From: "Cecelia Hickel" <cecelia.hickel@verizon.net>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 5:09 PM
Subject: Black Rock Dam Public Comment Submission

Dear David Kaumheimer,

I am a strong supporter for the proposed Black Rock Dam.

I am a Benton City resident and home owner since 1986. Benton City will be directly effected by the Black Rock Dam if it is built. My reasons for support are as follows:

The river has always been a polluted river from agriculture and dairy wastes. The state has always been lax about prevention of dunping into the river and as a result, our drinking water quality in this city has not been of the highest quality.

Recent cancer studies show that agricultural nitrates from fertilizers are primary contributors to the increase in female cancers. In other words, polluted drinking water from agricultural processes is a primary factor for causing cancer in women from environmental sources, not genetics. Was this a known factor for a nuclear source, the whole state would be in an uproar. But since we depend on economics from agriculture, it becomes just a blurb in the news.

Bottom line, the people who drink and depend on their life's water supply from the Yakima River need and deserve clean water. The water quality of the Yakima as a drinking water supply to my knowledge is not very well known process posted publicly. I think we may have a water source problem. The taste changes throughout the year. We replace water heaters every 2-3 years. Coffee pots fail constantly, fixtures plug up, hose sprayers last a short while, etc. It is more than "hard water". The reservoir will replenish the water supply by keeping more water in the Yakima and thus not concentrating contaminates as it draws down in heavy use times or summer months.

More water will improve the river enough to allow salmon to return. The money we now spend for so many years has been mostly unsuccessful overall. Poor return on the investment. If money is taken from the fish recovery account and pay for the electric load the pumping upstream will cost, that is very fair. Dollar for dollar there should be no increase in the electric bill, and the salmon recovery will be better served giving salmon a natural spawning ground, the fish need the Yakima reclaimed as their territory. Where else will they spawn naturally?

The cost for the project is 5 years of fish recovery funds. If it works, then those annual payments from all our monthly bills can go instead to the dam costs and our utility bills can come down. It seems to me that a repayment can be made over a short time and we can have our fish and eat it too. The fish will restore themselves IF they have the Yakima River to do so. This is a grand idea. The best I have seen yet. Bold and progressive and smart.

Tri-Citians do not have a lake to visit. We need a lake for water skiers. We

can build and design fish habitats for sport fishing such as Walleye. The water will not effect native fish. Camps for kids can be established.

A wind farm can be built to offset electricity costs and power the pumps.

The land below the dam can be used for biomass feedstock testing by the universities, school programs of all ages, and build/re-build wildlife habitats with grasses such as switchgrass and other native grasses that are a carbon sink. The land can get water from the excess off the dam to support studies the universities need for growing to support biofuels.

Solar can be used to power parks.

The whole theme of the project can be about biodiversity, conservation, learning to balance nature, green projects, alternative fuels and enjoying the outdoors with many activities.

More water available for the Red Mountain vineyards will improve the Benton City, West Richland, Prossor and Tri-City economies be allowing for the entire small appellation to be used instead of only a portion. This brings greater success to all the wine industries.

More vineyards , more grape marc as a feedstock for a planned biofuels refinery.

My questions about the impact are as follows:

The shoreline along the Yakima will change. There should be an impact on bridges, homes on the shoreline and such, especially at flood stages. While I can not calculate this increase, I thought it a good question to ask. Benton City has long thought it an idea to create a park on the river coming into town, yet it foods there enough to raise concerns. That shape curve has bypassed its own river bed before in very high waters. While nothing stops these floods, this could mean new bridges. Benton City needs a new bridge anyway, seriously, for two reasons. (1) When we last had bad floods, that bridge was closed a month from high water. (2) The existing bridge comes directly off the freeway which is fine, but the road to the wineries by passes the town. There is no crossing from the wineries to the downtown area so the wine tours completely miss the town. If Benton City had a second bridge crossing in another location it would not flood out and the downtown would be connected. We could use two bridges except at high water stages perhaps.

There should be several homes in the lower lands to be considered.

While the concern for an earthquake may be real, I doubt very seriously, and frankly it is very hard to imagine that any amount of water could impact the Hanford water table with highly toxic waste. That is even more remote than the earthquake notion.

I do have questions and concerns about migration paths of wildlife. Somehow they will need safe passage.

I found many technical flaws in the logic of using Hanford nuclear waste as

a reason for not building a conservation dam. These arguments should be abandoned.

The ground water flow towards Hanford may be a concern but I believe that is that if the water is used for plant studies and perhaps manmade streams, it can be managed just as any other downstream water from a dam.

In conclusion, every effort should be made to ensure this dam is built. I also think that the budget for this project needs a real scrutiny to lean it out and make it more conservative. It is an awful lot of money for pumps, engineering and pouring concrete. A large scale nuclear plant can cost that much and uses most likely close to the same amount of concrete. It is a good comparison question as to which uses more.

Final note, some years ago in Texas they built an enormous dam for conservation. My dad hauled gravel for concrete to it for 9 years. What is the estimated time frame for building this dam?

Cecelia Hickel

Cecelia Hickel
PO Box 609
Benton City, WA 99320
cecelia.hickel@verizon.net
Telephone PST (509) 588-2650

From: "Higginbotham, Fred G NWW" <Fred.G.Higginbotham@usace.army.mil>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 4:58 PM
Subject: Black Rock-Yakima River Basin Water Storage Feasibility Study COMMENTS

Dear BOR;

I'd like to make a few comments and ask questions about the feasibility study mentioned above, with reference to an article on Black Rock that appeared in the Sunday edition of the Tri-City Herald. I apologize for not being able to refer to specific parts of the study but I misplaced my copies of the CD's and only found them yesterday.

Irrigation: Although I wasn't able to read the whole document, a cursory review of references made about irrigation revealed no mention of current techniques or recent improvements in technology that might be used in conjunction with additional water storage, whether in Black Rock or elsewhere. I believe there is some potential to spend some of the money slated for Black Rock on improving the current (and I am guessing, somewhat wasteful) use of water from the Yakima Basin. The area could probably conserve a lot by replacing ditches with pipes, lining ditches with impervious material such as gunite, concrete or vinyl liner; and better, more efficient irrigation systems (I'm not sure what is out there but I bet it's better than flood irrigation and leaking ditches. The government could spend WAY less money I bet if they subsidized better irrigation techniques instead of building this reservoir.

Recreation: Plain and simple, any reference to recreation and Black Rock reservoir that is used in the same sentence borders on ridiculous. Where is the water going to come from to irrigate the lawns, trees, and bushes? Or supply the hotel (s) and resorts with potable water? If anyone says or said "from the reservoir", I'd like to know what happened to the 'irrigation and fish management' part of this project. It seems ludicrous to build the project for farmers and fish, and then let some land speculator and developer cash in on this project that will be partially funded by the U.S. public!! I haven't heard much about the attractiveness of a reservoir shoreline that fluctuates up to 1/4 mile in some years and how that attribute alone would probably not attract ANY recreationists (or their money) to the area.

Fish: I must apologize again for not making time to find and read this whole document. However, I did skim this edition, read previous related documents, AND attended one public meeting in Yakima last year. But I STILL haven't seen anything written about the possibility of adult salmon and steelhead coming up the Columbia and being confused by water that has been pumped from Priest Rapids forebay over to Black Rock, used in irrigation, and then runs back into the Yakima River. If any research has been conducted on the effects on returning adult salmonid straying caused by water introduced into the fishes natal stream, it needs to be referred to and quoted. If there is no such research, you should do some of your own or get someone from the region to do it for you. This project has the potential to do MAJOR harm to fish returning to the Yakima AND the Columbia above the mouth of the Yakima if they are confused by the 'smell' of the water.

Money: The following math is based mostly on estimates and guesses, other than the figures found in the March 30 edition of the Tri-City Herald.

Total cost of Black Rock, including operation and maintenance for 20 years: $6.7 BILLION.

-Estimate 300 farms, ranches, and orchards (1 owner each, family included) that use water from the Roza Irrigation District
-Estimate 2000 employees for all of these agricultural businesses

You could divide $4.5 billion between all of these people to (1) buy water rights, (2) cash them out ((3) or let them keep running their farms BUT use the money to improve irrigation techniques and find less intrusive, and questionable, water storage projects, and STILL come out money ahead because you wouldn't spend the $2.2 BILLION on maintenance and operations. AND, you might avoid a catastrophe for the recovery of salmon in the Yakima Basin. The total for each of these 2,300 people would be >>>>> $1,956,521.73!!! Ask around and I bet you'll get more takers than you'd think. Even if there were twice as many people involved, they would each get$978,260.86. You could throw in an extra $100,000,000 to give each of them an even $1 million each and STILL come out ahead.

Thank you for allowing everyone to comment on this project. Good luck and I hope someone comes up with a better idea.

Fred G. Higginbotham
Fishery Biologist
A US Government Agency
(509) 967-0168

fred.g.higginbotham@usace.army.mil

From: "Robert and Elizabeth Lathrop" <rathburne@harbornet.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 4:29 PM
Subject: Regarding the proposed Black Rock Dam

To all who will be reviewing the Black Rock Dam proposal :

Every action has a reaction. So it has been with the dam building on the Columbia River. At the time they were constructed the benefits seemed overwhelming, but with advances and emphasis on science, an understanding of the damage is growing.

Not only would it be a mistake to repeat this outdated technology, this particular site has unique problems.

(1) The cost to me and my grand and great grandchildren, would be ridiculously lopsided- 16 cents benefit out of every dollar invested. The recreational lake that would be created would not begin to return dollars to make up for that.

(2) An earthquake fault zone under the site makes this a particularly risky proposal.

(3) A very real scenario is that this large water reservoir would directly speed up flow of radioactive contaminants into the Columbia River. At the very least, construction would interfere with clean-up efforts there.

Global warming and world wide water problems are spurring research and technology on water storage, agricultural techniques, water reuse, and water conservation. Simpler, less expensive solutions must be tried before we jump into the next stage of water use in eastern Washington. We live in western Washington, but part of the bill would be ours, and since we were part of the generation that built the first dams, we have an obligation to speak out against this latest proposal.

Sincerely yours,
Liz and Bob Lathrop
9119 71st Ave. NW
Gig Harbor, WA 98332

Mar. 31. 2008 3:44PM No. 900 P. 1

FAX TO: DAVE KAUMHEIMER
509-454-5650, 1p.

David Kaumheimer
Environmental Programs Manager
U.S. Bureau of Reclamation
1917 Marsh Road
Yakima, WA 98901-2058

Fax: (509) 454-5650
Email: storagestudy@pn.usbr.gov

Re: Yakima Storage Study, Draft Environmental Impact Statement

Dear Mr. Kaumheimer:

I have the following comments concerning the Draft EIS for the Yakima Storage Study.

I OPPOSE THE CONSTRUCTION OF THE BLACK ROCK DAM. I URGE YOU TO FIND SOUND ALTERNATIVES TO CONSTRUCTION OF NEW DAMS IN WASHINGTON. AS HAS BEEN OUTLINED PROBLEMS WITH THE BLACK ROCK DAM INCLUDE (1) SITING ON A THRUST FAULT IN AN EARTHQUAKE ZONE; (2) DANGEROUS SEEPAGE & SATURATION ISSUES THROUGH GROUNDWATER AT HANFORD NUCLEAR RESERVATION; (3) REQUIRING MORE ENERGY THAN CAN BE JUSTIFIED; (4) NO FURTHER WATER AVAILABLE FROM COLUMBIA & ITS TRIBUTARIES TO FILL THIS RESERVOIR; (5) REAL ESTATE INDUSTRY'S BENEFITS CANNOT BE JUSTIFIED BY * HABITAT LOSS FOR SOME OF THE SHRUB STEPP'S ENDANGERED, THREATENED, & HIGHLY IMPERIELED SPECIES. PLEASE CONTINUE TO SEEK & USE BENEFICIAL SOLUTIONS TO WATER ISSUES.

Thank you for considering my comments. Please add me to the list to receive USBR's final EIS and decision in this matter.

Sincerely,

Name: ANNE & JACK MIDDLETON Date: 3-28-07

Address: 12694 JOSH WILSON RD. MOUNT VERNON • WA 98273

NOTE: These comments must be postmarked, faxed or e-mailed by March 31, 2008.

From: Arthur Miller <milleronskagit@yahoo.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 1:57 PM
Subject: Black Rock Boondoggle

I was born within a stone's throw of the Roza Project boundary in a farm house without running water (1936). I grew up on a farm in the Sunnyside District. My father and brother farmed in the Roza. I believe there is no better way for youth to grow up than on a working farm. It was the quintessential American way of life.

However, our society has changed. Less that 2% our population still live and work on farms. Just because someone says, "My family has farmed on the Roza for four generations" (Tom Carpenter, YBSA), is no justification for the rest of the taxpayer to pay an outrageous cost to supply the Roza with supplemental water.

Every land owner on the Roza knew, at the time purchase, of the junior nature of their water rights and the possibility of interuption of water delivery. In the past two to three years, I have driven over a considerable portion of the Roza. I see virtually no row crops. It appears that the entire Roza is planted to perennial crops. Most notably orchards, grapes and hops.

If one plants these crops with an uncertian and interuptable water supply, then one cannot come crying to others when the inevitable happens. They cannot ask or expect others to bail them out by paying an exorbitant price for supplemental water. It was clearly foreseeable low water years would occur.

Using $5,000,000,000 as an estimated cost for the Black Rock Project, the cost exceeds $10,000 per acre for the approximately 500,000 acres of irrigated land in the **ENTIRE** Yakima drainage. This is for *supplemental* water for land that is already under irrigation. It is my understanding that the Bureau uses a guideline of 3 to 5 thousand dollars per acre as a maximun cost to bring new land under irrigation. Just this analysis alone should have been sufficient to quash any expenditure for studying the Project.

According to an early statement by one of the organizers of the Yakima Basin Storage Alliance(Charlie de La Chapelle), originally their proposal was to provide supplemental water for only the Roza Project. At an estimated 73,000 acres in the Roza, this would be about $68,500 per acre. There are approximately 300 families farming the Roza. For a lot less money, the entire Roza could be bought and just closed down. Shutting off the water to the Roza would free up the water for many of the benefits touted by the supporters of Black Rock.

In our Northwest society we have had no problem walking away from billions of dollars of investment in other non economical projects that have affected more families. For example, the closing of several aluminum plants, stopping the construction of four nuclear power plants and demollishing a recently refurbished, operating nuclear plant.

As part of the original study, the Bureau reported the the Bumping Lake alternative would meet the water requirements of 70%. It would cost less than $400,000,000. Less than one tenth of the Black Rock alternative! However that alternative was dropped. I was there and heard the rational for dropping the Bumping alternative. Quite frankly, it was all political and had little to do with solving the water issues in the Yakima Valley.

By itself, the threat to the ground water under the Hanford Nuclear reservation and the possibility of additional contamination to the Columbia River should have been a show stopper before spending $18,000,000 of taxpayer's money studying a dead loser project.

I commend the Bureau staff, especially Kim McCartney, for doing an outstanding job and maintaining neutrality in a clearly politically motivated atmosphere.

Arthur Miller

PO Box 1452

Richland, WA 99352

From: "Elaine Packard" <espackard@msn.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 4:28 PM
Subject: Black Rock Dam

Register a strong opposition to this proposed dam from me.

Elaine Packard

Received in Mailroom
UCAO MAR 31 2008 YFO
Yakima, Washington

Pacific Northwest
National Laboratory
Operated by Battelle for the
U.S. Department of Energy

March 27, 2008

Bureau of Reclamation
Upper Columbia Area Office
1917 Marsh Road
Yakima, WA 98901-2058

ATTENTION: MR. DAVID KAUMHEIMER

Gentlemen:

Ref: Letter to Interested Individuals, Organizations and Agencies from Gerald Kelso, Bureau of Reclamation and Derek I. Sandison, Washington Department of Ecology dated January 29, 2008, "Yakima River Basin Water Storage Feasibility Study, Kittitas, Yakima, And Benton Counties, Washington, Draft Planning Report and Environmental Impact Statement"

The Pacific Northwest National Laboratory (PNNL) appreciates the opportunity to review and comment on the Draft Planning Report/Environmental Impact Statement for the Yakima River Basin Water Storage Feasibility Study, dated January 2008. The context of our review was on the specific work PNNL performed for the Bureau of Reclamation and its representation in this Draft Planning Report. PNNL recognizes the importance of efforts to created sustainable water resources future for the Yakima River and lower Columbia Basin, and applaud the Bureau of Reclamation and Washington Department of Ecology's efforts in addressing this important regional outcome.

Specific comments on the Draft document are as follows:

1. The last sentence of the first paragraph in Draft PR/EIS page 4-35 states:

"The investigation also incorporated the results of recent geologic drilling and aquifer testing by Reclamation at the proposed Black Rock site (Pacific Northwest National Laboratory [PENN], 2007....."

"[PENN]" should be corrected to "[PNNL]", and the corresponding reference on page R-27 should be: "PNNL, 2007. 'The Black Rock Reservoir Study: Results of the Borehole Hydrologic Field Testing Characterization Program at the Potential Damsite Southern Abutment Location.' PNNL-16716, Pacific Northwest National Laboratory, Richland, Washington."

902 Battelle Boulevard • P.O. Box 999 • Richland, WA 99352

Telephone (509) 375-4343 ■ Email mike.davis@pnl.gov ■ Fax (509) 375-6991

2. We also suggest adding to the last sentence of the first paragraph in Draft PR/EIS page 4-35 the Bureau of Reclamation report that discusses Black Rock damsite abutment studies (TS-YSS-18). The revised last part of the last sentence of the first paragraph on page 4-35 would then read: "... and aquifer testing by Reclamation at the proposed Black Rock site (Pacific Northwest National Laboratory [PNNL], 2007; Reclamation, 2004g and 2007h)."

The Reclamation (2007h) reference to be added to page R-31 would be: "Reclamation. 2007h. 'Supplemental Report for Appraisal Assessment - Geology and Hydrogeology, Right Abutment, Black Rock Damsite.' Technical Series No. TS-YSS18, U.S. Department of Interior, Bureau of Reclamation, Technical Service Center, Denver, Colorado."

Again, thank you for the opportunity to comment on this important study. Please direct any questions to Frank Spane at (509) 371-7087 or frank.spane@pnl.gov or Charles Brandt at (509) 375-2858 or charles.brandt@pnl.gov.

