

**ENVIRONMENTAL INSPECTION REPORT  
(ELECTRONICALLY SUBMITTED)  
FEDERAL ENERGY REGULATORY COMMISSION  
Portland Regional Office**

	<b>Date of Inspection</b>	<u>June 23-24, 2015</u>	
<b>Name</b>	<u>Spokane River Project</u>	<b>Project No.</b>	<u>2545</u>
<b>Licensee</b>	<u>Avista</u>	<b>License Type</b>	<u>Major</u>
<b>License Issued</b>	<u>June 18, 2009</u>	<b>License Expires</b>	<u>May 31, 2059</u>
<b>Location</b>	<u>Spokane River</u>	<u>Coeur d'Alene</u>	
	<b>Waterway</b>	<b>Reservation</b>	
	Spokane, Lincoln, and Stevens Counties, Washington; and Kootenai and Benewah Counties, Idaho	<u>Idaho and Washington</u>	
	<b>County</b>	<b>State</b>	
<b>Inspector</b>	<u>Benjamin H. Ellis</u>		
<b>Licensee Representatives</b>	<u>Elvin "Speed" Fitzhugh, Spokane River License Manager LaRoy Dowd, Operator Post Falls Michael Day, Operator Upper Falls and Monroe Street Brady Gallagher, Operator Nine Mile Kevin Powell, Operator Long Lake</u>		
<b>Other Participants</b>	<u>Dan Redline, Regional Administrator, Coeur d'Alene Office, Idaho DEQ; David C. Fair, Director of Parks and Recreation, Post Falls, ID; Patrick McGuire, Hydropower Compliance Specialist, Water Quality Program, Eastern Regional Office</u>		

**Summary of Findings**

This report covers conditions observed on the days of the inspection and a review of the record to ensure compliance with the environmental license requirements for the Spokane River Project.

At the time of inspection, the project was operating as follows:

- Post Falls Development: 1 of 6 units operating, 620 cubic feet per second (cfs), 1.9 megawatts (MW)
- Upper Falls Development: 1 of 1 unit operating, 620 cfs, 1.6 MW
- Monroe Street Development: 1 of 1 unit operating, 920 cfs, 5 MW
- Nine Mile Development: 1 of 1 unit operating, 1,300 cfs, 4.6 MW
- Long Lake Development: 2 of 4 units operating, 1,300 cfs, 40 MW

On June 23<sup>rd</sup>, Coeur d'Alene Lake level was at 2,127.83 feet mean sea level (msl), which is about 2 inches below normal maximum summer level. On June 24<sup>th</sup>, Nine Mile reservoir was drawn down about 6 feet due to installation of bulkheads related to reconstruction of the powerhouse. Avista planned to have the Nine Mile reservoir back to full pool in about one week.

Based on file reviews, discussions, and field observations made during the inspection, no items of noncompliance were found.

**Submitted** July 1, 2015

Benjamin H. Ellis  
Senior Project Manager  
Louis Berger

## **A. PROJECT PROFILE**

An original license for the Spokane River Project was issued on August 17, 1972, for four developments (Long Lake, Nine Mile, Monroe Street, and Upper Falls) on the Spokane River in Washington. In 1981, the Federal Energy Regulatory Commission (Commission) amended the license to include the Post Falls development. The five developments are all located along the Spokane River, which originates at the outlet of Coeur d'Alene Lake in Idaho and flows westerly approximately 111 miles to the Columbia River in eastern Washington.

### **1. Post Falls Development**

The Post Falls development includes three dams, constructed between 1906 and 1908 on the South Channel, North Channel, and Middle Channel of the Spokane River, with natural islands connecting the structures. Post Falls development includes generating facilities, nine impounded miles of the Spokane River (from the three dams to the natural outlet of Coeur d'Alene Lake), and Coeur d'Alene Lake.

The Middle Channel dam includes the following facilities: (1) a 215-foot-long, 64-foot-high dam, with a crest elevation of 2,135 feet;<sup>1</sup> (2) six 15-foot-wide, 14.8-foot-long vertical lift headgate intakes; (3) six 56-foot-long, 11.25-foot-diameter steel penstocks; (4) a six-turbine powerhouse, integral to the dam, with a total nameplate capacity of 14.75 MW; (5) a 500-foot-long, 115-kilovolt (kV) transmission line; (6) a substation; and (7) appurtenant facilities.

The South Channel dam includes the following constructed facilities: (1) a 127-foot-long, 25-foot-high dam, with a crest elevation of 2,135 feet; (2) a 37-foot-long spillway on top of the dam, with a spillway crest elevation of 2,128.5 feet; and (3) six 6-foot-wide, 13-foot-high vertical sluice gates. At the time of the inspection, Avista was reconstructing the South Channel dam with new concrete facing, spillway gates, and hoists.

The North Channel dam includes the following constructed facilities: (1) a 431-foot-long, 31-foot-high dam, with a crest elevation of 2,133 feet; (2) a spillway at elevation 2,114 feet; (3) a 100-foot-wide, 14-foot-high rolling sector gate; (4) seven 21-foot-wide, 12-foot-high radial gates; and (5) a 12-foot-wide, 12-foot-high radial gate.

The operating reservoir for the Post Falls development has a normal full-pool elevation of 2,128 feet and includes nine miles of the Spokane River between the development's dams and the natural outlet of Coeur d'Alene Lake, as well as Coeur d'Alene Lake and associated inundated portions of the St. Joe, St. Maries, and Coeur d'Alene rivers. The operating reservoir has a surface area of approximately 40,580 acres,

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<sup>1</sup> This report references all elevations to Avista's data, a variation of the National Geodetic Vertical Datum 1929.

a maximum depth of more than 200 feet, and usable storage of approximately 275,581.5 acre-feet.

## **2. Upper Falls Development**

The Upper Falls development includes two dams connected by Havermale Island located on the Spokane River, in Spokane, Washington. Upper Falls development consists of the following facilities: (1) a 366-foot-long, 35.5-foot-high concrete gravity dam across the North Channel of the Spokane River; (2) a 290-foot-long spillway across the top of the North Channel dam; (3) a 70-foot-long, 30-foot-high concrete gravity dam across the South Channel of the Spokane River; (4) three 11.8-foot-wide, 15-foot-high intake curtain headgates on the South Channel dam; (5) a 4-mile-long, 800-acre-foot reservoir with a surface area of 123 acres at a normal full pool elevation of 1,870.5 feet; (6) a 350-foot-long, 18-foot-diameter reinforced concrete penstock; (7) a single-unit powerhouse with a Francis-type vertical shaft turbine-generator unit with a nameplate capacity of 10 MW; and (8) appurtenant facilities. There is no primary transmission line associated with the Upper Falls development.

## **3. Monroe Street Development**

Monroe Street development consists of the following constructed facilities: (1) a 240-foot-long, 24-foot-high concrete gravity dam; (2) a 0.2-mile-long, 30-acre-foot reservoir with a surface area of 5 acres at a normal full pool elevation of 1,806.3 feet; (3) a 217-foot-long spillway; (4) a 332-foot-long, 14-foot-diameter penstock; (5) an underground, single-unit powerhouse with a vertical, Kaplan-style turbine-generator unit with a nameplate capacity of 14.82 MW; and (6) appurtenant facilities. There is no primary transmission line associated with the Monroe Street development.

## **4. Nine Mile Development**

Nine Mile development consists of the following constructed facilities: (1) a 364-foot-long, 58-foot-high concrete gravity dam; (2) an approximately 6-mile-long, 4,600-acre-foot reservoir with a surface area of 348 acres at the normal full pool elevation of 1,606.6 feet; (3) a 225-foot-long spillway at the crest of the dam, with two rows of 5-foot-high flashboards; (4) a 120-foot-long, 5-foot-diameter bypass diversion tunnel; (5) four intake chambers; (6) a powerhouse integral to the dam with four horizontal Francis turbine-generator units with a nameplate capacity of 26.4 MW; (7) two parallel 200-foot-long, 2.3-kV transmission lines; (8) one 200-foot-long, 13.8-kV transmission line; (9) a 150-foot-by-150-foot switchyard; (10) a 2.3-to-60/115-kV transformer and a 13.8/115-kV transformer; and (11) appurtenant facilities.

