

# **ATTACHMENT C**

## **Albeni Falls Dam**

### **FY 2011 ACTION PLAN**

#### **1. Introduction**

Section II.C. of the Memorandum of Agreement (MOA) calls for the development of an Action Plan (AP) with annual updates to timely:

- Address the feasibility of reestablishing bull trout passage at Albeni Falls Dam, and if determined feasible, seek funding necessary to construct; and
- Document the relationship between dam operations and downstream water temperature, and implement operational changes that moderate downstream water temperature supportive of bull trout and other aquatic species in the Pend Oreille River to the maximum extent practicable.

The MOA identifies a coordination process as the forum for discussing on-going and proposed actions at both the policy and technical level concerning effects on fish, wildlife, and water temperature. In accordance with the foregoing requirements, this is the FY 2011AP, which will be collaboratively updated by the Kalispel Tribe (Tribe), BPA, and the Corps prior to December 1 of each year for the duration of this agreement.

#### **2. Action Plan Purpose**

The purpose of this and all future APs is to timely achieve the long term objectives for bull trout passage and water temperature set forth in Section II.C. by:

- Documenting that all actions in the AP from the preceding fiscal year (October 1 – September 30) were completed on schedule;
- Identifying specific priority actions—including a schedule of tasks, key milestones, and necessary funding requests—to be taken in the upcoming fiscal year based on the status of available funding; and
- Identifying projected key actions, milestones, and funding needs for future fiscal years.

### 3. Albeni Falls Bull Trout Passage

#### a. Long Term Objective

The long-term objective is to expeditiously complete the 2000 USFWS BiOp requirements related to bull trout passage including completing the feasibility study and should passage be feasible and recommended, to work through agency decision-making processes and associated funding requests in rapid progression.

In December 1999, the Corps and BPA (Action Agencies) entered into consultation with the United States Fish and Wildlife Service (USFWS) to address the effects of operating the Federal Columbia River Power System (FCRPS), including Albeni Falls Dam, on listed species under the Endangered Species Act (ESA), 16 U.S.C. § 1536. The USFWS issued a Biological Opinion on 20 December 2000 (2000 USFWS BiOp) concluding that the proposed action was not likely to jeopardize the continued existence of bull trout and identifying reasonable and prudent measures (RPM) to minimize the level of incidental take associated with the Action Agencies' proposed action.

The 2000 USFWS BiOp included the following RPM for bull trout at Albeni Falls Dam:

- a. *By October 1, 2004, the action agencies shall conduct a feasibility study for reestablishment of two-way passage of adult and sub-adult bull trout at Albeni Falls Dam. This study must include observations of movement and survival of radio tagged bull trout from Lake Pend Oreille, and survival of adult and sub-adult bull trout passing through or over Albeni Falls Dam. The study must also analyze the feasibility of structural improvements such as fish ladders and measures to guide fish away from the turbines.*
- b. *Based on the results of the study, by October 1, 2005, the action agencies shall consult with the Service, as necessary, on the decision to reestablish fish passage at Albeni Falls Dam. If fish passage is determined to be necessary the action agencies will seek appropriations for the construction of the facility by October 1, 2008.*

The Corps signed a Record of Consultation and Statement of Decision in May 2001 to implement the 2000 USFWS BiOp and indicated that the agency would take the following actions in regards to bull trout:

#### **“FUTURE STUDIES OF OPERATION AND CONFIGURATION MODIFICATIONS**

The Corps is continuing to pursue configuration studies of potential system improvements identified in NMFS' and USFWS' 2000 BiOps. Some configuration studies are evaluating structural modifications that could be made to Federal projects on the lower Snake and Columbia rivers to improve juvenile salmon migration. There are also evaluations recommended to examine modifications at the

storage projects for bull trout and white sturgeon. The biological opinion also recommends that the Corps conduct several studies of the operation of the FCRPS to address improvements for listed species. The Corps is committed to pursue funding to conduct these studies. The exact scope and schedule of each study will be dependent upon congressional appropriations, public input, compliance with applicable laws and regulations and other procedural requirements.

**b. FY 2011 Actions/ Key Milestone Activities**

The following key milestone activities, set forth below, identify the Corps' efforts for FY 11 for this Feasibility Study. Achieving these milestones is amongst the Seattle District's top priorities for FY 2011.

