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Dear Agency Leaders:

RE: American Rivers’ comments on the Columbia River System Operations Draft Environmental Impact Statement

American Rivers appreciates the opportunity to submit the following comments on the Columbia River System Operations Draft Environmental Impact Statement (DEIS). In addition to submitting these comments, American Rivers signed on to the joint comments submitted by Earthjustice. American Rivers also joined comments prepared by the Northwest Energy Coalition.

Introduction

Founded in 1973, American Rivers is the leading conservation organization working to protect our nation’s rivers and streams. Our mission is to protect wild rivers, restore damaged rivers and conserve clean water for people and nature. Our strength lies in our 355,000 members, supporters and volunteers from all 50 states, thousands of whom live, work and recreate in the Columbia Basin. Among our supporters are anglers, paddlers, guides and outfitters, commercial fishers, advocates of tribal treaty rights, and many others – all of whom share a deep interest in recovering wild Snake River salmon and steelhead and their namesake river.
American Rivers has been advocating for the recovery of Snake River salmon and steelhead for more than two decades. The science clearly shows that breaching Lower Granite, Little Goose, Lower Monumental and Ice Harbor dams on the lower Snake River in eastern Washington state would provide the best and likely only chance of restoring self-sustaining, harvestable runs of salmon and steelhead to the Snake River Basin. The Snake River Basin historically hosted 2-6 million adult wild salmon and steelhead annually, comprising half of all the spring/summer Chinook salmon and steelhead in the Columbia Basin. Today, those runs have plummeted to less than five percent of their historic levels due to a combination of harvest, habitat, hatchery and hydrosystem impacts (the “four Hs”). While Snake River salmon declined from historic levels prior to the construction of the four lower Snake River dams, they have declined by more than 60 percent since the 1960s, when the dams were under construction. This decline has occurred despite an estimated $17 billion on recovery efforts that have not resulted in recovering populations of salmon and steelhead. It is time to take a different path. American Rivers believes that path must lead to a more vibrant Pacific Northwest powered by clean energy and thriving fishing, agriculture, and outdoor recreation economies.

**General Comments on the DEIS**

The Columbia River System Operations DEIS evaluated a No-Action Alternative, four “mixed objective” (MO) alternatives, and nine single objective alternatives that were either blended into the MOs or eliminated. The DEIS combined elements of several MOs into its Preferred Alternative (PA). It evaluates impacts of the various alternatives according to eight federal purpose and need criteria for the Columbia system operations (flood risk management, navigation, hydropower, irrigation, fish and wildlife conservation, climate impacts, recreation, and cultural resource protection), legal and institutional purposes including statutory authorities, environmental laws, Native American treaty rights, flexibility and adaptive management, and project Water Control Manuals (DEIS Executive Summary p. 16). Alternatives were also evaluated against eight study objectives: listed anadromous juvenile passage and survival; improved listed anadromous adult survival; improved listed resident fish survival; lamprey; operating flexibility; water supply; power supply; GHG impact/carbon free power; environmental; economic; social (with tribal cultural emphasis) (Executive Summary p. 18 and p. 2-3). The DEIS describes impacts of each alternative under a range of ecological and socioeconomic factors, using a 25-year time frame for the alternatives but a 50-year time frame for socioeconomic impacts. A summary of each alternative’s ability to meet the criteria is included in Table 7-1 (p. 7-17).

**DEIS Evaluation of Alternatives is Inadequate and Missing Critical Information**

American Rivers believes the current DEIS is incomplete, inadequate, and inaccurate, particularly in its analysis and valuation of dam breaching and the likely biological, economic and cultural benefits that restoring the lower Snake River to a natural condition would bring.

More specifically, we note the following:

1. **Benefits from dam breaching’s multiplication of wild fish returns are poorly estimated or excluded entirely:**
The dam breaching option (Mixed Objective Alternative 3, or MO3) would deliver substantial improvement of wild fish survival, passage and productivity, regardless of which of two fish forecasting models used in the DEIS produces the estimates. Yet the multitude of benefits from dam breaching’s multiplication of wild fish returns are poorly estimated or excluded entirely.

2. The DEIS excludes available data from prior studies showing substantial economic benefits of dam breaching.

The DEIS analysis states that its economic analysis approach is worse than other available methods but fails to utilize more the accurate estimating techniques and excludes available data from prior studies showing substantial economic benefits of dam breaching.

The DEIS fails to assign an economic value to wild fish recovery and increased angling activity that dam breaching and wild fish recovery would bring. The analysis vaguely suggests that new opportunities for angling and recreation “may offset” other changes, then wrongly concludes that dam breaching, the most robust strategy for fish recovery, does not deliver economic benefits.

The DEIS also minimizes benefits from increased post-dam breaching fishing activity by using comparisons with existing activity from two other rivers, the Clearwater and Hanford Reach of the Columbia, but then admits that those comparisons “may considerably under-estimate” future recreation activity on a restored natural river and the major tributaries (e.g., Salmon River, Middle Fork Salmon River, Grand Ronde River, etc.) that flow into it.

