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November 30, 2006

MEMORANDUM

TO: Council Members

FROM: Patty O'Toole

SUBJECT: Update on Black Rock Reservoir Project

At the March Council meeting several members of the Yakima River Basin Storage Alliance (YBSA) Board of Directors will present an update on the Black Rock Reservoir Project. Board members Charlie DeLa Chapelle (Vice Chair), Tom Carpenter (Treasurer) and Chuck Klarich (Board Member) are anticipated to be in attendance.

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Black Rock Reservoir

“Someone to carry water”

**Yakima Basin Storage Alliance
Presentation to the
Northwest Power and Conservation Council
December 13, 2006
Portland, OR**



Water For All

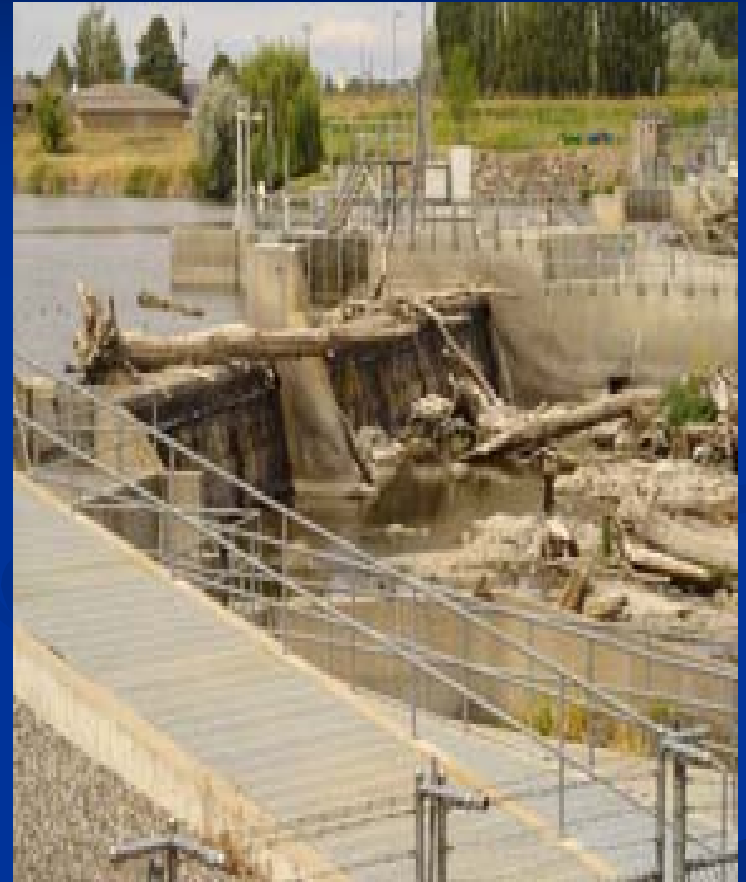
- 1. We have not balanced population growth with available resources.**
- 2. We are not practicing thrift by saving in times of abundance for times of absence.**
- 3. We are not making water storage and management adjustments as necessary.**
- 4. We are being unrealistic about paying the costs for real solutions.**
- 5. We are not involving grassroots people.**

Drip, Drip, Drop of Development

- By 1905 irrigated development in the Yakima Basin already totaled 170,000 acres.
- The plans for the current storage of 1.05 MAF were based on data and plans that are now 100 years old.
- By 1933 the last storage was completed. It took 28 years from planning to completion.
- Most recent planning started during drought of 1977 and 29 years later we are still suffering droughts and using 1933 storage plans.

