

# Additional Surface Water Storage in the Upper Snake Basin

ESPA CAMP Meeting

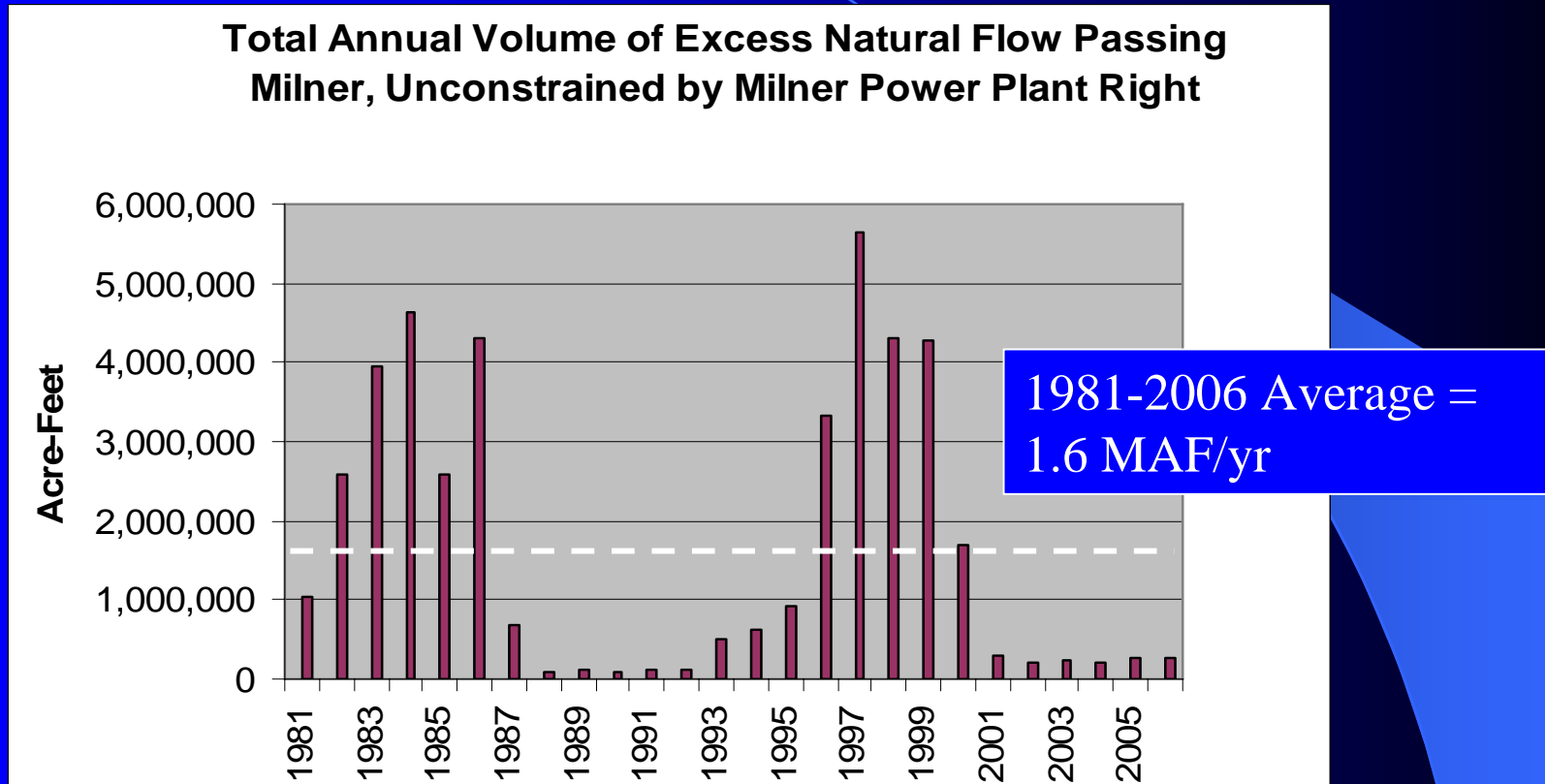
September 27, 2007

Rexburg, Idaho

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Idaho Department of Water Resources

# Water Supply Available to be Stored in New Surface Water Storage



Milner hydropower right is subordinate to future storage for upstream consumptive uses.

# What are the Potential New Storage Sites in the Upper Snake?

- We have identified approximately 73 potential sites in the Upper Snake Basin above Milner that have been studied at some level of detail.
- We believe, however, there are only two potential large-scale storage projects that warrant consideration:
  - Teton Reconstruction
  - Minidoka Enlargement
- There are probably several small off-stream sites (smaller than 10 KAF) that could also be developed.

# Teton Reconstruction

- Rebuild Teton Dam, which failed in 1977 during its initial filling.
- Would provide up to 300,000 acre-feet of storage.
- Would also provide power and flood control benefits.
- Current cost is estimated at \$453 Million for the roller-compacted concrete dam option (Bureau of Reclamation 1993 estimate indexed for inflation).

