximately 1,300 acres. The vast majority of the Project boundary is comprised of the 43 mile long Rocky Reach Hydroelectric Project reservoir. Chelan PUD owns approximately 100 acres within the Project boundary and the federal government (BLM and USDA-FS) owns another 160 acres. Chelan PUD has flowage rights easements for the remainder of the land within the Project boundary.

Development adjacent to the reservoir is low-intensity and rural in nature with the exception of the city of Entiat, and two unincorporated towns, Chelan Falls and Orondo. Approximately half the development consists of fruit orchards, pasture lands, and residential development. Seven parks which are part of Chelan PUD's existing recreation plan are also located along the reservoir, and include almost 400 acres of land which provide access to the river and adjacent lands for swimming, boating and personal watercraft, fishing, camping, picnicking, water-skiing, and other recreational uses. Use of these parks is most intensive during the summer season between Memorial Day and Labor Day.

Accessories to these land uses are often found within the Project boundary. Irrigation pumps, pump houses, and fruit-producing trees are often located on agricultural lands. Docks, buoys, boat ramps, boat lifts, and camping sites are often associated with residential development and parks. There are also two wastewater out-falls that service the cities of Chelan and Entiat.

The remainder of the lands surrounding the reservoir are undeveloped. These lands can be characterized as drylands. They include shrub steppe and grasslands vegetation with patches of exposed rock. Much of the undeveloped shoreline lies in areas where the reservoir is in close proximity to a small, private railroad on the westerly side and to State Route 97A (westerly) and State Route 97 (easterly). Narrow strips of riparian vegetation, including wetland areas, may be present along those areas of the reservoir where the shoreline slopes are relatively gentle.

Ownership of lands outside and/or adjacent to the Project boundary include Washington Department of Natural Resources, Washington Parks and Recreation Commission, USDA-FS, BLM, Chelan PUD, railroad, Washington Department of Transportation, city of Entiat, WDFW and private lands.

The mid-line of the Rocky Reach Hydroelectric Project reservoir forms the boundary between Douglas County to the east and Chelan County to the west. Land use activities on non-federal lands in each county are subject to the relevant comprehensive plans (developed in accordance with the Washington State Growth Management Act 1990) and the municipal zoning that guide specific land use activities under these plans.

The Act requires that specific planning elements be addressed by each jurisdiction and that implementing regulations (i.e. zoning) be consistent and concurrent with the plan.

Under the 1971 Washington State Shoreline Management Act, the Columbia River, including the entire shoreline within the Rocky Reach Hydroelectric Project, is designated as a shoreline of statewide significance. Both Douglas and Chelan counties have developed shoreline master programs consistent with the goals of the 1971 Washington State Shoreline Management Act to regulate land use of shorelines up to 200 feet inland from the ordinary high water mark. The programs have eight goals; economic development, public access, circulation, recreation, shoreline use, conservation, historical/cultural, and restoration. Federal lands within the Project boundary have very little shoreline development.

The following is a list of state, county, local and federal land management plans or implementing regulations that affect land management activities in and around the Rocky Reach Hydroelectric Project area.

Federal Land Management:	Bureau of Land Management Resource Management Plan (1987) Department of Ecology: Draft Shoreline Master Program Guidelines (1999) USDA Forest Service: Wenatchee National Forest Land and Resources Management Plan (1990) as amended
State:	Growth Management Act (1990) Washington State Parks: Classification and Management Plan
Chelan and Douglas counties:	Chelan County Shoreline Master Program (1980) Chelan County Comprehensive Plan (1999) Chelan-Entiat Comprehensive Plan (1977) Douglas County Shoreline Master Program (1972) Douglas County Comprehensive Plan (1995) Douglas Countywide Policy Plan Growth Management Act (1990)
Local:	Greater East Wenatchee Area Comprehensive Plan (1996) Wenatchee Urban Area Comprehensive Plan (1997) City of East Wenatchee Comprehensive Plan (1998) Douglas County Code Title 18 Zoning (1998), Title 14 Development Permit Procedures and Administration (1997), and Title 19 Environment (1993) City of Entiat Comprehensive Plan (1997) Entiat Valley Community Action Plan (1994) City of Entiat Community Action Plan (Updated 1999) Growth Management Act (1990)

Shoreline Development Tracking System

As a part of compliance with its FERC license, Chelan PUD assesses and tracks land uses within the Project boundary. Chelan PUD is responsible for reviewing permit

applications for certain types of use and occupancy of project lands and waters in cooperation with local and state agencies on a case-by-case basis to assure compatibility with FERC license terms and conditions and other appropriate regulations. Chelan PUD's role in the permitting process is to assure consistency with Project purposes including safety, environmental concerns, and aesthetics. Chelan PUD also encourages consistency with local and county management plans and zoning.

