

Comments to the U.S. Army Corps of Engineers Waterway Users Advisory Board at their meeting of August 14, 2014 in Walla Walla, Washington.

In the 1930s the U.S. Army Corps of Engineers (COE) determined that commercial navigation on the Lower Snake River could not be economically justified. The COE was correct in that decision. Commercial navigation was still not justifiable in 1947 when the COE attempted to create a benefit-cost ratio greater than 1 for the Snake River Project.

In 2002, as part of the Lower Snake River Juvenile Salmon Migration Feasibility Report (LSRFR), the COE determined that breaching the 4 Lower Snake River dams was far more expensive than modifying the dams for better juvenile fish passage. One of the costs of breaching involved projected cost increases for transporting an expanding volume of freight on the waterway by means other than barge. Today we know freight volume on the river has decreased by 50% over the past 15 years and the increased transportation costs attributed to breaching have vanished. Still no economic justification can be found for commercial navigation on the Lower Snake River.

The taxpaying public is told, however, in what amounts to a circular argument, that the Snake River Project is a multiple-purpose project, that one part of the system can justify another. After all, the dams are already here, the water is free, and hydropower pays the bills. Only the water isn't free, and taxpayers spend millions of dollars each year specifically for the operation and maintenance of the waterway. Much more significantly, like Snake River commercial navigation, the 4 Lower Snake River dams' hydropower "benefits" are not economically justifiable.

I worked as a civil engineer for the U.S. Corps of Engineers for 35 years and was the Deputy District Engineer for Programs in the Walla Walla District during the latter stages of the development of the LSRFR. Other employees and I had serious doubts about the validity of the data that led to the decision not to breach the dams. I expressed concerns at that time about omissions, errors, miscalculations and faulty assumptions in the work at hand, but the study progressed to its pre-determined and erroneous conclusion that modifying the dams to improve fish passage was the preferred alternative. Breaching the dams would be far too expensive, both short and long term. Actual hard data over the past 15 years confirm the mistakes made in reaching that conclusion. A reanalysis of the 2002 report demonstrates that the projected cost of keeping the dams was understated by approximately \$160 million on an average annual basis. Today the reality is not that breaching the dams would be too expensive, but rather that we cannot afford to keep these dams in place in their present configuration.

If the LSRFR study is corrected for errors and omissions, and actual data is substituted for 15-year old projections, the net economic benefit of keeping the dams the Army Corps claimed in 2002 simply disappears. Consider two examples on the cost side of the Benefit/Cost Analysis.

The Corps initially projected implementation costs for dam improvements in the Walla Walla District necessary for fish survival at \$682

million. Expenditures by the end of 2012 totaled more than \$750 million, with the COE's current project estimate of \$955 million. Approximately 80% of that cost is attributable to the 4 Lower Snake River dams.

The cost of rehabilitating the 4 dams' turbines presents another understated cost. Turbines have an expected life span of 25+ years and thus require at least 2 rebuilds during the remaining life of the Lower Snake River Project. The LSRFR included expenditures for turbine rehabilitation of \$321 million. The first 3 turbines are now undergoing such rehabilitation at a cost of \$91 million, leaving 21 more turbines in the first round. In today's dollars, two rounds of turbine rehabs will cost approximately \$1.5 billion, or more than a billion dollars over the cost projected in the LSRFS.

When all corrected costs and benefits are added to the 2002 LSRFR balance sheet, the net economic benefit of breaching the dams is somewhere between an annual average benefit of \$45 million to \$300 million depending in part on the wide range included in the report for the recreational benefit. When these costs and benefits are brought forward to 2014 and projected over the next 100 years, as was done in the 2002 report, the costs of operating the dams approaches \$300 million per year and the overall benefits for breaching on an annual average basis range from \$130 to 400 million. Trying to justify these dams in terms of navigation or hydropower, or as a multipurpose project, annually robs the American people of at least \$130 million in economic benefit and deprives the COE's O & M budget of at least \$50 million annually.

Today the Corps of Engineers faces unprecedented financial challenges ranging from an extended and aging infrastructure to extraordinary costs the Corps is already incurring due to climate change. In the Pacific Northwest, major costs for maintaining deep and shallow draft navigation on the Columbia River are rapidly escalating, such as the \$500 million projected for repair and replacement of the jetties at the mouth of the river that make the Port of Portland possible. Meanwhile, the 4 Lower Snake River dams are a money pit. Their costs in terms of navigation have likely always exceeded the benefits, and those costs are growing greater each year. Further, as noted above, the escalating costs of operating and maintaining this aging infrastructure have rendered the multipurpose/hydropower average annual National Economic Development benefits moot. The dams' ongoing costs have already exceeded replacement costs for hydropower.

The American people can no longer afford these dams, whether their costs are measured in dollars or fish, lost opportunity or continued environmental damage. The construction of these 4 dams has been a mistake, and at some point they will be breached. The longer the time before restoring this river to its natural flow, the greater the cost to the American taxpayer.

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