## **5. Long Lake Development**

Long Lake development consists of the following constructed facilities: (1) a 593-foot-long, 213-foot-high main dam; (2) a crescent-shaped 247-foot-long, 108-foot-high cutoff dam located about 900 feet upstream of the main dam; (3) a 23.5-mile-long, 105,080-acre-foot reservoir with a surface area of 5,060 acres at a normal full-pool elevation of 1,536 feet (Lake Spokane);<sup>2</sup> (4) four intake structures; (5) four 236-foot-long, 16-foot-diameter penstocks; (6) a powerhouse with four double-Francis-type, horizontal shaft turbine-generator units with a nameplate capacity of 71.7 MW; (7) a 207-foot-long, 56-foot-wide switch room inside the powerhouse; (8) two 115-kV transmission lines, one 0.81 miles long and the other 1.03 miles long, running approximately parallel to each other between the powerhouse and the Devil's Gap substation; and (9) appurtenant facilities.

## **6. Project Operations**

The Post Falls development typically controls water levels in the Spokane River and Coeur d'Alene Lake approximately six months a year starting in late June or July, after the spring runoff flows have peaked and largely subsided. Throughout the summer recreation season, Coeur d'Alene Lake is maintained at or near elevation 2,128 feet. Generally during the week after Labor Day, Avista begins to release stored water at the Post Falls development, resulting in a gradual drawdown in lake levels of one to two feet per month to a maximum drawdown of 7.5 feet. The timing of the drawdown varies annually based on flow conditions, weather forecasts, and energy demands. Post Falls has a minimum flow of 600 cfs, a down-ramping rate of no more than 4-inches per hour, seasonal aesthetic flows of 46 cfs in the North Channel, and releases in the spring and fall to enhance fishery resources and meet recreational needs. During the summer, if Coeur d'Alene Lake falls 3 inches below full pool, the license allows Avista lower minimum flows to 500 cfs.

Upper Falls development is operated as a run-of-river facility. At the dam, generation flow passes through a head gate and into the 350-foot-long penstock that carries the flow to the powerhouse, which is located on the south side of the river. Avista is required to spill a minimum aesthetic flow of 300 cfs through the Upper Falls bypass reach from 6:00 a.m. to one-half hour after sunset. Avista sets a gate on the North Channel dam to release the minimum flow. With leakage, Avista estimates that the actual minimum flow is closer to 320 cfs.

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<sup>2</sup> Lake Spokane is also commonly referred to as Long Lake.

The Monroe Street development is operated as a run-of-river facility. In accordance with the license, Avista is required to spill a minimum of 200 cfs over the Monroe Street spillway between the hours of 10:00 a.m. and one-half hour after sunset.

Nine Mile development is operated as a run-of-river facility. Flow not diverted for generation purposes passes through a diversion tunnel through the Nine Mile dam along the left side of the powerhouse. There are no operational or minimum flow requirements for this development.

Long Lake dam and Lake Spokane are operated as a peaking facility primarily to meet winter energy needs. The licensee usually draws down Lake Spokane slowly over a period of several weeks to several months, as needed to meet the energy demand. Although the existing license allows Avista to draw down Lake Spokane as much as 24 feet below the normal full-pool elevation of 1,536 feet, Avista typically limits drawdowns to an average of about 3 feet with a maximum of 14 feet, depending on energy demands. During the summer, Avista typically maintains the reservoir surface elevation within one foot of the full-pool elevation in support recreational uses of the lake. Except for a maximum allowable drawdown of 14 feet, there are no other operational or minimum flow requirements for this development under the existing license.

**7. Recreation Facilities**

There are 12 existing project recreation facilities that are owned by the licensee within the project boundary: (1) Q’emlin Park; (2) Falls Park; (3) Huntington Park at the Monroe Street development; (4) Trailer Park Wave Access; (5) Nine Mile overlook; (6) Nine Mile development interpretive center (“Spokane House”); (7) Nine Mile Boat Take-out; (8) Nine Mile Recreation Area; (9) Long Lake boat in campgrounds; (10) Long Lake picnic area; (11) Long Lake overlook; and (12) Long Lake North Shore campsites. These sites, which provide interpretation, boating, picnicking, hiking, scenic viewpoints, restrooms, and parking areas, are located within the project boundary. Avista contracts with others to manage the facilities, including the City of Post Falls, City of Spokane, and Washington State Parks and Recreation. In addition to project facilities, numerous other private and public recreational facilities provide public access to the project.

**B. INSPECTION FINDINGS**

Requirements	Date of Requirement	Follow-up Needed	Photo Nos.
<b>FISH AND WILDLIFE RESOURCES</b>			
Article 15 requires the licensee to, for the conservation and development of fish and wildlife resources, construct, maintain, and operate, or arrange for the construction, maintenance, and operation of such reasonable facilities.	O: 06/18/2009	No	

Requirements	Date of Requirement	Follow-up Needed	Photo Nos.
<b>Article 16</b> requires the licensee, whenever the United States desires, in connection with the project, to construct fish and wildlife facilities or to improve the existing fish and wildlife facilities at its own expense.	<b>O:</b> 06/18/2009	No	
<b>Article 401 Commission Approval and Filing of Amendments</b> requires the licensee to prepare plans in consultation with other entities for approval by Idaho Department of Environmental Quality (Idaho DEQ) and Washington Department of Ecology (Washington DOE):	<b>O:</b> 06/18/2009	No	
<ul style="list-style-type: none"> <li>• (a)(1) Discharge Flow Monitoring Plan at Post Falls development.</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 12/17/2009 <b>R:</b> 05/13/2010 <b>AP:</b> 06/18/2010	No	
<ul style="list-style-type: none"> <li>• (a)(2) Water Quality Improvement and Erosion Control Plan for Post Falls development.</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 06/11/2010 <b>AP:</b> 10/13/2010	No	15 and 18
<ul style="list-style-type: none"> <li>• (a)(3) Wetland and Riparian Habitat Protection and Enhancement Plan for Post Falls development.</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 03/26/2010 <b>AP:</b> 10/05/2010	No	13 and 14
<ul style="list-style-type: none"> <li>• (a)(4) Upper Falls Aesthetics Spill Plan</li> </ul>	<b>O:</b> 06/18/2009	No	21 and 23
<ul style="list-style-type: none"> <li>• (a)(5) Lake Spokane Aquatic Weed Management Plan</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 06/16/2010 <b>AP:</b> 01/13/2011	No	
<ul style="list-style-type: none"> <li>• (a)(6) Monroe Street Dam Sediment Management Plan</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 01/04/2010 <b>AP:</b> 03/02/10	No	
<ul style="list-style-type: none"> <li>• (a)(7) Nine Mile and Long Lake Reservoir Sediment Management Plan</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 06/11/2013 <b>AP:</b> 10/03/2013	No	
<ul style="list-style-type: none"> <li>• (a)(8) Wetlands Enhancement Plan.</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 05/29/2012 <b>AP:</b> 07/09/2012 <b>F:</b> 06/04/2014 <b>AP:</b> 09/30/2014	No	
<ul style="list-style-type: none"> <li>• (a)(9) Total Dissolved Gas (TDG) Monitoring Plan for Post Falls development</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 03/26/2010 <b>AP:</b> 12/14/2010	No	9
<ul style="list-style-type: none"> <li>• (a)(10) TDG Water Quality Attainment Plan for Long Lake Dam</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 07/16/2010 <b>AP:</b> 12/14/2010 <b>F:</b> 04/11/2013 <b>AP:</b> 08/13/2013	No	
<ul style="list-style-type: none"> <li>• (a)(11) Long Lake Dam Phase II Feasibility and Implementation Plan (DO Plan)</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 06/14/2010	No	32 and 34

