AGENDA
IDAHO WATER RESOURCE BOARD
MEETING NO. 6-12
September 7, 2012, Red Lion Hotel, 621 21st St.
Lewiston, Idaho

Executive Session at 7:30 am, closed to the public
Regular Session at approximately 8:00 am, open to the public

Thursday, September 6, 2012
1. Roll Call
2. Executive Session – Board will meet pursuant to Idaho Code § 67-2345 subsection (1)(f), for the purpose of communicating with legal counsel regarding legal ramifications of and legal options for pending litigation, or controversies not yet being litigated but imminently likely to be litigated. Executive Session is closed to the public.
3. Agenda and Approval of Minutes 5-12
4. Public Comment – The Board will allocate a period of time (not to exceed 30 minutes) for the public to address the Board on subjects not specifically shown as an agenda item.
5. IWRRI Advisory Committee Appointment
6. Director’s Report
7. IWRB Committee and Other Reports
   a. Stream Flow Enhancement and Minimum Stream Flow
   b. Water Storage Projects
   c. Upper Snake River Advisory (Operations Forum)
8. Water Transactions Program
   a. Status Report
   b. Kenney Creek
   c. Big Springs Creek (Lemhi)
9. IWRB Financial Program
   a. Status Report
   b. Ground Water Districts Revenue Bonds Update
   c. Bear River Bonds Update
10. UIC Rules Update
11. State Water Plan
12. RP CAMP Update
13. TV CAMP Update
14. ESPA CAMP and Aquifer Management Efforts
15. Water Storage Studies Update
16. Other Items Board Members May Wish to Present
17. Next Meeting and Adjourn
Work Session in Preparation for
IWRB Meeting No. 6-12

September 6, 2012 at 8:00 am
Red Lion Hotel, 621 21st St., Lewiston, ID

WORK SESSION AGENDA

1. ESPAM 1.1 vs. 2.0
   a. Model Comparisons
   b. ESPAM 2.0 Features
2. Optimum Development and Sustainability of Water Resources
3. Water Supply Bank
4. Background on IWRB’s Dworshak Small Hydropower Project
5. Meet Corps of Engineers Walla Walla District Commander
6. Dworshak Site Visit / Lunch (IWRB Members & IDWR Staff)

Americans with Disabilities

The meeting will be held in facilities that meet the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations to attend, participate in, or understand the meeting, please make advance arrangements by contacting Idaho Department of Water Resources at (208) 287-4800 or emailing info@idwr.idaho.gov.
To: Mr. Terry Uhling, Chairman  
Idaho Department of Water Resources  
322 E. Front Street, Suite 600  
Boise, ID 83720

Re: Invitation to serve on IWRRI External Advisory Board

Dear Mr. Uhling:

The Idaho Water Resources Research Institute (IWRRI) has just been reorganized within the University of Idaho to more effectively serve its constituency within the State of Idaho, and to better align its operation and mission with the overall strategic plan and vision for the University of Idaho. IWRRI continues to be committed to working with Idaho’s professional water resources community to address the state, region and nation’s most pressing water resources issues. As part of this reorganization, and to better serve our mission, we are re-forming the External Advisory Board (EAB) for the Institute, and I would like to ask that you, or your designate, serve on the IWRRI External Advisory Board.

The role that the re-formed IWRRI-EAB will serve is two-fold. The first role is to advise IWRRI on the highest priorities for initiating research and engagement activities provided through the USGS 104B program. IWRRI receives approximately $100,000 per year in funds through this program, and is able to use these funds for the broad purpose of understanding and helping to develop solutions to Idaho’s water resource issues through inter-institutional research, engagement and information transfer. Secondly, the IWRRI-EAB will serve as a means to more effectively communicate your organization’s water resources research, outreach and education interests to faculty at all of Idaho’s Universities, and for these faculty to more effectively disseminate information produced by their water resources research activities that may be of interest to your organization.

Thank you for considering this request to serve on the IWRRI External Advisory Board, and I look forward to working with you in the future.

Best Regards,

John C. Tracy, Director
Memorandum

To: Idaho Water Resource Board
From: Helen Harrington
Date: August 10, 2012
Re: Stream Flow Enhancement and Minimum Stream Flow Committee Update

The Stream Flow Committee met on July 20 following the Board meeting in Burley. The Committee made positive recommendations on two proposed water transactions in the Upper Salmon River Basin. The two transactions will be presented at the September IWRB meeting under the Water Transactions Program agenda item.

Sarah Rupp, Friends of the Teton River, presented a status update on water transactions efforts underway in the Teton River Basin. The work is currently focused on three tributaries: Teton Creek, Canyon Creek and Spring Creek. The Teton River Basin presents some unique challenges which Ms. Rupp has been working through with the local community and IDWR, including interstate water delivery and administration of water rights. The potential transaction on Spring Creek may be ready for Committee review within the next few months. Mr. Harvey Walker, representing the Grand Teton Canal Company, also spoke to the Committee regarding his concerns about water transactions in the Teton River Basin. Ms. Rupp is aware of the concerns and recognizes the need to ensure that any water transactions in the Teton River Basin are supported by the local water users and the community as a whole.

Staff received a draft appraisal for the Alturas Lake Creek water rights which are being marketed Katie Breckenridge and Rob Struthers, on behalf of the Breckenridge Family Trust. Once the appraisal is finalized, the Stream Flow Committee will be convened for discussion and a recommendation to the IWRB on how to proceed forward.
Memorandum

To: Idaho Water Resource Board
From: Morgan Case
Date: September 7, 2012
Re: Idaho Water Transaction Program Update

Transaction Updates

**Pole Creek 2012** - The Pole Creek transaction is maintaining a 6 cfs flow in Pole Creek. Recently installed telemetry is allowing remote monitoring of the flow to ensure that it does not drop below 6 cfs.

**Pole Creek 2013** – Six-inch monitoring wells are being drilled in preparation for a 12-inch test well that will help determine whether it is feasible to proceed with some conversion from surface water to groundwater. Other options on the table include elimination of the hydropower, reduction of irrigated ground, reconfiguration of the pivot system, permanent minimum flow agreements, and late season leases.

**Alturas Lake Creek** - The appraisal for the Breckenridge water rights is nearly complete. Although there has not been direct conversion, it appears the water right owners are not amenable to selling their water rights at the appraised value.

**Bayhorse Creek Flow Improvement** - The Bayhorse Creek transaction, which will increase flows in the lower end of Bayhorse Creek by **2.2 cfs** and provide a cold water plume in the Salmon River, is awaiting Northwest Power and Conservation Council approval before we can invoice for the project funds. That approval is expected in September.

**Patterson Big Springs Creek 2012**- The Patterson Big Springs Creek 9 received funding approval from the Northwest Power and Conservation Council. Staff invoiced OSC for the Idaho Fish Accord funds. The project will result in **7 cfs** left instream in Patterson Big Springs Creek, tributary to the Pahsimeroi River.

**Sulphur Creek Donation 2012**- The Nature Conservancy recently closed on the conservation easement which includes the provision that the owners will donate **1.07 cfs** of water rights to the IWRB. As soon as staff receives the water right deed, a change of ownership and lease/rental paperwork will be filed.

**Lower Lemhi Cerise** - The Lower Lemhi Cerise easement transaction is awaiting The Nature Conservancy ranch purchase. Some easement funding issues may push this transaction into FY 2013. If purchased, the easement will protect up to **4.32 cfs** in the Lower Lemhi River. If finalized, the total flow permanently secured towards the 35 cfs goal would be **23.1 cfs**.

**Lower Lemhi Annual 2012**- The WD 74 watermaster is administering the 16.2 cfs of water under contract to maintain the minimum flow in the Lower Lemhi River. The Lemhi went into administration in late July.
**Upper Bohannon Creek Eagle Valley Ranch** – Staff met with the Eagle Valley Ranch manager to discuss the value of a 2-3 cfs minimum stream flow agreement. Bob Loucks has agreed to work with the ranch to determine the fiscal impact to the agricultural production.

**Kenney Creek** – Staff has prepared and submitted a project proposal to the Columbia Basin Water Transactions Program. The project would leave 0.14 cfs in Kenney Creek and allow the water user to pump from a wastewater ditch. Although a small amount of water, this project wraps up a suite of flow restoration projects in Kenney Creek. The 20-year agreement not to divert would be funded through the Idaho Fish Accords.

**Lemhi River and Big Springs** – Staff has prepared and submitted a project proposal to the Columbia Basin Water Transactions Program. The project would consolidate diversion from Big Springs Creek and several Lemhi River diversions into an existing Lemhi River Ditch. An additional 1.36 cfs would flow in Big Springs Creek, while several miles of the Lemhi River would see a 4.64 cfs flow improvement. The 20-year agreement not to divert would be funded through the Idaho Fish Accords.

**Related Activity**

**Bohannon Creek Application 74-15889** – Board staff reviewing new water right applications in the Upper Salmon River Basin determined that a new application for 0.17 cfs from Bohannon Creek is not in the public interest and will interfere with flow restoration projects currently planned for Bohannon Creek. Due to these concerns, Board staff worked with the AG’s office to file a protest.
Memorandum

To: Idaho Water Resource Board
From: Morgan Case
Date: September 7, 2012
Re: Water Transactions Program – Kenney Creek 2012

Action Item: Attached is a resolution authorizing the Board to enter into a 20-year agreement not to divert 0.14 cfs out of Kenney Creek with the Andrews Family and authorizing the Board to expend $10,219.79 from the Idaho Fish Accords Water Transaction Fund.

Kenney Creek is a tributary to the Lemhi River approximately 16 miles upriver from Salmon. Kenney Creek has been a focus of restoration activities intended to reconnect the stream and improve habitat for Endangered Species Act-listed Chinook salmon and steelhead.

Efforts to date have included diversion consolidation, efficiency projects, screening, riparian protection, and the purchase of a conservation easement that has various flow and habitat components. The flow component requires the Kenney Creek Ranch owner to maintain a minimum flow of 4 cfs in Kenney Creek below the Kenney Creek 2 diversion, and to pull no more than half of the flow when flows in the creek are higher than 8 cfs.

There are a few other small water right users on Kenney Creek, and there are projects in development to remove those users from Kenney Creek in order to simplify the management of the easement and remove any other high flow diversions that might adversely impact the creek. One such project is with Gail Andrews who holds a 0.14 cfs right out of Kenney Creek. The Nature Conservancy has been working with Andrews on a project to put a small pumping station on a wastewater ditch that runs along the Andrews property. In order to make the project feasible for Andrews, they would like to enter into a 20-year agreement not to divert to receive compensation for the increased cost of pumping.

In order to protect the flows instream and minimize the financial impact of pumping waste water, staff proposes entering into a 20-year agreement not to divert. The cost of the agreement would be based on pumping cost estimates over 20 years - $10,219.79. The funds would be requested from the Idaho Fish Accord to be placed into the Board’s revolving development water transaction subaccount to be paid out annually.

