

**OFFICIAL COORDINATION REQUEST FOR
NON-ROUTINE OPERATIONS AND MAINTENANCE**

COORDINATION DATE- 1 March 2011

PROJECT- John Day Dam

RESPONSE DATE- 2 March 2011

Description of the problem - Thank you to those who provided comments on the 60% Plans and Specifications package for the John Day Dam North Fish Ladder entrance improvements. The design team is currently reviewing comments and continuing design efforts.

The heavy loads and crane associated with the new variable width weir to be installed at the entrance necessitate reinforcing of the stop logs that currently shut off the unused (it is NOT open during the fish passage season) South Entrance. For those who are not familiar with this entrance, it faces south, on the Spillbay 1 side of the fishway structure. Our original design approach involved replacing the existing steel stop logs with reinforced concrete stop logs, however, structural engineer Mike Crump recently suggested an alternative concept that would permanently close this entrance (see pdf). A solid concrete wall (from ladder floor to walking surface: 150'- 185') would replace the concrete stop logs. Doing this would be beneficial for several reasons:

1. Simpler and less expensive structural system for the deck reinforcing at the 185 level. Construction would be in the dry, which means less dive work relative to stop log construction/installation. Easier to construct = less \$ and less time.
2. Smoother flow hydraulically through the ladder (the CFD originally modeled the channel this way).
3. Elimination of stop logs which means less maintenance and fewer (if any) leaks.

If for whatever reason the wall needs to come out, we can design it with that in mind. I don't foresee any scenarios in which we'd want to operate the South Entrance (and I am including lamprey considerations). The design team needs to have resolution on this question very quickly so we can meet our design deadlines. If possible, please provide comments to me by COB tomorrow (March 2).

Type of outage required- No additional outage required. This action would permanently close the north fish ladder south entrance.

Impact on facility operation- The entrance to be permanently close is not used. There should be no impact to facility operation.

Length of time for repairs- No additional length of time for repairs.

Expected impacts on fish passage- no impacts to fish passage since the entrance to be permanently closed is not used and the work will occur during the outage already coordinated for the North Fish Ladder entrance improvements.

Comments from agencies

1. Gary Fredricks (NOAA Fisheries): I don't have any objections to walling this entrance off. It hasn't been used in years for various reasons.
2. Tom Lorz (Columbia River Inter-Tribal Fish Commission): I don't see any reason we could not move forward with this, the only issue is if we lose a number of pumps, which should not happen after all the work. Is there any reason we would use this entrance? Looking at the FPP I cannot see one, but Gary Fredricks might have some comments. First looks says it should be ok. Thanks for doing some creative thinking.
3. David Wills (U.S. Fish & Wildlife Service): I support eliminating the south entrance stop logs and sealing up the opening for the reasons explained below.
4. Chris Peery (US Fish & Wildlife Service): I do not foresee how this mod would have a negative effect on lamprey or salmon passage.
5. Patrick Luke (Yakama Nation): Thanks for the email. In response to the work being proposed - what is the goal of this work and is this suppose to help lamprey? The priority should be on better passage for lamprey (same song and dance). We seem to dance around the major issues on passage, but it seems lamprey passage is secondary on this side of the river. I bet for the same cost a LAP system or something to break up the velocity at the bottom of the entrance would help more than this cement block. The changes I would like to see FINALLY, would be for the ACE mimicking real live habitat so adult lamprey could pass...build a LAP system to help them get over JD. Not a diversion...
6. Bob Cordie (TDA Project Biologist) agreed that this would be beneficial and noted that similar closures have been done at other fishways.

Response to Comments (S. Tackley, 503-808-4751):

The concrete work described here is a structural component of the larger John Day North Fish Ladder modifications. We need to reinforce the deck of the fishway entrance area to accommodate the new weir we are planning to install. This is all part of a major overhaul of the entrance to improve the hydraulics and design features for both lamprey and salmon:

1. The "keyhole" style entrance weir will be similar to the one installed at the Cascades Island ladder at Bonneville (but should perform better hydraulically).

2. New auxiliary water supply pumps will provide sufficient water flow in the entrance area and transition pool to encourage proper upstream orientation (current flows are confusing).
3. Bollards along the bottom will break up the flow, immediately inside and outside the entrance weir.
4. Three lower ladder (transition pool) weirs will be removed to eliminate unnecessary obstacles.
5. We will work with NOAA Fisheries (Moser) to design an LPS inside the entrance area. Although the LPS would temporarily lead to the tailrace deck, near the fishway entrance, after a couple of years of performance evaluation and adjustments, the plan would be to extend the LPS to the upper ladder section or the forebay.
6. The modifications will include replacing all the 1-inch diffuser grating and upstream trash racks with 3/4-inch criteria grating to keep lamprey from accessing diffusers in the lower ladder and entrance area.

