USACE Portland District (NWP) FFDRWG Update Form

February 2015

Changes from last update are highlighted in Yellow

PROJECT INFORMATION

Project Title	Bonneville Adult Fish Facility Improvements
SCT Reference Number	
Project Manager (PM)	Jeff Ament (NWP, 503-808-4713)
Technical Lead (TL)	Steve Sipe (NWP, 503-808-4957)
Biologist/Coordination	Jon Rerecich (NWP, 503-808-4779)

PROJECT DESCRIPTION

Initial general problem statement: *Adult fish exiting the brail pool and being bypassed were getting trapped against the grizzly.* The following improvements were made in the 2012-2013 IWW period

- Add an observation box to aid in fish recovery before fish enter the brail pool
- Change the design of the overflow weir, just downstream of the grizzly, to add a porosity plate, to draw some flow from lower in the water column
- Extended the bypass pipes into the channel outside the lab (the invert elevation was designed to be about 6" above the water line, but the invert ended up at the waterline). Also added more water to these pipes.
- Added a baffle and floor and wall plating to the pool just outside of the brail pool. This was to provide lower velocities at the exit of the brail pool and breakup an eddy that was forming in this area. This was added after it was determined that the porosity plate listed above didn't provide enough reduction in velocities at the exit of the brail pool.

Then during the 2013 fish collection season additional mortalities were noted, it was unclear if these additional morts were due to better reporting, or an actual increase in mortality. In addition many shad built up against the trash rack causing a blockage and raising the water level. This raise in water level resulted in water being backed up into the bypass pipes, and seemingly allowing bypassed fish to stay in the pipe attempting to go back upstream in the pipe, to the point of exhaustion. Midseason in 2013, the extensions to the fish bypass pipes were removed. All of this requires follow-on modifications.

After analyzing these additional morts the PDT decided to pursue the following actions:

1. Strengthen the center divider on the observation boxes.
2. Provide for better trash raking, to minimize build-up of shad on the grizzly.
3. Determine optimum exit channel flow conditions
    a. Perform additional testing on the minimize floor and wall plating and the minimum depth of baffle to allow shad (and other fish) better egress conditions. This testing resulted in the baffle submergence being reduced, and some plating being removed.
    b. Investigate bypass mode for nighttime operations, that would provide zero flow (or as low as possible) in the lab to entice fish to exit – should greatly improve shad departure over night, and minimize fish falling into the lab overnight.
    c. Make baffle movable
4. Bypass pipes
    a. Investigate a greatly increased volume of water into the bypass pipes
    b. Investigate a new layout of the bypass pipes, to provide for better passage

CURRENT SCHEDULE

With the limited funding that was available in FY14, only items 1, 2 3a&b, and limited 4a was implemented. These actions, although limited from the original list, showed promising hydraulic conditions. Throughout the 2014 spring, summer and fall fish passage season acceptable survival of fish passing through the lab was achieved. Therefore no further design changes will be made. However, the PDT is currently working to upgrade the baffle to a more permanent structure and adding a water level sensor to minimize false water elevation alarms.

PROGRESS AND KEY ISSUES (List)

Final updates will be complete prior to the spring collection season, at which time, this PDT will close out this project.

FFDRWG REVIEW NEEDED AT MEETING? (If YES, list discussion topics below)

No.