The Stream Flow Enhancement and Minimum Stream Flow Committee recommends this transaction for approval.
Kenney Creek - Andrews Transaction

- Andrews Diversion
- Andrews Irrigated Field

New Pump

Miles
WHEREAS, Chinook salmon and steelhead habitat in the Lemhi River basin is limited by low flow and seasonally disconnected tributaries; and

WHEREAS, it is in the interest of the State of Idaho to restore flow in the Lemhi River and tributaries to encourage recovery of ESA-listed Chinook salmon and steelhead fish; and

WHEREAS, the diversions on Kenney Creek, tributary to the Lemhi River reduce stream flow in key spawning and rearing reaches of the Lemhi River Basin; and

WHEREAS, staff has developed a twenty-year agreement not to divert water from Kenney Creek to improve stream flow for anadromous and resident fish; and

WHEREAS, the water user has changed the point of diversion to pump from a wastewater ditch and the funds paid under the agreement will approximate the power expenses incurred, over a 20-year period, by changing the points of diversion; and

WHEREAS, funds are available from the Bonneville Power Administration through the Idaho Fish Accord Idaho Water Transaction Fund; and

WHEREAS, staff anticipates the funds being placed into the Idaho Water Resource Board (IWRB) Revolving Development Account for annual payment to the water right owners; and

WHEREAS, the Kenney Creek transaction is in the public interest and consistent with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contract with Gail Andrews and/or subsequent owners for an agreement not to divert out of Kenney Creek 5 in the amount of nine thousand nine hundred nineteen dollars and seventy-nine cents ($9,919.79).
NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho Water Transaction Program in the amount of nine thousand nine hundred nineteen dollars and seventy-nine cents ($9,919.79).

DATED this 7th day of September, 2012.

______________________________
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST: _______________________________
BOB GRAHAM, Secretary
Memorandum

To: Idaho Water Resource Board

From: Morgan Case

Date: August 17, 2012

Re: Water Transactions Program – Big Springs Creek and Upper Lemhi Transaction

Action Item: Attached is a resolution authorizing the Board to enter into a 20-year agreement not to divert 1.36-4.54 cfs out of Big Springs Creek and the Lemhi River with the Beyeler Ranches and authorizing the Board to expend $69,438.50 from the Idaho Fish Accord Water Transaction Fund.

Big Springs Creek is a Lemhi River tributary near Leadore, Idaho. It is a spring-fed tributary with spawning and rearing habitat for Chinook salmon and steelhead. Diversions from Big Springs Creek limit flow for those species, while the Big Springs Creek 5 diversion ditch intercepts Lee Creek and Big Eightmile Creek. The Lemhi L-58A diversion also intercepts Lee Creek. The mainstem Lemhi River near Big Springs Creek also provides important spawning and rearing habitat for Chinook salmon.

Staff has been working with The Nature Conservancy on a potential water transaction that would increase flows by 1.36 cfs in Big Springs Creek and 1.36-4.54 cfs in a 3.6 mile reach of the Upper Lemhi River. In order to accomplish those flow benefits, Beyeler Ranches and would consolidate some of its Lemhi River water rights (from L-58A and L-54) and all of its Big Springs water rights into one diversion (L-58).

In addition to the flow benefits, the project would eliminate two Lemhi River diversions, which are a potential source of entrainment for juvenile fish and remove the intercept points along the associated ditches, allowing seasonal flows in Lee Creek and Big Eightmile Creek to reach the Lemhi River. Both Lee and Big Eightmile Creek will need further restoration, both flow and habitat, to function as a reconnected tributary, but this project is a first step towards that goal. There would be a short reach of the Lemhi River (.6 miles) where flows would be reduced by 1.7 cfs, but that reduction should be mitigated by flows reaching the Lemhi River from Lee and Big Eightmile Creeks.

In order to protect the flows instream and minimize the financial impact of pumping water, staff proposes entering into a 20-year agreement not to divert. The cost of the agreement would be based on pumping cost estimates over 20 years plus a small annual payment ($500) to Y Livestock Ranch for the increased burden of maintenance on the LBSC 5 diversion ditch. Total project cost would be $69,438.50. The funds would be requested from the Idaho Fish Accord to be placed into the Board’s revolving development water transaction subaccount to be paid out annually.

The Streamflow Enhancement and Minimum Stream Flow Committee recommends this transaction for approval.
Big Springs Creek and Lemhi River Transaction

L-54 Beyeler will move 1.7 cfs to L-58

L-58 diversion, where Beyeler Ranches will divert Lemhi and Big Springs Creek Water Rights

L-58A Beyeler will move 3.8 cfs to L-58

Big Springs Creek 5 diversion, where Beyeler will leave 1.36 cfs instream
BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE BIG SPRINGS CREEK AND UPPER LEMHI TRANSACTION

A RESOLUTION TO MAKE A FUNDING COMMITMENT

WHEREAS, Chinook salmon and steelhead habitat in the Lemhi River basin is limited by low flow and seasonally disconnected tributaries; and

WHEREAS, it is in the interest of the State of Idaho to restore flow in the Lemhi River and tributaries to encourage recovery of ESA-listed Chinook salmon and steelhead fish; and

WHEREAS, the Lemhi River L-58A and Big Springs Creek diversions reduce stream flow in key spawning and rearing reaches of the Lemhi River Basin; and

WHEREAS, staff has developed a twenty-year agreement not to divert water from the Lemhi River at the L-58A diversion and the Big Springs Creek diversion to improve stream flow for anadromous and resident fish; and

WHEREAS, the water user has changed the point of diversion to pump from stream reaches that are not flow-limited and the funds paid under the agreement will approximate the power expenses incurred, over a 20-year period, by changing the points of diversion; and

WHEREAS, funds are available from the Bonneville Power Administration through the Idaho Fish Accord Idaho Water Transaction Fund; and

WHEREAS, staff anticipates the funds being placed into the Idaho Water Resource Board (IWRB) Revolving Development Account for annual payment to the water right owners; and

WHEREAS, the Big Springs Creek and Upper Lemhi transaction is in the public interest and consistent with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contract with Beyeler Ranches LLC and/or subsequent owners for an agreement not to divert out of the L-58A Big Springs Creek 5 diversions in the amount of sixty-nine thousand four hundred thirty-eight dollars and fifty cents ($69,438.50).
NOW THEREFORE BE IT FURTHER RESOLVED that this resolution is subject to the condition that the IWRB receives the requested funding from the Bonneville Power Administration through the Idaho Water Transaction Program in the amount of twenty sixty-nine thousand four hundred thirty-eight dollars and fifty cents ($69,438.50).

DATED this 7th day of September, 2012.

______________________________
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST: _________________________________
BOB GRAHAM, Secretary
MEMO

To: Idaho Water Resource Board  
From: Brian W. Patton  
Subject: Water Resource Projects Funding Program Status Report  
Date: August 28, 2012

As of **July 1st** the IWRB’s available and committed balances in the Revolving Development Account, Water Management Account, and the Secondary Aquifer Management Account are as follows:

**Revolving Development Account (main fund)**

<table>
<thead>
<tr>
<th>Committed but not disbursed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans for water projects</td>
<td>$2,325,394</td>
</tr>
<tr>
<td>Water storage studies</td>
<td>2,308,255</td>
</tr>
<tr>
<td>Total committed but not disbursed</td>
<td>5,009,157</td>
</tr>
<tr>
<td>Loan principal outstanding</td>
<td>8,586,499</td>
</tr>
<tr>
<td>Uncommitted balance</td>
<td>3,251,245</td>
</tr>
<tr>
<td>Estimated revenues next 12 months</td>
<td>2,300,000</td>
</tr>
<tr>
<td>Commitments from revenues next 12 months</td>
<td>0</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>5,551,245</td>
</tr>
</tbody>
</table>

**Rev. Dev. Acct. ESPA Sub-Account**

<table>
<thead>
<tr>
<th>Committed but not disbursed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CREP</td>
<td>2,419,581</td>
</tr>
<tr>
<td>Aquifer recharge</td>
<td>350,000</td>
</tr>
<tr>
<td>Bell Rapids</td>
<td>361,620</td>
</tr>
<tr>
<td>Palisades storage</td>
<td>10,000</td>
</tr>
<tr>
<td>Black Canyon Exchange</td>
<td>489,445</td>
</tr>
<tr>
<td>Loan for water project</td>
<td>250,000</td>
</tr>
<tr>
<td>Total committed but not disbursed</td>
<td>3,890,645</td>
</tr>
<tr>
<td>Loan principal outstanding</td>
<td>347,893</td>
</tr>
<tr>
<td>Uncommitted balance</td>
<td>119,381</td>
</tr>
<tr>
<td>Estimated revenues next 12 months</td>
<td>172,000</td>
</tr>
<tr>
<td>Commitments from revenues over next 12 months</td>
<td>0</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>291,381</td>
</tr>
</tbody>
</table>

**Rev. Dev. Acct. Bell Rapids Sub-Account**

| Committed but not disbursed (finance costs) | $179,225 |
| Estimated revenues next 12 months (1)      | 2,000    |
| Commitments from revenues over next 12 months | 2,000 |
| Estimated uncommitted funds over next 12 months | 0       |

**Rev. Dev. Acct. Dworshak Hydropower (2)**

| Committed but not disbursed (repair fund, etc.) | $1,328,576 |
| Estimated revenues next 12 months (3)          | 200,000   |
| Commitments from revenues over next 12 months  | 200,000   |
| Estimated uncommitted funds over next 12 months | 0        |
**Rev. Dev. Acct. Treasure Valley & Rathdrum Prairie CAMP Sub-Account**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed but not disbursed</td>
<td>$128,336</td>
</tr>
<tr>
<td>Estimated revenues next 12 months (5)</td>
<td>200,000</td>
</tr>
<tr>
<td>Commitments from revenues over next 12 months</td>
<td>0</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>328,336</td>
</tr>
</tbody>
</table>

**Rev. Dev. Acct. Pristine Springs Sub-Account**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed but not disbursed (Repair fund)</td>
<td>$1,164,228</td>
</tr>
<tr>
<td>Committed but not disbursed (ESPA CAMP)</td>
<td>1,232,000  (to be transferred to Secondary Aquifer Fund)</td>
</tr>
<tr>
<td>Total committed but not disbursed</td>
<td>$2,396,228</td>
</tr>
<tr>
<td>Loan principal outstanding</td>
<td>7,475,750</td>
</tr>
<tr>
<td>Uncommitted balance</td>
<td>0</td>
</tr>
<tr>
<td>Estimated revenues next 12 months</td>
<td>1,732,000</td>
</tr>
<tr>
<td>Commitments from revenues over next 12 months</td>
<td>1,732,000</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>0</td>
</tr>
</tbody>
</table>

**Rev. Dev. Acct. Upper Salmon/CBWTP Sub-Account**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed but not disbursed (Upper Salmon flow enhancement/reconnect projects)</td>
<td>$2,623,625</td>
</tr>
<tr>
<td>Estimated revenues next 12 months (4)</td>
<td>30,000</td>
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<tr>
<td>Commitments from revenues over next 12 months</td>
<td>30,000</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>0</td>
</tr>
</tbody>
</table>

**Water Management Account**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed but not disbursed:</td>
<td>$111,376</td>
</tr>
<tr>
<td>Loan principal outstanding</td>
<td>4,435</td>
</tr>
<tr>
<td>Uncommitted balance</td>
<td>4,756</td>
</tr>
<tr>
<td>Estimated revenues next 12 months</td>
<td>2,000</td>
</tr>
<tr>
<td>Commitments from revenues over next 12 months</td>
<td>0</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>$6,756</td>
</tr>
</tbody>
</table>