John Day North Fish Ladder is the poorest performing ladder for salmon in the Lower Columbia and Snake in terms of passage time, turn around issues, etc, so this overhaul presents us with an opportunity to improve passage conditions for both salmon and lamprey. The final Design Documentation Report (DDR) for this work is available upon request.

Final results- If the PDT is all on board, please move forward with the concrete wall concept (no stop logs; no screen/grating on tailrace side). Thank you for giving me the opportunity to discuss this idea with the region.

Please email or call with questions or concerns.
Thank you,

Sean C. Tackley
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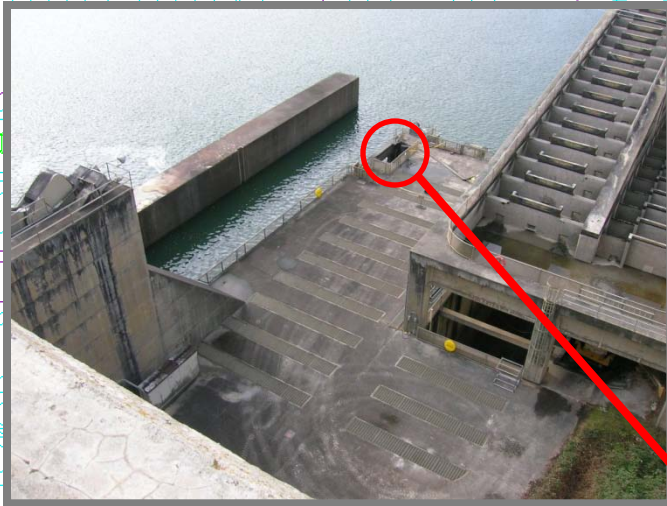
John Day – North Fish Ladder Entrance Improvements: Proposed Closure of South Entrance



FFDRWG
1 March 2011
Sean Tackley (503-808-4751)



US Army Corps of Engineers Portland District



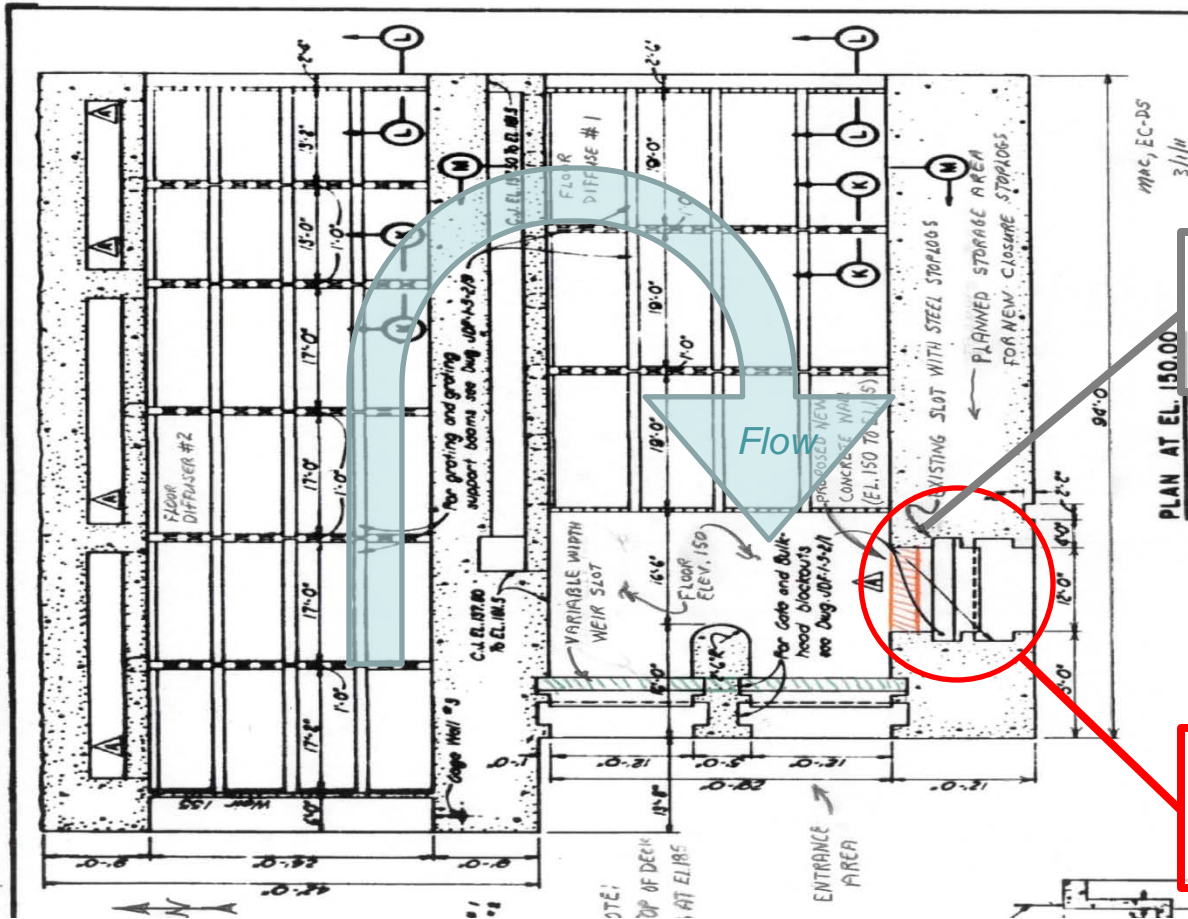
Need deck reinforcing at 185 ft. due to new crane loads. Leaves 2 options:

