



Federal Energy
Regulatory Commission

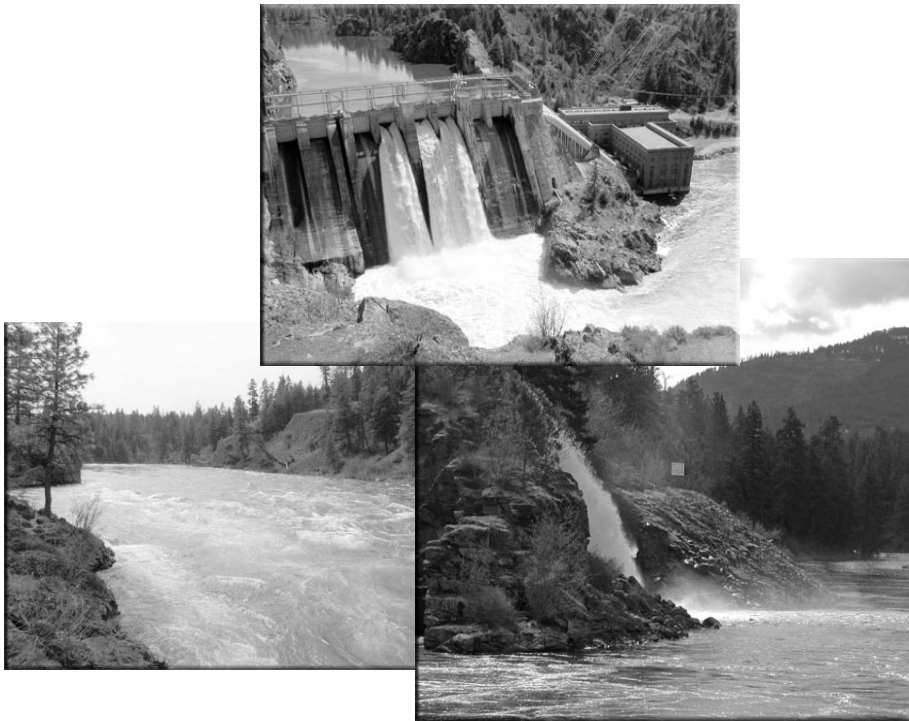
Office of Energy Projects

July 2007

FERC/FEIS – 0204F

FINAL ENVIRONMENTAL IMPACT STATEMENT

***SPOKANE RIVER AND POST FALLS
HYDROELECTRIC PROJECTS***



**States of Washington and Idaho
FERC Project Nos. 2545 and 12606
888 First Street, N.E.
Washington, DC 20426**



FEIS

SPOKANE RIVER AND POST FALLS HYDROELECTRIC PROJECTS FERC Project Nos. 2545 and 12606

**July
2007**

**FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR HYDROPOWER RELICENSING**

**SPOKANE RIVER AND POST FALLS HYDROELECTRIC PROJECTS
States of Washington and Idaho
FERC Project Nos. 2545 and 12606**

**Avista Corporation
1411 East Mission
PO Box 3727
Spokane, WA 99220-3727**

**Federal Energy Regulatory Commission
Office of Energy Projects
Division of Hydropower Licensing
888 First Street, NE
Washington, DC 20426**

July 2007

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF ENERGY PROJECTS

To the Agency or Individual Addressed:

Reference: Final Environmental Impact Statement

Attached is the final environmental impact statement (FEIS) for the Post Falls Hydroelectric Project No. 12606, located on the Spokane River in Kootenai and Benewah Counties, Idaho, and the Spokane River Developments No. 2545, located on the Spokane River in Spokane, Lincoln, and Stevens Counties, Washington.

This FEIS documents the views of governmental agencies, nongovernmental organizations, affected Indian tribes, the public, the license applicant, and Commission staff. It contains staff evaluations on the applicant's proposal and the alternatives for relicensing the Post Falls and Spokane River Projects.

Before the Commission makes a licensing decision, it will take into account all concerns relevant to the public interest. The FEIS will be part of the record from which the Commission will make its decision. The FEIS was sent to the U.S. Environmental Protection Agency and made available to the public in July 2007.

A copy of the FEIS is available for review in the Commission's Public Reference Branch, Room 2A, located at 888 First Street, N.E., Washington, DC, 20426. The FEIS also may be viewed on the Commission's web site at <http://www.ferc.gov> under the eLibrary link. Enter the docket number excluding the last three digits in the docket number field to access the document. For assistance, contact FERC Online Support at FERCOnlineSupport@ferc.gov or toll-free at 1-866-208-3676, or for TTY, (202) 502-8659.

COVER SHEET

- a. Title: Final Environmental Impact Statement for Hydropower Relicensing, Spokane River and Post Falls Hydroelectric Projects, States of Washington and Idaho, FERC Project Nos. 2545 and 12606
- b. Subject: Final Environmental Impact Statement
- c. Lead Agency: Federal Energy Regulatory Commission
- d. Abstract: Avista Corporation (Avista) filed two applications for new licenses for the existing 14.75-megawatt (MW) Post Falls Hydroelectric Project (Post Falls Project) and the 122.9-MW Spokane River Developments located on the Spokane River in Kootenai and Benewah Counties, Idaho and Spokane, Lincoln, and Stevens Counties, Washington. The nearest city is Spokane, Washington, and the Upper Falls and Monroe Street Developments are located within Spokane city limits. The Projects occupy about 44,556 acres of land, of which approximately 7,044 acres are within the Coeur d'Alene Indian Reservation; 54 acres are submerged lands administered by the U.S. Forest Service; and 308 acres are submerged lands administered by the Bureau of Land Management.
- The power generated at the 137.65-MW Projects provides approximately 6 percent of the current generating resources used to meet loads by Avista's 325,000 electrical customers in the region.
- Native fish species in the Spokane River and Coeur d'Alene Lake include westslope cutthroat trout, rainbow trout, mountain whitefish, and bull trout. Additionally, six federally listed species occur in the Project vicinity.
- Key issues associated with relicensing this Project are erosion and sedimentation control; water quality and quantity; fish resource and habitat protection and enhancement; wetland and riparian area protection and enhancement; local recreational opportunities enhancement; land use and socioeconomics; aesthetic resources; and cultural resource protection.
- The staff's recommendation is to relicense the Project as proposed, with additional measures recommended by agencies and the staff to protect and enhance environmental resources.

- e. Contact: **Environmental Staff**
John Blair
Federal Energy Regulatory Commission
Office of Energy Projects
888 First Street, N.E.
Washington, DC 20426
(202) 502-6092
- f. Transmittal: This final environmental impact statement prepared by the Commission's staff on the hydroelectric license application filed by Avista Corporation, Spokane, Washington, for the existing Post Falls Hydroelectric Project (No. 12606) and Spokane River Developments (No. 2545) is being made available to the public in July 2007, as required by the National Environmental Policy Act of 1969¹

¹ National Environmental Policy Act of 1969, amended (Pub. L. 91-190. 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, §4(b), September 13, 1982).

FOREWORD

The Federal Energy Regulatory Commission (Commission), pursuant to the Federal Power Act (FPA)² and the U.S. Department of Energy Organization Act³ is authorized to issue licenses for up to 50 years for the construction and operation of non-federal hydroelectric developments subject to its jurisdiction, on the necessary conditions:

That the project adopted...shall be such as in the judgment of the Commission will be best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, for the adequate protection and enhancement of fish and wildlife (including related spawning grounds and habitat), and for other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes referred to in Section 4(e)...⁴

The Commission may require such other conditions not inconsistent with the FPA as may be found necessary to provide for the various public interests to be served by the project.⁵

² 16 U.S.C. §791(a)-825r, as amended by the Electric Consumers Protection Act of 1986, Public Law 99-495 (1986) and the Energy Policy Act of 1992, Public Law 102-486 (1992).

³ Public Law 95-91, 91 Stat. 556 (1977).

⁴ 16 U.S.C. §803(a).

⁵ 16 U.S.C. §803(g).

TABLE OF CONTENTS**EXECUTIVE SUMMARY ES-1****1.0 PURPOSE OF ACTION AND NEED FOR POWER..... 1-1**

1.1	PURPOSE OF ACTION.....	1-1
1.2	NEED FOR POWER.....	1-4
1.3	INTERVENTIONS.....	1-7
1.4	SCOPING PROCESS.....	1-8
1.5	AGENCY CONSULTATIONS.....	1-9
1.6	ALTERNATIVES TO AGENCY MANDATORY TERMS AND CONDITIONS AND ADMINISTRATIVE LAW JUDGE FINDINGS	1-10
1.7	PUBLIC AND AGENCY INVOLVEMENT SINCE RELEASE OF THE DEIS	1-13

2.0 PROPOSED ACTION AND ALTERNATIVES 2-1

2.1	NO-ACTION ALTERNATIVE	2-1
2.1.1	General Description of the Existing Facilities and Operations.....	2-1
2.1.2	Post Falls Project	2-2
2.1.3	Spokane River Developments	2-3
2.1.3.1	Upper Falls Development.....	2-3
2.1.3.2	Monroe Street Development.....	2-4
2.1.3.3	Nine Mile Development	2-4
2.1.3.4	Long Lake Development	2-5
2.1.4	Current Project Operations	2-6
2.1.4.1	Post Falls Project	2-7
2.1.4.2	Upper Falls Development.....	2-8
2.1.4.3	Monroe Street Development.....	2-9
2.1.4.4	Nine Mile Development	2-9
2.1.4.5	Long Lake Development	2-9
2.1.4.6	Flood Control Operations	2-10
2.1.4.7	Fishery Management Operations.....	2-10
2.1.4.8	Project Safety.....	2-11
2.1.5	Current Environmental Measures.....	2-11
2.2	PROPOSED ACTION – APPLICANT’S PROPOSAL.....	2-14
2.2.1	Project Facilities	2-14
2.2.2	Project Boundary	2-14
2.2.3	Project Operations	2-15

2.2.4	Project Environmental Measures.....	2-16
2.3	MODIFICATIONS TO THE PROPOSED ACTION	2-16
2.3.1	Staff's Modification to the Proposed Action.....	2-40
2.3.2	Section 18 Fishway Prescriptions.....	2-40
2.3.3	Section 4(e) Conditions	2-40
2.3.4	Section 401 Water Quality Certificate Conditions.....	2-44
2.3.5	Section 10(j) Recommendations.....	2-44
2.3.6	Avista Alternative Section 4(e) Conditions under the Energy Policy Act of 2005	2-44
2.4	ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION	2-45
2.4.1	Federal Takeover	2-45
2.4.2	Issuance of a Nonpower License	2-45
2.4.3	Retirement of the Projects	2-45
2.4.4	Natural Hydrograph Alternative.....	2-46
3.0	ENVIRONMENTAL ANALYSIS.....	3-1
3.1	GENERAL DESCRIPTION OF THE BASIN.....	3-1
3.2	CUMULATIVELY AFFECTED RESOURCES	3-2
3.2.1	Geographic Scope.....	3-2
3.2.1.1	Water Quantity.....	3-3
3.2.1.2	Water Quality.....	3-3
3.2.1.3	Sediment Supply and Transport.....	3-4
3.2.1.4	Aquatic Resources	3-5
3.2.1.5	Terrestrial Resources	3-6
3.2.1.6	Recreational Resources.....	3-7
3.2.1.7	Cultural Resources.....	3-7
3.2.2	Temporal Scope	3-8
3.3	PROPOSED ACTION AND ACTION ALTERNATIVES	3-8
3.3.1	Geology and Soils.....	3-8
3.3.1.1	Affected Environment.....	3-8
3.3.1.1.1	Geology	3-8
3.3.1.1.2	Soils	3-13
3.3.1.1.3	Existing Geologic Hazards.....	3-16
3.3.1.1.4	Sediment Supply and Transport	3-16
3.3.1.1.5	Erosion.....	3-25
3.3.1.1.6	Turbidity	3-31
3.3.1.1.7	Hazardous Materials.....	3-32
3.3.1.2	Environmental Consequences.....	3-33
3.3.1.2.1	Effects of Lake Level Management	3-33

3.3.1.2.2	Project Flow Releases	3-40
3.3.1.2.3	Effects of Sediment Transport.....	3-41
3.3.1.2.4	Effects of Erosion	3-47
3.3.1.2.5	Effects of Turbidity	3-52
3.3.1.2.6	Secondary Effects of Environmental Measures.....	3-53
3.3.1.2.7	Administrative Law Judge Findings	3-54
3.3.1.3	Unavoidable Adverse Effects	3-57
3.3.1.4	Cumulative Effects	3-57
3.3.2	Water Quantity.....	3-58
3.3.2.1	Affected Environment.....	3-58
3.3.2.1.1	Surface Water	3-58
3.3.2.1.2	Groundwater	3-78
3.3.2.1.3	Water Rights.....	3-83
3.3.2.2	Environmental Consequences.....	3-84
3.3.2.2.1	Lake Level Management and Flow Releases.....	3-84
3.3.2.2.2	Groundwater	3-95
3.3.2.2.3	Water Rights.....	3-96
3.3.2.3	Unavoidable Adverse Effects	3-97
3.3.2.4	Cumulative Effects	3-97
3.3.3	Water Quality.....	3-98
3.3.3.1	Affected Environment.....	3-98
3.3.3.1.1	Water Quality Standards	3-98
3.3.3.1.2	Temperature.....	3-99
3.3.3.1.3	Biological Productivity and Related Water Quality Parameters	3-112
3.3.3.1.4	Metals	3-116
3.3.3.1.5	Total Dissolved Gas	3-121
3.3.3.2	Environmental Consequences.....	3-124
3.3.3.2.1	Effects of Lake Level Management on Water Quality	3-124
3.3.3.2.2	Effect of Project Flow Releases on Temperature.....	3-132
3.3.3.2.3	Effect of Flows on Biological Productivity, DO, and Other Water Quality Parameters	3-139
3.3.3.2.4	Metals	3-144
3.3.3.2.5	Total Dissolved Gas	3-145
3.3.3.2.6	Water Quality Monitoring.....	3-150

3.3.3.2.7	Secondary Effects of Proposed Measures.....	3-153
3.3.3.2.8	Administrative Law Judge Findings.....	3-155
3.3.3.3	Unavoidable Adverse Effects	3-160
3.3.3.4	Cumulative Effects	3-160
3.3.4	Aquatic Resources	3-163
3.3.4.1	Affected Environment.....	3-163
3.3.4.1.1	Coeur d’Alene Lake Basin	3-163
3.3.4.1.2	Post Falls Dam.....	3-170
3.3.4.1.3	Upper Falls and Monroe Street Dams.....	3-173
3.3.4.1.4	Nine Mile Dam.....	3-175
3.3.4.1.5	Long Lake Dam.....	3-176
3.3.4.2	Environmental Consequences.....	3-179
3.3.4.2.1	Ramping Rates, Spawning and Emergence Flows, and Instream Flows	3-180
3.3.4.2.2	Fish Passage and Entrainment.....	3-196
3.3.4.2.3	Aquatic Habitat Alteration	3-202
3.3.4.2.4	Other Aquatic Resource Measures.....	3-215
3.3.4.2.5	Secondary Effects of Proposed Measures.....	3-239
3.3.4.2.6	Administrative Law Judge Findings	3-241
3.3.4.3	Unavoidable Adverse Effects	3-245
3.3.4.4	Cumulative Effects	3-246
3.3.5	Terrestrial Resources	3-248
3.3.5.1	Affected Environment.....	3-248
3.3.5.1.1	Plant Communities	3-249
3.3.5.1.2	Plant Species of Special Concern...	3-254
3.3.5.1.3	Invasive Non-native Plant Species.....	3-258
3.3.5.1.4	Wildlife Species	3-260
3.3.5.1.5	Special Status Wildlife Species.....	3-262
3.3.5.1.6	Contaminant Levels in Wildlife	3-264
3.3.5.2	Environmental Consequences.....	3-265
3.3.5.2.1	Project Operations	3-265
3.3.5.2.2	Plant Communities and Wetlands.....	3-268
3.3.5.2.3	Plant Species of Special Concern...	3-276

3.3.5.2.4	Invasive Non-native Plant Species.....	3-279
3.3.5.2.5	Wildlife Species and Habitat.....	3-287
3.3.5.2.6	Special-Status Wildlife Species	3-291
3.3.5.2.7	Secondary Effects of Proposed Measures.....	3-292
3.3.5.2.8	Administrative Law Judge Findings	3-293
3.3.5.3	Unavoidable Adverse Effects	3-297
3.3.5.4	Cumulative Effects	3-298
3.3.6	Federally Listed Threatened and Endangered Species	3-299
3.3.6.1	Affected Environment.....	3-299
3.3.6.1.1	Bull Trout	3-299
3.3.6.1.2	Water Howellia.....	3-304
3.3.6.1.3	Ute Ladies'-tresses	3-304
3.3.6.1.4	Spalding's Catchfly	3-304
3.3.6.1.5	Gray Wolf.....	3-305
3.3.6.1.6	Bald Eagle	3-305
3.3.6.2	Environmental Consequences.....	3-306
3.3.6.2.1	Bull Trout	3-306
3.3.6.2.2	Water Howellia.....	3-308
3.3.6.2.3	Ute Ladies'-tresses	3-308
3.3.6.2.4	Spalding's Catchfly	3-309
3.3.6.2.5	Gray Wolf.....	3-309
3.3.6.2.6	Bald Eagle	3-309
3.3.6.3	Unavoidable Adverse Impacts	3-316
3.3.6.4	Cumulative Impacts	3-316
3.3.7	Cultural Resources.....	3-317
3.3.7.1	Affected Environment.....	3-317
3.3.7.1.1	The Projects' Area of Potential Effects.....	3-318
3.3.7.1.2	Cultural and Historic Context Involving the Region in and Around the Projects	3-320
3.3.7.1.3	Pre-Project Relicensing-Related Cultural Resource Investigations Associated with the Projects	3-326
3.3.7.1.4	Cultural Resource Investigations Related to the Projects' Relicensing Process	3-328
3.3.7.1.5	Cultural Resources Identified in the Projects' APE	3-329

3.3.7.2	Environmental Consequences.....	3-342
3.3.7.2.1	Post Falls Project.....	3-342
3.3.7.2.2	Spokane River Developments	3-353
3.3.7.3	Unavoidable Adverse Effects	3-361
3.3.7.4	Cumulative Effects	3-362
3.3.8	Recreational Resources.....	3-362
3.3.8.1	Affected Environment.....	3-362
3.3.8.1.1	Regional Recreational Opportunities	3-363
3.3.8.1.2	Project Area Recreational Opportunities and Uses	3-363
3.3.8.1.3	Recreational Needs.....	3-369
3.3.8.2	Environmental Consequences.....	3-369
3.3.8.2.1	Project Operations and Lake Management	3-370
3.3.8.2.2	Post Falls Project Whitewater Boating Effects	3-373
3.3.8.2.3	Post Falls Project Recreation Plan.....	3-375
3.3.8.2.4	Spokane River Developments Recreation Plan.....	3-376
3.3.8.2.5	Post Falls Project and Spokane River Developments Interpretation and Education Plans	3-378
3.3.8.2.6	Post Falls Project Recreation Resource Measures.....	3-380
3.3.8.2.7	Spokane River Developments Recreation Resource Measures	3-384
3.3.8.3	Land and Water Conservation Fund Act	3-388
3.3.8.4	Unavoidable Adverse Effects	3-389
3.3.8.5	Cumulative Effects	3-389
3.3.9	Land Management and Use	3-389
3.3.9.1	Affected Environment.....	3-390
3.3.9.1.1	Post Falls	3-391
3.3.9.1.2	Upper Falls and Monroe Street	3-392
3.3.9.1.3	Nine Mile and Long Lake	3-393
3.3.9.2	Environmental Consequences.....	3-394
3.3.9.2.1	Post Falls Project and Spokane River Developments Land Use Management Plans	3-394
3.3.9.2.2	Project Boundary Changes	3-396

3.3.9.2.3	Other Measures.....	3-400
3.3.9.3	Unavoidable Adverse Effects	3-401
3.3.10	Aesthetic Resources.....	3-401
3.3.10.1	Affected Environment.....	3-401
3.3.10.2	Environmental Consequences.....	3-403
3.3.10.3	Unavoidable Adverse Effects	3-408
3.3.11	Socioeconomic Resources	3-408
3.3.11.1	Affected Environment.....	3-408
3.3.11.2	Environmental Consequences.....	3-413
3.3.11.3	Unavoidable Adverse Impacts	3-416
3.4	NO-ACTION ALTERNATIVE	3-416
3.5	IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES	3-416
3.6	RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY	3-416
4.0	DEVELOPMENTAL ANALYSIS	4-1
4.1	INTRODUCTION	4-1
4.2	BASIS FOR POWER AND COSTS OF THE PROJECTS	4-2
4.3	COSTS	4-2
4.3.1	Cost of Environmental Measures	4-2
4.4	COMPARISON OF ALTERNATIVES	4-28
4.4.1	No-Action Alternative	4-28
4.4.2	Proposed Action.....	4-28
4.4.3	Staff-Recommended Alternative	4-30
4.4.4	Staff-Recommended Alternative with Mandatory Conditions.....	4-30
4.4.5	Summary of Alternatives	4-31
5.0	STAFF'S CONCLUSIONS.....	5-1
5.1	COMPREHENSIVE DEVELOPMENT AND RECOMMENDED ALTERNATIVE	5-1
5.1.1	Post Falls Project Recommendations	5-1
5.1.1.1	Measures Proposed by Avista.....	5-1
5.1.1.2	Staff-Recommended Measures	5-4
5.1.1.3	Discussion of Key Issues and Measures Proposed by Stakeholders.....	5-6
5.1.1.4	Staff Alternative with Mandatory Conditions	5-43
5.1.2	Spokane River Developments	5-45
5.1.2.1	Measures Proposed by Avista.....	5-45
5.1.2.2	Staff-Recommended Measures	5-47