For example, the DEIS notes that rafting is a popular activity on other undammed river reaches, including Hells Canyon and the Salmon River, but fails to account for the high economic value of rafting and related recreational activities. The DEIS entirely omits discussion or valuation of the 63 historically named rapids that breaching the lower Snake River dams would reveal. The DEIS also does not recognize the higher per-trip value of non-motorized boaters who would make up the bulk of recreational users on a restored river. A 2019 report by ECONorthwest, *Lower Snake River Dams Economic Tradeoffs of Removal*, cites 15-115% greater per trip for whitewater recreation compared to reservoir-based recreation, and a higher ($228 per day) recreational user value.

Restoring 140 miles of free-flowing river and revealing 14,000 acres of currently inundated riparian and riverside land, would provide an amazing recreation resource to the region. Today, Washington state does not have a multiple day destination whitewater river. A restored lower Snake River would provide such a resource benefitting Lewiston, the Tri-Cities, and small communities all along the river. Breaching the four lower Snake River dams would create new long-term jobs in the outdoor recreation and tourism sectors, and other types of businesses would inevitably move to the area due to an increased quality of life associated with a restored river and restored fisheries. Salmon recovery would benefit commercial, sport and tribal fisheries, thereby benefitting local communities. Salmon recovery would benefit the Southern
Resident orca population and associated tourism economies in Puget Sound and along the west coast.

In its analysis of cultural impacts, the DEIS downplays benefits of a restored natural river associated with public and tribal access, and instead emphasizes the potential threats to cultural resources from increased erosion and possible looting. A responsible plan for river restoration must include broad riparian restoration, along with careful management of access and use of restored riparian areas to ensure improvement of habitat and protection of cultural sites and resources.

The analysis does acknowledge the preference for dam breaching among tribal communities, an evaluation that comes as close as any in the DEIS to an accurate assessment and one we wholeheartedly support: “Most tribes support breaching the four lower Snake River dams...as it represents the only alternative that substantially attempts to restore the river to a more natural environment” (emphasis added) and some “could interpret dam breaching as a meaningful milestone in salmon restoration efforts” (p. 3-1414).

In contrast, the Preferred Alternative (PA) offers an uncertain range of impacts for wild fish, ranging between negative or possible positive benefits, with the positive only occurring with optimistic assumptions in one of the two fish population models. The PA analysis also admits that its approach is experimental, that its aim would be to collect data on effectiveness rather than offering a proven effective solution. The PA emphasizes structural measures at dams that were part of other alternatives, spill and adaptive changes to fish transport, while leaving power operations largely unchanged.

From that mixture of impacts, it appears the PA is intended to protect the status quo of operations, rather than actually achieve a significant improvement in wild fish survival through the hydrosystem. The PA is a patchwork of half measures, relies on experimentation and contingencies in modeling, fails to invest in significant changes to the dams or dam operations to benefit wild fish survival, and will fail to achieve the goal of restoring self-sustaining runs of salmon, steelhead and other imperiled fish species in the Snake and Columbia basins.

The following sections address shortcomings in the DEIS analysis regarding wild fish recovery, implementation costs, economic benefits, energy, irrigation, transportation, sediment, cultural resources, and environmental justice.

**Detailed Comments on the DEIS**

1) **Wild Fish Recovery**: The DEIS fails to recognize that only breaching the lower Snake River dams would deliver significant benefits in wild fish survival, returns and recovery.

The DEIS concludes that based on its model results, “breaching of the lower Snake River projects is expected to have major beneficial effects on juvenile outmigration and upstream migration” of wild salmon and steelhead, particularly those fish that originate in the Snake River (p. 3-593).
Operational changes in the dam breaching option would increase Snake River spring/summer Chinook juvenile survival between 19-25.9% compared to the no-action alternative, decrease travel times (up to 31% vs no action), and decrease turbine passage (-71-4%) and associated mortality (Table 3-88, p. 3-559). The analysis assumes that hatchery releases that are mitigation for the lower Snake River dams would end, and cautions that reduction of hatchery fish “could reduce numbers of juvenile Snake River Chinook salmon by as much as 85 percent” and that the reduction in hatchery fish could increase predation of wild juveniles and reduce juvenile survival.

For adult spring/summer Chinook, improvements compared to the No-Action Alternative would also be dramatic: 14-170% Smolt-to-Adult-Return (SAR) improvement from Lower Granite Dam and to Lower Granite Dam. Abundance would improve between 9-107% from the No-Action Alternative (Table 3-89, p. 3-560).

For Snake River steelhead, juvenile survival would improve 23-46% compared to the No-Action Alternative, travel time would decrease 32-45%, and powerhouse passage would decline by 76-77%, with a 178% increase in SAR, from the current return rate of 1.8% to 5% (p. 3-562-3).

The other MOs tend to have negative or mixed impacts on wild salmon and steelhead. Those that would deliver improvements still fall far short of achieving meaningful recovery for threatened fish.