**Secondary Aquifer Management Fund**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Committed but not disbursed:</td>
<td>$1,767,846</td>
</tr>
<tr>
<td>Uncommitted balance</td>
<td>667,559</td>
</tr>
<tr>
<td>Estimated revenues next 12 months</td>
<td>27,000</td>
</tr>
<tr>
<td>Commitments from revenues over next 12 months</td>
<td>0</td>
</tr>
<tr>
<td>Estimated uncommitted funds over next 12 months</td>
<td>694,559</td>
</tr>
</tbody>
</table>

**Total committed but not disbursed**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total committed but not disbursed</td>
<td>$17,434,914</td>
</tr>
<tr>
<td>Total loan principal outstanding</td>
<td>16,414,577</td>
</tr>
<tr>
<td>Total uncommitted balance</td>
<td>4,042,941</td>
</tr>
<tr>
<td>Total estimated uncommitted funds over next 12 months</td>
<td>6,872,277</td>
</tr>
</tbody>
</table>

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1. Exclusive of pass-through payments made by the U.S. Bureau of Reclamation.
2. Excess funds generated by the Dworshak Hydropower Project are deposited into the Revolving Development Account (Main Fund) on a monthly basis. To the date of this report this has totaled $2,136,656.
3. This line item includes power sales and interest income after removing debt service. Debt service is paid prior to the funds being deposited in the Revolving Development Account.
4. Exclusive of project funds provided by Bonneville Power Administration or federal appropriation sources. These funds are provided to the Board based on individual project proposals and so are not included in the income projection.
5. From Pristine Springs hydropower and rental income.
The following is a list of potential loans that we know about:

<table>
<thead>
<tr>
<th>Potential Applicant</th>
<th>Potential Project</th>
<th>Preliminary Loan Amount</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cub River Irrigation Company</td>
<td>Replace open lateral with pressure pipeline</td>
<td>$300,000</td>
<td>Have received federal (BOR) grant, but Cub River Irrigation serves lands in both Idaho and Utah so waiting on outcome of Utah Water Board loan request (Utah has lower interest rates).</td>
</tr>
<tr>
<td>Marysville Canal Company</td>
<td>Phase 3 of gravity pressure pipeline project</td>
<td>$1,500,000</td>
<td>Federal (NRCS) grant has been approved – working on revising estimated construction costs for IWRB loan. IWRB has financed Phases 1 &amp; 2 with $1.725M in loans to match prior federal grants.</td>
</tr>
<tr>
<td>Canyon County Drainage District No. 2</td>
<td>Replace failing drainage pipeline</td>
<td>$35,000</td>
<td>Working with attorneys on path to borrow funds</td>
</tr>
<tr>
<td>Description</td>
<td>Amount</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------------------------------------</td>
<td>--------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Original Appropriation (169)</td>
<td>$500,000.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative Audits</td>
<td>($42,264.45)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IWRB Bond Program</td>
<td>($15,000.00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative Appropriation FY90-91</td>
<td>$250,000.00</td>
<td></td>
<td></td>
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<td>Rathdrum Prairie CAMP &amp; Treasure Valley CAMP Sub-Account</td>
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<td>Pristine Springs Hydropower and Rental Revenues</td>
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Revolving Development Account - June 30, 2012 - Page 1 of 4
Upper Salmon/CBWTP Sub-Account

Water Transaction Projects Payment Advances from CBWTP/Accord .......................................................... $2,631,851.42
PCSRF funds for Administration of Non-Diversion Easements on Lemhi River ........................................................... $161,079.26
Interest Earned State Treasury ................................................................................................................................... $80,467.55
Transfer to Water Supply Bank ................................................................................................................................. ($36,910.77)
Payments for Water Acquisition .............................................................................................................................. ($215,651.80)

Committed Funds

Administration of Non-Diversion Easements on Lemhi River ................................................................................. $102,155.51
Alturas Lake Creek (Brekenridge) .......................................................................................................................... ($30.00)
Beaver Creek (DOT LLP) ........................................................................................................................................ $15,738.85
Big Hat Creek ......................................................................................................................................................... $270.55
Big Timber Tyler (Lepide Land Partners) ................................................................................................................. $449,572.77
Canyon Creek/Big Timber Creek (Beyeler) ................................................................................................................ $410,430.02
Fourth of July Creek (Vanderbilt) .......................................................................................................................... $17,562.41
Iron Creek (Phillips) ................................................................................................................................................ $230,166.61
Lemhi River & Little Springs Creek (Kauer) ................................................................................................................ $10,646.06
Little Springs Creek (Snyder) ................................................................................................................................... $292,766.06
Lower Eighteenmile Creek (Ellsworth Angus Ranch) ................................................................................................. $5,052.03
Lower Lemhi M Olson (Mark Olson) ......................................................................................................................... $11,200.07
Lower Lemhi Thomas (Robert Thomas) ................................................................................................................... $2,667.55
P-9 Bowies (River Valley Ranch) ............................................................................................................................ $294,420.26
P-9 Chatton (Sydney Dowton) ................................................................................................................................ $19,487.77
P-9 Dowton (Jim Dowton Ranch) ............................................................................................................................ $233,525.42
P-9 Elzinga (Elzinga) .................................................................................................................................................. $288,851.85
Whitefish (Leidore Land Partners) ............................................................................................................................ $100,083.42

Total Committed Funds ............................................................................................................................................. $2,623,825.20

Balance CBWTP Sub-Account.................................................................................................................................... ($0.00)

Eastern Snake Plain Sub-Account

Legislative Appropriation 2005, HB392 .......................................................................................................................... $7,200,000.00
Legislative Appropriation 2005, HB392, CREP Program ............................................................................................. $3,000,000.00
Interest Earned State Treasury .................................................................................................................................. $181,294.43
Loan Interest ............................................................................................................................................................... ($6,565.00)
Bell Rapids Water Rights Closing Costs ..................................................................................................................... $6,656.00
First Installment Payment to Bell Rapids Irr. Co. (Partial) ........................................................................................... ($361,800.00)
Second Installment Payment to Bell Rapids Irr. Co. (Partial) ....................................................................................... ($361,800.00)
Third Installment Payment to Bell Rapids Irr. Co. (Partial) ........................................................................................... ($361,800.00)
Fourth Installment Payment to Bell Rapids Irr. Co. (Partial) ....................................................................................... ($614,744.00)
Fifth Installment Payment to Bell Rapids Irr. Co. (Final) ............................................................................................. ($1,675,936.00)
Reimbursement from Commerce & Labor W-Canal ..................................................................................................... $74,709.77
Transfer to Pristine Springs Sub Account .................................................................................................................. ($1,000,000.00)
Reimbursement from Magic Valley GWD - Pristine Springs ......................................................................................... $50,000.00
Reimbursement from North Snake GWD - Pristine Springs ......................................................................................... $50,000.00
Reimbursement from Water District 1 for Recharge ................................................................................................... $159,764.73
Palisades (FMC) Storage Costs ................................................................................................................................. ($3,510,257.38)
Reimbursement from BOR for Palisades Reservoir ..................................................................................................... $2,381.12
W-Canal Project Costs ................................................................................................................................................ $326,834.11
Black Canyon Exchange Project Costs .................................................................................................................... ($71,680.00)
Black Canyon Exchange Project Revenues .................................................................................................................. $23,800.00
2008 Recharge Conveyance Costs .......................................................................................................................... ($14,580.00)
2009 Recharge Conveyance Costs ............................................................................................................................ ($355,253.00)
2010 Recharge Conveyance Costs ............................................................................................................................ ($484,227.46)
Pristine Springs Cost Project Costs ............................................................................................................................ ($6,863.91)

Loans and Other Commitments

Commitment - ESPA Comprehensive Aquifer Management Plan - CDR Contract ......................................................... $0.00
Commitment - North Snake & Magic Valley GWD Loan - Mitigation Pipeline ......................................................... $250,000.00
Commitment - Remainder of Bell Rapids Water Rights Purchase (1) ........................................................................... $361,620.00
Commitment - CREP Program (HB392, 2005) ............................................................................................................... $2,419,560.50
Commitment - Recharge Conveyance ......................................................................................................................... $0.00
Commitment - Additional recharge projects preliminary development ........................................................................... $350,000.00
Commitment - Palisades Storage O&M ..................................................................................................................... $10,000.00
Commitment - Black Canyon Exchange Project (fund with ongoing revenues) ......................................................... $499,444.95
Commitment - W-Canal Aquifer and Recharge Conveyance ...................................................................................... $0.00

Total Loans and Other Commitments ..................................................................................................................... $3,890,645.45

Loans Outstanding:
American Falls-Aberdeen GWD (CREP) ....................................................................................................................... $113,814.73
Bingham GWD (CREP) .............................................................................................................................................. $0.00
Bonneville Jefferson GWD (CREP) ............................................................................................................................ $67,469.03
Magic Valley GWD (CREP) ........................................................................................................................................ $106,538.78
North Snake GWD (CREP) ........................................................................................................................................ $58,070.56

TOTAL ESP LOANS OUTSTANDING ........................................................................................................................ $347,893.10

Uncommitted Balance Eastern Snake Plain Sub-Account .......................................................................................... $119,380.54

Dworshak Hydropower Project

Dworshak Project Revenues
Power Sales & Other .................................................................................................................................................. $5,532,419.01
Interest Earned State Treasury .................................................................................................................................. $454,510.22

Total Dworshak Project Revenues ............................................................................................................................. $5,977,929.23

Dworshak Project Expenses (2)
Transferred to 1st Security Trustee Account ........................................................................................................... $148,542.63
Construction not paid through bond issuance ........................................................................................................... $226,106.83
1st Security Fees ......................................................................................................................................................... $314,443.35
Operations & Maintenance ....................................................................................................................................... $1,410,791.53
Powerplant Repairs ................................................................................................................................................... $58,488.80
Capital Improvements ............................................................................................................................................ $318,366.79
FERC Payments ......................................................................................................................................................... $35,956.16

Total Dworshak Project Expenses ............................................................................................................................ ($2,512,696.09)

Dworshak Project Committed Funds
Emergency Repair/Future Replacement Fund ........................................................................................................... $1,298,575.00
FERC Fee Payment Fund ........................................................................................................................................... $30,001.49

