

4.0 DEVELOPMENTAL ANALYSIS

In this section, we look at the Post Falls Project's and Spokane River Developments' use of the Spokane River for hydropower purposes to see what effects various environmental measures would have on the Projects' cost and power benefits.

4.1 INTRODUCTION

The Proposed Action includes a variety of environmental PME measures. These measures include changes to the Project operations that would decrease the annual electric power output for the Post Falls Project and Spokane River Developments while also increasing their operating costs. Consistent with the Commission's approach to economic analysis, the power benefit of the Post Falls Project and Spokane River Developments is determined by estimating the cost of obtaining the same amount of energy and capacity using the likely alternative generating resources available in the region. In keeping with Commission policy as described in Mead, our economic analysis is based on current electric power cost conditions and does not consider future escalation of fuel prices in valuing hydropower project power benefits.¹

Our analysis includes (1) an estimate of the net power benefit of the Project for each of the licensing alternatives, and (2) an estimate of the costs of individual measures considered in this FEIS for the PME of environmental resources affected by the Project. To determine the net power benefit for each of the licensing alternatives, we compare Project costs to the value of the power output over a 30-year period as represented by the cost of the alternative source of power. A discount rate is used to translate future values to present values; consideration is also given for taxes, depreciation, annual charges, and O&M costs. For any alternative, a positive net annual power benefit indicates that the Project power costs less than the current cost of alternative generation resources, and a negative net annual benefit indicates that the Project power costs more than the current cost of alternative generation resources. This estimate helps to support an informed decision concerning what is in the public interest with respect to a proposed license. However, Project economics is only one of the many public interest factors the Commission considers in determining whether to issue a license and, if so, under what conditions.

¹ See Mead Corporation, Publishing Paper Division, 72 FERC ¶ 61,027 (July 13, 1995). In most cases, electricity from hydropower would displace some form of fossil-fueled generation, in which fuel cost is the largest component of cost of electricity.

4.2 BASIS FOR POWER AND COSTS OF THE PROJECTS

For our economic analysis of alternatives, we used the assumptions, values, and sources shown in Table 4.2-1. This information was provided by Avista in its license application.

We find that the values provided by Avista are reasonable for our analysis. Cost items common to all alternatives include taxes and insurance costs; net investment (the total investment in power plant facilities remaining to be depreciated); estimated future capital investment required to maintain and extend the life of plant equipment and facilities; relicensing costs; normal O&M costs; and Commission fees.

The Post Falls Project has a total installed capacity of 14.75 MW and a dependable capacity of 5.85 MW. Based on 23 years of record, from 1979 through 2003, the Post Falls Project, as currently operated, generates an average of 77,281 MWh annually (Avista, 2005). Current costs are presented in Table 4.2-2.

The Spokane River Developments have a total installed capacity of 122.92 MW and a dependable capacity of 69.47 MW. Based on 23 years of record, from 1979 through 2003, the Spokane River Developments, as currently operated, generate an average of 796,639 MWh annually (Avista, 2005). Current costs are presented in Table 4.2-3.

4.3 COSTS

4.3.1 Cost of Environmental Measures

The Proposed Action includes a number of environmental and recreational PME measures. Tables 4.3-1 and 4.3-2 present the capital and annual costs of these measures and other agency- and stakeholder-recommended measures by major resource type and area for the Post Falls Project and Spokane River Developments, respectively. The entity proposing the environmental measure is listed in the second column. A measure that would affect energy generation at the Post Falls Project is the addition of aesthetic flows (energy reduction of 19.2 MWh). Measures that would affect energy generation at the Spokane River Developments include aesthetic flows at Upper Falls Development (energy reduction of 748 MWh) and at Monroe Street Development (energy gain of 12 MWh).

Table 4.2-1. Assumptions for economic analysis of the Post Falls Project and Spokane River Developments

Assumption	Value	Source
Base year for costs and benefits	2007	Staff
Period of analysis	30 years	Staff
Short-term interest rate	9.72%	Avista
Long-term interest rate	8.75%	Avista
Discount rate	8.22%	Avista
Term of financing	20 years	Staff
Federal and state tax rate	35.00%	Avista
Local tax rate	1.25%	Avista
Long-term inflation	0.00%	Staff
Insurance	0.25%	Staff
Weighted cost of capital	9.72%	Avista
Return on equity	10.64%	Avista
Debt ratio	49%	Avista
Energy value (\$/MWh)	50 ^a	Avista
Capacity value (\$/kW)	Included in energy value	

\$/kW – dollars per kilowatt

- a. Energy value is based on Avista’s estimate of short-term forward pricing and is consistent with alternative power costs based on a combined cycle combustion turbine operating at a 92-percent plant factor.

Table 4.2-2. Current capital and annual costs for Post Falls Project

Category	Capital Cost (\$)	Annual Cost (\$)
Total net investment ^a	6,578,800	
Total relicensing cost ^b	7,874,100	
Total future investment ^c	10,603,000	
Total net investment ^d	25,055,900	
O&M ^e		814,100
Annual FERC fees ^f		59,600

- a. Net investment is the depreciated Project investment.
- b. This value is based on relicensing costs expended through December 31, 2004, and projected budget to completion. Avista's estimate is that 50 percent of relicensing costs accrue to the Post Falls Project and the balance to the other four developments.
- c. Avista has estimated the cost of future upgrades that will be necessary to maintain the Project at its current capacity. The cash flow is irregular between 2007 and 2016.
- d. This value is the sum of basic project net investment and Avista's relicensing costs.
- e. O&M costs are based on 2003 values escalated at 2.5 percent per year to a 2007 cost basis. More than \$84,000 is spent on environmental measures under the current license for all four Spokane River developments and the Post Falls Project.
- f. FERC fees include both annual federal lands fees of \$12,400 and FERC annual charges of \$43,700, escalated at 2 percent per year from 2004 to 2007.

Source: Compiled by Avista.