Sincerely,

J. Michael Davis
Associate Laboratory Director

JMD/CAB/BJW

cc: Charles A. Brandt
Frank A. Spane

From: "Peter Rimbos" <primbos@comcast.net>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 8:37 AM
Subject: BLACK ROCK DAM--PUBLIC COMMENTS

Sir/Madam,

Please consider these my public comments on The proposed $6.7 billion Black Rock Dam. I believe the dam is bad for taxpayers. The benefit-to-cost ratio is 16 cents on the dollar. We pay 84 cents on the dollar. As planned, the dam would be built on fractured basalts in an area at high risk for major earthquakes. I believe this risk is too great. Finally, expected leakage from the dam could raise groundwater levels at the Hanford Nuclear Reservation. This would adversely impact clean-up efforts at one of our nation's most contaminated sites. We should not worsen the problem at Hanford. Thank you.

Peter Rimbos
19711 241st Ave SE
Maple Valley, WA 98038
primbos@comcast.net

CC: "Patty Murray" <senator_murray@murray.senate.gov>, "Maria Cantwell" maria@cantwell.senate.gov

From: "Richard and Suzanne Rivers" <rsrivers@comcast.net>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 4:03 PM
Subject: Black Rock Dam

I think the proposed expenditure for the Black Rock Dam near the Hanford nuclear waste dump is at least a terrible waste of money, and at worst could be a disaster for the Columbia River. By raising and moving ground water through the contaminated Hanford Reservation, it would flush radioactive material into the Columbia. At six and a half billion dollars to build and fifty million annually to operate, it will join with the lower four dams on the Snake as a colossal tax-payer boondoggle. Stop this madness please!

Richard J Rivers MD
3110 N Sheridan Ct
Spokane WA 99205
509-326-0224

From: "Kevin & Deb Ryan" <kevdryan@comcast.net>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 3:52 PM
Subject: The Proposed Black Rock Dam

Ladies and Gentlemen: I am the Conservation Vice-president for the Washington State Council of the Federation of Fly Fishers. The Federation is a national organization representing tens of thousands of conservation minded sportsmen. Our state Council represents more than 750 active and concerned members throughout this state.

On behalf of these members, I wish to convey our opposition to the Black Rock Dam proposal and express common cause with those organizations and individual who oppose this economic and environmental folly.

At a cost of $6.7 billion to build (this is probably underestimated as usual) and millions to operate, it is calculated to return 16 cents for every dollar spent. Until food costs more than six times what it costs now, all other costs remaining constant, it will be madness to build such an edifice to benefit agriculture. The general public would have to cover the losses because the Yakima agricultural interests are wisely unwilling to do so.

Further the dam would have to be built in an area full of basalt faults placing it in high risk of damage from earthquakes. You can imagine the consequent disaster without any florid imagery from me.

Finally, consider that underground leakage through the basalt layer would raise the water table level in the Hanford Nuclear Facility area, helping to speed the plume of contaminated ground water toward the Columbia.

Considering all the unsavory possibilities, no responsible public body would countenance such a project without requiring a multi-gazillion dollar bond from Yakima farmers before proceeding. Further, all public officials involved in approving such a venture must forfeit their positions and any emolument therefrom should disaster ensue from earthquake, contamination, or financial failure and hope that a Portia may deliver them from the consequences of their folly.

Kevin Ryan
Conservation VP
WSCFFF

From: mike sebring <mlsebring@yahoo.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 9:31 AM
Subject: Black Rock Dam NO!

Hello,
As I learn about this project, I have to wonder who is going to benefit? I don't see any clear winners here.

There is not just one reason why the dam should not be built. There are many.
1. There is no way we should be adding any more risk to Hanford. This is plain crazy - the Hanford clean up is terribly behind schedule and budget, so there isn't' even a shadow of an argument that it can handle even a slight problem.
Which brings me to the next point:
2. This is an unstable area. A recipe for disastator, and at the very least, but also adds to the cost:
3. - HIGH maintainenance costs.
- The project, at .16 to the dollar, is economically ridiculous.
- None of the irrigationdistricts in the Yakima basin have accepted the operation andmaintenance costs of the Black Rock Dam.
4. Not that there needs to be any more evidence of the folly of this project, but there will undoubtedly have an ecological impact, especially, but not limited to the Columbia River.

This is a bad idea.
Please stop wasting time and money on it.

Thanks,
mike sebring

_____
OMG, Sweet deal for Yahoo! users/friends:Get A Month of Blockbuster Total Access, No Cost. W00t
http://tc.deals.yahoo.com/tc/blockbuster/text2.com

Received in Yakima

U
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A
O

MAR 31 2008

Yakima, Washington

David Kaumheimer
Environmental Programs Manager
U.S. Bureau of Reclamation
1917 Marsh Road
Yakima, WA 98901-2058

Fax: (509) 454-5650
Email: storagestudy@pn.usbr.gov

Re: Yakima Storage Study, Draft Environmental Impact Statement

Dear Mr. Kaumheimer:

I have the following comments concerning the Draft EIS for the Yakima Storage Study.

The EIS is incomplete because it is missing ~~the~~ a study of effects of increased ground water flows at the Hanford nuclear reservation.

The stated benefits for recreation are not credible. There are under utilized Columbia river reservoares nearby that offer superior recreational opportunities compared to those possible with a Black Rock lake.

Thank you for considering my comments. Please add me to the list to receive USBR's final EIS and decision in this matter.

Sincerely,

Name: Fred Simonen Date: March 27, 2008

Address: 2303 Carriage Ave Richland, WA 99354

NOTE: These comments must be postmarked, faxed or e-mailed by March 31, 2008.

Received in Mailroom
U C A O
MAR 31 2008
Yakima, Washington
Y F O

David Kaumheimer
Environmental Programs Manager
U.S. Bureau of Reclamation
1917 Marsh Road
Yakima, WA 98901-2058

Fax: (509) 454-5650
Email: storagestudy@pn.usbr.gov

Re: Yakima Storage Study, Draft Environmental Impact Statement

Dear Mr. Kaumheimer:

I have the following comments concerning the Draft EIS for the Yakima Storage Study.

Landslides have occurred on Horsethief Mountain. There is a concern of seepage from the proposed Black Rock reservoir into the basalts which would reactivate old slides and begin new ones. There are two faults under the proposed reservoir. With any earthquake there can be slope failure! What other consequences are there from earthquakes and water seepage? Why hasn't the independent review of the dam structure been done?

With the underground contamination at the Hanford site, the water leakage from the dam is to be of utmost concern. There can never be 100% assurance after the Hanford cleanup.

Why is there such a push to get this built when there are all these life threatening concerns?

Thank you for considering my comments. Please add me to the list to receive USBR's final EIS and decision in this matter.

Sincerely,

Name: Christine Simonsen Date: 3/27/2008

Address: 2303 Carriage Ave, Richland, WA 99354

NOTE: These comments must be postmarked, faxed or e-mailed by March 31, 2008.

RECLAMATION
Managing Water in the West

U C A MAR 31 2008 Y F O
Yakima, Washington

COMMENT FORM

Yakima River Basin Water Storage Feasibility Study Draft PR/EIS

Name (please print legibly): Cheryl Smith	
Organization: self	
Mailing Address: 1436 Hatrick	
City, State, and Zip Code: Richland WA 99354	
Telephone: NA	**E-mail:** NA

Request to be placed on the mailing list:

___ I want my name put on the mailing list to receive information on the Yakima River Basin Storage Study.

___ I want my name removed from this mailing list.

Please note: Our practice is to make comments, including names, home addresses, home phone numbers and email addresses of respondents, available for public review. Individual respondents may request that we withhold their names and/or home addresses, etc., but if you wish us to consider withholding this information you must state this prominently at the beginning of your comments. In addition, you must present a rationale for withholding this information. This rationale must demonstrate that disclosure would constitute a clearly unwarranted invasion of privacy. Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. We will always make submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public disclosure in their entirety.

My comments on the Yakima River Basin Draft Planning Report/Environmental Impact Statement are:

I look at this project as encouraging people to use more water. I have lived in the Columbia Basin for almost 30 years and all I see is more & more of the natural landscape being cultivated. Providing more water storage just means more water to use.

(Use back of sheet or additional sheets as necessary)

You may leave your comments in the box provided or mail, fax, email, or call in your comments before March 31, 2008, to: David Kaumheimer, Environmental Programs Manager, Bureau of Reclamation, 1917 Marsh Road, Yakima, WA 98901-2058; fax (509) 454-5650; email storagestudy@pn.usbr.gov; phone 509-575-5848, ext. 612.

U.S. Department of the Interior
Bureau of Reclamation

Washington State
Department of Ecology

From: Brian Stadelman <stadelmanbrian@yahoo.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 9:32 PM
Subject: Black Rock

To whom it may concern,

I do not support construction of the Black Rock Resevoir due to the following reasons:

1. The construction cost far out weigh the benefits.

2. The cost to continually pump water will be astronomical.

3. Research has proven salmon need cooler water. Any water sitting in the resevoir will warm quickly as it sit is the heat of the 100 degree sun. Alge and other foreign materials will then be flushed into the Columbia.

Thank you,

Brian Stadelman

No Cost - Get a month of Blockbuster Total Access now. Sweet deal for Yahoo! users and friends.

Received in Mailroom
UCAO APR 01 2008 YFO
Yakima, Washington

Ted Strong
302 Division Street
Grandview, WA. 98930
(509) 882-0339 phone
(509) 882-0345 fax

March 31, 2008

U.S. Department of the Interior
Bureau of Reclamation
Environmental Programs Manager
Upper Columbia Area Office
1917 Marsh Road
Yakima, WA 98901-2058

My name is Ted Strong, an enrolled member of the Confederated Tribes and Bands of the Yakama Nation. I have no official position with nor do I maintain to speak in behalf of the tribe. My comments are mine only as an individual tribal member. I presently own and manage an energy and natural resources consulting company located in Grandview, Washington. For ten years I previously served as Executive Director of the Columbia River Inter Tribal Fish Commission located in Portland, Oregon. It has professional and technical responsibility for assisting the Yakama, Umatilla, Nez Perce and Warm Springs preserve and implement their treaty fishing rights on the Columbia River and at all of the usual and accustomed fishing stations. This fishery responsibility extended from the headwaters of the Columbia, throughout the Columbia Basin and out to the Pacific Ocean.

I am writing today in support of the Black Rock Reservoir.

As an enrolled member of the Yakama Nation, I have worked fastidiously to assure the implementation of the fishing rights the tribe has reserved under the Treaty of 1855.

Because of population explosion since the signing of the treaty we have 50 times more people relying on the limited water supply for consumptive needs. The municipalities are all growing and the demand for water continues unabated.

We have an agrarian economy that supports hundreds of thousands in the three county area of the immediate Yakima Basin. The planted crops need water that is guaranteed by federal statutes and no new water storage has occurred to assure that water delivery since the 1930's.

The Yakima Basin like other areas of the northwest have experienced 100 year droughts in cycles closer to 10 years and the results have proven to be economically and environmentally devastating. The Yakima River is over appropriated and in the hot summer months when salmon need cool and fast flowing in stream water for migration the river is a mere trickle that is heated above the 65 degree temperatures lethal for salmon. None of the alternatives studied by the Bureau of Reclamation have the capacity to deal with catastrophic droughts. Only Black Rock has stored water that can assist in offsetting the devastation to fish and wildlife and agriculture.

The historic water shortages have caused the need for the infamous 'flip-flop' that has been ruinous for some tributaries of the Yakima River and has caused the decline of salmon and other fish and wildlife habitat. The 'flip-flop' was to be a temporary fix and instead due to inaction has been permanent. The temporary fixes have become the norm and the BOR has no plans that can replace the 'flip-flop'. The temporary nature of this quick fix was known to have adverse affects on the Yakima River system if kept in place too long. The 'flip-flop' has been in place for several decades and has been a cause of environmental harm but nobody is addressing this problem.

The Yakama Nation has idle lands that are owned by both the tribe and by individual tribal members that cannot be farmed or leased because of insufficient water supply. Water is not available from the current regime imposed on the Yakima River to provide irrigation for the reservation as served by the Wapato Irrigation Project. A normative river flow would allow greater amounts of water to serve the tribe and its members and improve their collective and individual economies with greater income. The tribe has a Land Enterprise and needs every drop of water to successfully farm its lands. The individual tribal members need water delivery to assure the leasing of their lands for family income. The Yakama Nation is on record supporting the historic attempts to improve water storage. The tribal economy is in dire need of diversification. It suffers from lack of agriculture development on a large scale that could bring appreciable income to the tribe yet has some of the most productive lands in Washington State. The tribe often will forego the aggressive farming practices in order to demonstrate environmental loyalty. This causes the tribe to lose out on both accounts because the environmental practices are piecemeal and do little to help the Yakima River get back to the 700,000 salmon it once produced. The agriculture economy of the Yakama Nation should be capable of yielding tens or hundreds of millions of dollars. Instead the tribe ekes out a bare existence with its farming.

If the Black Rock Reservoir were to be constructed it would allow the closure of the Sunnyside and Roza irrigation diversions. The irrigators at the urging of the Yakima Basin Storage Alliance have moved toward a position of cooperating on this closure. This is unprecedented. In the past, the Yakama Nation and the irrigators have fought bitterly over water and will do so in the future if a water supply solution like Black Rock fails to materialize. The money spent on litigation will be in the millions of dollars but is pale in comparison to the acrimony and disharmony that will ensue over water fights. At a time when these processes could have created venues for diplomacy the Bureau has erred in its policy of going it alone and reflecting the attitudes of the current Administration. I have not witnessed any tribal leaders being invited or being funded for participation in this water storage study. A negligible contract was offered by the Bureau to the tribal staff to come sit in as 'observers' of the process. This low level involvement fails to honor the government-to-government policy established by the Yakama Tribal Council and former Administrations. The result could mean an end to the tenuous cooperation and collaboration YBSA was able to place into effect between the tribe and the irrigators. Several years ago the Chairman of the Yakama Tribal Council and the Chairman of the Roads, Irrigation & Land Committee at least met face-to-face with the irrigators, county commissioners, U.S. Representative Doc Hastings , representatives of Senator Murray and Cantwell and the Washington State Governor's office to discuss water and salmon as reserved by the treaty of 1855. In recent years low-level staff from the water resources program has attended without authority to speak for the tribe but have been instrumental in conveying what they have termed anticipated positions. The process has been reckless with regard to involving appropriate and commensurate officials with authority to speak for the tribe. It has been the YBSA process not the Bureau of Reclamation process that allowed the irrigators to discuss transferring their water rights to the Columbia and leaving approximately 700,000 acre feet of water in the Yakima River, primarily for the benefit of salmon and irrigation water for the Yakama Nation. The tribe will

never receive any offer from anyone of substance that offers 700,000 acre feet of water for fish and wildlife. It is to the credit of the magnitude of benefits emanating from Black Rock that such things could be put on the table for discussion.

Now, water storage is needed more than any other time in our history and the federal government should not sit idly on its hands while the natural reservoirs called snow packs grow smaller and melt faster and sooner causing spring runoff that drains the water from the mountains too fast. This phenomenon results in too high water volumes in the Yakima River too early and leaves only a trickle of water in the Yakima River when the upstream migrating salmon need it most. The lack of water creates poor migration corridors, inhospitable water temperatures, high probability of pathogens that can wipe out salmon populations quickly,

The most important need of all for the Yakama Nation is water for sustainable ecosystems to support existing salmon runs and the reintroduction of those salmon species extirpated in our recent history by declining water and habitat. Historically, the Yakima River supported an average of 700,000 salmon comprised in least four species plus steelhead. Today, that number is less than 40,000 salmon and steelhead. It is reprehensible to think that the Yakama tribal members cannot be assured of a progressive and responsible water supply program to support the reintroduction of salmon, steelhead and other fish and wildlife which is guaranteed by our treaty of 1855. The federal government has a trust responsibility to see to the meaningful implementation of fish and water protection measures that provides substance to the treaty promises. I am appalled by certain non-tribal staff professionals who write opinions about salmon management that become the policy positions of the tribe. Our policy position should be to get back 700,000 salmon and steelhead not remnant runs that barely meet the Endangered Species Act threshold. The limitations should not be money or programs. The plans of the tribe currently rely on paper water and thus we only model and produce paper salmon. Our salmon feasts are excellent barometers of success when it comes to our salmon. First salmon feasts are too often an exercise in futility and humility. We find ourselves raging at each other and lamenting the poor salmon but don't take the bold steps to fight for their water, habitat and reintroduction. We shrink when our staff tell us that we can't ask for billions of dollars for our salmon.

The Yakima watershed has been in decline since 1855 and the federal government has been deficient in reversing the damages. The rich biology of the Yakima River can be described as bankrupt. In turn, the strength and beauty of the Yakama culture is imperiled. Without life in the Yakima River system to support the fish and wildlife, the tribal way of life is reduced to a remnant of what it was at treaty making time. There are no spring or summer chinook runs which the tribal members can harvest. There is no longer any sockeye salmon for the tribal members. The coho salmon are very slowly being reintroduced and will fail to repopulate if there is no a guaranteed supply of cool, clean and fast-flowing water in the Yakima River. Make no mistake we have grandiose plans and studies costing hundreds of thousands of dollars. We just have no water and habitat for salmon. One of our venerable leaders of the past said, "One day in the future we will have more biologists than salmon."

The Yakama Nation has a Yakima River Basin Watershed Plan for salmon and due to the inevitability of poor water have failed to seek the production of anywhere near the 700,000 salmon and steelhead that should be the tribe's goal as stipulated by treaty provisions. It is a breach of promise that the federal, state and tribal governments are committing by not creating a normative river regime in the Yakima River. Yet, the Yakima River is recognized as one of the premier ecosystems in the entire U.S. for salmon rearing. The governing bodies do an injustice to the treaty promises and the salmon by limiting their water management goals and programmatic actions to political expediencies. It would seem simple to

implement a natural river option if the political will were strongly in place. It is only a natural river that is going to enable the Yakama Nation to someday see even 100,000 salmon flourishing in the Yakima River and its tribal members fishing at their usual and accustomed fishing stations. Nothing in our past water management has come close to bringing about a remote semblance of our salmon runs. A few years ago we had one good spring Chinook run but it was attributed to good environmental conditions and had nothing to do with human practices. The only option studied by the Bureau that helps get the Yakima River back to being a natural flowing river is the Black Rock. By closing irrigation diversions at Roza and Sunnyside water would be allowed to rejuvenate the Yakima River especially below Union Gap all the way to Prosser. This is area neglected for many years and the least hospitable for salmon.

