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**SUBJECT: Comments submitted in response to KDRPP and KKC Draft Environmental Impact Statement
(Set #2)**

The following comments are submitted on behalf of ***Friends of Lake Kachess***, a consortium of three homeowners associations and unaffiliated residents located in areas affected by KDRPP and KKC. I am serving as a representative of these groups and the comments represent my personal views as well. Please note this group submitted comments in the initial open period and the present comments are in addition to, not a duplication of, earlier comments. Comments in this document are derived from information not previously available, in particular the Design Feasibility Analysis Reports for KKC and KDRPP. Although the Design Feasibility reports are now located on the Bureau of Reclamation website, the availability of this important information was not announced by the Bureau of Reclamation as part of the DEIS open comment process. This represents a significant failure of outreach and communication by the Bureau of Reclamation.

Be advised that another set of comments (Set #1) has been previously submitted by ***Friends of Lake Kachess***, focusing primarily on data from the Design Feasibility Analysis Reports for the KDRPP and KKC projects. The two submissions from ***Friends of Lake Kachess*** are not identical comments but represent separate and substantively different issues.

These comments are submitted in response to the Draft Environmental Impact Statement (DEIS) for Kachess Drought Relief Pumping Plant (KDRPP) and the Keechelus to Kachess Conveyance (KKC), specifically for the re-opened comment period ending June 15, 2015. In all cases below, unless otherwise noted, the page, table and figure citations refer to the Design Feasibility Analysis Report for Kachess Drought Relief Pumping Plant (www.usbr.gov/pn/programs/eis/kdrpp/kdrpdraftdesign.pdf) or the Design Feasibility Analysis Report for Keechelus to Kachess Conveyance (www.usbr.gov/pn/programs/eis/kkc/kkcdraftdesign.pdf). For ease of communication these citations will be shortened to "KDRPP Draft Design" and "KKC Draft Design", respectively, when cited below.

The following comments are offered without priority ranking; each represents a concern of the highest priority for our community. In closing, it is clear the KDRPP and KKC Projects have become highly controversial due to their negative economic and environmental impacts. The two projects cannot be

supported on their merits and do not add synergy to the Integrated Plan as a whole. As a result they must be terminated before more taxpayer funds are wasted.

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Introduction and Analysis of Cost Data not included in DEIS

The 2012 Bureau of Reclamation “Four Accounts Analysis” of Benefits-to-Costs of YRBWEP was published in 2012. At that time the Bureau estimated the costs for the two projects (KDRPP and KKC) Projects to be:

	Construction	IDC	OMR	Total
KDRPP	\$177.9 mil.	\$11.1 mil	\$6.8 mil	\$195.8 mil.
KKC	\$ 71.1 mil.	\$ 3.3 mil	\$5.5 mil	\$ 79.9 mil
Total Costs for combined KDRPP and KKC Projects =				\$275.7 mil.

Based upon these cost data, the Four Accounts Analysis estimated a Benefits/Costs ratio in the range of **1.4** for the YRBWEP.

However in the subsequent Draft Environmental Impact Statement (DEIS) for the KDRPP and KKC projects these costs have been shown to be significantly understated. Cost estimates used in the Jan. 9, 2015 Draft Environmental Impact Statement (DEIS) for the combined Kachess Drought Relief Pumping Plant (KDRPP) and the Keechelus to Kachess Conveyance (KKC) , are shown below:

From Kachess Drought Relief Pumping Plant
Draft Environmental Impact Statement
Table 2.13 p. 2-54

From Keechelus to Kachess Conveyance
Draft Environmental Impact Statement
Table 2.14 p 2-55

	Alt. A	Alt. B	Alt. A	Alt. B
Field Cost (\$)	282,660,000	248,580,000	151,100,000	175,580,000
Total Cost (\$)	434,390,000	380,710,000	221,320,000	254,440,000
Total Cost/ Field Cost	154%	153%	146%	145%

[NOTE: for ease of comparison, an average of the two alternatives will be used]

Ave. Total Cost (\$)	407,550,000	237,880,000
for Alt. A & Alt. B		

Estimated Total Cost (\$) of Combined
KDRPP and KKC from DEIS 645,430,000

The estimated costs used in the DEIS for the combined KDRPP and KKC are 234% higher (645,430,000 ÷ 275,700,000 x 100) than in the Four Accounts Analysis. We must assume the more recent, and more detailed, analysis of costs in the DEIS are more accurate than those in the Four Accounts Analysis reported three years earlier. Since there have been no claims that benefits have increased (indeed there are multiple reports that some benefits are overstated), the new cost estimates require a reduction in the 1.4 Benefit/Cost ratio by an equivalent factor. Adjusting for the increase in cost, this yields a corrected Benefit/Cost ratio of [(1.000 ÷ 2.34) x 1.4] of 0.60 for YRBWEP.