Table 4.2-3. Current capital and annual costs for Spokane River Developments

Category	Capital Cost (\$)	Annual Cost (\$)
Total net investment ^a	68,732,000	--
Total relicensing cost ^b	7,874,100	--
Total future investment ^c	46,336,000	--
Future rubber dam ^d	1,410,000	
Total net investment ^e	124,352,100	--
O&M ^f	--	3,375,500
O&M savings ^g		-45,400
Annual FERC fees ^h	--	436,600

- a. Basic project net investment is the depreciated Project investment allocated to power purposes.
- b. This value is based on relicensing costs expended through December 31, 2004, and projected budget to completion. Avista's best estimates are that 50 percent of relicensing costs accrue to the Post Falls Project and the balance to the other four developments.
- c. Avista has estimated the cost of future upgrades that would be necessary to maintain the Project at its current capacity. This figure includes estimated cost for replacing flashboards at Nine Mile Development with a rubber dam because it is anticipated some improvement would be necessary over the next 20 years.
- d. Estimated capital cost of the future rubber dam at Nine Mile Development.
- e. This value is the sum of basic Project net investment and Avista's relicensing costs.
- f. O&M costs are based on 2003 values, escalated at 2.5 percent per year to a 2007 cost basis. More than \$84,000 is spent on environmental measures under the current license for all five Spokane River developments.
- g. O&M savings are based on lower labor costs and maintenance associated with a rubber dam at Nine Mile Development in lieu of flashboards.
- h. FERC fees include FERC annual charges of \$411,400, escalated at 2 percent per year from 2005 to 2007.

Source: Compiled by Avista.

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Water Resource Measures					
<i>TDG Control and Mitigation Program (PF-WQ-1)</i>	Avista, Staff	\$0	\$5,400	\$5,400	Yes
Coeur d'Alene Water Quality Monitoring Program	Staff	\$0	\$39,600 ^a	\$39,600	Yes
Spokane River Water Quality Monitoring Program	Staff	\$0	\$11,900 ^b	\$11,900	Yes
<i>Idaho Water Quality PME (PF-WQ-2)</i>	Avista	\$15,000	\$30,900 ^c	\$33,200	No
Preliminary 4(e) condition: Prepare, fund, and implement a Water Quality Monitoring Plan to document the influence of the Project on water quality within the Coeur d'Alene Indian Reservation	Coeur d'Alene Tribe	\$0	\$347,700 ^d	\$347,700	No
Modified 4(e) condition: Prepare, fund, and implement a Water Quality Monitoring Plan to document the influence of the Project on water quality within the Coeur d'Alene Indian Reservation	BIA (4e)	\$27,500	\$195,000	\$199,100	No
Undertake a Water Rights Protection Program	Sierra Club	--	--	Indeterminate	No
Install and operate water quality monitoring station downstream of Post Falls Dam	Sierra Club	\$90,300	\$38,000	\$51,500	No
TDG Compensation Program	Sierra Club, Lands Council	--	--	Indeterminate	No
Obtain NPDES permit for dam	Sierra Club	--	--	Indeterminate	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Aquatic Resource Measures					
<i>Post Falls Fish Protection, Mitigation, and Enhancement Program (PF-AR-1)</i>					
Part 1: Maintain 600-cfs minimum flow release at Post Falls Dam with allowance for 500 cfs during July 1 – September 15 of each year (PF)	Avista, Staff	\$0	\$0 ^e	\$0	Yes
Part 2: Spawning and emergence plan compliance	Avista, IDFG, Staff	\$0	\$10,000	\$10,000	Yes
Part 3: Maintain a maximum allowable per-hour discharge downramping rate at Post Falls Dam that corresponds to a no more than 4-inch drop per hour in downstream water levels	Avista, USFWS, IDFG, Staff	\$0	\$0	\$0	Yes
Part 4: Provide for a Population and Habitat Protection and Enhancement Program for westslope cutthroat trout and bull trout in the Coeur d’Alene Lake Basin and native rainbow trout in the free-flowing reach of the Spokane River downstream of Post Falls Dam	Avista	\$0	\$86,700	\$86,700	No
Part 5: Provide support for population and habitat assessments and monitoring for westslope cutthroat trout and bull trout in the Coeur d’Alene Lake Basin and native rainbow trout in the free-flowing reach of the Spokane River downstream of Post Falls Dam	Avista	\$0	\$86,700	\$86,700	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Part 6: Provide assistance and support for a Public Information, Education, and Law Enforcement Program specific to bull trout and westslope cutthroat trout in the Coeur d'Alene Lake Basin and native rainbow trout in the free-flowing reach of the Spokane River downstream of Post Falls Dam	Avista, Staff (in part)	\$0	\$86,700	\$86,700	Partly ^f
Post Falls Project Fish PME Program—fish and habitat assessments, habitat restoration projects, and follow-up monitoring in the Coeur d'Alene Lake basin to mitigate for lost production of native salmonids due to seasonal inundation of 10 miles of tributary habitats. Costs based on IDFG's original 10(j) recommendation for a funding commitment.	IDFG	\$0	\$175,000 ^g	\$175,000	No
Post Falls Project Ramping Rate Report	Staff	\$80,000	\$0	\$12,000	Yes
Post Falls Project Fish PME Program—fish and habitat assessments, habitat restoration projects, and follow-up monitoring in the Coeur d'Alene Lake basin to mitigate for lost production of native salmonids due to seasonal inundation of 10 miles of tributary habitats. Costs based on the actual cost to restore 10 miles of tributary habitat	IDFG	\$3,960,000 ^h	\$0 ⁱ	\$592,900	No
Post Falls Project Fish PME Program—fish monitoring and recreational fishery and/or aquatic habitat protection and enhancements within the Spokane River and/or Coeur d'Alene Lake	IDFG	\$0	\$75,000 ^g	\$75,000	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Fisheries Public Education and Outreach Program specific to bull trout and westslope cutthroat trout in the Coeur d'Alene Lake Basin	IDFG, Staff (in part) ^j	\$0	Indeterminate ^k	Indeterminate	Partly ^l
Post Falls Fisheries Public Education and Outreach Plan and Implementation	Staff	\$10,000	\$5,000	\$6,500	Yes
Trout Stock Status Monitoring Program	WDFW	\$0	\$13,100 ^m	\$13,100	No
Native Trout Enhancement Program	Sierra Club/The Lands Council	--	--	Indeterminate	No
Provide spring flows for incubation and emergence of trout in the Spokane River April 15 through June 7 of each year at Post Falls Dam	WDFW	\$0	Indeterminate	Indeterminate	No
Release approximately 770 cfs minimum instream flow from Post Falls to provide 500 cfs at Barker Road	Sierra Club	\$0	\$0	\$0	No
Release sufficient water from Post Falls Dam to achieve a flow of 500 cfs at Barker Road	The Lands Council	\$0	\$0	\$0	No
Recommend generally higher minimum flow releases of 700 to 800 cfs to achieve a minimum flow of 500 cfs at Barker Road.	Northwest Whitewater	\$0	\$0	\$0	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Implement a 600-/500-cfs instream flow release regime at Post Falls Project with 5 years of adaptive management through development and implementation of a Quality Assurance Project Plan, and final flow release to be determined following five year adaptive management period.	WDOE, Staff (in part)	\$30,000 ^b	\$2,000 ^{o, p}	\$6,600 ^q	Partly ^r
Release 600/500 cfs at Post Falls Project, with final flow release of between 800 and 500 cfs to be determined following five years of adaptive management monitoring.	WDFW, Staff (in part)	\$25,000	\$2,000 ^o	\$5,700	Partly ^r
Instream flow adaptive management program	Lands Council, Northwest Whitewater, Sierra Club	\$25,000	\$2,000 ^{o, p}	\$5,700 ^q	No
Collect and compare real-time flow data at Barker Road for 5 years	The Lands Council	\$20,000	\$2,400 ^s	\$5,400	No
Provide ramping rate flows from Post Falls of no more than 2 inches per hour as measured at the USGS gage (12415500) ^t	WDFW, Sierra Club	Indeterminate	Indeterminate	Indeterminate	No
Mandate ramping rate of no more than 1 inch per hour at Post Falls Dam from June 16 to October 31 and 2 inches per hour from November 1 to February 15 ^t	Sierra Club, Lands Council	Indeterminate	Indeterminate	Indeterminate	No
Preliminary 4(e) condition: Salmonid Fisheries Plan	Coeur d'Alene Tribe	\$20,000	Indeterminate ^p	\$3,000 ^q	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Tributary Restoration for 6.6 miles of riverine habitat upstream of the inundation zone of the reservoir.	USFWS	\$2,633,600 ^u	\$0 ⁱ	\$394,300	No
Develop a mitigation program to address Project effects to the benthic community in the Spokane River	Sierra Club	\$2,500 ^v	Indeterminate ^p	\$400 ^q	No
Establish a Habitat Restoration/Mitigation Trust Fund	Sierra Club	Indeterminate	Indeterminate	Indeterminate	No
Preliminary 4(e) condition: Develop and implement an Aquatic Weed Management Plan to eradicate exotic and noxious aquatic weeds in the waters affected by the Project that are within the Coeur d'Alene Indian Reservation	Coeur d'Alene Tribe	\$20,000	Indeterminate ^p	\$3,000 ^q	No
Modified 4(e) condition: Develop and implement an Aquatic Weed Management Plan to control exotic and noxious aquatic weeds in the waters affected by the Project that are within the Coeur d'Alene Indian Reservation	BIA (4e)	\$20,000	Indeterminate ^p	\$3,000 ^q	No
<i>Coeur d'Alene Lake Aquatic Weed Management Program (PF-AR-2)</i>	Avista; IDFG	\$0	\$50,000	\$50,000 ^w	No
Coeur d'Alene Lake Aquatic Weed Management Plan	Staff ^x	\$20,000	\$50,000	\$53,000	Yes
Monitor instream flows below Post Falls Project using real-time gage	Avista, CELP, WDFW, Staff	\$20,000	\$6,000	\$9,000	Yes