Requirements	Date of Requirement	Follow-up Needed	Photo Nos.
<ul style="list-style-type: none"> <li>(a)(12) Water Quality Monitoring and Quality Assurance Project Plan (QAPP)</li> </ul>	<b>O:</b> 06/18/2009 <b>F:</b> 08/13/2009 <b>AP:</b> 09/17/2009	No	32 and 34
<b>Article 402</b> <i>Lake Spokane Drawdown</i> requires the licensee to limit the drawdown of Lake Spokane to no more than 14 feet below the normal full-pool elevation of 1,536 feet.	<b>O:</b> 06/18/2009	No	
<b>Article 403</b> <i>Operational Compliance Streamflow Monitoring</i> requires the licensee to operate and maintain the Post Falls gage (U.S. Geological Survey gage no. 12419000) to provide real-time streamflow monitoring data.	<b>O:</b> 06/18/2009	No	
<b>Article 404</b> <i>Ramping Rate Evaluation</i> requires the licensee to file a ramping rate evaluation report.	<b>O:</b> 06/18/2009 <b>F:</b> 12/11/2012	No	
<b>Article 405</b> <i>Trout Stocking</i> requires the licensee to annually stock Upper Falls and Nine Mile reservoirs and provide annual report.	<b>O:</b> 06/18/2009 <b>F:</b> 11/24/2014	No	
<b>Article 406</b> <i>Lake Spokane Fishery Enhancement</i> requires the licensee to file the Lake Spokane Fishery Enhancement and Creel Survey Plan.	<b>O:</b> 06/18/2009 <b>F:</b> 06/11/2010 <b>AP:</b> 08/05/2010 <b>R:</b> 03/29/2013	No	
<b>Article 407</b> <i>Non-native Predator Fish Removal</i> requires the licensee to enhance conditions for bull trout and file study report within three years of license issuance.	<b>F:</b> 07/17/2008 <b>O:</b> 06/18/2009 <b>F:</b> 04/04/2012	No	
<b>Article 408</b> <i>Spokane River Trout Public Education and Outreach</i> requires the licensee to file the Spokane River Rainbow Trout Fisheries Public Education and Outreach Plan.	<b>O:</b> 06/18/2009 <b>F:</b> 06/11/2010 <b>AP:</b> 02/10/2011	No	13
<b>Article 409</b> <i>Coeur d'Alene Lake Fisheries Pubic Education and Outreach</i> requires the licensee to provide education about fisheries protection and enhancement measures at the Post Falls development.	<b>O:</b> 06/18/2009 <b>F:</b> 04/28/2010 <b>AP:</b> 12/06/2010	No	13
<b>Article 410</b> <i>Coeur d'Alene Lake Aquatic Weed Management for Non-tribal Waters</i> requires the licensee to file an aquatic weed management plan for the Coeur d'Alene Lake basin on non-tribal waters.	<b>O:</b> 06/18/2009 <b>F:</b> 06/18/2010 <b>AP:</b> 01/19/2011 <b>R:</b> 04/07/2011	No	
<b>Article 411</b> <i>Reservation of Authority to Prescribe Fishways</i> reserves authority to the Commission.	<b>O:</b> 06/18/2009	No	
<b>Article 412</b> <i>Columbia River Basin Fish and Wildlife Program</i> reserves authority to the Commission.	<b>O:</b> 06/18/2009	No	
<b>Article 413</b> <i>Wetlands Enhancement Plan</i> requires the licensee to monitor wetlands at the Nine Mile development and file a report.	<b>O:</b> 06/18/2009 <b>F:</b> 05/29/2012 <b>AP:</b> 07/09/2012	No	
<b>Article 414</b> <i>Bald Eagle Management Plan</i> requires the licensee to file the Bald Eagle Management Plan.	<b>O:</b> 06/18/2009 <b>F:</b> 05/07/2010 <b>AP:</b> 05/11/2011	No	
<b>Article 415</b> <i>Transmission Line Management Plan</i> requires the licensee to file the Transmission Line Management Plan to minimize raptor injuries and mortality.	<b>O:</b> 06/18/2009 <b>F:</b> 06/09/2010 <b>AP:</b> 02/27/2011	No	31
<b>RECREATION RESOURCES</b>			

Requirements	Date of Requirement	Follow-up Needed	Photo Nos.
<b>Article 17</b> requires the licensee to construct, maintain, and operate, or shall arrange for the construction, maintenance, and operation of such reasonable recreational facilities, including modifications thereto, such as access roads, wharves, launching ramps, beaches, picnic and camping areas, sanitary facilities, and utilities, giving consideration to the needs of the physically handicapped.	<b>O:</b> 06/18/2009	No	
<b>Article 18</b> requires the licensee, so far as is consistent with proper operation of the project, to allow the public free access, to a reasonable extent, to project waters and adjacent project lands owned by the licensee.	<b>O:</b> 06/18/2009	No	
<b>Article 416</b> <i>Spokane River Developments Recreation Plan</i> requires the licensee to file a Recreation Plan and to enhance recreation resources at the Spokane River developments.	<b>O:</b> 06/18/2009 <b>A:</b> 08/10/2009 <b>F:</b> 05/26/2010 <b>AP:</b> 10/24/2011 <b>R:</b> 11/19/2012 <b>AP:</b> 06/12/2013 <b>R:</b> 05/19/2015	No	17, 18, and 24
<b>Article 417</b> <i>Post Falls Development Recreation Plan</i> requires the licensee to file a Recreation Plan to enhance recreation resources at the Post Falls development, includes the Trailer Park Wave Access Site Assessment.	<b>O:</b> 06/18/2009 <b>F:</b> 05/26/2010 <b>AP:</b> 10/24/2011	No	1, 2, 8-10, 17, and 18
<b>Article 418</b> <i>Interpretation and Education Plan</i> requires the licensee to file an Interpretation and Education Plan.	<b>O:</b> 06/18/2009 <b>F:</b> 05/26/2010 <b>AP:</b> 03/09/2011	No	1, 2, and 35
<b>Article 419</b> <i>Land Use Management Plan</i> requires the licensee to file a Land Use Management Plan to protect environmental resources. Updates to plan will be filed every 5 years.	<b>O:</b> 06/18/2009 <b>F:</b> 06/11/2010 <b>AP:</b> 03/09/2011	No	
<b>Article 420</b> <i>Aesthetic Flows Release</i> requires the licensee to release 46 cfs from the Post Falls development North Channel dam on certain days and times of the year.	<b>O:</b> 06/18/2009	No	
<b>CULTURAL RESOURCES</b>			
<b>Article 421</b> <i>Programmatic Agreements</i> requires the licensee to implement the Programmatic Agreement and file a Historic Properties Management Plan Most recent Annual Report Filed: 06/19/2014	<b>O:</b> 06/18/2009 <b>F:</b> 05/25/2010 <b>AP:</b> 02/25/2011	No	26 and 30
<b>Appendix D</b> <i>Protection of Cultural Resources</i> requires licensee to file CRMP for Coeur d'Alene Reservation	<b>O:</b> 06/18/2009 <b>F:</b> 02/18/2011 <b>AP:</b> 03/20/2012 <b>R:</b> 08/07/2014 <b>AP:</b> 09/12/2014	No	
<b>PUBLIC SAFETY</b>			
Facilities and measures to ensure public safety (18 CFR, Part 12). Revised Public Safety Plan Filed 5/15/2015; pending Commission Approval	<b>F:</b> 08/14/06 <b>O:</b> 11/30/2006 <b>F:</b> 21/21/2006 <b>O:</b> 3/23/2007 <b>F:</b> 5/15/2015	No	

Requirements	Date of Requirement	Follow-up Needed	Photo Nos.
<b>OTHER ENVIRONMENTAL RESOURCES</b>			
<b>Article 19</b> requires the licensee to be responsible for, and take reasonable measures to prevent, soil erosion on lands adjacent to streams or other waters, stream sedimentation, and any form of water or air pollution.	<b>O:</b> 06/18/2009	No	
<b>Article 20</b> requires the licensee to clear and keep clear to an adequate width lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project.	<b>O:</b> 06/18/2009	No	
<b>O:</b> Ordered; <b>18 CFR:</b> Title 18 Code of Federal Regulations; <b>AP:</b> Approved; <b>A:</b> Amended; <b>F:</b> Filed; <b>AC:</b> Accepted; <b>R:</b> Revised *Form L-1 Terms and Conditions of License for Constructed Major Project Affecting Lands of the United States, October 1975.			

**C. Comments and Follow-Up**

Based on review of project record, discussions during the site visit, and field observations made during the inspection, no items of noncompliance were found. The following comments and observations are included:

**(1) Fish and Wildlife Resources:** Article 401(a)(1) requires the licensee to implement a Discharge Flow Monitoring Plan and provide an annual report on water temperature and flow monitoring for each Spokane River development. Avista monitors flows and water temperature at each powerhouse and develops the annual report in consultation with appropriate agencies. Avista also maintains a flow and reservoir level website that provides public information about project operations, water quality and temperature, as well as other environmental measures:  
<https://www.avistautilities.com/environment/Pages/waterflow.aspx>.

Article 401 (a)(2) and (a)(9), and the Idaho water quality certification (WQC), requires Avista to implement the Water Quality Improvement and Erosion Control Plan for the Post Falls development and monitor temperature, total dissolved gas (TDG) and dissolved oxygen (DO). The licensee conducted studies between 2010 and 2014 in consultation with Idaho DEQ and Washington Department of Fish and Wildlife (Washington DFW). Idaho DEQ determined that the temperature and DO data generated by the monitoring plan supports the minimum allowable discharge required by the WQC and that license condition I.B of the WQC has been met. As such, Avista continues to operate Post Falls to meet the minimum ramp rates in the license order. At the time of the inspection, the South Channel dam was under reconstruction to replace manual gates with automatic gates. Avista and Idaho DEQ determined that balancing spill between the north and south channels may reduce high levels of TDG resulting from entrainment of nitrogen during periods of high flows. The licensee and Idaho DEQ expect the South Channel improvement will allow for better control spill through both channels and reduce

TDG over current operations. Also, as part of the erosion control measures in the plan, the licensee completed about 1 mile of shoreline stabilization on the St. Joe River, as well as shorter shoreline stabilization projects on the St. Maries and Coeur d'Alene rivers (photos 15 and 18).