- i. Prototype Design Workshop w/ stakeholders (Dec 7-8 2010):** The Corps' Seattle District held a workshop at Albeni Falls Dam, which included participants from the Corps, Kalispel Tribe, BPA, U.S. Fish and Wildlife Service, and other stakeholders. The objective of this workshop was to develop design criteria for an experimental entrance facility prototype (prototype) that will provide critical information to aid the feasibility evaluation for bull trout passage at Albeni Falls Dam. The prototype will allow the project team to test several entrance types, velocities, and attraction flows to determine whether bull trout will be attracted to and enter the facility at the preferred location.
- ii. Completion of the Draft Existing and Without Project Conditions Report (September 2011):** The Corps' process for decision-making includes development of the *Existing and Without Project Conditions Report* (Report). The purpose is to describe the existing baseline conditions and projects 50 years into the future assuming no modification to Albeni Falls Dam. This report reviews and summarizes existing information from previous studies in the project area and technical study documentation related to bull trout and fish passage, Albeni Falls Dam operations, natural and cultural resources of the area and other pertinent information. Seattle District staff will coordinate with the Kalispel Tribe regarding the development of a draft "existing" and "without project conditions" report. The "existing" and "without project" conditions are used to characterize the project area and serve as a reference for comparing each alternative solution. This draft report, along with the written scope of the next steps of analyzing alternatives, will be available for review by the Kalispel Tribe, BPA, resource agencies and the Corps no later than **September 30, 2011**. These components are the subject of the Feasibility Scoping Meeting (FSM) after an internal Agency Technical Review is completed as part of the Corps review process.

**c. Projected Actions/Key Milestones (Post FY 2011)**

The following are actions/key milestones that are projected to occur after FY 2011; these actions/key milestones will be reviewed and edited, deleted, or added to as appropriate in the process of updating the relevant FY action list.

- i. Prototype Design Complete (2012):** The design criteria for the prototype developed during the December 2010 workshop will be used to complete a 100% design of the prototype. The Corps' goal is to construct and begin operating the prototype in FY 12. This schedule assumes the Corps' requested funding is available and significant design and/or construction issues do not arise. In the event funding or design/construction issues do arise, the Corps will meet with the Tribe to discuss.
- ii. Feasibility Scoping Meeting (FSM) (2012):** The description of the existing and without project condition will be the subject of discussion at the FSM with the Kalispel Tribe, BPA, resource agencies, and the Corps (District, Division and Headquarters). The purpose of the FSM is to have the Tribe, BPA and Corps (district, division, HQ) agree on the existing without project condition and the approach to move forward into the next phases of the feasibility study of analyzing alternatives.
- iii. Finish construction prototype and begin experimental operation (2012)**
- iv. Draft Feasibility Report (August 2015)**
- v. Final Feasibility Report (TBD).**
- vi. Post Feasibility Report Meeting (TBD):** Within 60 days of the issuance of the approved feasibility report, the Corps, BPA and Tribe will meet to discuss the report and to identify next steps, including agency decision making processes in regards to the report.

**4. Albeni Falls Dam Operational Releases for Downstream Water Temperature Moderation Supportive of Bull Trout and Other Aquatic Species in the Pend Oreille River.**

The Tribe, BPA, and the Corps share a concern about downstream water temperature in the Pend Oreille River, particularly with respect to late summer/early fall (defined for purposes of the AP as August 15<sup>th</sup> to the end of October) water temperature effects on bull trout and other aquatic species.

### **a. Long Term Objective**

The long term objective is to operate Albeni Falls Dam in late summer and early fall to improve downstream water temperature for bull trout and other aquatic species in the Pend Oreille River to the maximum extent practicable. The first priority toward this end is to assess whether releases from Albeni Falls Dam can decrease downstream water temperature during this critical time period. To make this assessment, the Corps and Tribe agree to engage in a joint investigation of operational adjustments through modeling analyses and experimental releases for downstream water temperature moderation. This investigation will be conducted in three phases.

In phase 1, a technical team will evaluate the relationship between potential operational adjustments and downstream water temperature. During this phase, both post- and pre- Labor Day operational releases for downstream water temperature moderation will be evaluated using an agreed upon model. In phase 2, information derived from the phase 1 modeling effort will be used by the technical team to develop criteria for the timing and duration of post-Labor Day experimental releases.<sup>1</sup> The recommendation to implement the experimental post-Labor Day release operation will be addressed annually in the development of the annual Action Plan, as submitted for inclusion into the water management plan. If modeling results indicate that pre-Labor Day releases may result in improved water temperatures, the Corps, with the support of the Tribe and BPA, will also initiate the requisite processes to assess effects associated with pre-Labor Day releases.<sup>2</sup> As part of phase 2, the Corps, Tribe, and BPA will develop a monitoring plan for experimental releases for downstream water temperature moderation. In phase 3, the Corps and Tribe will use information from the modeling effort, experimental releases, and results from the monitoring to inform future operations and if appropriate, the requisite processes necessary to consider a decision to implement a pre-Labor Day release in a revised long term operational plan. The Corps and the Tribe agree that a primary objective in a revised long term operational plan is moderation of downstream water temperatures supportive of bull trout and other aquatic species in the Pend Oreille River to the maximum extent practicable.