Some have expressed fear of salmon becoming disoriented in their journey to their natal streams at spawning time due to Columbia River water being dumped into the Yakima River under the Black Rock alternative. This is baseless concern. The Columbia River water would be transferred directly into the irrigation delivery systems and used to irrigate the croplands. The efficiency of the system would allow the water to slowly seep back into the ground and acquire Yakima River characteristics before being returned to the Yakima River. The idea that salmon would be subjected to false attraction from the Columbia River need not be a concern.

There are serious questions and concerns raised about the water seepage from Black Rock. Of concern is the image of water rushing into the underground areas where radioactive wastes are stored on the Hanford Reservation and pushing the wastes into the Columbia creating widespread contamination. The study should address this concern in a scientific manner bringing the most modern technology and engineering to bear upon this concern. Early examination strongly suggests that the seepage would gravitate toward the Horn Rapids area not creating a raging river flooding the radioactive waste storage areas of Hanford. Further, very little exploration of pumping of the seepage water has been documented. It is entirely possible that the estimated 3% water seepage, which is standard on any dam built by the BOR, could be pumped down to insignificant amounts and actually used for other irrigation purposes, leaving a mere trickle of water that could be easily absorbed into the soil. The BOR has allowed irrational fears to drive the public to hysteria rather than allow an informed and reasoned approach to this perceived problem materialize.

The high cost of the project has been exclaimed by many in the public. It is entirely possible that the BOR could put the building of Black Rock out to private builders who are experienced in large scale projects. The BOR has never built any storage facility the size of Black Rock. Some design engineers have suggested they could reduce the cost by one third if they had the option to do a design-build on Black Rock. They maintain they could build Black Rock on budget and on time. This has not been thoroughly studied.

Over hundreds of years the non-tribal economy has been built at the sacrifice of salmon. The cultural icons of the Yakama Nation have literally paid with their lives while the federal and state governments have spent many times more than the estimated $6 billion it might cost to construct Black Rock to insure the non-tribal economies thrived. The Yakama Nation need never be bowed and go hat in hand to any government seeking money for the successful reintroduction of their Creator given salmon and their habitat. By acquiescing to the shrill voices expounding the cost to give water and its sacred life back to the Yakima River and all our non-human brothers and sisters the tribe will suffer the indignation of no spring Chinook for its first food feasts. The tribe will make its tribal members live in the past by memory only of days when they fished by net at Tuptut and others ancestral grounds. The tribe will never realize the full economic benefits of its several hundred thousand acres of agricultural lands and

its tribal members will be relegated to another generation of waiting for the fulfillment of the federal government's promise to uphold its solemn trust duty to secure the treaty promises of salmon and water, among other promises.

The Yakama Nation should have had a seat at the policy level planning for the best possible future that could be attained for the Yakima River. Early on in this study process the Yakama Nation requested a little more than $1 million from the BOR in order to conduct its own cultural study and engineering review. They received no favorable response. Instead, the lack of an inclusive public involvement process left the most valuable tribal wisdom out of the decision making. No professional and/or technical staff can ever substitute for the timeless knowledge of the fishers, hunters, root diggers and berry pickers who have the obligation of feeding families and those who gather in our longhouses and shaker churches during feasts, memorials, funerals, name-givings and other holy events. Some of these people even get elected to a position on the tribal council and could have spoken for the ones who live by nature's laws but have no language and voice to speak for themselves.

The Black Rock Reservoir may not be the perfect solution to our water shortage but it is one of the best to come along in more than 70 years of apathy and dereliction. A no action alternative is a great disservice to humanity and our plant, animal, bird and fish brothers and sisters.

From: <FStruck@aol.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 2:58 PM
Subject: Black Rock Dam- don't approve it

Not only is the proposed dam a drain on taxpayers, but also those who are expected to benefit will not take responsibility for costs.

It would likely have negative effect on the Hanford clean up and could be a hazard if the leaks at Hanford aren't fixed.

Yakima county isn't even limiting wells now and that means they have enough water- why do this.

We need to stop diverting water from our rivers- the water is limited and we need to live within limits.

**********Create a Home Theater Like the Pros. Watch the video on AOL Home.
(http://home.aol.com/diy/home-improvement-eric-stromer?video=15&ncid=aolhom00030000000001)

From: Mary Taylor <thetaylorranch@msn.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 7:28 AM
Subject: Black Rock Remarks

The construction of this proposed dam is wrong. It's way too expensive.

It's supposed to be about irrigation, but there is nothing a farmer could raise that would pay for that water.
Then it was supposed to be about recreation. But, miles of mud flat created every year by drawing the water down is not a recreation draw.
Then it was supposed to be about saving salmon. If everyone was so interested in saving salmon, why is there a legal fishing season on them! It's not about saving salmon either.
Then, it's supposed to "cure global warming". Now I'm not a scientist, but this is extremely far fetched.

There is not a single reason that this dam should be constructed and dig so deeply into the tax payer's pockets. I won't go into all the geology problems, you know those. Enough said.

I will talk, again, about my family's mineral rights. We have asked repeatedly about them, and to date, not a thing has been said. To cover those mineral rights with water could possibly be a major disaster to my family. We own a rather large share of them in the Black Rock Valley. We have not waited until the last minute to ask, we've been asking right along, and have yet to be given any kind of answer. Our place is a multi generational ranch. We are VERY VERY MUCH AGAINST this project.

YBSA will tell you they intend to pump water from the Columbia all year long. Yet, come to find out, they are forbidden from pumping in the 2 hottest months of the year. So you're still going to have the miles of drawdown that I spoke of above. I really don't see miles of mud flats being a big tourist draw!

YBSA speaks of million dollar homes and gold courses. Excuse me but a LOT of this land is privately owned! If people were interested in selling, there would be for sale signs out. Oh we're old "this is for the greater good". I don't see how sinking that much money and expecting more every year to the amount it would take for cost and maintance can be called "the greater good". This state cannot afford it.

It's time for all this to stop. It's time for reality to sink in. This project is a loser and always has been. Stop spending taxpayer money on it and go find a realistic solution. This is not it. Don't listen to YBSA's hype. A retired congressmen, used car salesmen, a hop farmer with a measly 10 acres, are not qualified to give an opinion on a proposed project such as this. They are not scientists, they are not geologists. They are just wanting their name attached to something big. This is nothing more than an ego trip for them. They do not have the right to spend taxpayers money in such massive amounts not to mention commit generations yet unborn to having that over their heads for maintance and upkeep! Stick with the facts. The facts do not support this project. In fact, the facts shoot this project down as the loser it is. 16 cents return on every dollar spent is not good enough by far, to even consider this!

Time to stop living in la la land and be realistic. This project cannot be built.

Mr. Mrs Lynn A. Taylor
23063 State Route 24
Moxee, WA 98936

Test your Star IQ
http://club.live.com/red_carpet_reveal.aspx?icid=redcarpet_HMTAGMAR

From: "Jack.Stanford" <jack.stanford@flbs.umt.edu>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 4:15 PM
Subject: comment on EIS

Comment on Yakima River Basin Water Storage Feasibility Study

by Jack A. Stanford

I was asked to review this document by Mel Wagner, Yakima, in the context of my previous work on the river. I directed the Reaches Project" that is referred to in the draft EIS. My research clearly showed that recovery of the salmon and steelhead runs would be problematic without providing substantial "new" water in the Yakima Basin. Conservation actions, while laudable and necessary on their own merits, cannot supply the additional water needed to achieve "normative" conditions needed to substantially promote target fish populations and restore a healthy river-flood plain ecosystem.

The main problem is that the EIS evaluates alternatives to enhance water availability in the Yakima in a constrained way, at least for the so called "joint" alternatives. The BoR concluded that water could not be pumped from the Columbia River during the irrigation months (July and August) in the Yakima owing to agreements that were formulated to maintain flows for outmigrating salmon in the Columbia. These agreements clearly exist, but I and others have noted that volumes of water pumped to the Yakima to replace irrigation water in Roza and Sunnyside are very small compared to the average flow of the Columbia River, indeed, they would not even be measurable on average and wet years and negligible on dry years. Even more significantly, the flow agreements on the Columbia, as I understand them, apply to fish outmigrating from the Snake River, so a pump/siphon exchange at or above Priest Rapids that takes a package of water in summer that is replaced above McNary is of no consequence to those fish because the water is replaced by outflow from the Yakima above the Snake River confluence. The analysis therefore should not have been limited by pumping restrictions during the outmigration period, which of course coincides with the irrigation season. The constraint of not pumping irrigation water in July and August obviously requires storage in a massively expensive reservoir that probably is not needed if pumping could be done during these months.

Thus, the EIS was seriously flawed from the outset. Given the fact that the authors of the report were constrained to a flawed design, the analysis reported in the EIS is reasonable. I

acknowledge that of the alternatives that were compared to the no-action baseline, the Black Rock plan is the better one. I emphasize, however, that Black Rock would be vastly less expensive if a reservoir is not needed, as I believe is the case.

I note three rather weak areas in the analysis however.

First, it was concluded on the basis of a USGS model that the Black Rock flows would not reduce high summer temperatures. I could not get the key report that describes the model that was used for this analysis as it is a draft USGS report (that in itself is a flaw). But, I seriously doubt that substantially higher summer flows that would be possible with Roza and Sunnyside not diverting from the Yakima, would not reduce summer temperatures toward normative conditions for salmon and steelhead juveniles. I say this because of the massive potential in the Yakima for higher flows to restore floodplain function by moving substantially greater volumes of water through the alluvial aquifers of the river, especially in the Kittitas and Wapato reaches. This should reduce the summer temperatures; however, I do not know if this process was included in the USGS model. I did not model flow-temperature relations on the Yakima in the Reaches study, but aquifer discharge into the river, where it was functional, was clearly summer cool and winter warm. Also, working with others, I have modeled thermal flux in relation to flow on other Columbia River tributaries with a state-of-the-art simulator and we concluded that in-stream temperatures are entirely coupled to river-aquifer interactions.

Secondly, it is unclear how changes in rearing habitat for target fishes were determined. Shallow-water, off-channel rearing habitat is a key bottleneck for salmon and steelhead production in the Yakima based on my Reaches study. Any analysis of flow enhancement in an EIS context must include a careful analysis and modeling of river to flood plain coupling that creates rearing habitat. The best way to do this is by using remote sensing tools: multi-spectral imagery to determine aerial habitat at different flows linked to a DEM from lidar imagery. Some of these data exist but apparently have not been synthesized.

Finally, I think the estimates of improved salmon and steelhead production under enhanced flows are too low. They seem to be based on a combination of spawning and outmigration flow considerations. Historically the Yakima was the salmon factory of the Columbia owing to extremely good river-flood plain-tributary connectivity. No flow enhancement project can be evaluated solely on main channel flow-productivity relations. It has to be done in context of improved connectivity, including restoration actions are interactive with flow enhancement. Small dams, revetments and other obstructions that sever connectivity

have to be removed so that the enhanced flows can enter the flood plains and facilitate movement of spawners into new spawning habitats and juveniles into the restored fringe habitats that we now know are essential to salmon productivity. Any conventional estimate of how enhanced flows in the Yakima may relate to fish populations will be, by definition, conservative. This is particularly true if harvest of spawners is allowed and if hatchery stocks intermingle with wild fish in any way. The only way to really know how the fish will respond is to restore flows and eliminate obstructions throughout the system.

The bottom line is that restoration of the Yakima River has to go beyond where this EIS has gone. Unfortunately, the current analysis was initiated with the wrong parameters about augmentation timing, and it uses information that lacks a state-of-the-art ecosystem context. Restoration of the Yakima must include the much needed augmentation of flows along with a critical focus on restoring floodplain connectivity and function.

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March 31, 2008

David Kaumheimer
Environmental Program Manager
U.S. Bureau of Reclamation
Upper Columbia Area Office
1917 Marsh Rd.
Yakima, WA 98901-2058

SUBJECT: Review of Draft Planning Report/EIS – Yakima Basin Water Storage Feasibility Study

Dear Mr. Kaumheimer:

The Washington Department of Fish & Wildlife has reviewed the Draft PR/EIS for the Yakima River Basin Water Storage Feasibility Study (**SFS**) and provides the following assessment and comments. Our comments reflect our mandate to "… preserve, protect, perpetuate, and manage the wildlife and food fish, game fish, and shellfish in state waters and offshore waters" (RCW 77.04.012).

We would like to reiterate the importance of providing instream flows for fish in the Yakima Basin as well as the other watersheds in the Columbia Basin. We support opportunities to increase flows in the Yakima Basin that benefit the species we are mandated to protect, perpetuate and manage. In addition it is important for the DPR/EIS to recognize the benefits of increased flows for fish in the Yakima Basin. Our comments follow.

Technical Reports

The purpose of the Yakima River Basin Water Storage Feasibility Study is to improve instream flows and out-of-stream water availability in the Yakima River. The DPR/EIS does a reasonable job of covering the general topics of concern for instream flows for fish, but it relies on information from other documents and models to form conclusions. The information is referenced but not available within the DPR/EIS. One must read and review all technical reports to be able to adequately comment on the findings and conclusions of the DPR/EIS. In addition, there were other technical

reports, more specifically the U.S. Department of Energy analysis of seepage from the Black Rock alternative that will not be available until the final version of the PR/EIS is released. We would like to propose an extended comment period for the final PR/EIS so that the public has an opportunity to provide comments on all the relevant documentation.

Executive Summary

Table ES.1

The April target flow for the Wapato Reach (Parker Gage) appears to be erroneous. April is the primary month for spring chinook, coho and steelhead smolt downstream migration and mean monthly flow should be significantly higher than in March---not 300 cfs lower. This is the case for all the other reaches, but not the Wapato Reach---the key reach that the System Operations Advisory Committee (SOAC) monitors during smolt migration to determine if migration pulse flow releases from storage are required. Under-estimating the April flow objective for the Wapato Reach would likely affect the anadromous fish benefit analysis and comparisons between each of the "Joint Alternatives".

Page xix. Accomplishments. - The Wapato Reach does not represent the lower 40 miles of the river. It does not compare fish use, fish stocks, channel morphology, island habitat, bedload material, velocity, and in many areas, volume (flow volume varies because of gage placement and return flows). It's functions and values are much more dynamic and complex, especially because of its proximity to the free flowing portion of the mainstem Columbia River.

Table ES.2

The entire analysis of anadromous and resident fish benefits in the SFS is based on the "seasonal volume objectives" in Table ES.2, which are derived from the monthly flow objectives in Table ES.1. There is a very significant error in the calculation of the volume objectives for both the Ellensburg and Wapato reaches during the "spring" and "winter" seasons (see Excel spreadsheet attachment). WDFW staff used this spreadsheet to check the volume objectives and found significant discrepancies. Oddly, the "summer" season volume objectives were correct, but all the spring and winter objectives in Table ES.2 over-estimate the true volumes required to achieve the monthly flow targets in Table ES. 1. The discrepancies ranged from a low of 51,079 acre-feet (Spring, Wapato) to a high of 411,395 acre-feet (Winter, Wapato). Since the "No Action" alternative is compared to the volumetric seasonal flow objectives and the "Joint Alternatives" are compared to the "No Action" alternative to measure relative accomplishments, a significant mathematical error in establishing the volumetric flow objectives at the very beginning casts doubt over the validity of the entire comparative benefit analysis. The entire benefit-to-cost analysis (BCA) must be run again using the correct volumetric seasonal flow objectives before the Final PR/EIS can be issued.

Page xx and Table ES.2 – It would be helpful to put the cubic feet per second (cfs) conversion for acre-feet (af) in parentheses. Although af is the unit for storage, cfs is the unit for flow. Other areas of the DPR/EIS compare seepage and volume using different units. Please consider utilizing one unit or putting the second unit in parentheses so that comparisons are transparent

and easily understood.

Page xxi – Black Rock Alternative - "Water from the Columbia River would be pumped from the Priest Rapids Lake any time Columbia River water is available in excess of current instream target flows and storage space is available in a Black Rock reservoir, with the exception of July and August, when no Columbia River withdrawals would occur." Instream flows were set in the 1980s with limited information before ESA listings. It is questionable to assume that those instream flows are a threshold for no impact at higher flows.In addition, spring water withdrawals could potentially modify flows to the degree that some bird nesting islands would be connected to the shore and would allow access for predators such as coyotes and foxes. Terminology for instream target flows elsewhere in the DPR/EIS suggest that the Columbia River instream target flows refer to the 2004 BiOp flows, but the terminology should be clarified, at a minimum, and if the BiOp flows are not what is meant, then clarifications should be made.

Page xxx - Anadromous Fish; No Action Alternative - Under current conditions an ongoing decline in fish population is evident (wild or natural stock) and under drought conditions population impacts are probably severe. In the same paragraph that a "no effect" is noted, the authors state that "the greater spring flows downstream of Parker are considered beneficial to improve anadromous salmon smolt outmigration through the middle and lower Yakima River. Please clarify this contradiction. Also clarify how increases in velocity influence riparian, floodplain, and side channel habitats.

Page xxxi - Anadromous Fish - Please clarify the rationale regarding how higher flows result in reduced summer rearing habitat in the lower Yakima River

Page xxxi - Anadromous Fish -The Joint Alternatives may also provide opportunity to affect access to habitat and habitat conditions in the tributaries. See more comments on this subject below.

Resource Analysis – Water Resources/Anadromous Fish:

No Action Alternative

This discussion fails to recognize the benefits to fish resources that will occur if water conserved under the existing YRBWEP Basin Conservation Program (BCP) can be "blocked up", stored in the existing reservoirs and called on for release by SOAC to meet highest priority fish needs. The fish managers need the flexibility to use "conserved fish water" to maximize benefits. Incremental increases in summer flows in the Wapato Reach (below Parker Dam) may not be the highest priority use of this water. Flow objectives within various reaches would expect to vary with varying storage options.