5.1.2.3	Discussion of Key Issues and Measures Proposed by Stakeholders.....	5-49
5.2	SUMMARY OF SECTION 10(j) RECOMMENDATIONS AND 4(E) CONDITIONS	5-72
5.2.1	Recommendations Pursuant to Section 10(j) of the FPA..	5-72
5.2.2	Recommendations Pursuant to Section 10(a) of the FPA .	5-86
5.2.3	U.S. Department of the Interior, Bureau of Indian Affairs, and USDA Forest Service Section 4(e) Conditions.....	5-86
5.3	CONSISTENCY WITH COMPREHENSIVE PLANS	5-87
5.4	RELATIONSHIP OF LICENSE PROCESS TO LAWS AND POLICIES	5-90
5.4.1	Clean Water Act Section 401 Water Quality Certification	5-90
5.4.2	Endangered Species Act	5-90
5.4.3	National Historic Preservation Act.....	5-91
5.4.4	FPA Section 18 Fishway Prescriptions	5-92
5.4.5	LWCF Act	5-93
5.4.6	Columbia River Fish and Wildlife Program.....	5-94
6.0	LITERATURE CITED	6-1
7.0	LIST OF PREPARERS.....	7-1
APPENDIX A STAFF RESPONSES TO COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS).....		A-1

LIST OF FIGURES

Figure No.	Figure Name	Page
Figure 1.0-1.	Location map - Spokane River and Post Falls Hydroelectric Projects	1-2
Figure 1.2-1.	Regional firm monthly capacity surplus/deficit projections.....	1-5
Figure 3.3.1.1-1.	St. Joe River features	3-10
Figure 3.3.1.1-2.	Coeur d'Alene River features	3-11
Figure 3.3.1.1-3.	Conceptual model of sediment erosion, transport, and deposition in the lower Coeur d'Alene River	3-18
Figure 3.3.2.2-1.	Flow duration curve for Spokane River near Post Falls, Idaho (August 1978 through July 2002).....	3-88
Figure 3.3.2.2-2.	Flow duration curve for Spokane River at Upper Falls/Monroe Street Developments (August 1978 through July 2002).....	3-92
Figure 3.3.4.2-1.	General movement patterns of bull trout and westslope cutthroat trout in the Coeur d'Alene Basin in relation to Post Falls Dam operations.....	3-206
Figure 3.3.5.1-1.	Plant survey sites in the Spokane River Projects area	3-256

LIST OF TABLES

Table No.	Table Name	Page
Table 2.2.4-1.	Proposed Action and stakeholder alternatives measures	2-17
Table 3.3.2.1-1.	Streamflow surface water and reservoir station information near the Spokane River Project.....	3-59
Table 3.3.2.1-2.	Daily mean lake level elevation statistics (feet) for Coeur d'Alene Lake (August 1978 through July 2002)	3-65
Table 3.3.2.1-3.	Daily mean elevation and corresponding surface area of Coeur d'Alene Lake (August 1978 through July 2002)	3-66
Table 3.3.2.1-4.	Daily mean flow statistics (cfs) for Spokane River near Post Falls, Idaho (August 1978 through July 2002)	3-67
Table 3.3.2.1-5.	Spokane River near Post Falls, Idaho, regulated 3-day maximum flow (cfs)	3-68
Table 3.3.2.1-6.	Spokane River near Post Falls, Washington, regulated 7-day minimum flow (cfs)	3-69
Table 3.3.2.1-7.	Daily mean flow statistics (cfs) for Spokane River at Upper Falls/Monroe Street (August 1978 through July 2002)	3-71
Table 3.3.2.1-8.	Spokane River at Upper Falls/Monroe Street regulated 3-day maximum flow (cfs) (August 1978 through July 2002).....	3-72
Table 3.3.2.1-9.	Spokane River at Upper Falls/Monroe Street, Washington, regulated 7-day minimum flow (cfs).....	3-73
Table 3.3.2.1-10.	Daily mean flow statistics (cfs) for Spokane River at Nine Mile	3-75
Table 3.3.2.1-11.	Spokane River at Nine Mile regulated 3-day maximum flow (cfs) (August 1978 through July 2002)	3-76
Table 3.3.2.1-12.	Spokane River at Nine Mile regulated 7-day minimum flow (cfs)	3-77
Table 3.3.2.1-13.	Daily mean flow statistics (cfs) for the Spokane River downstream of Long Lake Development	3-79
Table 3.3.2.1-14.	Spokane River downstream of Long Lake regulated 3-day maximum flow (cfs)	3-80
Table 3.3.2.1-15.	Spokane River downstream of Long Lake Development regulated 7-day minimum flow (cfs)	3-81

Table 3.3.2.1-16.	Daily mean simulated lake level elevation statistics (feet) for Lake Spokane (August 1978 through July 2002)	3-82
Table 3.3.2.2-1.	Change in daily mean elevation statistics (feet) (Proposed Action minus current Project operations) for Coeur d'Alene Lake (August 1978 through July 2002)	3-87
Table 3.3.3.1-1.	Designated beneficial uses of surface waters	3-100
Table 3.3.3.1-2.	Existing and proposed water quality criteria for surface waters in the Project area	3-102
Table 3.3.3.1-3.	EPA-approved 1998 303(d) listings and status of corresponding TMDLs.....	3-106
Table 3.3.4.1-1.	Fish of the Coeur d'Alene Lake Basin	3-166
Table 3.3.4.1-2.	Fish species collected in Lake Spokane in 2001	3-178
Table 3.3.4.2-1.	Potential for fish entrainment at Spokane River Projects	3-197
Table 3.3.4.2-2.	Entrainment and mortality risk for fish at Post Falls Dam.....	3-199
Table 3.3.4.2-3.	Entrainment and mortality risk for fish at Spokane River Developments	3-201
Table 3.3.4.2-4.	Approximate distance of inundation in Coeur d'Alene Lake major tributaries at various lake elevations	3-205
Table 3.3.5.1-1.	Habitat types mapped in 2003 in study area (acres).....	3-250
Table 3.3.5.1-2.	Culturally important species observed during field surveys, July and August 2003	3-257
Table 3.3.5.1-3.	Noxious weeds observed during field surveys in July and August 2003	3-259
Table 3.3.5.1-4.	Federally and state-listed endangered, threatened, and special concern wildlife species potentially occurring within the Project area in the Coeur d'Alene and Spokane subbasins.....	3-263
Table 3.3.7.1-1.	National Register-eligible archaeological resources located within the Project APE in Idaho and Washington	3-330
Table 3.3.7.1-2.	National Register evaluation of historic buildings and structures located within the APE or within 100 feet of the APE in Idaho and Washington	3-335
Table 3.3.8.1-1.	Project recreational sites owned by Avista and within Project boundaries	3-365
Table 3.3.8.1-2.	Recreation use at developed sites within or adjacent to the Project boundaries	3-368

Table 3.3.9.2-1.	Summary of land ownership within Post Falls Project boundaries.....	3-396
Table 3.3.9.2-2.	Summary of land ownership within Spokane River Developments boundaries.....	3-398
Table 3.3.10.2-1.	Annual energy costs and lost generation from potential flow releases, total costs, and annualized costs	3-407
Table 3.3.11.1-1.	Population density for the five counties within the Project area	3-409
Table 3.3.11.1-2.	Percent share of each industry to total employment in the five Spokane River study area counties.....	3-410
Table 3.3.11.1-3.	Per capita income in the five counties within the Project area, 2002	3-412
Table 4.2-1.	Assumptions for economic analysis of the Post Falls Project and Spokane River Developments	4-3
Table 4.2-2.	Current capital and annual costs for Post Falls Project	4-4
Table 4.2-3.	Current capital and annual costs for Spokane River Developments	4-5
Table 4.3-1.	Summary of costs of environmental measures for Post Falls Project	4-6
Table 4.3-2.	Summary of costs of environmental measures for Spokane River Developments	4-19
Table 4.4-1.	Summary of costs, power benefits, and net benefits of the Post Falls Project alternatives.....	4-29
Table 4.4-2.	Summary of costs, power benefits, and net benefits of the Spokane River Developments alternatives	4-29
Table 5.2-1.	Fish and wildlife agency recommendations	5-74
Table 5.2-2.	BIA modified 4(e) conditions for Post Falls Project	5-88
Table 5.3-1.	Comprehensive plans relevant to Post Falls Project and Spokane River Developments.....	5-89

LIST OF ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ALJ	Administrative Law Judge
ALP	alternative licensing process
aMW	average megawatt
aMWh	average megawatt -hour
APE	area of potential effects
APLIC	Avian Power Line Interaction Committee
ATSDR	Agency for Toxic Substances and Disease Registry
Avista	Avista Corporation
AWTP	advanced wastewater treatment plant
BA	biological assessment
BEA	Bureau of Economic Analysis
BIA	Bureau of Indian Affairs
BLM	U.S. Bureau of Land Management
B.P.	before the present
BPA	Bonneville Power Administration
°C	degrees Celsius
CCC	Civilian Conservation Corps
CaCO ₃	Calcium carbonate
CELP	Center for Environmental Law and Policy
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
Commission	Federal Energy Regulatory Commission
Corps	U.S. Army Corps of Engineers
CRMP	Cultural Resources Management Plan
CRWG	Cultural Resources Work Group
CWA	Clean Water Act
DEIS	draft environmental impact statement
DO	dissolved oxygen
DOI	U.S. Department of the Interior
DPS	distinct population segment
DEQ	Department of Environmental Quality
EAP	Emergency Action Plan
EIS	environmental impact statement
EPA	U.S. Environmental Protection Agency
EPAct	Energy Power Act
EPRI	Electric Power Research Institute

ESA	Endangered Species Act
EWU	Eastern Washington University
°F	degrees Fahrenheit
FEIS	final environmental impact statement
FERC	Federal Energy Regulatory Commission
FPA	Federal Power Act
fps	feet per second
FR	Federal Register
FWG	Fisheries Work Group
GIS	geographic information system
HDI	Hardin Davis, Inc
HDR	HDR Engineering, Inc.
HED	hydroelectric development
HEC-RAS	Hydrology Engineering Center-River Analysis System (Corps of Engineers)
HPMP	Historic Properties Management Plan
HRA	Historical Research Associates
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDHW	Idaho Department of Health and Welfare
IDOH	Idaho Division of Health
IDPR	Idaho Department of Parks and Recreation
IDWR	Idaho Department of Water Resources
IMP	Intermountain Province
ITD	Idaho Transportation Department
IWTP	industrial wastewater treatment plant
LWCF	Land and Water Conservation Fund
kW	kilowatt
MBEWG	Montana Bald Eagle Working Group
MC	modified condition
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
ml	milliliter
MOA	memorandum of agreement
MW	megawatt
MWh	megawatt-hour
NAS	National Academy of Sciences
National Register	National Register of Historic Places
NEA	Northwest Economic Associates
NEPA	National Environmental Policy Act
NGO	non-governmental organization

NHC	Northwest Hydraulic Consultants
NHPA	National Historic Preservation Act of 1966
NPCC	Northwest Power and Conservation Council (formerly Northwest Power Planning Council)
NPDES	National Pollutant Discharge Elimination System
NPPC	Northwest Power Planning Council (now Northwest Power and Conservation Council)
NPS	National Park Service
NTU	nephelometric turbidity unit
NWA	Northwest Whitewater Association
O&M	operation and maintenance
OU	Operable Unit
PA	programmatic agreement
PAH	polycyclic aromatic hydrocarbon
PBDE	polybrominated diphenyl ether
PCB	polychlorinated biphenyl
PDEA	preliminary draft environmental assessment
PFO1	palustrine forested broad-leaved deciduous
pH	potential hydrogen (a measure of acidity and alkalinity)
PME	protection, mitigation, and enhancement
PNCA	Pacific Northwest Coordination Agreement
POTW	publicly owned treatment work
Post Falls Project	Post Falls Hydroelectric Project (FERC No. 12606)
Projects	Spokane River Developments and Post Falls Hydroelectric Projects
PSS	palustrine scrub-shrub
RCW	Revised Code of Washington
RLUAWG	Recreation, Land Use & Aesthetics Work Group
ROD	Record of Decision
SAJB	Spokane Aquifer Joint Board
SCCD	Spokane County Conservation District
SD1	Scoping Document 1
SD2	Scoping Document 2
SHPO	State Historic Preservation Officer
Spokane River Developments	Spokane River Development of the Spokane River (FERC No. 2545)
Staff	Commission staff
TCDD	tetrochlorodibenzo- <i>p</i> -dioxin
TCP	traditional cultural property
TDG	total dissolved gas
THPO	Tribal Historic Preservation Officer

TMDL	total maximum daily load
TRWG	Terrestrial Resources Work Group
TVA	Tennessee Valley Authority
µg	microgram
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAC	Washington Administrative Code
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WDOE	Washington Department of Ecology
WDOH	Washington Department of Health
WRIA	water resources inventory area
WRWG	Water Resources Work Group
WSPRC	Washington State Parks and Recreation Commission
WUA	weighted usable area
WWTP	wastewater treatment plant

EXECUTIVE SUMMARY

This final environmental impact statement (FEIS) evaluates the potential effects on the environment associated with the relicensing of the five hydroelectric developments that make up the 137.65-megawatt (MW) Spokane River Hydroelectric Project No. 2545. Currently, the licensed Project consists of these five hydroelectric developments, with one located in Kootenai and Benewah counties, Idaho, and the other four located in Spokane, Lincoln, and Stevens counties, Washington. The current license will expire on August 1, 2007.

On July 28, 2005, Avista Corporation (Avista) filed two separate applications with the Federal Energy Regulatory Commission (the Commission or FERC) for new licenses for the five hydroelectric developments. One application was filed for the upstream Idaho development, the 14.75 MW Post Falls Hydroelectric Project No. 12606. The other application was filed for the four Washington hydroelectric developments, the 122.9 MW Spokane Hydroelectric Project No. 2545 (referred to as the “Spokane River Developments,” with both collectively referred to as “the Projects”).

This FEIS has been prepared by the staff of the Commission to fulfill the requirements of the National Environmental Policy Act (NEPA); the Commission’s implementing regulations under Title 18, Code of Federal Regulations (CFR), Part 380; and the Council on Environmental Quality regulations for implementing NEPA (40 CFR Parts 1500-1508). The purpose of this document is to inform the Commission, the public, and the various federal and state agencies, tribes, and non-governmental organizations about the potential adverse and beneficial environmental effects of the proposed Project and of reasonable alternatives.

The principal issues that we address for the Post Falls Hydroelectric Project include the influence of Project operations on Coeur d’Alene Lake levels; water quality both in Coeur d’Alene Lake and downstream of Post Falls Dam; fishery resources below the dam and in the Coeur d’Alene Lake drainage; cultural resources in and around Coeur d’Alene Lake; and shoreline erosion, wetlands, and riparian areas in the backwater areas of Coeur d’Alene Lake. The principal issues that we address for the Spokane River Developments include the influence of Project operations on total dissolved gas (TDG) levels, dissolved oxygen (DO) levels, sediment transport, fish habitat, and wetlands. Other issues involve determining the appropriate level of enhancements for aesthetic flows in downtown Spokane, protection of bald eagles, and control of noxious and exotic weeds in the reservoirs and on the shorelands.

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Projects would continue to operate under the terms and conditions of the existing license, and no new environmental protection or enhancement measures would be implemented. We use this alternative to establish baseline conditions against which we evaluate other alternatives and judge the benefits and costs of any measures that might be required under new licenses.

AVISTA'S PROPOSED ACTION

The Proposed Action would involve no changes to Project facilities other than replacing the flashboards at Nine Mile Development with a more permanent feature such as a pneumatically operated spillway gate (rubber dam). Any other facility changes would consist of generally minor and independent elements identified and constructed pursuant to specific protection, mitigation, and enhancement (PME) measures. Replacing the flashboards with a rubber dam would not change the pool level, nor would operations change at Nine Mile Development except that the flashboards would no longer be released downstream and Avista would have the ability to restore the pool elevation somewhat more quickly after spill events. Periodic maintenance of the entire facility would continue through the term of a new license.

The Proposed Action would not involve significant changes to Project operations other than to extend the time Coeur d'Alene Lake is at its maximum elevation (2,128 feet above mean sea level) by about 7 to 14 days each year (until September 15). This proposed change would enhance recreation at the Project.

The existing Project boundary encompassing the Post Falls Project is defined by the 2,128-foot elevation contour, as shown in a 1980 FERC license amendment. Recent fieldwork led Avista to make corrections to the 2,128-foot contour maps. Avista therefore is proposing to amend the Project boundary maps to correspond with the more recent data, consistent with retaining the current 2,128-foot boundary. Other proposed changes to the Project boundary include the following:

Post Falls Project

- At the Post Falls Project, adding 2,352 acres (now within the 2,128-foot contour) and removing 0.5 acre east of the abandoned Corbin Ditch.

Spokane River Developments

- At Upper Falls and Monroe Street Developments, removing 2.8 acres that serve no Project purpose;

- At Nine Mile Development, removing 66 acres that serve no Project purpose; and
- At Long Lake Development, adding 350.1 acres associated with a proposed shoreline buffer, the Nine Mile Resort (day use area), and two short sections of primary transmission line.

Avista proposes to operate the Projects in a manner similar to past operations with a set of comprehensive environmental measures. These primary measures are:

Post Falls Project

- Maintaining a 600-cubic-foot-per-second (cfs) minimum discharge flow at Post Falls Dam, with the option to maintain a 500-cfs flow under low-flow conditions.
- Maintaining a maximum downramping flow rate of no more than a 4-inch drop per hour.
- Equipping the U.S. Geological Survey (USGS) gage no. 12419000 on the Spokane River downstream of Post Falls Dam to provide real-time flow information.
- Providing flows in the spring to protect rainbow trout spawning and fry emergence.
- Implementing TDG Control and Mitigation Programs along with other water quality monitoring provisions.
- Implementing a Fish Population and Habitat Protection and Enhancement Plan 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.
- Implementing aquatic weed management measures in Coeur d'Alene Lake.
- Implementing a comprehensive Erosion Control and Wetland and Riparian Habitat Protection and Enhancement Program for Coeur d'Alene Lake and its tributaries.
- Providing aesthetic flows through the north channel at Post Falls Dam on weekends during the summer season.
- Preparing and implementing a Recreation Plan for the Post Falls Project.

- Developing and implementing an Interpretation and Education Plan.
- Conducting recreational use surveys every 6 years.
- Developing and implementing a Land Use Management Plan.
- Implementing a Historic Properties Management Plan (HPMP).
- Monitoring bald eagles, surveying for new eagle nests, and developing Bald Eagle Nest Management Plans on Project lands.

Spokane River Developments

- Limiting the drawdown of Lake Spokane to no more than 14 feet except to periodically expose the lake bottom to freezing temperatures to help control aquatic weeds.
- Providing year-round aesthetic flows at Monroe Street Development and summer season flows at Upper Falls Development.
- Implementing TDG Control and Mitigation Programs along with other water quality monitoring provisions.
- Implementing a Fish Population and Habitat Protection and Enhancement Program for the Spokane River.
- Implementing aquatic weed management measures at Nine Mile Development and Lake Spokane.
- Implementing a comprehensive Riparian and Wetland Habitat Protection and Enhancement Program at Lake Spokane and Nine Mile Reservoir.
- Preparing and implementing a Recreation Plan for the Spokane River Developments.
- Developing and implementing an Interpretation and Education Plan
- Conducting recreational use surveys every 6 years.
- Developing and implementing a Land Use Management Plan.
- Implementing a HPMP.
- Managing Project transmission lines to minimize injuries/mortality to raptors and to control vegetation using non-chemical approaches.

- Monitoring bald eagles, surveying for new eagle nests, and developing Bald Eagle Nest Management Plans for Project lands.

STAFF ALTERNATIVE

The Staff Alternative generally consists of the Proposed Action with additional or modified environmental measures recommended by staff to be performed by Avista. These measures include agency recommendations made pursuant to sections 4(e), 10(j), and 10(a) of the Federal Power Act (FPA). Staff recommendations include the following additions or modifications to Avista's proposal:

Post Falls Project

- Developing and implementing a plan to monitor water temperature and DO in Coeur d'Alene Lake.
- Developing and implementing a plan to monitor water temperature and DO from Post Falls Dam to river mile 84.
- Developing and implementing a Post Falls Fisheries Public Education and Outreach Program Plan specific to native fish species upstream of the Post Falls Project.
- Preparing and filing a Post Falls Project Ramping Rate Report after implementation and evaluation of the effectiveness of the 4-inch-per-hour downramping rate.
- Using annual meetings with agencies and interested parties to determine priorities and projects slated for fisheries and aquatic habitat enhancement.
- Developing and implementing plans for identifying and protecting bald eagle nests.
- Developing and implementing a Land Use Management Plan for the Post Falls Project; the U.S. Fish and Wildlife Service (USFWS) Noxious Weed Management Program would be a component of the plan.
- Developing and implementing a Coeur d'Alene Lake Aquatic Weed Management Plan.
- Developing and implementing an Interpretation and Education Plan; a Bald Eagle Educational and Interpretive Program would be a component of the plan.

- Developing and implementing a final Post Falls Recreation Plan to include certain recreation facilities within the Project boundary.
- Addressing potential indirect effects of the Proposed Action on traditional cultural properties that may not be located within the predefined area of potential effects (APE).
- Providing a schedule in the HPMP to evaluate all remaining cultural resources for National Register eligibility and resolve all adverse effects to historic properties.
- Including programs in the HPMP to: (1) monitor tribally sensitive cultural sites; (2) expand the APE where there are erosional effects occurring on cultural resources above the 2,128-foot line; (3) safeguard against vandalism on archaeological sites; and (4) curate cultural resource materials in a fashion that is suitable to the Coeur d'Alene Tribe.