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<sup>1</sup> The Water Control Manual currently permits initiation of Albeni Falls drafts after Labor Day. For an early post-Labor Day initiation of releases, appropriate coordination with the public and regional forums such as the Technical Management Team would occur.

<sup>2</sup> The Water Control Manual gives the Corps the discretion to adjust its operations, and to amend the Water Control Manual if the operational changes are not currently addressed by the project's existing documentation. Implementation of a pre-Labor Day release for downstream water temperature moderation requires additional processes and analyses ensuring that the proposed operational change is consistent with applicable statutes and regulations, including the Corps's ESA and NEPA responsibilities, and modification of the existing Water Control Manual pursuant to 33 C.F.R. 222.5.

## **b. Summary of Existing Water Temperature Assessment Efforts**

To date three different CE-QUAL-W2 models have been developed to simulate temperatures in the Pend Oreille River system: (1) “The Albeni Falls Model” - Idaho Department of Environmental Quality (IDEQ) contracted with Portland State University (PSU) to develop and calibrate a hydrodynamic and water quality model of the Pend Oreille River from Lake Pend Oreille to Albeni Falls Dam (AFD) using CE-QUAL-W2 (PSU 2006). This model was updated by the Corps (Schneider and Easthouse 2009); (2) “The Box Canyon Model” - Washington Department of Ecology (WDOE) contracted with PSU to develop and calibrate a CE-QUAL-W2 model for the segment of the river stretching from below AFD to Box Canyon Dam, including waters of the Kalispel Tribe (PSU 2007); and, (3) “The Boundary Model” - Seattle City Light contracted with Battelle to develop and calibrate a CE-QUAL-W2 model for the segment of the river from Box Canyon Dam to the Canadian border.

## **c. FY 2011 Actions/ Key Milestone Activities**

In 2011, the Corps, Tribe, and BPA will initiate the first and second phases of their water temperature study. In order to assist decision makers on late summer/early fall operations, these Parties will work collaboratively on: (1) technical evaluations to assess effects of releases on downstream water temperatures, developing criteria for timing and volume of an experimental release operation, and developing a monitoring plan; (2) a policy team recommendation concerning triggering conditions for and the timing, duration, and magnitude of an experimental release operation; and, (3) developing language to incorporate the policy team’s recommendation into the proposed draft 2012 Water Management Plan.

### **i. Technical Evaluations**

The Tribe, BPA, and the Corps agree that criteria for timing and duration for experimental releases should be developed in order to assess the effect of this operation on water temperature downstream of Albeni Falls for the benefit of bull trout and other aquatic species. To develop these criteria, the Tribe, BPA, and the Corps will determine the appropriate model by resolving concerns about assumptions in existing models. The parties acknowledge the limitations of the existing water temperature models, and the goal of this effort in 2011 is to jointly utilize a model that will allow these Parties to develop an experimental release plan for inclusion into the annual WMP.

#### **a) Review of the Albeni Falls Model and Box Canyon Model (May 2011)**

The Corps and Tribe policy representatives will assign their respective technical team to work together to review the model parameters of the existing Albeni Falls Model as modified by the Corps, and the Box Canyon Model. The technical team will work

to resolve where possible, with assistance of a mutually agreeable facilitator, any technical differences in the data being used, and/or the validity of the existing models to replicate water temperature for the geographic scope of the model.

After the completion of the technical review of these models by the Tribe and Corps, a meeting will be held to brief policy representatives of the Tribe, Corps, and BPA on the results of that review. The intent is to assess and understand the limitations of the models and the utility of the models for evaluating 2011 operations. The Tribe, BPA, and the Corps recognize that any modeling effort has inherent limitations in terms of its accuracy and ability to simulate temperature changes that may actually occur with any operational change. If issues remain between the parties that the policy representatives agree need further work, the policy representatives will identify the course of action to be taken in 2011 or future years. This could include an independent review by Portland State University or another third party neutral selected by agreement of these parties. Outstanding technical disputes shall be resolved by the policy team taking into account the best available science and criteria that are most protective of bull trout.

**b) Modeling of Operational Options (May/June 2011)**

If the policy representatives agree that the models are adequate to conduct an analysis of operational options, the joint technical team will be directed to evaluate different operations at Albeni Falls Dam that have the potential to lower water temperature in the late summer/early fall in comparison to current operations. The intent of this step is to evaluate the sensitivity of different operations to lower downstream water temperature. This will include completion of analysis of a post-Labor Day experimental release for downstream temperature moderation, and initiation of analyses for pre-Labor Day releases for downstream water temperature moderation.