MO2 reduces spill, resulting in more turbine mortality and increased migration time for juvenile fish. Most alternatives include the same improvements to lamprey passage and survival, so suggest they could benefit lamprey. MO2 could reduce Snake River Chinook survival up to 7%, reduce juvenile steelhead survival by up to 22%, and cause a 30% reduction in SAR for Chinook and steelhead (pp. 3-515 to 3-517).

MO4 results vary widely by model, from negative to positive depending on the model and assumptions. It predicts 1-10% juvenile survival improvement for Snake River spring/summer Chinook, 8-14% reduction in travel time, and 64-81% reduction in transported fish because of additional spill, but increased risk from Total Dissolved Gas (Table 3-96, p. 3-610). SAR and abundance changes vary widely by model, from -12% to +75%, but with the higher rate only achieving 3.5% SAR, far less (almost 50%) than the SAR under the dam breaching alternative. Abundance could range from -32% to + 99% vs. the no-action alternative (Table 3-97, p. 3-612).

For Snake River steelhead, MO4 could increase juvenile survival 1-30%, decrease travel time up to 10%, reduce transported fish by 82%, and reduce powerhouse passage 80-86% (Table 3-98, p. 3-614). SAR could improve by 72% to a rate of 3.1% (Table 3-99, p. 3-616).

Most of the structural improvements targeting lamprey should be implemented regardless and could be included with the dam breaching alternative. MO2 could increase risk of injury or impingement for lamprey because of increased powerhouse flow and passage. MO3 would
improve lamprey survival and production substantially by easing upstream and downstream migration without the lower Snake River dams.

In contrast, the Preferred Alternative offers uncertain anadromous fish impacts, and relies upon unproven practices unlikely to actually achieve recovery. The PA suggests it may have some positive fish benefits, but also declares that its spill strategy is essentially experimental and would prioritize the value of power sales to determine when spill would occur (p. 7-21). The PA fish benefits range from negative to somewhat positive, with the possible increased fish returns predicated on unreliable model assumptions of reduced delayed mortality, so are highly contingent. The DEIS “acknowledges the range of potential outcomes predicted by the models used to estimate impacts to anadromous fish, including a study to evaluate the potential benefits and unintended consequences of a flexible spill operation”.

Survival rates of juvenile spring/summer Chinook under the PA “would be very similar to the No-Action Alternative,” between 1-5% higher, decreasing travel time 7 percent (Table 7-24, p. 7-100). SAR impact would range from a decrease of 7.5% to an increase of 35% compared to the No-Action Alternative, with adult abundance ranging from -24 to +58% (Table 7-25, p. 7-102). For Snake River steelhead, juvenile survival and travel time would not change from the no-action alternative, with SAR increasing 28% but to a rate of only 2.3%, far below the level produced by dam breaching.

2) Implementation Costs: Breaching the four Lower Snake River dams represents a cost-effective investment, given that the implementation costs of MO3/Breach are comparable or less than other alternatives, including No Action and PA.

MO3, the dam breaching alternative, competes favorably in cost with the other MOs and preferred alternative, with lower costs for structural measures, operational actions, and fish and wildlife mitigation programs compared to the MOs and PA. Annual equivalent costs for MO3 would range between $896M and $1.001B, a reduction of between $159M with low fish and wildlife costs to $54M with high fish and wildlife costs, compared to the No-Action Alternative’s annual cost of $1.055B, a reduction of between 5-15% (Table 3-308 and 3-309, p. 3-1481). The Preferred Alternative would cost between $1.014-1.063B, between a 3.9% reduction to a 0.6% increase compared to the No-Action Alternative (Table 7-51, p. 7-199).

3) Economic Benefits: The DEIS does not fully capture the benefits of dam breaching, nor does it reasonably count the economic benefits of wild fish recovery, associated recreation and economic activity that LSR dam breaching would deliver.

In particular, the DEIS recreation impact analysis:

a) Declares that the “unit day value” method used was less accurate than “preferred” site-specific travel cost or contingent value approaches (p. 3-1880) but that the more detailed analysis “was not possible under the timeline of the study.”
b) Emphasizes the loss of existing activity based on boat ramp data (p. 3-1177) “quantitatively at reservoirs only and are described qualitatively for river reaches” where dam breaching would improve recreational access and quality.

c) Assigns monetary values to short-term lost recreation activity (p. 3-1222) amounting to 83% of visitor spending under the No-Action Alternative.

d) Contains only qualitative estimates of fishing benefits, with no assigned monetary value: “Fishing Activities, as well as other recreation types, would be considerably reduced in the short term during and immediately following breach, but could rebound in the long-term as anadromous fish populations improve. The largest increases in the number of Snake River salmon and steelhead are projected under MO3. Therefore, fishing for these anadromous species could increase in the long term ... relative to the No Action Alternative. The value of trips could also increase due to the increased abundance and diversity of wild fish.” (p. 3-1214)

The DEIS also notes “new opportunities for land and water-based river recreation and possibly anadromous recreational fishing may offset visitation losses...and recreational opportunities may even increase in the long-term relative to the No-Action Alternative” (pp. 3-1222 – 3-1223). But because the DEIS fails to assign monetary value estimates, the dam breach option does not have an assigned economic benefit.

