

**Low Impact Hydropower Institute
Recertification Review
Farmers Irrigation District Plant 2 and Plant 3
Hood River, Oregon (LIHI Certificate No. 45)**

By Nicholas Niiro

There have been no material changes affecting Project compliance with LIHI criteria, and the District continues to meet all of the criteria. I recommend recertification for a term of five years.

I. Background

An application for renewal of Low Impact Hydro Certification was filed with the Low Impact Hydro Institute (LIHI) on November 11, 2013, by Farmers Irrigation District (District or FID) for its hydropower project (Project) consisting of Plant 2 and Plant 3 on tributaries and the main stem of the Hood River, in Oregon. The original five-year LIHI Certification #45 was granted on March 25, 2009.

The original certification required:

No later than December 31, 2011 and annually thereafter FID shall, after consultation with the ODFW and ODEQ, file a report on water quality presenting the status and progress of measures designed to mitigate and reduce water temperatures in the Hood River;

No later than December 31, 2011 FID shall demonstrate that the Sustainability Plan filed with their LIHI application:

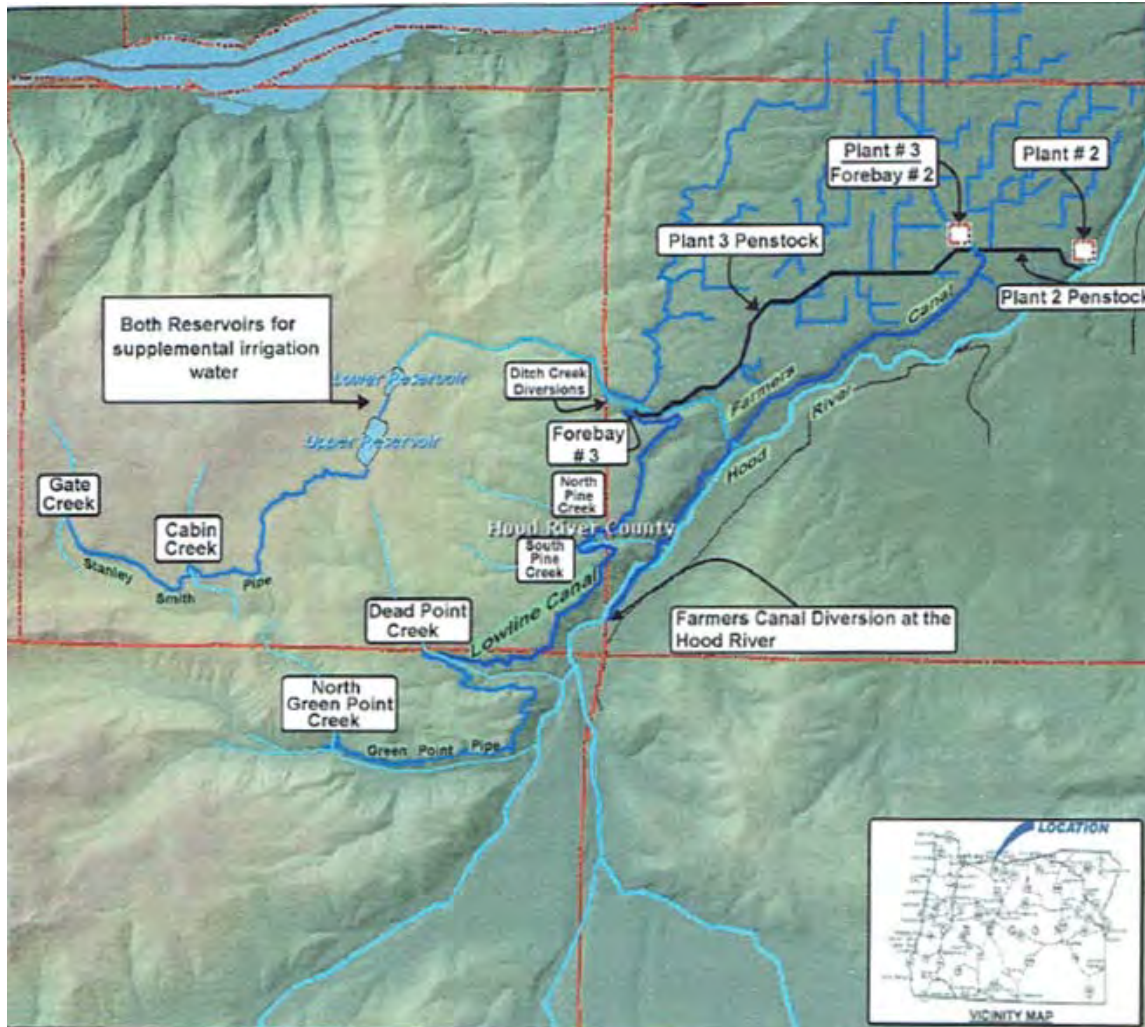
1. Meets the LIHI's requirements for a watershed enhancement fund;
2. Achieves within the Project's watershed the ecological and recreational effects of land protection described in LIHI's Watershed Protection criteria; and,
3. Has the agreement of appropriate stakeholders and state and federal resource agencies.

