

Waddell Letter to Chief's Environmental Advisory Board

July 5, 2017

Page 1 of 8

July 5, 2017

Comments for the Chief's Environmental Advisory Board meeting 12 July 2017

Submitted by;

James Waddell

Civil Engineer, PE Retired, USACE Retired

289 Ocean Cove Ln

Port Angeles, Washington

98363

I had a 35 year career with the Corps and other federal agencies and am retired. I have no affiliations in regards to these comments and do not represent anyone but myself.

The purpose of my comments is to once again shed light upon Corps findings in the 2002 Environmental Impact Statement for the lower Snake River Dams about environmental effects, cost and economic findings, and available policy options for the Chief of Engineers and the EAB.

This is the fifth EAB meeting to which I have submitted comments regarding the lower Snake River Dams. While I realize the EAB is not an action arm of the Corps, its advice to the Chief should carry some weight. The four dams on the lower Snake River will continue to fester as one of the Corps' greatest environmental tragedies, if not dealt with immediately. Previous documentation has pointed out the serious lack of national and regional economic benefit. The Benefit to Cost Ratio is well below one. The ever increasing operations and maintenance costs make the hydropower generated by the lower Snake River dams several times more expensive than the other hydropower dams in the Columbia basin. The Corps' lack of money to maintain the \$2 billion in investments since 1988 just in juvenile bypass improvements on the four dams, is now causing more juvenile mortality, than if the Corps had done nothing. Indeed the 2002 EIS pointed this out, that is, doing nothing was slightly better than constructing more bypass improvements. Instead, the preferred environmental alternative in the 2002 EIS, breaching the earthen berms, was taken off the table by accepting misleading economic conclusions.

Today, the mistakes continue. Managers and regional leaders have made an institution out of misleading each other and folks like you based on information from pro-dam advocates, in and out of government. The misleading or incorrect information is often left uncorrected or even condoned by the Corps, BPA or NOAA and some elected leaders. Once again, many are drinking the "kool-aid" of more studies, a Systems Operations Review, a new EIS and a 6th Biological Opinion. These federal agencies gladly drink this, since it gives an appearance to the court and the public that they want to have an honest look at the problems and solutions. They do this while ignoring their own reports, the Corps 2002 EIS, data and their own staffs, (if these folks were allowed to speak candidly without fear of retribution). What the Corps and other federal agencies are ignoring is that if they were to immediately put the four lower Snake River dam

projects into a non-operational status by breaching the earthen berms, they would be viewed as modern day heroes for giving Snake River salmon and steelhead their best chance at recovery, while at the same time restoring a massive ecosystem for future generations to enjoy, and fulfilling Stevens Treaty obligations to Pacific Northwest tribes.

At the last EAB meeting in October, a letter I sent to the Chief was read aloud. In response, the Chief read the NWD announcement requesting the public to provide scoping comments to the new Columbia Systems Operations Review, indicating through all appearances and actions since then, that this is what the Corps is going to do to address the issues raised by your own reports and data. He also noted that you folks wanted to see what kind of scoping comments would come in. Of course thousands did and if you got a briefing on them you would have seen many that said the 4 LSR dams should not be included in this new NEPA process because you already have an EIS that can be quickly updated. These comments also suggest a two tier response to the court ordered NEPA process, Tier One, begin breaching immediately with the 02 EIS and Tier Two assess the rest of the FCRPS with the new NEPA/EIS process. I am quite sure that Judge Simon would have no problem accepting this even though the Second Tier will take longer than five years. Not to complicate things too much, but I suggest that since the Corps must undertake a similar process leading up to the Columbia River Treaty negotiations, that CRT process and the Second Tier NEPA be combined. It will save money and may in fact lead to a better treaty and more cost effective Columbia River system