e) Entirely excludes the monetary value of post-dam breach salmon and steelhead fishing, based on claims that fishing value is limited by uncertainties related to Endangered Species Act restrictions, and because those estimates were excluded from the 2002 Final Lower Snake River Juvenile Salmon Migration Feasibility Report/Environmental Impact Statement by the Walla Walla District US Army Corps of Engineers (2002 FEIS) analysis that was used as the primary basis of this economic impact estimate for the breach option (p. 3-1219).

f) Declares that the methods to estimate potential fishing visitors (comparing with fishing visits to Hanford Reach and Clearwater data) “may considerably underestimate future recreation activity in the Lower Snake River.”

g) Notes that rafting is a primary recreation interest in upstream reaches including Hells Canyon and Salmon River, but includes no discussion or valuation of the 63 historically named rapids that breaching the lower Snake River Dams would reveal. The DEIS also does not recognize the higher per-trip value of non-motorized boaters who would make up the bulk of post breach recreation. A 2019 report by ECONorthwest, Lower Snake River Dams Economic Tradeoffs of Removal, cites 15-115% greater per trip for whitewater recreation (p. 97) and a $228 per day recreational user value (p. 99).

h) Other than referencing the 2002 FEIS, the DEIS fails to evaluate or incorporate numerous published analyses of economic impacts related to dam breaching. Several studies by the Idaho Department of Fish and Game and others between 1996-2005 estimated the value of
a recovered fishery could be worth $148M for a single species to $342M for recovered populations of salmon and steelhead, up to $734M if direct and indirect benefits are included (summarized in Laughy, Linwood. The Economic Impact in Idaho of Snake River Salmon and Steelhead Fisheries, March 2020).

The DEIS also considers, but then declines to assess non-use, also known as passive use values, of restored salmon and steelhead runs in the Columbia Basin. Other economic studies have shown strong passive use values associated with salmon recovery exist among Pacific Northwest residents. A 1999 study by John Loomis, Passive use values of wild salmon and free-flowing rivers, assigned non-use value of increased anadromous salmon and steelhead related to Snake River dam breaching between $66M and $879M, with an additional $420M in passive use related to the return of the lower Snake River to a natural condition. While acknowledging that passive use values could be considered, the DEIS instead summarily excluded these values, even though some passive use values were included in 2002 FEIS and they are commonly used elsewhere to benchmark economic estimates. The DEIS vaguely concludes instead that “Given the limitations of the existing literature, this EIS does not include a quantitative benefit transfer of passive use values” (DEIS p. 3-1322).

A 2019 evaluation by ECONorthwest, Lower Snake River Dams Economic Tradeoffs of Removal, suggests a potential value of $1.04B in recreation benefits and an additional $10.97B non-use. “Removing the Lower Snake River Dams will result in a net increase of $505 million in output, $492 million in value added, $408 million in labor income, and 317 average annual job-years.” Within those totals, “Spending from visitors in the area results in an increase of $179 million in total output, an increase of $104 million in total value added, an increase of $56 million in total labor income, and an increase of 49 average annual job-years” (ECONorthwest p. 124).

Since the DEIS assigns no dollar values to its ‘qualitative’ analysis of fishing and recreation benefits, dollar values from Idaho Fish and Game studies, the ECONorthwest report and others should be considered as offsets against estimated negative financial impacts.

4) Energy and Power Impacts: The investments in energy conservation and carbon neutral replacement generation that could accompany LSR breaching would make the region’s energy system stronger, more climate resilient, and contribute to broader sustainability in ways that the PA will not.

As with other segments of the DEIS, the analysis of power replacement costs and ratepayer impacts associated with dam breaching are inaccurate and incomplete. The DEIS exaggerates the costs of replacement power, given the ongoing evolution of power markets and declining cost of emerging renewable and storage technologies, and omits additional available efficiency and demand side energy resources in the analysis of MO3’s power replacement scenarios.
Based on an unnecessarily narrow evaluation of energy replacement options and scenarios, excluding wind, solar-storage hybrids, and additional energy efficiency, the DEIS assigns a significant range of additional cost to power replacement related to lower Snake River dam breaching, from about $380M - $1.1B. Potential wind, energy efficiency, and storage resources are currently available and have steadily declined in cost. Studies by the Northwest Energy Coalition (NWEC) and others indicate that a realistic, forward projection of solar costs would allow replacement of generation from the lower Snake River dams at 15-30% less than the DEIS estimates. NWEC estimates that using a more accurate cost estimate for solar, storage, and other distributed energy resources would reduce the capital cost of replacement power by a quarter or more (NWEC DEIS comments p. 31).

Incorporating an optimized and realistic, cost-effective replacement portfolio that includes more accurate cost assumptions for wind, solar, energy efficiency and storage investments would reduce projected replacement cost and rate impacts associated with lower Snake River dam breaching. Consequently, because the DEIS fails to provide accurate information needed to make an informed decision, a new and more rigorous study is warranted.