No later than December 31, 2011, FID shall file with LIHI a plan for recreational access to the recreational fishery at project reservoirs. FID shall obtain agreement of appropriate stakeholders and state resources agencies with that plan and file the plan with FERC.

Both Plant 2 (P-7532) and Plant 3 (P-6801) operate under Federal Energy Regulatory Commission (FERC) conduit exemptions granted on April 6, 1984, and February 1, 1983, respectively. The District applied for and received an amendment to its conduit exemption for Plant 3 on January 29, 1991. The Oregon Department of Fish and Wildlife (ODFW), U.S. Fish and Wildlife Service (FWS), and U.S. National Marine Fisheries Service (NMFS) commented on the exemption proceedings before FERC. On July 18, 2012, FERC's Office of Energy Projects inspected the intakes and powerhouses of Plants 2 and 3, without incident.

The District submitted copies of its 2012 Sustainability Plan with its application (Attachment 1). In addition, LIHI received letters from ODFW and the Oregon Department of Environmental Quality (ODEQ), indicating continued support for LIHI certification of the Project (Attachments 2 and 3).

II. Project Description



The District's Plants 2 and 3 were constructed in the mid-1980s to produce renewable energy for the Bonneville Power grid and provide revenue to the District to be used for water conservation, stream restoration, and fish screen projects. Plant 2 contains two generators – 1.0 MW and 2.0 MW – driven by horizontal axis Francis turbines; Plant 3 contains a 1.8 MW generator with a horizontal axis Pelton turbine. Each plant has its own switchgear, and electricity flows from both plants to a single substation, which is connected directly to the Bonneville grid.

The projects are run-of-river, and no dams are associated with the project's six water diversion systems. Water flows to Plant 3 forebay through the ten-mile long Lowline Canal;

water flows to Plant 2 through the five-mile long Farmers Canal. The Project has no reservoir storage other than the forebay, canal, and pipe systems. Water from Plant 3 also flows through Plant 2. The District owns the project facilities and holds easements for the canals, pipes, forebays, penstocks, and transmission lines.

The District diverts its project water through self-cleaning, horizontal fish screens, a technology developed by the District that allows fish to pass through the diversion systems without harm. The District maintains year-round minimum flows in Green Point Creek, a premier anadromous fish-bearing stream that is one of the sources of water for the Plant 3. Plant 3 is operated at reduced capacity if Green Point Creek flow drops below 250 cubic feet per second (cfs) for three consecutive days, and the plant typically does not run at all during the summer months.

In the 1990s, the Hood River was listed for threatened salmon and steelhead, and the Hood River was also placed on the Clean Water Act (CWA) section 303(d) list for water temperature. In the response to these listings, in a concerted effort to ensure that the District's plants are low impact, the District has worked with ODFW, ODEQ, and the Confederated Tribes of Warm Springs to enhance Hood River instream flow during the summer months and ensure that the District's Project does not increase water temperature.

In 2010, Hood River was designated as critical habitat for bull trout.

On August 22, 2011, ODFW, ODEQ, and the District entered into a Memorandum of Agreement (MOA) establishing operating conditions for the purpose of meeting LIHI certification (Attachment 4).

III. Low Impact Certification Criteria

A. Flows [PASS]

1. Is the Facility in *Compliance with Resource Agency Recommendations* issued after December 31, 1986 regarding flow conditions for fish and wildlife protection, mitigation and enhancement (including in-stream flows, ramping and peaking rate conditions, and seasonal and episodic instream flow variations) for both the reach below the tailrace and all bypassed reaches?

YES = Pass, go to B

N/A = Go to A2

NO = Fail

YES. The MOA requires that

[d]uring the months of July through October, when daily mean discharge in the Hood River is below 250 cfs for three consecutive days, diversion from the Hood River into Farmers Canal, as measured at the Farmers Canal broad crested weir, shall not exceed 40 cubic feet per second until the daily mean discharge in the hood river exceeds 250 cfs for three consecutive days.