Article 401 (a)(3) and the Idaho WQC requires Avista to implement the Wetland and Riparian Habitat Protection and Enhancement Plan. Avista and the agencies implement the plan by meeting annually to plan for wetland acquisitions and projects. During the inspection, we visited the 128-acre Shady St. Joe wetland mitigation project, a partnership between Avista, U.S. Forest Service, and Idaho Department of Fish and Game (Idaho DFG) (photos 13 and 14). The parcel is behind a berm on a historical channel of the St. Joe River that was dewatered when the berm near the river was modified. Avista and its partners reconnected the historical channel to the mainstream river, increased flow through the wetlands, developed ponds, planted native aquatic plants and shoreline trees. At the time of the inspection, we observed new cottonwood recruitment and extensive waterfowl use in the reconstructed wetlands.

Article 401 (a)(5) and the Washington WQC requires the licensee to implement Lake Spokane Aquatic Weed Management Plan for weed control, in part through winter drawdowns and monitoring. Article 410 requires a similar plan for Coeur d'Alene Lake. The most recent annual reports for the plans were filed on February 26, 2015 and show that the licensee has conducted herbicide weed reduction measures annually starting in 2010 and follows the drawdown and monitoring required in the plans. Avista appears to be complying with the weed management plans for all project developments.

Article 401 (a)(6) and the Washington WQC requires the licensee to implement Monroe Street Dam Sediment Management Plan, including sediment sampling, periodic removal of sediment from upstream of the Monroe Street dam, and long term monitoring sediment buildup. Avista monitors sediment build up annually and typically conducts sediment removal every other year. The last dredging was done in 2014 and Avista expects to conduct the next sediment removal in 2016.

Article 401 (a)(7) and the Washington WQC require the licensee to implement Nine Mile and Long Lake Reservoir Sediment Management Plan. While the plan calls for managing sediment in place, every 5 years the licensee conducts bathymetric studies of the reservoirs. The next study will be conducted this summer before extensive aquatic weed growth occurs in the reservoirs. Avista expects to file the updated bathymetry data with the Commission in fall 2015.

The Idaho WQC also requires the licensee file a Fish Protection and Enhancement Plan for the Post Falls development that includes public education and outreach, consistent with article 409. The plan requires a five-year work schedule that the licensee developed in consultation with agencies and filed for Commission approval on April 10, 2015. Proposed measures include habitat restoration, wetland acquisition, fish stocking

programs, and exotic species suppression programs, among others. The site visit and report indicated that fish enhancement and public education projects are on tract at the Post Falls development. The licensee has installed public information signage at the project recreation sites within project. Also, pursuant to the plan, Avista and Idaho DFG developed the Spicer Pond fishing area and boat launch on the St. Maries River (photo 13), the purpose of which is to take fishing pressure away from native bull and cutthroat fisheries in the area.

Consistent with article 401 (a)(8), article 413, and the Washington WQC, the licensee continues to implement wetland plans for Lake Spokane and Nine Mile developments in consultation with Washington DOE, Washington DFW, and U.S. Fish and Wildlife Service (FWS). The primary measures include the purchase of wetlands for conservation and rehabilitation, including the 108-acre parcel Sacheen Springs located about 50 miles north of the project on the Little Spokane River. Sacheen Springs is reported to be in good ecological condition and Avista's primary management activity since acquiring the property is annual invasive weed management. Other annual activities related to the plan include planting trees and shoreline stabilization to address runoff adjacent to the project reservoirs. Also, during the inspection, the licensee pointed to areas along Lake Spokane where they are experimenting with shoreline rehabilitation projects with private landowners. The northeast shore of the lake has numerous concrete barriers defining much of the shoreline and Avista has offered to cost share removal of the concrete and rehabilitate the shoreline with natural rocks and vegetation.

The record shows that the licensee continues to work with Washington DOE to implement the water quality plans consistent with article 401 (a)(10-12) and the Washington WQC. The licensee monitors DO downstream of the Long Lake dam during summer months (photo 34). When DO drops below threshold levels, the licensee injects air into the draft tubes (photo 32). From the licensee's studies, most of the impacts to DO in the Spokane River appear to be the result of nutrient loading from land use outside of the project boundary. Nonetheless, the licensee continues to implement wetland management, land protection and habitat enhancement, and is working on measures with Washington DFW to reduced invasive carp in the reservoir. The carp reduction project has been delayed because the parties cannot identify fishing measures that would reduce carp without impacting other native fish. Also, as part of the plan, Avista and the agencies are planning a significant retrofit of the face of the Long Lake dam to reduce TDG during high flow events. Currently, high flow spills over the 108 foot tall face of the dam into the deep plunge pool, which monitoring shows entrained TDG. Avista plans to fill in a large area of the plunge pool and shape the bottom face of the dam to redirect spill across the surface of the plunge pool. Although the design and construction plan are still being developed, Avista currently expects to complete the project by 2018.

Interior's 4(e) condition 4(a) requires the licensee to complete a shoreline erosion inventory and develop an Erosion Control Implementation Plan for tribal lands within the

project boundary. The licensee completed the inventory in December, 2011 and filed the implementation plan, developed in consultation with the tribe and agencies, on October 10, 2014. When the license was issued, the licensee and the Coeur d'Alene Tribe anticipated implementing erosion control and wetland mitigation measures on the reservation near Coeur d'Alene Lake. In subsequent years, the licensee and Coeur d'Alene Tribe identified more appropriate projects at the headwater of Hangman Creek. The licensee and tribe purchased about 656 acres, of which about 508 are wetlands. The tribe is rehabilitating Hangman Creek to improve water quality, allowing for spring freshet inundation of the historical floodplain and expanding wetlands and trout habitat (photos 11 and 12). Avista is also supporting the planting of over 4,000 trees, weed treatment, and monitoring.

In accordance with article 403, Avista installed telemetry equipment on the existing USGS gage no. 12419000b located at Corbin Park about 1.5 miles downstream of the Post Falls development. This work was completed shortly after the license was issued and the public has access to the flow gage at this website:

<http://waterdata.usgs.gov/usa/nwis/uv?12419000>

The license limits the down-ramping rate at Post Falls development to a maximum of four-inches per hour and Avista began implementing the down-ramping rate upon issuance of the 2009 license. Article 404 of the license required Avista to conduct an assessment of the potential effects of the down-ramping rate on emerged rainbow trout fry in the Spokane River approximately 10 miles downstream of the Post Falls development. On December 12, 2012, the licensee filed the ramping rate evaluation report, developed in consultation with agencies, which concluded that the four-inch per hour ramping rate is protective of rainbow trout fry in the Spokane River and the licensee continues to implement the required ramping rate.

Article 405 requires the licensee, in consultation with resource agencies, stock fish at Upper Falls and Nine Mile developments based on an annual work plan developed with the agencies. At the time of the inspection, recently stocked 4-6 inch fish were seen pooling near the Nine Mile dam. The licensee is in compliance with the article and stocks fish under the annual direction and consultation with fish and wildlife management agencies.

Article 406 requires the licensee to file and implement the Lake Spokane Fishery Enhancement and Creel Survey plan. At the time of the inspection, the licensee had recently stocked over 150,000 sterile trout in Long Lake and continues to comply with the creel study, annual consultation, and reporting requirements.

In accordance with article 407, the Non-native Predator Fish Removal Plan for the St. Joe River, Avista completed the required study of non-native fish in 2011 in consultation with Idaho DFG and FWS. The purpose of the plan was to identify the abundance and need to remove northern pike, smallmouth bass, and largemouth bass, non-native species

that were thought to predate native bull trout. However, based on the findings of the study, Avista and the agencies found that non-native fish were not of sufficient abundance to warrant removal and did not seem to have adverse effects on native trout. Therefore, Avista and the agencies agreed that no additional fish reduction measures are needed in the St. Joe River.