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Terrestrial & Geologic Resource Measures					
<i>Coeur d'Alene Lake and Tributary Erosion Control and Wetlands and Riparian Habitat Protection and Enhancement (PF-TR-1)^y</i>	Avista, USFWS (10j), Staff	\$0	\$500,000	\$500,000	Yes
Preliminary 4(e) condition: Prepare, fund, and implement a Coeur d'Alene Indian Reservation Shoreline Erosion Control Plan	Coeur d'Alene Tribe	--	\$0	No additional costs	Yes, costs included in PF-TR-1
Modified 4(e) condition: Prepare, fund, and implement a Coeur d'Alene Indian Reservation Shoreline Erosion Control Plan	BIA (4e)	\$0	\$100,000	\$100,000	No
Implement PF-TR-1 (Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement Plan) with modifications: (1) unused funds accumulate, (2) projects should not be selected solely based on cultural resources, (3) allocate funds for erosion vs. wetlands, and (4) modify project selection process	IDFG (10j)	\$0	\$0	\$0	No
Implement PF-TR-1 (Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement Plan) with modifications: (1) restore 532 acres of PFO1 wetlands, and (2) restore 250 acres of PSS wetlands	USFWS (10j)	\$2,350,000	\$78,200	\$430,000	No, but USFWS says PF-TR-1 will satisfy this measure.

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Implement PF-TR-1 (Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement Plan) with modifications; priority given to natural levees in lower St. Joe River, excluding areas covered by other USFWS recommendations.	USFWS (10j), Staff	\$0	\$0	\$0	Yes
Preliminary 4(e) condition: Develop and implement a Coeur d'Alene Indian Reservation Wetland and Riparian Habitat Plan	Coeur d'Alene Tribe	\$20,000	Indeterminate ^p	\$3,000 ^q	No
Modified 4(e) condition: Develop and implement a Coeur d'Alene Indian Reservation Wetland and Riparian Habitat Plan	BIA (4e)	\$10,464,000 ^z	\$348,800 ^{aa}	\$1,915,500	No
Survey Project lands and develop a plan to control noxious weeds	USFWS (10j), Staff	\$25,000 ^v	\$7,500 ^v	\$11,200	Yes
Annually monitor bald eagle nests for occupancy and nesting productivity	Avista, USFWS (10j), Staff	\$0	\$10,000 ^v	\$10,000	Yes
Annually survey for new bald eagle nests	Avista, USFWS (10j), Staff	\$0	\$10,000 ^v	\$10,000	Yes
Develop a Bald Eagle Educational and Interpretive Program	USFWS (10j), Staff	\$25,000 ^v	\$2,500 ^v	\$6,200	Yes
Develop Bald Eagle Nest Management Plans and monitor actual bald eagle use	Avista, USFWS (10j), Staff	\$25,000 ^v	\$2,500 ^v	\$6,200	Yes

