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The Cost of Keeping the Lower Snake Dams

During the 1990s, the National Marine Fisheries Service listed 13 stocks of Snake River fish as threatened or endangered under the Endangered Species Act. These listings triggered a \$32 million study of the four Lower Snake River dams called the *Lower Snake River Juvenile Salmon Migration Feasibility Report* (LSRFR). In this report, the Walla Walla District of the U.S. Army Corps of Engineers vastly understated the costs of maintaining and operating four dams on the lower Snake River in eastern Washington. An honest economic analysis of the LSRFR shows that neither the American public nor the U.S. Army Corps of Engineers can afford to keep the lower Snake River dams in place.

Many individuals and organizations have made critical comments regarding the LSRFR Environmental Impact Statement, noting missing information, the selective use of data and a failure to clarify assumptions. A reevaluation of the 2002 report—correcting earlier cost projections with now available actual costs and addressing omissions, errors, miscalculations and faulty assumptions—demonstrates that **the Walla Walla District understated the true cost of keeping the dams in place by a staggering \$160.7 million on an average annual basis.**

A reevaluation of the Walla Walla District's work is required to correct the assumptions and cost estimates used in the LSRFR and verify these corrections based on actual costs over the past 15 years. When these corrected costs are projected over the remaining life of the project—using carefully chosen escalation rates and the same methodology the Walla Walla District used in deriving the 2002 report—**the corrected annual average cost of keeping the dams in place calculates to \$217.2 million.**

The Environmental Impact Statement included in the LSRFR considers four alternatives for addressing legally required salmon and steelhead recovery. The biological analysis of the four alternatives determined that alternative 4, breaching, presented the highest probability of recovering endangered fish. However, the Walla Walla District concluded the dams could be successfully modified to improve fish passage and that the net economic benefits of keeping the dams in place greatly exceeded those of breaching. The 2002 report suffered from a number of serious flaws:

- The analysis failed to include any cost for decommissioning the dams at the end of their useful lives. The reanalysis estimates this cost to be an average annual \$20 million.
- The 2002 analysis noted that construction and acquisition costs for the major system improvements would occur throughout the 100-year life of the project and identified a 25-year replacement schedule for those improvements. The initial cost of these improvements was severely underestimated. In addition, the report failed to include any replacement costs for the equipment involved.
- The 2002 report failed to reflect any costs for major rehabilitation or replacement of fish hatcheries and also failed to include certain fish mitigation implementation costs or any costs for future items that have not yet been developed for fish passage.
- None of the costs in the feasibility report were adjusted for inflation/cost escalation.
- The Bonneville Power Administration pays the costs of maintenance, operations and minor repairs specifically related to power generation. These costs were not fully included in the analysis.
- According to the *Lower Snake River Programmatic Sediment Management Plan*, “about .7 mcy [million cubic yards] per year of sand must be dredged to maintain the authorized navigation channel depth and maintain the current hydraulic capacity of the levees [around Lewiston, Idaho].” Dredging for flow conveyance has not occurred since 1992, and dredging for navigation purposes has only occurred once since 2000. Thus the operation and maintenance costs noted over the past 14 years in the Walla Walla District's Civil Works Activity Reports include only a small fraction of the dredging costs the District now predicts will be required.

At the time the LSRFR was completed, Bonneville Power was using a discount rate of 4.75% in its costing models. Today, the Northwest Power and Conservation Council uses an even lower discount rate of 4%. The Walla Walla District in 2002 used a discount rate of 6.875% and claimed the total average annual cost of keeping the dams in place was \$56.5 million. The corrected amount using the same discount rate is \$217.2 million. **The average annual costs for keeping the dams with base year 2001 at a 4.75% discount rate is \$283.8 million. If 2015 is used as the base year with a discount rate of 4.75%, the average annual cost for keeping the lower Snake River dams over the next 100 years climbs to \$435.6 million.** No matter what numbers are used, even with the most conservative discount rates, the costs of keeping the 4 lower Snake River dams drastically outweigh the benefits.

In 1947 the Army Corp of Engineers was unable to justify economically the construction of the four dams on the Lower Snake without manipulating the costs and benefits of the Lower Snake River Project. In 2002 the Corps continued this practice, preparing an economic analysis fraught with errors, mistakes, miscalculations, and invalid assumptions. **An honest and accurate evaluation of the costs of keeping the lower Snake River dams can only conclude that these dams need to be breached at the earliest possible date.**