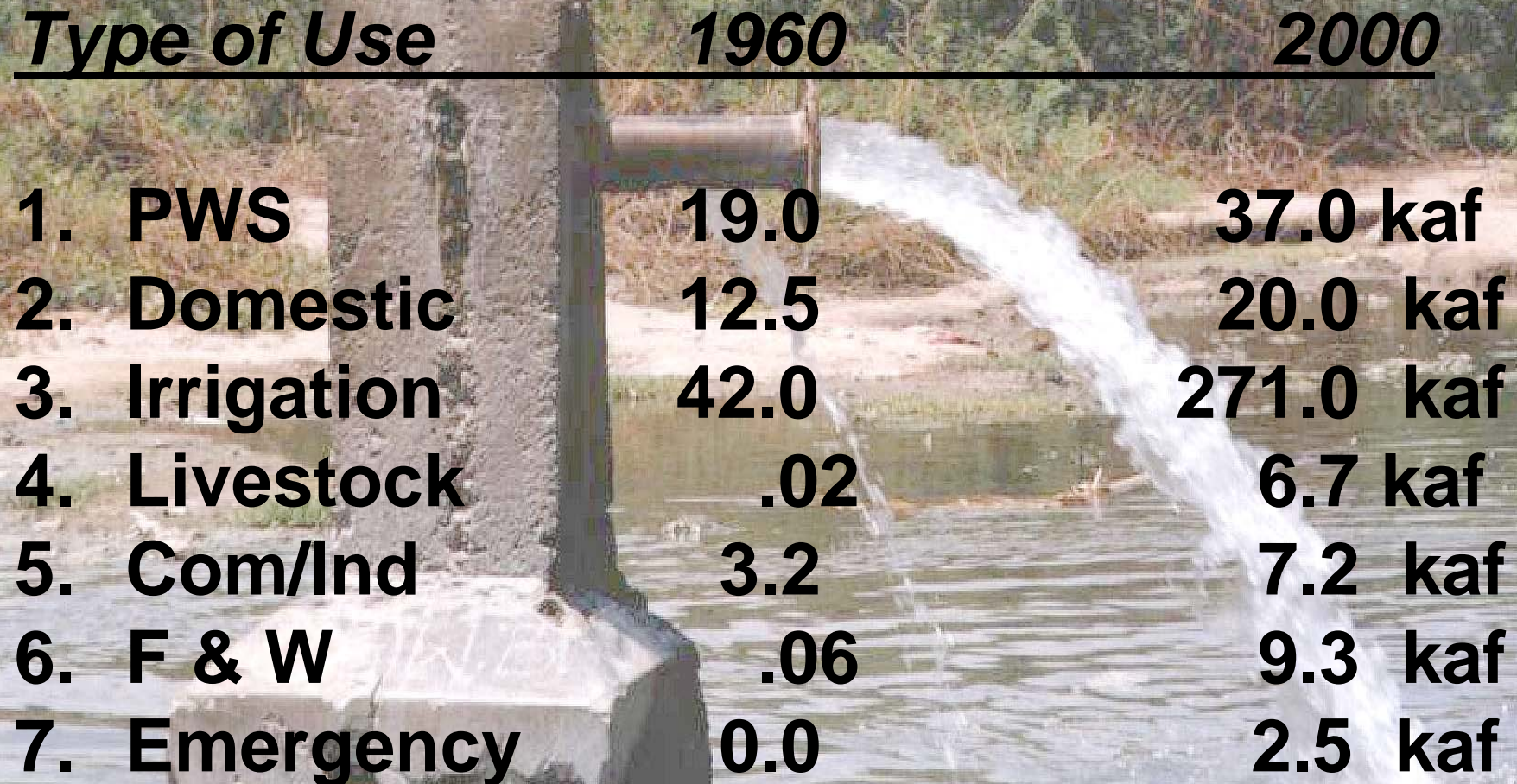
The River of Opportunity

- We took advantage of the opportunity to live by the river but failed to prepare to make a responsible living from its waters.
- Yakima River over-appropriation is a widely known fact but it is only one consideration.
- Ground water pumping must be viewed as further evidence of dire need for new water storage and management.
- Changing environmental and anthropogenic circumstances require realistic solutions.