These smart, available infrastructure investments would lead to a modernized, sustainable, net zero carbon energy system that doesn’t drive wild salmon and steelhead to extinction. A revised system that integrates additional conservation and renewables with post-dam breach hydropower is healthier in the long run for its climate/carbon impacts, wild fish and natural river recovery, so that the investment in a more resilient system is worth it for a sustainable future.

The DEIS omits maintenance and upgrade costs associated with leaving the lower Snake River dams in place. Based on typical 50-year maintenance cycles, 21 of 24 turbines would need upgrade or replacement; yet the cost of doing this maintenance/upgrade cycle, which could cost $1 billion or more, is omitted from both the No Action and Preferred Alternatives (NWEC DEIS comments, p. 55). Inclusion of these costs would also expand the differential between the breaching alternative, which would avoid upgrade and maintenance costs for lower Snake River dam turbines, and NA/PA in which those costs would be necessary.

The DEIS also fails to properly evaluate power customers’ willingness to pay additional costs in order to recover salmon and steelhead. Studies of regional willingness-to-pay related to wild salmon recovery indicate a range that would support potential increases from dam removal ranging from $3.42-$7 per month (ECONorthwest p. 111). Although we believe the DEIS over-estimates potential rate increases, if necessary, the likely rate increases would fall within regional willingness-to-pay ranges, so represents a strength rather than a weakness of the dam breaching option.

5) Irrigation: Irrigation costs and impacts associated with dam breaching are inaccurate, because the DEIS ignores prior analysis from the 2002 FEIS, which concluded that irrigated agriculture could continue along the Snake River.

One of the key points that underpins the approach taken in the DEIS regarding irrigated agriculture is that if the dams are breached (MO3), there will be no more agriculture on the
lands adjacent to the Snake River. However, the 2002 FEIS\(^1\) by the same agency clearly found a viable path for continuing to irrigate these same lands.

In 2002, the analysis found that an alternative, Option 3\(^2\), could technically work and met the criteria desired by the analyst:

- operational prior to breaching of the Ice Harbor reservoir
- function through a full range of river stages without interruption
- able to handle a potentially large quantity of suspended sediment

No reason is provided as to why something that was true in 2002 fails to be true in 2020. The only source given is “conversations with several extension agents in Washington and Oregon.” These conversations are without other reference such as date or even information regarding what was said. So, we are left to assume that these may be the same conversations mentioned in the 2002 FEIS where, under Farmland Value in Section 5.11, it states:

“This analysis based the determination of economic effects to irrigators under Alternative 4 Dam Breaching on a change in farmland values that would occur with elimination of the current water supply. Typical land values for farm properties near Ice Harbor were used. This information was compiled through discussions with farm managers, cooperative extension agents, farmland appraisers, agricultural economics professors, and the use of published enterprise budget sheets for a number of crops.”

In 2002 Appendix I, Economics, estimated that modifying the irrigation pumps in 1998 (Option 3) cost $291,481,000 and also estimated the land value at $127,940,000. The conclusion was that private landowners would not pay for modifications.

American Rivers supports the continued irrigation of these lands and will support including the costs to modify the irrigation systems while the lower Snake River is restored. We believe solutions can be found that meet the need for salmon and people for a restored river, and for farms to continue to irrigate their land from that same river.

6) Transportation: The DEIS analysis of transportation impacts from dam breaching is incomplete and overestimates costs to replace current barge-based agricultural commodity shipping.

Throughout the DEIS the analysis is limited. Key points and prior analysis by the USACE and others are missing. Overall, there is not adequate consideration of the benefits of dam breaching to the region, nor a close look at solutions and mitigation measures that can cost


\(^2\) 2002 FEIS, Appendix D, Natural River Drawdown Engineering and Technical Appendix D, Existing Systems and Major System Improvements Engineering.
effectively replace services provided by the four lower Snake River dams. Similar deficiencies are present throughout the DEIS’s transportation analysis.

The analysis of the impacts under MO3 in Appendix L, Navigation and Transportation, appears to rely on a belief that there are not significant opportunities for additional investments in rail infrastructure which could increase rail capacity.

The DEIS focuses on the present and on limitations. But what is limited in 2019 where “commenters have further stated it is difficult to secure a unit train on short notice” (L-3-14, comments of Idaho Cooperating Agencies, December, 2019) becomes possible when public investment shifts from maintaining an aging system of locks and barges, and towards further investment in rail infrastructure.

Wheat farming existed in the Inland Northwest prior to the construction of the four lower Snake River dams, and farming will continue to thrive after the dams are breached. When the four lower Snake River dams and their barge transport system were put in place between 1962 and 1981, farmers moved from shipping via rail to using either rail or barge, based largely on price and location. The existing rail system in the region declined, grain elevators were abandoned or removed, tracks were either left to degrade or were removed. Those are investments that can be made again. We support transportation improvements that give farmers options for shipping.