However, even the much higher cost estimates in the DEIS were again increased in the subsequent Feasibility Design Analysis for the KDRPP and KKC projects (reported in two separate documents). The Feasibility Design Analysis increased the two projects' costs under three scenarios: low, medium, and high cost, and added two options to the Keechelus to Conveyance Project. For ease of analysis, only the Medium and High Cost Estimates are shown below.

From Kachess Drought Relief Pumping Plant
Feasibility Design Analysis
Table 20 p. 84

From Keechelus to Kachess Conveyance
Feasibility Design Analysis
Table 23 p. 59

	Alt. A	Alt. B	Alt. A	Alt. B.	Alt. C.	Alt. D
Field Cost (med.)($\$$)	332,720,000	331,030,000	217,600,000	217,500,000	250,500,000	250,800,000
Field Cost (high)($\$$)	432,500,000	430,340,000	304,700,000	304,500,000	350,700,000	350,600,000

By using the same conversion factors (for Field Costs to Total Costs) found in the DEIS, we can estimate Total Costs from Field Costs in the Feasibility Design Analysis. [NOTE: Because the Feasibility Design Analysis added two additional options, to maintain consistency with the DEIS we combine Alt. A + Alt. B to derive an average (mean) value, and do the same with Alt. C and Alt. D.]

	Alt. A	Alt. B	Alt. A	Alt. B	Alt. C	Alt. D
Field Cost	332,720,000	331,030,000	217,600,000	217,500,000	250,500,000	250,400,000

(med.)(\\$)			Ave. of A & B	Ave. of C & D
			217,550,000	250,450,000
Converting from Field to Total Cost	154%	153%	146%	145%
Estimated Total Cost (med) (\$)	512,388,000	506,475,900	317,623,000	363,152,500
Ave. Alt. A and Alt. B	509,431,950		Ave. Alt. C and Alt. D	340,387,750

Estimated Total Cost for KDRPP + KKC from Feasibility Design Analysis (med) (\$) $(509,431,950 + 340,387,750) = \mathbf{849,819,750}$

Using the same process we can estimate Total Costs (high) from the Feasibility Design Analysis:

	Alt. A	Alt. B	Alt. A	Alt. B	Alt. C	Alt. D
Field Cost (high)(\\$)	432,500,000	430,340,000	304,700,000	304,500,000	350,700,000	350,600,000
Converting from Field to Total Cost	154%	153%	146%		145%	
Total Cost (high)(\\$)	666,096,200	658,420,200	444,570,000		508,442,500	
Ave. Alt. A + Alt. B (\$)	662,254,200		Ave. Alt. C + Alt. D (\$)	476,506,250		

Estimated Total Cost for KDRPP + KCC from Feasibility Design Analysis (high) (\$) $(662,254,200 + 476,506,250) = \mathbf{1,138,764,450}$

It is clear the true total costs of the KKC and KDRPP Projects have once again been revised upwards. The only question is the amount of the increase, and the corresponding effect on the Benefit/Cost ratio. Using the medium cost estimate from the Feasibility Design Analysis:

DEIS Estimate of Total Cost (med)(\\$)	645,430,000	Feasibility Design Analysis Estimate of Total Cost (med) (\$)	849,819,750
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The estimated Total Costs of KKC and KDRPP from the DEIS are greater than the estimated Total Costs of KKC and KDRPP from the Feasibility Design Analysis by $[(849,819,751 - 645,430,000) \div 645,430,000 \times 100 =]$ 32%. If the true costs have increased (which is the only possible conclusion one can reach from the Feasibility Design Analysis), there must be a corresponding decrease in the (already once-revised) 0.60 Benefit/Cost ratio. **The simplest and most defensible adjustment of the Four Accounts Benefit/Cost ratio would be to reduce it 32%, $[.60 - (.60 \times .32 =)]$ to yield a value of 0.41**

A similar adjustment to the Benefit/Cost ratio can be made from the high cost estimate in the Feasibility Design Analysis. Estimated Total Costs of KKC and KDRPP from the Feasibility Design Analysis (high) represent a $[(1,138,764,450 - 645,430,000) \div 645,430,000 \times 100]$ 76% increase over DEIS estimated costs. **As before, the simplest and most defensible adjustment of the Four Accounts Benefit/Cost ratio would be a reduction by 76%, to $[.60 - (.60 \times .76)]$.14.** While there can be discussion about whether medium or high cost estimates are the better predictor of future reality, there can be no question that historical evidence would support using the high cost estimate.