Anadromous Fish

Ignoring, for the moment, the flaws with the comparative benefit analysis described above, the Black Rock Reservoir (BRR) alternative appears to provide the highest level of benefits for anadromous fish. However, the $8.7 million over the 100-year benefit stream (i.e. approximately $87,000 annual increase relative to the "no action alternative") seems ridiculously low relative to $602 million for recreation and $287 million for M&I water use. The benefit analysis is too narrowly focused and

does not quantify the synergistic benefits to on-going habitat protection and restoration projects funded by USBR's YRBWEP program, the Salmon Recovery Funding Board (SRFB), Yakima Tributary Access and Habitat Program, Water Acquisition Programs, Regional Fisheries Enhancement Group, BPA's Fish & Wildlife Program, and others. Significant improvements in anadromous fish abundance (particularly spring chinook and coho salmon) have already occurred because of habitat projects without the benefit of more water that can be stored, "shaped" and released at the discretion of the fish managers. The SFS Team needs to estimate how SOAC-managed flow releases using 500-800 KAF annually from the BRFR can leverage habitat protection/restoration projects to increase fish production at much higher levels than currently modeled.

The benefit analysis of the Joint Alternatives also ignores the opportunity and value of storage in improving flows (and leveraging habitat improvements) in key tributaries for the benefit of steelhead, coho, spring chinook, rainbow/cutthroat trout and bull trout. SOAC would not limit use of stored blocks of "fish water" solely to increase mainstem flows below the existing USBR reservoirs. The Study Team should show how stored "fish water" under the three joint alternatives would typically be distributed between the reservoirs (i.e. where and how much). Then the Study Team should work with the SSTWG to identify creative ways using existing irrigation system infrastructure (or improvements) to deliver fish water released from reservoirs to tributaries and other off-channel habitats as recommended by the authors of the "Reaches Project" (Stanford et al., 2002) and discussed in the PR on Page 1-21.

The six indicators for evaluation of fish benefits: Summer Rearing Habitat in the Easton and Ellensburg Reaches for Spring Chinook and Steelhead Fry and Yearlings; Flip-Flop in Both the Upper Yakima and Naches Rivers for Yearling Steelhead and Spring Chinook; Spring Flow Downstream from the Parker Gage; July-September Flow Downstream from the Parker Gage; Estimated Anadromous Fish Population Size; and False Attraction, are reasonable, but <u>two others</u>, <u>Side Channel Connectivity</u> and <u>Winter Habitat Conditions</u> in the Yakima River basin, should also be considered. Interaction of water quality and physical habitat (modeled in instream flow studies) is not addressed, but could be significant. <u>Side Channel Connectivity</u> - A specific concern is connectivity of off-channel or lateral habitat with the Yakima River. There is some discussion of floodplain processes, including cottonwood recruitment, and there is recognition that floodplain and river have become disconnected to a large degree (e.g., see 1.2.2.1; 1.7.2.3; 1.7.2.4; 4.8). Lateral or off-channel habitat is connected to the main channel at high flow. As flow drops, lateral habitat disconnects from the main channel. Fish, usually juveniles that are in the lateral habitats when they become disconnected, are forced to stay in the lateral habitats until they are reconnected. Once disconnected, usually in late spring or early summer, the lateral habitats may warm more than water in the main channel, often to temperatures that are not favorable or even lethal to young salmonids (in the absence of groundwater connectivity). If, on the other hand, connectivity persists into the warming period, a temperature gradient may develop that leads young fish to leave the lateral habitats at the time when favorable habitat shifts from the lateral habitats towards the main channel. This timing and temperature and rate of flow change (ramping) aspect of connectivity are not addressed, yet it has great potential to affect survival and production of salmonids, particularly coho and spring Chinook salmon.

Winter Habitat Conditions in the Yakima River Basin - Winter conditions get relatively little attention in this document. Most concern has been focused on spring, summer, and fall, but winter water is stored and flow management practices do influence fish habitat and survival. Flow stability is generally favorable to winter salmonid survival and storing any winter flow pulses buffers downstream reaches from such pulses. On the other hand, keeping flows low in winter increases risk of freezing of young fish and eggs. Some flow fluctuations in winter is often desirable to moderate very cold water temperatures.

Fish that spawn below Prosser are impacted significantly by river operations and flow management. In many years, there is a significant difference in spawning (both fall Chinook and coho) between the lower reach and the Wapato reach. The lower reach had over 3,000 fall Chinook adults that never passed over the Prosser fish passage facilities and spawned in the Yakima River in the late 1990's (See Watson's PSMFC reports on lower Yakima River spawning estimates to supplement Table 4.24). Since then, the redd counts below Prosser have declined with the loss of spawning habitat attributed to star grass colonies. Those habitat functions remain and could be manifested if the river conditions (flow and water quality) change within this reach.

The proposed Black Rock management emphasizes minimum Columbia River diversions at the expense of more normative flows. In wet years, more water would be diverted from the Yakima River rather than from Black Rock, missing the opportunity to provide more normative flows and flow variability with higher flows in wetter years. On p. 2-4, the DPR/EIS refers to: "Title XII target flows do not necessarily provide for a natural (unregulated) ecosystem function. Title XII target flows at the two control points do not address fish habitat and food web needs at the basin level and thus, by themselves, cannot be expected to lead to restoration of anadromous fish runs (SOAC, 1999)."

Chapter 2 - Joint Alternative

The proposed Black Rock management emphasizes minimum flows at the expense of normative flows. In wet years irrigators would get more water and would get it from the Yakima River rather than from Black Rock, leaving Black Rock more full and missing the opportunity to provide more normative flows and flow variability with higher flows in wetter years. On p. 2-4, the DPR/EIS refers to: "Title XII target flows do not necessarily provide for a natural (unregulated) ecosystem function. Title XII target flows at the two control points do not address fish habitat and food web needs at the basin level and thus, by themselves, cannot be expected to lead to restoration of anadromous fish runs (SOAC, 1999)."

Page 2-4, Table 2.2 - The seasonal volumetric flow objectives in Table 2.2 for the Ellensburg and Wapato reaches do not match the values shown in Table ES.2 (and Table 2.10). The objectives shown in Table 2.2 are closer to the actual objectives shown in WDFW's attached Excel spreadsheet, but are still erroneous. WDFW has not checked the volumetric flow objectives for the Easton, Cle Elum or Lower Naches River, but we suspect they may also be incorrect. The Study Team needs to check your math calculations to make sure your flow objectives are correct and are displayed the same in all tables throughout the document. Otherwise, comparison of goal attainment and monetary benefits between the "no action" and "joint alternatives" will be erroneous and invalid. Simple math errors in calculating volumetric flow objectives do not "inspire confidence" that more complex fish benefit model outputs (e.g. DSS, AHA and EDT) can be trusted to be accurate.

Page 2-31, Tables 2.10 and 2.11; Page 2-35, Table 2.12 - The flow objective values in Table 2.10 are the same erroneous values shown in ES.2. Consequently, the differences between the "no action" alternative flows and the volumetric flow objectives shown in Table 2.11 are incorrect. For example, the difference for Umtanum – Spring is **not -9%**, but is **actually +6%** when compared to the true objective of 646,355 ac-ft (not the erroneous 741,915 ac-ft shown in ES.2 and Table 2.10). There is no way to tell if the flow comparisons (percent differences) between the joint alternatives and "no action" in Table 2.12 are accurate because only model result totals are shown in Table 2.10. The flow objective totals are incorrect in Table 2.10; hence the volume totals for the various alternatives may also be incorrect.

Page 2-48 and Table 2.21 - The lowest proposed level for Black Rock Reservoir is 80 percent in July and September, respectively. Please clarify why Black Rock Reservoir volumes are maintained at 80 percent or greater year round. Holding the reservoir at lower levels may benefit migrating fish in the Columbia River during September.

Page 2-55; Page 2-57, Table 2.30

The Wymer pump station has to lift (i.e. push) water to elevation 1,730' (not elev. 1,610') in order to fill the reservoir to full pool. The pipeline discharge into the reservoir may be at elev. 1,610', but full pool elevation is 120' higher. The "top of inactive (dead) storage" elevation in Wymer Reservoir is incorrect…it should read 1,375' to coincide with the low-level outlet elevation.

Page 2-70 Operations - Does the proposed pipeline for the Wymer Reservoir and pump exchange alternative go across Amon Creek in Yakima River delta? Amon Creek is completely absent from the impact analysis.

Page 2-70 Operations - The amount of water delivered through the pipeline for the Wymer Reservoir and pump exchange alternative is less in a wet year than a dry year. Please evaluate the value of high flows for fish life and consider maintaining dry year pump exchange totals in a wet year as well. Evaluation should include floodplain analysis, hydro-geo analysis, bedload movement, increased values for rearing, etc. To provide for the maximum extent (benefit) of improved stream flows, this extra water should stay in the river. In order to achieve fish stock restoration, the habitats and river channel need high flows to restore instream, riparian, and floodplain diversity. Diversity and complexity contribute to a healthy river ecosystem.

Page 2-71/72

The irrigation season flow objective (and equivalent volume) at the Parker Gage (Wapato Reach) for the Wymer + Pump Exchange alternative is stated to be 1,500 cfs, less the YRBWEP Title XII flows and water conservation gains. Establishing a 1,500 cfs flow objective is a substantial improvement relative to the "no action" alternative, particularly during the summer period (July-Oct.), and should not be minimized. This flow objective provides an additional 48,708 ac-ft for Wapato Reach summer flow relative to the 1,300 cfs target flow used to evaluate the BRR and

"Wymer Only" alternatives. However, during the spring period, operating the pump exchange to supplement YRBWEP flows up to 1,500 cfs only provides a combined total volume of 362,340 ac-ft, as opposed to the target for BRR and "Wymer Only" of 729,331 ac-ft from Table ES.2, 2.2 and 2.10

(using the WDFW corrected volumetric objective from the attachment). The difference of 366,991 ac-ft represents an unfair comparison---a much lower target that makes a straight benefits comparison with the other two joint alternatives difficult to impossible (an "apples vs. oranges" comparison). All three joint alternatives should be evaluated against the same volumetric flow objectives.

Page 2-76 - 2.7 Economics, Fisheries Benefits - Please provide an analysis of population structure. In order to produce harvestable fish that are valued, some percentage of each generation must spawn successfully and the relationship between spawners and harvestable surplus may not be linear. In addition, extensive recent literature has pointed to the role of carcasses of adult spawners to contribute to subsequent generation's growth and productivity; this is also likely to be a non-linear relationship.

Page 2-95, Fisheries Benefits

There are a number of problems with the anadromous and resident fish benefits analysis that reduce or ignore benefits that can be expected to accrue during the 100-year benefit stream used in the analysis:

1) The analysis does not include sockeye salmon, which are proposed for reintroduction into Cle Elum and Bumping Reservoirs under the USBR storage dam fish passage program, and which is currently in the feasibility phase. Considering the long-term benefit period for the storage study, it is reasonable to assume that permanent upstream and downstream fish passage facilities can and will be constructed and sockeye re-established. The "use values" of a Yakima Basin sockeye run should be estimated and included in the benefits analysis.

2) Yakima steelhead are harvested in Columbia R. tribal commercial and subsistence fisheries (Zone 6) and Yakima R. tribal subsistence fisheries. Unlike the non-treaty commercial and sport fishery, the treaty tribes harvest wild steelhead as well as hatchery fish. The statement that wild Yakima steelhead (there are no hatchery steelhead in the Yakima Basin) have little to no "fishery use value" is incorrect. Use values for these two harvest categories need to be computed for steelhead and included in the benefit analysis. Table 4.26 (Page 4-115) does show tribal harvest of steelhead, but no benefit is calculated in the economic analysis.

3) Use values for non-listed resident fish species (e.g. kokanee in reservoirs; rainbow and cutthroat trout in streams) are not calculated. These species will benefit to varying degrees from fish-oriented water management under the joint alternatives like anadromous species. Resident trout in rivers currently support an important sport fishing commercial guide industry that contributes to the local economy, as well as non-commercial recreational fishing that has measurable economic value.

4) "Non-use" (non-consumptive) values for both anadromous and resident fish are excluded from the benefit analysis. Significant increases in abundance, productivity, distribution and life history diversity of ESA-listed steelhead and bull trout should accrue from creatively managing as much as 500-800 MAF of stored "fish water blocks" (i.e. BRR alternative). Even though no harvest of bull trout currently occurs and steelhead harvest is limited to tribal commercial (Zone 6) and subsistence fisheries, the benefits analysis ignores the very real costs to society required to recover these ESA "threatened" species. If any of the joint

alternatives can produce demographic benefits leading to the de-listing of steelhead and/or bull trout, these societal costs can be avoided and recovered populations can begin to provide fishery "use values". "Avoided costs" of T&E species recovery that can be directly attributed to storage study alternative accomplishments should be used in the fish benefit analysis.

Page 2-101 - Economics – The watchable wildlife public expenditure component(s) is underestimated. There is a lack of analysis indicating how restoration efforts will lead to increased nonuse value benefits by the public.

Page 2-106; Table 2.66

Not much significance is given to T&E species in the Environmental Quality (EQ) Evaluation (only a combined weight of 4%). This is probably because steelhead and bull trout are considered "non-use" species and currently do not contribute economic benefits to the Benefit: Cost Analysis (BCA) because "avoided costs" of ESA species recovery are not counted as economic benefits. Table 2.66 shows "zero" significance (no effect) for bull trout for any of the joint alternatives and only minor positive effects for steelhead. WDFW believes that creative use of 500-800 MAF of stored "fish water" that can be managed by the SOAC fish managers annually to enhance flow and leverage habitat protection/restoration in the mainstem, tributaries and reservoirs, has the best chance of leading to the recovery of steelhead and bull trout.

Page 2-115 - Various reaches of the Columbia River are also designated as a Wild and Scenic River reach and this information should be included.

Page 2-115 and Table 2.69 (also Table 4.25) - Tables 2.69 (also Table 4.25) list expected quantified effects of the different proposals. For fish, the benefits are modest, although the Black Rock alternative appears to provide the greatest benefits to salmonid habitat identified in this chapter, based on the indicators in 4.8.2.1; however, Side Channel Connectivity and Winter Habitat Conditions in the Yakima River basin should also be considered.

Page 2-115 and Table 2.69 - Aquatic Invertebrates benefits are understated. The analysis does not include the potential production of the reservoir habitat. There are also tributary aquatic invertebrate benefits that would add to the quantitative, as well as qualitative measures if tributary habitats were included in the studies.

Instream Flows

- Columbia River flows

  The rate of withdrawal from the Columbia River mainstem is discussed as a proportion of daily pool and flow fluctuation (see 4.8.2.2). The withdrawal from the Columbia is treated as very small, yet fish interests have emphasized the importance of flow and the potential for cumulative impacts. Work by Anglin (see 4.8.2.1) is the best analysis available of fish habitat response to flow.

  Instream flow constraints on withdrawals from the Columbia are referenced (e.g., see 2.4.2.1, Table 2.17), but there are several different possible instream flow constraints, and it is not always clear which instream flows take precedence. Ecology adopted instream flows as WAC 173-563 in the 1980s, based on limited study of instream flow needs and before most listings of Columbia River salmonids under the federal Endangered Species Act (ESA). The 2004 Biological Opinion flows developed by federal fish researchers and managers addressed instream flows needed for outmigration of smolts of ESA-listed salmonids through the Columbia River hydropower system. Seasonal constraints were developed for the Columbia River Basin Water Management Program as a result of state legislation. The document does not address these different criteria and does not indicate which of these constraints will be met.

  The DPR/EIS implies that no flow requirements constrain withdrawal from the Columbia River in the fall, yet upstream migration, spawning, and incubation take place then for salmon.

- Yakima River flows

  The driving instream flow targets are addressed (e.g., Tables 2.1, 4.1) in the DPR/EIS for the Yakima River. Given there are several sets of instream flows (Title XII, SOAC, SSTWG; see Tables 2.1, 2.2), it would be helpful to compare the instream flow targets in one table.

Chapter 3 - State Alternative

Page. 3-5 - Please note error in a-f Total column of Table 3.1 for Cascade Irrigation District (288 should be 2088). Kiona Irrigation is also confusing between a-f columns.

Page 3-5 - Table 3.1 notes various amounts of trust water. Please provide a discussion on the intended use of the saved water.

Page 3-23 and Table 3.3 - Please elaborate on the potential impacts in the anadromous fish section.

Chapter 4 - Affected Environment and Environmental Consequences

Page 4-2 - 4.2.1.1 River Regulation - Early in the document Reclamation notes how important Stanford et al 2002 recommendations are for restoration of normative flow. Stanford et al 2002 is rarely referenced again in the entire document. This is an important reference for noting deficiencies and how to achieve potential biological gains. The DPR/EIS should compare the various alternatives and their ability to meet Stanford et al 2002 recommendations. This section provides an opportunity to incorporate and discuss the Stanford et al 2002 recommendations.

Page 4-29 - Groundwater Resources -. It is noted that since predevelopment, a 31 percent mean annual increase in basin recharge has occurred due to application of irrigation water to croplands. Has this stabilized or will this continue to increase?

Page 4-33 - Irrigation return flows to the lower Yakima River account for about 75 percent of the streamflow downstream of the Parker gage. Please identify the time period for those return flows. Also, please explain how the data was analyzed (where, when, frequency, etc.).

Page 4-51 - Figure 4.10 is a reasonable itemization of elements of stream fish habitat, but it doesn't explain relationships. Please identify relationships.

Page 4-54 - 4.5.2.2. No Action Alternative - The volume of sand (fines) is important to fish survival. Excessive amounts can injure fish and cover the redds. Under any of the alternatives, sand volumes would have a direct relationship to habitat conditions and fish survival. This relationship should be considered in more detail.

Page 4-68, 69, and -112 (Indicator 4) - Additional information is necessary to validate the model used (Carroll and Joy 2001). Please provide how the data were analyzed, and methods of collection (when, where, frequency, etc.). The model may/could apply to a specific reach; specific time period. When flows increase 352 cfs, and 666 cfs, respectively, anywhere on the river, much less in the lower river during the summer period, the aquatic habitat is going to respond in several beneficial ways and yet temperature, DO, sediment load, and other water quality parameters are noted to experience "virtually no change".

Page 4-95 – Affected Environment - Please adjust fall Chinook adult upstream migration timing in table 4.23. Fall Chinook peak migration occurs at Bonneville about September 1 rather mid August is the onset of the fall Chinook upstream migration. Peak migration in 2007 at McNary Dam was September 25.

