**USACE Portland District (NWP) FFDRWG Update Form**  
**25 July, 2018**

**PROJECT INFORMATION**

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| Project Title | The Dalles Dam Fish Unit Rehab |
| SCT Reference Number |  |
| Project Manager (PM) | Eric Bluhm (NWP, 503-808-4759) |
| Technical Lead (TL) | Tom White (NWP 503-808-4446) |
| Biologist/Coordination | Jon Rerecich (NWP, 503-808-4779) |

**PROJECT DESCRIPTION**

The East Fish Ladder at The Dalles Dam receives auxiliary fish attraction water from two Kaplan turbine-generators specifically designed for this purpose with both units required to be running to meet the flow requirements. Approximately 80% of all adult fish migrating past The Dalles use this ladder. These units were placed online in 1957 and the turbines are reaching the end of their service life with a condition assessment of the turbines being marginal.

Project objective: Increase the reliability of the fish units and the overall fish unit system

Project Scope: Evaluate the existing fish unit system to ensure the reliability of the fish units. Primary focus will be on the turbines, spare equipment to reduce unit outage times, and redundancies/dependencies of subsystems.

The Phase 1A report covers the analysis and results developed by the Project Development Team (PDT): outlines the need for, applicable assumptions to, and the roles and importance of Units 1 and 2 within the fish guidance system; describes the existing conditions of the major equipment components; identifies the criteria and constraints for the Alternatives evaluated; applies the criteria and constraints to each Alternative; includes cost estimates for each Alternative; and concludes with a Recommended Alternative as well as the Next Best Alternative.

**CURRENT SCHEDULE**

1. Draft Final Report (90% Review): Complete June 15, 2018
2. Phase 1A Report Complete August 15, 2018

Phase 1, Plans & Specifications, Phase 2, EDC, and Closeout Milestones

1. Design Complete JUL 2019
2. Contract Award JAN 2020
3. Physical Completion APR 2022

**PROGRESS AND KEY ISSUES (List)**

90% internal and FFDRWG reviews completed June 15, 2018. No external agency review comments were received. The PDT is working on responding to internal review comments and making edits to the report. The three most important components of the fish water turbine rehabilitated system are dependability, flexibility and discharge. Two alternatives meet these three requirements:

* Recommended Alternative: Alternative C, Replace Turbines with Oil-Filled Kaplan Runners, Uprated to Shaft Limit. This Alternative provides a reliable turbine runner for the fishway attraction water system with a broad range of flows that can operate both in the normal range, but also having the capability of providing up to 20% additional flow to the system in an emergency. This runner will allow the system to have redundancy of operation.
* Next Best Alternative: Alternative B, Replace Turbines with Propeller Runners, with the Same Rated Output as Existing. This provides the fishway attraction water system with the same flows as existing with a very reliable turbine runner. However, there will be no redundancy of operation.

Compared to the Recommended Alternative C, the major differences for the Next Best Alternative B are a lower cost for the procurement of the new propeller runner and lower cost for model testing for the new propeller runner. Additionally, Alternative B would not require the additional cost of the generator uprate study.

The construction cost of the Recommended Alternative C is estimated at $23.1 million. The construction cost of the Next Best Alternative B is estimated at $19.6 million.

Based on review comments, these two alternatives are undergoing further evaluation.

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

The Dalles AWS backup system is under construction with commissioning to be scheduled once NWP and the contractor work through problems with the seven foot valves. The backup system can deliver at least 1,400 cfs to The Dalles fish ladder system in the event both fish water units were to fail. However, the AWS systems is not designed to work in conjunction with the existing fish water units. The AWS backup system is a factor in construction management and criteria development for this report. As such, planning is underway to test the backup AWS and one fish unit operation once the backup AWS is commissioned.