Prosser Dam

Ground Water Pumping



<u>Type of Use</u>	<u>1960</u>	<u>2000</u>
1. PWS	19.0	37.0 kaf
2. Domestic	12.5	20.0 kaf
3. Irrigation	42.0	271.0 kaf
4. Livestock	.02	6.7 kaf
5. Com/Ind	3.2	7.2 kaf
6. F & W	.06	9.3 kaf
7. Emergency	0.0	2.5 kaf

Past is catching up; Future is slipping away

- Watershed Councils of 1990's were small part of larger process effort to identify storage, finance, water quality, fish, wildlife, governance, public involvement and in-stream flow solutions.
- The dedication to many people, expenditure of millions of dollars and practical solutions were lost to politics and bureaucracies.
- We are in danger of repeating history and cheating the future with more processes seen through dream-filled eyes.



Watering the River

- De-watering started with settlement by non-tribal people.
- Dam, ditches and diversions altered the flow and course of the rivers.
- Cities and communities are consuming water at tremendous levels with no let up.
- Small, piece-meal and sought after cheap fixes will not effectively restore the vitality of the Yakima River.
- A well-planned pumping from the Columbia would help water the Yakima River, without harming the Columbia River. Water has been withdrawn in large amounts over the past 100 years and will need a big fix.

The Normative River

- Black Rock would enable the Yakima River to flow more freely and normally.
- Normative flows provide the greatest benefit to fish and wildlife which have lost 70% of their habitat to humans according to scientific studies in 2002.
- Black Rock proposes exchanging Roza and Sunnyside diversions from Yakima to Columbia leaving approx 600 kaf in Yakima and requiring only 4% of Columbia discharge at Priest Rapids.
- This action in Roza alone results in 29% increase in in-stream flow and connection of off-channel habitat by 80%.
- By creating a hydrologic connection between the river and the flood plains, from the recaptured irrigation withdrawals, it provides thermal moderation (winter warm and summer cool conditions), increased food for aquatic life and removal of chemicals that degrade the habitat.

Salmon And The Normative River

- Salmon and steelhead once were 800,000 strong in the Yakima River and now are below 5% of that number. Summer chinook and sockeye are extinct but are tribal goals for reintroduction.
- Anadromous fish are the biggest beneficiary of Black Rock and its ability to support a goal of unregulated flow in the Yakima River providing wetland restoration, floodplain connectivity to the river and habitat complexity.
- Black Rock allows interaction of biota to occur in upstream to downstream, laterally across flood plains and vertically between the river and alluvial aquifers dimensions.
- Black Rock allows irrigation water to be used in appreciable amounts for salmon spawning, rearing and migration in numbers necessary for restoration at harvestable, sustainable numbers.
- Black Rock creates a shifting habitat mosaic that mimics historic discharge regimes so hospitable to fish and wildlife.

Reclaiming the Future

- Black Rock is way forward premised on time honored principles of astute water management.
- Using volumes of water that Black Rock can offer can fulfill the promise of making the Yakima River the best salmon nursery in the world.
- Black Rock accomplishes a world of good for fish and wildlife but it also meets a goal of providing 70% water for junior water right users in drought years, helping to avoid economic disaster and fighting over water.



COST

- **Viewed like a tree from 3 inches distant instead of a forest from a half-mile away, the Black Rock project might seem too big and too expensive.**
- **If amortized to account for all citizens served from 1933 to 50 years into the future, all fish and wildlife and the total quality of life from aesthetics to economics, the cost is relatively small.**
- **The cost of planning is in the millions, the cost of building is in the billions but the cost of a free flowing, life-giving river, as Mastercard says, “Priceless”.**

Power Benefits of Black Rock

The Yakima Basin Storage Alliance is funding energy studies associated with the operation of Black Rock. It is expected that the studies will show the following:

1. Use of reversible single-stage or multiple stage pump-turbines will reduce costs.
2. Adding generation at Roza and Sunnyside can reduce costs by approx \$11 million/year.
3. Capacity service could be \$3 million in refill year and \$6 million in a non-fill year.
4. Wind integration services can generate \$24 million in a refill year and \$36 million in a non-refill year.
5. Extend life of congested transmission by acting as strategic load.
6. Could add critical new capacity during extreme peak load conditions.



Sid Morrison
Chairman of the board, YBSA

*“Black Rock borrows water
from the Columbia and puts it
back...with fish in it”*