Page 4-95 – Affected Environment and Table 4.23 - Adjust the juvenile fall Chinook and summer Chinook outmigration window to be from April through August.

Page 4-95 – Affected Environment - Under status and distribution, include the upper Columbia River fall Chinook stocks. The DPR/EIS states, "to some extent, in Priest Rapids Lake..", but does not describe any further spawning or dam counts further up the river. The Wenatchee River is well known for fall Chinook stocks.

Page 4-98/99, Habitat Conditions for Anadromous Fish; Page 4-125, Cumulative Impacts

If unregulated flow with natural variability and the "interaction of these habitat elements, combined with streamflow" is so important in producing "a complex mosaic under which native aquatic species assemblages evolved and live", then why does the Planning Report ignore the fish benefits that could accrue from the joint alternatives from being able to creatively manage significant amounts of stored fish water (especially BRR)? The fish managers will continue to use SRFB, RFEG, BPA and other funding to implement prioritized habitat access, protection and restoration projects that could work synergistically with SOAC-recommended management of "new fish water" from the joint alternatives to provide significantly higher benefits than presently shown in the PR. The Study Team should attempt to factor "flow leverage of habitat projects" into the BCA to maximize productivity.

Page 4-103, Methods and Assumptions

Temperature

It was not indicated what model was used for temperature. The DEIS indicates that there was no difference between the Joint Alternatives and the No Action Alternative. However, no data or variances regarding temperatures were shown within the various index reaches and the parameters that were included in the model were not described. It was not indicated if only differences in the means temperatures were modeled or is changes would occur based on water year. For example, the Black Rock alternative may have resulted in notable differences in temperatures within some reaches during drought or very wet years.

The DEIS recognized the altered nature of the hydrograph including truncation of runoff peaks and duration and the associated effects on quality, quantity, and temporal duration of groundwater discharge to the river. However, no attempt was made to "game the model" to assess if water saved through reductions in late summer flows in the lower Yakima River might be used to increase groundwater storage through providing higher peak flows in the spring. Thus, returning groundwater might moderate temperatures in the lower river and/or associated side channels later into the summer months. If temperature modeling indicated no fish benefit associated with increased flows in the lower river due to excessive temperatures, the flow objectives should have been adjusted to use the water elsewhere and/or at different times in an attempt to maximum fish productivity.

For example, reducing flow objectives in the lower river for a 70day period by 600 or 900 cfs would provide about 83,000 to 125,000 acre-feet of flow respectively. If this water were to be used during the April-early May out-migration period during natural spring runoff flows, increased hyporheic storage of cold water within the floodplain of the Wapato reach would occur. This may reduce temperatures in the lower river over an extended, critical time period. Predation might be moderated as well due to increased flow volumes and colder water.

We realize that there could be an infinite number of output flow objective scenarios that could be reviewed with the DSS model. The DEIS used only one flow objectives for each stream reach assuming it would be optimal for production and/or survival of salmonids. It was apparently assumed that a flow objective roughly reflecting the natural hydrograph would be a reasonable template to use with greater weighting of importance towards some stream reaches than others. However, it was also discussed that if 650,000 acre-feet were provided to SOAC through a Black Rock alternative for fish management the water would likely be managed very differently between good water years and drought. It would be expected that flows within certain reaches would be weighted of much greater priority than in others during droughts, while other flow scenarios might be used during years with heavy snow pack. Within year adjustments would likely be necessary as well to ensure optimal use of water for fish production. An algorithm tied to *Riverware* and *EDT* models could be developed to optimize fish benefit under various scenarios.

<u>Page 4-104 - Two-dimensional Hydraulic Model</u>

While we have confidence in the model we have concerns with the sensitivity of the data collection methods for the data used in the model as it may have underestimated channel complexity and juvenile salmonids rearing habitat in some reaches. Thre floodplain habitat in ythe upper Easton reach and Wapato reach are very complex and difficult to accurately survey with any method. Ken Bovee indicated that LIDAR was effective to within 1 meter and didn't penetrate dense canopy areas. It would be preferable to truth some of the LIDAR data with more traditional methods such as sonar or cross sectional measurements of the floodplain and associated side-channel habitat to ensure that an acceptable degree of precision occurred.

During the presentation of the DSS model it was indicated that LIDAR were sensitive to within 1 meter which may have excluded many small habitat features including shallow off channel/side channel habitats especially areas where extensive complexity exists. We much prefer sonar or transects at a subset of location to ground truth the changes in the DSS model.

The model apparently used habitat preference data for various life history stages of salmonids that was a collective opinion of various experts rather than empirical data. It was not indicated regarding whether or not this data was compared to empirical data and preference curves that are available.

Evaluation of Fish Benefits - Modeling

The areas of interest for anadromous fish incorporate the existing and proposed reservoirs within the basin, and the mainstem Yakima, Naches and Tieton Rivers from the headwater reservoirs to the confluence of the Yakima River with the Columbia River. The areas of interest for resident fish include the existing and proposed reservoirs within the basin, and the mainstem Yakima, Cle Elum, Naches, Tieton, and Bumping Lakes Rivers from the headwater reservoirs to the confluence of the Yakima River with the Columbia River.

- Modeling efforts are limited by available data to five stream reaches, hence it is assumed that because fish benefits created by additional flows in the lower Yakima reach were not evaluated, the data does not exist or was not provided to the modeler. Was it assumed that excessive temperatures alone during the rearing period eliminated this reach from consideration? It is our professional opinion that with increased flows and river rejuvenations that significant habitat may be established within the lower Yakima reach. Alternatives flow scenarios that change flow objectives within this reach may result in temperature moderation.
- The lower reach (Prosser to Columbia River confluence) is absent from most of the modeling efforts. We question the relationship between flows and habitat that indicates a decrease in habitat, even when there is a potential to increase flow by as much as 50 percent. Were only direct flow increases considered and not flow increases realized through hyporheic exchange within this reach? As velocity increases, especially in the lower gradient stream reaches, the juveniles seek out the low energy zones created by the horizontal and vertical increases upon the floodplain. There is a significant amount of floodplain habitat (as noted in the document) in the lower river for fish to utilize if wetted up. Please provide where and under what flow regimes the flow measurements and channel configuration data were taken. This would affect the data analysis. Also, indicate if the temperature model addressed side-channel habitat independently from the mainstem , as groundwater influence would be different.

- The document focuses on the mainstem Yakima River habitat functions and values. It seems that the models or estimates do not include any of the tributary values. Most of the middle to lower Yakima Basin tributaries is influenced by irrigation practices, and most of them carry irrigation return flows, including Satus and Toppenish Creek on the Yakama Reservation. A major omission in the DPR/EIS is the analysis of tributary habitat function and values, fish life and their relationship to mainstem Yakima River Reclamation operations. Increased storage in conjunction with other habitat restoration efforts would provide significantly opportunities for improving instream flow within tributaries that wouldn't otherwise be possible.
- The flow models used to predict habitat suitability appear to be flawed regarding flow and habitat relationships. Deprivation of and beneficial lateral connectivity is overlooked or somehow miscalculated in the five index areas (perhaps due to the math errors noted above). Please review these calculations.
- The coho and fall Chinook life history functions were not comprehensively addressed by the EDT analysis for the lower 40 miles of the Yakima River. Surrogate reaches were used instead. Applying traditional assessment methods within these reaches would be preferred to assess model precision.
- It is not clear how accurate the assessments of the resource indicator measurements are (Table 2.69). Flow-habitat modeling was used, but models are only our simplifications of our incomplete understanding of fish ecology. Benefits of the proposed projects (see 4.8.2.7) are greater for older year classes rather than the year classes measured.
- Please explain why the models indicate a reduction of flow in the lowest reach. Municipal sources appear not to be clearly delineated.

- The use of DSS to model coho rearing habitat is problematic (Beecher, WDFW; Brad Caldwell, Ecology). In many streams the models apparently indicate that the lowest stream flows produce the best habitat for coho based on weighted usable area and preference curves. However, much empirical data from smolt trapping by WDFW has found that increased stream flows result in successively increased coho productivity. Ecology and WDFW have typically disregarded the WUA results because of the conflict with what we know about stream flow for coho juveniles. Smolt trapping data indicates a strong correlation between higher summer/fall stream flow and resultant increased adult coho returns. Empirical data suggests that a one-percent increase in stream flow in Aug/Sept will result in a one percent increase in the adult coho population two years later.

<u>Page 4-115, Steelhead</u>

A 51 percent increase in steelhead adult abundance resulting from the Black Rock Alternative is not a "minor effect" (from the EQ Evaluation), especially when the benefit analysis did not use any of the new fish water to improve habitat and production in tributaries. The actual improvement should be higher if the means to direct some of the 500-800 MAF to tributaries can be identified and implemented. This is probably our best chance to recover Yakima steelhead to the level that they can be de-listed and support a sustainable tribal subsistence and terminal sport fishery.

Page 4-118, juvenile salmonid productivity

On page 4-118, it is noted in the DSS that the model assumed no changes in the existing channel configuration, just changes in flow. The limited changes in salmon and steelhead productivity for each alternative appeared linked to the altered nature of the floodplain and changes in the cross-sectional channel configuration. The incised and simplified nature of the existing channels reflected minimal gain in habitat quantity until flow stages were quite high or low. Over bank flows provided significant access to perched side channel habitats and backwater areas. The DSS model could be used as a tool to refine and prioritize where floodplain connectivity would result in the greatest fish benefit or incorporate modifications to the bed that are proposed. Gaming the model would highlight which restoration alternatives resulted in greatest production.

The various alternative also assumed that other restoration programs and alternatives would not provide synergistic fish benefits. Yakima river Basin Water enhancement Program, and Salmon recovery funds could be used to later exist water delivery systems to convey and wheel water from the Yakima River to water users current diverting from the small tributaries. Resolving instream flow fish passage barriers within the lower reaches from flow exchanges could provide better anadromous access many miles of habitat.

These exchange benefits are not reflected in the fish benefit calculations within the model.

Page 4-132, Table 4.31

The summary of impacts of the joint alternatives on rainbow trout and bull trout does not include any estimates of improved adult production…why? Why no attempt to estimate economic "use values" for river-dwelling rainbow and cutthroat trout or ESA "avoided cost" values from improvement in viable salmonid population (VSP) parameters for bull trout leading to de-listing?

Additional Comments

- WDFW and PSMFC found that the lower Yakima River fall Chinook stock was genetically different from the Hanford Reach, Snake River, and Marion Drain Up River Brights (See 1998, 1999, 2000, and 2001 PSMFC reports). This stock warrants greater consideration regarding habitat values, habitat association and use, and identifying potential benefit from the Yakima River Storage EIS alternatives. We suggest identifying some index areas within this reach as well.
- Please elaborate on increased water use and the potential locations of future withdrawals for municipalities with regard to ground water sources and surface water from the Yakima River.

- Please consider a pipeline be built to direct flows from the outlet of Wymer Reservoir to the Yakima River rather than realigning the existing channel. Lower Lmuma Creek (below SR-821 bridge) is valuable coho and steelhead rearing habitat.
- There was no mention of the positive relationship between nutrients and salmonid production. There is significant literature regarding the benefit of additional marine derived nutrients on salmonid productivity. Although the DEIS assumed to channel in the existing habitat increased escape of some species, particularly fall Chinook and perhaps coho, might measurably increase productivity of existing habitats. The enhancement effects of spawning pink salmon on stream rearing juvenile coho salmon are well documented.
- The proposed Black Rock Reservoir could affect the existing groundwater contamination at the Hanford Nuclear Reservation. Seepage from the proposed reservoir would increase the ground water flow in the aquifer under the reservoir. This has potential to increase the movement of contaminants from the central part of the site. Such an increase in groundwater flow has the potential to change containment plume shapes, travel times, and peak concentrations. The seepage from the proposed reservoir also has the potential to raise the water table level beneath the Hanford site and mobilizing the contaminants currently in the soil.

Sincerely,

Jeff Tayer

Jeff Tayer
Regional Director

Attachment (Table 1 – Storage Study Flow Objectives)

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Creation Date Mon, Mar 31, 2008 4:20 PM
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Table 1 - Storage Study Flow Objectives.xls	20480	
Final WDFW Yakima Storage Study Response 3-31-08.doc	694784	
Mime.822	981308	

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Priority:	Standard
ReplyRequested:	No
Return Notification:	None
Concealed Subject:	No
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Junk Mail Handling Evaluation Results
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Message is eligible for Junk Mail handling
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Table 1

Mean Monthly Flow Targets and Required Volume (AF) from Tables ES. 1, ES.2, 2.2 and 2.10

Reach	March	April	May	June	**Spring Total**	July	August	Sept.	October	**Summer Total**	November	December
Ellensburg												
Mean CFS	1,982	2,424	3,700	2,586		2,000	1,000	1,000	1,000		980	1,0
Volume (AF)	121,655	143,986	227,106	153,608	**646,355**	122,760	61,380	59,400	61,380	**304,920**	58,212	62,3
					741,915							
		Value in Tables ES.2 & 2.10 =					**Value in Tables ES.2 & 2.10 =**			**304,920**		**Value in**
				diff. =	**95,560**				diff. =	**0**		
Table 2.2	117,938	144,238	220,150	153,849	**636,175**	119,000	59,500	59,500	59,500	**297,500**	58,311	60,4
Wapato												
Mean CFS	3,109	2,794	3,500	2,655		1,300	1,300	1,300	1,300		1,758	1,8
Volume (AF)	190,830	165,964	214,830	157,707	**729,331**	79,794	79,794	77,220	79,794	**316,602**	104,425	113,7
					780,410							
		Value in Tables ES.2 & 2.10 =					**Value in Tables ES.2 & 2.10 =**			**316,602**		**Value in**
				diff. =	**51,079**				diff. =	**0**		
Table 2.2	184,978	166,261	208,250	157,958	**717,447**	77,350	77,350	77,350	77,350	**309,400**	104,616	110,2

= "actual seasonal volume objectives"

= discrepancy between "actual seasonal volume objectives" and values shown in Tables ES.2, 2.2 and 2.10

NO discrepancy between "actual seasonal volume objectives" and values shown in Tables ES.2 and 2.10, however discrepancy exists with Table 2.

J.A. Easterbrooks, WDFW
March 27, 2008

From: Ken and Jocelyn Weeks <kjweeks@embarqmail.com>
To: <storagestudy@pn.usbr.gov>
Date: Mon, Mar 31, 2008 12:52 PM
Subject: Black Rock dam

Greetings: please abandon this ill advised and economically unsupportable plan for the Black Rock Dam...it would seem that the Bureau of Reclamation has run out of rational big dam sites some time ago...this idea makes no sense on any grounds.
1. it is a real looser for taxpayers. with from your own anaysis a benefit to cost ration of 16 cents on the dollar...great agri-business gets the water and taxpayers get the shaft.
2. The dam would be built on fractured Basalts(!!) in a area of high earthquake risk....this is not good thinking.
3.Leakage from the dam could raise groundwater (of course it will) at Hanford Nuclear Reservation, eventually I would think this radioactive plume would reach the Columbia river and poison the river for all. All of this for agri-business in the Yakima basin? For those businesses that have lowered the water table by unsustainable practices and now want us to bail them out....with a amazingly expensive boondoggle....this is nuts. in a nutshell.

Sincerely, Ken Weeks
4 luftfeld road
Lyle, WA

Received in Mailroom
U Y
C MAR 31 2008 F
A O
Yakima, Washington

Confederated Tribes and Bands
of the Yakama Nation

Established by the
Treaty of June 9, 1855

David Kaumheimer
Bureau of Reclamation
Upper Columbia Area Office
1917 Marsh Road
Yakima, WA 98901-2058

March 26, 2008

Subject: Yakama Nation Cultural Resources Program Comments on the Yakima River Basin Water Storage Feasibility Study Draft Planning Report/EIS

Dear Mr. Kaumheimer,

Enclosed are the Yakama Nation Cultural Resources Program (CRP) comments on the above noted draft planning report/EIS. These comments are focused on both the EIS and the Storage Study Class I inventory report prepared for Reclamation by Archaeological Investigations Northwest (AINW) and are divided as such.

Please contact me at 1-509-865-5121 ext. 4737 or Yakama Nation archaeologist Dave Woody at ext. 4760 if you have any questions.

Sincerely,

Johnson Meninick, Program Manager
Cultural Resources Program

General Concerns

The areas of potential affect lie within the ceded area of the Confederated Tribes and Bands of the Yakama Nation as set forth in the Treaty of 1855 (12 stat., 951) between the Yakama Nation and the United States government. With this document, the Yakama Nation asserts sole tribal authority in matters pertaining to the management of their cultural resources within this area. Management includes determination of significance of impacts to traditional cultural properties, archaeological, sacred religious, hunting, gathering, ancestral, legendary, historical sites etc. Only the Yakama Nation can determine what is significant to Yakama culture.

However, the overall cultural resource sections are missing a key tribal perspective on present traditional cultural properties, archaeological, sacred sites, food gathering and hunting areas, critical to traditional cultural practices of present day Yakamas. The only resource inventoried in the Cultural Resources report, provided by Archaeological Investigations Northwest (AINW), is historical resources and is mirrored in the language of the Draft/EIS. The end result is an inaccurate, incomplete portrayal reliant solely on previous archaeological investigations, and does not encompass the full spectrum of cultural resource types. Having not provided this complete portrait, levels of cultural significance are undeterminable at this time. Until a formal Class III cultural resource survey is conducted, tribal consultation pursuant to the National Historic Preservation Act of 1966, presence of cultural resources and their significance cannot be ascertained.

Furthermore, the enhancement, destruction, removal, replacement of *all* cultural resources, not just archaeological or historical, significant to the Yakama Nation is an issue unaddressed in this Draft/EIS. Mitigation is of the utmost importance to the Yakama Nation, as it is the Nation that has lived upon this land since time of beginning. The Draft EIS does recognize there are previously recorded archaeological resources within the APE's, which are protected by federal cultural resource mandates. Because the APE's lie within the ceded area of the Yakama Nation, the Yakama Nation has sole tribal authority over cultural resources significant to it. Therefore, without a memorandum of agreement between the Yakama Nation and the federal agency, the proposed project will be in violation of the National Environmental Policy Act, National

Historic Properties Act, Executive Order 13007, American Indian Religious Freedom Act, Archaeological Resources Protection Act, and Archaeological and Historic Preservation Act. Costs for this mitigation would be considerable but have yet to be included in the overall economic impacts of the proposed project.