Spokane River Developments

- Developing and implementing a Long Lake Oxygen Monitoring and Enhancement Plan.
- Stocking 6,000 catchable-sized sterile rainbow trout (6 to 8 inches) in Upper Falls Reservoir and 9,000 catchable-sized sterile rainbow trout in Nine Mile Reservoir.
- Developing and implementing a Lake Spokane Trout Stocking and Creel Survey Plan to guide the stocking of 155,000 catchable-sized sterile rainbow trout in Lake Spokane (Long Lake Reservoir) annually for the first 5 years following license issuance and to monitor the success of the fish stocking program.
- Developing and implementing a Spokane River Fisheries Public Education and Outreach Program Plan specific to native rainbow trout populations in the Spokane River downstream of the Post Falls Project.
- Preparing a Sediment Management Plan for Lake Spokane and Nine Mile Reservoir.
- Developing and implementing a Spokane River Developments Recreation Plan.
- Developing and implementing a Land Use Management Plan for the Spokane River Developments; the USFWS Noxious Weed Management Program would be a component of the plan.

- Developing and implementing a Lake Spokane Aquatic Weed Management Plan.
- Conducting even-year monitoring of Nine Mile Reservoir for early detection of noxious aquatic weeds.
- Developing and implementing an Interpretation and Education Plan; a Bald Eagle Educational and Interpretive Program would be a component of the plan.
- Monitoring wetlands in Lake Spokane after installation of a rubber dam and mitigating any net loss of vegetated wetlands.
- Providing a schedule in the HPMP to evaluate all remaining cultural resources for National Register eligibility and resolve all adverse effects to historic properties.
- Including programs in the HPMP to: (1) monitor tribally sensitive cultural sites; (2) safeguard against vandalism on archaeological sites; and (3) curate cultural resource materials in a fashion that is suitable to both the Coeur d'Alene Tribe and the Spokane Tribe of Indians.

STAFF ALTERNATIVE WITH MANDATORY CONDITIONS

Section 4(e) of the FPA gives the Secretary of Interior (the U.S. Department of the Interior [DOI]) and the Secretary of Agriculture (the U.S. Department of Agriculture [USDA]) authority to impose conditions on a license issued by the Commission for hydropower projects located on "reservations" under the Secretary's supervision (16 U.S.C §§796[2], 797[e]).

In a July 18, 2006, filing with the Commission, DOI submitted preliminary section 4(e) conditions on behalf of the Bureau of Indian Affairs (BIA) for the Post Falls Project. On May 17, 2007, DOI filed with the Commission modified terms, conditions, and prescriptions for the Post Falls Project. We analyze them in this FEIS.

On July 14, 2006, and August 21, 2006, the USDA Forest Service submitted preliminary section 4(e) conditions for the Post Falls Project. On May 3, 2007, the USDA Forest Service filed a letter with the Commission stating that its August 18, 2006, modified terms, conditions, and prescriptions for the Post Falls Project are its final terms, conditions and prescriptions for the Project. The modified conditions are administrative conditions, not environmental measures. We do not analyze them in this FEIS.

Pursuant to section 18 of the FPA, DOI also included in its July 18, 2006, filing on behalf of the USFWS, reservation of authority to prescribe the construction, operation, and maintenance of fishways in the future during the term of the license. The final 4(e) conditions and the reserved authority for fishway prescriptions must be included in any new license that may be issued for this Project. Incorporation of these mandatory conditions into a new license would cause us to modify or eliminate some of the environmental measures that we include in the Staff Alternative, including staff-recommended plans for water quality monitoring, shoreline and erosion control, and aquatic weed management at Coeur d'Alene Lake.

PROJECT EFFECTS AND CONCLUSION

Table ES-1 summarizes the substantive differences between Avista's Proposal, the Staff Alternative, and the Staff Alternative with Mandatory Conditions. Based on our detailed analysis of the environmental benefits and costs associated with the four alternatives considered in detail in this FEIS, we conclude that the best alternative for the Projects would be to issue a new license(s) consistent with the environmental measures specified in the Staff Alternative.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
POST FALLS PROJECT			
Annual generation (megawatt-hour [MWh])	77,262	77,262	77,262
Net annual power benefits	-\$3,025,400	-\$1,980,600	-\$3,688,600
Hydrologic Resources			
Instream Flows	Minimum instream flow releases of 600 cfs year-round from Post Falls Dam, with ability to lower releases to 500 cfs between July 1 and September 15 of each year if the level of Coeur d'Alene Lake drops 3 inches or more below full-pool elevation 2,128 feet (PF-AR-1, Part 1).	Adopt Avista's proposal.	No specific conditions required.
	Upgrade USGS gage no. 12419000 to real-time capability (PF-REC-3).		
Ramping Rates	Follow a downramping rate that corresponds to no more than a 4-inch drop per hour in downstream water levels (PF-AR-1, Part 3).	Adopt Avista's proposal, but also evaluate the effectiveness of the ramping rate and prepare and file a Post Falls Project Ramping Rate Report after implementation of the 4-inch-per-hour ramping rate.	No specific conditions required.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Water Quality			
Water Quality Monitoring	Develop and implement a plan to monitor discharge and water temperature in the Spokane River from Post Falls Dam to the Idaho/Washington state line. Fund the Coeur d'Alene Tribe's water quality monitoring program in Coeur d'Alene Lake and fund the purchase and installation of two meteorological stations (PF-WQ-2).	Develop and implement a plan to monitor water temperature and DO in Coeur d'Alene Lake. Develop and implement a plan to monitor water temperature and DO from the Post Falls Dam to river mile 84.	Require licensee to implement a comprehensive Water Quality Monitoring Program in Coeur d'Alene Lake, which includes sampling water temperature, DO, organic parameters, and phytoplankton. Also includes water quality modeling efforts every 5 years and installation of a meteorological station on the Coeur d'Alene Indian Reservation.
Total Dissolved Gas	Monitor, evaluate, and control the production of elevated TDG levels in discharges from Post Falls Project (PF-WQ-1).	Adopt Avista's proposed measures.	No specific conditions required.

Table ES-1. Summary of key differences and components of Avista’s Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista’s Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Geologic Resources			
Erosion Control, Wetland, and Riparian Habitat Plan (PF-TR-1)	Erosion control component: control erosion on the shorelines of Coeur d’Alene Lake and tributaries.	Adopt Avista’s erosion control program component included in PF-TR-1.	DOI’s modified condition no. 2 would require Avista to control shoreline erosion on 50% of the St. Joe River and on 30% of Coeur d’Alene Lake on the reservation. If included in the license as a mandatory condition, this alternative would replace our recommended measures for erosion control under PF-TR-1.

ES-12

Table ES-1. Summary of key differences and components of Avista’s Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista’s Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Aquatic Resources			
Fisheries Enhancement	Provide for a Population and Habitat Protection Program for westslope cutthroat trout and bull trout in the Coeur d’Alene Lake Basin. Include rainbow trout spawning and fry emergence protection, and provide for assessments and monitoring of native salmonids. Additionally, include assistance and support for a Public Information and Education Program specific to bull trout and westslope cutthroat trout in the Coeur d’Alene Lake Basin (PF-AR-1, Parts 4, 5 and 6). Provide spring flows for upper Spokane River rainbow trout for spawning and fry emergence protection (PF-AR-1, Part 2).	No comparable fish population and aquatic habitat protection and enhancement measures recommended. Staff’s alternative includes some provisions for fisheries public outreach and education in the Coeur d’Alene Lake basin and the Spokane River. Staff’s alternative also includes Avista’s proposed measures for protecting spawning and emerging rainbow trout.	No specific conditions required.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Aquatic Resources (cont)			
Aquatic Weeds	Provide assistance and financial support for public education, monitoring, and weed management measures associated with exotic/noxious weeds in Coeur d'Alene Lake (PF-AR-2).	Adopt Avista's proposed measures but require Avista to be fully responsible for lake weed management by filing a plan for Commission approval and implementing all measures included in the plan.	Add to Avista and Staff Alternative measures (as scaled back to not include duplicative enhancements on Coeur d'Alene Indian Reservation lands) to 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.
Terrestrial Resources			
Bald Eagles	Annually survey for new bald eagle nests; annually monitor bald eagle nests for occupancy and productivity; and prepare bald eagle nest management plans—all for lands within the Project boundary.	In addition to Avista's proposals, do not limit bald eagle surveys, monitoring, and nest management plans to Project lands (except on-the-ground enhancements) and add a requirement to develop a Bald Eagle Educational and Interpretive Program for the Projects.	No specific conditions required.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Terrestrial Resources (cont)			
Erosion Control, Wetland, and Riparian Habitat Plan (PF-TR-1)	Wetland component: restore and/or acquire wetlands at Coeur d'Alene Lake and tributaries.	Adopt Avista's proposed measures.	DOI modified condition no. 6 would require Avista to restore and/or replace 3,488 acres of wetlands on or off the reservation. Due to this condition, this alternative would not include Avista's proposed measures for wetlands under PF-TR-1.
Noxious Weeds	Manage noxious weeds on its lands through a Land Use Management Plan (PF-LU-1) and educate the public about eradicating noxious weeds through its public outreach measure (PF-LU-1 and PF-REC-4).	In addition to Avista's proposed measures, implement a Noxious Weed Management Program that includes surveys.	No specific conditions required.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Recreation Resources			
Recreation Plan	Implement recreational enhancements in accordance with a proposed Recreation Plan. Establish a Recreation Enhancement Fund (PF-REC-1). Implement measures for recreational facilities on USDA Forest Service, Bureau of Land Management (BLM), and Coeur d'Alene Tribe lands (PF-REC-2).	Adopt in part; develop a final Recreation Plan to include certain recreation facilities within the Project boundary.	USDA Forest Service provided section 4(e) conditions related to administration and legal aspects of Avista's proposal.
Whitewater Boating	Coordinate late spring and fall flow releases to extend whitewater boating opportunities and provide boating flows during one or two weekends in August while minimizing adverse effects on fish and aquatic resources. Includes provisions for improving downstream access (PF-REC-3).	Adopt in part; coordinate measure with Aquatic Resources, Fisheries Enhancement measures (PF-AR-1, Part 2).	No specific conditions required.
Interpretation and Education Plan	Provide for educational and interpretive media about the Project and related resources (PF-REC-4); conduct recreational use surveys every 6 years.	Adopt in part; add a Bald Eagle Educational and Interpretive Program component.	No specific condition proposed.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Cultural Resources			
Cultural Resources Management	Develop and implement the HPMP. The plan would include treatment and management recommendations for National Register of Historic Places-eligible archaeological sites located along the shorelines of Coeur d'Alene Lake and its tributaries and would address ongoing cultural resources protection and management (PF-CR-1). Additionally, develop a specific plan for cultural resources located on the reservation and develop treatment options for National Register-eligible resources located on the reservation that have not already been completed by previous studies.	Similar to Avista's proposal, except the HPMP should also include: (1) a detailed schedule to evaluate all remaining cultural resources for National Register eligibility and resolve all adverse effects to historic properties, and (2) programs to monitor tribally sensitive cultural sites, expand the APE where there are erosional effects occurring on cultural resources above the 2,128-foot line, safeguard against vandalism on archaeological sites, and curate cultural resource materials.	Add to Avista and Staff Alternative measures (as scaled back to not include duplicative enhancements on Coeur d'Alene Indian Reservation lands) to include further analysis, protection, and treatment of cultural resource sites on the Coeur d'Alene Indian Reservation within the Project boundary and on lands above the 2,128-foot elevation where erosional effects are occurring or could occur in the future. Include provisions to prevent vandalism. Also provide for monitoring, traditional cultural property inventory and evaluation, education programs, development of an emergency recovery plan for inadvertent discovery of cultural sites, and management of material remains and records recovered from the reservation.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
SPOKANE RIVER DEVELOPMENTS			
Annual generation (MWh)	795,903	795,903	No mandatory conditions.
Net annual power benefits	\$18,554,400	\$19,160,000	
Hydrologic Resources			
Aesthetic Flows	Provide a 200-cfs minimum daily aesthetic flow through Upper Falls Development bypass reach (north and middle channels) from 10 a.m. to one-half hour after sunset, Memorial Day weekend through September 30 (SRP-AES-1). Continue the current 200-cfs minimum daily aesthetic flow from 10 a.m. to one-half hour after sunset daily, year-round, at Monroe Street Development (SRP-AES-1).	Adopt Avista's proposed measures.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Hydrologic Resources (cont)			
Lake Levels	Limit the drawdown of Lake Spokane to 14 feet, except under certain emergency conditions. Periodically lower Lake Spokane during the winter to expose the lake bed to freezing temperatures to reduce the occurrence of aquatic weeds such as Eurasian watermilfoil.	Adopt Avista's proposed measures.	No mandatory conditions.
Water Quality			
Total Dissolved Gas	Develop and implement a TDG Control and Mitigation Program, including spill gate operating protocols, monitoring, and a comprehensive Long Lake Development TDG Abatement Plan (SRP-WQ-1).	Adopt Avista's proposed measures.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Water Quality(cont)			
Water Quality Monitoring	Develop and implement a Water Quality Monitoring Program upstream of the Spokane River Developments and initiate and implement a Long Lake DO Enhancement Plan (SRP-WQ-2).	Develop and implement a Long Lake Oxygen Monitoring and Enhancement Plan.	No mandatory conditions
Geologic Resources			
Sediment Management	Support regional efforts to reduce erosion and downstream sedimentation in the Hangman Creek watershed (SRP-TR-1).	In addition to Avista's erosion control measure (SRP-TR-1), include the preparation and implementation of a Sediment Management Plan for Nine Mile and Long Lake Developments.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista’s Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista’s Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Aquatic Resources			
Fish Protection	Provide for fish population and aquatic habitat protection and enhancement efforts on the Spokane River and Lake Spokane. Also support the development and implementation of enhanced fish population and related aquatic habitat assessments and monitoring programs associated with the Upper Falls, Monroe Street, Nine Mile, and Long Lake Developments (SRP-AR-1).	Annually stock 6,000 rainbow trout in Upper Falls and 9,000 rainbow trout in Nine Mile Reservoir. Also annually stock 155,000 rainbow trout and conduct creel surveys in Lake Spokane for 5 years following license issuance. No other comparable fish population and aquatic habitat protection and enhancement efforts recommended.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Aquatic Resources (cont)			
Aquatic Weeds	Implement site-specific and general weed control measures in Lake Spokane, including potential use of bottom barriers to maintain public access sites (SRP-AR-2).	Adopt Avista's measure but require Avista to be fully responsible for lake weed management by filing a plan for Commission approval. Also, conduct even-year monitoring for early detection of aquatic weeds in Nine Mile Reservoir.	No mandatory conditions.
Terrestrial Resources			
Wetland and Riparian Area Enhancement	Secure property protection for, and implement, new wetland enhancement or restoration efforts adjacent to or near the Nine Mile or Long Lake Developments (SRP-TR-1)	In addition to Avista's proposal, add a requirement to monitor wetlands affected by a new rubber dam at Nine Mile Development and mitigate any net loss of vegetated wetlands at the Project.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Terrestrial Resources (cont)			
Transmission Line Corridor	Provide raptor protection and non-chemical vegetation management, as appropriate, on approximately 2.1 miles of existing Project transmission lines, as well as any new transmission lines that may become part of the Project in the future (SRP-TR-2).	Adopt Avista's measures.	No mandatory conditions.
Noxious Weeds	Manage noxious weeds on its lands through a Land Use Management Plan (SRP-LU-1) and Transmission Line Management Plan (SRP-TR-2).	In addition to Avista's proposed measures, implement a Noxious Weed Management Program that includes surveys.	No mandatory conditions.
Bald Eagles	Annually survey for new bald eagle nests; annually monitor bald eagle nests for occupancy and productivity; and prepare bald eagle nest management plans—all for lands within the Project boundary.	In addition to Avista's proposals, do not limit bald eagle surveys, monitoring, and nest management plans to Project lands (except on-the-ground enhancements) and add a requirement to develop a Bald Eagle Educational and Interpretive Program for the Projects.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista's Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista's Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Recreation Resources			
Recreation Plan	Implement recreational enhancements in accordance with a proposed Recreation Plan (SRP-REC-1 and SRP-REC-2).	Adopt in part; develop final Recreation Plan to include certain recreation facilities within the Project boundary.	No mandatory conditions.
Interpretation and Education Plan	Provide for educational and interpretive media about the Project and related resources (SRP-REC-3); conduct recreational use surveys every 6 years.	Adopt in part; add a Bald Eagle Educational and Interpretive Program component.	No specific condition proposed.
Aesthetic Resources			
Aesthetic Flows	Provide a 200-cfs minimum daily flow through Upper Falls bypass reach (north and middle channels) from 10 a.m. to one-half hour before sunset from Memorial Day through September 30 and continue year-round 200-cfs flow over Monroe Street Dam.	Adopt Avista's measures.	No mandatory conditions.

Table ES-1. Summary of key differences and components of Avista’s Proposed Action, the Staff Alternative, and the Staff Alternative with Mandatory Conditions for the Post Falls Hydroelectric Project and Spokane River Developments (continued)

Resource	Avista’s Proposal	Staff Alternative	Staff Alternative with All Final Modified Mandatory Conditions
Cultural Resources			
Cultural Resources Management	Develop and implement the HPMP.	Adopt Avista’s measures, including mandatory conditions; adopt all but one of the measures in DOI condition 4, which include expanding the APE, monitoring, anti-vandalism, and curation programs.	Adopt Avista’s measures, including mandatory conditions involving expanded APE, monitoring, anti-vandalism, and curation programs; in addition, Avista would provide funds for upgrading and expanding the Coeur d’Alene Tribe curation facility.

Source: Staff

1.0 PURPOSE OF ACTION AND NEED FOR POWER

On July 28, 2005, Avista Corporation (Avista) filed two applications with the Federal Energy Regulatory Commission (the Commission or FERC) for new licenses for its five hydroelectric developments on the Spokane River in Washington and Idaho. The applications are for the Spokane River Hydroelectric Project (referred to as the “Spokane River Developments”) and the Post Falls Hydroelectric Project (referred to as the “Post Falls Project”), with both collectively referred to as “the Projects.” The Projects consist of five hydroelectric developments located in Kootenai and Benewah counties, Idaho, and in Spokane, Lincoln, and Stevens counties, Washington, in and near the city of Spokane, Washington (Figure 1.0-1). The Post Falls Project, the farthest upstream development, is located in Idaho; it has an installed capacity of 14.75 megawatts (MW). The Post Falls Project, as proposed by Avista, has an annual generation of 77,262 megawatt-hours (MWh). The Spokane River Developments consist of the four lower river developments, which are located in Washington; they have an installed capacity of 122.9 MW. The Spokane River Developments, as proposed by Avista, have an annual generation of 795,903 MWh. Avista proposes no new capacity.

The Post Falls Project occupies approximately 308 acres of submerged land administered by the Bureau of Land Management (BLM) and 54 acres of land administered by the U.S. Department of Agriculture (USDA) Forest Service, Coeur d’Alene National Forest. Within the Post Falls Project boundary are 5,996 acres of lands owned by the United States and held in trust for the Coeur d’Alene Indian Tribe. However, establishment of exact ownership acreage has never been settled because of ordinary high-water mark disputes that have yet to be settled in court. Also within the Project boundary, approximately 1,593 acres are owned by the State of Idaho as part of Heyburn State Park. The Spokane River Developments do not occupy any federal or tribal lands. Currently, all five hydroelectric developments are operating under a single combined license issued by the Commission on August 17, 1972. That license will expire on August 1, 2007.

1.1 PURPOSE OF ACTION

The Commission, under the authority of the Federal Power Act (FPA), may issue licenses with terms from 30 to 50 years for the construction, operation, and maintenance of jurisdictional hydroelectric projects. The Commission is considering whether to issue new licenses to Avista for the Projects. The purpose of the proposed projects is to provide continued, uninterrupted, low-cost electrical

PUBLIC

1-2

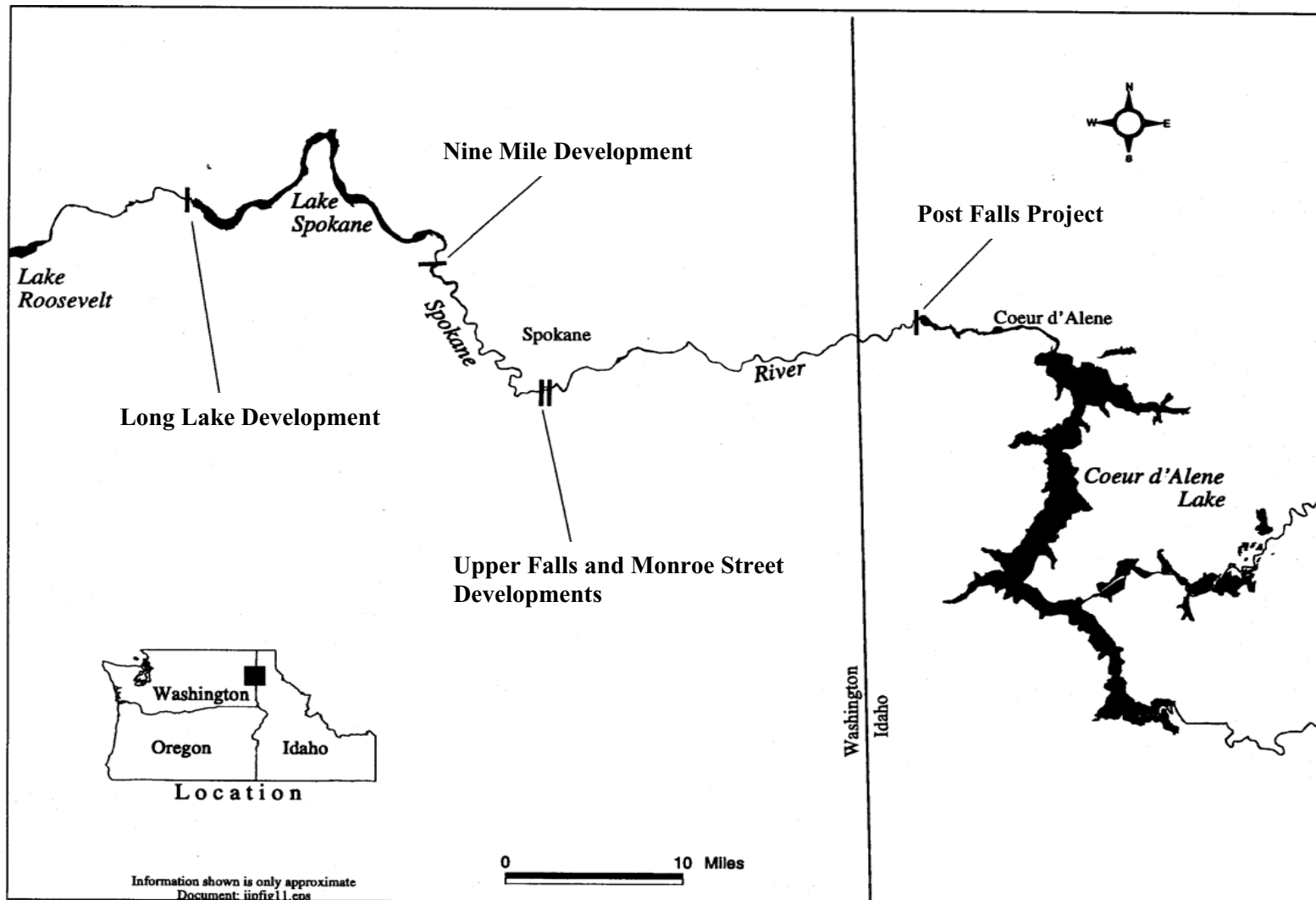


Figure 1.0-1. Location map - Spokane River and Post Falls Hydroelectric Projects

energy generation for the benefit of governmental, industrial, and residential customers in the region, while balancing the needs of resources and other public interests in the area.