The licensee continues to implement the Spokane River Trout Public Education and Outreach Plan under article 408, as confirmed during the inspection. The purpose of the plan is to educate the public about wild rainbow trout and measures that can be taken by the public to minimize their impacts on native trout habitats. All of the public access sites observed during the site visit are well signed and Avista continues to work with the agencies to develop brochures to educate the public about wild and native trout.

In accordance with article 410, the licensee is required to implement a Coeur d'Alene Lake Aquatic Weed Management Plan for Non-tribal Waters that includes annual surveys for milfoil and annual implementation of up to 30 acres of herbicide treatment, based on survey results. The plan is implemented in consultation with agencies and Avista appears to be in compliance with this condition.

Article 414 requires the development of a Bald Eagle Management Plan, which was approved by the Commission on May 11, 2011. For the most part, the project boundary includes the reservoir high water mark and the licensee reports that numerous bald eagle nest near but outside the project boundary. While the licensee has no jurisdiction over land use where most of the eagles are located, the licensee complies with the condition by monitoring and counting active eagle nests annually. The record shows that the population of eagles and number of eagle nests continues to grow throughout the project area.

Article 415 requires the licensee to implement the Spokane River Transmission Line Management Plan, filed June 9, 2010. This is a 2-mile long transmission line that extends from the Long Lake dam to Devils Gap substation and complies with raptor and wildlife protection standards (photo 31). The licensee reported that, consistent with the plan, they walk the line every year and look for raptor nests or any signs of raptor injuries or mortality. Since they started the monitoring in 2010, Avista has not identified any issues with the transmission line and appears to be in compliance with this article.

Overall, applicable fish and wildlife aspects at the project were in satisfactory condition on the day of the inspection and Avista appears to be in compliance with the many environmental resource plans and consultation requirements in the license.

## **(2) Recreation, Land Use, and Aesthetic Resources:**

Article 401 (a)(4) and article 420 require the licensee to implement plans for aesthetic spill at Post Falls, Upper Falls, and Monroe Street developments. During the inspection

of Post Falls, the licensee identified the gates on the North Channel that are opened to create minimum aesthetic flows of 46 cfs during the weekend. At Upper Falls, the licensee identified numerous weirs that it installed to improve the visual benefits of aesthetic flows by spreading the minimum aesthetic flows across the rocks in the bypassed reach (photo 21). The licensee complies with the aesthetic flows at Upper Falls by opening a gate at the top of the bypassed reach that is calibrated to 300 cfs. Aesthetic flows at Monroe Street are controlled by intake through the project powerhouse as gaged from total flows downstream of the plant (photo 23). The record shows that the licensee continues to implement the minimum aesthetic flows according to the plan. When the project is not in compliance with the aesthetic flow requirements, the licensee reports to the Commission any changes from outages or other operational problems.

On May 19, 2015, the licensee filed a revised Recreation Plan consistent with articles 416 and 417. The plan provides an update of construction activities at Post Falls development, and summarizes the completion of many previously approved recreation projects throughout the Spokane River Project. The record also shows that Avista submitted as-built drawings for recreational facilities as they were completed and opened to the public. During the inspection, we visited all of the recreation sites with the exception of some of the remote boat-in campsites. The recreational facilities were well-built, and maintained in excellent condition. Avista does not manage any of their recreational sites. Instead, they contract with entities that are already operating recreational facilities and have the equipment and staff to maintaining the facilities at a high level (photos 1, 2, 8, 9, 10, 13, 17, 18, and 24). On March 25, 2015, the licensee filed FERC Form 80 documents for the project, showing that no recreational facilities exceed 75 percent utilization.

As part of the recreation plan, Avista completed the boat ramp extensions on Coeur d'Alene Lake in 2014 (photos 8 and 17), all of which start outside the project boundary and enter the project at the high water mark. In discussions between Avista and Commission staff on March 11, 2015 and March 20, 2015, Commission staff determined the boat launch extensions are one-time measures for other entities and do not serve project purposes per Paragraph No. 185 of the license. As such, Commission staff directed Avista not to file as-build drawings for these facilities. Nonetheless, Avista plans continue to track these measures as part of the approved Recreation Plan.

Article 418, Interpretation and Education Plan, requires the licensee to file an interpretation and education plan that includes a description of interpretive materials about the Spokane River developments; provisions for incorporating bald eagle education; provisions for an interpretive display regarding the Ice Age Floods; provisions for the providing information on historic properties; and an implementation schedule. Avista developed the interpretive signs in consultation with agencies and installed the signs throughout the project area (photos 1, 2, and 35).

Article 419, Land Use Management Plan, requires the licensee to protect the scenic quality and environmental resources of the Spokane River and Coeur d'Alene Lake in consultation with agencies. The licensee documented and designated land use within the project boundary. It continues to comply with these land use standards throughout the project.

Based on the site visit and review of the record, Avista appears to be in compliance with recreational, land use, and aesthetic requirements at the project.

### **(3) Cultural Resources**

With respect to article 421, implementation of the Historic Properties Management Plan is ongoing and developed in consultation with agencies. Avista is completing a major rehabilitation of the Nine Mile powerhouse and it recently completed renovations on the historic cottages near the powerhouse in consultation with Washington State Historic Preservation Officer. One substantial measure at Nine Mile development includes the installation of a large warehouse with brick exterior that follows visual queues from historic buildings at the development (photos 26 and 30). Typically warehouses at hydro projects are large steel buildings. Other improvements at project developments include protective kiosks and interpretive signs that educate the public about historical uses of the Spokane River.

The license requires the Avista to develop a Cultural Resource Management Plan in collaboration with the Coeur d'Alene Tribe and the Tribal Historic Preservation Officer, and in consultation with the Idaho State Historic Preservation Officer. The Commission approved the first CRMP on March 20, 2012 and a revision to the plan on September 12, 2014. Based on the record and discussions during the inspection, the licensee and tribes continue to work together to implement the plan that defines goals for identifying, evaluating, assessing, treating, and protecting cultural sites and properties within the reservation area of potential effects.

### **(4) Public Safety and Other Environmental Resources**

Avista keeps public safety plans at each powerhouse. From the site visit, the licensee maintains appropriate fencing and clear warning signs around all of the project developments (photos 19 and 31). Boat barriers are in place upstream of the dams and intake structures (photo 25), and an emergency grab-line is in place upstream of Upper Falls, the most urban of the developments (photo 20). All barriers, warning signs, and fencing were in good condition on the day of the inspection. Avista has installed new Part 8 signs at all of the developments (photo 22) except Post Falls, which still has an old style Part 8 sign. Avista plans to update the sign at Post Falls to match the new design in 2016.

The interior of the project powerhouses had proper containment facilities in place for oil and other liquid waste disposal. The sumps were inspected and appeared in good operating order with no oil sheen visible. Avista monitors the intake and tailwater elevations by staff gage with remote cameras and electronic gages (photos 19 and 29).

All of the powerhouses were very clean, with good signage, orderly operational rooms, a library with safety plans and the project license, and tools and safety equipment appropriately stored. The Nine Mile was an exception to this standard because it is in the middle of a significant retrofit (photos 26-28). Two of the four units are undergoing complete reconstruction from the intake structure to the draft tubes, which requires extensive demolition and retrofit work. The project continues to operate and the contractors and Avista appear to have coordinated operations and construction to protect environmental resources and maintain safety. For example, construction work adjacent to water includes 1-2 silt fences to catch runoff; most of the heavy equipment has oil catchment systems if a hydraulic line breaks or other equipment failures lead to spill of hazardous fluids; and, the licensee placed catchment and cleanup containers around the construction site for easy access if an accident occurs. To date, only one construction accident occurred that could have impacted environmental resource when a hydraulic line broke on an excavator. The contractor contained the leak immediately and no oil reached the water. Once construction is completed, the powerhouse will undergo a thorough cleaning to remove construction dust and debris. Avista expects to complete the work in 2016.

#### **D. Exhibits and Photographs**

The following are provided to show the location of the project and to illustrate project features: project location map, photo location map, and 36 photographs.