Chelan and Douglas counties and area municipalities participate in a program that has been developed to reduce the number of forms needed in complying with environmental laws that have a redundant purpose and authority. This program uses a Joint Aquatic Resource Permit Application (JARPA). The Project Lands Management Study (DES, 2001) contains a summary of the JARPA program and an example of the JARPA form. One form can now be used to process any and all permits for:

- (1) Shoreline Substantial Development, Variance, or Conditional Use Permit issued by local government;
- (2) Temporary Modification of Water Quality Criteria issued by WDOE;
- (3) Hydraulic Project Approval issued by WDFW;
- (4) Section 401 Water Quality Certification issued by WDOE; and
- (5) U.S. Corps of Engineers Section 404 and Section 10 Permits.

All actions undertaken are subject to Washington's State Environmental Policy Act (SEPA). Environmental review (SEPA) is required for any proposal which involves a government "action," as defined in the SEPA rules (WAC 197-11-704), and is not categorically exempt (WAC 197-11-800 through 890). SEPA is similar to the National Environmental Policy Act (NEPA). According to WAC 197-11-610, SEPA does allow the use of NEPA documents to meet SEPA requirements if the analysis of the NEPA is complete and accurate.

Public and Specially Designated Lands

The Swakane, Entiat and Chelan Butte Wildlife Areas, managed by the Washington Department of Fish and Wildlife (WDFW), are located in Chelan County just west and northwest of the Rocky Reach Hydroelectric Project reservoir. In 1963 Chelan PUD, as mitigation for the development of the Rocky Reach Hydroelectric Project, provided funds for purchasing 17,502 acres of lands for inclusion in the Swakane, Entiat and Chelan Butte Wildlife areas, to be managed by WDFW for hunting and deer and upland bird game habitat.

A 173-acre parcel called Gallagher Flats was purchased by Chelan PUD, as part of the 1963 agreement to mitigate impacts resulting from the Rocky Reach Hydroelectric Project. Gallagher Flats, located upstream of Beebe Bridge along the west bank of the reservoir, is managed by WDFW for hunting.

Other areas purchased by Chelan PUD in the vicinity of the project, as part of the 1963 agreement to mitigate wildlife impacts resulting from the Rocky Reach

Hydroelectric Project, include 22 easements that provide public stream bank access and fishing areas along the Wenatchee River. These areas were created as off-site mitigation for sports fishing access areas inundated by construction of Rocky Reach Hydroelectric Project dam. These easements were deeded to WDFW. These areas are located from the Wenatchee River mouth (located approximately five miles downstream of Rocky Reach Hydroelectric Project dam) upstream to approximately one mile below Leavenworth. Some of these easements include parking and others include only public access across private lands from the road to the shoreline and lands along the shoreline.

The White River, Stehekin River, Icicle River, Lake Wenatchee, and the Entiat River (above the USDA-FS boundary) are proposed wild and scenic.

Identification of Wetlands, Floodlands, Federal Lands

An estimated 13 acres of wetlands occur along the Rocky Reach Hydroelectric Project shoreline (Chelan PUD, 1991). Although the reservoir has limited storage capability, the Project is operated to reduce the potential for downstream flooding minimizing the potential effects on floodplain areas.

The Rocky Reach Hydroelectric Project occupies nearly 1,300 acres, of which 160 acres is federally-owned land, including the BLM, the USDA-FS and DNR.

Existing Uses of Project Lands

The Project boundary includes two sanitary sewer out-falls, storm water out-falls, irrigation withdrawals, and recreational development that is part of the Chelan PUD's existing recreation plan. Within the Project boundary, agriculture uses, recreational sites developed by Chelan PUD, and some residential lands, surround approximately half the reservoir. Agriculture uses consist primarily of fruit orchards and some pasture lands. Irrigation pumps and pump-houses to withdraw water from the Columbia River are often located on agricultural lands. Recreation sites provide for swimming, boating, fishing, camping, picnicking, water-skiing, and other recreational uses. Recreational use generated at these sites is intensive during the summer season.

The remainder of the land surrounding the reservoir is generally undeveloped. These lands can be characterized as dry lands. They include shrub steppe and grasslands vegetation with patches of exposed rock. Much of the undeveloped shoreline lies in areas where the reservoir is in close proximity to the railroad on the westerly side and to State Routes 97A (westerly) and 97 (easterly). Narrow strips of riparian vegetation, including wetland areas, may be present along those areas of the reservoir where the shoreline slopes are relatively gentle.

b. Environmental Impacts and Recommendations:

It is concluded that the comprehensive plans are relevant to the Project area and that there are not inconsistencies between the various plans. The Social Sciences Working Group made no proposals that pertain directly to land uses of the Rocky Reach Hydroelectric Project area.