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Aesthetic Resource Measures					
<i>Post Falls Project Aesthetic Flows (PF-AES-1)</i>	Avista, NPS, IDFG, Northwest Whitewater, Staff	\$0	\$12,100 ^{bb}	\$12,100 ^{bb}	Yes
Land Use Measures					
<i>Post Falls Project Land Use Management Plan (PF-LU-1)</i>					
Implement Land Use Management Plan	Avista	\$0	\$5,000	\$5,000	No
Add 2,352 acres (currently within the 2,128-foot contour) and remove 0.5 acre of private land east of the abandoned Corbin Ditch	Avista, Staff	\$0 ^{cc}	\$0	\$0	Yes
Provide assistance and financial support for enforcement of land and water-based laws and regulations administered by federal, state, local, and tribal governments within their jurisdiction on lands near the Project	Avista/WDOE	\$0	\$12,500	\$12,500	No
Add approximately 107 acres of USDA Forest Service lands to Post Falls Project area	Staff	\$0	\$4,500	\$4,500	Yes
Develop and implement final Land Use Management Plan ^{dd}	Staff	\$0	\$0	\$0	Yes
Recreation Resource Measures					
<i>Post Falls Project Recreation Plan (PF-REC-1)</i>	Avista, Stakeholders	\$15,000	\$5,000	\$7,300	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Recreation Resource Measures (cont)					
<i>Coeur d'Alene Lake Recreation PME (PF-REC-2)</i>					
Future recreation construction or rehabilitation of existing projects at or near Post Falls Project	Avista, Stakeholders	\$0	\$26,300	\$26,300	No
Planning and construction of recreation projects, O&M, and continued public access	Avista, Stakeholders	\$982,250	\$183,300 ^{ee}	\$330,400	No
Improve existing recreation facilities at Falls Park and Q'emiln Park	Avista, Staff	\$150,000	\$50,000	\$72,500	Yes
Extend six boat ramps	Avista, Staff	\$65,000	\$0	\$9,700	Yes
Enhance and maintain water-based facilities at three Forest Service recreation sites	Avista, Staff	\$54,000	\$15,000	\$95,900	Yes
Construct a breakwater for the Higgens Point Boat Launch and stabilize the shoreline	Avista, Staff	\$100,000	\$10,000	\$25,000	Yes
<i>Post Falls/Spokane River Recreation PME (PF-REC-3)</i>					
Whitewater boating flow releases	Avista, Northwest Whitewater, Staff	\$215,000	\$17,500	\$49,700	Yes
Develop the Trailer Park Wave access site	Avista, Staff	\$150,000	\$15,000	\$37,500	Yes
<i>Post Falls Project (PF-REC-4)</i>					
Interpretation and Education Plan	Avista, Staff	\$25,000	\$7,000 ^{ff}	\$10,700	Yes
Recreational use surveys	Avista, Staff	\$0	\$14,200 ^{gg}	\$14,200	Yes

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Cultural Resource Measures					
<i>HPMP (PF-CR-1)</i>	Avista, IDFG, Staff	\$30,000 ^{hh}	\$0	\$4,500	Yes
In the HPMP, address any TCPs that are determined to be affected by the Project and conduct monitoring for cultural resources located within the APE on reservation lands	Avista, Staff	\$0	\$24,000	\$24,000	Yes
Determine National Register eligibility and resolve impacts to historic properties located on the Coeur d'Alene Indian Reservation within the Project boundary and other lands within the established APE	Avista, Staff	\$0	\$168,500	\$168,500	Yes
Modified 4(e) condition: Determine National Register eligibility and resolve impacts to historic properties located on the Coeur d'Alene Indian Reservation within the Project boundary and buffer area beyond the established APE, in addition to expanding the existing Coeur d'Alene curation facility	BIA (4e)	\$200,000	\$168,500	\$198,400	No
Other Items					
Purchase and maintain boat for PME measure implementation (total cost shared 50/50 with Spokane River Developments)	Avista	\$25,000 ^v	\$2,500 ^v	\$6,200	No
Support office staff time and expenses associated with new PME measures	Avista	\$0	\$406,000	\$406,000	No
Provide for administrative overhead costs for new PME measures	Avista	\$0	\$52,700	\$52,700	No

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
<ul style="list-style-type: none"> a. This is an equivalent annual cost based on an annual cost of \$100,000 for each of the first 5 years and no costs thereafter. b. This is an equivalent annual cost based on an annual cost of \$30,000 for each of the first 5 years and no costs thereafter. c. This is an equivalent annual cost based on an annual cost of \$25,000/year over the 30-year analysis, with an additional \$15,000/year for the first 5 years for monitoring. d. This is an equivalent annual cost based on a cost of \$339,600 per year over the 30-year analysis. However, every fifth year, an additional \$50,000 would be needed for water quality modeling. e. The required minimum flow passes through turbines at the middle channel powerhouse; therefore, there is no energy loss (i.e., no costs). f. Staff accepts the fisheries public education and outreach programs implemented according to staff-recommended plans, but does not accept any law enforcement activities or general funding commitments. g. Cost of the measure is based on IDFG's recommended annual funding commitment. h. IDFG provides a cost of \$75 per linear foot to design and construct restoration work. We assume that IDFG is therefore suggesting that the annual funding commitment of \$175,000 could be substituted by the actual costs of restoring 10 miles of tributary habitats seasonally inundated by the Project. This cost estimate does not, however, include any of the costs to conduct IDFG's recommended initial habitat/population assessments or follow-up monitoring as sufficient detail is lacking for us to determine the costs of these measures. We note that there would be additional costs to conduct these measures. i. Assumes no annual O&M costs would be required to maintain restoration projects. j. Staff's recommendation includes development of a Post Falls Fisheries Public Education and Outreach Program Plan. k. IDFG did not provide enough detail for us to determine a cost for its recommended measure. l. Staff accepts the fisheries public education and outreach programs implemented according to staff-recommended plans. m. This is an equivalent annual cost based on a survey data collection cost of \$25,000 every 2 years over a 30-year period. n. This cost includes \$25,000 for adaptive management and a \$5,000 one-time capital cost to develop the Quality Assurance Project Plan. o. This is an equivalent annual cost based on a cost of \$5,000 per year for the first 5 years, and no costs thereafter. p. Only cost to develop plan is included. Costs to implement the measures of the plan could not be determined. q. The total average annual costs may be greater than what is shown in the table because a portion of the annual costs are indeterminate. r. Staff accepts the initial flow releases but does not accept adaptive management provisions. s. This is an equivalent annual cost based on a \$6,000 annual O&M cost for the first 5 years. 					