Revolution Development Account - June 30, 2012 - Page 2 of 4
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<th>Loan Description</th>
<th>Amount Committed</th>
<th>Amount Disbursed</th>
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<td>Big Wood Canal Company (23-Jan-09; Thorn Creek Flume)</td>
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<td>Boise City Canal Company (WRB-492; 18th St Canal Rehab)</td>
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<td>Boise City Canal Company (WRB-492; Grove St Canal Rehab)</td>
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<td>Bonnie Laura Water Corporation (14-Jul-06; Well repairs)</td>
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<td>Carlin Bay Property Owners Association</td>
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<td>Mores Creek Rim Ranches Water District</td>
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<td>$67,914.91</td>
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<tr>
<td>New Hope Water Corporation</td>
<td>$42,000</td>
<td>$0.00</td>
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<tr>
<td>New Hope Water Corporation</td>
<td>$151,460</td>
<td>$83,411.06</td>
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<tr>
<td>Oakley Valley Water Company</td>
<td>$138,331</td>
<td>$24,301.08</td>
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<tr>
<td>Pocatello Water Corporation</td>
<td>$39,600</td>
<td>$0.00</td>
</tr>
<tr>
<td>Picabo Livestock Co (Picabo town water system new well)</td>
<td>$38,000</td>
<td>$0.00</td>
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<tr>
<td>Pinehurst Water District (14-mar-08; Water Storage tank)</td>
<td>$160,000</td>
<td>$75,349.03</td>
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<tr>
<td>Powder Valley-Shadowbrook Homeowners Association</td>
<td>$210,500</td>
<td>$5,039.12</td>
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<tr>
<td>PPRT Water System</td>
<td>$70,972</td>
<td>$20,370.31</td>
</tr>
<tr>
<td>Preston Riverside &amp; Minx Creek Canal Co.</td>
<td>$400,000</td>
<td>$0.00</td>
</tr>
<tr>
<td>Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipeline)</td>
<td>$900,000</td>
<td>$372,005.37</td>
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<tr>
<td>Producers Irrigation Company (17-Mar-06; well replacements)</td>
<td>$185,000</td>
<td>$80,197.32</td>
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<tr>
<td>Ranch Subdivision Property Owners Association</td>
<td>$24,834</td>
<td>$1,371.36</td>
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<tr>
<td>Riverside Independent Water District</td>
<td>$350,000</td>
<td>$198,952.97</td>
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<td>Robertson Ditch Co</td>
<td>$30,000</td>
<td>$0.00</td>
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<td>Skin Creek Water Association</td>
<td>$168,258</td>
<td>$106,754.52</td>
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<tr>
<td>Sourdough Point Owners Association (23-Jan-07; water supply &amp; treatment)</td>
<td>$750,000</td>
<td>$119,942.77</td>
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<tr>
<td>Spirit Bend Water Association</td>
<td>$92,000</td>
<td>$55,435.11</td>
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<tr>
<td>Thunder Canyon Owners Association (6-Feo-04)</td>
<td>$92,416</td>
<td>$54,674.81</td>
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<tr>
<td>Twenty-Mile Creek Water Association</td>
<td>$104,503</td>
<td>$1,966.05</td>
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<tr>
<td>Twin Lakes Canal Company - Winder Lateral Pipeline Project (13-Jul-06)</td>
<td>$500,000</td>
<td>$376,757.34</td>
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<tr>
<td>Twin Lakes Canal Company (2-Apr-04)</td>
<td>$500,000</td>
<td>$436,400.00</td>
</tr>
<tr>
<td>Twin Lakes-Рathdrum Fld Cont Dist (24-Oct-02; Twin Lakes Dam)</td>
<td>$380,000</td>
<td>$72,221.17</td>
</tr>
<tr>
<td>Water Authority-Nashville Water Company</td>
<td>$225,000</td>
<td>$72,866.26</td>
</tr>
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</table>

**Total Loans Outstanding:** $8,586,499.16
<table>
<thead>
<tr>
<th>Association</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake Reservoir Company</td>
<td>(29-July-11; Payette Lake-Lardo Dam Outlet Gates)</td>
<td>$285,756.89</td>
</tr>
<tr>
<td>Lindsay Lateral Association</td>
<td></td>
<td>$15,300.00</td>
</tr>
<tr>
<td>North Snake &amp; Magic Valley GWD Loan - Mitigation Pipeline</td>
<td></td>
<td>$250,000.00</td>
</tr>
<tr>
<td>Monument Ridge Homeowners Association</td>
<td>(20-Mar-09; irrigation system rehab)</td>
<td>$0.00</td>
</tr>
<tr>
<td>Portneuf Irrigating Company</td>
<td>(29-July-11; Pipeline project)</td>
<td>$1,300,000.00</td>
</tr>
<tr>
<td>South Liberty Irrigation Company</td>
<td>(28-May-10; Pipeline project)</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

**TOTAL LOANS AND OTHER FUNDING OBLIGATIONS**: $5,009,156.90

**Uncommitted Funds**: $3,251,245.21

**TOTAL**: $16,846,901.27

(1) Actual amount needed may vary depending on final determination of water actually purchased and interest income received.
(2) Debt service on the Dworshak Project bonds is paid before the Dworshak monies are deposited into the Revolving Development Account and is therefore not shown on this balance sheet.
Idaho Water Resource Board
Sources and Applications of Funds
as of June 30, 2012

WATER MANAGEMENT ACCOUNT

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original Appropriation (1978)</td>
<td>$1,000,000.00</td>
</tr>
<tr>
<td>Legislative Audits</td>
<td>($10,645.45)</td>
</tr>
<tr>
<td>IWRB Appraisal Study (Charles Thompson)</td>
<td>($5,000.00)</td>
</tr>
<tr>
<td>Transfer funds to General Account 1101(HB 130, 1983)</td>
<td>($500,000.00)</td>
</tr>
<tr>
<td>Legislative Appropriation (6/28/1984)</td>
<td>$115,800.00</td>
</tr>
<tr>
<td>Legislative Appropriation (HB988, 1994)</td>
<td>$75,000.00</td>
</tr>
<tr>
<td>Turned Back to General Account 6/30/95, (HB988, 1994)</td>
<td>($35,014.25)</td>
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<tr>
<td>Legislative Appropriation (SB1260, 1995, Aquifer Recharge, Caribou Dam)</td>
<td>$1,000,000.00</td>
</tr>
<tr>
<td>Interest Earned</td>
<td>$119,751.04</td>
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<tr>
<td>Filing Fee Balance</td>
<td>$2,633.31</td>
</tr>
<tr>
<td>Water Supply Bank Receipts</td>
<td>$841,083.07</td>
</tr>
<tr>
<td>Bond Fees</td>
<td>$277,254.94</td>
</tr>
<tr>
<td>Funds from DEQ and IDOC for Glens Ferry Water Study</td>
<td>$10,000.00</td>
</tr>
<tr>
<td>Legislative Appropriation FY01</td>
<td>$200,000.00</td>
</tr>
<tr>
<td>Transfer to/from Revolving Development Account</td>
<td>($7,500.00)</td>
</tr>
<tr>
<td>Legislative Appropriation (SB1239, Sugarloaf Aquifer Recharge Project)</td>
<td>$60,000.00</td>
</tr>
<tr>
<td>Legislative Appropriation (HB 843 Sec 6)</td>
<td>$520,000.00</td>
</tr>
<tr>
<td>Legislative Appropriation (SB1496, 2006, ESP Aquifer Management Plan)</td>
<td>$300,000.00</td>
</tr>
<tr>
<td>Legislative Appropriation (HB 320, 2007, ESP Aquifer Management Plan)</td>
<td>$849,936.99</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$4,496,765.85</td>
</tr>
</tbody>
</table>

Grants Disbursed:

- Completed Grants: $1,291,110.72
- Arco, City of: $7,500.00
- Arimo, City of: $7,500.00
- Banchroft, City of: $7,000.00
- Bloomington, City of: $4,254.86
- Boise City Canal Company: $7,500.00
- Bonners Ferry, City of: $7,500.00
- Bonneville County Commission: $3,375.00
- Bowill, City of: $2,299.42
- Buffalo River Water Association: $4,007.25
- Butte City, City of: $3,250.00
- Cave Bay Community Services: $6,750.00
- Central Shoshone County Water District: $7,500.01
- Clearwater Regional Water Project Study, City of Orofino et al.: $10,000.00
- Clearwater Water District: $3,750.00
- Cottonwood Point Water and Sewer Association: $7,500.00
- Cottonwood, City of: $5,000.00
- Cougar Ridge Water & Sewer: $4,661.34
- Curley Creek Water Association: $2,334.15
- Downey, City of: $7,500.00
- Fairview Water District: $7,500.01
- Fish Creek Reservoir Company, Fish Creek Dam Study: $12,500.00
- Franklin, City of: $6,750.00
- Grangeville, City of: $7,500.00
- Greenleaf, City of: $3,000.00
- Hansen, City of: $7,450.00
- Hayden Lake Irrigation District: $7,500.00
- Hulen Meadows Water Company: $7,500.00
- Iona, City of: $1,425.64
- Kendrick, City of: $7,500.00
- Kooskia, City of: $7,500.00
- Lakeview Water District: $2,250.00
- Lava Hot Springs, City of: $7,500.00
- Lindsay Lateral Association: $7,500.00
- Lower Payette Ditch Company: $5,500.01
- Maple Grove Estates Homeowners Association: $5,020.88
- Meander Point Homeowners Association: $7,500.00
- Moreland Water & Sewer District: $7,500.00
- New Hope Water Corporation: $2,720.39
- North Lake Water & Sewer District: $7,500.00
Northside Estates Homeowners Association ........................................... $4,492.00
North Tomar Butte Water & Sewer District ........................................ $3,575.18
North Water & Sewer District ............................................................. $3,825.00
Parkview Water Association ............................................................... $4,649.98
Payette, City of .................................................................................. $6,579.00
Pierce, City of .................................................................................... $7,500.00
Potlatch, City of ................................................................................ $6,474.00
Preston Whitney Irrigation Company ................................................ $7,500.00
Preston & Whitney Reservoir Company .......................................... $3,606.75
Preston & Whitney Reservoir Company .......................................... $7,000.00
Roberts, City of .................................................................................. $3,750.00
Round Valley Water ........................................................................... $3,000.00
Sagle Valley Water & Sewer District ................................................ $2,117.51
South Hill Water & Sewer District .................................................... $3,825.00
St Charles, City of ............................................................................ $5,632.88
Swan Valley, City of .......................................................................... $5,000.01
Twenty-Mile Creek Water Association ............................................ $2,467.00
Valley View Water & Sewer District ................................................ $5,000.02
Victor, City of .................................................................................... $3,750.00
Weston, City of ................................................................................ $6,601.20
Winder Lateral Association ............................................................... $7,000.00

TOTAL GRANTS DISBURSED ................................................................ ($1,632,755.21)

IWRB Expenditures

- Lemhi River Water Right Appraisals ............................................... $31,000.00

Expenditures Directed by Legislature

- Obligated 1994 (HB988) ................................................................. $39,985.75
- SB1260, Aquifer Recharge ............................................................. $947,000.00
- SB1260, Soda (Caribou) Dam Study ............................................ $53,000.00
- Sugarloaf Aquifer Recharge Project (SB1239) ............................. $55,953.69
- ESPA Settlement Water Rentals (HB 843 2004) ...................... $504,000.00
- ESP Aquifer Management Plan (SB1496, 2006) ......................... $300,000.00
- ESP Aquifer Management Plan (HB320, 2007) ......................... $801,077.75

TOTAL IWRB AND LEGISLATIVE DIRECTED EXPENDITURES .......... ($2,732,017.19)

WATER RESOURCE BOARD RECHARGE PROJECTS 
CURRENT ACCOUNT BALANCE ............................................................ ($11,426.88)

Committed Funds:

Grants Obligated

- Cottonwood Point Water & Sewer Association .......................... $0.00
- Preston - Whitney Irrigation Company ....................................... $7,500.00
- Water District No. 1 (Blackfoot Equalizing Reservoir Automation) $35,000.00

Legislative Directed Obligations

- Sugarloaf Aquifer Recharge Project (SB1239) ......................... $4,046.31
- ESPA Settlement Water Rentals (HB 843, 2004) ................. $16,000.00
- ESPA Management Plan (SB 1496, 2006) .......................... $0.00