Furthermore, beginning at 8:00 a.m. on October 1 and continuing to 8:00 a.m. on October 15, the District shall cease all diversion from the Hood River into Farmers Canal.

By letter dated February 24, 2014, ODFW noticed its support for recertification, contingent upon the implementation and continued operation of the MOA. By letter dated February 26, 2014, ODEQ also noticed its support for recertification, contingent on the District operating according to the above flow schedule. ODEQ stated that “FID has also continued to modify the amount of water that they divert from the Hood River during periods of low flow.” The District meets the flow criteria.

B. Water Quality [PASS]

1. Is the Facility either:

a. In Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986?

OR

b. In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?

YES = Pass, Go to B2
NO = Fail

YES. The MOA states that

ODEQ will support the District’s effort to obtain and maintain low impact hydropower certification as long as the District’s hydropower system operation does not cause thermal effects in excess of ODEQ standards.

It also requires testing of thermal effects of the project.

The 2012 Update on Thermal Impact (Attachment 5) indicates that the Project has a cooling effect on water, most notably in the summer. The report concluded that

[i]t is probable, with the input of warmer Neal Creek water above the site of the FID tailrace, that the FID tailrace water may mitigate for warmer in-stream temperatures not associated with hydroelectric plant operations, providing a net benefit to the natural system.

The District plans to continue thermal monitoring indefinitely to enhance the results of its study. These results, and ODEQ's continued support, satisfy this criteria.

2. Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?

YES = Go to B3

NO = Pass

YES. The Hood River does not meet the state's water quality criteria for temperature, so ODEQ established a TMDL for temperature, which the EPA approved in 2002.

3. If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?

YES = Pass

NO = Fail

YES. As stated above, the 2012 Update on Thermal Impact indicates that the District's project does not cause the violation. The District will continue monitoring and analyzing data. Further, ODEQ supports LIHI recertification for the District's Project contingent on continued implementation of and operation according to the MOA. In its letter dated February 26, 2014, ODEQ noted that operation according to the MOA "should have a direct benefit for stream temperature."

C. Fish Passage and Protection [PASS]

1. Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and downstream passage of anadromous and catadromous fish issued by Resource Agencies after December 31, 1986?

YES = Go to C5

NO = Fail

YES. No material change. The District has installed fish screens and must continue to release in-stream flows as prescribed above.

5. Is the Facility in Compliance with Mandatory Fish Passage Prescriptions for upstream and/or downstream passage of Riverine fish?

YES = Go to C6

N/A = Go to C6

NO = Fail

YES. No material change.

6. Is the Facility in Compliance with Resource Agency Recommendations for Riverine, anadromous and catadromous fish entrainment protection, such as tailrace barriers?

YES = Pass, go to D

N/A = Pass, go to D

NO = Fail

YES. No material change.

D. Watershed Protection [PASS]

1. Is there a buffer zone dedicated for conservation purposes (to protect fish and wildlife habitat, water quality, aesthetics and/or low-impact recreation) extending 200 feet from the high water mark in an average water year around 50 - 100% of the impoundment, and for all of the undeveloped shoreline

YES = Pass, go to E and receive 3 extra years of certification

NO = Go to D2

NO.

2. Has the facility owner/operator established an approved watershed enhancement fund that: 1) could achieve within the project's watershed the ecological and recreational equivalent of land protection in D.1.,and 2) has the agreement of appropriate stakeholders and state and federal resource agencies?

YES = Pass, go to E and receive 3 extra years of certification

NO = Go to D3

YES. The original licensing questioned the ecological and recreational equivalence of the District's Sustainability Plan to the land protection described, and it allowed the District to conditionally pass under this criteria with no extra years of certification granted.

The District subsequently demonstrated that the Sustainability Plan satisfies these criteria. After satisfying the original certification conditions, the District has continued to update, improve, and expand its Sustainability Plan. Further, ODFW and ODEQ continue to support the program.

Under the Sustainability Plan, the District has installed 9 fish screens, installed 77 flow meters, planted 7,800 trees, and conserved 3,500 acre-feet annually (from the 1995 baseline). Over the next five years, it plans to optimize and repower Plant 2, complete its Farmer Canal and North Green Point Pipe Projects, and complete its reservoir consolidation and riparian enhancement project. The Districts' Sustainability Plan is equivalent to the land protection described in D.1 and D.2.

The District continues to meet these criteria.

E. Threatened and Endangered Species Protection [PASS]

1. Are threatened or endangered species listed under state or federal Endangered Species Acts present in the Facility area and/or downstream reach?