Table 4.3-1. Summary of costs of environmental measures for Post Falls Project (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
<ul style="list-style-type: none"> t. There is no loss in net generation. However, to achieve ramping rates of less than 4 inches per hour, modifications to the dam would be needed. The costs for these modifications are indeterminate. u. This cost includes the total cost to develop and implement the program (assumes \$75 per linear foot to design and construct restoration activities and \$20,000 to develop the plan). v. Cost for this measure has been split between the Post Falls Project and the Spokane River Developments. w. Avista proposes to provide annual funds for the program with cost caps. x. Staff recommends that Avista be fully responsible for implementing all aquatic weed measures in an approved Coeur d’Alene Lake aquatic weed management plan. y. The PF-TR-1 plan has two components; one component is a \$100,000 annual Erosion Control Program, and the other is a \$400,000 annual Wetland and Riparian Habitat Plan, for a total cost of \$500,000 per year. Staff proposes to implement PF-TR-1 with minor no-cost modifications. z. The estimated cost to acquire and restore the land is \$3,000 per acre. For the 3,488 acres, the capital costs equals \$10,464,000. aa. The estimated cost to maintain the wetlands is \$100 per acre per year. For the 3,488 acres, the annual costs equal \$348,800 per year. bb. These annual costs include \$11,100 per year for O&M plus a reduction in annual energy benefits of \$1,000 per year, which equates to an energy loss of 19.2 MWh for aesthetic flows. cc. Since the land is already owned by the applicant, there would be no additional cost to implement the measure. dd. Costs for staff’s recommended measures in the final plan are assumed to be included in cost of the initial Avista plan. ee. This is an equivalent annual cost based on a cost of \$159,500 per year over the 30-year analysis, with an additional \$60,000 per year in year 10, and every year thereafter. ff. This is an equivalent annual cost based on a cost of \$5,000 per year over the 30-year analysis, with an additional \$15,000 every 6 years to update the plan. gg. This is an equivalent annual cost based on a cost of \$75,000 every sixth year beginning in 2008. hh. The total capital cost of the HPMP would be \$60,000 for the Post Falls Project and the Spokane River Developments, divided equally between the Projects. 					

Source: Compiled by staff, including information provided by Avista in the PDEA.

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Water Resource Measures					
<i>TDG Control and Mitigation Program (SRP-WQ-1)</i>	Avista, Staff	\$0	\$50,000	\$50,000	Yes
Develop and implement a Long Lake Oxygen Monitoring and Enhancement Program	Staff	\$170,000	\$40,000	\$62,200	Yes
<i>Washington Water Quality PME (SRP-WQ-2)</i>	Avista	\$170,000	\$45,900 ^a	\$68,200	No
Install and operate water quality monitoring stations upstream and downstream of Long Lake Dam	Sierra Club	\$180,600	\$76,000	\$99,600	No
Conduct monitoring and feasibility study of measures to improve DO in Long Lake Reservoir	Sierra Club	--	--	Indeterminate	No
Implement a TDG Compensation Program	Sierra Club, Lands Council	--	--	Indeterminate	No
Modify Long Lake Dam to reduce TDG levels	Sierra Club, Lands Council	--	--	Indeterminate	No
Limit drawdown of Lake Spokane to 14 feet, except under emergency conditions	Avista, Staff	\$0	\$0	\$0	Yes
Aquatic Resource Measures					
<i>Spokane River Fish Protection, Mitigation, and Enhancement Program (SRP-AR-1)</i>	Avista	\$0	\$125,000	\$125,000	No
<i>Lake Spokane Aquatic Weed Management Program (SRP-AR-2)</i>	Avista, WDFW (10j)	\$0	\$25,000 ^b	\$25,000	No

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Nine Mile Reservoir aquatic weed monitoring and potential future aquatic weed management plan	WDFW	\$5,000	Indeterminate ^c	\$700 ^d	No
Nine Mile Reservoir aquatic weed monitoring	Staff	\$0	\$10,500 ^e	\$10,500	Yes
Develop and implement a Lake Spokane aquatic weed management plan ^f	Staff	\$15,000	\$25,000	\$27,000	Yes
Develop a mitigation program to address Project impacts to the benthic community in the Spokane River	Sierra Club	\$2,500 ^g	Indeterminate ^c	\$300 ^d	No
Establish a Habitat Restoration/Mitigation Trust Fund	Sierra Club	--	--	Indeterminate	No
Spawning Gravel Management Program	WDFW	\$20,000	\$150,000 ^h	\$152,600 ^d	No
Fishery Enhancement Supplementation Program	WDFW	\$0	\$202,800 ⁱ	\$202,800 ^d	Partly ^j
Trout stocking in Upper Falls Reservoir and Nine Mile Reservoir	WDFW, Staff	\$0	\$12,800 ^k	\$12,800	Yes
Lake Spokane trout stocking with Creel Survey Plan (first 5 years of license)	Staff	\$20,000 ^l	\$73,900 ^m	\$76,500	Yes
Lake Spokane trout stocking (after first 5 years of license)	Staff	\$0	\$79,000 ⁿ	\$79,000	Yes ^o
Long Lake Reservoir DO Mitigation Program Development	Sierra Club	--	--	Indeterminate	No
Long Lake Dam DO Mitigation Program Development	Sierra Club	--	--	Indeterminate	No