The significance of using the most recent (and what must be assumed the most accurate) cost data from the Feasibility Design Analysis is the impact on Benefit/Cost projections in the Four Accounts Analysis. **Using the Bureau's own data it is clear the corrected Benefit/Cost ratio of the YRBWEP falls in the range of 0.14 – 0.41.** Whether the true value is at the low end or the high end of the range is immaterial; what is important is that the Four Accounts estimate (of 1.4) overstates the true B/C value by orders of magnitude and cannot be used in decision-making for YRBWEP.

There has been extensive discussion about the relative merits of the Four Accounts Analysis (FAA) and the Washington Research Center (WRC) findings. The WRC found that all projects in the YRBWEP had a negative Benefit/Cost ratio, as did the entire plan. Proponents of the plan have argued that “disaggregation analysis” is inappropriate because the whole is somehow greater than the sum of the parts. The preceding analysis shows that the arguments about methodology, while substantive and important, pale in comparison to the impact of updated project cost data on the analysis. Using the BoR's own data, Benefit/Cost ratios fall far below the 1.0 threshold required for federal funds (i.e., 0.14 – 0.41). If the WRC study results were recalculated using updated cost data, the Benefit/Cost ratios would be even lower (we estimate in the range 0.00 – 0.15).

These corrected estimates of Benefit/Cost are not trivial changes; a reduction of B/C from 1.4 to 0.14 – 0.41 is both quantitatively and practically significant. This magnitude of change is relevant for policy makers, citizens, and all other stakeholders of YRBWEP. It is imperative that Benefit/Cost calculations be corrected using current project cost data, and that these corrected calculations be disseminated before any further action is taken regarding YRBWEP.

Given the outdated nature of cost data used in the DEIS, we ask that the following corrective actions be taken in issuing a Final Draft Environmental Statement (FEIS) for KDRPP and KKC. For ease of expression the following abbreviations will be used:

DEIS Draft Environmental Impact Statement
KDRPP Kachess Drought Relief Pumping Plant
KCC Keechelus to Kachess Conveyance
BoR Bureau of Reclamation
B/C Benefit-to-Cost
YBIP Yakima Basin Integrated Plan
WRC Water Research Center at Washington State University

SUMMARY OF FINDINGS AND REQUEST FOR ACTION: The Bureau must recalculate all Benefit/Cost values reported in the Four Accounts Analysis using its own most current data on project costs. We ask this recalculation take place immediately and be reported prior to the release of the Final EIS, and that all interested parties be informed of the revised Benefit/Cost projections. We further ask that all reports, calculations, tables, figures and other disseminated materials using Four Accounts Analysis cost data contain an addendum with corrected (i.e., updated) cost data, together with an explanation of the effects of updated cost data on any Benefit/Cost projections. A more detailed summary of this request follows.

1. The DEIS project cost estimates for KCC and KDRPP are inaccurate and must be corrected using current cost data. It is imperative that we have valid and complete cost data for evaluating proposals for public funds. The initial estimate of construction costs for KDRPP and KCC (from BoR's "Four Accounts" analysis) estimated the cost of the two projects at \$275.7 million in 2012. Subsequently the DEIS for both projects added several design alternatives and updated the costs as of January, 2015. Taking an average of the four design options, the cost is extrapolated to be \$645,430,000 (a 234% increase). Another cost update was provided in April, 2015 with the Feasibility Design analyses for KDRPP and KCC. Two additional design alternatives were added and Field Cost estimates were provided (which do not include administrative, maintenance, present value and other true costs). Adjusting the Field Costs by the same factors used by BoR in the DEIS, total costs for the two projects range between \$850,000,000 and \$1,139,000,000 (an average 54% increase above the Feasibility Design data). Even this understates the true costs, because the Bureau has acknowledged the inadequacy of the DEIS in recognizing mitigation costs for failed wells, property values decline, increased fire hazard, impaired fire suppression, bull trout and spotted owl mitigation, and other factors, nor does it include the cost of private land purchases and right-of-way acquisitions. Taking all these factors into consideration, it appears the low end of total costs for KDRPP and KCC to be \$1 billion, with the high end approaching \$1.5 billion. The changing design features and shifting methodologies used by the Bureau in projecting costs, intentionally or not, obscures the true costs and prevents citizens and policy makers from making informed decisions. Our independent recalculations of project cost may have an error factor, but any error in our calculations is magnified by the error introduced by BoR in using outdated cost data. The latter is an "orders of magnitude" error. Taking all now-available data into consideration (and including previously

excluded mitigation costs) we ask the BoR to determine and disseminate the true, total project costs of KDRPP and KKC prior to release of a Final EIS.”