The Commission must decide whether to issue a new license and what conditions to place on any license issued. In deciding whether to authorize the continued operation of the Project and related facilities in compliance with the FPA and other applicable laws, the Commission must determine that the Project will be best adapted to a comprehensive plan for improving or developing a waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the protection of, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality.

Commission staff (staff) prepared this final environmental impact statement (FEIS) to ensure that the Commission makes an informed licensing decision and to comply with the National Environmental Policy Act of 1969 (NEPA), as amended, the Council on Environmental Quality (CEQ) guidelines implementing NEPA, and the Commission's regulations.

In this FEIS, we assess the effects of operating the Projects (1) with no changes or enhancements to the current facilities or operations (No-Action Alternative); (2) as proposed by Avista (Proposed Action); (3) as proposed by Avista with additional modified environmental measures (Avista's proposal with modifications, or the Staff Alternative); and (4) as proposed under the Staff Alternative with Mandatory Conditions. The No-Action Alternative represents baseline environmental and economic conditions for comparison with other alternatives. Other alternatives considered but eliminated from detailed analysis include (1) federal governmental takeover and operation of the Projects; (2) issuance of a non-power license upon expiration of the current Project license; (3) retirement of the Projects; and (4) implementation of a natural hydrograph alternative for the Post Falls Project.

The principal issues addressed in the FEIS involve (1) reservoir operations related to power generation and other purposes; (2) Project releases for protection of native fish populations and other purposes; (3) water quality; (4) fishery management and protection needs; (5) protection and enhancement of wildlife habitat; (6) potential effects on threatened and endangered species; (7) recreational access and facility improvements; (8) protection of cultural and historic resources; (9) waterway bank erosion; and (10) aesthetic flows and aesthetic resources.

1.2 NEED FOR POWER

Avista, an investor-owned utility supplying electricity to residential, wholesale, commercial, and industrial users, owns and operates the 14.75-MW Post Falls Project and the 122.9-MW Spokane River Developments. Avista provides energy to more than 325,000 electric and 300,000 natural gas customers in a 30,000-square-mile service area that covers parts of four western states (Washington, Idaho, Oregon, and Montana) with a variety of energy resources.

The Projects include developments that operate both in run-of-river mode and with regulated reservoirs. The Projects are operated in a coordinated manner to contribute to Avista's electric generating resources.

Avista also operates the Clark Fork Hydroelectric Project facilities, including the 466-MW Noxon Development and the 257-MW Cabinet Gorge Development, totaling 723 MW of licensed nameplate capacity. On the Spokane River, Avista also operates the Little Falls Hydroelectric Project, which has a nameplate rating of 32 MW. These three Avista hydroelectric facilities, together with Avista's five Spokane River Projects, provide about 892 MW of hydro capacity (Avista, 1999). Energy from the eight developments accounts for 451 average MW (aMW)¹, or about 36 percent of Avista's 1,270-aMW resource portfolio in 2004.

The balance of Avista's firm generation resources are coal-fired thermal plants, gas-fired combustion turbine plants, purchases from independent power producers, and wholesale power purchases. Additionally, Avista participates in the Northwest Energy Efficiency Alliance, a non-profit consortium of energy providers and related industries involved in developing markets for energy-efficiency products and services, and in several regional energy conservation, audit, and weatherization programs. Avista's energy conservation and efficiency programs serve residential, commercial, and industrial customers by providing technical assistance, incentives, and education about the wise use of energy. Generally, its programs have been divided into three local portfolios: commercial/industrial, limited income, and residential. Avista continues to work to provide cost-effective conservation programs to customers. During the last 26 years, Avista has acquired 111 aMW of energy through the implementation of its conservation programs (Avista, 2005).

The Bonneville Power Administration's (BPA's) *2006 Pacific Northwest Loads and Resources Study* (the 2006 White Book) is a snapshot of overall Pacific Northwest regional conditions as of March 31, 2006, and incorporates load,

¹ An average megawatt (aMW) is a unit of electrical consumption or production over a year. It is equivalent to the energy produced by the continuous use of 1 MW of capacity served over a period of 1 year. One aMW is equivalent to 8,760 MWh, or 8.76 gigawatt-hours (BPA, 2005).

PUBLIC

contract, and resource estimates provided by BPA, federal agencies, public utilities, cooperatives, and investor-owned utilities (BPA, 2006). Figure 1.2-1 illustrates how the monthly peak firm MW deficit could grow to as much as 5,085 MW by operating year 2016.² For the month of January (a peak-demand month for the region), the total regional firm load is projected to be 38,205 MW in 2016, and total net power resources are expected to be 33,148 MW. The colder winter months are most susceptible to deficits; April and May also may experience deficits.

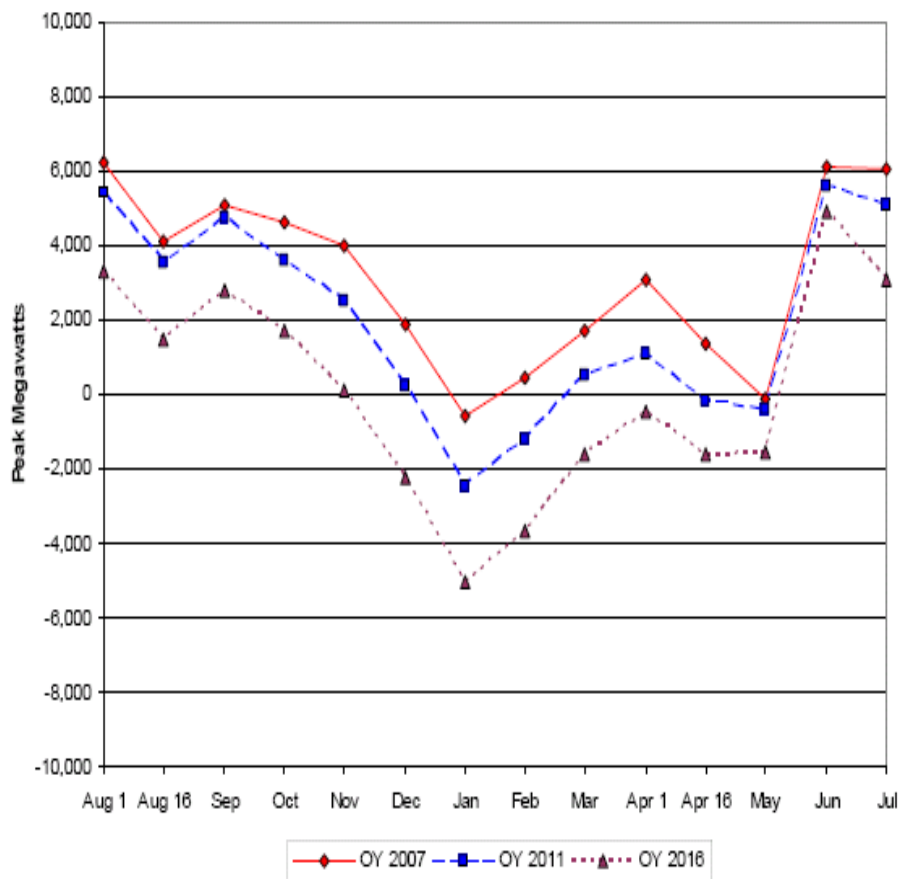


Figure 1.2-1. Regional firm monthly capacity surplus/deficit projections
Source: BPA, 2006

² An operating or energy year begins August 1 and ends July 31.

The average annual regional firm load is expected to rise from 20,637 aMW in 2007 to 23,418 aMW in 2016, excluding the load associated with exports. Additionally, energy exports are expected to decrease from 1,002 aMW in 2007 to 691 aMW in 2016. In general, the regional firm load is projected to be 21,650 aMW in 2007 and 24,119 aMW in 2016. Total net power resources are expected to grow from 23,667 aMW in 2007 to 24,114 aMW in 2016, resulting in a surplus of firm power of 2,017 aMW in 2007 and a deficit of 5.6 aMW in 2016. These BPA projections indicate a continued need for power in the Pacific Northwest.

The Projects are part of the 250 developments in the Columbia River system. The amount and timing of water released from the Columbia River system projects substantially affect both hydroelectric generation and the other benefits provided by the system (e.g., transportation, irrigation, and natural resource protection). The efficient management of this complex hydroelectric and water resource system is facilitated by the Pacific Northwest Coordination Agreement (PNCA). Most public and private utilities and federal generators in the region, including Avista, are parties to the PNCA. The PNCA provides for the coordination of water releases from the participating hydroelectric projects to optimize energy production and other benefits.

The Projects fall under the purview of the PNCA and operates in coordination with other developments in the system. The amount of storage water provided by the Projects, however, is very small compared to the many other, much larger storage reservoirs in the Columbia River system, including Flathead Lake on the Flathead River, Lake Pend Oreille on the Clark Fork-Pend Oreille River system, the Canadian storage reservoirs on the upper Columbia River, Lake Roosevelt (formed by Grand Coulee Dam) on the main stem of the Columbia River, and the Snake River storage reservoirs.

Avista, through its resource planning process for the states of Washington and Idaho, regularly prepares comprehensive forecasted energy requirements and files integrated resource plans to the Washington (state) Utilities and Transportation Commission and Idaho Public Utilities Commission. Through this planning process, Avista anticipates that the overall growth in electricity sales will average 3.4 percent per year between now and 2023. By 2013, an energy shortfall of 411 aMW is projected for the year, and an energy shortfall of as much as 556 aMW could occur in January—the month with the largest energy shortfall.³

³ Avista uses an 80-percent confidence level for energy planning to account for abnormal monthly weather patterns and below-average monthly hydroelectric capability. Avista also maintains operating reserves in accordance with industry standards.

Similarly, on an annual basis, Avista forecasts surplus capacity through 2009. By 2013, a capacity shortfall of as much as 432 aMW is expected for the year, and a 547-aMW shortfall could occur in December—the month with the largest capacity shortfall.

Avista operates the Projects in concert with its other facilities and programs to minimize the overall cost of power production. Without these Projects, Avista would be faced with replacing the Project's energy and capacity at costs reflecting the value of new resource acquisition.

In summary, if licensed, the power from the Projects would continue to be useful in meeting Avista's needs as well as part of the local and regional need for power. The Projects help displace fossil-fueled electric power generation that the region now uses, thereby conserving non-renewable fossil fuels and reducing the emission of noxious byproducts caused by fossil-fuel combustion.

1.3 INTERVENTIONS

On January 13, 2006, the Commission issued a notice accepting Avista's applications to relicense the Post Falls Project and Spokane River Developments. This notice set a 60-day period, which ended on March 14, 2006, during which interventions and protests could be filed. In response to that notice, the following entities filed motions to either intervene or intervene and protest:

<u>Entity</u>	<u>Type</u> ⁴	<u>Filed Date</u>
American Whitewater	I	March 1, 2006
Washington Department of Fish and Wildlife (WDFW)	I	March 3, 2006
Sierra Club	I/P	March 7, 2006
USDA Forest Service (Post Falls only)	I	March 8, 2006
Center for Environmental Law and Policy (CELP)	I/P	March 9, 2006
Washington Department of Ecology (WDOE)	I	March 9, 2006
State of Idaho	I	March 10, 2006
Spokane Canoe and Kayak Club and Northwest Whitewater Association (NWA)	I	March 13, 2006
Friends of the Centennial Trail	I	March 13, 2006
City of Post Falls, Idaho	I	March 13, 2006
Hagadone Hospitality Co.	I	March 14, 2006
U.S. Department of the Interior (DOI)	I	March 14, 2006
The Lands Council	I/P	March 14, 2006
Coeur d'Alene Tribe of Indians	I/P	March 14, 2006

⁴ "I" filings were Motions to Intervene; "I/P" filings were Motions to Intervene and Protest.

<u>Entity</u>	<u>Type⁴</u>	<u>Filed Date</u>
Spokane River Association	I	March 14, 2006
Idaho Rivers United	I	March 15, 2006
Washington State Parks and Recreation Commission (WSPRC)	I	March 15, 2006
Kootenai County, Idaho	I	March 15, 2006
Washington Department of Natural Resources (WDNR)	I	March 15, 2006
Washington Interagency Committee on Outdoor Recreation	I	March 15, 2006
Spokane Mountaineers, Inc.	I	March 15, 2006
Lake Spokane Protection Association	I	March 15, 2006
City of Coeur d'Alene, Idaho	I	March 20, 2006

On May 5, 2006, the Commission published a notice granting late intervention status to the eight entities listed above that filed after March 14.

1.4 SCOPING PROCESS

Avista conducted the NEPA scoping process as part of the Alternative Licensing Process (ALP) and formally initiated public scoping on May 6, 2003, with the release of Scoping Document 1 (SD1). SD1 invited the public to provide comments on the Projects either through written or oral testimony. Two public scoping meetings were held in Spokane, Washington, on June 3, 2003. A court reporter recorded all comments and statements made at the scoping meetings. All comments and statements have been made part of the Commission's public record for the Projects.

In addition to the comments received at the scoping meetings, 67 individuals provided written comments during the 60-day comment period concluding July 6, 2003. The following entities also provided written comments:

<u>Commenting Entity</u>	<u>Date of Letter</u>
Coeur d'Alene Lakeshore Owner's Association	May 27, 2003
Idaho Nature Conservancy	May 28, 2003
Coeur d'Alene Chamber of Commerce	May 28, 2003
Kootenai County Assessor	May 29, 2003
Post Falls Area Chamber of Commerce	May 30, 2003
Kidd Island Bay Restoration and Conservation Project	May 30, 2003
Rivermill Investments, LLC.	June 2, 2003
The Greater Squaw Bay Association	June 11, 2003

<u>Commenting Entity</u>	<u>Date of Letter</u>
City of Coeur d'Alene	June 25, 2003
Rockford Bay Terrace Community, Inc.	June 26, 2003
U.S. Fish and Wildlife Service (USFWS)	June 27, 2003
Leisurehaven Floathouses Inc.	June 28, 2003
The Hagadone Corporation	July 1, 2003
WDOE	July 1, 2003
BLM	July 1, 2003
USDA Forest Service	July 2, 2003
Kootenai County Sheriff's Department	July 3, 2003
Department of the Army	July 3, 2003
Idaho Department of Parks and Recreation (IDPR)	July 3, 2003
The Lands Council	July 6, 2003
WDFW	July 6, 2003
Coeur d'Alene Tribe	July 7, 2003
Sierra Club, Upper Columbia River Group	July 7, 2003
Idaho Rivers United	July 7, 2003
Bureau of Indian Affairs (BIA)	July 8, 2003

Written and oral comments were summarized and addressed in Scoping Document 2 (SD2) issued on June 14, 2004. SD2 presented an expanded list of resource issues and alternatives to be examined in the NEPA analysis. The issues included potential effects on (1) geology and soils; (2) water quality and quantity; (3) aquatic resources; (4) terrestrial resources; (5) threatened and endangered species; (6) cultural resources; (7) recreation and aesthetics; and (8) socioeconomics. The alternatives included (1) Avista's preliminary proposed action, (2) no action, and (3) other alternatives that may be proposed by agencies, tribes, other governmental or non-governmental organizations (NGOs), or other parties.

1.5 AGENCY CONSULTATIONS

In addition to the formal NEPA scoping described in the previous section, significant opportunities for public involvement were integrated into the Projects' relicensing process. Opportunities began upon commencement of the ALP process, when a Plenary Group of stakeholder organizations was formed to participate in and generally oversee the ALP and the desired development of a settlement agreement. The Plenary Group held its first meeting on May 21, 2002, and at that time established five additional work groups to focus on issues within major resource areas: water resources; fisheries; terrestrial resources; recreation,

land use, and aesthetic resources; and cultural resources. The work groups met approximately monthly for almost 3 years to define issues, review and approve study plans and results, and recommend environmental measures to be included into the intended Settlement Agreement and incorporated into Avista's Proposed Action. Some, but not all, of the work groups' recommendations are included in Avista's Proposed Action presented in this FEIS.

On May 18, 2006, the Commission issued a notice soliciting recommendations, terms, conditions, and prescriptions for the Projects. This notice set July 17, 2006, as the deadline for these filings. In response to the notice, the following entities filed recommendations, preliminary terms and conditions, and preliminary prescriptions:

<u>Commenting Entities</u>	<u>Type</u>	<u>Dated Filed</u>
Kootenai County	10(a)	July 14, 2006
USDA Forest Service	10(a), 4(e)	July 14, 2006 ⁵
Center for Justice (Sierra Club)	10(a)	July 17, 2006
City of Post Falls, Idaho	10(a)	July 17, 2006
WDOE	10(a)	July 17, 2006
CELP	10(a)	July 17, 2006
NWA	10(a)	July 17, 2006
State of Idaho	10(a), 10(j)	July 17, 2006
The Lands Council	10(a)	July 17, 2006
WDFW	10(j)	July 18, 2006
Department of Interior (BIA, USFWS, BLM, National Park Service [NPS])	4(e), 10(j), 10(a), section 18	July 18, 2006 ⁶
City of Coeur d'Alene	10(a)	July 19, 2006

1.6 ALTERNATIVES TO AGENCY MANDATORY TERMS AND CONDITIONS AND ADMINISTRATIVE LAW JUDGE FINDINGS

In DOI's July 18, 2006 filing, the BIA filed 15 preliminary 4(e) conditions applicable to the Post Falls Project. In a filing of August 17, 2006, to DOI's Office of Environmental Policy and Compliance and the Commission, Avista filed 12 alternative conditions to DOI's preliminary section 4(e) conditions. Of the 12 alternative conditions, only four involved Avista proposing any new measures;

⁵ The USDA Forest Service also provided modified preliminary recommendations, terms, and conditions in a letter filed on August 21, 2006. On May 3, 2007, the USDA Forest Service stated that its filing of August 21, 2006, contains its final recommendations, terms, and conditions.

⁶ DOI requested an extension on its filing and was granted a 1-day extension.

the other eight alternative conditions requested DOI to delete the corresponding BIA condition in its entirety with the alternative asking that no condition be imposed at all. There were no alternatives proposed by Avista regarding the USDA preliminary 4(e) conditions. On September 1, 2006, Avista filed reply comments to recommendations, terms, and conditions filed by all parties, including DOI, on the Projects (Avista, 2006a).

On August 17, 2006, Avista also filed a request with DOI for a hearing on disputed issues of material fact with respect to six of the preliminary conditions filed by DOI with FERC under section 4(e) conditions. Pursuant to section 241 of the Energy Policy Act of 2005, Pub. L. No. 109-58, § 241, 119 Stat. 594, 674-75 (Aug. 8, 2005) (EPAAct), codified at 16 United States Code (U.S.C.) §§ 797(e), 811, and the underlying procedural regulations published in 70 Federal Register (FR) 69804 (November 17, 2005) (promulgated in 43 CFR Part 45), “[t]he license applicant and any party to the proceeding shall be entitled to a determination on the record, after opportunity for an agency trial-type hearing of no more than 90 days, on any disputed issues of material fact with respect to such conditions.” 16 U.S.C. § 797(e).

In its request for hearing, Avista identified 38 proposed issues of disputed material fact for hearing. Notices of intervention and responses to Avista’s hearing request were then filed by the Coeur d’Alene Tribe, the State of Idaho, and the Upper Columbia River Group of the Sierra Club.

On October 2, 2006, BIA filed an answer responding to Avista’s hearing request. In its answer, BIA contended that most of Avista’s proposed issues of disputed material fact were inappropriate for hearing because they failed to meet the 43 CFR 45.1(a)(1) requirement that each hearing issue be disputed, material, and factual. BIA also argued that several of Avista’s proposed issues were actually questions of policy and/or alternative conditions, and therefore beyond the scope of the proceeding. The Coeur d’Alene Tribe and the Sierra Club also took the position that most of Avista’s proposed issues did not meet the requirements to be identified for hearing.