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Fisheries Public Education and Outreach Program specific to the protection of wild trout in the Spokane River ^p	WDFW, Staff (in part)	\$0	\$10,000	\$10,000	Partly ^q
Fisheries Public Education and Outreach Program specific to the protection of wild trout in the Spokane River ^p	IDFG, Staff (in part)	\$0	\$5,000	\$5,000	Partly ^q
Spokane River Fisheries Public Education and Outreach Program Plan	Staff	\$10,000	\$10,000	\$11,300	Yes
TDG Mitigation Program	Sierra Club	--	--	Indeterminate	No
Obtain NPDES	Sierra Club	--	--	Indeterminate	No
Native Trout Enhancement Program	Sierra Club	--	--	Indeterminate	No
Sediment Reduction Program	Sierra Club	--	--	Indeterminate	No
Monitor Instream Flow with Real-time Gages	CELP	--	--	Indeterminate	No
<i>Lake Spokane-Nine Mile Terrestrial, Riparian and Wetland Habitat Protection (SRP-TR-1)</i>					
Purchase or acquire easement for new wetland and subsequent restoration	Avista, Staff	\$350,000	\$0	\$45,700	Yes
200-foot buffer for Avista Project lands	Avista, Staff	\$0 ^r	\$20,000	\$20,000	Yes
Financial support for watershed restoration	Avista	\$0	\$10,000	\$10,000	No
Terrestrial & Geologic Resource Measures					
<i>Project Transmission Line Management Program PME (SRP-TR-2)</i>	Avista, WDFW, USFWS (10j), Staff	\$0	\$6,100	\$6,100	Yes

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Implement SRP-TR-1 with modifications: prepare an Upland Habitat Protection and Enhancement Plan to protect shoreline and enhance at least 24 acres of upland habitat	USFWS (10j)	\$72,000	\$2,400	\$11,800	No
Annually monitor bald eagle nests for occupancy and nesting productivity	Avista, USFWS (10j), Staff	\$0	\$10,000 ^g	\$10,000	Yes
Annually survey for new bald eagle nests	Avista, USFWS (10j), Staff	\$0	\$10,000 ^g	\$10,000	Yes
Develop a Bald Eagle Educational and Interpretive Program	USFWS (10j), Staff	\$25,000 ^g	\$2,500 ^g	\$6,200	Yes
Develop Bald Eagle Nest Management Plans and monitor actual bald eagle use	Avista, USFWS (10j), Staff	\$25,000 ^g	\$2,500 ^g	\$6,200	Yes
Survey Project lands and develop a plan to control noxious weeds	USFWS (10j), Staff	\$25,000 ^g	\$7,500 ^g	\$11,200	Yes
Provide funds to purchase 300 acres of shoreline property and wetland habitat contiguous with Lake Spokane or other Avista-owned property	WDFW (10j)	\$900,000	\$30,000	\$147,600	No
Prepare, fund, and implement an Erosion Control, Prevention, and Restoration Program for Lake Spokane and Nine Mile Reservoir ^s	WDFW (10j)	\$0	\$0	\$0	No
Prepare, fund, and implement a Sediment Management Plan in Nine Mile Reservoir and Lake Spokane	WDOE, WDFW, Staff	\$5,000	Indeterminate	\$700 ^d	Yes

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Protect and manage all Avista-owned lands (about 1,976 acres) around Lake Spokane for wildlife	WDFW (10j)	\$0 ^t	\$30,000	\$30,000	No
Monitor wetlands on Lake Spokane after installation of rubber dam and mitigate any net loss of wetlands	Staff	\$0	\$4,000 ^u	\$4,000	Yes
Aesthetic Resource Measures					
<i>Spokane River Developments Aesthetic Flows (SRP-AES-1)</i>					
Aesthetic flows at Upper Falls ^v	Avista, NPS, Northwest Whitewater, Staff	\$50,000 ^w	\$67,900 ^x	\$74,500	Yes
Aesthetic flows at Monroe Street	Avista, NPS, Northwest Whitewater, Staff	\$0	-\$600 ^y	-\$600 ^y	Yes
Aesthetic flows at Upper Falls until midnight year-round ^z	Sierra Club	\$0	\$333,500 ^{aa}	\$333,500	No
Land Use Measures					
<i>Project Land Use Management Plan (SRP-LU-1)</i>					
Implement Land Use Management Plan	Avista, Staff	\$0	\$15,000	\$15,000	Yes

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Assistance and financial support for enforcement of land and water-based laws and regulations administered by federal, state, local, and tribal governments within their jurisdictions	Avista	\$0	\$12,500	\$12,500	No
Develop and implement final Land Use Management Plan ^{bb}	Staff	\$0	\$0	\$0	Yes
Recreation Resource Measures					
<i>Spokane River Project Recreation Plan (SRP-REC-1)</i>	Avista, Stakeholders	\$10,000	\$5,000	\$6,300	No
<i>Spokane River Recreation (SRP-REC-2)</i>					
Huntington Park	Avista, Staff	\$0	\$10,000	\$10,000	Yes
Water Avenue access	Avista, Stakeholders	\$20,000	\$5,000	\$7,600	No
<i>Spokane River (SRP-REC-3)</i>					
Interpretation and Education Plan	Avista, Staff	\$25,000	\$4,800 ^{cc}	\$8,100	Yes
Recreational use surveys	Avista, Staff	\$0	\$13,200 ^{dd}	\$13,200	Yes
<i>Lake Spokane/Nine Mile Reservoir Recreation PME (SRP-REC-4)</i>					
Nine Mile Resort development to expand day use and seasonally extend boating opportunities	Avista, Staff	\$250,000	\$0	\$32,700	Yes
Accept and maintain Nine Mile cottages	Avista, Staff	\$0	\$0	\$0	Yes
Develop the Nine Mile / Spokane House interpretive center	Avista, Staff	\$175,000	\$20,000	\$42,900	Yes

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Develop the Nine Mile portage take-out area	Avista, Staff	\$15,000	\$5,000	\$7,000	Yes
Extend the Centennial Trail approximately 1 mile	Avista, Staff	\$100,000	\$0	\$13,100	Yes
Develop up to 10 boat-in-only campsites	Avista, Staff	\$50,000	\$10,000	\$16,500	Yes
Reconstruct the Long Lake Dam overlook	Avista, Staff	\$50,000	\$10,000	\$16,500	Yes
Develop the Long Lake Dam river access site next to picnic area	Avista, Staff	\$10,000	\$5,000	\$6,300	Yes
Planning and construction of recreation projects, including O&M and continued public access	Avista, Stakeholders	\$790,000	\$132,400 ^{ee}	\$235,600	No
Cultural Resource Measures					
<i>HPMP (SRP-CR-1)</i>	Avista, Staff	\$30,000 ^g	\$0	\$4,500	Yes
In the HPMP, address any traditional cultural properties that are determined to be affected by the Project and conduct monitoring for cultural resources located within the APE on reservation lands	Avista, Staff	\$0	\$24,000	\$24,000	Yes
Determine National Register eligibility and resolve impacts to historic properties located within the Project APE	Avista, Staff	\$0	\$75,000	\$75,000	Yes
Other Items					
Purchase and maintain boat for PME measure implementation (total cost shared 50/50 with Post Falls Project)	Avista	\$25,000 ^g	\$2,500 ^g	\$6,200	No
Support office staff time and expenses associated with new PME measures	Avista	\$0	\$363,700	\$363,700	No