Specific concerns

Page 4-254

Section 4.20.1.1

Paragraph 3

The author misinterprets Ray (1939) by overstating the likenesses between Plains and Plateau after the introduction of the horse. This stance has since been displaced by Anastasio (1955,1972) and states Ray as doing the exact opposite of what the author suggests in this paragraph. He explains that Ray had refuted the Plateau as a "cultural void filled with miscellaneous items borrowed from the Northwest and Plains cultures. In fact, Ray displays the "cultural unity of the area in contrast [not in likeness] with surrounding culture areas and describes some of its major characteristics, such as the emphasis on village and band political autonomy, the stress on peaceful means for determining intergroup relations, and a number of other features." Furthermore, Anastasio continues to explain that the horse did much to intensify and change the appearance of trade between Plateau and other culture areas. If anything, the horse created a much more complex portrait of intertribal relations then is summarized by the authors' findings. The authors' summary is superficial and have managed to boil down the intertribal trading economies of Plains and the Plateau to create a mono-Plains horse culture.

The authors do not provide a clear theoretical approach towards defining their use of tribal groups at any point in time. The current logic jumps from tribal confederation (Yakama) to culture area (Plateau) to mish-mash of tribal confederation and an undefined group of native people (Yakama and related groups) to the village level (*tsikik*). The authors offer no temporal reference as to the political existence of these groupings or the

area of which these tribal groups inhabited. Certainly the author recognizes the Treaty of 1855 and that the APE for each alternative lie within the ceded area of the Yakama Nation. But just as soon as the authors introduce this jurisdictional issue, they complicate the situation by widening the scope to include the other Columbia Plateau tribes (Umatilla Colville, Wanapum). Without an introduction to these groups and an explanation as to their relevance to the APE, the message for their inclusion is unclear and confusing.

The authors discount the complex trading networks that have been maintained for millennia between Plateau and not only Plains tribes but California, Great Basin and Northwest Coast tribes as well. Walker's (1997) work, along with that of Anastasio (1955, 1972), has clearly refuted the conflated concept that Plains culture has had such an overwhelming impact on the Plateau, that it caused Plateau tribes to instantaneously abandon their cultural identity and social order for that of another. Setting aside that the author imagines this diffusion could have taken place 200, epidemics were also sweeping through the Plateau as was the first migration of European settlers. The epidemics, along with the posed threat of land loss, encroachment of settlers, and the religious and cultural assimilation settlers brought with them, could have just as easily caused this tighter political alliance between bands and tribes of the Yakama and "related tribes".

Moreover, the author exaggerates the influence of an east to west trend in intertribal trade after the appearance of the horse. Plateau groups were part of a very complex and diverse trade web stretching into other culture areas besides those to the east. Just as the authors emphasize this east to west trend, items of great value moved from the Plateau to the east, as well. The Dentalium, for example, originates from the Northwest Coast. For some Plateau tribes, this shell was used as money and traded with Plains tribes who valued it as much as their western neighbors. Tribes, such as the Lakota, adorned themselves with the valuable shell on clothing and accessories (Would this not be an adoption of Plateau clothing styles?). The horse did much to change the lifestyles of the Yakama and related groups. Combined with aforementioned political and environmental factors, the changes that took place, on the Columbia Plateau before, during, and after their appearance, are complex far beyond the nine lines provided by the authors.

Plateau social organization has been widely studied in anthropology. Of those studies, Ackerman points out that Plateau social organization, in terms of gender roles, is defined as the equal or balanced access of men and women to power, authority, and autonomy in four social spheres" — economic, domestic, political, and religious" (Ackerman 2003: 24). Meanwhile, in terms of political organization, Walker describes that the role of "head men", which were typically chosen based on "qualities of wisdom, personal character, and leadership", existed on a village level. Chiefs, on the other hand, were associated with larger bands or tribal organizations (1998:336). Traditionally, chiefs do and did exist, especially in terms of regulating such activities as fishing and hunting.

Comments on Specific Sections of the Draft EIS

4.20.2.4 Mitigation

How would adverse impacts to cultural sites eligible for the NRHP under criteria other than D be mitigated for? If a site is eligible in terms of an association with an important event in tribal history (Criterion A) or a figure/individual significant to the tribe (flesh and blood or otherwise), what action(s) would mitigate the destruction of that site or place? As it is unlikely that mitigation could be pursued via archaeological data recovery for a site that is not deemed as National Register eligible in terms of its archaeological data potential, but rather for its cultural association or meaning, mitigation to the effected tribe would likely be in monetary terms.

Consultation with effected tribes in terms of NRHP eligibility would not be an option, but rather mandatory due to the potential for sites to be eligible to the National Register under Criteria other than D. This is not referring to TCPs, but rather eligibility outside the viewpoint of archaeology and archaeological data potential (Criterion D).

Consultation with effected tribes during the development of an MOA for mitigation measures would also not be optional. Reclamation, SHPO, or the ACHP would be poorly equipped to define either the damages or appropriate mitigation for sites eligible to the NRHP in terms of tribal cultural values and viewpoints. Further, development of a mitigation MOA is likely to be viewed as the creation of Reclamation policy, which would therefore be subject to Executive Order 13175 which requires

regular and meaningful consultation and collaboration with Native American governments.

4.20.2.5 Cumulative Impacts

This section makes reference to "historic resources", the non-renewable nature of these resources, the goal of archeological investigations being able to re-create a site or historic property in the laboratory, and the desirability of preserving a portion of a site for future analytical methods which might be able to extract additional archaeological data from a site. Although it does not state it specifically, the title of this section would imply that this would be the way to address the cumulative impacts of the chosen alternative. This further implies "historic resources" and the cumulative impacts upon them will only be addressed in terms of archaeology and archaeological data recovery. This extremely limited view of historic resources is a complete failure as far as meeting the intent of the NHPA, which does not define history or what is thought to be an historic resource solely in terms of archaeology or archaeological data. In terms of the NHPA, what is considered an historic resource, its importance or National Register eligibility, and whether it maintains its integrity, is defined by the people who consider it important. Therefore, how cumulative impacts are addressed cannot be done only through archaeological means and still maintain compliance with NHPA Section 106.

4.22 Indian Trust Assets

Under both the Wymer and Black Rock Alternatives, the flooding of the respective reservoirs would at minimum lead to significant loss of terrestrial resources. Although the Yakama Nation rights to these resources defined by the Treaty of 1855 would not be altered, if the resources themselves are eliminated, then the right to utilize them becomes irrelevant. Therefore, the destruction of resources would ultimately and equally diminish the rights of the Yakama Nation to those resources.

Yakima Regional Clean Air Authority

Received in Mailroom
MAR 31 2008
Yakima, Washington

Six So. Second St., Suite 1016, Yakima, WA 98901
Phone: (509) 834-2050, Fax: (509) 834-2060
http://www.co.yakima.wa.us/cleanair

March 27, 2008

Bureau of Reclamation
Upper Columbia Area Office
Mr. David Kaumheimer, Environmental Program Manager
1917 Marsh Road
Yakima, WA 98901-2058

RE: Yakima River Basin Water Storage Feasibility Study

Dear Mr. Maples:

Thank you for providing the Yakima Regional Clean Air Authority (YRCAA) the opportunity to review and comment on the Yakima River Water Storage Feasibility Study.

Prior to starting the renovation work, the following is required:

1. Contractors doing clearing, grading, construction, paving, or landscaping work must file a dust control plan with YRCAA.

Thank you for the opportunity to connect with the city's continued support-in-protecting the air quality in Yakima County.

Best regards,

Hasan M. Tahat, Ph.D.
Engineering, Planning & Monitoring Division Supervisor

Cc: File

Received in Mailroom
UCAO MAR 31 2008 YFO
Yakima, Washington

BOARD OF YAKIMA COUNTY COMMISSIONERS

☆ District One
Michael D. Leita

☆ District Two
Ronald F. Gamache

☆ District Three
Rand Elliott

March 31, 2008

David Kaumheimer
Environmental Programs Manager
Bureau of Reclamation
Upper Columbia Area Office
1917 Marsh Road
Yakima, Washington 98901-2058

Dear Mr. Marquis:

Yakima County cover letter re: Draft PR/EIS Yakima River Basin Water Storage Feasibility Study

The Board of Yakima County Commissioners is writing this cover letter to express our objections regarding the Draft PR/EIS Yakima River Basin Water Storage Feasibility Study findings and conclusions. We have attached specific comments made by our Yakima County staff.

Historically, Yakima County has been known as the "fruit bowl" of the Nation and the watershed cradle of ESA recovery efforts within the Pacific Northwest. Municipal water demands continue to grow.

The last water projects for this unique area were created by our Federal government over 70 years ago. Over the last 30 years, various actions have been taken to mitigate growing water demands. Water conservation, innovative irrigation practices, reservoir "flip-flops", huge salmon recovery efforts, temporary well drillings, removal of orchards, and other solutions have fallen short. Compounding these shortfalls are diminishing annual mountain snow packs. Yakima County's basic water needs can no longer be mitigated by past shortsighted solutions.

Yakima County can not accept second-best solutions. Seventy years ago vision and commitment made this valley fertile. Only a visionary major water project will solve our region's impending long term water crisis. The EIS economic analysis based on limiting and short sighted parameters is unacceptable. The deadline for completing the final draft PR/EIS is in December 2008. In that document, the Bureau of Reclamation is required to identify a preferred alternative.

Sincerely,

Ronald F. Gamache, Chairman

J. Rand Elliott, Commissioner

Michael D. Leita, Commissioner

cc: file
Public Services

Comments on the Yakima River Basin Water Storage Feasibility Study Draft PR / EIS

Terry Keenhan, P.E. [1]
Joel Freudenthal, Fish and Wildlife Biologist [2]

Preamble / Overview

The Executive Summary of the Yakima Basin Storage Study Planning Report / EIS (PR / EIS) states *"(the) finite (water) supply and limited storage capability does not meet the water supply demands in all years and results in significant adverse impacts to the Yakima River basin's economy, which is agriculture-based, and to the basin's aquatic resources - specifically those resources supporting anadromous fish."* This statement is not surprising since the total Yakima Basin reservoir storage is only 30% of the annual basin runoff. This compares to the Colorado River dams built by the Bureau which hold between 400 and 500% of annual runoff and provide drought resistant water supply to the users.

This Yakima Project's low level of drought resistance has been an issue for irrigators, municipalities, fisheries and market economies both national and international for a long period and its long term viability has become of increasing concern with increased frequency of droughts/proration of water users, and with the documented one and a half degree regional warming and reduced snow packs since 1946. According to studies quoted by the EIS this reduction in summer flow supply is anticipated to accelerate to an additional 40% reduction of current flows. We are all aware that the basin water is currently over-allocated yet non-irrigation water demands (on surface and subsurface which may be connected) within the valley are increasing primarily due to regional and State growth pressures.

The Yakima Project undertaken by reclamation in 1905 has provided a valued local, regional and national contribution to the economies despite its small size, limited drought resistance and basin water over-allocation. The project has shaped the local economy, the local communities and the regional, state and nation's food production, particularly for high value crops. However, past experience, most recently in the 2005 and in the 1990s, has shown the increasingly limited drought resistance, and the resultant hardships, recoveries and impacts on modified crop selection, rotation and the resultant reduction to total capital investment - valley-wide. The PR / EIS has failed to adequately address water supply and demand issues as they relate to competing demands and environmental impacts, including damages as they relate to droughts and stability of the water supply.

Further, the World Commission on Dams November 2000 Report *"Dams and Development, a New Framework for Development"* which surveyed large dams worldwide reveals that large irrigation dams (non-hydroelectric and non-flood control) have ***not*** provided positive benefit

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[1] *Mr. Keenhan is currently Surface Water Manager for Yakima County Public Services. Mr. Keenhan has over fifteen years experience in the design of damns, related infrastructure, and management of water resources.*

[2] *Mr. Freudenthal is currently Fish & Wildlife Biologist for Yakima County Public Services, he is the primary author of the Yakima Sub-Basin Plan and Draft Yakima Basin Salmon Recovery Plan. He has over 20 years experience in the development and implementation of water and aquatic habitat*

to cost ratios. One of the authors of this comment worked on the International Joint Venture establishing the International Funding Feasibility (including national benefits) of the hydroelectric Three Gorges Dam, which failed to provide an agreed upon positive BC ratio despite the huge transformative national benefits of the hydroelectric gains. So it is disappointing that this report characterizes the NED account as a benefit/cost analysis that must be greater than 1 for a proposed water project or plan to be *"economically justified"*, which is a concept that does not appear in the P&Gs. The NED account is intended to measure benefit to the Nation according to specific categories of benefits defined in the P&G's, and as such is not a cost/benefit analysis to be used to determine if a project or plan is "economically justified" as mentioned in the PR/EIS.

It is our view that the Storage Study PR / EIS falls well short of accurately depicting the economic and environmental issues facing the Yakima Basin and notably, benefits to adjacent areas in the Columbia Basin. Consequently, we think the PR / EIS in its present form will seriously hamper future efforts to maintain or improve the economy and/or the environment in the Yakima and Columbia Basins to the detriment of the residents in these areas, the State of Washington and the United States as a whole. We believe this could have been avoided by a fuller involvement of local municipalities and agricultural interests beyond that offered from the study outset, as recommended by the WCD 2000 Report and in the P&Gs.

The Storage Study has been in progress since 2003, and by the time the Study is concluded, some $16 to $18 million will have been spent by the Federal Government and the State of Washington in examination of alternatives for improving water supply and fish habitat in the Yakima basin. The County believes that a more open Yakima Valley input to the alternative evaluation, criteria and selection and to the PR / EIS is required. Decision making revealed in Chapters 1 and 2 of this document reveal a lack of connectivity and involvement between the local, regional, and state parties and the Bureau, plus exclusion of some important issues. There is also a disconnect between conclusions in Chapter 2 (the PR) and the material presented in Chapters 3, 4 and 5 (EIS). It is apparent that many of the conclusions reached in Chapter 2 were reached prior to consideration of the information in Chapters 3,4, and 5 in the draft document. We are also aware of information from the DSS model and the EDT model runs that were not included in the Draft PR/EIS, but will be included in the final. The substantive and procedural validity of the Final PR/EIS and the process used to develop it will be in question without a more clear linkage between the completed chapters 3,4, and 5 and the conclusions reached in Chapter 2.

It is in the interests of all parties that the information presented in the PR / EIS, - particularly the economic, fisheries, and water supply issues which are the core of the PR / EIS - accurately reflect the current and anticipated future supply and demand conditions within the basin and are framed in the context of the Federal and State Governments policy objectives that drove the funding to support preparation of the Storage Study PR / EIS. An accurate and consistent discussion of the issues and effects of the current economic and environmental issues facing the basin would allow a more accurate appraisal of the individual alternatives and also allow interested parties in the basin to move forward collaboratively in the future if none of the current alternatives are implemented, or new alternatives arise as a result of the shortcomings of the alternatives presented.

Major Issue 1 - Agricultural Economy of the Yakima Basin and its susceptibility

Specifically, we feel that the effects of any of the alternatives on the agricultural economy, particularly the National Economic Development (NED) account, are seriously in error and do not reflect the economic severity of the past droughts or the economic benefits that would accrue from reducing or eliminating the frequency of short water supply years. The PR / EIS states that it was prepared in conformance with the *Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies (P&Gs)*, which contain extensive direction on preparation of the NED account for agriculture. We find that the economic analysis for agriculture in the PR/EIS or in the Economics Technical Report is not in compliance with the P&Gs due to lack of analysis of damage reduction, intensification, change in cropping patterns, and insufficient scope.

The Yakima Valley agricultural economy is dependent to a large degree on perennial crops such as fruit, grapes, asparagus and other specialty crops, as well as livestock and dairy production. The PR / EIS's lack of consideration of drought-induced damage to orchards, vineyards, other perennial crops as well as the productive capacity of livestock operations seriously underestimates the effect of drought on the basin's economy. These damage effects are especially severe for fruit and grape production and require several years after the substantial droughts for a farm unit to return to full capacity. The PR / EIS only considers the effect of drought as a loss of farm income in a short water year, and does not consider the damage to productive capacity of farm units and the Basin as a whole that occurs during drought, continues to constrain productivity in subsequent years, and results in inefficient water use in all years. It is this concept that resulted in the local development of the 70% or greater proration goal that is adopted also as a goal in the PR/EIS. It is this lack of consistency between the economic rationale behind the goal and the economic analysis of the beneficial effects of meeting this goal (or increased reliability/flexibility of water supply in general) which will thwart or retard the alternatives put forth in the PR/EIS and any subsequent proposals.

Improvements in water supply will reduce risks to agricultural producers, which in turn should lead to changes in the intensity of use on individual parcels, and a shift in cropping patterns, especially where economic/water supply risk is most severe - such as the KID, KRD and the Roza Irrigation Districts. The P&Gs suggest market analysis, interviews with local farmers, and interactions with experienced local property appraisers to account for these effects. These procedural requirements of the P&Gs were not performed for the PR / EIS, leading to an underestimation of the current effect that high risk has on the agricultural economy nor the benefits of reducing that risk.

The Kennewick Irrigation District (KID) is the most junior of the Reclamation Water Contract Holders in the Yakima Basin. Improvement of the water supply to this district should be expected to have significant effects on the agricultural economy given its recent status as a premier wine-producing area and the acknowledged lack of predictable water supply necessary to take advantage of the unique soil and climactic conditions present in the KID. Yet the KID (or any other area whose diversion point is below Sunnyside Dam) is not included in the PR / EIS analysis of the agricultural economy or the economics model as Reclamation Crop Reports were not available for this area. Not including the area which would arguably have the most benefit from an increased water supply in the PR / EIS leaves the document substantively flawed in its evaluation of the agricultural economy of the Basin.