On October 10, 2006, DOI’s Office of Environmental Policy and Compliance referred the matter to the DOI Office of Hearings and Appeals, Departmental Cases Hearings Division, pursuant to 43 CFR 45.25(a). The case was then assigned to Administrative Law Judge (ALJ) Andrew S. Pearlstein.

Between October 13, 2006, and December 3, 2006 the ALJ, Avista, BIA, Coeur d’Alene Tribe, and Sierra Club participated in several pre-hearing activities, including a prehearing teleconference, a period of discovery and direct testimony of witnesses, and a scheduled site visit.

The hearing convened in Spokane, Washington, on December 4, 2006, and continued through December 8, 2006. Avista, BIA and the Coeur d'Alene Tribe jointly, and the Sierra Club filed post-hearing briefs, including proposed supporting and ultimate findings of fact, on December 22, 2006, and reply briefs on December 29, 2006.

On January 8, 2007, the ALJ filed his final findings of fact in the case. His findings focused on alleged environmental effects and impacts of the continued operation of the Post Falls Project on the Coeur d'Alene Reservation, where the parties have raised disputed issues of material fact relating to conditions proposed by the BIA to monitor and mitigate those alleged impacts. Those effects include impacts or alleged impacts on water quality, fisheries, aquatic vegetation, wetlands, erosion, and the Coeur d'Alene Tribe's cultural resources. Avista generally denied that the Project causes adverse impacts to the reservation, while BIA and the tribe generally alleged that the Project does cause such impacts.

An abbreviated summary of the ALJ's findings of fact with respect to each of the issues identified for hearing follows.

Coeur d'Alene Lake and Tributary Shoreline Erosion Control: (a). The Project is responsible for about 50 percent of erosion in the lower tributaries, and 30 percent in the lake. (b). The Project increases boating activity on the reservation.

Water Quality Standards and Water Quality Monitoring: (a). The Project affects plant growth and distribution in the shallow southern end of the lake; and increases temperature and reduces dissolved oxygen (DO) in that area. (b). The Project does not significantly increase eutrophication in the lake as a whole. (c). The Project has no effect, or a negligible effect, on the amount of metals that dissolve in the lake. (d). The Project does not have potential effects on the metal parameters listed, but may have effects on the organic parameters in the southern end of the lake.

Protection of Cultural Resources: (a). The Project has caused an increase in pothunting of cultural resources on the reservation. (b). Avista's survey of cultural resources was adequate to identify those resources for the intended purposes. (c). The Project may affect cultural resources within the 100-foot buffer zone.

Salmonid Fisheries: The Project has had only minor impacts on the decline of native salmonid fish in the lake, which are dwarfed by the devastating impacts of non-Project factors, primarily the introduction of non-native species and the degradation of tributary spawning habitat.

Aquatic Weed Management: (a). The Project is a cause of the increase in growth and spread of Eurasian watermilfoil in the lake. (b). It is not feasible to totally eradicate Eurasian watermilfoil from the lake, but it is feasible to control it in a limited area such as the south end of the lake on the reservation.

Wetland and Riparian Habitat Replacement and Maintenance: (a)(1). The Project has reduced the total acreage of wetlands on the reservation and has impaired the functioning of those wetlands. (2). The Project has reduced the occurrence of certain culturally important plants. (3). Human activities unrelated to the Project have not reduced wetlands on the reservation. (4). The wetlands on the Project are in equilibrium with the summer lake level, but not with natural ecological processes.

Specifics of the ALJ findings can be found in Chapter 3.0, under relevant resource areas, titled “Environmental Consequences,” subheading “Administrative Law Judge Findings.”

1.7 PUBLIC AND AGENCY INVOLVEMENT SINCE RELEASE OF THE DEIS

The Commission issued and distributed the draft environmental impact statement (DEIS) to the public on December 28, 2006. The U.S. Environmental Protection Agency’s (EPA’s) Notice of Availability was published in the Federal Register on January 5, 2007. The notice stated that the DEIS was available for a 60-day public comment period ending March 6, 2007. Based on requests from the public, FERC held two public meetings in Spokane, Washington, on February 8, 2007, to collect comments on the DEIS.

During the public comment period, over 225 written public comments were received from the general public. During this same period, the Commission also received comments from the following federal and state agencies, tribes, and NGOs:

<u>Commenting Entity</u>	<u>Date Filed</u>
Washington Department of Archaeology & Historic Preservation	January 30, 2007
WSPRC	February 21, 2007
USDA Forest Service	February 22, 2007
WDOE	February 23, 2007
Coeur d’Alene Lakeshore Property Owner’s	February 28, 2007
Spokane Mountaineers	February 28, 2007
NWA	March 4, 2007
Spokane Tribal Natural Resources	March 5, 2007
BIA	March 5, 2007

<u>Commenting Entity</u>	<u>Date Filed</u>
Avista Utilities	March 6, 2007
Center for Justice / Sierra Club / CELP	March 6, 2007
City of Post Falls	March 6, 2007
IDPR	March 6, 2007
Idaho Department of Environmental Quality (IDEQ)	March 6, 2007
Idaho Department of Fish and Game (IDFG)	March 6, 2007
Inland Northwest Water Resources	March 6, 2007
Lake Spokane Protection Association	March 6, 2007
The Lands Council	March 6, 2007
WDFW	March 6, 2007
EPA	March 6, 2007
City of Spokane	March 6, 2007
Coeur d'Alene Tribe	March 6, 2007
Cave Bay Community Services, Inc.	March 13, 2007
Whitworth Water District No. 2	March 13, 2007
Spokane County Water Quality Advisory Committee	March 14, 2007
City of Coeur d'Alene	March 19, 2007
Avista Utilities	March 29, 2007
Center for Justice / Sierra Club / CELP	April 19, 2007
Avista Utilities	April 23, 2007
Avista Utilities	April 26, 2007

The Commission has summarized in Appendix A the comments received from these entities and the general public, has provided responses to those comments, and has indicated whether (and how) we have modified the text of the EIS.

In addition to receiving agency comments on the DEIS, the Commission also conducted a teleconference on March 20, 2007, to discuss the preliminary 10(j) provisions submitted by each agency. Based on the findings of the ALJ and the results of the teleconference, additional information and modified 10(j) and 4(e) conditions were submitted by various agencies for consideration in the FEIS. These final conditions have been discussed in the appropriate sections of this EIS.

2.0 PROPOSED ACTION AND ALTERNATIVES

This section describes the Proposed Action and alternatives considered in this FEIS. Section 2.1 describes the No-Action Alternative, under which the Projects would continue Project operations under the terms and conditions of the existing license. This alternative provides the current conditions against which other alternatives are compared. Section 2.2 describes the Proposed Action, which is operation of the Project in accordance with Avista's proposal. Section 2.3 describes modifications to the Proposed Action based on agency and stakeholder terms, conditions, and recommendations as well as staff modifications. Section 2.4 discusses other alternatives that were considered but eliminated from detailed evaluation.

2.1 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Projects would continue to operate under the terms and conditions of the existing license. No new environmental measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with the Proposed Action.

2.1.1 General Description of the Existing Facilities and Operations

The currently licensed Spokane River Project includes five hydroelectric developments and associated reservoirs located on the Spokane River in northern Idaho (Kootenai and Benewah counties) and eastern Washington (Spokane, Stevens, and Lincoln counties). The Spokane River originates at the outlet of Coeur d'Alene Lake in Idaho and flows westerly approximately 111 miles to its confluence with the Columbia River in eastern Washington (which is now within Lake Roosevelt, the impoundment created by Grand Coulee Dam). In downstream order, the Spokane River Project includes the Post Falls Project, which is in Idaho (river mile 102), and Upper Falls Development (river mile 74.2), Monroe Street Development (river mile 74), Nine Mile Development (river mile 58), and Long Lake Development (river mile 34), all four of which are located in Washington (see Figure 1.0-1).

Two other hydroelectric developments located on the Spokane River are the Upriver Project, owned by the City of Spokane (river mile 80; FERC Project No. 3074), and the Little Falls Project (river mile 29), which is owned by Avista but is not part of the Commission-licensed Spokane River Project. The Project boundary, as defined in the current FERC license, is depicted in Exhibit G of the license applications and encompasses approximately 44,556 acres. As these exhibits show, the current Project boundary encompasses four distinct areas: one each for the Post Falls Project, Nine Mile Development, and Long Lake Development, and

one that encompasses both the Upper Falls and Monroe Street Developments. The Project boundary generally follows the normal high-water line of the Project reservoirs, with some additional areas included around the Project dams, powerhouses, and tailraces. At Long Lake, Nine Mile, and Post Falls Developments, the Project boundary also encompasses some additional, relatively small parcels of company-owned lands.

2.1.2 Post Falls Project

The Post Falls Project is located on the Spokane River at river mile 102, in Post Falls, Idaho, approximately 9 miles downstream of the river headwaters at Coeur d'Alene Lake. This development impounds the 9 miles of the Spokane River upstream of the Post Falls Project. It influences the water levels in Coeur d'Alene Lake and the lower reaches of lake tributaries, depending on the volume of tributary inflow and time of year.

The Post Falls Project includes three dams (north channel, middle channel, and south channel, with natural islands connecting the three structures), spillways along the top of the north and south channel dams, a powerhouse integral to the middle channel dam, and various appurtenant structures. The operating reservoir for the Post Falls Project encompasses Coeur d'Alene Lake, the lower portions of the St. Joe, St. Maries, and Coeur d'Alene Rivers, and the portion of the Spokane River between the lake outlet and the dam. Development dimensions and specifications associated with the Post Falls Project include:

- a reservoir that covers the uppermost 9 miles of the Spokane River, Coeur d'Alene Lake, and lower portions of lake tributaries, having a normal full-pool elevation of 2,128 feet;
- Coeur d'Alene Lake (including lateral lakes and affected river reaches of the Coeur d'Alene, St. Joe, St. Maries, and Spokane Rivers), having a surface area of approximately 40,600 acres, a maximum depth of more than 200 feet, and usable storage of approximately 223,100 acre-feet (equating to a 9-foot drawdown at the development and a 7.5-foot drawdown in the lake);
- a 431-foot-long, 31-foot-tall north channel dam, with a top-of-dam elevation of 2,133 feet and incorporating the north channel spillway (spillway crest elevation of 2,114 feet), which includes a 100-foot-wide, 14-foot-high rolling sector gate, seven 21-foot-wide, 12-foot-high radial gates, and one 12-foot-wide, 12-foot-high radial gate;
- a 215-foot-long, 64-foot-tall middle channel dam, with a top-of-dam elevation of 2,135 feet;

- a 127-foot-long, 25-foot-tall south channel dam, with a top-of-dam elevation of 2,135 feet and incorporating the 37-foot-long south channel spillway (spillway crest elevation of 2,128.5 feet), which is controlled by six 6-foot-wide, 13-foot-high vertical sluice gates;
- six 56-foot-long, 11.25-foot-diameter intakes and steel penstocks, integral to the middle channel dam, with top of intake openings at 2,113.75 feet; and
- a six-turbine powerhouse, integral to the middle channel dam, with a total nameplate capacity of 14.75 MW and a total hydraulic capacity of 5,400 cubic feet per second (cfs).

2.1.3 Spokane River Developments

The Spokane River Developments—Upper Falls Development (river mile 74.2), Monroe Street Development (river mile 74), Nine Mile Development (river mile 58), and Long Lake Development (river mile 34)—are located in Washington (see Figure 1.0-1).

2.1.3.1 Upper Falls Development

Upper Falls Development is located on the Spokane River (river mile 74.2) in downtown Spokane, Washington, 28 miles downstream of the Post Falls Project. Upper Falls Development creates a relatively small reservoir.

Upper Falls Development includes two dams located on either side of a natural island (Havermale Island) in the Spokane River. A dam and headgate structure (i.e., for the intakes to the penstocks) is located on the south channel (river mile 74.2), and a dam and control works structure (for water level and spill control) is located on the north channel (river mile 74.7).

Some of the features, structures, and specifications associated with Upper Falls Development include:

- a 4-mile-long reservoir upstream of the south channel dam, having an impounded surface area of 150 acres and a volume of 800 acre-feet at normal full-pool elevation of 1,870.5 feet;
- a 366-foot-long, 35.5-foot-tall north channel dam with a top-of-dam elevation of 1,876.9 feet and incorporating the north channel spillway (spillway crest elevation of 1,854.9 feet), which includes two 60-foot-wide, 16-foot-high rolling sector gates and four approximately 42-foot-wide, 13-foot-high vertical lift gates;

- a 70-foot-long, 30-foot-tall south channel dam with a top-of-dam elevation of 1,876.9 feet;
- three 15-foot-high, 12-foot-wide intakes with headgates, with the top of the intake opening at 1,861.4 feet;
- one 350-foot-long, 18-foot-diameter, reinforced concrete penstock; and
- one powerhouse, located along the south shore of the river, containing one vertical turbine with a total nameplate capacity of 10 MW and a total hydraulic capacity of 2,500 cfs.

2.1.3.2 Monroe Street Development

Monroe Street Development, which creates a very small reservoir, is also located in downtown Spokane, Washington, at river mile 74, about 1,000 feet downstream of Upper Falls Development. Monroe Street Development includes a single concrete gravity dam spanning the river, with an intake structure located adjacent to the south abutment of the dam. The powerhouse is located underground on the south shore of the Spokane River a short distance downstream of the dam. A small public park area, Huntington Park, surrounds Monroe Street Development. Some of the features, structures, and specifications associated with Monroe Street Development include:

- a 0.2-mile-long reservoir with a normal full-pool elevation of 1,806 or 1,806.3 feet (the additional 0.3 foot of elevation is maintained during viewing hours to provide a required 200-cfs minimum flow over the spillway), 5 acres of impounded surface area, and 30 acre-feet of storage;
- a 24-foot-tall, 240-foot-long dam with a top-of-dam elevation of 1,806 feet;
- a 217-foot-wide concrete overflow spillway;
- a single intake with a 332-foot-long, 14-foot-diameter steel penstock; and
- a powerhouse (largely underground and completed during a 1992 redevelopment) containing one vertical, Kaplan-style turbine with a total nameplate capacity of 14.82 MW and a total hydraulic capacity of 2,850 cfs.

2.1.3.3 Nine Mile Development

Nine Mile Development is located on the Spokane River at river mile 58. Nine Mile Development lies 16 miles downstream of Monroe Street Development and 24 miles upstream of Long Lake Development. A single dam and associated powerhouse comprise this development. Some unique features associated with

Nine Mile Development include a sediment bypass tunnel (or diversion tunnel) that was installed at the dam in 1996 and the Nine Mile cottages, originally built for facility operators at the dam and now leased to Washington State Parks. Some of the features, structures, and specifications associated with Nine Mile Development include:

- an approximately 6-mile-long reservoir (Nine Mile Reservoir) with normal full-pool elevation of 1,606.6 feet, an impounded surface area of 440 acres at full pool and storage of 3,130 acre-feet under a 16.6-foot maximum drawdown;
- a 364-foot-long, 58-foot-tall dam;
- a 225-foot-long concrete overflow spillway, with a spillway crest elevation of 1,596.6 feet, plus two rows of 5-foot-high flashboards;
- four intakes integral to the face of the dam where water is fed to the turbines via steel and concrete bulkhead chambers called a “wet pit;” and
- a powerhouse integral to the dam containing four horizontal Francis turbines (including an indoor substation) with a total nameplate capacity of 26.4 MW and a total hydraulic capacity of 6,500 cfs.

2.1.3.4 Long Lake Development

Long Lake Development is located on the Spokane River (river mile 34), approximately 25 to 30 miles northwest of Spokane, Washington, and 24 miles downstream of Nine Mile Development. Long Lake Development includes an L-shaped, concrete gravity main dam and adjacent intake structure, a concrete arch cutoff dam located along the western shoreline approximately 700 to 800 feet upstream of the main dam, a gated spillway along the top of the main dam, and a powerhouse. Some of the features, structures, and specifications associated with Long Lake Development include:

- a 23.5-mile-long reservoir (Lake Spokane) with a maximum width of about 0.7 mile, a maximum depth of 180 feet, and approximately 5,060 acres of impounded surface area and 105,080 acre-feet of storage at normal full-pool elevation of 1,536 feet;
- a 213-foot-tall, 593-foot-long main channel dam, with a top-of-dam elevation of 1,537 feet;
- a 108-foot-tall, 247-foot-long cutoff dam;

- a 213-foot-long, gated ogee spillway with a crest elevation of 1,508 feet; eight 29-foot-tall, 25-foot-wide lift gates; and a capacity of 115,000 cfs at a normal full-pool elevation of 1,536 feet;
- four intake structures integral to the main dam, with three 16-foot-diameter and one 14-foot-diameter, 236-foot-long steel penstocks that traverse the downstream face of the dam, and the top of each penstock at elevation 1,507 feet; and
- a powerhouse, including an indoor substation, located at the base of the dam containing four turbines with a total nameplate capacity of 71 MW and a total hydraulic capacity of 6,300 cfs.

2.1.4 Current Project Operations

Generally, the five hydroelectric developments that make up the current Spokane River Project are operated to maximize power generation to meet local and regional electricity demands, with consideration given to flood management, natural resource protection, recreation, and other river-water associated needs. The Post Falls Project and the four Spokane River Developments are part of the regional coordination effort expressed in the PNCA. During extreme weather events or regional power shortages, normal operating conditions on the Spokane River Project may be modified, but still remain consistent with constraints imposed by the existing license. Operational changes may also occur in emergency situations, such as accidents or other conditions that pose a threat to life or property, or in the event of equipment failures. Emergency Action Plans (EAPs) are updated annually for Post Falls Project and for Nine Mile and Long Lake Developments. The EAPs provide operators with detailed instructions of procedures to follow during emergency situations, including separate flowcharts for various situations with phone numbers of all pertinent local, state, and federal agencies, as well as the order in which the phone calls should be made. Specific examples of emergency situations would include, but would not necessarily be limited to, a spill gate motor being destroyed by lightning, or law enforcement personnel requesting that Avista close spill gates to conduct a search for a missing person. Under these types of situations, Avista would likely have to modify Project operations. The Upper Falls and Monroe Street Developments are classified as low hazard-potential dams. Therefore, they are granted exemption status from filing an EAP.

The Spokane River Developments and the Post Falls Project are operated in a coordinated manner. The Post Falls Project is used to “regulate” flows in the Spokane River at certain times and in accordance with minimum flow requirements and other lake level or downstream flow considerations. Downstream of the Post Falls Project, the Upper Falls and Monroe Street

Developments are operated as run-of-river facilities. Farther downstream, Nine Mile Development is generally operated as a run-of-river facility, with relatively minor pool level fluctuations.

“Run-of-river” means that water flowing into the reservoir is essentially equal to the water being discharged from the hydroelectric development, and the reservoir water levels change little unless under flood conditions, operation and maintenance (O&M) activities, or some other unusual circumstance.

At Long Lake Development, the most downstream of the five current Project developments, there is significant storage. The storage capacity at Long Lake Development is used primarily to respond to the energy demands of Avista’s customers during the winter months, with the pool level lowering over a period of several weeks to several months, depending on energy needs and water inflow. During the summer, Avista attempts to maintain Lake Spokane at a level near full pool, generally using the top foot of storage for responding to daily changes in energy demand.

More detail on the operation of the individual Project hydroelectric developments, the associated water levels and Project discharges, and specific limitations and requirements of the current FERC license is provided below.

2.1.4.1 Post Falls Project

The Post Falls Project is currently operated to meet several interests, including:

- minimum-flow requirements of the FERC license;
- customer energy demands;
- consideration of the need to maximize the amount of storage available in Coeur d’Alene Lake for absorbing spring runoff flows; and
- consideration of upstream recreational, residential, and commercial interests for a stable water level along with downstream resource needs.

The current FERC license for the Spokane River Project requires a minimum instantaneous discharge at the Post Falls Project of at least 300 cfs, or an amount equal to the inflow to Coeur d’Alene Lake, whichever is less. This minimum flow is normally provided through powerhouse discharge into the river immediately below the middle channel dam. Seepage flows also provide some water into the downstream channels. These seepage flows are estimated as high as 30 cfs or more into the north channel when the upstream pool is at 2,128 feet. Considerably less seepage flows into the south channel (10 cfs or less), but it is

still enough to maintain several wetted pools in the incised bedrock below this dam.

Beyond meeting the minimum flow requirements of the license, operations of the Post Falls Project vary from year to year due to weather conditions and energy demands. The operations of the Post Falls Project have also evolved over time in response to a range of community interests. The Post Falls Project typically controls water levels in the Spokane River and Coeur d'Alene Lake about 6 months a year. Many factors, including weather forecasts, snowpack conditions, runoff predictions, resource interests, and energy demand, are considered in determining when to begin controlling the lake's water level with the Post Falls Project. More importantly, Avista cannot begin controlling the lake level until after spring runoff flows have peaked and largely subsided. This typically occurs in late June or early July, and allows Avista to then maintain Coeur d'Alene Lake at or near elevation 2,128 feet throughout the summer recreation season.

In the fall, Avista begins to release water at the Post Falls Project, resulting in a gradual drawdown of the Coeur d'Alene Lake water level. The drawdown, typically 1 to 2 feet per month, generally begins the week following Labor Day. The timing of the drawdown varies because of the annual variations in flow conditions, weather forecasts, and energy demands. This release of water achieves several ends: optimizing energy production, adding storage capacity in Coeur d'Alene Lake for fall and winter precipitation to help minimize upstream flooding, and increasing flow in the Spokane River.

2.1.4.2 Upper Falls Development

Upper Falls Development operates near elevation 1,870.5 feet with a full-pool elevation of 1,871 feet, and does not include any discharge requirements or other limitations under the current FERC license. Upper Falls Development has very little storage (800 acre-feet) and is operated as a run-of-river facility. Because the City of Spokane's Upriver Project, located upstream of Upper Falls Development, is also operated as a run-of-river facility, the operation and subsequent electric generation at Upper Falls Development is driven primarily by Spokane River flows.