TOTAL GRANTS & LOANS OBLIGATED & UNDISBURSED ................ $111,375.55

Loans Outstanding:

<table>
<thead>
<tr>
<th>Loan</th>
<th>Amount Loaned</th>
<th>Principal Outstanding</th>
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<tbody>
<tr>
<td>Arco, City of</td>
<td>$7,500</td>
<td>$0.00</td>
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<tr>
<td>Butte City, City of</td>
<td>$7,425</td>
<td>$1,969.94</td>
</tr>
<tr>
<td>Roberts, City of</td>
<td>$23,750</td>
<td>$2,465.22</td>
</tr>
<tr>
<td>Victor, City of</td>
<td>$23,750</td>
<td>$0.00</td>
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</tbody>
</table>

TOTAL LOANS OUTSTANDING ................................................................ $44,435.16

Uncommitted Funds ......................................................................... $4,755.86

CURRENT ACCOUNT BALANCE ................................................................ $120,566.57
## SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND

**Legislative Appropriation (HB 291, Sec 2)**: $2,465,300.00

**Interest Earned State Treasury (Transferred)**: $24,406.09

**Water Users Contributions**: $100.00

**Conversion project (AWEP) measurement device payments**: $(4,319.29)

**Contribution from GWD's for 2011 ESPA Managed Recharge**: $71,893.16

**Contribution from GWD's for Revenue Bond Prep Expenses**: $14,462.50

**2012 Managed Recharge**: $(56,437.55)

**Payment for Recharge**: $(80,000.00)

### Committed Funds

- **Measurement devices for AWEP conversion projects**: $195,680.71
- **High Country RC&D Cloud Seeding**: $40,000.00
- **American Falls Res. Dist#2 - MP31 Recharge Site Engineering**: $6,000.00
- **Five-Year Managed Recharge Pilot Program**: $1,443,572.45
- **Contribution from GWD's for 2011 ESPA Managed Recharge**: $(8,106.84)
- **GWD Bond Prepatory Expenses**: $37,500.00
- **Idaho Irrigation District Recharge Phase 1**: $13,200.00
- **Fremont-Madison Irrigation District Egin Recharge**: $40,000.00

**Total Committed Funds**: $1,767,846.32

**TOTAL UNCOMMITTED FUNDS**: $667,558.59

**CURRENT ACCOUNT BALANCE**: $2,435,404.91
MEMO

To:            Idaho Water Resource Board
From:          Brian Patton
Subject:       Update on ESPA Ground Water District Revenue Bonds
Date:          August 24, 2012

The Southwest Irrigation District (SWID) has completed its purchase of 15% interest in the trout farms that were acquired by four ESPA ground water districts utilizing the proceeds of revenue bonds issued by the IWRB.

As you may recall, the IWRB issued $33.89M in revenue bonds in January of 2012 ($17.96M taxable and $15.93M tax-exempt). The proceeds were loaned to four Eastern Snake Plain ground water districts and used to acquire certain spring-fed commercial trout farms in the Thousand Springs area to resolve water use disputes.

The SWID encompasses about 90,000 acres of land supplied by ground water pumping on the south side of the Snake River near Burley and has needs similar to the ground water districts. It was anticipated that SWID would participate in this acquisition; however, because they are formed as an irrigation district rather than a ground water district, the approval process could not be completed on the same timeline as the ground water districts. The four ground water districts therefore proceeded with the acquisition and agreed to pay the debt service on the IWRB revenue bonds, with the understanding that SWID would be allowed to buy in when it completed its approval process.

The agreements between the IWRB and the four ground water districts remain unchanged; SWID has entered into agreements with the ground water districts concerning SWID’s share of the project costs, including debt service on the IWRB bonds.

The agreements between the IWRB and the ground water districts contemplated additional districts, such as SWID, being allowed to buy into the project without IWRB approval if there is no adverse impact to the tax-exempt revenue bonds. A “No Adverse Effect Opinion Letter” was issued and is attached. The 15% purchase by SWID was completed on July 30, 2012.
August 2, 2012

Brian W. Patton, P.E.
Chief, Planning Bureau
Idaho Department of Water Resources
P.O. Box 83720
Boise, Idaho 83720-0098

Re: Southwest Irrigation District

Dear Brian:

Consistent with the previous conversation that you and Rick Skinner and I had, I am enclosing copies of the letters from Perry Israel and Hawley Troxell relative to the tax implications and the securities implications of the sale of 15% interest in the fish facilities to Southwest Irrigation District.

It is my understanding that you will use these letters as notice to the water board of the transaction. If you need anything else please let me know.

Yours very truly,

William A. Parsons

WAP/cm
Enc.
July 30, 2012

Idaho Water Resource Board
Boise, Idaho

American Falls-Aberdeen Ground Water District
American Falls, Idaho

Bingham Ground Water District
Blackfoot, Idaho

Magic Valley Ground Water District
Rupert, Idaho

North Snake Ground Water District
Jerome, Idaho

Southwest Irrigation District
Burley, Idaho

The Bank of New York Mellon Trust Company, N.A. as Trustee
San Francisco, California

$17,960,000
Idaho Water Resource Board
Water Resource Loan Program Revenue Bonds, Series 2012A
(Ground Water Rights Mitigation) (Tax Exempt)
(No Adverse Effect Opinion)

Ladies and Gentlemen:

I have been engaged by the American Falls-Aberdeen Ground Water District, the Bingham Ground Water District, the Magic Valley Ground Water District, and the North Snake Ground Water District (together, the “Borrowers”) in conjunction with the sale of property financed by the Idaho Water Resource Board $17,960,000 Water Resource Loan Program Revenue Bonds, Series 2012A (Ground Water Rights Mitigation) (Tax Exempt) (the “Bonds”). The Bonds were originally issued in an aggregate principal amount of $17,960,000 on February 8, 2012, pursuant to the laws of the State of Idaho and a Trust
Indenture, dated as of February 1, 2012 (the “Indenture”) between the Idaho Water Resource Board (the “Board”) and The Bank of New York Mellon Trust Company, N.A., as trustee. The proceeds of the Bonds were loaned to Borrowers, each a ground water district organized under Title 42, Chapter 52, Idaho Code and located in the State of Idaho. Capitalized terms not defined in this letter have the meaning assigned to them in the Indenture, as amended.

In connection with the issuance of the Bonds, I delivered an opinion (the “Closing Tax Opinion”) to the effect that interest on the Bonds is excluded from gross income for Federal income tax purposes pursuant to Section 103 of the Internal Revenue Code and that such interest is not a specific preference item for purposes of the Federal individual and corporate alternative minimum taxes. I note that the Closing Opinion is subject to certain assumptions and qualifications.

The proceeds of the Bonds were used by the Borrowers to purchase certain interests in aquaculture properties (the “Tax-Exempt Properties”), more fully described in the Tax Certificate of the Board and the Borrowers dated February 8, 2012. The Borrowers propose to sell an undivided interest in the Tax-Exempt Properties, together with an undivided interest in certain other interests in aquaculture properties acquired simultaneously with Tax-Exempt Properties using proceeds of taxable debt (the “Taxable Properties”), to Southwest Irrigation District (the “Buyer”) pursuant to a Purchase and Sale Agreement effective as of July 30, 2012, by and between the Borrowers and the Buyer (the “Purchase and Sale Agreement”). The Buyer has authorized the purchase of the undivided interest in a Resolution of the directors of the Borrower effective as of July 24, 2012 (the “Resolution”), and is issuing its Revenue Bond, Series 2012 (Water Rights Mitigation) pursuant to a Financing Agreement dated as of July 1, 2012, between D.L. Evans Bank and the Buyer (the “Financing Agreement”). In addition, the Borrowers and the Buyer are entering into an Assignment and Assumption Agreement dated July 30, 2012 (the “Assignment and Assumption Agreement”), pursuant to which the Buyers are assigning an undivided interest in certain leases and subordination rights relating to the Taxable Properties. You have requested my opinion relating to effect of the sale and the assignment (the “Transactions”) on the tax-exempt status of the interest on the Bonds.

I have reviewed the Indenture, the Tax Certificate, the Purchase and Sale Agreement, the Resolution, the Financing Agreement, the Assignment and Assumption Agreement, and such other documents, laws, regulations, and rulings as I have deemed necessary or desirable to express an informed opinion with respect to the effect of the Transactions on the tax-exempt status of the interest on the Bonds.

I have not performed an audit or other examination as to the current status of the interest on the Bonds and am not updating the Closing Opinion. Rather, with your
permission, I have assumed that the interest on the Bonds continues to be excluded from gross income under Section 103(a) of the Code immediately prior to the Transactions.

The opinion expressed herein is based on an analysis of existing laws, regulations, rulings, and court decisions and covers certain matters not directly addressed by such authorities. Such opinion may be affected by actions taken or omitted or events occurring after the date hereof. I have not undertaken to determine, or to inform any person, whether any such actions are taken or omitted or events do occur or any other matters come to my attention after the date hereof. My engagement with respect to the Bonds has concluded with the delivery of this letter and I disclaim any obligation to update this letter.

Based on and subject to the foregoing, and in reliance thereon, as of the date hereof, I am of the opinion that entry into the Purchase and Sale Agreement and the Assignment and Assumption Agreement and the execution of the Transactions contemplated by those documents, will not adversely affect the exclusion of interest on the Bonds from gross income for purposes of federal income taxation pursuant to Section 103(a) of the Code.

Except as expressly provided above, I do not express any opinion regarding the Bonds, the tax status of the interest on the Bonds, or any collateral tax consequences relating to the status of the holders or other consequences of holding the Bonds or receiving interest on the Bonds.

Very truly yours,

Perry Israel
July 30, 2012

Re: Ground Water Districts’ transfer of tenant-in-common interest in Trout Farms to Southwest Irrigation District

To each of the addressees listed on Schedule 1:

We have acted as special counsel to the Southwest Irrigation District (“SWID”) in connection with the legal opinion required by Section 6.8 of that certain Purchase and Sale Agreement effective as of July 30, 2012 (“Purchase Agreement”) by and among SWID, as Buyer, and American Falls-Aberdeen Ground Water District, Bingham Ground Water District, Magic Valley Ground Water District and North Snake Ground Water District, each a ground water district organized under Title 42, Chapter 52, Idaho Code and located in the State of Idaho, and collectively referenced in this letter as “Sellers”.

Sellers own as tenants-in-common certain aquaculture (fish farm) facilities consisting generally of land, water rights, equipment and other real and personal property (collectively, the “Trout Farms”). Sellers financed their acquisition of the Trout Farms in part by borrowing, pursuant to a Loan Agreement (“IDWR Loan Agreement”) among Sellers and the Idaho Water Resources Board (“IDWR”), the proceeds of Idaho Water Resource Board $17,960,000 Water Resource Loan Program Revenue Bonds, Series 2012A (Ground Water Rights Mitigation) (Tax Exempt) (the “IDWR Bonds”) originally issued on February 8, 2012, pursuant to the laws of the State of Idaho and a Trust Indenture dated as of February 1, 2012 (the “Indenture”) between the IDWR and The Bank of New York Mellon Trust Company, N.A., as trustee, and in part through issuance of taxable debt. Sellers own, operate and administer the Trout Farms pursuant to the Amended and Restated Joint Powers Agreement for Thousand Springs Mitigation effective January 3, 2012, as authorized by Idaho Code §§ 42-5224(15) and 67-2326 through 67-2333 (“Joint Powers Agreement”).

