

Waddell Letter to Inland Waterway Users Board

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Comments for the Inland Waterway Users Board meeting, 19 July 2017

Submitted by;

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I have 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 are to shed light upon findings in the Corps 2002 Lower Snake River Feasibility Report/ Environmental Impact Statement (EIS), in the context of current environmental, cost and economic findings, and available policy options since that time, to the Inland Waterway Users Board.

In August of 2014 I provided comments and made statements at the IWUB meeting in Walla Walla. In these comments I pointed out that when Corps planning guidance is properly applied to the economic analysis found in the Corps 2002 Lower Snake River Feasibility Study/Environmental Impact Statement (EIS), there is very little if any transportation savings by shipping by barge on the lower Snake River from Ice Harbor Dam to Lewiston Idaho, thus no economic benefit. Since then, further analysis of Inland navigation on the lower Snake by two economic consulting firms shows little economic value gained from shipping by truck/barge. Farmers in eastern Washington are continuing to shift from barging on the lower Snake as evidenced by their role in building unit train grain loaders for rail shipments to Portland and Seattle/Tacoma.

These farmers are also taking advantage of the state of Washington's rail grain shuttle service for car lot loads to the port of Wallula on the Columbia River to be shipped by barge to Portland and other lower Columbia River Ports. Additionally, the Port of Lewiston Idaho has lost virtually all of its container shipment business since 2014. Barge shipments of petroleum products have too nearly ceased on the lower Snake except for port facilities located below Ice Harbor Dam, effectively, part of the Columbia System.

As the Board and the Corps leadership should clearly be able to fathom is that a waterway classified as "negligible use" has further declined in use, importance and certainly economic benefit. While it is clear the navigation is fully subsidized, many divert attention to this failure by arguing that the hydropower benefits are such that they are the reason the lower Snake River dams must be kept operational. This too is false. When full accounting for all the four dam's costs versus all hydro, navigation, recreation, incidental irrigation and commercial fishing

benefits are considered, the Benefit to Cost Ratio (BCR) is .15, see attached "scorecard" for details.

Nevertheless, many still exaggerate navigation benefits for the lower Snake River to the point, that when effectively challenged with the facts, divert attention by broadening the argument to say that, these four dams are an essential and inseparable part of a Columbia/Snake River "System". As such they cannot be placed into a non-operational mode. This is like saying the Lower Kentucky River locks are part of the Ohio River System and without them the Ohio would fail. In contrast, placement of the Willamette River Lock and Dam into a non-operational status by Portland District did not entail such a system relationship. In reality, the four Lower Snake Dams are a liability to both the Navigation and Hydropower functions of the Columbia River by depriving funds needed for these other projects. The LSRD's also inflict so much damage to endangered species as to jeopardize the cost effective operations of the remaining Columbia River Dams. Judge Simons 2016 directions for the Agencies to undertake a complete Columbia River Systems Operations review and NEPA analysis to protect and recover salmon and steelhead, largely because of the LSRD's, is evidence of this and will not only waste well over \$100 million but leaves the question hanging for another 5-10 years. This delay makes prudent investment decisions by the private sector, whether they be in navigation or power generation, exceedingly difficult and risky. Even the development of Lewiston Idaho has been in stasis for decades because of the false economic hope the inland navigation would bring and the lack of redevelopment behind the project levees for fear of them being overtopped. Another irony in that many of the pro LSRD advocates instill fear in people by claiming a loss of flood protection when in fact these are not flood control projects. Indeed, the deposition of 2 million cubic yards of sediment each year at the head of the navigation channel in Lewiston substantially raises the flood risk in Lewiston behind the project's levees.

The ever increasing operations, maintenance, repair and rehab costs make LSR hydro power and navigation several times more expensive than the other dams in the Columbia basin. In addition these four dams incur massive investments for fish mitigation both in construction costs as well as O,M,R&R. As current evidence of failing recovery efforts show, the lack of money to maintain a \$2 Billion dollar investment, just in juvenile bypass improvements on the four dams since 1988, is now causing more juvenile mortality than if nothing had been done. 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 this EIS, breaching the earthen berms, was taken off the table by accepting misleading economic conclusions.

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 not only be viewed as modern day heroes for giving Snake River salmon and steelhead their best chance at recovery, but, as an agency that brought thousands of new jobs

in recreation, reclaimed viticulture/orchards and synergistic enterprise, while insuring the economic viability of the remaining hydro/navigation system.

However, the Corps leadership is not only following the can kicked down the road by the Courts but usually “manage” to kick it again when close to meaningful action. The excuse now is to follow the new NEPA process. Underway for 14 months, the Corps leadership is “reviewing” the tens of thousands of scoping comments. Not evident in public statements is any evidence by hundreds who said the 4 LSR dams should not be included in this new NEPA process because the Corps already has 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. It seems self evident 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 since the Corps must undertake a similar process leading up to the Columbia River Treaty negotiations, that process and the Second Tier NEPA be combined. This will save money and may in fact lead to a better treaty and more cost effective Columbia River system. One that will preserve and enhance Columbia River Navigation to the Tri-Cities.

The Corps 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 Corps folks in Northwest Division 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 and diversion of scarce funds to the LSRDs. It has only led to a self perpetuating cottage industry for researchers, trial attorneys and environmentalists who desire to hold onto their coveted positions

All should note, 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. As it should be known, but largely ignored in the region, this EIS is still used/needed 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 02 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 additional few issues since I last addressed the IWUB.

The Corps has spent another \$30-40 million upgrading the juvenile bypass system on Lower Granite Dam. Biologists say this 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. This work experienced delays that avoided being significant only by changing contractors in mid stream and working two shifts seven days a week. The new cost has not been revealed but will easily be over \$10 million. This and dredging costs 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 navigation 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 costly to operate than a Columbia River 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 and Washington Public Utility Districts are 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 ever 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 the Corps 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 LSR dam support heading into this NEPA process and Court arguments. All of this is now becoming common reading in power journals and related articles.

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 4th, 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 publically say anything disparaging about the 4 LSRD's since BPA funds most of it. As the IWUB 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 a Federal Advisory group with some independence, hopefully the IWUB can rise above the regional grid lock and support immediate divesture of reservoir navigation on the lower Snake River.

However, 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 indicative of willful delay.

In July of last year, it was pointed out again to the Chief of Engineers, that based on the Corps 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

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alternative laid out in the O2 EIS, the Corps has 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 Chief over a year ago. 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. Given the low volume of barge traffic on the upper resevoirism, industry impacts should be limited as long as there are several months warning of drawdown of the first reservoir. In the October 2016 Environmental Advisory Board meeting, the Chief of Engineers referred to me as "just one of the variables" and there are many "variables" the Corps/he must consider. True, as one citizen providing input, I am no more than "one variable". But, the information presented to the Corps and the IWUB is the work of the Corps and other agencies who have considered thousands of variables,

I very much realize this is a lot for an IWUB member to digest. However, the point of listing all these, (there are many more problems I could list) is to give 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 of the Boards attention as advisors to the Corps. 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. Otherwise, inland navigation in the Northwest will surely suffer if hamstrung by the costs and lack of benefit from the four lower Snake River Dams.

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