2. Request to provide corrected Benefit/Cost estimates for KDRPP and KKC projects. The BoR has publicly acknowledged the minimum threshold for receiving federal funds for YBIP is a B/C of 1:1 (or 1.00). The only B/C estimate the BoR has ever provided is approximately 1.4 (returning \$1.40 for each \$1.00 spent) from the Four Accounts analysis for the entire YBIP. However using the most recent cost updates (documented above) it is clear the total costs of KDRPP and KKC have increased more than 300% (and would increase even more if mitigation costs were included). The BoR has consistently refused to provide a B/C estimate for the KDRPP and KKC projects, saying they cannot be “disaggregated” from the total YBIP. However by the BoR’s own actions it refutes this argument because it is now separating (i.e., “disaggregating”) these two projects from the rest of YBIP by declaring the two projects to represent a 10 year “Phase One” effort. There is no “Phase Two” at this time, either in content or timing, and at the very least it would be decades in coming. The BoR has now disaggregated these two projects from the rest of the YBIP. It is not acceptable to claim the B/C for the two projects cannot be disaggregated and estimated. Indeed, they must be estimated. In the absence of more detailed information, the most logical assumption would be that the BoR’s outdated estimate of 1.4 B/C should be adjusted downward by the 300+% increase in total costs. This would lead to a corrected B/C estimate in the range of 0.14 – 0.41 (a loss of \$0.59 to \$0.86 for every dollar spent) for KDRPP and KKC. We ask the bureau to determine and disseminate the true Benefit/Cost ratio of KDRPP and KKC, respectively, using current data and objective methodology.
3. Request to nominate independent review entity for choosing Four Accounts Analysis or Water Research Center for planning purposes. The Water Research Center is a non-advocacy research center at Washington State University, funded by the National Institute of Environmental Sciences and representing a collaboration of leading scientists from WSU, University of Washington and other universities. In 2013 the Washington State Legislature out of concern for the lack of independent data on benefits and costs of YBIP commissioned the WRC to conduct an analysis of the separate projects in the plan. The WRC study was directed by Dr. Jonathan Yoder and involved scientists from multiple universities and private organizations at a cost of \$300,000. The WRC reported that KDRPP would have a negative B/C of .46, and KKC would have a negative B/C of 0.20, meaning for each \$1.00 spent on the two projects, KDRPP would lose \$0.54 and KKC would lose \$0.80. It further showed that conservation techniques, developing a free-market water rights exchange system, implantation of new technologies, and other approaches would be far more cost effective than KDRPP and KKC, and achieve the same objectives. With the updated cost data from BoR on DEIS and Feasibility Design, the B/C ratios would fall below 0.10, meaning a loss of more than \$0.90 for every \$1.00 spent. The BoR has consistently refused to acknowledge the validity of the WRC, will not consider its findings for planning purposes, and offers no alternative (beyond the now outdated Four Accounts analysis). However the WRC is the only independent and state-of-the-art, comprehensive analysis conducted by recognized experts in the field and subjected to peer-review. Since the BoR and YBIP refuses to recognize or adopt the WRC findings into its planning and analysis, we ask that the BoR nominate a credible, independent third-party organization, recognized for its objectivity

and expertise in water policy research, to review the WRC report and Four Accounts analysis and recommend which methodology should be accepted in B/C estimates going forward. We further ask that this nomination be provided to the University of Washington Environmental Law Program, which will invite other nominations and select a credible entity to review the FAA and WRC finding, and recommend which analysis should be adopted in KDRPP and KKC planning.