The Economics Technical Report for the Yakima River Basin appears to be in error in several places on page 29. Table 2-20 appears to suffer from transposition of numbers in the first line, and arguably, in line 5, which shows the probability of dry years. In paragraph 2.3.1.1.5 this same example "probability of a dry year" is shown as the probability of a dry year that was used in the PR/EIS. The probability of a dry year, using the selected 25 year period, is 0.24 (6/25) and 0.20 (5/25) for the No Action alternative. If frequency (0.04) was actually used in the PR/EIS, then the benefits side of both the NED and RED accounts is underestimated by 80%. As noted earlier, this under-estimation is further exacerbated by the unjustified exclusion of the intervening year impacts following droughts and the exclusion of benefits for years below 100%. This of course influences the RED account which also exhibits low multiplier factors. Generally the Economics Technical Report excludes vital information for assessment or comments

Summary - The analysis of the Agricultural economy of the Yakima Basin is seriously flawed in the report and underestimates the inefficiencies associated with pro-rationing of irrigation water and droughts. This underestimation is so skewed that the prospect for change or relief in the pro-rationing system, the Storage Capacity of the Yakima Project, or the rationale for increased conservation are all equally set back by the EIS.

Major Issue II - Uncertainty, Likelihood, Risk and Mitigation of Impacts

The P&Gs also thoroughly discuss the concepts of risk and uncertainty, but these concepts are not dealt with consistently in the document. Potential impacts (or benefits), environmental or otherwise, do not translate into reasonable or realistic impacts without the screening of likelihood (or uncertainty), an evaluation of actual risk, and a determination of reasonably attainable mitigation measures. This is not only a standard engineering approach but a technique required of environmental impact statements (including NEPA and SEPA) to meet legal concerns, and also consistent with the recommended approach in the P&Gs. There are several cases of an incomplete or minimal analysis of these aspects prior to report inclusion. Two of the significant impacts are noted below.

Climate Change - The effects of Climate Change are discussed in the document, but are not modeled and were not included in the evaluation of alternatives. The quoted Climate models and studies show a high probability of increases in mean temperature by 3 degrees and decrease in snowpack and summer streamflow in the order of 40% (Table 4.9) by 2050. Recent NRCS North Cascade glacial mass studies and measurements at snowpack measurement sites, which are not quoted in the PR / EIS, have measured a substantial wasting away of local Cascade glaciers and 25% reduction in snow water equivalent over the last 60 years in response to the 1.5 degree increase and small precipitation increase in the area since 1946. The PR/EIS states that consideration of climate change effects was not considered in any of the recommended accounts because of the uncertainties associated with separate precipitation studies. The P&Gs specifically calls for the inclusion of these types of uncertainties in the decision making process, and the risk and uncertainties associated with climate change should be incorporated into the alternative evaluation process with the inclusion in the matrices and tables for at least one, and probably 3 (NED, RED, EQ) accounts in the PR/EIS. The impacts of the decision to disregard the projected 40% reduction in summer flows (water supply) cannot be understated in a basin which is far from even being considered drought resistant now. The reduction in water availability in the summer cannot help but result in tighter water supply and more instances of pro-ration within the Basin. Alternatives in the PR / EIS

should have been evaluated according to not only the ability to reduce proration under the present climate, but in this predicted future climate. There are no attempts to model or address mitigation of this significant and likely impact. In essence, this states that more frequent and extended droughts in a basin which is minimally drought resistant are okay.

Seepage - Environmental risks and likelihoods as well as reasonable mitigation associated with Seepage from Black Rock have not yet been established or quantified since studies are still ongoing. This is promised within the Final PR / EIS. County comments on the November draft to remove report seepage conclusions prior to completion of the studies were removed in the Executive Summary and Chapter 4 but not in Tables 2.62, 2.64 and 2.66. We repeat that evaluation of alternatives for "seepage risk" including mitigation should not occur prior to the completion of the seepage report, but should occur prior to their inclusion in the Final PR / EIS. We expect these tables to be further assessed since they should evaluated including agencies other than the Bureau, as was stated in Chapter 2.

Increased usage and reliance of wells - The uncertainty and impacts of current emergency usage of more wells to safeguard crops and other supplies has not been addressed, particularly with regard to the interconnection between surface and groundwater. The current mining of this resource due to the limited drought resistance and the potential damage already done or predicted in the next few years has not been analyzed, included or acknowledged. This is a concern for all Columbia irrigated basins.

Summary - The PR / EIS does not follow the recommendations in the P&Gs for consistently dealing with risk and uncertainty, and is therefore substantively and procedurally deficient. These concepts should be dealt with fairly and consistently prior to formulation of the Final PR / EIS.

Major Issue III - Columbia River Water Supply Development Account

The Storage Study is funded by the Washington State Department of Ecology through the Columbia River Water Supply Development Account. The major goals of the Water Supply Development Account are defined by the legislature are:

(1) A key priority of water resource management in the Columbia River basin is the development of new water supplies that includes storage and conservation in order to meet the economic and community development needs of people and the instream flow needs of fish.
(2) A Columbia River basin water supply development program is needed, and directs the Department of Ecology to aggressively pursue the development of water supplies to benefit both instream and out-of-stream uses.

Ecology and Reclamation cooperated in the development of the *Columbia River Mainstem Storage Options Off-Channel Assessment Pre-Appraisal Report*. This report looks at criteria for siting of off-channel storage reservoirs that would have the ability to capture the same Columbia River flows (i.e. October through June) that are targeted by the Black Rock Alternative in the Storage Study. Also similar to the Black Rock Alternative, the reservoir sites would ultimately release water to the mainstem Columbia or allow reduction in diversion of water from the mainstem Columbia during the summer months, when water supply for irrigation, hydropower, and fish are most limited.

During the preparation of the *Off-Channel Assessment*, Ecology stated that the Black Rock Alternative would be "further considered" in the Storage Study EIS. To date, the effects of the Black Rock Alternative on the summer flows in the Columbia River, and potential beneficial uses of such water (similar to the benefits examined in the *Off-Channel Assessment)* has not occurred.

Such an analysis must be included in the final PR / EIS to conform to the purposes for which State Funding was provided, and also to conform to the requirements for preparation of the NED account as laid forth in the P&Gs.

Summary: The PR / EIS draws an artificial line at the mouth of the Yakima River and does not consider beneficial effects downstream of that point as required by the P&Gs and in furtherance of the policy of the State of Washington for the Columbia River Water Supply Development Account which funded the State portion of the PR / EIS.

Major Issue IV - Fish and Habitat

One of the main drivers for habitat restoration in the Yakima Basin is the listing of the Middle Columbia River Steelhead DPS and the Columbia River Bull Trout DPS as threatened under the Endangered Species Act. There should be discussion of the impact of doubling of the population of Steelhead in the Yakima Basin relative to the listing status of the populations within the Yakima Basin and across the DPS of the Mid-Columbia. An alternative that actually did double the abundance of this species in the Yakima Basin would probably lead to delisting of the entire Mid-Columbia ESU, and affect the economy and environment of other areas of Washington State and Oregon.

The effects of modifications to the flow and diversion regime on fish and fish habitat are extremely complex. Reclamation has spent considerable time and effort in development of analysis tools to evaluate these effects. Only recently, after the completion of the draft PR/EIS, have these tools been completed and an analysis of the results/outputs generated by these tools performed. From this initial analysis two things are apparent, the storage alternatives do not appreciably change the extent or distribution of habitat types in the upper river, and almost all of the improvements in abundance are derived from increased flow in the lower river, mostly during June and early July. This indicates that the alternatives themselves suffered from significant design flaws and fail to meet the goal to "Improve anadromous fish habitat by restoring the flow regimes of the Yakima and Naches Rivers to more closely resemble the natural (unregulated) hydrograph." Even though the SSTWG was used to develop flow objectives, the development of those flow objectives, and the design of alternatives themselves, was only a coarse approximation of desired flow characteristics. What would be required is a more iterative approach that uses the tools developed by Reclamation for the storage study to optimize fishery benefit for a given set of opportunities and constraints presented by the infrastructure characteristics of each alternative. In essence, the alternatives were poorly designed but the tools to develop a much better set of designs now exist, and should be used prior to development of the Final PR/EIS. Optimizing the alternatives to benefit fisheries is necessary to meet the goals of the PR/EIS, but even if it wasn't, the flow management scenarios should still be optimized as a component of mitigation sequencing for all of the other effects associated with the new infrastructure required by the Storage Alternatives and the State's more programmatic alternatives.

Summary: The PR/EIS fails to adequately address the effects on ESA listed species in the context of the Steelhead DPS as a whole, this information should be included. The development of the flow management scenarios was completed in the absence of evaluation and analysis tools that now exist. All alternatives, including the no action alternative, should have their flow management scenarios optimized in light of these new tools. This is necessary not only to meet the goal of the PR/EIS relative to anadromous fisheries, but also from the standpoint of mitigation for the infrastructural elements of each alternative.

Received in Mailroom
MAR 31 2008
Yakima, Washington
UCAO YFO

Yakima Basin Storage Alliance

Comments on the Yakima River Basin Storage Feasibility EIS Draft 3/31/2008

YBSA wishes to thank the Washington State Department of Ecology and the US bureau of Reclamation for their work preparing this report. This report factually demonstrates the need for new storage in the Yakima River Basin. If we do not take action to develop more storage, then the future economic and environmental health of the Basin will be effectively dammed. This report documents several critical issues.

1. Yakima River Basin storage capacity is currently 30% of average annual yield, the lowest of any large irrigation project in the West.
2. The BOR has insufficient water to meet the needs of both fish and agriculture in most years.
3. There are 225,000 acres with interruptible water rights, limiting it value to the vagaries of snow pack and snow melt.
4. Washington state legislature has mandated more new storage.
5. Washington State DOE reports indicate snow pack will decrease significantly in future years due to climate change.
6. DOE has declared the need for additional storage.
7. Environmental objectives have increased the demand for storage (without increasing the supply).
8. Municipal demands have been increasing (and have not supplied more storage).

The study tells us 35 sites have been considered over the last 30 plus years. The best 6 sites were selected for further analysis. Those rejected did not meet the 3 criteria of the study. Please note the in-stream sites were rejected for environmental reasons. In stream storage is unacceptable in today's society, even though it is the cheapest storage.

The options are listed below with our comments:

1. Black Rock. "Reclamation has concluded that Black Rock is technically viable… and would meet the goals of the Storage Study."

2. Wymer Dam and Reservoir. Reclamation concluded '…this is better than the no-action alternative." The project de-normalizes the Yakima hydrograph and should therefore be rejected. The volume added amounts to no more than the proverbial "band-aid".

3. Wymer Dam Plus Yakima River Pump Exchange. This option reduces the de-normalizing of option 2 at an additional cost of $2.9 Billion.

4. Enhanced Water Conservation. Conservation has been actively pursued for the last 30 years and will continue as profit and technology allow. But the volume of water saved is minor compared to the combined needs for water. The best way to increase the value of conserved water is to STORE it.

5. Market –Based Reallocation of Water Resources. This option is already practiced in dry years. Again the volumes available pale next to the demands, and necessitate fallowing ground, which again drastically curtail economic growth. Another difficult issue here is that water rights have a significant public value and therefore complicate sales.

6. Groundwater Storage. This is projected to provide only 1,900 ac-ft in drought years.

YBSA supports the only option which meets the needs of our environment and our economy. The components of Black Rock are proven and producing the desired results. They are the Umatilla pump exchange and the Banks Lake pumped storage reservoir. We cannot afford the second best option; we must protect our economy and our environment.

YBSA comments are outline below

1.P&G guidelines

2.Anadromous fish

3.Irrigation

4.Recreation

5.Regional Economic impacts

6.Economic Justification

7.Pump Generation

8.Construction costs

9.Contrasts in alternatives Operations

10.Comprehensive programs

11.Reservoir Seepage

12.Project Financing and Repayment

13.Future Values

14. Report to Congress

Principles and Guidelines

Reclamation and other federal water resource agencies are required to use the "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (P&Gs). The P&Gs establishes four accounts "to facilitate evaluation and display of alternative plans" and requires that the alternative with the greatest net economic benefit consistent with protecting the Nations environment, the National Economic Development (NED) Plan, be selected unless the Secretary grants an exception.

The NED Plan is supposed to measure increases in the economic value in the national output of goods and services. In contrast is the Regional Economic Development (RED) account which is supposed to reflect changes in the distribution of regional activity that will result from a project. These regional economic impacts are commonly measured as regional employment, regional output of goods and services, and regional income. These regional economic impacts are intended to account for not only the direct impact on the primary affected sectors of the economy but also the secondary impacts that are generated by other sectors.

Regional economic impacts however, are not considered in economic justification. We understand the rationale for this is not to favor one area of the country over another area in the decision-making process of Federal water resource projects.

We believe application of the P&Gs and its implications on policies and processes of a Federal agency such as Reclamation severely constrains the agency in

constructively addressing solutions to water resource issues. When it comes to solutions to the water supply issues in the Yakima basin, the P&Gs and economic justification becomes just that --- a constraint which Reclamation knows full well cannot be overcome. This has been the case since the P&Gs were mandated in 1983 and will remain so unless appropriate action is taken to constructively reassess its value in Federal participation in solving regional water resource issues. With many regions facing major water resource issues it is imperative that Reclamation with a long history of capably assisting in solving water issues plays an active and constructive role.

Anadromous Fish

In the Pacific Northwest we are striving to preserve and improve our anadromous fishery. The Yakima basin presents a unique opportunity to take positive action in regard to water and habitat; the vital components for salmon and steelhead. Yet, the "measuring stick" for a water exchange of the magnitude of the Black Rock Alternative for anadromous fishery is based solely on the monetary value of the number of fish harvested.

We do not see such a "measuring stick" being applied to other salmon recovery and enhancement activities in the Yakima basin and the Pacific Northwest. Of course this would not be acceptable in the development of biological opinions, in sub-basin planning, nor in on-going court actions dealing with salmon recovery and the cultural values of salmon and steelhead to our Native Americans. In view of this, we believe it is completely inappropriate to attempt to monetarily value salmon and steelhead recovery and enhancement activities.

The true value of salmon and steelhead spawning and rearing areas such as the Yakima River basin cannot be captured by fish harvested or escapement figures. Once anadromous fish exit the Yakima basin survival is contingent solely on external conditions. What is missing is the production capability or "potential fish carrying capacity" of the Yakima basin attributable to water which the Storage Study has addressed and to recovered habitat which may require physical alternations, which the Storage Study has not, but should, address.

Carrying Capacity

We believe the BOR has failed to maximize the potential of Black Rock to restore Salmon in the Yakima, and urge the BOR to utilize Dr Jack Stanford's work to maximize the fish carrying capacity of the Yakima Basin. We know that it is very difficult to accurately forecast the number of returning spawners to a tributary, and therefore the measurement of carrying capacity of similar known reaches of comparable quality and magnitude maybe the best measure for evaluation. Keys

to Salmon recovery are increased water volume, access to more habitats in key reaches and access to old spawning grounds above the dams of the upper reservoirs. YBSA will work with Dr. Stanford to obtain carrying capacity numbers for Salmon restoration. So too should BOR.

If, in view of the foregoing, it is deemed necessary that a monetary value is assigned to the anadromous fishery one approach that might be considered is to base it on the cost of a "single purpose project" required to restore the flow regime of the Yakima and Naches Rivers to more closely resemble the natural (unregulated) hydrograph. This is commonly used with respect to developing a monetary value for municipal and industrial water supplies. However, a concern with this approach is that further storage development on Yakima basin main-stem and tributary rivers is not environmentally and biologically acceptable and thus would not represent a most likely single purpose alternative.

We further believe the desired goal of normalizing the hydrograph of the Yakima as been overlooked. It is the first criteria of the authorization act. Wymer storage site should be eliminated or assessed heavy penalties for violating the first principle, if not; Black Rock should be heavily favored for its contribution to normalization. OFF-CHANEL STORAGE IS MORE EXPENSIVE and that societal value must be quantified in your B/C analysis, otherwise damming Yakima Canyon is the cheapest and most logical alternative.

Black Rock has 3 other benefits that are not quantified in the BOR report but are monitored and valued as environmental imperatives for Salmon recovery. Pollution mitigation and water temperature reduction are greatly assisted by increasing the volume of upper mountain water that flow though the entire Yakima if Black Rock supplies the Roza and Sunnyside irrigation districts. In addition Black Rock offers the ability to eliminate the current 'Flip/Flop' on the Tieton River, which would then be available to be a more productive fishery. These values must also be quantified. We also request you include the climate change scenario which shows a 50% likely hood/yr of 1994 magnitude droughts on Salmon recovery too.

Irrigation

Irrigation benefits are measured as the difference in net farm income realized from a full water supply compared to a deficient supply. In the past, this has reflected the net farm income from dry-land production compared to irrigated production resulting in a significant difference, and irrigation benefit. However, when faced with periodic inadequate water supplies such in the Yakima basin, accounting for the probability of occurrence based on a historical period of

record, and then discounting these over a 100-year period of analysis, significantly reduce the irrigation benefits so that they account for only 8 percent of the total estimated benefits of the Black Rock Alternative.

This analysis considers only the net income realized by the farmer which supposedly measures the increase in the economic value in the national output of goods and services. No effort is made to look at the economic value of these agricultural products as they move through the agricultural processing sectors into the international export market. It is interesting to note that approximately 30 percent of the Yakima valley apple production enters the international market and is exported to Mexico, Canada, Taiwan, India, China, and other countries. We do not see how such export which positively affects our nation's trade balance is recognized by this "net farm income" analysis.

Further, we believe the economic impacts of deficient water supplies are not restricted solely to the year in which they occur as there is also a negative economic effect in intermediate years (see "Regional Economic Impacts" discussion).

What is discerning is that no consideration is given to "looking forward" with regard to the potential impacts of climate change on the irrigation water supply. With all of the current emphasis on climate change we believe that a "what if scenario(s)" is most important to display potential impacts on the adequacy of the water supply for irrigation and anadromous fishery. This is particularly germane in view of the Yakama Nation's "time immemorial" right to the flow necessary to maintain anadromous fish life in the river as indicated by the Adjudication Court.

Recreation

The recreation carrying capacity at a Black Rock reservoir is capped at 700,000 annual visits estimated to be reached by the 23rd year of operation. There is some information in the "Economics Technical Report for the Yakima River Basin" (pages 36 and 37) which very briefly discusses the basis for estimating carrying capacity. However, this does not explain some of the constraints such as the "boats at one time capacity" and "developed campsites" used in the analysis. Since carrying capacity directly affects the benefits we are interested to know how this number was developed.