# Teton Reconstruction

- Previously constructed as a federal project – congressional authorization as a federal project is still in place.
- Site is recognized in the State Water Plan as a potential reservoir location.
- IDWR Director Tuthill has publicly supported investigating reconstruction of Teton.
- Due to previous failure, overcoming negative perceptions may be a challenge.

# Minidoka Enlargement

- Raise existing Minidoka Dam by up to 5 feet.
- Could possibly be timed to be done at the same time as upcoming rehabilitation of the dam.
- Would provide an additional 50,000 acre-feet of storage.
- Cost estimate is approximately \$100 Million.

# Recommendations

If the Advisory Committee believes that more surface water storage should be part of the plan:

- The Advisory Committee should recommend that the Water Resource Board work with Reclamation to begin the necessary studies for undertaking Teton and/or Minidoka as federal projects.
- Investigations should also be undertaken at small off-stream sites that could be done as non-federal projects

Questions?



# Potential High-Lift Exchange

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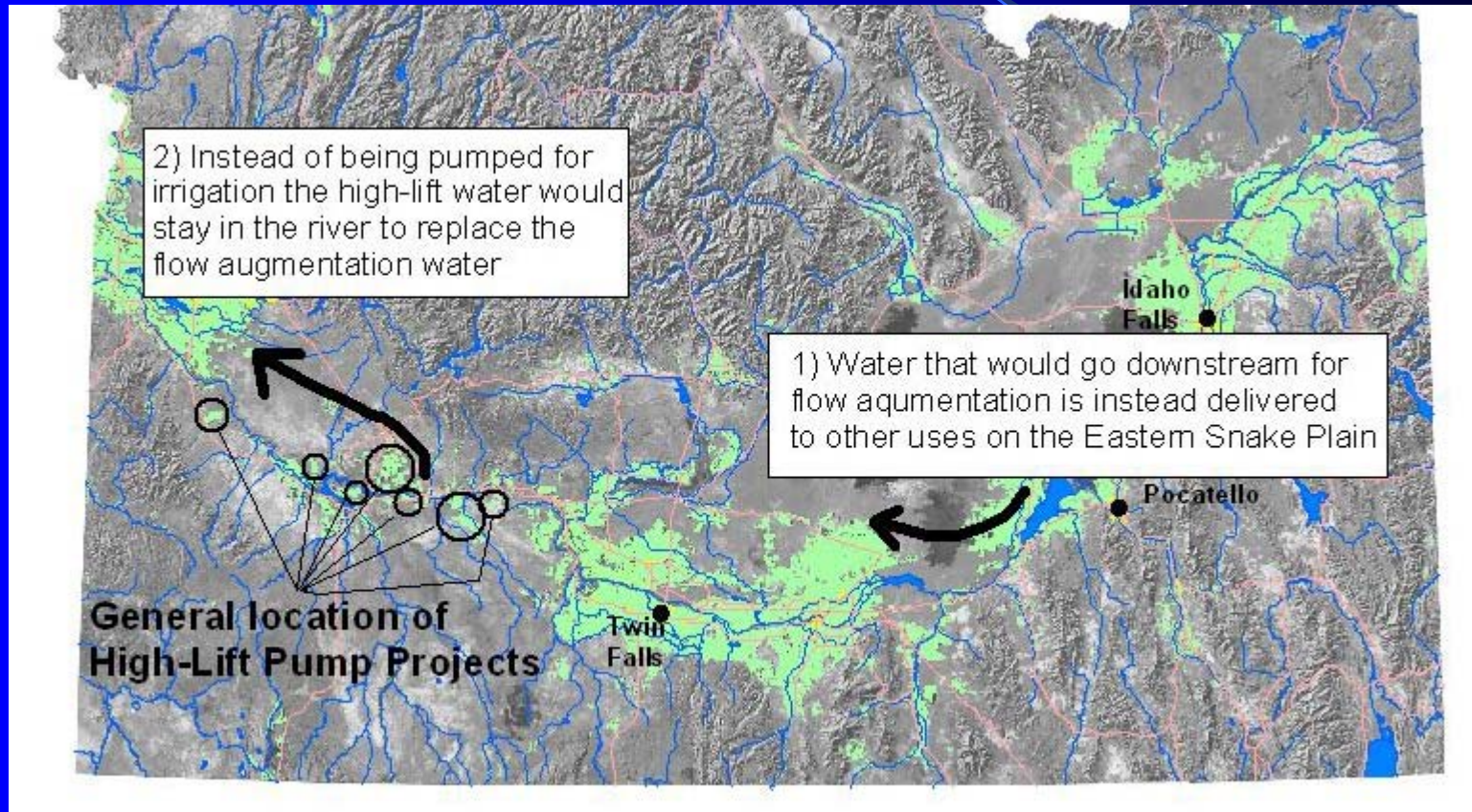
# High-Lift Exchange Concept

The Upper Snake River Basin provides up to 200,000 Acre-Feet of water from reservoir storage every year for downstream flow augmentation. The actual amount is determined by a combination of reservoir carry-over from the prior year and the April 1<sup>st</sup> runoff forecast. If this obligation can be supplied from other sources, this water could be made available for other purposes.