Sellers propose to sell to SWID, and SWID proposes to purchase from Sellers, an undivided fifteen percent (15%) tenant-in-common interest in the Trout Farms. As an irrigation district organized under Title 43 of the Idaho Code, SWID is authorized to issue tax-exempt bonds (subject to judicial confirmation, which has been obtained pursuant to the District Court’s Final Order dated April 27, 2012). Pursuant to that authority, at closing the parties will consummate the following transactions (collectively, the “Transactions”) in accordance with the Purchase Agreement and related transaction documents listed on Schedule 2 (collectively, the “Transaction Documents”):

(i) SWID will issue to D.L. Evans Bank (“Bank”) SWID’s Revenue Bond, Series 2012 (Water Rights Mitigation) in the amount of $5,083,500 (“SWID Bond”) pursuant to a Financing Agreement dated as of July 1, 2012, between Bank and SWID (the “Financing Agreement”).
(ii) Bank will immediately endorse and assign the SWIB Bond to Sellers, and deliver it to Land Title and Escrow, Inc. ("Escrow Agent") pursuant to an Escrow Agreement among SWID, Land Title and Escrow, Inc. and Sellers;

(iii) Sellers will simultaneously execute and deliver to SWID a Warranty Deed dated July 30, 2012 granting SWID an undivided fifteen percent (15%) tenant-in-common interest in the Trout Farms and, pursuant to an Assignment and Assumption Agreement effective July 30, 2012 (the "Assignment and Assumption Agreement"), assign to SWID an undivided fifteen percent (15%) tenant-in-common interest in certain leases, permits and subordination rights relating to the Trout Farms;

(iv) Pursuant to the Assignment and Assumption Agreement, SWID will assume its proportionate fifteen percent (15%) share of certain obligations of Sellers (including, without limitation, Sellers’ obligations under the leases, permits and subordination rights relating to the Trout Farms and Sellers’ obligation to pay principal and interest under the IDWR Loan Agreement), pay Sellers fifteen percent (15%) of certain costs and expenses incurred by Sellers in acquiring the Trout Farms, and reimburse Sellers for certain Transaction costs;

(v) Pursuant to the Escrow Agreement, SWID will pay the Escrow Agent the principal and interest due on the SWID Bond, and the Escrow Agent will pay that amount proportionately to each of Sellers to reimburse them for their proportionate shares of fifteen percent (15%) of the principal and interest due on the IDWR Bonds

(vi) Pursuant to the Purchase Agreement and the Escrow Agreement, SWID will deliver to Escrow Agent a one-time deposit to serve as a de facto debt service reserve fund representing SWID’s proportionate fifteen percent (15%) share of Sellers’ obligation to fund a debt service reserve fund under the IDWR Loan Agreement); and

(vii) SWID will execute and deliver a Binding Consent dated July 30, 2012, consenting to and agreeing to be bound by the Joint Powers Agreement. Pursuant to the Joint Powers Agreement, SWID will have the right to appoint a director to serve on the board of directors empowered by the Joint Powers Agreement to manage the business and affairs of the Trout Farm; and SWID’s appointed director will be entitled to vote fifteen percent (15%) of the voting units that may be voted by the directors constituting the board.

SWID has authorized the Transactions and SWID’s execution, delivery and performance of the Transaction Documents by Resolution of SWID’s board of directors effective as of July 23, 2012 (the "Resolution"). SWID has requested this firm’s opinion relating to the application to the Transactions of the securities registration provisions of the federal Securities Act of 1933 ("1933 Act") and the Idaho Securities Act (Idaho Code §§ 30-14-101 et seq., the "ISA") and regulations promulgated thereunder (collectively, "Applicable Laws").

1. Documents reviewed. In connection therewith, we have examined such documents (including, without limitation, the Transaction documents set forth on Schedule 2 and have reviewed
such questions of law as we have considered necessary and appropriate for the purposes of the opinions set forth below.

2. **Assumptions.** For the purposes of this opinion letter, we have assumed, with your permission and without independent investigation, that:

2.1 **Documents Generally.** All documents submitted to us as signed documents contain genuine signatures, all documents submitted to us as originals are authentic and complete and all documents submitted to us as copies of original documents are accurate and complete reproductions of authentic and complete originals. All certifications of public officials and other public records reviewed by us are accurate and complete. Upon execution and delivery, each of the executed Transaction Documents will (i) conform to the latest unsigned draft provided to us in electronic form, and (ii) have been completed with all blanks appropriately filled in and all correct and complete exhibits attached. We express no opinion as to the content of any blanks and any exhibits that were not included in the latest unsigned drafts of Transaction Documents provided to us. Each of the Transaction Documents creates valid and binding obligations of each of the parties thereto, enforceable in accordance with its terms.

2.2 **Persons Generally.** All natural persons who executed documents for themselves or as agents or representatives of others had, at the time of execution, the competency and legal capacity to execute such documents and to undertake and perform any obligations thereunder.

2.3 **Due Authorization, Execution and Delivery of the Transaction Documents.** Each party to the Transaction Documents has the requisite power and authority (corporate or otherwise) to execute, deliver and perform its obligations thereunder. Each of the Transaction Documents has been duly authorized by all requisite action on the part of each of the parties thereto and with all requisite approvals in accordance with such party’s organic statutes and regulations (including, without limitation, (i) with respect to SWID, Title 43 of the Idaho Code and (ii) with respect to each of Sellers, Title 42, Chapter 52 of the Idaho Code), and its organization and governance documents. The actions taken by each of the parties to each of the Transaction Documents have complied in all respects with the provisions of their respective organic statutes and organizational documents. Each of such parties has complied with all applicable fiduciary duties and obligations, whether imposed at law or through the equitable powers of courts, in connection with the Transactions and the Transaction Documents. No other agreements or understandings exist among the parties, written or oral, and no usage of trade or course of prior dealing among the parties exists that would, in either case, define, supplement or qualify the terms of the Transaction Documents. All terms and conditions of, or relating to, the Transactions contemplated by the Transaction Documents are correctly and completely set forth in the Transaction Documents. The factual statements and information contained in the Transaction Documents are accurate and complete.

2.4 **Parties Generally.** Each of the parties to the Transaction Documents is duly organized and existing and in good standing under the laws of Idaho. Each of the parties to the Transaction Documents has complied with all legal requirements pertaining to its status as such status relates to the
right to enter into and enforce the Transaction Documents and is in compliance with all laws, rules and regulations governing the conduct of its business. Each of the parties to the Transaction Documents has the requisite power and authority under its organizational documents and applicable law (other than the Applicable Laws) and has obtained any necessary governmental, internal or other consents, approvals and authorizations (other than as may be required by Applicable Laws) to execute, deliver, accept, enter into and perform such Transaction Documents to which it is a party and has taken all necessary action to duly and effectively execute, deliver, accept and otherwise enter into each of the Transaction Documents to which it is a party.

2.5 Conduct, Notice and Purpose. There has been no mutual mistake of fact or misunderstanding, fraud, duress or undue influence in this transaction. The conduct of the parties to the Transaction Documents has complied with any requirements of good faith, fair dealing and conscionability. The parties to the Transaction Documents will act in accordance with, and will refrain from taking any action that is forbidden by, the terms and conditions of the Transaction Documents, any obligation implied therein, and the agreements secured thereby including (without limitation) any implied obligations of good faith and fair dealing. No waiver or amendment of any of the provisions of the Transaction Documents has occurred or will occur by conduct of the parties or otherwise. All covenants under the Transaction Documents required to be performed prior to the date of this opinion have been performed or waived and all conditions under the Transaction Documents required to be satisfied prior to the date of this opinion have been satisfied or waived.

2.6 Conflicts. Neither the execution and delivery of the Transaction Documents by any party, nor the performance of any party thereunder (a) conflicts with or violates or will result in a breach of or default under its organic statutes or organizational documents or any agreement to which such party is bound, or (b) conflicts with or violates any law, rule, regulation or ordinance applicable to such party (other than any Applicable Laws, which are the subject of this opinion) or any judgment, order, writ, injunction or decree binding on such party.

3. Opinion. Based on the foregoing assumptions and subject to the qualifications and limitations set forth below, we are of the opinion that:

3.1 Consummation of the Transactions contemplated by the Purchase Agreement (including, without limitation, Sellers’ conveyance of a 15% tenant-in-common interest in the Trout Farms to Buyer) will not (i) violate the securities registration requirements of any federal or Idaho state securities law or (ii) require approval by or registration with the United States Securities and Exchange Commission or the Idaho Department of Finance.

3.2 The SWID Bond is an exempt security exempted from registration under the 1933 Act by Section 3(a)(2) of the 1933 Act and from registration under the ISA by Idaho Code § 30-14-201(1).

4. Qualifications. The opinions expressed above are subject to the following exceptions, qualifications and limitations:
4.1 We are attorneys licensed to practice in the State of Idaho. The opinions set forth herein are based upon our consideration only of the Applicable Laws. We express no opinion with respect to any provision of Applicable Laws that requires the application of the law of any other jurisdiction.

4.2 We have not examined, and we express no opinion concerning, any laws or regulations other than the Applicable Laws. In particular (but without limitation), we express no opinion as to the application or effect of, or any party’s compliance with, federal, state or local statutes, ordinances, rules, regulations, administrative or judicial decisions relating to (a) federal or state income tax; (b) tax-exempt bond; (c) irrigation districts or groundwater districts, (d) water rights; (e) fraudulent transfer or fraudulent conveyance laws; (f) banking laws and regulations, or (g) securities or blue sky laws or regulations (including, without limitation, anti-fraud provisions and broker/sales agent registration requirements) except for the Applicable Laws.

4.3 Except to the extent expressly set forth herein or as we otherwise believe to be necessary to our opinion, we have not undertaken any independent investigation to determine the existence or absence of any fact; and no inference as to our knowledge of the existence or absence of any fact should be drawn from our representation of SWID or the rendering of the opinions set forth above.

4.4 Subsequent Events. The opinions herein are issued as of the date of this opinion letter only. We express no opinion as to what effect laws, regulations or rulings promulgated, or judicial decisions rendered, subsequent to the date hereof with or without a retroactive date, may have on the opinions set forth herein. We have no continuing obligation to inform you of changes in law or facts subsequent to the date hereof or facts of which we become aware after the date hereof.

4.5 Scope of Opinion. Our opinions are limited to the matters set forth herein. No opinion may be inferred or implied beyond those opinions explicitly stated herein. The captions in this letter are for convenience of reference only and shall not limit, amplify or otherwise modify the provisions hereof.

