Key Points

An Economic Review of the Yakima Basin Integrated Plan (YBIP)

"How errors, inaccurate assumptions and false constraints drive the YBIP forward"

The current YBIP (formally called the Yakima River Basin Integrated Water Resource Management Plan and also called the "IP") is a water management plan for Yakima River Basin of South-central Washington State that has arisen out of the broader Yakima River Basin Water Enhancement Project (YRBWEP). It has taken years to develop, cost millions of dollars and resulted in a substantial amount of published documentation.

The YBIP released its federally mandated Benefit-Cost analysis in the October 2012 Four Accounts Analysis (4AA) which concludes the net benefits of the IP as a whole range from $6.2 billion to $8.6 billion and associated costs ranging from $2.7 billion to $4.4 billion. However, this analysis contains significant mathematical errors and the data used in the analysis is now outdated and no longer valid. Specifically, the Washington State Water Research Center's (WRC) 2014 study of the YBIP economics revealed significantly lower total benefits in the $1.1 – 2.2B range. At the same time, currently projected costs of $3.8B have increasing significantly. Just two of the early projects (KDRPP & KKC) have had recent cost increases of nearly $600M (300% as disclosed in the USBR feasibility study). Total YBIP costs of the IP are now at least $4.4B and still growing.

Specific shortcomings of the current IP are as follows:

- ***The 4AA B-C analysis is filled with outright errors and flawed assumptions***. Correcting for these reduces the benefits approximately $6B to just over $1B while simultaneously the costs are at $3.8B and climbing ($4.4B with the recent cost updates). Only Fish Passage comes even close to passing B-C minimums. Given the magnitude of errors, flawed assumptions and cost increases, the B-C analysis according to the 4AA and cited in the proposals is inaccurate by orders of magnitude and therefore an updated B-C analysis must be mandated.
- ***Net…Net, the YBIP spends $2,794 per sockeye and $127,725 per non-sockeye fish.*** The IP benefits are fundamentally based on sockeye salmon (94% of fish benefits, 76% of total IP benefits), which primarily depend on Fish Passage for effective reintroduction. Non-sockeye require expensive habitat restoration and in-stream flow changes and represent only 6% of fish benefits. Clearly the place to start is with sockeye restoration, which can be accomplished without the inefficient non-sockeye restoration as proposed.
- ***Alternatives to draining lakes and building dams exist and should be objectively evaluated (not by USBR or the irrigators) before funding any projects.*** Hay and wheat use 41% of the water in the Yakima Basin. Combined, hay and wheat use nearly 3,500 gallons of water per $1 of net revenue, over 4x more than the average of 846 gallons for other Yakima Basin crops. These non-strategic, high water using, low economic value crops provide only 14% of Yakima Basin net revenue (most of it is exported as well) and are readily sourced from other regions in Washington. Exploring drought year deficit watering strategies provides 600 KAF of water use savings and reduces the economic impact of droughts by over 50% ($71M vs $150M). The 4AA study and the USBR continue to ignore this option.
- ***The USBR must provide accurate long-term analysis of water levels for Lake Kachess.*** The USBR has not responded to requests for the 100 year analysis based on their drought assumptions. Models developed based on the YBIP assumptions suggest catastrophic impacts on Lake Kachess water levels with below current minimum pool levels occurring 50% of the time.
- ***Determine reimbursement responsibility and amounts before any funding is released or construction starts.*** The federal government mandates significant non-federal funding while WA State mandates significant non-state funding. The resulting confusion is unacceptable. Specific, detailed, significant and achievable irrigator financial responsibility should be clearly defined before any funding is released. Current cost projections indicate irrigators could not support profit or repayment.

June 29, 2015

Summary of revised YBIP B-C Analysis:

Overview: Present Value Preliminary Cost Allocation – 2012: With Adjustments

	Total ($M)
4AA Benefits	**7,395**
Adjustments to 4AA Benefits	**(6,255)**
Correct Calculation Errors	**(3,255)**
Adjust for 200k higher initial fish populations and their corresponding lower incremental WTP values	(2,700)
Adjust for present value impact of not including fish benefits until fish projects are actually completed	(200)
Correct lease vs purchase price and calculation errors for Municipal Water Use	(355)
Adjust for Flawed Assumptions	**(3,000)**
Remove potential for Fish Populations to increase above 181k fish	(1,200)
Adjust PV due to 30 additional years to achieve 181k fish population totals	(1,200)
Correct for future climate scenario, reduce from 8x worse than historical to 4x worse (50% reduction)	(400)
Correct for overly constrained water trade assumption of 10%; Allow for 50% inter-district trade reducing FAA Benefits by 50%	(200)
Revised Total Benefits	**1,140**
4AA Total Cost Allocation	**3,520**
Revised Total Cost Allocation: Add $600M for KDRPP/KKC	**4,120**

Revised Total Benefit-Cost	**(2,980)**
Revised Total Benefit-Cost Ratio	**0.28**

4AA Projected Total Benefit-Cost	**3,875**
4AA Projected Total Benefit-Cost Ratio	**2.10**