When river flow is less than the 2,500-cfs turbine capacity of Upper Falls Development, all flows are typically routed into the south channel through the intake structures and to the powerhouse. During these times, the north channel around Havermale Island receives only minimal leakage flows of about 30 cfs through the control works and a small amount of groundwater inflow. When river flow exceeds the turbine capacity, excess water is passed through the north

channel control works while maintaining a relatively stable water level in the reservoir.

2.1.4.3 Monroe Street Development

Monroe Street Development is operated as a run-of-river facility with a pool elevation of 1,806 feet, with almost no storage (30 acre-feet). Therefore, as at Upper Falls, Spokane River flows from Coeur d'Alene Lake drive the operation of Monroe Street Development. The current FERC license for the Spokane River Project requires Avista to maintain an aesthetic flow of at least 200 cfs over the Monroe Street Dam and downstream ledges during viewing hours (10 a.m. to one-half hour after sunset) each day, year-round.

2.1.4.4 Nine Mile Development

The Nine Mile forebay has an operating full-pool elevation of 1,606.6 feet. The FERC license for the Project does not include any minimum flow, water level, or other limitations specific to Nine Mile Development. However, flow below the dam generally mirrors inflow into the reservoir. There is no bypass reach at Nine Mile Development, since the powerhouse is integral to the dam. Powerhouse discharge and/or spill over the dam flows directly into the downstream river channel.

Nine Mile Development has 3,130 acre-feet of storage and, while capable of limited storage-and-release operations, is operated as a run-of-river facility. Therefore, operation of Nine Mile Development is driven primarily by Spokane River flows from Coeur d'Alene Lake. Two rows of 5-foot-high boards are installed on the spillway to maintain the full-pool level. During high-flow periods, sections of the flashboards are removed to allow the water to pass, resulting in a temporary drop and subsequent restoration of the reservoir surface elevation of up to 10 feet in those years when flashboard removal is required. The flashboards are replaced once river flow allows for safe access to the crest of the dam.

2.1.4.5 Long Lake Development

The normal full-pool elevation at Long Lake Development is 1,536 feet. The current FERC license for the Project allows for a 24-foot drawdown of Lake Spokane to elevation 1,512 feet. No other water level or discharge requirements or limitations in the FERC license pertain to Long Lake Development.

With more than 100,000 acre-feet of storage, Long Lake Development is operated as a storage-and-release facility for power generation purposes. Historically, Lake Spokane was lowered to the 24-foot limit during certain winter periods. In recent years, depending on river flows and several other considerations,

Lake Spokane has rarely been lowered more than 14 feet during the winter, and is typically held within 3 feet of full pool during most of the year. During the summer recreation season, the reservoir is normally within 1 foot of the full-pool elevation.

2.1.4.6 Flood Control Operations

The five developments of the currently licensed Spokane River Project play an annual role in managing upstream flood potential. This role is limited by the Project's storage capacity (confined to the 7.5-foot depth between the low pool elevation of 2,120.5 feet and the full-pool elevation of 2,128 feet) and by the outflow capacity of the natural outlet restriction of Coeur d'Alene Lake relative to flood flows in the Spokane River Basin. This same feature, the lake's natural outlet restriction, provides downstream flood protection. Based on USGS gage historical records, inflow to the lake can be more than twice as high as outflow, which has led to a recorded lake elevation as high as 2,139 feet (Kootenai County, 1998).

Avista draws Coeur d'Alene Lake down during the fall (to as low as elevation 2,120.5 feet), which increases the storage capacity in Coeur d'Alene Lake to accommodate fall-through-spring precipitation and spring snowmelt. Nonetheless, spring rain and snowmelt can result in high flows into Coeur d'Alene Lake such that the lake level rises above elevation 2,128 feet, even though spill gates are open at the Post Falls Project and all water reaching the development is immediately passed downstream. Because of the natural Coeur d'Alene Lake outlet characteristics, there is little the Post Falls Project can do to alter a flood event once flows reach flood stage.

When consistent with operational objectives, Avista voluntarily seeks to maintain certain reservoir levels favorable for recreational activities during the recreation season, although the current FERC license contains no related requirements. At Coeur d'Alene Lake, Avista typically maintains reservoir elevations at or near 2,128 feet from late June or early July through the week after Labor Day. At Lake Spokane, Avista tries to maintain reservoir elevations within 1 foot of full pool (1,536 feet) throughout the summer recreation season.

2.1.4.7 Fishery Management Operations

In cooperation with the WDFW and IDFG, Avista monitors flows and rainbow trout spawning and emergence in the free-flowing reach of the Spokane River downstream of the Post Falls Project each year (Avista, 2000). Based on the annual variability in river flow and the monitoring results, Avista voluntarily operates the Post Falls Project in a manner that attempts to maintain downstream river flows that are sufficient to keep the majority of the rainbow trout spawning

redds wetted through the fry emergence period. This operation, including the monitoring and agency consultation, often requires either no substantial change in operations or only a minor delay or lessening in spill and/or discharge at the Post Falls Project, with an associated minor delay in reaching the desired Coeur d'Alene Lake summer water level near 2,128 feet (Avista, 2000). The current FERC license contains no specific requirements for this operation.

2.1.4.8 Project Safety

The Post Falls Project and the Spokane River Developments have been operating for over 50 years under the existing license. During that time, the Commission staff has conducted operational inspections focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. In addition, the Projects have been inspected and evaluated every 5 years by an independent consultant, and a consultant's safety report has been submitted for Commission review. The Commission staff would continue to inspect the Projects during the new license terms to ensure continued adherence to Commission-approved plans and specifications, special license articles relating to construction (if any), operation and maintenance (O&M), and accepted engineering practices and procedures.

2.1.5 Current Environmental Measures

Avista currently provides facilities and programs related to river flows, fisheries, wildlife, recreation, and aesthetic resources, either as required by the current FERC license or other regulations or on a voluntary basis.

The current FERC license for the Spokane River Project includes several specific terms and conditions providing for the protection and enhancement of environmental resources. These terms and conditions include:

- maintaining a minimum discharge from the Post Falls Project of 300 cfs or an amount equal to the inflow to Coeur d'Alene Lake, whichever is less;
- maintaining an aesthetic scenic flow of at least 200 cfs over the Monroe Street Dam during normal viewing hours from 10 a.m. to one-half hour after sunset each day;
- limiting the maximum drawdown of Long Lake Development operating reservoir (Lake Spokane) to no more than 24 feet (elevation 1,512 feet, compared to a normal full-pool elevation of 1,536 feet);

- maintaining Huntington Park, located in downtown Spokane and adjacent to Monroe Street Development, as a publicly accessible park and open space; and
- stocking catchable-size rainbow trout in the Spokane River each year both upstream of Monroe Street Development and in the Nine Mile Reservoir.

In addition to the specific environmental measures called for in the existing FERC license for the Project, Avista has also implemented environmental and resource-protection measures to ensure compliance with other applicable regulatory requirements. Avista has also entered into a number of voluntary cooperative agreements with agencies, organizations, and individuals, or otherwise supported a variety of measures to enhance and conserve environmental resources. Examples of these regulatory actions and voluntary measures (as noted in parentheses below) that are specifically designed to protect and enhance Project-associated resources include the following:

- Maintenance of the Coeur d'Alene Lake level at or close to 2,128 feet from late June or early July past Labor Day.
- Maintenance of the Lake Spokane elevation within 1 foot of full pool (1,536 feet) throughout the summer recreation season.
- Maintenance of public access at the Nine Mile Resort on Lake Spokane. The facility, which is owned by Avista and operated by concessionaires, offers boating, camping, and swimming opportunities.
- Appropriate preservation, protection, and maintenance of historic properties and features associated with the Project, pursuant to the National Historic Preservation Act of 1966 (NHPA) and as listed or eligible for listing in the National Register of Historic Places (the National Register). Past and ongoing activities include maintenance of the Nine Mile cottages and ongoing consideration of the historic significance of various features of Post Falls, Upper Falls, Nine Mile, and Long Lake Developments whenever considering or proposing any significant facility modifications or alterations. Avista also donated a turbine unit removed from Monroe Street Development to the Henry Ford Museum.
- Development and implementation of appropriate guidelines and requirements for addressing interactions between migratory birds and/or bird nests and Project-associated facilities (pursuant to the Migratory Bird Treaty Act and/or Endangered Species Act [ESA]). Activities have included relocating nests (primarily osprey nests), providing alternative nesting platforms, and modifying transmission line spacing (increasing the spacing between "hot" wires and grounding wires or surfaces). These activities are intended to protect

birds from electrocution as well as to prevent power outages and damage to power poles.

- Monitoring of rainbow trout spawning and fry emergence each year in the free-flowing reach of the Spokane River, located downstream of the Post Falls Project, and coordination of the operation of the development with fisheries agencies to keep the majority of the redds wetted through the fry emergence period.
- When possible, limitation of the winter drawdown of Long Lake Development operating reservoir (Lake Spokane) to no more than 14 feet in consideration of local domestic water supplies.
- Implementation of a Bald Eagle Nest Territory Management Plan for a nest site associated with Long Lake Development.
- Lease of approximately 20 acres of property at Falls Park and 78 additional acres of Avista land for Q'emiln Park to the City of Post Falls, at no cost.
- Support for the development and implementation of an Aquatic Weed Management Plan for Lake Spokane.
- Provision of financial support to the WDNR for O&M of the Lake Spokane boat launch and campground and the Avista-owned boat-in overnight camping sites.
- Support of numerous other public parks, water access, and recreational sites and features. Specific examples include land donations and other support for the Cougar Bay conservation area; financial support for Falls Park, Riverfront Park, Riverside State Park, Plese Flats, and the Centennial Trail; and development and/or maintenance of the Nine Mile Resort and the North Shore campsites (Lake Spokane).
- Permitting of limited private recreational uses of Project-associated property through annual permits.
- Support of numerous resource agency, academic, and Avista studies and resource evaluations concerning Project-associated environmental resources. These have included water quality studies and evaluations, erosion inventories and studies, wetlands inventories, several wildlife and recreation studies, and a variety of fisheries-related studies and investigations undertaken in years prior to the relicensing process.
- Support of local watershed restoration efforts in Hangman Creek Watershed.

2.2 PROPOSED ACTION – APPLICANT’S PROPOSAL

Under the Proposed Action, Avista would continue to operate the Projects in a manner similar to current Project operation, but with a slightly modified reservoir management approach and flow release regimes. Additionally, Avista would implement numerous protection, mitigation, and enhancement (PME) measures at each development.

2.2.1 Project Facilities

The Proposed Action would involve no changes to Project facilities, other than replacing the flashboards at Nine Mile Development with a more permanent feature such as a pneumatically operated spillway gate (rubber dam). Any other facility charges would consist of generally minor and independent elements identified and constructed pursuant to specific PME measures. Replacing the flashboards with a rubber dam would not change the pool level, nor would operations change at Nine Mile Development except that the flashboards would no longer be released downstream, and Avista would have the ability to restore the pool elevation somewhat more quickly after spill events. Periodic maintenance of the entire facility would continue through the term of a new license.

2.2.2 Project Boundary

The current Project boundary for the Post Falls Project is defined by the 2,128-foot elevation contour, as shown in a 1980 FERC license amendment. Recent fieldwork led Avista to make corrections to the 2,128-foot contour maps. Avista therefore is proposing to amend the Project boundary maps to correspond with the more recent data, consistent with retaining the current 2,128-foot boundary. Other proposed changes to the Project boundary include the following:

Post Falls Project

- At the Post Falls Project, 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.

Spokane River Developments

- At Upper Falls and Monroe Street Developments, remove 2.8 acres that serve no Project purpose;
- at Nine Mile Development, remove 66 acres that serve no Project purpose;
- at Nine Mile Development, remove the land occupied by the Nine Mile Cottages that serve no Project purpose; and

- at Long Lake Development, add 350.1 acres associated with a proposed shoreline buffer, the Nine Mile Resort, a dredged boat area, and a section of primary transmission line.

2.2.3 Project Operations

Under the Proposed Action, Avista would operate the Post Falls Project and the four Spokane River Developments in a manner generally similar to current Project operations but with several operational changes intended to address stakeholder concerns. Proposed operational changes include the following:

Post Falls Project

- The minimum discharge from the Post Falls Project would be set at 600 cfs year-round under normal operations, as measured at USGS gage 12419000 (Spokane River near Post Falls). Between July 1 and September 15 of each year, Avista would reduce the minimum discharge to 500 cfs if the level of Coeur d'Alene Lake dropped below 2,127.75 feet (3 inches below full pool) as recorded at the USGS gage at Coeur d'Alene Lake (station no. 12415500).
- Operations at the Post Falls Project would be managed to comply with the discharge approaches outlined in the *Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan* (Avista, 2004).
- The summer recreational elevation of Coeur d'Alene Lake, at or near 2,128 feet, would start as soon as practicable each summer (the same as current Project operations) and would be maintained until September 15. Exceptions would occur to maintain the minimum discharge flow from the Post Falls Project and to ensure that spring flows for trout are provided according to the *Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan*.
- Operations at the Post Falls Project would follow a downramping rate that corresponds to no more than a 4-inch drop per hour in downstream water levels at the USGS gage no. 12419000 (Spokane River near Post Falls).
- Flows from the Post Falls Project would be adjusted when possible in late spring and in the fall to maintain preferred whitewater paddling flows for an extended time, and, when possible, increased flows for open-water boating would be scheduled for one or more weekends in August. Enhancement measures for fisheries resources would take precedence over any whitewater paddling flow releases.

Spokane River Developments

- Aesthetic flows would continue to be provided year-round at Monroe Street Development and also would be initiated seasonally at the Post Falls Project and Upper Falls Development.
- Avista would limit the drawdown of Lake Spokane to 14 feet, except under certain emergency conditions. This would constitute a change from current license conditions, which allow for a 24-foot maximum drawdown, but would not deviate from the way the Project has been operated in recent years.
- Avista would attempt to periodically draw down Lake Spokane during the winter to expose the lake bed to freezing temperatures to reduce the occurrence of aquatic weeds such as Eurasian watermilfoil.

2.2.4 Project Environmental Measures

Avista's Proposed Action consists of numerous PME measures at the Projects. We summarize the primary components of the Proposed Action PMEs in Table 2.2.4-1 and compare them, where applicable, with any alternative measures provided by stakeholders groups and agencies subsequent to the filing of the application.

2.3 MODIFICATIONS TO THE PROPOSED ACTION

After evaluating the Proposed Action and recommendations from the resource agencies and other interested parties, we considered what, if any, additional PME measures would be necessary or appropriate with continued operation of the Projects. These additional measures include the preliminary recommendations, terms and conditions, and prescriptions for the Projects submitted in response to the Commission's notice of May 18, 2006 (see section 1.5).

Federal and state resource agencies, local governmental entities, and other stakeholder groups submitted their comments, recommendations, terms and conditions, and prescriptions to the Commission in July 2006. These comments, recommendations, terms and conditions, and prescriptions often have several components and can generally be characterized as variations to Avista's PME measures considered as part of the Proposed Action. These modified measures are analyzed in this FEIS and summarized alongside Avista's measures in Table 2.2.4-1.