1. Build new stop logs *OR*
2. Install concrete wall (fishway floor to deck)

South Entrance
(currently closed)



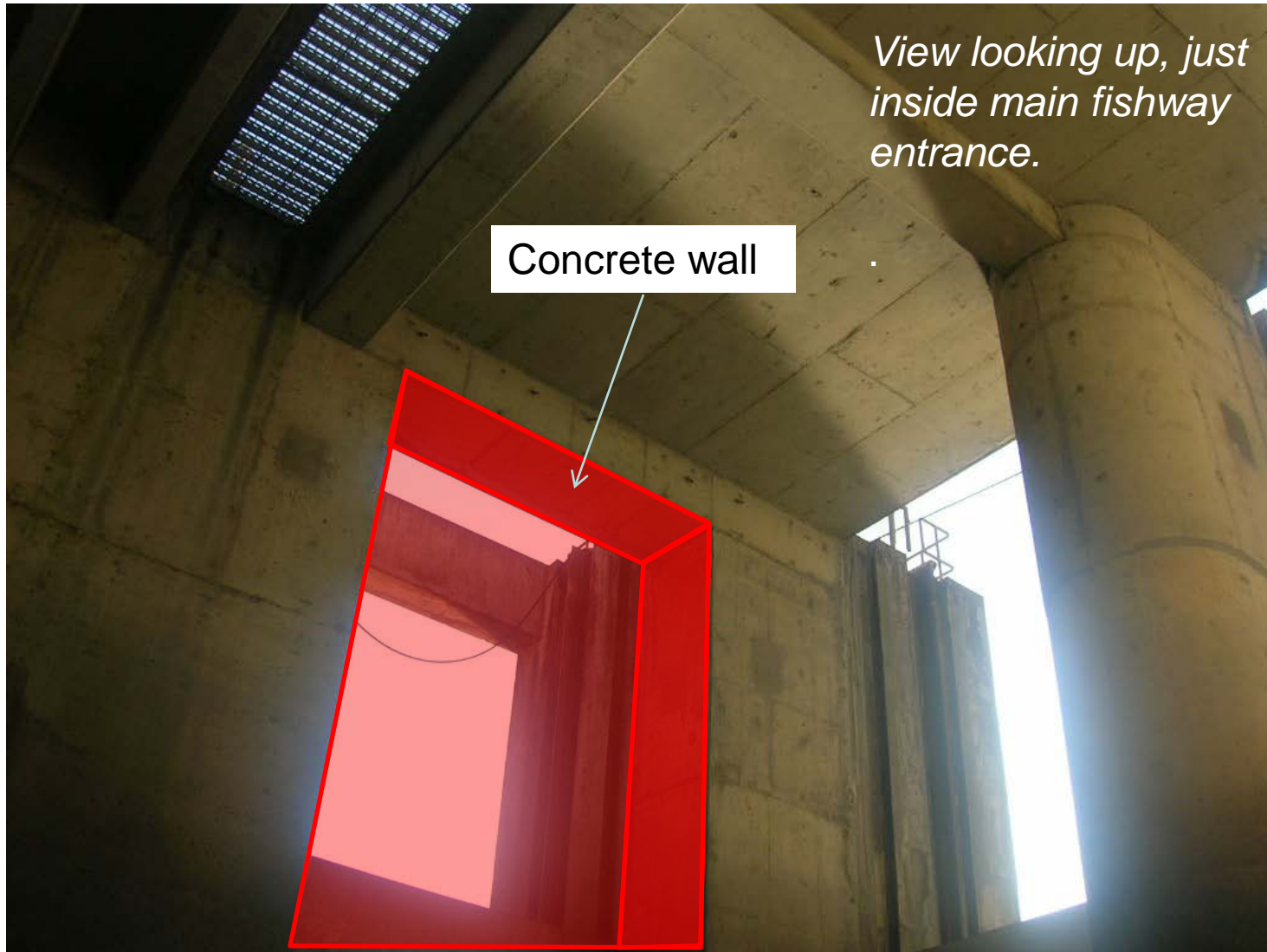
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- Concrete wall on inside of fishway would be ~35 high (floor of fishway to deck)
- Eliminates need to install & maintain stop logs at this unused entrance
- Other design features?