You folks also received many thousands of computer generated comments that said the Corps should consider breaching the 4 LSRD's in the new NEPA process. This is ironic, but also right on script with your folks in NWD and many of the environmental NGO's. For over two decades both groups have evolved to embrace litigation as **THE** means of progress. To the point that the Corps of Engineers has acquiesced its expertise to solve problems to the trial attorneys. This is unfortunate since the Corps has some great attorneys who know how to utilize policies to solve problems with engineers, instead of in a court room. The NGO's are also content with the litigation, given the BiOp/spill victories in court that they tout to their donors as success. This of course has led to more wasted tax/rate payer money and no recovery of endangered fish or orca. It has only led to a self perpetuating cottage industry for researchers, trial attorneys and environmentalists who desire to hold onto their coveted positions

Just to remind you, this new NEPA process will take 5 plus years just to get to a *programmatic* EIS and a lot more than the \$40 million budgeted. Rumor has it the current estimate is now \$80 million. If breaching were even considered in this PEIS and it were left to Walla Walla District to accomplish, it would be another 3-5 years before a specific EIS for breaching would be completed. So it would be another decade and at least \$120 million to get to the same answer you have in the existing 2002 EIS. And as you know this EIS is still used for ongoing operations and mitigation improvements on the dams today. This basic policy was affirmed in a letter to me by the ASACW in January. The letter also points out that breaching is an alternative in the

O2 EIS (the current EIS) and that the new NEPA process can be shaped by the the current EIS and vice-a-versa. The letter is attached.

So, in the meantime in the real world of dam operations and mitigation efforts to restore endangered runs I would like to point out a few things since my last input to the Chief and EAB.

The Corps has spent another \$30-40 million upgrading the juvenile bypass system on Lower Granite Dam that biologists say is a waste of \$100 as it will have little to no benefit. And, NWW still plans on doing follow-on phases that will add millions more, while claiming that it is BiOp driven, so must be budgeted.

Lack of O&M money is leading to a system that is, not only defective in concept but, if not maintained to a very high degree, causes greater mortality than had it never been built. For instance, public reports show, in spite of the fact that biologists pointed out that the screens at Little Goose Dam preventing juvenile salmon from entering the turbines had not been properly cleaned and repaired over the winter, they were installed anyway. The result was an estimated 5,000 smolts impinged or trapped in the screens. What is not publically known is how many thousands more were injured and died, or will die later. This all happened during high flows so that to repair the screens they had to shut down 2-3 turbines in addition to the one already out of service, thus causing very high gas saturation at levels that are lethal to salmon, adults and juveniles. I was told by state biologists that they have seen numerous adults "scalped" when gas bubbles form under their skin and is peeled off their foreheads when they hit the water shear from the dam's flip lips. I should also point out that very few, including the environmental NGO's, are going to say that these high flows over the spillways are causing very high gas saturation throughout the entire Columbia Snake system with the resulting mortality on fish. On the lower Snake the Corps NWW have been operating these dams outside of the ESA waivers for weeks at a time. Of course, your regional leaders are saying this cannot be helped since this is a high flow problem. The truth is, were it not for the four high head dams there would be virtually no dissolved super saturated gas in the river

Lack of O&M money has delayed replacement of the debris boom at Little Goose Dam since 2014. Debris impacts further damage the screens. Lack of funds have led operators of each dam to forego debris removal since it is easier for them to pass the debris by fully opening tainter gates during high flows and passing the problem downstream to the next operator. Beyond the obvious fallacy of this, it also accelerates erosion of the stilling basins at each dam because of the high flows, a historic problem, and because the debris is spilled, large logs and stumps pile up on the concrete apron. I don't have to tell you that this also accelerates erosion. Full tainter gate spill has also damaged the downstream jetty for the navigation lock, which means at high spill conditions the lock cannot be used.

In April and several weeks late the 4 month lock closure was completed on all the 4 LSR Dams, in spite of the fact that this is nothing more than an expensive subsidy that has cheaper alternatives available. All this has been noted before and is reflective of the very low BCR for these four dams. See attached scorecard. This is just more wasted funds that are badly needed elsewhere on other dams and restoration projects in the region.