The Corps, BPA, and the Tribe will discuss and agree on how to interpret and assess the model results, conferring with Portland State University or a mutually agreeable third party neutral if necessary. The technical team will develop criteria for timing and volume of an experimental release operation. It is recognized that weather conditions and runoff characteristics may vary the timing of the start of the draft and the outflows. Outstanding technical disputes shall be resolved by the policy team taking into account the best available science and criteria that are most protective of bull trout.

**c) Development of a 2011 Monitoring Plan (June 2011)**

The Tribe, BPA, and the Corps agree to work collaboratively on a monitoring plan to assess the anticipated benefits of experimental post-Labor Day release from Albeni Falls Dam. A technical team will be identified by May 2011 to begin the discussions and development of an annual monitoring plan. The plan will include, but not necessarily be limited to, developing a temperature monitoring plan to assess the relative Pend Oreille River water temperature change from an earlier post-Labor Day release compared to the current operation downstream of Albeni Falls Dam.

Observed temperature data collected from an earlier post-Labor Day release will be compared to theoretical temperature data output from the model under normal operating circumstance. Funding in FY 2011 for all parties is limited to existing planned and budgeted efforts. The temperature monitoring plan may be modified in future years as needed to address critical uncertainties.

**ii. Meeting of Policy Representatives (August 2011)**

The Tribe, Corps, and BPA policy representatives will meet to be briefed on the technical results of the modeling effort and monitoring plan development. After consideration of the results of the modeling, including the criteria for timing and volume of experimental releases, the policy representatives will develop a plan that specifies triggering conditions for a post-Labor Day experimental release, the operational response when such conditions occur, and the regional coordination process necessary to implement the proposed operation. Depending upon the results of the modeling effort, additional modeling or analysis may also be warranted. The Policy Team will also discuss modeling results of the pre-Labor Day release, and if sufficient information is available to suggest this operation would improve downstream temperatures in the Pend Oreille River, initiate the necessary processes on a pre-Labor Day release.

**iii. Integration of the Policy Team Recommendation into the Draft 2012 WMP (August/September 2011)**

The Tribe, Corps, and BPA will appoint representatives to collaboratively draft language to incorporate the Policy Team's experimental release recommendations into the draft 2012 WMP. The draft language will be submitted to the Policy Team no later than September 15<sup>th</sup>, 2011, and the Policy Team will make any final revisions in order to timely include its recommendations in the draft update of the WMP. This addition to the WMP shall be carried forward in the annual WMP for the duration of the MOA unless new information becomes available and the Tribe, Corps, and BPA agree that a modification is appropriate.

**d. Projected Actions/Key Milestones (Post FY 2011)**

**i. Preparation of the FY+1 AP (by December 1, FY)**

Policy representatives of the Tribe, BPA and Corps will meet in December 2011 and annually thereafter to review the implementation of the prior year's AP. Lessons learned and improvements will be identified and incorporated into the upcoming FY's AP.

**ii. Discuss project cost estimates for FY+2 (January/February FY )**

**iii. Meeting of Policy Representatives (June FY)**

**iv. Regional Coordination of 2012 Operations (July FY)**

If a release for downstream water temperature moderation immediately following Labor Day is consistent with the WMP or otherwise agreed to by the Tribe, BPA, and the Corps, these parties agree to work collaboratively through the regional coordination processes to implement the operation. This includes providing technical information and supporting the rationale for operations at public meetings, the Regional Forum Technical Management Team meetings, or other regional forums. The Corps, Tribe, and BPA are committed to the extent practicable to an Albeni Falls Dam late summer/early fall operation which will take into account criteria that are most protective of bull trout.

**v. Post-Labor Day experimental release (September FY)**

The Corps will release flows for downstream temperature moderation immediately following Labor Day consistent with the WMP or otherwise agreed to by the Corps, Tribe, and BPA.

**vi. Policy check-in on the outcome of experimental operations (December FY)**

Policy representatives of the Tribe, BPA, and Corps will meet annually in December to review any test operations, results of monitoring, and the regional coordination process. Lessons learned and improvements will be identified and incorporated into the AP for the next fiscal year.

- vii. Create a long-term operational plan to support downstream water temperature supportive of bull trout and other aquatic species in the Pend Oreille River to the maximum extent practicable (Ongoing)**

The collaborative work under phases 1 and 2 of the joint water temperature investigation set forth in this AP is intended to inform a long-term operational response in conjunction with phase 3. The Corps, Tribe, and BPA agree to work toward completing all three phases as expeditiously as possible.