4. Request to determine and disseminate mitigation costs for fire risk and suppression. The KDRPP and KKC area has hundreds of homes and related structures, and the two watersheds encompass 10,000's of acres of forestlands . Fire commissioners and firefighters in the area indicate that a reduction in groundwater tables will increase fire risk by removing forest groundwater, resulting in dryer and stressed fuel and more dangerous combustion conditions. Furthermore the lowering of Lake Kachess will dramatically reduce fire suppression ability from both surface and air water transport means. It is likely an 82.75 ft. vertical reduction in Lake Kachess will prevent any extraction of water for suppression purposes. Despite repeated warnings to this effect, the BoR has not responded to concerned parties in the area, specifically the four fire districts most likely to be affected. These are Kittitas Valley Fire District #8, Snoqualmie Pass Fire Department and (through mutual aid agreements), Kittitas Valley Fire District #3/Easton, and Kittitas Valley Fire District #7/Cle Elum. These organizations protect our citizens and their property and are extremely concerned that the BoR refuses to acknowledge the legitimacy of their concerns about fire risk and suppression. The only response from BoR has been that fire risks will be "monitored and mitigated." However it will be too late to mitigate a loss when fire has destroyed homes, forests, and possibly lives. It is imperative that this risk be objectively evaluated and effective mitigation strategies be identified and in place before a hazard occurs. We ask that the BoR engage affected fire departments and include their input in the DEIS. We further ask the BoR to provide an assessment of increased fire risk attributable to KDRPP and KKC, and a full description of mitigation strategies and costs.
5. Request to determine cost and other impacts of diminished public recreation activities. The areas around Lake Kachess and Lake Keechelus (e.g., Lake Kachess Campground, Lake Easton Campground, Snoqualmie Pass, Crystal Springs, Lost Lake, etc.) are extremely popular outdoor recreation areas. The DEIS acknowledges these areas will be severely impacted by, especially, KDRPP. The pumping station will reduce camping by an average of 25 days, water recreation and fishing will be impaired and in some cases eliminated...possibly for consecutive years, hiking and other family activities will be severely compromised. We ask that you conduct a comprehensive and objective assessment of the impact KDRPP and KKC will have on people who live outside the area, and that this assessment be made available to citizens who will lose recreational opportunities due to KDRPP and KKC.
6. Request to determine and disclose mitigation costs of bull trout in Lake Kachess. The bull trout is a threatened species in Lake Kachess and reducing the level 82.75 vertical feet will prevent the fish from spawning in Box Canyon. Yet there is no plan to mitigate this loss of habitat and reduction in population of a threatened species. The Gold Creek Bull Trout mitigation plan does not affect the Lake Kachess bull trout population so cannot mitigate this loss. The DEIS alludes to vague considerations for mitigation of bull trout habitat destruction and population decline,

but does not provide definitive proposals with cost estimates. We ask that definitive plans for bull trout mitigation in Lake Kachess be prepared, complete with cost estimates, these cost estimates be included in any future total cost estimates and B/C estimates for KDRPP and KKC. To be clear, we are asking for a complete description of mitigation strategies you propose for the Lake Kachess bull trout population, their effectiveness, and the costs of those strategies.

7. Request to determine and disseminate information on mitigation costs of private properties. Residents believe a lowered water level will affect property values, possibly cause wells to go dry, create dangerous erosion conditions in landslide prone areas, and likely persist for multiple years. The DEIS confirms their fears, stating these are likely results and Lake Kachess may take 2 – 5 years to refill. [Local residents believe the refill period may be longer, perhaps 10 years.] While the BoR has acknowledged the probability of these events, residents have not received information about mitigation of these losses. Residents who are likely to be adversely affected if KDRPP and KKC proceed ask that the BoR provide a detailed plan for mitigation of private property losses in the case of failed wells, declining property values, erosion/landslide events, and related hazards, the effectiveness of those strategies, and the cost.
8. Request to update and correct estimates of construction activity impact on local environment. Citizens in the vicinity of KDRPP and KKC are extremely concerned about the impact of construction activities. While the DEIS describes construction traffic as a “minor nuisance,” local residents have a different interpretation. The DEIS states construction activities will have a duration of 3 years, but the Feasibility Design analysis has increased that to 5.5 years. The DEIS states truck traffic will be 59 trucks/hour (1 per minute) during peak times, but the Feasibility Design analysis suggests this will more than double (due to two boring machines operating simultaneously and an increase in the size of the KKC tunnel). A “temporary realignment” of the only access road (Kachess Lake Road) will take place for 5.5 years. The DEIS acknowledges there will be an increase in “dust, noise, traffic and other disturbances.” These are more than “minor nuisances.” We ask that the BoR describe its plans for mitigation of these substantial negative effects, and that you indicate the plans for informing citizens of these effects.