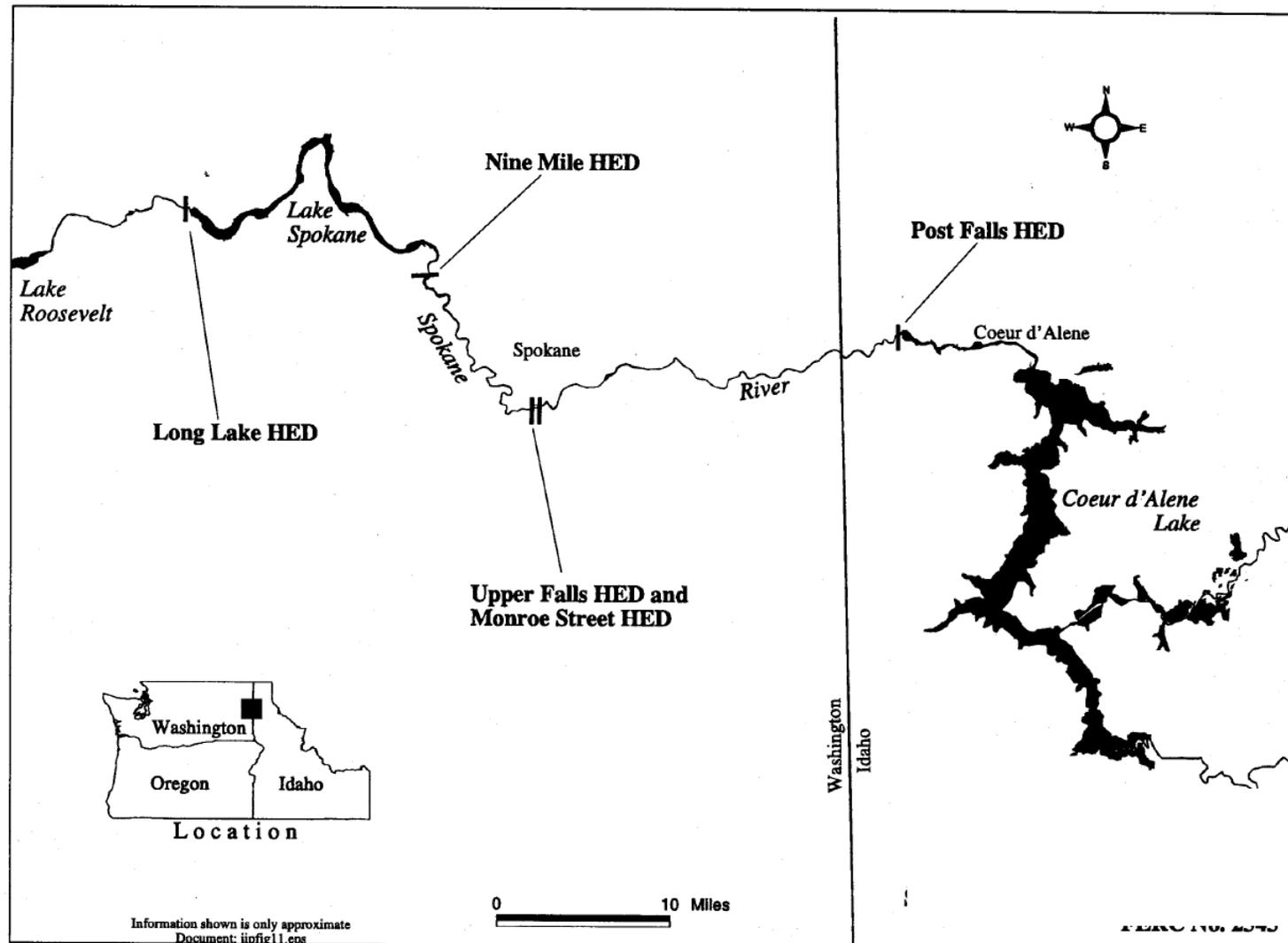


Figure 1. Project location map for the Spokane River Project, FERC No. 2545.

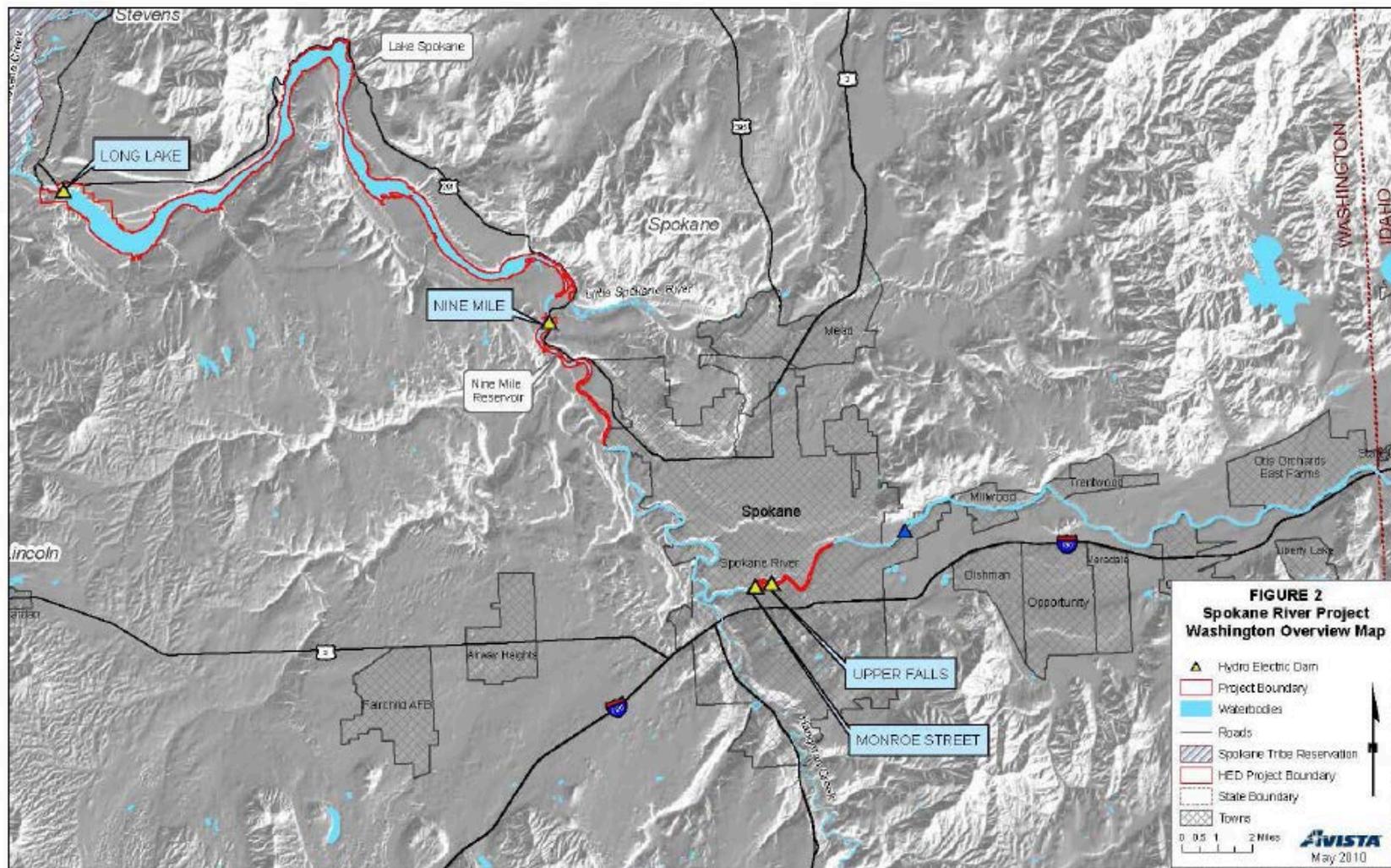


Figure 2. Project map for Long Lake, Nine Mile, Monroe Street, and Upper Falls developments.