Recently, one of the economists who worked on the 2002 EIS has come forward to support the concern that much of the economic work was cherry picked at the time by the NWW and NWD economists/study managers. Collaborating with some of his coworkers on the original report, they have estimated the present value of reclaiming some, about 6500 acres, of the agriculture lands that were formally in viticulture and orchards. Their estimate adds \$120 million per year in economic activity after dam breaching. This has not been added to the BCR shown on the attached scorecard but it further drives a terrible BCR of .15 further into the dirt. Breaching the four dams would also add at least 2,500 jobs to the region, on top of the 3,000 recreational jobs a free flowing river brings. This alone should be enough for OMB and the White House to realize the political statement this would make over the preservation of a couple hundred federal jobs for employees who could be rotated elsewhere or who may be retirement eligible. Losses to the navigation industry would be practically zero as 90% of the traffic is on the Columbia and McNary pool at river mile 1-5 on the Snake.

Also impacting conditions on the lower Snake is another contracting fiasco by NWW (4 big ones come to mind in just the last 3 years) with Dworshak turbine unit 3, the main unit. This unit has also played a vital role in reducing temperatures in the warm lower Snake reservoirs during summer fish migration. The unit has been a problem for years and money has never been available for a proper rehab. Last fall it broke again and was under contract to be rehabbed by July of this year. According to public reports, poor contractor performance and oversight have led to QC problems that will cause the unit to be delayed until next year. Being a 700 foot high flood control dam, it needs to release water come hell or high water in July, but instead of using the turbine it will use the spillway. You get the picture again with the saturated gas, but much worse given the head of this dam. Not to mention that this water will not be as cold as when going through the turbine. Reports in July show the water releases to be 2 degrees warmer than tailwater temperatures using the turbines and the temperatures at the next dam that are already exceeding the 10 years average. This is another reason to drawdown this pool this summer.

Then there are Bonneville Power Administration woes. Recent programming documents still do not appear to indicate plans to replace anymore of the remaining 21 over age turbines on the 4 LSR Dams despite their rhetoric to folks that they are doubling down on turbine rehabs. I think that, what they would mean to say in truth is, they are having to spend twice what their estimate was just a few years ago to replace the first three at Ice Harbor dam, and that is already twice the estimate in the 2002 EIS. They would also say, if they knew how to calculate

the full Corps and BPA operational cost of each dam, that these four dams are running anywhere from 2 to 4 times more money to operate than a Columbia River hydro project. BPA has also informed the agencies that they will be reducing their expenditures for environmental work by 25% because power rates are not keeping up with operating costs.

The high flows and spill this year are also causing another problem for energy producers. While spring flows have always created surplus power for BPA that drives wholesale prices very low, this year it caused them to curtail wind energy on 22 days. Most people don't realize that you can't simply turn off turbines on these rivers and divert water over the spillways without causing massive fish kills because of the gas saturation problem noted above. Indeed, since it is largely relegated to the history books, few if any know that the 4 LSR dams were originally built with only half the turbines installed. The budget folks in DC at the time knew the power economics did not pencil out, (nor did they ever). However, once the dams were built, the Corps realized that these high head dams spilling so much water were causing massive fish kills. So the other 12 turbines were installed, even though they were not needed for power. When this is put into context with the fact that power producers in the Pacific Northwest have placed another 4000 MW of wind and 2000 MW of solar into BPA's Integration queue *in just six months* last year AND the fact that California is finding wind, solar and conservation to be even cheaper than BPA's surplus subsidized "cheap" power, it is little wonder that the BPA wants to avoid further capital investments in the 4 LSRD's. This also has big implications for the Canadian Treaty negotiations mentioned above, but NWD appears to pay little heed to this, instead dreaming up Purpose and Need arguments attempting to make the dams immutable. Taking out the 800 aMW's the 4 LSR Dams produce will make it possible for the private sector to place more power on the grid and allow the Corps and BPA to move hydro and navigation monies to other dams with a better ROI.