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
Provide for administrative overhead costs for new PME measures	Avista	\$0	\$47,300	\$47,300	No
<p>a. This is an equivalent annual cost based on an annual cost of \$40,000/year over the 30-year analysis, with an additional \$15,000/year for the first 5 years for monitoring.</p> <p>b. Avista proposes to provide annual funds for the program with cost caps.</p> <p>c. Only the cost to develop the plan is included. Costs to implement the measures of the plan could not be determined.</p> <p>d. The total average annual costs would be greater than what is shown because all annual costs could not be determined.</p> <p>e. This is an equivalent annual cost based on a cost of \$20,000 every other year, over the 30-year analysis.</p> <p>f. Staff recommends that Avista be fully responsible for implementing all aquatic weed measures in an approved Lake Spokane Aquatic Weed Management Plan.</p> <p>g. Cost for this measure has been split between the Spokane River Developments and the Post Falls Project.</p> <p>h. The cost of gravel is \$150,000 per year. However, additional unknown annual costs include material hauling costs; costs to excavate, haul, and dispose of existing sediment-laden gravels; costs to construct, install, and maintain flow deflection devices; and costs to conduct studies prior to augmentation and every 3 years thereafter.</p> <p>i. Additional unknown annual costs would include the cost to transport fish to lakes outside of the Project area.</p> <p>j. Staff is only recommending WDFW's trout stocking levels in Upper Falls and Nine Mile Reservoirs. See measure below for costs.</p> <p>k. This is the cost of stocking 6,000 trout in Upper Falls Reservoir and 9,000 trout in Nine Mile Reservoir annually.</p> <p>l. Cost to develop the study plan.</p> <p>m. This is an equivalent annual cost based on a cost of \$60,000 per year for creel surveys and \$145,000 per year for stocking trout for years 2 through 6 of the 30-year analysis.</p> <p>n. This is an equivalent annual cost based on a cost of \$145,000 per year for stocking trout in years 7 through 30 of the 30-year analysis.</p> <p>o. If the creel surveys (listed in measure above) determine that the Lake Spokane fish stocking program is successful.</p> <p>p. WDFW recommends that Avista provide \$10,000 annually and IDFG recommends that Avista provide \$5,000 annually for the program; however, staff recommends that Avista be fully responsible for implementing all public outreach activities in a Commission-approved Spokane River Fisheries Public Outreach and Education Plan.</p>					

Table 4.3-2. Summary of costs of environmental measures for Spokane River Developments (continued)

Environmental Measures	Entity	Capital and One-time Costs (2007\$)	Annual Costs (2007\$)	Total Average Annual Cost (2007\$)	Adopted by Staff?
<p>q. Staff accepts the Fisheries Public Education and Outreach Programs implemented according to staff-recommended plans.</p> <p>r. Avista estimates that a 200-foot buffer would add about 320 acres of land to the Project. Avista estimates the value of these 320 acres to be between \$1.6 million and \$6.5 million dollars. Since Avista already owns this land, we assign no capital cost to the 320 acres.</p> <p>s. Costs are included as part of the original O&M costs for the Project.</p> <p>t. This does not include the lost development costs.</p> <p>u. This is an equivalent annual cost based on a cost of \$10,000 per year for the first 5 years, and no costs thereafter.</p> <p>v. This measure is for 200 cfs of aesthetic flow from 10 a.m. until one-half hour after sunset from Memorial Day until September 30 each year.</p> <p>w. Cost of channel modification study.</p> <p>x. Annual costs include \$30,500 for gate operation and maintenance, and a reduction in annual energy benefits of \$37,400 per year, which equates to an energy loss of 748 MWh for aesthetic flows at Upper Falls.</p> <p>y. There is a \$600 per year gain in energy revenue, which equates to an energy gain of 12 MWh for aesthetic flows at Monroe Street; hence the negative sign.</p> <p>z. This measure is for 500 cfs of aesthetic flow from 5 a.m. until midnight, year-round.</p> <p>aa. Annual costs include \$30,500 for gate operation and maintenance, and a reduction in annual energy benefits of \$303,000 per year, which equates to an energy loss of 6,060 MWh for aesthetic flows.</p> <p>bb. Costs for staff's recommended measures in the final plan are assumed to be included in cost of the initial Avista plan.</p> <p>cc. This is an equivalent annual cost based on a cost of \$3,500 per year over the 30-year analysis, with an additional \$10,000 every 6 years to update the plan.</p> <p>dd. This is an equivalent annual cost based on a cost of \$75,000 every 6th year beginning in 2008.</p> <p>ee. This is an equivalent annual cost based on a cost of \$85,000 per year over the 30-year analysis, with an additional \$300,000 every 10th year.</p>					

Source: Compiled by staff, including information provided by Avista in the PDEA.

4.4 COMPARISON OF ALTERNATIVES

The various operational alternatives, which include the No-Action Alternative, the Avista Proposed Action, the Staff-Recommended Alternative, and the Staff-Recommended Alternative with Mandatory Conditions, are summarized to compare the overall net annual benefits of each alternative.

4.4.1 No-Action Alternative

The existing Projects represent the No-Action Alternative. Under this alternative, there would be no change in Project facilities or operations (beyond life extension of structures and equipment), and no new enhancement measures would be provided.

The annual operating cost of the existing Post Falls Project is about \$3,446,100 (\$44.59/MWh). The Post Falls Project would generate an average of 77,281 MWh of electricity annually and have an annual power value of \$3,864,100 (\$50.00/MWh). This would result in a net annual benefit of \$417,900 (\$5.41/MWh).