# What are High-Lift Projects?

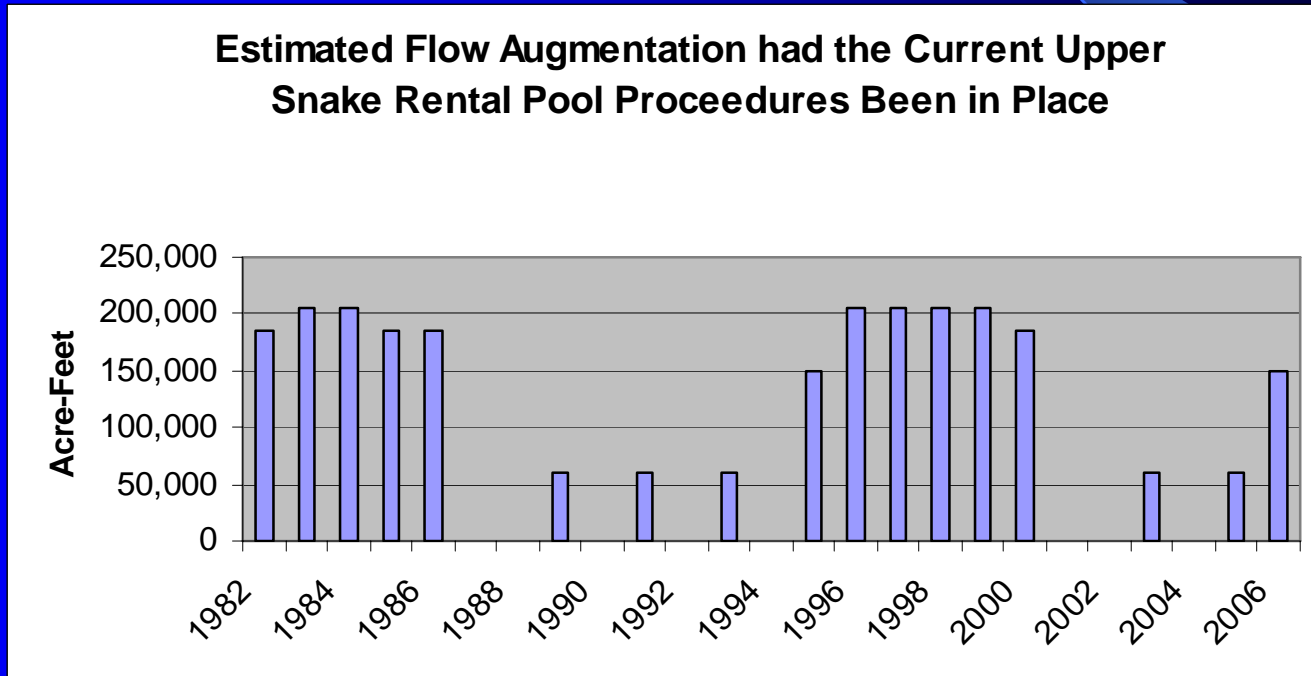
- Generally located along the Snake River between Bliss and Marsing.
- They pump water from the Snake River several hundred feet up onto adjacent benches for irrigation use.
- Due to high pump lifts and associated power costs, project economics can be marginal and many of the owners have expressed interest in selling their water rights for other purposes.
- In 2005 the Idaho Water Resource Board purchased the water rights from the Bell Rapids high-lift project for about \$24 million for uses specified in the Snake River (Nez Perce) Water Rights Agreement.

# How Would a High-Lift Exchange for Flow Augmentation Water Work?



# High-Lift Exchange

What would have been the annual amount of rental pool water going to BOR for salmon flow releases since 1982 if the current rental pool procedures had been in place?



Average 1982-2006 = 102,000 AF

# High-Lift Exchange – How much High-Lift Water is Available?

- When the Water Resource Board went through the process to purchase the “Bell Rapids” water rights, proposals were received from owners representing 110,000 Acre-Feet, in addition to the Bell Rapids rights.
- Assuming the same price as Bell Rapids, it would cost approximately \$35 Million to acquire these rights.

# High-Lift Exchange – How much High-Lift Water is Available?

- Due to the irrigation season not matching the “salmon flow” season, only about 80% of high-lift water is exchangeable (this number may be subject to change). This means if 110,000 acre-feet are acquired, and the BOR has sufficient flow augmentation from the Upper Snake, about 88,000 could be made available on the Eastern Snake plain.
- Taking into consideration years when no or reduced flow augmentation is available, we estimate that acquisition of 110,000 acre-feet of high-lift water would result in an average of 79,700 AF/yr being made available for use above Milner.

# High-Lift Exchange

If the Advisory Committee believes the High-Lift Exchange should be part of the plan, the Advisory Committee should make the following recommendations to the Water Resource Board:

- Begin working with Reclamation to develop a long-term exchange agreement.
- Develop a funding system to acquire the high-list water rights that appear to be available.



Questions?