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
POST FALLS PROJECT		
Operational Measures	Flow Regime/Lake Levels: Set the minimum discharge from Post Falls Project at 600 cfs year-round under normal operations, as measured at the USGS gage 12419000 (Spokane River near Post Falls). Between July 1 and September 15 of each year, reduce the minimum discharge to 500 cfs if the level of Coeur d'Alene Lake drops below 2,127.75 feet (3 inches below full pool) as recorded at the USGS gage at Coeur d'Alene Lake (station no. 12415500). Manage operations at Post Falls Project to comply with the discharge approaches outlined in the Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan (Avista, 2004). Conduct operations at Post Falls Project to follow a downramping rate that corresponds to no more than a 4-inch drop per hour in downstream water levels at the USGS gage 12419000 (Spokane River near Post Falls). Start the summer recreational elevation of Coeur d'Alene Lake, at or near 2,128 feet, as soon as practicable each summer (the same as current Project operations) and maintain that elevation until September 15. Exceptions would occur, if needed, to maintain the minimum discharge flow from Post Falls Project and to meet fisheries resource needs, as noted above. Adjust flows from Post Falls Project when possible in late spring and in the fall to maintain preferred whitewater paddling flows for an extended time, and, when possible, schedule increased flows for open-water boating for one or more weekends in August.	Flow Regime/Lake Levels: Provide a 600-cfs year-round minimum instream flow for Post Falls discharges within the context of a 5-year adaptive management program (WDOE, filed 7/17/2006). Provide a 500-/600-cfs minimum flow release within the context of an adaptive management program, with final flow releases to be set between 500 and 800 cfs (WDFW, filed 4/3/2007). 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. Flow shall be at a level of 60 percent of the highest 7-day running average (consecutive days) of daily discharge flows from Post Falls Project for the period of April 1-15 each year, or natural flow, whichever is less (WDFW 10(j), filed 7/18/2006). Release approximately 770 cfs minimum instream flow from Post Falls to provide 500 cfs at Barker Road (Sierra Club, filed 7/17/2006; CELP, filed 7/17/2006). Release sufficient water from Post Falls Dam to achieve a flow of 500 cfs at Barker Road. Collect and compare real-time flow data at Barker Road for flows below 800 cfs during summer months to identify the loss of flow and calculate the minimum instream flow for Post Falls to protect fish habitat. The monitoring should occur over the first 5 years of the license (The Lands Council, filed 7/17/2006). Maintain Coeur d'Alene Lake at 2,128 feet as soon as practicable each summer and maintain that level until September 15, subject to the proposed minimum discharge flows at Post Falls and providing appropriate measures for impacts on seasonal wetlands created by the extended summer pool elevation (State of Idaho, filed 07/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Operational Measures (cont)	Provide aesthetic flows at Post Falls Project through the North Channel spill gates (approximately 46 cfs) on Saturdays and Sundays from 12 noon until 6 p.m., Memorial Day weekend through Labor Day (PF-AES-1).	Maintain Coeur d’Alene Lake at 2,128 feet, from April 1 through October 31, unless there is an actual danger of flooding (Spokane River Association, filed 03/14/2006). Maintain Coeur d’Alene Lake at 2,128 feet for the months of June through September, subject to variations due to spring runoff (Hagadone Hospitality Co., filed 03/14/2006; Kootenai County Board of Commissioners, dated 07/13/2006). Recommend not having a 500-cfs minimum instream flow at Post Falls when Coeur d’Alene Lake drops 0.25 foot. Recommend generally higher releases of 700 to 800 cfs to achieve a minimum flow of 500 cfs at Barker Road (NWA, filed 7/17/2006). Provide ramping rates from Post Falls of no more than 2 inches per hour as measured at the USGS gage 12419000) (WDFW 10(j), filed 7/18/2006). Endorse no more than 2-inch-per-hour ramping rate at Post Falls, or ramping rates suggested by WDOE and WDFW (CELP, filed 7/17/2006). 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 (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Geology and Soils Measures	Erosion Control Program (First Component of the Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement [PF-TR-1]): Identify and prioritize specific areas of particular interest for protection needs and specific erosion control activities and projects. Potential sites and erosion control measures that may be included in the initial plan are in the erosion study (Earth Systems and Parametrix, 2004). Sites likely to be prioritized based on presence and condition of National Register-eligible archaeological sites. Sites also to include appropriate monitoring and evaluation of biological and physical effectiveness of the specific erosion-control measures to be implemented, and projects to be implemented within the first 5 years of the license term with updates on a 5-year cycle.	Coeur d'Alene Lake and Tributary Erosion Control (tied in with riparian measures): Make some modifications to the Coeur d'Alene Lake Tributary Erosion Control and Habitat Protection and Enhancement Measure in terms of priorities and jurisdictional cooperation (State of Idaho, IDFG 10(j), filed 7/17/2006) (also under Terrestrial). Prepare, fund, and implement a Coeur d'Alene Indian Reservation Shoreline Erosion Control Plan (DOI 4(e), filed 7/18/2006). Include identifying and prioritizing all existing erosion sites, completely describing these sites, mapping them, preparing the design of erosion control measures for each site, preparing and implementing monitoring and maintenance procedures, filing the plan in two parts with implementation schedules, and obtaining tribal approval and providing annual reports. Implement measures to prevent or reduce erosion on Coeur d'Alene Lake (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Water Resource Measures	Total Dissolved Gas (TDG) Control and Mitigation Program (PF-WQ-1): Develop and implement a TDG Control and Mitigation Program, including spill gate operating protocols and ongoing TDG monitoring and evaluation. Idaho Water Quality PME (PF-WQ-2): Develop and implement a Water Quality Monitoring Program.	Water Quality PME: Prepare, fund, and implement a Water Quality Monitoring Plan to document the influence of the Project on water quality with in the Coeur d'Alene Indian Reservation (DOI, preliminary 4(e) conditions filed 7/18/2006, modified 4(e) conditions filed 5/7/2007). Undertake a Water Rights Protection Program (Sierra Club, filed 7/17/2006). Undertake measures to minimize TDG downstream of dams (Sierra Club, filed 7/17/2006). Obtain National Pollutant Discharge Elimination System (NPDES) permits for dams (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006). Install and operate water quality monitoring stations downstream of Post Falls and Long Lake Dams (Sierra Club, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Aquatic Resource Measures	Post Falls Project Fish PME Program (PF-AR-1): Maintain a 600-cfs minimum discharge flow at Post Falls Project under normal operating conditions, with a defined trigger for reducing the minimum flow to 500 cfs. Comply with Post Falls Project discharge levels as outlined in the Upper Spokane River Rainbow Trout Spawning and Fry Emergence Protection Plan. Maintain a maximum allowable per hour discharge downramping rate at Post Falls Project that corresponds to no more than a 4-inch drop per hour in downstream water levels. 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 Project. This component may also support wild salmonid protection by providing for alternative angling and harvest opportunities through recreational and fishery enhancement and supplementation. Support population and habitat assessments and monitoring for westslope cutthroat trout and bull trout in the Coeur d'Alene Lake Basin and/or native rainbow trout in the free-flowing reach of the Spokane River downstream of Post Falls Project. 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 Project.	Fish PME Program: Conduct a Post Falls Project Fish PME Program, including provisions for tributary habitat restoration, fish population monitoring, recreational and fishery habitat protection, and a fisheries public outreach program (IDFG modified 10(j), filed 3/6/2007). Encourage Avista's "commitment for community outreach, education, and enforcement to try and diminish illegal harvesting of fish" at Post Falls Project. Provide annual reports (rather than every 5 years) on Post Falls Fishery Protection and Enhancement Program (CELP, filed 7/17/2006). Develop a Salmonid Fisheries Plan (Coeur d'Alene Tribe in support of BIA, preliminary 4(e), filed 7/17/2006). Restore 6.6 miles of tributary habitats upstream of the inundation zone of Coeur d'Alene Lake (USFWS modified 10(j), filed 3/5/2007). Fund and implement population and habitat protection efforts specifically directed at bull trout and westslope cutthroat trout in the Coeur d'Alene Basin (The Lands Council, filed 7/17/2006). Develop a mitigation program to address Project impacts to the benthic community in the Spokane River (Sierra Club, filed 7/17/2006). Establish a habitat restoration/mitigation trust fund (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006). Conduct a Trout Stock Status Monitoring Program (WDFW modified 10(j), filed 3/6/2007).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Aquatic Resource Measures (cont)	Coeur d'Alene Lake Aquatic Weed Management Program (PF-AR-2): Provide assistance and financial support for public education, monitoring, and weed management measures associated with exotic/noxious weeds in Coeur d'Alene Lake.	Coeur d'Alene Lake Aquatic Weed Management Program: Conduct an Aquatic Weed Management Program to control exotic and noxious aquatic weeds in the waters affected by the Project that are within and adjacent to the Coeur d'Alene Indian Reservation (DOI modified 4(e), filed 5/5/2007).
Terrestrial Resource Measures	Wetlands Program (Second Component of the Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement [PF-TR-1]): Identify and evaluate agreed-upon wetland and riparian habitat sites associated with Coeur d'Alene Lake or its tributaries in order to protect, enhance, or restore them. Appropriate access would need to be obtained prior to implementing this measure.	Coeur d'Alene Lake and Tributary Erosion Control and Wetlands and Riparian Habitat Protection and Enhancement: 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 (palustrine, forested, broad-leaved deciduous) wetlands, and (2) restore 250 acres of PSS (palustrine, scrub-shrub) wetlands (USFWS section 10(j), filed 7/17/06; revised 3/5/07). The USFWS indicates that PF-TR-1 will satisfy this recommendation. 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 resource values, (3) funds should be allocated for erosion vs. wetlands, and (4) the project selection process should be modified (IDFG section 10(j), filed 7/17/06; revised 3/6/07).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Terrestrial Resource Measures (cont)		Implement PF-TR-1 (Coeur d'Alene Lake and Tributary Erosion Control and Wetland and Riparian Habitat Protection and Enhancement Plan) with modifications: (1) priority given to natural levees in lower St. Joe River excluding areas covered by other USFWS recommendations (USFWS 10(j), filed 7/17/06).
		Develop and implement a Coeur d'Alene Indian Reservation Wetland and Riparian Habitat Plan to restore and/or replace 3,488 acres of emergent, scrub-shrub, and/or forested wetlands on or off the reservation (DOI, 4(e), filed 7/18/2006 revised 5/7/07).
		Implement measures to protect and restore wetlands at Coeur d'Alene Lake (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).
		Bald Eagles:
		Develop a Bald Eagle Educational Interpretive Program (both Post Falls Project and Spokane River Developments) (USFWS 10(j), filed 7/18/2006)
		Annually monitor bald eagle nests for occupancy and nesting productivity on Project lands (both Post Falls Project and Spokane River Developments) (USFWS 10(j), filed 7/18/06).
		Annually survey for new bald eagle nests on Project lands (both Post Falls Project and Spokane River Developments) (USFWS 10(j), filed 7/18/06).
		Develop Bald Eagle Nest Management Plans and monitor actual bald eagle use on Project lands (USFWS 10(j), filed 7/18/2006).
		Noxious Weeds:
		Develop a management plan to control noxious weeds on Project lands (DOI, USFWS 10(j), filed 7/18/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Cultural Resource Measures	Historic Properties Management Plan (HPMP) (PF-CR-1): Develop and implement the HPMP. Avista's proposed alternative to DOI's (BIA) cultural resources measure—Have Avista prepare and implement an HPMP for NHPA-eligible cultural resources within the existing and expanded area of potential effects (APE) of Coeur d'Alene Indian Reservation and other parts of the Project.	Cultural Resources Plan: Identify cultural sites and properties and assess effects for sites located on the reservation (DOI 4(e), filed 5/7/2007). Prepare, fund, and implement a Cultural Resources Management Plan (CRMP) (DOI 4(e), filed 5/7/2007).
Recreation Resource Measures	Post Falls Project Recreation Plan (PF-REC-1): Develop and implement a Project Recreation Plan that encompasses the various recreation PME measures and consult with the appropriate recreation management entities. Provide 25 percent of funds for the recreation measures. Establish a Recreation Enhancement Fund.	Post Falls Project Recreation Plan: Implement the proposed Post Falls Project recreation measures (PF-REC-1 through PF-REC-4), provided the scheduled whitewater flow releases are demonstrated to not harm fishery resources (State of Idaho, filed 3/6/2007). Within 1 year of new license, develop a recreation plan pertaining to PF-REC-1 in the license application. Provide 25 percent of funds for the recreation measures (USDA Forest Service modified 10(a), filed 8/18/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Recreation Resource Measures (cont)	Coeur d'Alene Recreation PME (PF-REC-2): Provide funds (not to exceed \$27,750) for improvements at City of Coeur d'Alene Park. Enter into a separate agreement with the City of Coeur d'Alene to provide \$3,500 annual O&M costs. Improve existing recreation facilities at Falls Park. Provide funds (not to exceed \$75,000) for project development and provide \$20,000 annual O&M costs. Improve existing recreation facilities at Q'emiln Park. Provide funds (not to exceed \$75,000) for project development and provide \$30,000 annual O&M costs. Partially fund seven Coeur d'Alene Lake and tributary boat ramp extensions. Provide funds (not to exceed \$75,000) for all of the boat ramp extensions. Install private aids to navigation on Coeur d'Alene Lake and along the Coeur d'Alene and St. Joe Rivers as they enter the lake. Provide funds (not to exceed \$20,000) for new or enhanced navigational aids and provide \$1,000 annual O&M costs.	Coeur d'Alene Recreation PME: Implement the Coeur d'Alene Lake recreation measures (IDFG, filed 3/12/2007; DOI, filed 3/5/2007). Obtain prior written approval from the Forest Service for all final design plans at Bell Bay Campground, Medimont Recreation Area, and Rainey Hill Recreation Area (USDA Forest Service modified 4(e), filed 8/18/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Recreation Resource Measures (cont)	Provide funds (not to exceed \$200,000) to the BLM for development or enhancement of water-based recreational facilities on Coeur d'Alene Lake and its tributaries. Enter into a separate agreement with BLM to provide \$33,000 annual O&M costs. Cooperate with the Coeur d'Alene Tribe to develop or enhance water-based recreational facilities on Coeur d'Alene Lake and its tributaries. Provide funds (not to exceed \$200,000) to develop an undetermined recreational site. Enter into a separate agreement with the tribe to provide \$30,000 annual O&M costs. Partially fund abandoned dock and debris removal from Coeur d'Alene Lake Partially fund (not to exceed \$100,000) the Higgins Point breakwater and shoreline stabilization project. Enter into a separate agreement with the IDPR to provide \$10,000 annual O&M costs. Partially fund (not to exceed \$54,000) water-based facilities at the Forest Service Bell Bay Campground, Medimont Recreation Area, and Rainey Hill Recreation Area. Enter into a separate agreement with the Forest Service to provide \$15,000 annual O&M costs. Provide funds (not to exceed \$1,500) for mooring buoys and related O&M costs (\$3,400 annually) at Mowry State Park. Provide funds (not to exceed \$60,000) for three Coeur d'Alenes trail spurs that would provide access for people with disabilities and development of a pedestrian pullout along the trail at the Plummer Trailhead. Enter into a separate agreement with the Coeur d'Alene Tribe to provide \$7,500 annual O&M costs.	Indemnify, defend, and hold the Forest Service harmless for any damages or claims sustained by the Forest Service during construction of improvements at Bell Bay Campground, Medimont Recreation Area, and Rainey Hill Recreation Area (DOI, USDA Forest Service modified 4(e), filed 8/18/2006). Within 6 months of license issuance begin planning the implementation of site-specific recreation improvements at Bell Bay Campground, Medimont Recreation Area, and Rainey Hill Recreation Area as defined under PF-REC-2 in the license application. Provide approximately 25 percent of the funds (not to exceed \$54,000) for Forest Service recreation sites and provide \$15,000 annual O&M costs (USDA Forest Service modified 10(a), filed 8/18/2006). Public Outreach: Within 1 year of new license, develop an Interpretation and Education Plan as specified in PF-REC-4 of the license application (USDA Forest Service modified 10(a), filed 8/18/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Recreation Resource Measures (cont)	Provide funds (not to exceed \$4,000) for Hawley's Landing boat dock improvements.	Post Falls/Spokane River Recreation PME Develop the Trailer Park Wave access site and the Corbin Park boat ramp (IDPR, filed 3/6/2007).
	Provide funds (not to exceed \$2,000) for sand at Plummer and Rocky Point beaches.	
	Provide funds (not to exceed \$60,000 per year) to ensure continued public access and development of new and/or reconstructed recreation facilities on or adjacent to the Project waters.	
	Post Falls/Spokane River Recreation PME (PF-REC-3):	
	Coordinate the late-spring and fall flow releases from Post Falls Project to extend whitewater boating opportunities on the Spokane River and provide scheduled boating flow releases up to two weekends in August.	
	Provide funds (not to exceed \$15,000) for upgrading the USGS Post Falls gage (gage no. 12419000) and provide real-time flow information system. Enter into a separate agreement with the USGS to provide \$2,500 annual O&M costs.	
	Cooperate in the acquisition, development, and related O&M for the Trailer Park Wave access site. Provide funds (not to exceed \$150,000) for site acquisition and/or project development and provide \$15,000 annual O&M costs.	
	Provide funds (not to exceed \$50,000) for the improvement and/or reconstruction of the boat ramp at Corbin Park.	
	Post Falls Project Public Outreach (PF-REC-4):	
	Prepare and implement an Interpretation and Education Plan.	
	Conduct recreational use surveys at the Project every 6 years.	

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Land Use Measures	Post Falls Project Land Use Management Plan Implementation PME (PF-LU-1): Implement the Project Land Use Management Plan as stipulated under PF-LU-1 in the license application. On and adjacent to the Project, provide assistance and financial support for enforcement of land- and water-based laws and regulations administered by federal, state, local, and tribal governments. Project Boundary Modifications: At Post Falls Project, 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.	Post Falls Project Land Use Management Plan Implementation PME: Implement the Land Use Management Plan (PF-LU-1) (IDFG, filed 03/12/2007). Determine Avista's liability for fire and other damages to National Forest System Lands in accordance with standard L-Form Articles 22 and 24 of the license (USDA Forest Service modified 4(e), filed 8/18/2006). Identify Avista as responsible for identifying and reporting to the Forest Service all known or observed hazardous conditions on or directly affecting Forest Service lands (USDA Forest Service modified 4(e), filed 8/18/2006). Project Boundary Modifications: N/A
Aesthetic Resource Measures	Post Falls Project Aesthetic Flows (PF-AES-1): Provide aesthetic flows at Post Falls Project through the North Channel spill gates (approximately 46 cfs) on Saturdays and Sundays from 12 noon until 6 p.m., Memorial Day weekend through Labor Day.	
Other Project-Wide Measures	Facilities and Administrative Support: Purchase and maintain a boat for PME measures at Post Falls Project (total cost shared 50/50 with Spokane River Developments). Provide for administrative overhead costs for new PME measures; provide support office staff time and expenses.	License Terms: Issue one 30-year license for the Post Falls Project and Spokane River Developments (Coeur d'Alene Tribe, filed 3/6/2007; NWA, filed 3/4/2007).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
SPOKANE RIVER PROJECT		
Operational Measures	Flow Regime/Lake Levels: Continue to provide aesthetic flows year-round at Monroe Street Development and initiate aesthetic flows seasonally at Post Falls Project and Upper Falls Development. Limit the drawdown of Lake Spokane to 14 feet, except under certain emergency conditions. This would constitute a change from current license conditions, which allow for a 24-foot maximum drawdown, but would not deviate from the way the Project has been operated in recent years. Attempt to periodically draw down Lake Spokane during the winter to expose the lake bed to freezing temperatures to reduce the occurrence of aquatic weeds such as Eurasian watermilfoil. Provide a 200-cfs minimum daily aesthetic flow through Upper Falls Development bypass reach (north and middle channels) from 10 a.m. to one-half hour after sunset, Memorial Day weekend through September 30, and implement channel restoration as feasible to enhance visual conditions (SRP-AES-1). Continue to provide the current 200-cfs minimum daily aesthetic flow from 10 a.m. to one-half hour after sunset daily, year-round, at Monroe Street Development (SRP-AES-1).	Flow Regime/Lake Levels Release a minimum instream flow of at least 200 cfs from Upper Falls Dam for aesthetic viewing at downtown falls, through midnight and modify channel to spread flow across riverbed (Sierra Club, filed 7/17/2006). Provide a minimum instream flow sufficient to achieve significant aesthetic values for waterfall viewing (CELP, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Geology and Soils Measures	Erosion: Support additional habitat management and enhancement activities on new Project lands as well as on existing Project land that may include erosion control (Lake Spokane/Nine Mile Terrestrial, Riparian and Wetland Habitat Protection and Enhancement PME (SRP-TR-1).	Erosion Control: Prepare, fund, and implement an Erosion Control, Prevention, and Restoration Program for Lake Spokane (The Sierra Club and Lands Council, filed 7/17/2006). Prepare, fund, and implement an Erosion Control, Prevention, and Restoration Program for Lake Spokane and Nine Mile Reservoir (WDFW 10(j), filed 7/18/2006).
	Sedimentation: Support regional efforts to reduce erosion (and downstream sedimentation) in the Hangman Creek Watershed (SRP-TR-1).	Sedimentation: Develop a Sediment Management Plan for Nine Mile and Long Lake Reservoirs (WDOE, filed 7/17/2006). Develop a Sediment Management Plan for Nine Mile Reservoir and Lake Spokane (WDFW 10(j), filed 7/18/2006). Study reservoir sedimentation and development measures to reduce sedimentation problems for Nine Mile and Lake Spokane (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006). Implement measures to prevent or reduce erosion on Lake Spokane (Long Lake Reservoir) (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Water Resource Measures	TDG Control and Mitigation Program (SRP-WQ-1): Develop and implement a TDG Control and Mitigation Program, including spill gate operating protocols, ongoing TDG monitoring and evaluation, and a comprehensive Long Lake Development TDG Abatement Plan.	Washington Water Quality PME: Undertake a Water Rights Protection Program (Sierra Club, filed 7/17/2006). Undertake projects to improved DO in Long Lake Reservoir and downstream (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).
	Washington Water Quality PME (SRP-WQ-2): Develop and implement a Water Quality Monitoring Program.	Require Avista to undertake measures to minimize TDG downstream of dams (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006). Continue the DO Enhancement Plan for Long Lake Dam for 10 years instead of 5 years and submit the plan for approval within 5 years of license issuance. \$50,000 is insufficient to provide adequate funding for a feasibility study to improve DO levels downstream of Long Lake Development (CELP, filed 7/17/2006). Obtain NPDES permits for dams (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006). Study, identify, and implement remedies for meeting water standards for temperature (Sierra Club, filed 7/17/2006). Install and operate water quality monitoring stations downstream of Post Falls and Long Lake Dams (Sierra Club, filed 7/17/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Aquatic Resource Measures	Spokane River Fish PME Program (SRP-AR-1):	Spokane River Fish PME Program:
	Provide for fish population and aquatic habitat protection and enhancement efforts on the Spokane River and Lake Spokane.	Salmonid Fisheries Management Plan (WDFW 10(j), filed 7/18/2006).
	Support the development and implementation of enhanced fish population and related aquatic habitat assessments and monitoring programs associated with the Upper Falls, Monroe Street, Nine Mile, and Long Lake Developments.	Fund and implement population and habitat protection efforts for native resident trout in the Spokane River within 1 year of a new license (Sierra Club, filed 7/17/2006, The Lands Council, filed 7/17/2006).
	Lake Spokane Aquatic Weed Management Program PME (SRP-AR-2):	Conduct a Spawning Gravel Management Program (WDFW modified 10(j), filed 3/6/2007).
	Implement site-specific and general weed control measures in Lake Spokane, including potential use of bottom barriers to maintain public access sites. Attempt periodic winter drawdowns of 10 to 14 feet to assist in managing weeds in Lake Spokane.	

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Aquatic Resource Measures (cont)		Conduct a Fishery Enhancement/Supplementation Program (WDFW modified 10(j), filed 3/6/2007).
		Conduct a Fisheries Public Outreach and Education Program specific to the protection of wild trout in the Spokane River (WDFW modified 10(j), filed 3/6/2007)
		Implement a Native Resident Trout Enhancement Program for Coeur d’Alene Lake and the Spokane River (Sierra Club, filed 7/17/2006).
		Develop a mitigation program to address Project impacts to the benthic community in the Spokane River (Sierra Club, filed 7/17/2006).
		Establish a habitat restoration/mitigation trust fund (Sierra Club, filed 7/17/2006; The Lands Council, filed 7/17/2006).
		Spokane River Aquatic Weed Control: Conduct an Aquatic Weed Management Program focused on monitoring and control of invasive plant species in the Nine Mile and Lake Spokane areas (WDFW modified 10(j), filed 3/6/2007).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Terrestrial Resource Measures	Lake Spokane/Nine Mile Terrestrial, Riparian and Wetlands Habitat Protection and Enhancement PME (SRP-TR-1): Secure appropriate property protection for, and implement, new wetland enhancement or restoration efforts adjacent to or near the Nine Mile or Long Lake Developments. Project Transmission Line Management Program PME (SRP-TR-2): Provide raptor protection and non-chemical vegetation management, as appropriate, on approximately 2.1 miles of existing Project transmission lines, as well as any new transmission lines that may become part of the Project in the future.	Lake Spokane/Nine Mile Terrestrial, Riparian and Wetlands Habitat Protection and Enhancement PME: Enhance and restore 42.51 acres of wetlands along Long Lake, Little Spokane River, or Hangman Creek (WDOE, filed 7/17/2006). Protect and manage all Avista-owned land in the vicinity of Lake Spokane for the purposes of preserving wildlife habitat and include these lands in the Project boundary (approximately 1,976 acres) (WDFW 10(j), filed 7/18/2006; revised 3/6/07). Provide funds to purchase 300 acres of shoreline property and wetland habitat contiguous with Lake Spokane and other Avista-owned property that is to be managed for wildlife purposes (WDFW 10(j), filed 7/18/2006; revised 3/6/07). Prepare an Upland Habitat Protection/Enhancement Plan at Long Lake Reservoir (USFWS (10(j), filed 7/18/2006).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Terrestrial Resource Measures (cont)		Bald Eagles: Develop and implement an Education and Interpretive Program to inform the public about bald eagle use (USFWS 10(j), filed 7/18/2006). Annually monitor bald eagle nests for occupancy and nesting productivity (USFWS 10(j), filed 7/18/2006). Annually survey for new bald eagle nests in the vicinity of the Projects (USFWS 10(j), filed 7/18/2006). Develop Bald Eagle Nest Management Plans and monitor actual bald eagle use (USFWS 10(j), filed 7/18/2006). Noxious Weeds: Develop a management plan to control noxious weeds on Project lands (DOI, USFWS, 10(j), filed 7/18/2006).
Cultural Resource Measures	HPMP (SRP-CR-1): Develop and implement the HPMP.	
Recreation Resource Measures	Spokane River Project Recreation Plan (SRP-REC-1): Develop and implement a Project Recreation Plan that encompasses the various recreation PME measures and consult with appropriate parties. Spokane River Recreation PME (SRP-REC-2): Continue to manage Huntington Park at Monroe Street Development as a natural area/buffer.	

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Recreation Resource Measures (cont)	Provide funds (not to exceed \$20,000) for developing the Water Avenue access site. Enter into a separate agreement with the City of Spokane to provide \$5,000 annual O&M costs. Spokane River Public Outreach PME (SRP-REC-3): Prepare and implement an Interpretation and Education Plan. Conduct recreational use surveys at the Project every 6 years. Lake Spokane/Nine Mile Reservoir Recreation PME (SRP-REC-4): Enter into a separate agreement with Washington State Parks or transfer ownership of the Nine Mile Cottages. Remove the cottage compound from the Project area because it does not serve Project purposes. Provide funds (not to exceed \$150,000) to develop an interpretative center at Nine Mile Development and relocate the existing Nine Mile overlook. Provide \$20,000 annual O&M costs. Provide funds (not to exceed \$25,000) to redevelop the interpretive displays at the Spokane House. Develop and identify the Nine Mile portage, including parking and signs. Provide funds (not to exceed \$15,000) for developing the measure and provide \$5,000 annual O&M costs.	If the intent of the Commission staff recommendation is that Avista should be responsible for costs associated with extending the Centennial Trail, the WSPRC would be willing to allow its lands, upon which the trail would be located, to be brought into the Project boundary (WSPRC, filed 2/21/2007). Implement the Spokane River Development recreation measures (DOI, filed 3/5/2007).