The annual operating cost of the existing Spokane River Developments is about \$18,847,700 (\$23.66/MWh). The Spokane River Developments would generate an average of 796,639 MWh of electricity annually and have an annual power value of \$39,832,000 (\$50.00/MWh). This would result in a net annual benefit of \$20,984,200 (\$26.34/MWh).

4.4.2 Proposed Action

The Proposed Action represents the power value, annual costs, and net benefits as proposed by Avista.

Tables 4.4-1 and 4.4-2 compare the power value, annual costs, and net benefits under the No-Action Alternative to the power value, annual costs, and net benefits under the Proposed Action for the Post Falls Project and the Spokane River Developments, respectively.

The annual operating cost of the Post Falls Project under the Proposed Action would be about \$6,888,500 (\$89.16/MWh), as summarized in Table 4.4-1. Under the Proposed Action, the Post Falls Project would generate an average of 77,262 MWh of electricity annually and have an annual power value of \$3,863,100 (\$50.00/MWh). This would result in a negative net annual benefit of -\$3,025,400 (-\$39.16/MWh).

Table 4.4-1. Summary of costs, power benefits, and net benefits of the Post Falls Project alternatives

Category	Alternative			
	No-Action	Proposed Action	Staff-Recommended	Staff-Recommended with Mandatory Conditions
Installed Capacity	14.75 MW	14.75 MW	14.75 MW	14.75 MW
Annual Generation	77,281 MWh	77,262 MWh	77,262 MWh	77,262 MWh
Annual Power Value	\$3,864,100 (\$50.00/MWh)	\$3,863,100 (\$50.00/MWh)	\$3,863,100 (\$50.00/MWh)	\$3,863,100 (\$50.00/MWh)
Annual Cost	\$3,446,100 (\$44.59/MWh)	\$6,888,500 (\$89.16/MWh)	\$5,843,700 (\$75.64/MWh)	\$7,551,700 (\$97.74/MWh)
Net Annual Benefit	\$417,900 (\$5.41/MWh)	-\$3,025,400 (-\$39.16/MWh)	-\$1,980,600 (-\$25.64/MWh)	-\$3,688,600 (-\$47.74/MWh)

Table 4.4-2. Summary of costs, power benefits, and net benefits of the Spokane River Developments alternatives

Category	Alternative ^a		
	No-Action	Proposed Action	Staff-Recommended
Installed Capacity	122.9 MW	122.9 MW	122.9 MW
Annual Generation	796,639 MWh	795,903 MWh	795,903 MWh
Annual Power Value	\$39,832,000 (\$50.00/MWh)	\$39,795,200 (\$50.00/MWh)	\$39,795,200 (\$50.00/MWh)
Annual Cost	\$18,847,700 (\$23.66/MWh)	\$21,240,700 (\$26.69/MWh)	\$20,635,100 (\$25.93/MWh)
Net Annual Benefit	\$20,984,200 (\$26.34/MWh)	\$18,554,400 (\$23.31/MWh)	\$19,160,000 (\$24.07/MWh)

a. Since there are no federal lands within the Project, there is no agency with mandatory conditioning authority.

The annual operating cost of the Spokane River Developments under the Proposed Action is about \$21,240,700 (\$26.69/MWh), as summarized in Table 4.4-2. Under the Proposed Action, the Spokane River Developments would generate an average of 795,903 MWh of electricity annually and have an annual power value of \$39,795,200 (\$50.00/MWh). This would result in a net annual benefit of \$18,554,400 (\$23.31/MWh).

4.4.3 Staff-Recommended Alternative

The Staff-Recommended Alternative represents the power value, annual costs, and net benefits as proposed by FERC staff.

Tables 4.4-1 and 4.4-2 compare the power value for the Staff-Recommended Alternative to the Proposed Action. The value remains constant because no operational changes would affect generation.

The annual operating cost of the Post Falls Project under the Staff-Recommended Alternative would be about \$5,843,700 (\$75.64/MWh), as summarized in Table 4.4-1. Under the Staff Alternative, the Post Falls Project would generate an average of 77,262 MWh of electricity annually and have an annual power value of \$3,863,100 (\$50.00/MWh). For the Staff-Recommended Alternative, this would result in a negative net annual benefit of -\$1,980,600 (-\$25.64/MWh).

The annual operating cost of the Spokane River Developments under the Staff-Recommended Alternative would be about \$20,635,100 (\$25.93/MWh), as summarized in Table 4.4-2. Under the Staff Alternative, the Spokane River Developments would generate an average of 795,903 MWh of electricity annually and have an annual power value of \$39,795,200 (\$50.00/MWh). This would result in a net annual benefit of \$19,160,000 (\$24.07/MWh).

4.4.4 Staff-Recommended Alternative with Mandatory Conditions

The Staff-Recommended Alternative with Mandatory Conditions represents the power value, annual costs, and net benefits as proposed by FERC staff, with the mandatory 4(e) conditions included.

Table 4.4-1 compares the power value for the Staff-Recommended Alternative with Mandatory Conditions to the Proposed Action. The value remains constant because no operational changes would affect generation.

The annual operating cost of the Post Falls Project under the Staff-Recommended Alternative with Mandatory Conditions would be about \$7,551,700 (\$97.74/MWh), as summarized in Table 4.4-1. Under the Staff-Recommended Alternative with Mandatory Conditions, the Post Falls Project would generate an

average of 77,262 MWh of electricity annually and have an annual power value of \$3,863,100 (\$50.00/MWh). Based upon the costs we could identify for the Staff-Recommended Alternative with Mandatory Conditions, this alternative would result in a negative net annual benefit of -\$3,688,600 (-\$47.74/MWh).

4.4.5 Summary of Alternatives

Table 4.4-1 summarizes the annualized costs, benefits, and net benefits of the No-Action Alternative, the Proposed Action, the Staff-Recommended Alternative, and the Staff-Recommended Alternative with Mandatory Conditions at the Post Falls Project.

Table 4.4-2 summarizes the annualized costs, benefits, and net benefits of the No-Action Alternative, the Proposed Action, and the Staff-Recommended Alternatives at the Spokane River Developments.

The annual costs that are presented in these tables include the assumptions from Table 4.2-1, the standard operation and maintenance costs provided in Tables 4.2-2 and 4.2-3, plus the cost of the environmental measures proposed in Tables 4.3-1 and 4.3-2. The net annual benefit is derived by subtracting the annual cost from the annual power (generation) value.