YES = Go to E2

NO = Pass, go to F

YES. Lower Columbia River steelhead, Lower Columbia River Chinook salmon, and bull trout.

2. If a recovery plan has been adopted for the threatened or endangered species pursuant to Section 4(f) of the Endangered Species Act or similar state provision, is the Facility in Compliance with all recommendations in the plan relevant to the Facility?

YES = Go to E3

N/A = Go to E3

NO = Fail

YES. No material change.

3. If the Facility has received authority to incidentally *Take* a listed species through: (i) Having a relevant agency complete consultation pursuant to ESA Section 7 resulting in a biological opinion, a habitat recovery plan, and/or (if needed) an incidental Take statement; (ii) Obtaining an incidental Take permit pursuant to ESA Section 10; or (iii) For species listed by a state and not by the federal government, obtaining authority pursuant to similar state procedures; is the Facility in Compliance with conditions pursuant to that authority?

YES = Go to E4

N/A = Go to E5

NO = Fail

YES. No material change.

4. If a biological opinion applicable to the Facility for the threatened or endangered species has been issued, can the Applicant demonstrate that:

a. The biological opinion was accompanied by a FERC license or exemption or a habitat conservation plan?

OR

b. The biological opinion was issued pursuant to or consistent with a recovery plan for the endangered or threatened species?

OR

c. There is no recovery plan for the threatened or endangered species under active development by the relevant Resource Agency?

OR

d. The recovery plan under active development will have no material effect on the Facility's operations?

YES = Pass, go to F

NO = Fail

N/A.

5. If E.2. and E.3. are not applicable, has the Applicant demonstrated that the Facility and Facility operations do not negatively affect listed species?

YES = Pass, go to F

NO = Fail

YES. A review of the FERC docket for Plant 1 (P-6801) and Plant 2 (P-7532) indicate that no actions have been taken by the National Marine Fisheries Service or the Fish and Wildlife Service since the original LIHI certification.

F. Cultural Resource Protection [PASS]

1. If FERC-regulated, is the Facility in Compliance with all requirements regarding Cultural Resource protection, mitigation or enhancement included in the FERC license or exemption?

YES = Pass, go to G

N/A = Go to F2

NO = Fail

YES. At the time of exemption, the District solicited comment from the Oregon State Historic Preservation Officer (OSHPO), who on June 30, 1988 stated that “It is our opinion that the Project would have no effect on sites on, or eligible for inclusion, on the National Register of historic places.” There has been no material change.

G. Recreation [PASS]

1. If FERC-regulated, is the Facility in Compliance with the recreational access, accommodation (including recreational flow releases) and facilities conditions in its FERC license or exemption?

YES = Go to G3

N/A = Go to G2

NO = Fail

N/A.

2. If not FERC-regulated, does the Facility provide recreational access, accommodation (including recreational flow releases) and facilities, as Recommended by Resource Agencies or other agencies responsible for recreation?

YES = Go to G3

NO = Fail

YES. There are no dams associated with the Project, which operate as run of river. The reservoirs are used for irrigation and are not operationally connected to the hydropower system. This issue was satisfactorily addressed in the District’s letter to LIHI, dated March 6, 2012 (Attachment 6). Further, there are no recreation or public facilities associated with the Project.

3. Does the Facility allow access to the reservoir and downstream reaches without fees or charges?

YES = Pass, go to H

NO = Fail

N/A. As stated above, the reservoirs are not associated with hydropower production.

H. Facilities Recommended for Removal [PASS]

1. Is there a Resource Agency Recommendation for removal of the dam associated with the Facility?

YES = Fail

NO = Pass

NO. There are no dams associated with the Project.

IV. Reviewer Findings and Recommendations

I recommend recertification of the District's Project for a term of five years.

The District successfully satisfied the conditions on the prior license by demonstrating, through the implementation of its Sustainability Plan and MOA with ODEQ and ODFW, that the Project adequately protects water quality. The District continues to expand its Sustainability Plan.

Since the project was originally certified, the Hood River has been listed as critical habitat for bull trout. I contacted Oregon representatives of FWS and NMFS, sent them relevant information about the Project, and asked for comment. No comments have been received. The temperature monitoring report demonstrates that the Project does not adversely affect the temperature of the Hood River, and ODFW has indicated its support of the Project. I conclude that there are no adverse effects of the Project on bull trout critical habitat.

The District has complied with the terms of the original license, and the Project continues to satisfy the LIHI criteria.