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Recreation Resource Measures (cont)	Provide funds (not to exceed \$100,000) to extend the Centennial Trail from Sontag Park to Nine Mile Resort. Provide funds (not to exceed \$250,000) to reconfigure Nine Mile Resort as a day-use area to complement Washington State Parks' proposed new campground at Riverside State Park. Provide funds (not to exceed \$140,000) to WDNR to expand its Lake Spokane Campground. Provide \$30,000 annual O&M costs. Provide funds (not to exceed \$50,000) to identify and develop up to 10 boat-in-only semi-primitive campsites on Lake Spokane. Provide \$10,000 annual O&M costs. Provide funds (not to exceed \$50,000) to redevelop, operate, and maintain the Long Lake Dam overlook. Provide \$10,000 annual O&M costs. Provide funds (not to exceed \$10,000) to develop a carry-in boat launch immediately downstream from the Long Lake Dam picnic area. Provide \$5,000 annual O&M costs. Provide parking, hiking, and watchable-wildlife opportunities at the Devil's Gap Trailhead and surrounding area; provide \$5,000 annual O&M costs. Provide funds (not to exceed \$300,000 every 10 years after the initial projects are completed) to ensure continued public access and development of new and/or reconstructed recreation facilities at the Project.	

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Land Use Measures	Project Land Use Management Plan Implementation PME (SRP-LU-1): Implement the Project Land Use Management Plan, as stipulated under SRP-LU-1 in the license application. On and adjacent to the Project, provide assistance and financial support for enforcement of land- and water-based laws and regulations administered by governments within their jurisdictions. Project Boundary Modifications: At Upper Falls and Monroe Street Developments, remove 2.8 acres that serve no Project purpose. At Nine Mile Development, remove 66 acres that serve no Project purpose. At Long Lake Development, add 350.1 acres associated with a proposed shoreline buffer, the Nine Mile Resort, a dredged boat area, and a section of primary transmission line. Seek to acquire a portion of property within 300 feet of Lake Spokane shoreline (approximately 47 acres) and manage for habitat protection (SRP-TR-1). Incorporate into the Project boundary Avista-owned lands within 200 feet of the Lake Spokane shoreline (approximately 320 acres) and manage as appropriate under the Land Use Management Plan (SRP-TR-1).	Project Boundary Modifications: N/A

Table 2.2.4-1. Proposed Action and stakeholder alternatives measures (continued)

Resource Area	Proposed Action	Alternate Agency/Stakeholder Recommendations
Aesthetic Resource Measures	Spokane River Project Aesthetic Flows PME (SRP-AES-1): Provide a 200-cfs minimum daily aesthetic flow through Upper Falls Development bypass reach (north and middle channels) from 10 a.m. to one-half hour after sunset, Memorial Day weekend through September 30, and implement channel restoration as feasible to enhance visual conditions. Continue to provide the current 200-cfs minimum daily aesthetic flow from 10 a.m. to one-half hour after sunset daily, year-round, at Monroe Street Development.	Spokane River Project Aesthetic Flows PME: Release a minimum instream flow of at least 500 cfs from Upper Falls Dam for aesthetic viewing at downtown falls, from 5 a.m. until midnight, year-round and modify channel to spread flow across riverbed (Sierra Club, CELP, filed 3/6/2007).
Other Project Wide Measures	Facilities and Administrative Support: Purchase and maintain a boat for PME measures (total cost 50/50 with Post Falls Project). Provide for administrative overhead costs for new PME measures; support office staff time and expenses associated with new PME measures.	

2.3.1 Staff's Modification to the Proposed Action

After evaluating the Proposed Action, including mandatory conditions filed pursuant to sections 4(e) and 18 of the FPA, and other recommendations from resource agencies and interested entities under sections 10(a) and 10(j) of the FPA, we considered what, if any, additional measures would be necessary or appropriate for continued operation of the Projects. The Staff Alternative consists of the Proposed Action (section 2.2) with the adoption of other environmental measures recommended by agencies and stakeholders as well as staff. In section 5.1 of Chapter 5.0, we summarize measures proposed by Avista that we recommend and these new measures, as well as our rationale.

2.3.2 Section 18 Fishway Prescriptions

Pursuant to section 18 of the FPA, DOI filed its proposal to reserve the authority to prescribe the construction, operation, and maintenance of fishways in the future during the term of the license in its July 18, 2006, submittal.

2.3.3 Section 4(e) Conditions

Section 4(e) of the FPA provides that any license issued by the Commission for a project within a federal reservation should be subject to and contain such conditions as the Secretary of the responsible federal land management agency deems necessary for the adequate protection and use of the reservation. The existing Post Falls Project occupies lands owned by the United States and held in trust for the Coeur d'Alene Indian Tribe.

In a July 18, 2006, filing with the Commission, DOI, on behalf of the BIA, submitted preliminary terms and conditions pursuant to section 4(e) of the FPA. On May 17, 2007, Interior filed with the Commission modified terms, conditions, and prescriptions for the Project. The conditions consist of specific environmental measures, summarized below, as well as administrative conditions that pertain to aspects of Avista's use of BIA-managed reservation lands. Because the administrative conditions are not environmental measures, we do not analyze them in this FEIS.

The USDA Forest Service submitted its preliminary section 4(e) conditions in its July 14, 2006, filing, but later modified those conditions in its August 18, 2006, filing. On May 3, 2007, the USDA Forest Service filed a letter with the Commission stating that its August 18, 2006, modified terms, conditions, and prescriptions for the Project are its final terms, conditions, and prescriptions. All of the August 18, 2006, conditions were determined to be administrative and legal conditions. Because the administrative conditions are not environmental measures, we do not analyze them in this FEIS.

Environmental Measures

The DOI-modified 4(e) environmental conditions are summarized below:

Modified Condition (MC) 2: Coeur d'Alene Lake and Tributary Shoreline Erosion Control—Avista should conduct an Erosion Inventory and Assessment, which would include an inventory of all erosion sites on the St. Joe River and reservation. Based on the inventory and assessment, Avista should develop for approval by the Secretary of the Interior an Erosion Control Design Plan outlining how Avista would control 50 percent of erosion on reservation shorelines on the St. Joe River and 30 percent of erosion on reservation shorelines on Coeur d'Alene Lake. In addition, Avista should prepare an Erosion Control Implementation Plan for approval by the Secretary of the Interior. Upon approval, Avista should then implement construction of all erosion control designs within 4 years. Avista should also conduct additional erosion inventories over the course of the license term to document whether additional erosion sites develop in the future.

MC 3: Water Quality Standards and Water Quality Monitoring—Avista should conduct the water monitoring and modeling program designed by BIA to adequately identify and assess Project effects on water quality in the southern portion of the lake within the reservation. Included in the water monitoring program are seven parameters (total nitrogen; nitrite + nitrate; ammonia; total, dissolved, and ortho phosphorus; and chlorophyll-*a*) to be measured at five sites, including one site in Benewah Lake and one in Round Lake, following specifics outlined by BIA. In addition, continuous monitoring of temperature, specific conductance, potential hydrogen (pH), and DO; twice-monthly water column profiles; continuous meteorological station data; and monitoring of other limnological data should be measured at specified sites. Avista should then report the data collected within 30 working days after collection or laboratory analysis and should promptly respond to tribal requests regarding such data. Every 5 years, Avista should update the water quality models of the Project-affected waters above Post Falls Dam to assess the Project's contribution to exceedance of water quality standards.

MC 4: Protection of Cultural Resources—Avista should conduct ongoing monitoring to ensure that impacts to cultural properties on the reservation within the area of potential effects (APE) are identified and addressed throughout the license term. Avista should protect cultural sites and properties on the reservation within the APE from illegal scavenging and collecting as defined in the Initial Cultural Resource Response Program and the Cultural Resource Management Plan, of which BIA retains the authority to approve. Avista should fund the long-term storage and curation of cultural resources in the tribe's facility, including any necessary upgrade and expansion of that facility.

MC 5: Aquatic Weed Management—Avista, in collaboration with the Coeur d'Alene Tribe, should prepare for approval by the Secretary of the Interior a Coeur d'Alene Indian Reservation Aquatic Weed Management Plan to control exotic and noxious aquatic weeds in waters affected by the Project that are within and adjoining the Coeur d'Alene Indian Reservation. The plan should include: (1) annual fall surveys to assess and map infestation and distribution of exotic and noxious aquatic weeds, (2) management actions, based on the annual survey results, specific to each identified weed for implementation the following spring, (3) a survey and implementation schedule, (4) coordination with management of other resources, and (5) criteria to measure progress of control of each identified weed.

MC 6: Wetland and Riparian Habitat Replacement and Maintenance—Avista should restore and/or replace 3,488 acres of emergent scrub-shrub and/or forested wetlands on or off the reservation within the first 10 years of the license.

Administrative / Legal Measures

MCs filed by DOI that we consider administrative or legal in nature include the following:

- MC 1: Avista should prepare an Implementation and Monitoring Plan for the Secretary of the Interior's approval for Avista activities required by the license regarding how it intends to comply with the DOI's section 4(e) conditions 2 through 6. The Implementation and Monitoring Plan should include: (1) an Erosion Inventory and Assessment Plan, (2) a Water Quality Monitoring Plan, and (3) an Aquatic Weed Management Plan. Avista should prepare annual reports of information relating to implementation and monitoring requirements, including (a) progress reports on shoreline erosion control, (b) results of water quality monitoring and reviews of the Water Quality Monitoring Plan, (c) results of water quality modeling, (d) a summary of activities conducted for Protection of Cultural Resources Condition, (e) results of an annual survey of aquatic weeds, and (f) an Annual Work Plan detailing the coming year's expected activities as applicable to activities related to DOI section 4(e) conditions 2 through 6.
- MC 7: Avista will collaborate with the tribe to formulate plans and actions and resolve disputes in a manner that is acceptable to both parties.
- MC 8: For plans requiring approval of the Secretary of the Interior, such approval will be obtained before the plan is filed with FERC.

- MC 9: When written notice is required, Avista will provide written notice to the Secretary (or designee), the tribe, the chairman of the tribal council, the administrative director of the tribe, and the director of the tribe's Natural Resources Department; in emergencies, a phone call should be made to the parties, followed by written notice.
- MC 10: Avista will allow a representative of the Coeur d'Alene Tribe and DOI access to, through, and across Project lands and works for inspection after proper credentials have been shown, advance notice given, and safety measures followed.
- MC 11: The Secretary of the Interior can accept or reject, in whole or in part, Avista's submissions; upon rejection, Avista shall have 45 days to resubmit the rejected portion.
- MC 12: Avista's performance of all requirements of these conditions shall be consistent with the purposes of section 4(e) of the FPA to ensure that the reservation is adequately protected and utilized and that the Project does not interfere with, or is not inconsistent with, the purposes for which the reservation was established.
- MC 13: These conditions are not intended to modify/alter any rights held by the Coeur d'Alene Tribe under applicable federal or tribal law.
- MC 14: the Secretary of the Interior reserves the authority to review Avista's compliance with any requirement of these conditions and may seek permissible remedies under the FPA or other laws if Avista is found to be noncompliant. Avista would implement, upon order of FERC, additional measures identified by the Secretary pursuant to section 4(e) authority, as necessary to ensure adequate protection and utilization of the Coeur d'Alene Indian Reservation.

Conditions filed by the USDA Forest Service that we consider administrative or legal in nature include the following:

- MC 1: Avista shall obtain written approval from the USDA Forest Service for all final design plans for recreational improvements specified in PF-REC-2 before such improvements are implemented on National Forest System lands.
- MC 2: Avista shall indemnify, defend, and hold the United States harmless for any damages or losses sustained by the United States during construction of the recreational improvements specified in PF-REC-2 and for judgments, claims, or demands assessed against the United States in connection with the construction of such improvements.

- MC 3: Avista's liability for fire and other damages to National Forest System lands shall be determined in accordance with L-Form Articles 22 and 24 of the license.
- MC 4: During construction, Avista is responsible for identifying and reporting to the USDA Forest Service all known or observed hazardous conditions affecting such lands, recreational improvements, or resources, or any conditions that pose a risk of injury to individuals.

2.3.4 Section 401 Water Quality Certificate Conditions

Avista filed an application for Water Quality Certification to the Washington Department of Ecology (WDOE) and Idaho Department of Environmental Quality (IDEQ) for the Projects on July 12, 2006, as required under section 401(a)(1) of the Federal Water Pollution Control Act (Clean Water Act [CWA]). Neither WDOE nor IDEQ responded to the applications or submitted section 401 conditions. Therefore, Avista withdrew its July 12, 2006, applications and reapplied for 401 certification with IDEQ on June 5, 2007, and WDOE on June 13, 2007. Certifications are pending.

2.3.5 Section 10(j) Recommendations

Under section 10(j) of the FPA, each hydroelectric license issued by the Commission must include conditions based on recommendations provided by federal and state fish and wildlife agencies for the PME of fish and wildlife resources affected by the Project. The Commission is required to include these conditions unless it determines that they are inconsistent with the purposes and requirements of the FPA or other applicable law. The USFWS, WDFW, and IDFG filed recommendations pursuant to section 10(j) in July 2006. In March 2007, the USFWS, WDFW, and IDFG filed modifications to their original section 10(j) recommendations.

2.3.6 Avista Alternative Section 4(e) Conditions under the Energy Policy Act of 2005

In accordance with the EPOA of 2005, Avista filed a request for a trial-type hearing with DOI on August 17, 2006. As part of that request, Avista filed a series of 12 alternative conditions, or countermeasures, to DOI's (4)(e) preliminary conditions filed July 18, 2006. The DOI referred the matter to an ALJ on October 6, 2006. On January 8, 2007, the ALJ issued his opinion on disputed factual issues. DOI considered the judge's opinion in formulating its modified 4(e) conditions filed with the Commission on May 7, 2007. These modified 4(e) conditions are analyzed in this FEIS.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

We also considered other alternatives to the Proposed Action, but eliminated them from detailed study because they are not considered reasonable under the circumstances of this case. These alternatives include: (1) federal takeover; (2) issuance of a non-power license; (3) retirement of the Project; and (4) implementation of a natural hydrograph alternative at the Post Falls Project. We discuss the rationale for eliminating these alternatives from detailed study in the following sections.

2.4.1 Federal Takeover

In accordance with section 16.14 of the Commission's regulations, a federal department or agency may file a recommendation that the United States exercise its right to take over a hydroelectric project with a license that is subject to sections 14 and 15 of the FPA (16 U.S.C. sections 791(a) – 825(r)). Federal takeover and operation of the Projects would require Congressional approval. No party has suggested that federal takeover would be appropriate, and no federal agency has expressed interest in operating the Project. In this case, we do not consider federal takeover to be a reasonable alternative.

2.4.2 Issuance of a Nonpower License

A nonpower license is a temporary license that the Commission would terminate whenever it determines that another governmental agency is authorized and willing to assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. At this time, no government agency has suggested a willingness or ability to take over the Projects. No party has sought a nonpower license, and we have no basis for concluding that the Projects should no longer be used to produce power. Thus, we do not consider a nonpower license to be a reasonable alternative.

2.4.3 Retirement of the Projects

Retiring the Projects would involve denying the relicense application and surrendering or terminating the existing license with appropriate conditions. Termination or surrender of the existing license would entail one of two Project retirement alternatives—without dam removal or with dam removal.

Project Retirement Without Dam Removal

Project retirement without dam removal would involve retaining the dams and reservoirs, while disabling or removing equipment used to generate electricity. This option would result in the loss of the Project's energy production, system

operating benefits, tax revenues, and operation-related employment and would require the Commission to identify another government agency willing and able to assume regulatory control and supervision of the remaining facilities. The changes to Project operations and the additional measures proposed by Avista and any required by the Commission at relicensing would not occur. This retirement option avoids the temporary adverse impacts of dam removal, but it also precludes the long-term benefits of the additional measures proposed by Avista or required by the Commission at relicensing. No agency or other party has recommended this alternative. Moreover, Avista customers and the Spokane metropolitan region rely, in part, on the power generated by the Projects, and decommissioning the Projects would require a source of replacement power, which has not been identified. Because decommissioning in-place provides no incremental benefits to any resource area different from other alternatives we examine in detail, eliminates the power benefit, and still continues a maintenance cost burden, we do not consider this decommissioning alternative further.

Project Retirement With Dam Removal

Removal of the Project works would also provide no significant benefits over other alternatives we evaluate in detail. This alternative would also involve several significant adverse effects in addition to the loss of generation capacity. Most significantly, it would involve management of accumulated sediment behind Nine Mile Dam and at the upper end of Lake Spokane by either dredging or release downstream. Sediment management alternatives would involve potentially significant adverse environmental and economic impacts. Potential environmental effects include mobilization of stored and immobilized contaminants behind the dams, increased turbidity and sedimentation, and lowered water quality in the Spokane River. It would also involve conversion of flatwater resources to riverine resources. Because Project retirement with removal of the Project facilities would induce a significantly higher economic and environmental cost than other alternatives and has not been recommended by any of the resource agencies, we do not evaluate this alternative further.

2.4.4 Natural Hydrograph Alternative

Several stakeholders participating in the ALP expressed an interest in demonstrating how the river and environment would be different if the Post Falls Project ceased operating in the manner it does and Coeur d'Alene Lake and the Spokane River were allowed to function under natural flow conditions. In response, Avista used the same modeling that was used to evaluate lake levels and river flows under current Project operations (No Action) and under the Proposed Action to make a preliminary evaluation of the effects of a scenario commonly referred to as the Natural Hydrograph Alternative at the Post Falls Project.

Under this alternative, the Post Falls Project would continue to operate and produce power, but under a significantly revised operating regime. The development would be operated in a manner that allowed Coeur d'Alene Lake levels and Spokane River flows to be determined solely by inflows and the lake's natural outlet restriction. No minimum flow would be provided by the Post Falls Project. The other four Spokane River developments would operate as they would under the No-Action Alternative, although this operation would be predicated upon the modified flow regime.

Under typical hydrologic conditions (i.e., in most years), flows under the natural hydrograph in the Spokane River downstream of Post Falls would be noticeably lower between September and January relative to current Project operations. From February through May, flows under the natural hydrograph alternative would be similar to current Project operations. From June through August, flows would be higher under the natural hydrograph in most years.

The Natural Hydrograph Alternative would have both beneficial and adverse effects on fish populations downstream of Post Falls Project as compared to current and proposed operations. In wet years, sufficient water would likely be available to provide higher flows downstream of Post Falls Project from spring through summer, providing a benefit to spawning, rearing, and foraging rainbow trout. In warm, low-water years, however, flows downstream of Post Falls under the natural hydrograph could potentially be significantly less than under current and proposed operations. Storing water in Coeur d'Alene Lake allows Avista to release water slowly through the Post Falls Project throughout the summer months. Under a natural hydrograph, less water would be stored in the lake, and the Spokane River downstream of Post Falls Dam would have significantly less water in some years than under existing conditions. Adverse flow and temperature effects on native fish populations could be substantial in the Spokane River between the Post Falls Project and Sullivan Road—notably in the vicinity of Barker Road, where stream flows would likely be very low during some warm, low-water years.

Under typical hydrologic conditions, Coeur d'Alene Lake would be significantly lower than under current Project operations (more than 1 foot) from June through January. From February through May, lake levels under the natural hydrograph alternative would be much more similar to current Project operations. The greatest difference would occur during August and September, when the lake level under current typical hydrologic conditions would be approximately 8 feet higher than under the Natural Hydrograph Alternative.

The loss of storage and head would lead to a loss of generation. Under the Natural Hydrograph Alternative, average annual energy at the Post Falls Project would drop approximately 6,800 MWh. This is equivalent to an average drop in

energy of less than 1 MW. Average annual energy production at the four downstream developments would also drop, by approximately an additional 3 MW. Avista would need to make up these losses from other energy sources.

Staff evaluated the Natural Hydrograph Alternative within the context of the current collaborative process and concluded that this alternative is not reasonable for the following reasons:

- The majority of stakeholders participating in the ALP did not view it as a reasonable alternative.
- This alternative would have adverse socioeconomic effects that would more than offset any gains to some resources.
- The shoreline of Coeur d'Alene Lake would be lowered by 2 to 8 vertical feet in the summer period, and these dewatered areas would adversely affect residential, recreational, and commercial users whose development and use patterns are designed around the current lake level regime.

For these reasons, we do not consider a Natural Hydrograph Alternative at the Post Falls Project to be a reasonable alternative.

File [Section_3_Environmental_Analysis.PDF] cannot be converted to PDF. (Error: File not found)

File [Section_4_Developmental Analysis.PDF] cannot be converted to PDF. (Error: File not found)

File [Section_5_Staff_Conclusions.PDF] cannot be converted to PDF. (Error: File not found)

File [Section_6_Literature_Cited.PDF] cannot be converted to PDF. (Error: File not found)

File [Section_7_List_of_Preparers.PDF] cannot be converted to PDF. (Error: File not found)

File [Appendix_A_.PDF] cannot be converted to PDF. (Error: File not found)

Document Content(s)

Report_Cover_and_Spine.PDF.....	1
Title_Page.PDF.....	3
Letter_to_the_Parties_Foreword.PDF.....	5
Table_of_Contents.PDF.....	11
Executive_summary.PDF.....	27
Section_1_Purpose_of_Action.PDF.....	51
Section_2_Proposed_Action_and_Alternatives.PDF	65
Section_3_Environmental_Analysis.PDF	113
Section_4_Developmental_Analysis.PDF	114
Section_5_Staff_Conclusions.PDF.....	115
Section_6_Literature_Cited.PDF.....	116
Section_7_List_of_Preparers.PDF.....	117
Appendix_A_.PDF.....	118