Our Analysis

As described in the paragraphs above, development around the Rocky Reach Hydroelectric Project reservoir is low intensity and rural in nature. Approximately half the reservoir consists of fruit orchards, pasture lands, and residential development. Seven parks, which are part of Chelan PUD's existing recreation plan, are also located along the reservoir, and provide nearly 400 acres of lands allocated to public access to the Rocky Reach Hydroelectric Project reservoir.

Shoreline facility development policy, piers, docks, boat landings, bulkheads and other shoreline facilities on project lands and waters are permitted to assure compliance with environmental laws. Chelan and Douglas counties and area municipalities responsible for permitting use a Joint Aquatic Resource Permit Application (JARPA) that has been developed to manage the permitting process.

Chelan PUD assesses and tracks land uses within the Project boundary and reviews permit applications for types of use and occupancy of project lands and waters in cooperation with local and state agencies on a case-by-case basis to assure compatibility with license terms and conditions and other appropriate regulations.

Chelan PUD's proposal to continue this policy would provides measures to assess and track land uses within the project boundary throughout the new license period. Neither the Social Sciences Working Group, nor any other party, has made specific land use recommendations through the relicensing process. None of the environmental and recreation enhancements proposed through the new license would have a negative impact on land use in the Rocky Reach Hydroelectric Project area.

c. Unavoidable Adverse Impacts:

None.

5.3.9 Aesthetics

a. Affected Environment:

A broad river valley surrounds the Rocky Reach Hydroelectric Project dam, with apple orchards lining both sides of the Columbia River. Private residences, a residential subdivision, some commercial uses, and several parks are also part of the visual setting of the area. The land surrounding Rocky Reach Hydroelectric Project reservoir is generally rural in character, with approximately half of the land being undeveloped shrub-steppe, grasslands, or exposed rock. The other half is developed for agriculture, recreation, and residential uses. The several parks and agricultural land intermixed with the non-irrigated shrub-steppe hills provide an impression of a desert and oasis setting outside of the winter months.

The Rocky Reach Hydroelectric reservoir dominates the scene in the local area, being visible from a large area. Because the river terraces are relatively level and only sparse vegetation is present, there is little or no visual screening of the dam facility and reservoir. Where slopes along the shoreline are relatively gentle, narrow bands of riparian vegetation and wetland areas exist.

Adjacent to the Rocky Reach dam visitor center, 30 acres of lawns and gardens add to the scenery, including 8,000 colorful annual flowers planted in a new design each year. In addition, a display of bright red, white, and blue annual flowers depicts the U.S. flag, and several varieties of dahlias add to the color at the visitor center grounds.

Aesthetics and Project Structures and Transmission Lines

The Rocky Reach Hydroelectric Project dam, spillway and powerhouse are located at Columbia River mile 437.7, approximately seven miles north of the city of Wenatchee. The reservoir extends approximately 43 miles upstream to the Wells Hydroelectric Project. Access to the dam is by way of paved roads from State Highway 97A on the west side of the Columbia River and State Highway 97 on the east side. The Project contains fish passage facilities, and fish rearing facilities at Turtle Rock Island and near the dam's left abutment, both upstream and downstream of the dam. These facilities are funded and maintained by Chelan PUD and operated by WDFW. The fish rearing facilities upstream and downstream of the dam are associated with the Rock Island Hydroelectric Project.

Five sets of 230-kV transmission lines convey power from the powerhouse to the switchyard, which is located on the Project west abutment. These lines are part of the Project, while the transmission lines beyond the switchyard are not part of the licensed Project.

b. Environmental Impacts and Recommendations:

Prior to construction of the Rocky Reach Project, the Columbia River shoreline between Rocky Reach and Wells dams was comprised largely of cobble, gravel, and sand river bars, that resulted from scouring during spring runoff (described in more detail in Section 5.3.4 Terrestrial and Wildlife Resources.) A thin line of riparian vegetation could be found at places along the channel fringe, although flooding and arid conditions prevented substantial riparian development. The development of the Rocky Reach Project changed the aesthetics of the area as the stable river elevation promoted mature plant communities. Additionally, the aesthetic conditions of the area changed as many areas were converted to orchards and other agricultural uses, parks were built, and portions of the shoreline were rip-rapped to prevent erosion.

Our Analysis

None of the enhancements proposed or recommended by any party would have a negative impact on the aesthetic resources of Rocky Reach Hydroelectric Project area.

c. Unavoidable Adverse Impacts:

None.