In the area of transportation, the DEIS falls short in key ways:

- The DEIS ignores a rail line, the WATCO-Union Pacific line from Lewiston to Lyons Ferry. This is a primary alternative for grain shipping. This, and the lack of information regarding Washington State’s Grain Train and transportation plans, is a surprising oversight.
- The DEIS should have included data and information from relevant reports on transportation, among them:
  - Washington State Department of Transportation (WSDOT)’s 2019 Draft Rail Plan 2019 – 2040
  - WSDOT’s 2017 2017 – 2027 Grain Train Strategic Plan
  - WSDOT’s 2015 Palouse River and Coulee City Rail System Strategic Plan
  - WSDOT’s 2015 Short Rail Line Rail Inventory and Needs Assessment
- The DEIS assumption that barge volume will decrease substantially on the Columbia River is faulty. It would make sense to consider expansion at the Port of Pasco with barge transport originating there. The 2002 FEIS assumed that this would happen and that grain transport would shift to the Tri-Cities. This would reduce rail miles and shipping costs. Expanding rail to the Port of Pasco for grain shipment should be fully explored, starting by updating the earlier analysis in the 2002 FEIS by the Corps.
- The DEIS measures truck trips not by miles but by each trip leaving the farm. “The most immediate and noticeable impact comparing the No-Action Alternative to MO3 is that the number of truck trips going to the river ports decreases by 80,086 trucks as farmers now choose the next least cost option, which would be shuttle rail under Scenario 1.
That would result in an additional 46,638 trucks going from the farm to elevators with rail access instead and an additional 32,495 trucks to elevators with rail access and an additional 892 trucks going from the farm to elevators without rail access. Also, under Scenario 1, an additional 498 truck trips would occur for trans-shipments between elevators without rail to those with rail that didn’t occur under the no-action scenario. The net additional trips under Scenario 1 is 13,515 truck trips compared to the No Action Alternative.”

Given the distance of many farms to the river ports, and the location of rail elevators, and the potential to add elevators with an expanded rail system, we recommend an analysis that looks at miles driven rather than truck trips so decision makers and the public have an accurate understanding of impacts.

- Changes to the current rail infrastructure seem likely to occur and that this be analyzed to understand the true benefits, costs and impacts: more elevators will be built, connected by rail lines, especially in places that once had more rail and more grain elevators. This is happening today and the trend is likely to continue. Such upgrades of elevator and rail infrastructure may mean that fewer truck miles are driven, and that rail options become increasingly available for transportation of agricultural commodities to market. If public investments are shifted from maintaining an aging barge/lock system and to rail that includes public or farmer-cooperative owned rail, the result may be good options at fewer miles driven.
- An assumption is made that grain shipped on the Columbia will drop from 65% to 32% of all grain shipped with no explanation why. It seems reasonable to assume, just as the 2002 FEIS did, that under MO3 grain would arrive at the Tri-Cities via rail or truck and loaded onto barges from there, and that grain that originates farther from the river is likely to continue on via rail to lower Columbia ports.
- The DEIS assumes that all grain shipped on the river arrives via truck but this conflicts with assumptions in the 2002 FEIS. It seems reasonable to analyze how much grain can also arrive via train to the Tri-Cities. This impacts the costs and the overall truck miles and if it was deemed viable in 2002 it should be considered. The 2020 model assumed that all grain loaded onto a rail car would continue to Portland via rail yet in 2002 it was assumed that grain would also be shipped from the Tri-Cities.
- The transportation model assumes that there will be no expansion of rail lines (and in fact, overlooks a rail line.) In the years since the publication of the 2002 FEIS there has been public and private investment in short rail and increased options and shuttle facilities. It is reasonable to assume that this trend will continue and that rail will be more available, especially if the removal of barge past Pasco makes investment in rail for grain transport more appealing.
capacity could be made available with no significant increase in unit cost\(^3\) yet the 2020 DEIS failed to fully consider or update this analysis. It also failed to analyze a surprising finding of the 2002 FEIS, that the current transportation is NOT the least cost option.

Transportation was analyzed in the 2002 FEIS and the USACE found solutions that would allow grain transportation once the four lower Snake River dams were breached. Their solution was a mix of improved rail capacity and expanded grain storage at the Tri-Cities.

The 2002 FEIS discovered while modeling transportation costs that the existing system wasn’t the least cost. They stated there wasn’t enough time to analyze that further but this should have been looked at in the DEIS:

> “A fundamental assumption made for this analysis is that the existing transportation of grain represents the least-cost condition. Therefore, it was assumed that the cost of all movements of grain with dam breaching should be at least as costly as under the base condition. Actual operation of the model, however, showed that this was not the case. **The model results showed that a number of grain movements were found to be less costly with dam breaching than with the existing transportation system.**” (Emphasis added.)\(^4\)

The 2002 analysis should have been the starting point for the DEIS in order to build on the earlier work, particularly the sections we provide below:

- “If dam breaching were to occur, the Tri-Cities area would become the alternate port area.\(^5\)” The FEIS goes on to estimate the costs to range from $58.7-million to about $335.4 million depending on the type of facility and capacity added at Pasco. These estimates included rail and access roads.
- The 2002 FEIS also estimated that there were sufficient country elevators to shift grain from the Snake River but that improvements to loading facilities and railcar handling tracks would be needed. (Appendix I, I3-109)
- The 2002 FEIS considered whether it made sense to maintain the river ports, and add rail from them to the Tri-Cities, “It would be appropriate to consider converting some of the existing 12 river elevators (which handled over 100-million bushels of grain in 1998) to railroad loading facilities that would then ship grain by rail to the Tri-Cities.\(^6\)” They believed this had the potential of being less costly than other approaches.
- The 2002 FEIS found that while there may need to be some rail upgrades, they also found that concerns about railroad pricing may not be accurate. “While some specific route segments might require substantial incremental expenditures to accommodate additional traffic, the adverse rate effects of these expenditures would be largely offset by the efficiencies gained through expanding the capacity of related route segments. At

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\(^3\) 2002 FEIS, Appendix I, I3-88  
\(^4\) 2002 FEIS, Appendix I, I3-90  
\(^5\) 2002 FEIS, Appendix I, I3-89  
\(^6\) 2002 FEIS, Appendix I, I3-89
least in the case of the diversion of lower Snake River traffic, concerns regarding terminal congestion and the adverse effects this congestion may have on railroad pricing are unfounded.\(^7\)

7) Sediment: Sediment related impacts from dam breaching are overstated in the DEIS and could be reduced through potential mitigation strategies.

a) The DEIS suggests sediment from breaching would degrade conditions between 2-7 years following the deconstruction. However, the study does not adequately contextualize the volume of sediment that would potentially mobilize in comparison to the receiving waters of both the Snake and Columbia rivers and their capacity for handling a short-term increased sediment load. In their guidelines for assessing sediment for dam removal consideration, the Federal Interagency Advisory Committee on Water Information Subcommittee on Sedimentation, led by the U.S. Bureau of Reclamation, acknowledges that the “…probability of sediment impact is based on the relative reservoir sediment volume (small, medium, or large). The relative reservoir sediment volume is based on the ratio Ts, which represents the years of upstream sediment supply trapped within the reservoir. The years of trapped sediment is representative of the reservoir sediment volume and the river’s capacity to transport it.” Additionally, studies analyzing sediment transport following the removal of dams like the Marmot Dam on Oregon’s Sandy River indicate sediment transport and distribution can happen much more quickly, with sediment redistributed in the first year the river recovering its pre-dam conditions and most sediment redistributed in 2-3 years. Sediment quality and chemical components may be more of a concern than in the Sandy River, but the distribution time could be far less than estimated.

The Condit Dam on the White Salmon River in Washington impounded 2.3 million cubic yards of sediment. When considering sediment management alternatives, the project investigators weighed the long-term gains against short-term impacts to aquatic species, as well as the capacity of the receiving waters to transport the sediment. The final 401 water quality certification indicated that the project would “…cause brief exceedances of water quality criteria in the White Salmon River and the Columbia River...However, dam removal will provide permanent benefits to fish, other aquatic life, and recreational uses.” The U.S. Fish and Wildlife Service found salmon redds upstream of the Condit Dam within one year of the dam’s demolition.

The DEIS also assumes passive transport of all sediment available behind the dams. It does not acknowledge that moving forward with a dam breach alternative would analyze a number of sediment management and mitigation alternatives, including but not limited to mobilizing sediment behind the dams in consideration.

The discussion of sediment in MO3 focuses almost exclusively on impacts to aquatic species if sediment were released and does not consider the current impacts of sedimentation to

\(^7\) 2002 FEIS, Appendix I, I3-105
habitat within the dam impoundments and the flood risk associated with the reservoir sediment deposit behind Lower Granite Dam under the other alternatives. Full consideration of the dam breach alternative should account for the benefits associated with re-establishing a more natural sediment transport regime, including the restoration of habitat within the former impoundments that would result from the clearing of fine sediment from those impoundments.

b) The DEIS provides little discussion on the fact that MO3 is the only alternative that would result in marked improvements to lethally warm water temperatures. Unimpounded flowing water is better able to maintain cooler water temperatures necessary for increased survival of native riverine aquatic life. Water quality improvements need to be considered as part of the alternatives’ analysis.

8) Cultural Resources: The DEIS emphasizes risk and potential degradation to cultural resources in the dam breaching alternative and fails to recognize significant cultural benefits that a natural river would restore.

Functioning natural rivers are and have always been at the heart of Pacific Northwest’s culture. The restoration of natural conditions in the lower Snake River through dam breaching represents an unparalleled opportunity to expand cultural opportunities, for both tribal and non-tribal communities, yet the DEIS fails to recognize or give sufficient value to the cultural value of lower Snake River restoration.

The DEIS emphasizes risk, primarily in the exposure and erosion potential of various alternatives on archeological sites and Traditional Cultural Properties, the latter encompassing both historic and modern features in the built environment, including the dams themselves. It downplays or omits the benefits of restored natural river conditions that would result from breaching.