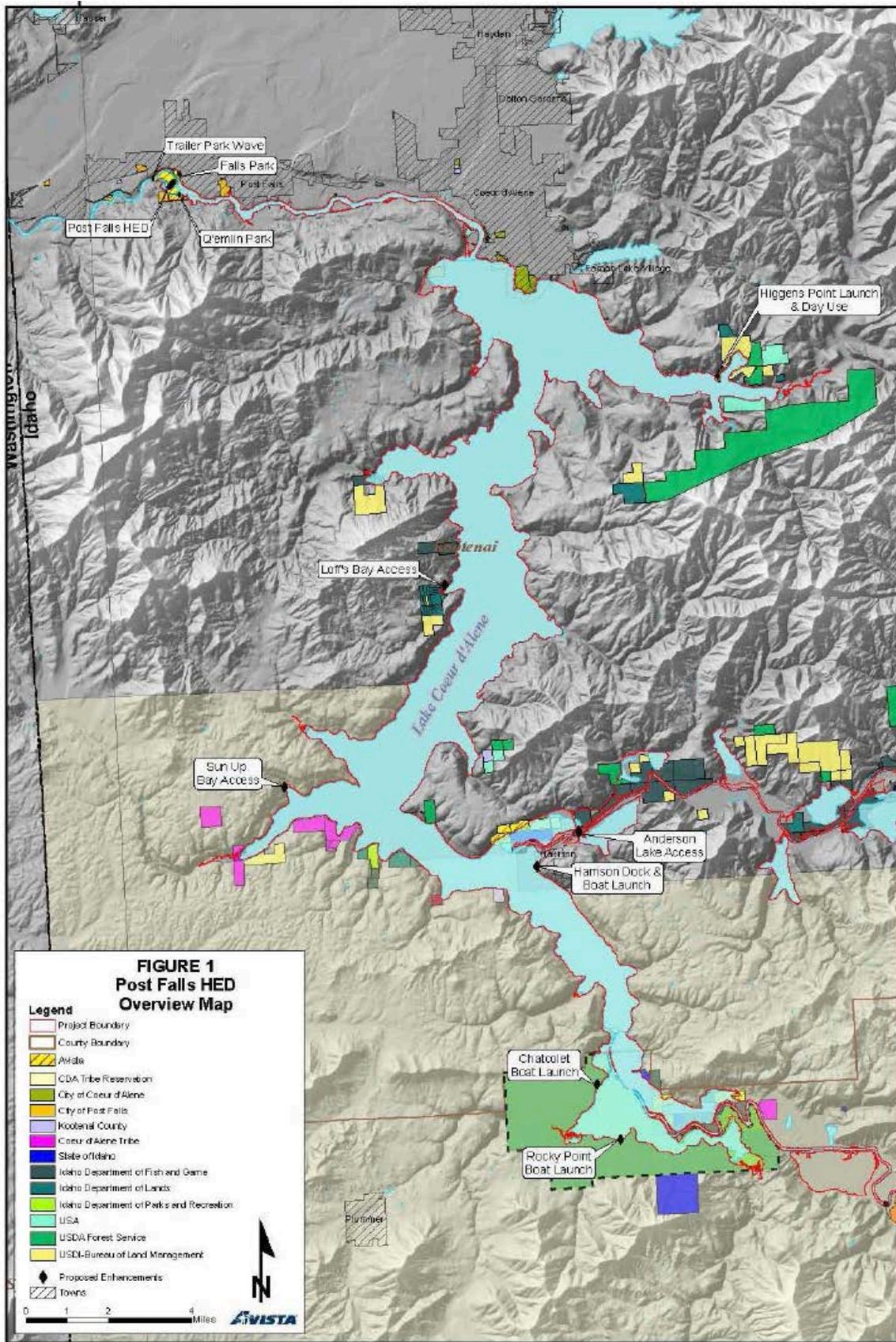


Figure 3. Project map for Post Falls development.



Photo 1: Interpretive signs at Falls Park overlooking the North Channel.



Photo 2: Falls Park entrance, parking area, interpretive signs, and restroom.



Photo 3: Post Falls head gage, staff gage, and trash rack.



Photo 4: Post Falls hazardous waste containment system and cleanup materials, typical of other powerhouses.



Photo 5: Updated transformer catchment basin at Post Falls



Photo 6: Updated bearing catchment basin for turbines at Post Falls



Photo 7: Fencing at bridge across Post Falls North Channel, typical of fencing and signage at project powerhouses.



Photo 8: Boat launch and dock at Q'emlin Park. Boat barrier for Post Falls South Channel can be seen behind the truck.



Photo 9: Typical signage at public boat launches around Coeur d'Alene Lake.



Photo 10: New Trailer Park Wave access site. This is also the area where Avista monitors TDG and DO.



Photo 11: Hangman Creek erosion control and wetland enhancement, a partnership between the Coeur d'Alene Tribe and Avista.



Photo 12: Hangman Creek riparian habitat rehabilitation.

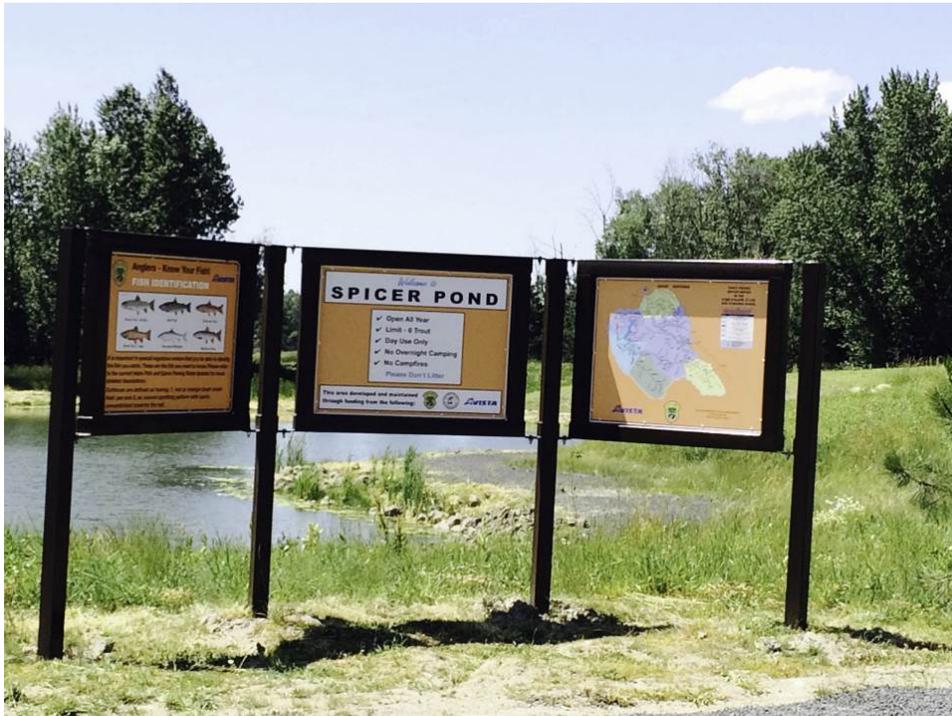


Photo 13: Spicer Pond, a rehabilitated fishing pond, boat launch, and interpretive signs on the St. Maries River, a partnership with Idaho DFG and Avista.



Photo 14: Shady St. Joe wetland rehabilitation, part of a 128 acre project with Idaho DFG, and U.S. Forest Service (Source: Google Earth).



Photo 15: Shady St. Joe new wetland rehabilitation pond.



Photo 16: St. Joe River shoreline stabilization and erosion control project, a short section of 1-mile long project.



Photo 17: New boat launch on Coeur d'Alene Lake at Harrison, typical of new boat launches around the lake.



Photo 18. New boat launch and shoreline stabilization at Medimont on the Coeur d'Alene River, a partnership between U.S. Forest Service and Avista.



Photo 19: Upper Falls intake gage and camera for staff gage.



Photo 20: Upper Falls intake and emergency grab-line.



Photo 21: Upper Falls aesthetic spill of 320 cfs. Avista installed weirs throughout the bypassed reach to maximize aesthetic flow coverage over the rocks.



Photo 22: Part-8 sign, typical of all project developments.

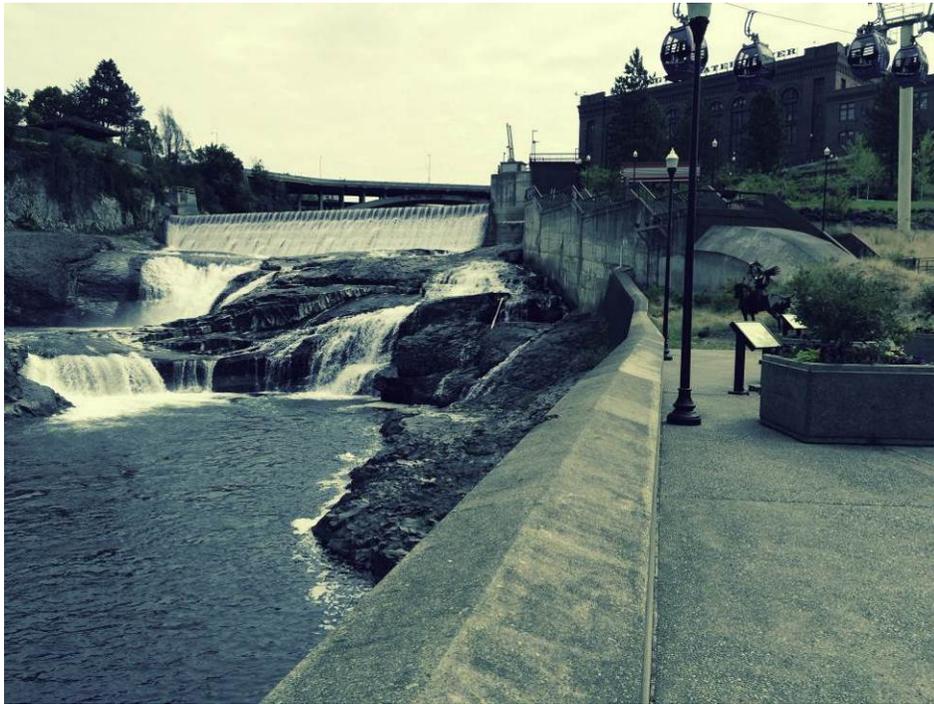


Photo 23: Monroe Street project intake, dam, and aesthetic flows. Part of Huntington Park can be seen on the right side of the image.



