

Battelle  
The Business of Innovation  
902 Battelle Boulevard  
Richland, Washington 99352  
Telephone (509) 376-3631  
E-mail [dd.dauble@pnl.gov](mailto:dd.dauble@pnl.gov)  
Fax (509) 373-1153

February 7, 2006

Darryll Olsen, Ph.D.  
Board Representative  
Columbia-Snake River Irrigators Association (CSRIA)  
3030 W. Clearwater, Suite 205-A  
Kennewick, WA 99336

REVIEW FO THE COLUMBIA-SNAKE RIVER IRRIGATORS ASSOCIATION  
(CSRIA) COLUMBIA RIVER WATER MANAGEMENT PROPOSAL, BATTELLE  
PROJECT NUMBER 50340

Ref: Memorandum from Darryll Olsen, CSRIA Board Representative to Dennis Dauble,  
Battelle, November 2, 2005

Dear Dr. Olsen:

Enclosed please find a letter report that provides a conceptual/technical review of the  
Columbia-Snake River Irrigators Association (CSRIA) Columbia River Water  
Management Proposal. The report includes an overview of major features of the CSRIA  
proposal and a brief narrative response to five questions posed in the statement of work.

Please feel free to contact me if you have any questions.

Sincerely yours,

Dennis Dauble  
Director  
Natural Resources Division  
Environmental Technology Directorate  
Battelle, Pacific Northwest Division

DDD/dm

Enclosure

**Review of Columbia-Snake River**

# **Irrigators Association (CSRIA) Columbia River Management Proposal**

A letter Report Prepared by  
Dennis D. Daubel  
Michael J. Scott  
Lance W. Vail

February 2006

Battelle, Pacific Northwest Division  
Richland, Washington 99352

1  
**LEGAL NOTICE**

This report was prepared by Battelle Memorial Institute (Battelle) as an account of sponsored research activities. Neither Client nor Battelle nor any person acting on behalf of either:

MAKES ANY WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, with respect to the accuracy, completeness, or usefulness of the information contained in this report, or that the use of any information, apparatus, process, or composition disclosed in this report may not infringe privately owned rights; or

Assumes any liabilities with respect to the use of, or for damages resulting from the use of, any information, apparatus, process, or composition disclosed in this report.

Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by Battelle. The views and opinions of authors expressed herein do not necessarily state or reflect those of Battelle.

## Review of Columbia-Snake River Irrigators Association Columbia River Management Proposal

The purpose of this document is to provide a conceptual/technical review of the Columbia-Snake River Irrigators Association (CSRIA) Columbia River Water Management Proposal (Memorandum from Darryll Olsen, CSRIA Board Representative to Dennis Dauble, Battelle, 2 November 2005). In brief, we were to review the proposal

and readily available related information, such as the Washington State Department of Ecology (Ecology) policy objectives, to identify and technical “show stoppers”, and to address specific questions described later in this document. The three reviewer’s areas of expertise included the technical disciplines of fisheries, economics, and hydrology.

As stated in the November Memorandum, CSRIA proposal objectives were directed at promoting water use efficiency by providing for 1) new water allocations from the Mainstem Comumbia-Snake River system; 2) a new water allocation mitigation fund, and 3) tributary and Mainstem flow mitigation, equal to or greater than the impacts of new water allocations from the Mainstem system, by securing new conservation measures and projects.

Our review found numerous beneficial features of the proposal notably: a stimulus for applying BMP’s, a regional perspective on water management, and an attempt to articulate tradeoffs in water use. The limited description of implementation created an additional suite of questions that would need to be clarified before the program could be fully implemented by ecology. Consequently, we did not conduct an in-depth analysis of the consistency of the proposal with Washington water law, Oregon and Idaho water law or Federal court rulings related to water management on the Columbia River Basin.

This document includes an overview of major features of the CSRIA proposal and a brief narrative response to five questions posed in the statement of work.

### Overview

The expansion of a viable agriculture and municipal/industrial capacity is predicated on obtaining access to an adequate reliable water supply. Conflicts over water in Washington have tended to lock the system of water rights allocations into a status-quo holding pattern. Western water law while protecting water rights on the principal of “first in time” does not provide much incentive for improved water use efficiency by the senior water users, or those with generally the greatest water use efficiency improvement opportunities.

The CSRIA proposal considered the appropriation of water from the “mainstem”. The “mainstem” domain is defined as from Lower Monumental Dam tailrace on the Snake and Chief Joseph Dam tailrace on the Columbia downstream to Bonneville Dam on the lower Columbia. The proposal would allow allocation of up to 300,000 acre-fee (0.3

MAF)<sup>1</sup> from this domain for irrigation and/or municipal uses through 2015. Any new water use would be required to utilize BMPs as established by Ecology. Withdrawals are

---

<sup>1</sup> While not discussed directly in the proposal, 0.3 MAF is derived from earlier work by/for the Department of Ecology. It corresponds approximately to the sum of existing drought permits for agriculture use (29 kaf)

compared with July flows at McNary Dam. The Pacific NorthWest Project believes that about 90% of the subject withdrawals from the Mainstem would come from the McNary or John Day Pool, 2% from the Ice Harbor Pool, and 8% from the Wells Pool. Permit holders would have up to 15 years to demonstrate beneficial use of the water right. Additionally, new appropriations would require payment of a “Hydropower Mitigation Fee” or HMF<sup>2</sup> (initially set at \$10 per acre foot). Payment would be based on actual withdrawal, not the permit ceiling. These payments would fund the “Water Conservation Project Revolving Fund” (WCPRF), managed by the Department of Ecology, which would be used for water conservation projects such as funding improvements in the existing water system infrastructure or other measures such as purchase of water rights. The proposal would not allow any application to be denied or interruptible based on Washington State’s instream flow requirements.