4.6 Scope of Investigations.

4.6.1 As to various questions of fact material to our opinions, we have relied to the extent we deem reasonably appropriate upon the accuracy and completeness of the recitations of facts set forth in the Transaction Documents without independent investigation. In addition to the Transaction Documents, we have reviewed such other documents, made such investigations of fact, examined such questions of law, and done such other things, if any, as we have deemed necessary in order to render the opinions expressed herein, except as described below. With your permission, however, we have not reviewed any other documents that are not Transaction Documents, but which are incorporated by reference into the Transaction Documents. No opinions are expressed with respect to any such incorporated documents and the opinions expressed herein are limited in that they do not take into account the contents of any such incorporated documents.
4.6.2 Wherever we have stated that we have assumed any matter, it is intended to indicate that we have assumed such matter without making any factual, legal or other inquiry or investigation, and without expressing any opinion or conclusion of any kind concerning such matter. Whenever this opinion letter is qualified by the phrase "of which we are aware" or "to our knowledge," "to the best of our knowledge," or "known to us" with respect to the existence or absence of facts, it is intended to indicate that during the course of our representation as counsel to the Idaho Law Parties in connection with the Financing, no information has come to the attention of the attorneys directly involved in this transaction which would give us actual knowledge of the existence or absence of such facts, but that we have not reviewed any documents or files other than the documents specifically identified in this letter, or undertaken any other independent investigation whatsoever, except as may be expressly set forth herein. Any limited inquiry undertaken by us during the preparation of this opinion should not be regarded as such an independent investigation. No inference as to our knowledge of the existence or absence of facts should be drawn from the mere fact of our representation as counsel to the Idaho Law Parties in connection with the Financing.

4.6.3 We have made no examination of any property or title to any property.

4.7 Title, Priority, and Property Matters. We express no opinion as to (a) Sellers' title to any property that is the subject of the Transactions, whether real or personal; (b) the existence, creation, attachment, perfection or priority of any liens, security interests, charges or encumbrances thereon (whether currently existing or created by the Transaction Documents); or (c) the accuracy or adequacy of any description of such property.

4.8 Use of this Letter. This opinion is furnished by us as special counsel for the District solely in connection with the Transactions. The opinions expressed herein may be relied upon only in connection with the Transactions and only by the Sellers and their counsel. A copy of this opinion may be furnished to IDWR and the IDWR Bond trustee for informational purposes only and not for their reliance.

Our engagement by the District has concluded with the delivery of this letter and we disclaim any obligation to update this letter.

Sincerely,

HAWLEY TROXELL ENNIS & HAWLEY LLP

[Signature]
SCHEDULE 1
OPINION ADDRESSEES

AMERICAN FALLS-ABERDEEN GROUND WATER DISTRICT
Box 70
American Falls, Idaho 83211

BINGHAM GROUND WATER DISTRICT
250 S. Oak Street #17
Blackfoot, Idaho 83221

MAGIC VALLEY GROUND WATER DISTRICT
P.O. Box 430
Paul, Idaho 83347

NORTH SNAKE GROUND WATER DISTRICT
152 E. Main Street
Jerome, Idaho 83338
Sellers listed on Schedule 1
July 30, 2012
Page 8

SCHEDULE 2
TRANSACTION DOCUMENTS

Purchase and Sale Agreement dated July 30, 2012 by and among SWID, as Buyer, and American Falls-Aberdeen Ground Water District, Bingham Ground Water District, Magic Valley Ground Water District and North Snake Ground Water District, collectively as Sellers

Financing Agreement dated July 1, 2012 by and between SWID and D.L. Evans Bank, including form of SWID’s Revenue Bond, Series 2012 (Water Rights Mitigation)

Warranty Deed by Sellers to SWID dated July 30, 2012

Assignment and Assumption Agreement effective July 30, 2012 by and among SWID and Sellers


SWID’s Binding Consent to the Joint Powers Agreement dated July 30, 2012

Escrow Agreement among SWID, Land Title and Escrow, Inc., and Sellers

Resolution of Southwest Irrigation District effective July 24, 2012

General Certificate of Southwest Irrigation District dated July 30, 2012
TREASURETON IRRIGATION COMPANY
9479 N. Treasureton Road
Preston ID 83263
July 25, 2012

Idaho Water Resource Board

Re: Cottonwood Pipeline Project

Dear Board:

At the IDWR board meeting on July 20, 2012 we were asked by the board to write what we thought would be a fair resolution to our problem of finances concerning the bond issue process.

As we pointed out before, we were told in an email dated May 31, 2011 from Don Nelson, for $7,000 in closing costs we would receive a 4% loan. Prior to this we had been told the closing costs would be $5,000. We swallowed hard at the extra $2,000, but decided for the 4% loan, we would go ahead and pay the full $7,000 to get the cheaper money. We had already spent many hours and many thousand of dollars forming an LID and we did not want to waste this investment.

The end result absolutely shocked us. Closing costs were $13,653 instead of the $7,000 we anticipated. We were also forced to borrow $12,000 to put into a debt service reserve fund which we will be forced to pay interest on for 20 years. That interest alone will be over $14,000 based on a 5.95% interest rate. After all these fees for this low interest bond loan, we were still given a 5.95% loan. We had been told we would get a 4% interest rate loan.

Our payment should have been based on a $94,347 payoff amount to Ireland Bank plus $7,000 which equals $101,347 for 20 years at 4% with a payment of $7,457 yearly. In reality our payment now, based on all the added fees and higher interest is $94,347 Ireland Bank payoff, $13,653 closing costs, $12,000 reserve fund which results in a $120,000 loan at 5.95%. This payment will be $10,419. This is unless someone comes up with more fees. This yearly payment amount is $2,962 higher per year than it should be for the 20 year loan. Over the 20 year loan period the total cost is $59,240 more (20 x $2,962 = $59,240).
If we still get our $12,000 reserve payment back, we would only loose $47,240. If the board would give us \( \frac{1}{2} \) of this $47,240 up front, which is $23,620, we would be happy.

Sincerely,

Brad P. Shumway, President
Treasureton Irrigation Company

Miles Geddes
Pipeline Project Manager
Memorandum

To: Idaho Water Resource Board
From: Brian Ragan, UIC Hydrogeologist
Date: September 7, 2012
Re: Proposed UIC Rule Revision – Aquifer Exemption

Action Item: None

New language has been added to the proposed Underground Injection Control (UIC) rules of IDAPA 37.03.03 since our last presentation to the Board on July 20, 2012. The need to add this new language was discussed during a conference call between IDWR, the Idaho Department of Environmental Quality (IDEQ), and the U.S. Environmental Protection Agency (EPA). The staff of the UIC program is presenting this now in order to give the Board ample time to be fully informed of the proposed revisions leading up to the request, which will be made in November, for a resolution approving the rules for submission to the 2013 Legislature.

The new language is in regard to the process called an “aquifer exemption.” These are anticipated for Class II injection wells associated with oil and gas production. An aquifer exemption is a process by which the requirements to meet water quality standards may be reduced for an aquifer or a portion of an aquifer if:

1. It does not currently serve as a source of drinking water and;
2. It cannot now and will not in the future serve as a source of drinking water because:
   (a) It is mineral, hydrocarbon, or geothermal energy producing, or it can be demonstrated by a permit applicant as a part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible;
   (b) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;
   (c) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or
   (d) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or
3. The Total Dissolved Solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

In order for the State of Idaho to grant an aquifer exemption, IDWR, IDEQ and EPA must all agree that it is appropriate, then the Idaho Legislature must pass it as a rule under IDEQ’s “Ground water Quality Rule” in IDAPA 58.01.11.
The conceptual framework for how this process would work in Idaho is as follows:

1. IDWR would receive the petition for exemption from an oil or gas company and review it to determine if the criteria set forth in the rules have been met.
   
a. If the criteria have not been met, the petition will be returned to the applicant and the reasons for denial will be listed.

2. If the criteria have been met, IDWR will submit the information to EPA for review in order to achieve concurrence.

3. Upon IDWR and EPA concurrence, the applicant will be directed to IDEQ to initiate the aquifer categorization process as described in IDAPA 58.01.11 “Ground Water Quality Rule.” (aquifer categorization is a rulemaking process open to public comment and dependent on passage by the Idaho Legislature)
025. EXEMPTION FROM DRINKING WATER SOURCE DESIGNATION (RULE 25). (MOVED FROM RULE 075) (40 CFR 144.7, 146.4, EPA GUIDANCE #34)

01. General. Most aquifers in Idaho are likely to fit within the definition of "underground source of drinking water." Some portions of these aquifers, however, may be isolated or contain water of such quality that they will not be utilized as drinking water sources. Other deep ground water systems may contain water of such poor quality that they will not be used for drinking water. Under the authorities of section 1805, Title 42, Idaho Code, the Director may determine "the most effective means by which these water resources may be applied for the benefit of the people of this state." As such, these aquifers, portions of aquifers and deep ground water systems may be employed in the best interests of Idaho as disposal sites for certain contaminants, as authorized for disposal under these rules. However, injection must be consistent with the requirements of the Ground Water Quality Act of 1989 and the Idaho Ground Water Quality Plan.

02. Petition Process for Aquifer Exemptions. The Department or any other person or entity may petition to exempt an aquifer from the designation as a drinking water source. The Department and the Idaho Department of Environmental Quality both have jurisdictional responsibilities for processing a petition for aquifer exemption. Therefore, the applicant must first submit information to the Department and then to the Idaho Department of Environmental Quality. The petition process is broken down into the following steps: (1) The petition is first submitted to the Department where it is reviewed. If the petition is approved, the Department shall obtain U.S EPA concurrence to support the approval. (2) Upon approval and U.S. EPA concurrence, the Department will direct the applicant to initiate the aquifer categorization process with the Idaho Department of Environmental Quality to categorize the aquifer as "other" and adopt less strict water quality standards for the exempted zone which ultimately allows for the injection of fluids that exceed the water quality standards set forth in IDAPA 58.01.11 "Ground Water Quality Rule."

To be considered for exemption by the Department, an aquifer must meet the criteria set forth in 025.04 of these rules. The petition for exemption shall be submitted to the Department and must
contain the general information found in section 025.05 and the pertinent specific information found in section 25.06 of these rules. Once the petition has been reviewed by the Department, the applicant will be notified as to whether or not the aquifer meets the criteria for exemption. If the aquifer does meet the criteria for exemption the notification will direct the applicant to the Idaho Department of Environmental Quality to initiate the procedures for categorizing an aquifer as per IDAPA 58.01.11 “Ground Water Quality Rule”. If the aquifer does not meet the criteria for exemption the notification will deny the petition and list the reasons for the denial.

03. Identification of Underground Sources of Drinking Water and Exempted Aquifers. (40 CFR 144.7)

a. The Director may identify (by narrative description, illustrations, maps, or other means) and shall protect as underground sources of drinking water, all aquifers and parts of aquifers which meet the definition of “underground source of drinking water” in section 010 of these rules, except to the extent there is an applicable aquifer exemption under paragraph (b) of this section. If an aquifer has not been specifically identified by the Director, it is an underground source of drinking water if it meets the definition in section 010 of these rules.

b. The Director may identify (by narrative description, illustrations, maps, or other means) and describe in geographic and/or geometric terms (such as vertical and lateral limits and gradient) which are clear and definite, all aquifers or parts thereof which the Director proposes to designate as exempted aquifers using the criteria in section 025.04 of these rules.

c. Subsequent to program approval or promulgation, the Director may, after notice and opportunity for a public hearing, identify additional exempted aquifers. For approved State programs exemption of aquifers identified:

i. under section 025.04.b shall be treated as a program revision under 40 CFR 145.32;

ii. under section 025.04.c shall become final if the Director submits the exemption in writing to the U.S. Environmental Protection Agency and the U.S. environmental Protection Agency has not disapproved the designation within 45 days. Any disapproval by the U.S. Environmental Protection Agency shall state the reasons and shall constitute final Agency action for purposes of judicial review.