Photo 24: New boat launch at Nine Mile development.



Photo 25: Boat protection barrier and floating sign upstream of Nine Mile dam, typical of all developments.



Photo 26: New warehouse building at Nine Mile dam, constructed to reflect historical brick cottages and powerhouse. Most project warehouses typically modular steel buildings.

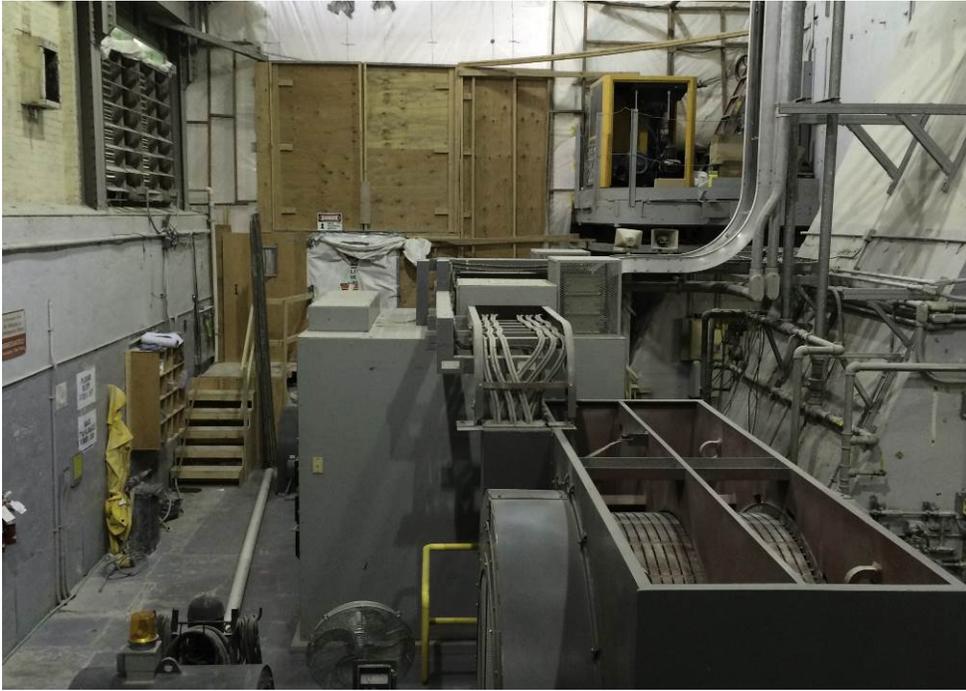


Photo 27: Operating side of Nine Mile powerhouse with a dust protection wall in the background.



Photo 28: Nine Mile powerhouse reconstruction.



Photo 29: Nine Mile powerhouse control gates and crane pad construction. Tailrace gage shown on the right side of the picture.



Photo 30: Rehabilitated historic cottage adjacent to Nine Mile dam. The cottages are leased at no fee to Washington Parks and Recreation. The new warehouse, designed to compliment historic structures, can be seen in the background beyond the white car.



Photo 31: Devils Gap substation and the termination of the 2-mile Long Lake transmission line.



Photo 32: Long Lake powerhouse draft tube oxygen injection system.



Photo 33: Long Lake powerhouse aerosol containment cabinet, typical of all powerhouses.

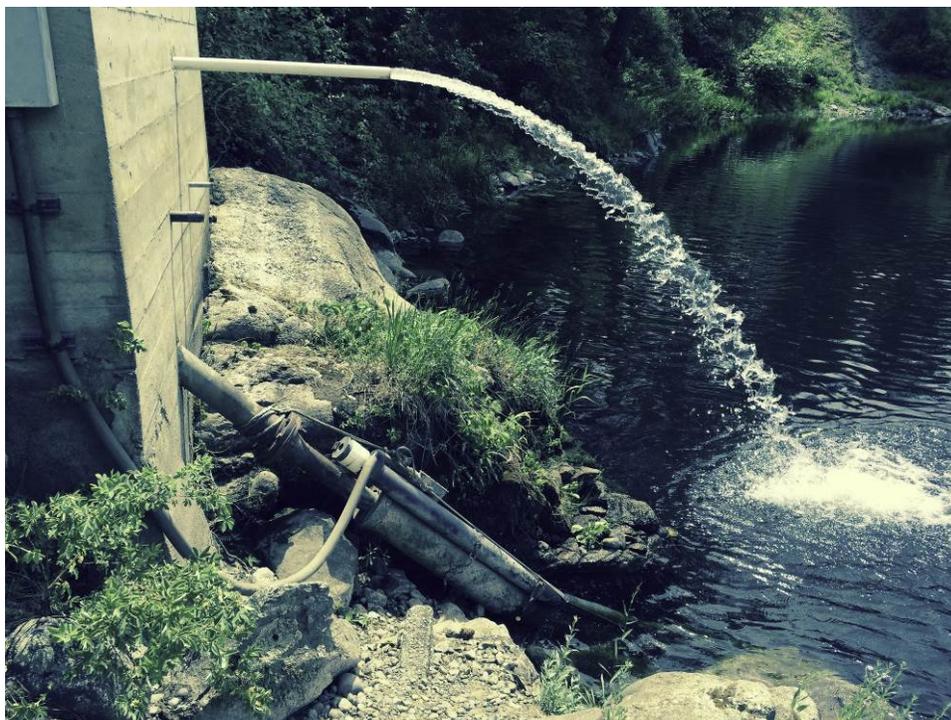


Photo: 34: Long Lake development dissolved oxygen monitoring station.

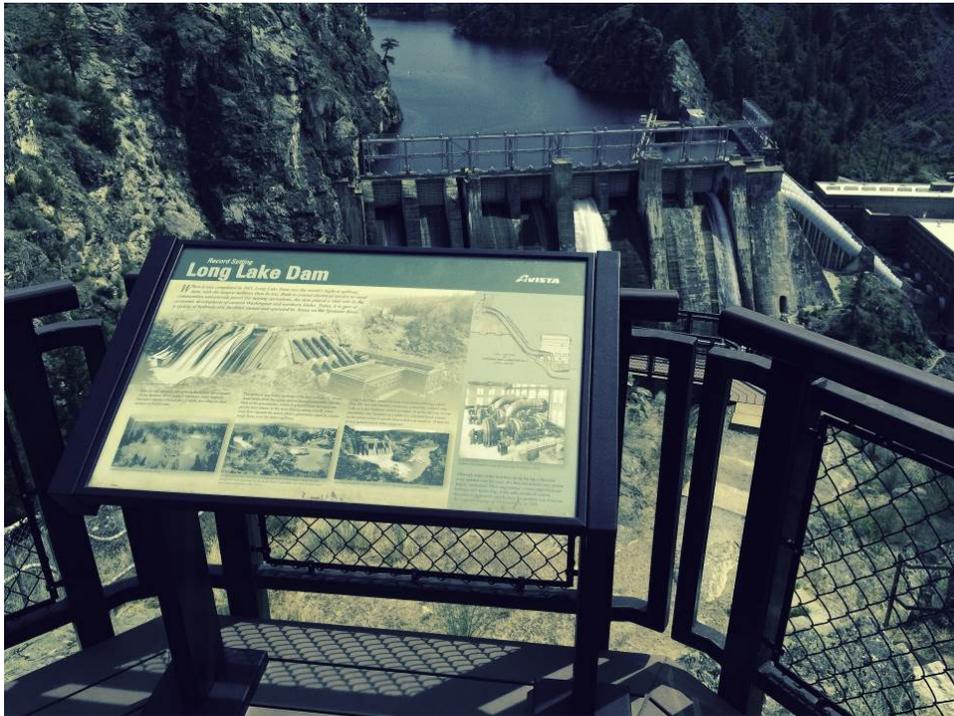


Photo 35: Long Lake dam overlook.



Photo 36: Lake Spokane boat in campsites, one of 9 recently constructed on the lake.