BPA and their pro-dam lobbyists have been telling us over the last year that it is not the power itself that is so important as the balancing or reserve power the dams provide to the grid. I and two fellow engineers have checked every example given to us at the CSRO scoping meetings and other media and find that the 4 LSRD's have proved to be nothing more than a minor contributor of contributions that are not needed because there is sufficient hydro from other projects, renewables, natural gas and conservation. These dams simply do not meet their authorized purpose and need. It is of course a far greater sin to keep operating them under these conditions than to pretend they are a "value to the Nation", as the NWW District Commander is claiming on the Corps website. But NWD has been "doubling down" on the propaganda, rewriting "purpose" arguments for Judge Simon that claim the dams cannot be breached since that would be a change in purpose, which only Congress can authorize. Putting a project into a caretaker or non-operational status does not change the purpose of the project and is often done in the Corps, without Congress having to authorize it. Of course this true, or how else could the Corps exercise its fiduciary responsibilities when projects fail or Congress does not appropriate enough the money for all projects no matter their value?

Earlier this year a BPA budget official stated in a program review meeting that BPA has the worst, by far, asset to debt ratio of any public utility in the Nation, 93%. When you add their interest payments to the annual operating cost for these four dams it looks like they have been losing money on an annual basis for the last five years. In other words, the lifecycle economics are bad enough for the Corps to swallow, but for BPA, they lose money every time they spin turbines on the Snake. And they do not appear to be paying their debt off either, just interest. And after amassing another two billion dollars in debt for the failed juvenile bypass hardware the Corps has hung on the dams, I can't imagine what is keeping them from telling you guys to shut the four dams down today, except that no one wants to be the first one to say the dams need to be taken off the grid and put into a non-operational status. It is also important to remember that BPA is a Power Marketing Agency, so its passion is in marketing, not operating dams. They have indeed launched another joint effort with pro-dam lobbyists to "sell" the value and greenness of these dams to the public as a precursor to rate hike requests, and to politicians in order to build pro-dam support heading into this NEPA process and Court arguments. All of this is now becoming common reading in power journals and related articles.

I also see now that the President's budget has a line in it to sell off BPA's grid assets. I don't know if anybody told OMB that these are the only assets BPA owns. So where does that leave the Corps and the Bureau? Will they be trying to sell expensive surplus power on the open market and, for the LSR Dams, at a significant loss?

And then there are the endangered species that are doing worse than ever since the Corps' two billion dollar investment to recover them began in 1988. As government reports and sources predicted, and we documented in our Nov 2015 Salmon White paper, in 2016 the average runs were down over 30% from the 10 year average (a metric the agencies adopted to avoid pre-dam run comparisons). For this year they were initially predicted to be 10% less again, but are now predicted to be over 30% less. As of July 4<sup>th</sup>, the now complete Snake River Spring Chinook run is down 64%, Summer Chinook are down 53%, Steelhead (another listed species) is down 83% and early returning "jacks," an indicator of next year's runs, are down 45%. Even if we assume some improvements with late arrivals, it is still going to be another disastrous year, to quote several fisheries biologists. Next year the same, which would mean that the Snake River will have four very bad years in a row, which for salmon runs is very bad news and the endangered Southern Resident Killer Whales that depend on them. This is news that you will likely not hear, except over a beer. The "record returns" rhetoric we hear from the regional agency leaders is no longer based on the 10 year average, but on the 1990's when some runs almost vanished. All the public hears is misinformation that things are doing fine and the investments are paying off.