MO3 analysis assigns potential “major adverse” impacts to dam breaching associated with exposure of 14,000 acres now covered by lower Snake River reservoirs, citing the example of a 2014 drawdown at Wanapum Dam as an example. The DEIS suggests the major impacts would be potential erosion damage, threats of looting and casual collection of artifacts (p. 3-1386), and a 915% increase in acre-days of exposure, using the spatial extent of Lower Granite dam’s reservoir as a proxy for the lower Snake River area (pp. 3-164-5, 3-1383). The benefits of additional tribal access and restored cultural use are referenced, but given little weight as benefits. The notion of tribal use is mentioned in a footnote in analysis of exposure, (p. 3-1378) stating that short term risk “is expected to shift to beneficial effects in the period after (breaching) due to increased access to these properties by tribal communities.” And later, “Restoration of a natural river would allow tribal communities that attach importance to those areas to access them and, in the long term, experience the river as it was prior to inundation (p. 3-1388). The analysis notes that 293 archeological sites encompassing 2,125 acres exist within the lower Snake reservoirs (p. 3-1383), and that
based on improved survey techniques would likely expand to over 500 sites after breaching (p. 3-1387).

The summary of effects acknowledges that exposure of Traditional Cultural Properties “would allow resumption of some traditional uses that have not been possible since the dams were built, and this is viewed as a beneficial effect” but continues to note that the partial removal of dams “would be major effects to these built resources and would reduce their historic value” (p. 3-1391).

The DEIS acknowledges that MO3 was “specifically identified by several tribes as preferable” and “Most tribes support breaching the four lower Snake River dams...as it represents the only alternative that substantially attempts to restore the river to a more natural environment” and some “could interpret dam breaching as a meaningful milestone in salmon restoration efforts” (p. 3-1414).

“Exposure” of the currently inundated area represents an extraordinary opportunity for people to reconnect with the land and river, one in which public agencies would need to play a significant management role. Any serious strategy to restore natural river conditions in the lower Snake River would include plans for ecological restoration, as well as management of access and measures to protect significant cultural sites and resources. The DEIS fails to consider such restoration plans and protection as elements of its mitigation strategies, and in doing so fails to recognize both federal agencies’ responsibility in post-breaching land management and the significant cultural value that breaching would offer.

9) Environmental Justice: The DEIS downplays or dismisses the significant, disproportionate negative Environmental Justice impact that continued operation of lower Snake River dams and reservoirs imposes upon tribes and downplays the restorative justice value of a natural river.

In its analysis of Environmental Justice (EJ) impacts, the DEIS claims that changes to vegetation and wildlife associated with dam breaching would be adverse, including “the potential to adversely affect plants used for ceremonial and subsistence gathering activities by tribal communities” although in the long term, following re-establishment of vegetation, “target species are expected to return and be available for traditional hunting and trapping activities.” Still, the DEIS considers the EJ effect related to vegetation to be minor with no disproportionately high and adverse effects on minority, low income or tribal people” (p. 3-1428).

On fish, the EJ analysis emphasizes “short term adverse effects” to most species but then acknowledges that “long-term increases in abundance in anadromous species due to dam breach are expected to occur, particularly Snake River runs of Chinook salmon and steelhead.” And that “All species of salmon and steelhead are culturally important to Indian tribes and increased salmon and steelhead returns could result in a major beneficial change.” It notes potential adverse impact to resident fish harvest that would adversely impact opportunities for tribes, low income and minority subsistence fishers (p. 3-1460).
The EJ section acknowledges that “return of this portion of the Snake River to riverine conditions would allow practitioners of traditional lifeways the chance to return to locations that have been inaccessible for decades,” a benefit “most recognized in tribal communities” (p. 3-1463).

**Conclusion**

American Rivers believes that breaching the four lower Snake River dams would deliver the most effective and scientifically justifiable means of restoring threatened wild salmon and steelhead and bring along significant economic and cultural benefits that the DEIS excludes, ignores, or dismisses.

We strongly recommend that your agencies integrate additional investment and mitigation actions, based on comprehensive analysis that utilizes existing methods, studies, data and strategies that were excluded from the DEIS, to develop a recovery plan that restores natural river conditions in the lower Snake River. A well-developed dam breaching and investment plan can recover federally endangered salmon and steelhead runs, and also initiate a transition to modernized sustainable infrastructure for power conservation and generation, transportation, irrigation and water supply, as well as diversified recreation and cultural resource preservation.

The DEIS and especially the Preferred Alternative fail to recognize or comprehensively analyze impacts to wild fish populations, implementation costs, economic values, energy, irrigation, transportation, sediment, cultural, and environmental justice aspects of the alternatives, consistently diminishing or excluding benefits associated with dam breaching and a restored natural lower Snake River. Consequently, we do not believe the analysis in the DEIS meets the standard for a “hard look” at all reasonable alternatives as required by the National Environmental Policy Act. Improved, comprehensive analysis and mitigation planning would produce a cost-effective strategy for lower Snake River dam breaching, natural river restoration, and infrastructure modernization.

Capturing the opportunity to restore the lower Snake River and the thousands of miles of salmon-bearing tributaries that flow into it represents a unique path to ecological recovery that will bolster the future of the Pacific Northwest economy, its cultural integrity, climate resilience and sustainability. We urge the federal agencies to work with regional stakeholders and leaders to take these critical steps as soon as possible.

Sincerely,

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Director, Rivers of Puget Sound and Columbia Basin