Regional Economic Impacts

We believe the regional economic impacts are very important in the decision-making process as noted on page xviii of the Executive Summary which states in part:

> "…none of the alternatives developed in this feasibility study meet the requirements to be identified as the NED Alternative. The alternatives do, however, result in positive changes in regional income and regional employment, anadromous fish habitat improvements, and improved urban and community attributes as shown in the RED, EQ, and OSE accounts, respectively. Because of these positive changes, the alternatives are presented in this Draft PR/EIS, although no alternative has been identified as a "preferred alternative." A preferred alternative may be identified in the Final PR/EIS based on factors other than the economic standard. The reason for the selection will be explained in the Final PR/EIS".

Our understanding of regional economic impacts is that it includes the direct impact (measured as the gross farm income) and also the secondary impacts often referred to as "multiplier effects". Regional economic impacts are expressed in terms of number of jobs and in monetary terms of output and income. Section 4.14.1.4 (page 4-205 of the PR/EIS) indicates that the gross on-farm income from Yakima Project irrigated lands generates over 12,000 jobs, almost $400 million in labor income, and over $1 billion in output annually in the four-county study area.

Table 4.48 of the PR/EIS (page 4-213) shows that in a year like 1994, when the proration level is 27 percent an alternative which moves the proration level to 70 percent results in an additional 2,608 jobs, a $234 million increase in regional economic output, and an increase of $83 million in labor income. Several things seem to be occurring: first, the irrigation goal of the Storage Study is to provide a 70 percent proratable water supply in dry years and the regional economic activity which occurs between a full water supply and the 70 percent level is not measured; second, there is no accounting for the adverse economic impacts related to the unreliability of the water supply for permanent agricultural crops such as in securing financing and contracts for marketing of these crops; and third, regional economic impacts are not displayed in a manner similar to the benefits to allow a meaningful comparison with the expenditures incurred which generate the economic impacts.

The entire economic focus in the draft PR/EIS is on benefits for economic justification. The difference between benefits and regional economic impacts and the exclusion of the latter from the economic justification analysis is difficult to comprehend. With Reclamation policy requiring non-Federal cost sharing, regional economic impacts are most important to State and local agencies and entities. It is our view the draft PR/EIS is very deficient in this area.

Recreation

The recreation regional economic impacts shown in the draft PR/EIS represent expenditures from recreators living outside of the four-county region. The reason for this is explained as "…within-region recreators are assumed to spend the majority of their recreation expenditures within the region regardless of the alternatives under consideration, implying they would generate little by way of additional regional economic activity". For the Black Rock Alternative, annual nonlocal visitation estimates were estimated at 28 percent of the total annual visitation. Thus it appears that expenditures of local recreators associated with new slack-water recreation opportunities created by a Black Rock Alternative are not included in the regional economic impacts. We question this assumption.

YBSA made the effort to secure and finance an independent assessment of what the construction of a Black Rock reservoir could mean with respect to water oriented recreation opportunities and the potential for an at-site master planned development. The report prepared by the consultants is referenced in Section 6.1.1.2 (page 6-3) of the Draft PR/EIS with the indication that "…these potential revenue flows would be regional in scope and not the national economic benefits that Reclamation and other Federal studies are mandated to address for the economic justification of Federal water resource projects". However, there is no further reference of the results of this assessment in the Draft PR/EIS.

This document estimates the present worth value of the regional economic impacts as follows:

Expenditures incurred by recreationists	$1.280 billion
Expenditures incurred for the master planned development	
(residential, commercial, and resort)	$2.120 billion
Total	$3.400 billion

We do not see why this information is excluded from the regional economic development analysis. Based upon what has occurred in the vicinity of other Reclamation reservoirs in the Pacific Northwest this information reflects a future potential which should not be ignored. While there is no assurance at this time that such development will occur above the reservoir "footprint", there is no assurance that it will not occur. A case in point is the Suncadia development in the vicinity of Cle Elum Reservoir that not very long ago was "not on the horizon".

Pump-Generation

Every opportunity should be explored for inclusion of potential "revenue producing" measures at a Black Rock Project that would help to defray costs. To date, consideration has not been given to the construction of a pump-generator at Black Rock dam that would use the water stored in the reservoir released through a generator at the base of the dam for hydroelectric generation. This released water would then be pumped back to the reservoir and the cycle could be repeated as appropriate to coincide with high load/low load scenarios as well as in conjunction with wind power facilities. What would be required is a re-regulating impoundment in the vicinity of the dam for storage of the released water for short intervals and subsequent recycling back to Black Rock reservoir. This type of pump-generator operation has been in use at Oroville Dam in California for many years. Relicensing of the hydroelectric facilities at Oroville Dam is currently underway.

As the Northwest increases investments in alternative energy, integration of these various sources need to be coordinated, and stored to maximize their values. That requires a battery. In Europe the wind and nuclear generators are tied to a grid which in which, when supplies exceed demand pumps water up fiords in Sweden and Finland and Norway. The higher the lift, the better it can store more energy. Black Rock offers that potential.

We further believe that to preserve the Recreational values, we can use the diurnal rate differential to dampen the fluxuation of the water level in the Reservoir.

It is our intent to pursue discussions with others to determine the viability of this operation from both an engineering and financial perspective.

Construction Cost

The magnitude of "add-ons" to the estimated cost of in-field construction activities incurred by contractors for labor, materials, and equipment ("pay items") is overwhelming. These add-ons increase the estimated "pay items' from $2.250 billion to $4.500 billion. Of particular significance is the 35 percent noncontract cost of $1.200 billion. What we see occurring is an effort to be most liberal in estimating project costs yet on the other hand, most conservative in estimating project benefits (see "Economic Justification" discussion).

With regard to the construction period which is used in developing the interest during construction cost, we suggest the projected 10-year construction period is influenced to a large extent by expectations of annual construction appropriations

to Reclamation rather than the contractor(s) capability to construct the project. The result is increased costs which are used in the benefit-cost analysis.

YBSA believes that large projects can be best cost controlled by using "Design/Build" concept, whereby the builder receives the designs 80% completed so that they can best match current resources to the solution, saving time and money.

Contrasts in Alternative Operations

A comparative analysis of what each alternative will do and will not do with respect to providing flexibility in system operations and the capability for adaptive management in addressing the basin's anadromous fishery should be included in the Draft PR/EIS.

Comprehensive Program

There is the concern the accomplishments of restoring the flow regime of the Yakima and Naches Rivers to more closely resemble the natural (unregulated) hydrograph are not fully measured. This is because the Storage Study does not consider the potential productive capability of salmon and steelhead habitat in the major floodplains currently constrained by physical alterations. In addition, tributary habitat restoration and its correlation with the positive effects of main stem flow improvements in improving anadromous fishery production has not been considered.

A comprehensive approach to the water issues of the Yakima basin was put in place with the Yakima River Basin Water Enhancement Project activities initiated in the early 1980s. It was recognized the pieces necessary for a successful resolution of these issues are so intertwined that a comprehensive approach was necessary. Some of these pieces such as fish passage and protective facilities have been implemented. Other pieces such as the "Basin Conservation Program", the recent work of the Yakima Basin Fish and Wildlife Recovery Board, fish passage to spawning areas upstream of existing Yakima Project dams, and the Storage Study are ongoing. Title XII of the Act of October 31, 1994, recognizes the need for a comprehensive plan and provides authorities for actions such as tributary flow enhancement measures including the restoration of stream habitat.

Reservoir Seepage

We know about the seepage potential, but the BOR has failed to mention the mitigation possibilities. THIS MUST BE INVESTIGATED. This is too big a problem not to have aired and open to public comment. We also believe that the

solutions to this problem need to be discussed and understood by the public. We believe that intercepting the seepage, and using the "new return flows", can be a very significant benefit for the Tri-Cities municipal needs, or augmenting flows in the Hanford reach on the Columbia, the Horns Rapids reach of the Yakima, or even to agricultural, or commercial interests, while at the same time virtually eliminating the threat to the Hanford Reservation contaminants. YBSA will challenge the EIS if no public comment period is allowed for mitigation.

Project financing and repayment

The BOR failed to discuss how to pay for this project. YBSA will work with Washington State to develop a plan. YBSA will include a method to assess irrigation payments as well as debt structure from the various benefactors including power and recreation. The BOR should do like wise and assist the effort. YBSA has received the go-ahead from Washington State to have a "Four Corners" meeting to address the issues. Commissioner Johnson has been invited.

YBSA's stated goal is to maximize the benefits for all sectors. We adopted this goal after being advised by senior BOR officials, who stated that no large projects would be built without multiple paying partners, and resolving treaty rights. The BOR study must recognize and maximize the recreational, power and Salmon recovery benefits to achieve it's goals and have the tools to do it's job of managing water in the Northwest. We urge the BOR to include the Mitchel-Nelson report (Jan 2007) which analyzed the recreational development potential. THIS VALUE IS CRITIAL to recognize, in order to attract private capital for construction and operation.

Future Values

YBSA urges the BOR to use past values for benefits to assess LONG TERM TRENDS, and project those values into the future including land values, in a Future Value analysis, and compare that Future Values of the alternatives 50 and 100 years out so that all can compare the alternatives to the no-action alternative. We further believe the BOR must recomputed its NPV analyses using a 3 year build time, to show the value to compressing the build time. We also request the BOR include the climate change scenario which shows a 50% likely hood/yr of 1994 magnitude droughts on economic values for the region.

Report to Congress

These pieces must be woven into a comprehensive plan and a legislative package developed so all of the interests of the Yakima basin are assured that the authorities and mechanisms for funding are in-place. This comprehensive plan

approach fully promotes the concept of federal-nonfederal cost sharing which is so necessary in addressing today's water resource issues. We urge you to take this into consideration in the preparation of a Final Storage Study PR/EIS.

Sincerely,

Charlie de La Chapelle,

Vice Chair, on behalf of the Yakima Basin Storage Alliance

3/31/08

Received in Mailroom
U C A O
MAR 31 2008
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March 27, 2008

David Kaumheimer, Environmental Program Manager
Upper Columbia Area Office
U.S. Bureau of Reclamation
1917 Marsh Road
Yakima, WA 98901

RE: Hearing Comments, Draft Planning Report/Environmental Impact Statement, Yakima River Basin Water Storage Feasibility Study.

Dear Mr. Kaumheimer:

Thank you for the opportunity to comment on the Draft Planning Report/Environmental Impact Statement, Yakima River Basin Water Storage Feasibility Study.

It is our concern that the legal restrictions on the goals and objectives of this study were critically flawed from the start. This severely limited the alternatives of the study, precluding an optimum alternative. These restrictions should be rectified prior to completing the study.

Individual entities represented on the board will provide separate comments depending upon a variety of perspectives. Reclamation needs to consider all comments and resolve the shortcomings in the completion of the planning process.

Sincerely,

Richard Dieker

Richard Dieker, Chair
Yakima Basin Water Resources Agency

cc: Gerald Kelso, Area Manager, USBR
Derek Sandison, Regional Director, CRO, WDOE

From: Kenneth E. Lewis <klew@bentonrea.com>
Date: Mon Mar 31, 2008 4:53:28 PM US/Pacific
To: kmmccartney@pn.usbr.gov
Subject: Black Rock reservoir discussion

Dear K. McCartney:

Enclosed please find my letter in discussion of the Black Rock project, which I am emailing on 3/31/08 to qualify in your deliberations. I am sending also a typed copy of a letter by Art > Isherwood which he mailed to the Yakima Herald, which printed it in "Letters to the Editor" on 3/23/08. I have never met him but called him after reading his letter, because I had begun to think, as he does, that the ongoing studies are not adequately addressing the vision -- the reality-- of the future, the big real, and happening future.

I have received permission from Mr. Isherwood to send you this copy of his letter.

To the Bureau of Reclamation – This is to express support for Black Rock reservoir, and for Sid Morrison and others who have adequately addressed every issue to arise as negative context, and have rather fully developed positive reasons for construction. Further, this is to extol the visions portrayed by Art Isherwood in a letter to the Yakima Herald on 3/23/08. His experience in development of major water provisions for the American West is possibly unmatched by other living humans. He should be sought out and interviewed by decision-making authorities.

I'm a former government hydrologist, and hydraulic design engineer with the U.S. Engineer Corps in Walla Walla, now farming on Yakima Valley junior water-rights land. More importantly, now in my eighth decade, I, like Mr. Isherwood, have developed some perspective on time. That perspective leads to understanding of the real meaning of Black Rock reservoir. And that perspective denies the assertions of " environmentalists" like Rick Leaumont (of the Audubon Society), who says (but without detail) the project " costs too much".

One prominent issue is being addressed by government scientists who happily report remarkable success in stopping and destroying the flow of strontium to the Columbia. Control of other harmful elements will, hopefully, follow. The credit and the onus are both theirs, as they must keep the impact from spreading from Hanford to across the state, as all studies continue.

And yes, as Mr. Morrison suggests, the true benefits of Black Rock might well include recreation – perhaps even a state park (as opposed to real estate development)– but, as he emphasizes, are first found primarily in saving the existing infrastructure from the increasingly huge and utterly devastating economic losses (real, recent, and more to come) due to droughts, ignored by the Bureau of Reclamation in its emphasis on a small national effect.

Secondly, Back Rock is the *first and only idea* to allow restoration of salmon migration as a blending of old and new, or of blending the wilderness largesse with the inevitable human development. This leads to the clinching theme of Mr. Isherwood:

Isherwood says that the costs of Black Rock, as of Grand Coulee, the Los Angeles Waterway, and similar projects will be forgotten - - swallowed by the future.

He's so right! Call it swallowed by inflation, if arithmetic rules. Consider:

The Tri Cities at the confluence of the Yakima and Columbia are emulating development of other great cities of the West. It's all happening. I've lived for over eight decades, and just twice that (16-plus decades -- 2 lives) takes us back to the mid 1840's - - before the Civil War, before the California gold rush, before all but a very few of the wagon trains, before any West Coast cities, scarcely 40 years after Lewis & Clark. And look at it now, from Los Angeles north to San Francisco Bay areas, and on to Portland, Seattle and the greater Puget Sound, and Vancouver.

And it's still happening now, like it or not - - Megalopolis! – so we must do it the best we can, blending old and new. Salmon beautifully saved. At no remembered cost.

I've hiked the mid and south Cascades of Washington, traversed the eastern and northern passes of the Olympics, explored the Pioneer Mountains of

Idaho, and camped the summer of 1947 on the Nushagak Peninsula of Alaska - - but it's time now to appreciate not only the natural beauty, but the gardens of man as well, and our arts and architectures. If there's a bit of garbage here & there, recycle it, and behold the salmon in our midst.

Copy of letter sent by Art Isherwood to "Letters to the Editor" of the Yakima Herald, and published 3/23/08:

To the editor - - I worked for the Bureau of Reclamation for38 years; retiring as chief administrative officer of Grand Coulee Dam and I support Black Rock. When Grand Coulee Dam was authorized, Spokane newspapers found no justification for construction. Big question "Who will buy the electricity, jackrabbits" Grand Coulee has been expanded and is designed for future expansion. What would the West be like without Grand Coulee?

I also worked on the California Aqueduct, taking water 600 miles to Los Angeles. Those against said this project involved too many impossible tasks. Four pumping stations. Pumps at Bakersfield lifted water approximately 2000 feet. One pumping station had penstocks going through the San Andreas Fault. Approximately 30 miles of canal were subject to settlement of 5 to 7 feet requiring flooding for months to consolidate soil. Unheard of delivered water cost of $31 per acre-foot; when Roza water was costing between $8 and $10 for 3 acre-feet.

Neither Grand Coulee Dam nor the California Aqueduct could have been built using existing Bureau criteria for Black Rock. It is time to take a futuristic view of the total long range benefits of Black Rock.

ART ISHERWOOD
Yakima

WASHINGTON STATE DEPARTMENT OF
Natural Resources

DOUG SUTHERLAND
Commissioner of Public Lands

March 31, 2008

David Kaumheimer
Environmental Programs Manager
Bureau of Reclamation
1917 Marsh Road
Yakima WA 98901-2058

SUBJECT: Yakima River Basin Water Storage Feasibility Study Draft Planning Report and EIS

Thank you for the opportunity to provide comments on the Yakima River Basin Water Storage Feasibility Study Draft Planning Report and EIS. The Washington Natural Heritage Program is responsible for maintaining information on rare plant species and high quality native wetland and terrestrial ecosystems.

We recommend rare plant surveys be performed, at the appropriate time of year, to determine whether the proposed project areas contain rare plant species. The Washington Natural Heritage Program strongly encourages the protection of rare plant populations and their habitats in their natural condition. Maintaining viable populations of rare plants in their natural habitats is the best way to ensure their long-term survival. This may mean simply protecting the habitat from disturbance, or it may mean active management of the habitat to restore and maintain its natural condition.

The benefits for conserving rare plants in their natural habitat are many: 1) suitable conditions such as soil, light, moisture, exposure, and other influences exist for their continued survival, meaning less effort and fewer resources will be required; 2) the intricate interactions of both plant and animal species are conserved; 3) other natural resources such as water quality and open space are preserved; 4) scientists gain an understanding of the species' biology and habitat requirements.

Conserving rare plant species through introductions or reintroductions (translocation or propagation) is at best an uncertain tool and can only be considered experimental. To determine success of projects would take decades. Success would require the establishment of ecosystem functions, not just the presence of a few individuals of a rare species.

Little is known about most rare plant species' biology, such as their pollination systems or germination requirements. Such lack of knowledge would hinder artificial efforts. Relocating plants may also interfere with their natural evolution. Plant species' genetics could be negatively affected by mixing with local populations – or by becoming limited in genetic variation from having too small of a population. Therefore we cannot support relocation of sensitive species as appropriate mitigation.

The loss of shrub-steppe habitat is a great concern to our program. Any loss of shrub-steppe adds to the cumulative loss of this irreplaceable resource. We agree with the US Fish and Wildlife Service's comments that shrub-steppe is a limited and endangered resource. Over half of the state's shrub-steppe has been converted. Only 1% of the original shrub-steppe is protected in preserves designated solely for shrub-steppe and associated species. The preservation of shrub-steppe is also critical for the birds and other animals that use this declining habitat.

The proposed mitigation to compensate for shrub-steppe losses by converting agricultural lands to shrub-steppe is unrealistic since conversion of even degraded shrub-steppe to functional shrub-steppe has yet to be demonstrated.

We hope that the Bureau of Reclamation will work with the Natural Heritage Program to identify and protect rare plant species and high-quality ecosystems in the project area.

Thank you for your consideration of these comments.

Sincerely,

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