This is the predictable end game of a 50 year trajectory. In spite of massive investments in the hydro system, hatcheries and habitat along with ever more restrictive harvests, this is an end game that is being ignored by the regional leadership. When I get a rare opportunity to meet

face-to-face with leaders, they are stunned (or feign ignorance) when I tell them the truth about what is really going on. I can't always tell if it is because they are hearing a different story or that I had the temerity to tell them what their own documents say. The state and tribal folks are petrified that they will lose funding for habitat work, if they say anything disparaging about the 4 LSRD's since BPA funds most of it. As the EAB may be aware, the Corps is not funding much restoration in the rest of nation or Pacific Northwest, such as Puget Sound which has a \$400 million price tag, because so much is going into these four dams. This is the maddening paradox, the Corps is spending billions that the Corps' Feasibility Study and EIS in 2002 said was less effective than doing nothing. The Corps does not have the O&M money to maintain this massive investment which in turn causes more mortality than if it had done nothing. The ever smaller numbers of fish is making the habitat investments pointless (a fact that the habitat industry is only now waking up to). Ever smaller salmon and steelhead runs and declining genetic diversity makes recovery exponentially more difficult with every year that breaching is delayed. The overall spiraling loss of biomass into the Columbia/Snake is crashing the ecosystem from the micro biological food webs in the headwaters of Idaho to the lack of primary prey for endangered killer whales to loss of fisheries in the northwest Pacific Ocean. All this on top of the Corps failure to meet the fundamental federal objective of creating National Economic Development, which does not happen with a BCR way below 1. Never mind the regional loss of thousands of jobs, indirect economic and ecosystems services benefits and higher power bills by the continued operation of these four dams. While many in government will nod in agreement, since it is in their own publically available reports, few seem willing to speak up. Being an independent group, hopefully the EAB can rise above this.

This fear of communication and lack of transparency by regional leaders and managers is at an all time high, to the point they don't even read the reports and empirical data from the field. For instance NOAA has stated, buried in the hundreds of pages of its 2016 Spring/Summer Chinook Recovery Plan, that while the Plan has many actions directed at recovery, they will not lead to recovery. Some recovery plan! Keep in mind, the \$2 billion and counting mitigation efforts on the dams are part of the plan's actions. I should also point out that the Corps is set up to take the fall for "jeopardy" since they state this in their recovery plan. Having stated this in their report, all this BiOP litigation and activity is just an expensive sideshow. The Corps does not have to wait for a judge to suggest what he Corps should do. That is only an excuse and willful delay.

In October of last year, it was pointed out again to the Chief and EAB, that based on your own data and options availed to the Corps in the 2002 EIS, the immediate drawdown of Lower Granite Dam to spillway crest to allow improved summer passage and habitat conditions followed by removal via mechanical/controlled hydraulic breaching of the dam's earthen berm in December is the only option remaining to recover the listed species. Given the breaching alternative laid out in the 02 EIS, you have more than enough NEPA coverage do this as an emergency action. Since this was not done in 2016, biologist warn, that time to start viable

recovery is so short, that summer drawdown of Lower Granite followed with the breach of Lower Granite **and** Little Goose Dams starting in December of 2017 is necessary. This too is documented in the O2 EIS and was reviewed/updated and provide to the EAB over a year ago. Despite the mocking I took by LTG Semonite at the October EAB meeting that updating and contracting could take place in a matter of a couple months, this is all possible to accomplish this year if decisions are made very soon. He also referred to me as "just one of the variables" and there are many "variables" the Corps must consider. True, as one citizen providing input, I am no more than "one variable". But, the information presented to the EAB is the work of the agencies who have considered thousands of variables,

I very much realize this is a lot for an EAB member or the Chief to digest. However, the point of listing all these, (there are many more problems I could list) is to give you an idea of how the cost, economics, biological issues and **policies** that provide a way forward, and when taken collectively, present an issue very worthy and in need of your attention. I also say this because, like many things in the Corps, this will require executive leadership in DC to overcome the institutional inertia endemic in the Northwest surrounding these dams.

Jim Waddell