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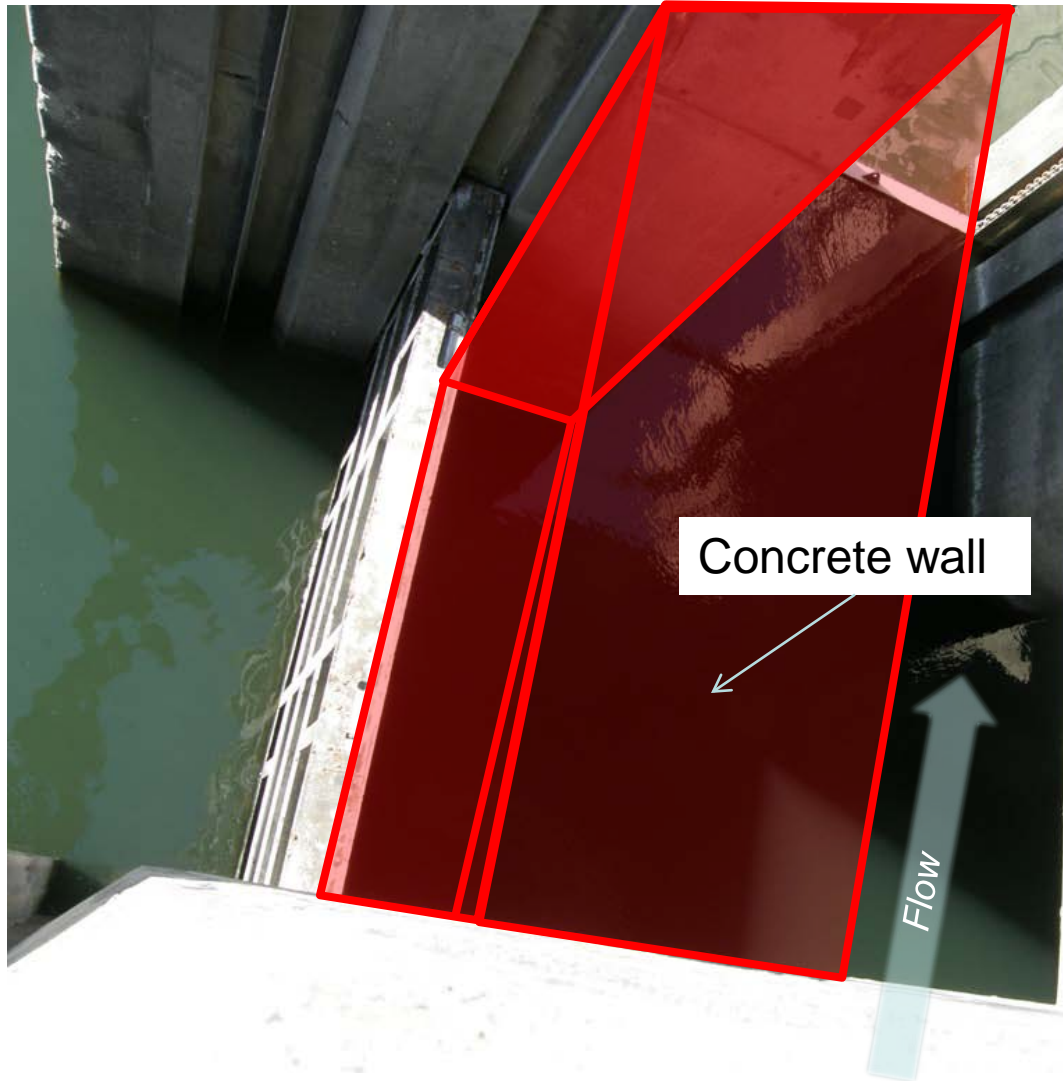


View looking up, just inside main fishway entrance.

Concrete wall



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View looking down on South Entrance (main fishway entrance is in upper right corner).

Red lines approximate the size and shape of the proposed concrete wall.



John Day – North Fish Ladder Entrance Improvements: Proposed Closure of South Entrance

PROS:

- Improved hydraulics
- Cheaper construction
- Easier to maintain (and fewer leaks)
- Can be designed for relatively easy removal

CONS:

- Semi-permanent closure of South Entrance (Emergency ops?)
- Unknown impacts on lamprey passage (likely none)