### Best Management Practices

The proposal provides several methods to encourage and support investment in BMPs. Any new water permits would be limited to applications that would have to employ BMPs and would be required to pay a price of \$10/acre-ft. per year for actual water withdrawn from the Mainstem. Existing interruptible water rights could be converted to uninterruptible water rights by implementing BMPs and paying a fee of \$10 per acre-ft. for actual water withdrawn from the Mainstem up to the name-plate amount of their current permit. Under the proposal, BMPs can take a variety of forms, including: on farm delivery improvements (e.g. drip, soil moisture sensors), improved delivery efficiency (e.g. lining canals, piping) and crop improvements (e.g. drought tolerant plants). The BMPs are based on CSRIA’s June 2005 “Irrigation Best Management Practices for Mainstem Columbia –Snake River Pumpers,” which are more stringent than those in Department of Ecology’s “Technical Manual: Best Management Practices for Securing a Drought Permit for Use on the Columbia River Mainstem.”(December 2004). The Department of Ecology would determine whether a given water user was using BMPs.

### Conservation Programs and Water Trust

The purpose of WCPRF, managed by the Department of Ecology, is to fund conservation improvements among irrigators and irrigation districts in the Columbia River basin that have senior water right and therefore, not incentive to improve their water conveyance and utilization practices.

Typically the oldest (senior) water systems present the greatest opportunity for water savings through implementation of BMPs. Although not explicitly mentioned in the proposal, importantly, any water saved as a result of implementing BMPs would be placed in a water trust managed by Department of Ecology.

---

and municipal and industrial use (4 kaf), plus pending applications for agriculture (239 kaf) and M & I (33 kaf), the total of which is 0.303 MAF. Timing and location of withdrawals is not specified, but matters.

<sup>2</sup> Hydropower Mitigation Fee is not intended to directly offset foregone power costs to regional rate payers, but represents a calculated multiyear average opportunity cost for the water in its role of producing hydropower. The fee would be allowed to change every 5 years based on national inflation rates thereby having Ecology assume the price uncertainty risk, a compromise between the variable nature of the water value over time based on flow conditions, and the need for administrative simplicity.

Because of the water trust feature, the water conservation projects could actually result both in less water withdrawn from the Yakima and in more water in the river. Because of the location of the irrigators, reduced withdrawals do not in general reduce ground water recharge. For example, the Odessa aquifer is deep “fossil” water and would be unaffected.

Sequencing of permits and WCPRF projects (which would reflect a separate decision process at the Department of Ecology) was not described in the proposal. Since HMF would be based on actual withdrawal amounts and not permit ceilings, the income could vary and would not flow in until diversions had already begun. If WCPRF projects are expected to simultaneously offset new diversions, some additional seed funding would be required. However, the WCPRF could be established with direct appropriations or the bonding authority of the state and repaid as HMF payments were received. The HMF rate is currently set at \$10 per acre-foot. Since these are payments into capital fund, if backed by the full faith and credit of the state or a reliable flow of payments, the state would have the option of borrowing against these revenues, and equivalent of about \$153/acre-foot at 5% interest over 30 years.

#### Key questions

1. *Does the basic structure of the CSRIA proposal—BMPs, a hydropower mitigation fee, and purchase of water conservation measures in the tributaries—appear feasible as a foundation for issuing new water rights?*

Answer: Yes. The proposal mandates BMPs for any new water withdrawals, which is one of the key requirements of Ecology. It also offers a financial means to improve the efficiency of water use in existing withdrawals elsewhere in the Columbia River Basin to (potentially) improve water quality and (potentially) provide more instream flow. Further, the proposal does not require either new storage or international agreements with Canada to provide additional water during the irrigation season. The basic structure is transparent and provides a clear basis for new withdrawals.

2. *Do the key proposal components demonstrate technical merit, are they empirically derived, and technically supportable?*

Answer: Yes. While not discussed directly in the proposal, 300 KAF is derived from earlier work by/for the Department of Ecology. It corresponds approximately to the sum of existing drought permits for agriculture use (29 KAF) and municipal and industrial use (4 KAF), plus pending applications for agriculture (239 KAF) and M&I (33 KAF), the total of which is 303 KAF.

- 3. Are there any readily apparent, technical “show stoppers” that would impair proposal implementation?*

Answer: No. There appear to be adequate resources for Ecology to implement the proposal in a manner that would adequately protect the multiple demands on the water supply.

- 4. What are the positive features of the CSRIA proposal relative to issuing new water rights?*

Answer: Positive features include requirements for BMP; simplicity and transparency of the basis for issuing new permits; and providing funding for water conservation projects.

- 5. Does the proposal address tributary/mainstream flow protection or enhancement?*

Answer: Yes. The proposal addresses tributary/mainstream flow protection or enhancement by requiring BMPs and the \$10 charge. It would provide a degree of protection for the mainstem flows by reducing the actual withdrawals connected to exercising any new water right. The revolving fund also would provide Ecology with the means to conduct additional mitigation on either the Mainstem or tributaries, as the agency decides is appropriate. One issue is whether the terms described in Section 4(7), as they relate to interruptible use and instream flow requirements would be supported by resource agencies.