04. Criteria for Exempted Aquifers (40 CFR 146.4) An aquifer or a portion thereof which meets the criteria for an “underground source of drinking water” in section 010 may be determined under section 025.03 of these rules to be an “exempted aquifer” for Class II wells if it meets the criteria in paragraphs (a) through (c) of this section.

a. It does not currently serve as a source of drinking water; and

b. It cannot now and will not in the future serve as a source of drinking water because:

i. It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

ii. It is situated at a depth or location which makes recovery of water for drinking
water purposes economically or technologically impractical;

iii. It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

c. The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

05. General Information to be Submitted with a Petition for Exemption. Applicants requesting exemptions must provide the following general information:

a. A map of the proposed exempted area in a format acceptable to the director. The map must show the boundaries of the area to be exempted, the topography, and other natural surface features and surface water locations. Any map which precisely delineates the proposed exempted area is acceptable.

b. A written description of the proposed exempted aquifer including:

i. Name of formation of aquifer.

ii. Subsurface depth or elevation of zone.

iii. Vertical confinement from other underground sources of drinking water.

iv. Thickness of proposed exempted aquifer.

v. Area of exemption (e.g., acres, square miles, etc.).

vi. A water quality analysis of the horizon to be exempted.

c. In addition to the above descriptive information concerning the aquifer, all exemption requests must demonstrate that the aquifer "... does not currently serve as a source of drinking water." as per section 025.04.a of these rules. To demonstrate this, the applicant must survey the proposed exempted area to identify any water supply wells which tap the proposed exempted aquifer. The area to be surveyed should cover the exempted zone and a buffer zone outside the exempted area. The buffer zone should extend a minimum of a 1/4 mile from the boundary of the exempted area. Any water supply wells located should be identified on the map showing the proposed exempted area. If no water supply wells would be affected by the exemption, the request should state that a survey was conducted and no water supply wells are located which tap the aquifer to be exempted within the proposed area. If the exemption pertains to only a portion of an aquifer, a demonstration must be made that the waste will remain in the exempted portion. Such a demonstration should consider among other factors, the pressure in the injection zone, the waste volume, injected waste characteristics (i.e., specific gravity, persistence, etc.) in the life of the facility. The model described in section 045.07.a(ii) of these rules or a comparable aquifer model acceptable to the Director shall be used in this demonstration.

06. Specific Information to be Submitted with a Petition for Exemption
a. The following information shall be submitted with a petition for exemption for an aquifer meeting the criteria in section 025.04.b(i) of these rules. ( )

If the proposed exemption is to allow a Class II enhanced oil recovery well operation to continue, the fact that it has a history of hydrocarbon or mineral production will be sufficient proof that this standard is met. Many times it may be necessary to slightly expand an existing well field to recover minerals or hydrocarbons. In this case, the applicant must show only that the exemption request is for expanding the previously exempted aquifer and state his reasons for believing that there are commercially producible quantities of minerals within the expanded area. ( )

For Class II wells, a demonstration of commercial producibility shall be made as follows: ( )

i. For a Class II well to be used for enhanced oil recovery processes in a field or project containing aquifers from which hydrocarbons were previously produced, commercial producibility shall be presumed by the Director upon a demonstration by the applicant of historical production having occurred in the project area or field. ( )

ii. For Class II wells not located in a field or project containing aquifers from which hydrocarbons were previously produced, information such as logs, core data, formation description, formation depth, formation thickness and formation parameters such as permeability and porosity shall be considered by the Director, to the extent such information is available. ( )

Exemptions relating to any new Class II wells which will be injecting into a producing or previously produced horizon should include the following types of information: ( )

iii. Production history of the well if it is a former production well which is being converted. ( )

iv. Description of any drill stem tests run on the horizon in question. This should include information on the amount of oil and water produced during the test. ( )

v. Production history of other wells in the vicinity which produce from the horizon in question. ( )

vi. Description of the project, if it is an enhanced recovery operation including the number of wells and their location. ( )

b. The following information shall be submitted with a petition for exemption for an aquifer meeting the criteria in section 025.04.b(ii) of these rules. ( )

Consideration of an aquifer exemption request under this provision would depend on the availability of alternative supplies, the adequacy of alternatives to meet present and future...
needs, and a demonstration that there are major costs for treatment and or development associated with the use of the aquifer.

The economic evaluation, submitted by the applicant, should consider the above factors, and these that follow:

i. Distance from the proposed exempted aquifer to public water supplies.

ii. Current sources of water supply for potential users of the proposed exempted aquifer.

iii. Availability and quality of alternative water supply sources.

iv. Analysis of future water supply needs within the general area.

v. Depth of proposed exempted aquifer.

vi. Quality of the water in the proposed exempted aquifer.

vii. Costs to develop the proposed exempted aquifer as a water supply source including any treatment costs and costs to develop alternative water supplies. This should include costs for well construction, transportation, and water treatment for each source.

c. The following information shall be submitted with a petition for exemption for an aquifer meeting the criteria in section 025.04.b(iii) of these rules.

Economic considerations will factor into the Director's decision on aquifer exemption requests under this section. Unlike the previous section, the economics involved are controlled by the cost of technology to render water fit for human consumption. Treatment methods can usually be found to render water potable. However, costs of that treatment may often be prohibitive either in absolute terms or compared to the cost to develop alternative water supplies.

The Director's evaluation of aquifer exemption requests under this section will consider the following information submitted by the applicant:

i. Concentrations and types of contaminants in the aquifer.

ii. Source of contamination.

iii. Whether contamination source has been abated.

iv. Extent of contaminated area.
v. probability that the contaminant plume will pass through proposed exempted area.

vi. ability of treatment to remove contaminants from ground water.

vii. chemical content of proposed injected fluids.

viii. current water supply in the area.

ix. alternative water supplies.

x. costs to develop current and probable future water supplies, cost to develop water supply from proposed exempted aquifer. This should include well construction costs, transportation costs, water treatment costs, etc.

xi. projections on future use of the proposed aquifer.

d. The following information shall be submitted with a petition for exemption for an aquifer meeting the criteria in section 025.04.c of these rules.

An application under this provision must include information about the quality and availability of water from the aquifer proposed for exemption. Also, the exemption request must analyze the potential for public water supply use of the aquifer. This may include: a description of current sources of public water supply in the area, a discussion of the adequacy of current water supply sources to supply future needs, population projections, economy, future technology, and a discussion of other available water supply sources within the area.
Memorandum

To: Idaho Water Resource Board
From: Helen Harrington
Date: August 17, 2012
Re: Idaho State Water Plan

No action necessary.

Public hearings and information meetings are being held around the state as the public comment period progresses for the Proposed Revisions of the State Water Plan. A 90-day public comment period commenced on June 18 and will close on September 21, 2012. No written comments have been received.

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The Water Resource Planning Committee is tentatively planning meetings in early October and early November to consider the testimony and comments received. It is anticipated that recommendations for final revisions will be provided for consideration to the IWRB accompanied by a recommendation of adoption of the Revised State Water Plan at the November Board meeting.
Memorandum

To: Idaho Water Resource Board  
From: Helen Harrington  
Date: September 6, 2012  
Re: Rathdrum Prairie Comprehensive Aquifer Management Plan (RP CAMP) Update  

No action required.

The Rathdrum Prairie CAMP Advisory Committee (AC) met on July 9. The goal of the meeting was to establish a process and procedures for CAMP implementation, which could mean 1) establishing subcommittees, 2) prioritizing actions, and 3) identifying resource needs. Due to the small number of attendees, the meeting focused primarily on prioritizing actions and discussing the funding which the IWRB recently made available for RP CAMP implementation.

A significant concept of the RP CAMP is the need for ongoing communication and collaboration among the varied interests and activities in the Spokane Valley-Rathdrum Prairie Aquifer region. Resolving potential conflicts will like be based on maintaining and enhancing the interaction among existing cooperative groups within both Idaho and Washington. Several of the RP CAMP actions, including conservation efforts and interstate collaboration are being locally driven, with numerous RP CAMP advisory committee members actively participating. These activities include a developing group called the Idaho Washington Aquifer Collaborative (IWAC). Initial representation in this group includes municipal purveyors in both states, tribes and Spokane County. The AC voiced strong encouragement for RP CAMP representation is included. The message was going to carried to the IWAC group at upcoming meetings.

Guidelines for requesting funding for RP CAMP implementation projects have been developed and posted on the RP CAMP web page. The Guidelines identify the elements which must be included in any funding request. The guidelines generally follow the IWRB’s Financial Program required elements and include the need to show a direct link to the goals and actions of the RP CAMP and the need for cost-sharing with IWRB funds.

The AC will be meeting on a quarterly basis.
Memorandum

To: Idaho Water Resource Board
From: Helen Harrington
Date: August 17, 2012
Re: Treasure Valley Comprehensive Aquifer Management Plan (TV CAMP)

ACTION: Consider request for CAMP funding from TV Partnership

TV CAMP Status

The public comment period for the Proposed TV CAMP is currently open and continues through September 30, 2012. No public comments have been received as yet, but are anticipated as the public comment period draws to an end. Public hearings are scheduled for Caldwell (Monday, September 10, 6-8 p.m.) and Boise (Tuesday, September 11, 6-8 p.m.).

Funding Request

The Treasure Valley Partnership has submitted a request for $500 toward funding a Treasure Valley Water Quality Summit (attached). The meetings will be held in Boise on November 8, 2012. Total budget for the meeting is estimated at $1,505.90. Matching funds are also being requested from other organizations.

The planning group which is spearheading this meeting includes representation from several TV CAMP Advisory committee groups including surface water irrigators, cities and IDEQ.

Staff Assessment

Although the TV CAMP has not been adopted by the IWRB, the advisory committee process and completion of the recommendations submitted to the IWRB has established some noteworthy outcomes. One of the most significant outcomes was bringing together highly diverse interest groups and developing a working relationship among them. Initial unease among committee members has evolved into collaborative efforts, exemplified by the entities involved in the planning of this meeting. TV CAMP can be directly credited with having a hand in bringing groups together for discussion on mutual interests.

While water quality is the focus of the summit, the TV CAMP recognizes that meeting future water needs requires protecting existing uses and benefits. Water quantity and quality are both part of the equation of meeting future water demand to ensure that available water supplies can be used for the beneficial uses to which they will be applied.

Staff supports the funding request based on the following elements:

1. Reflects Proposed TV CAMP Coordination and Implementation through coordinating with water users and evaluating and addressing environmental issues.
2. Reflects the partnership among stakeholders to fund activities and leverage programs with CAMP implementation
3. Addresses the overall IWRB efforts to resolve potential conflicts through cooperation and collaboration rather than crisis and litigation.

Attachments:
Request from Treasure Valley Partnership
Request for support from Rex Barrie, Boise River Watermaster
Letter of support from City of Meridian
BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF PROJECTS ASSOCIATED )
WITH THE RECOMMENDED TREASURE VALLEY ) A RESOLUTION
COMPREHENSIVE AQUIFER MANAGEMENT ) TO ALLOCATE FUNDS
PLAN )
_______________________________________)

WHEREAS, the Idaho Water Resource Board (Board), pursuant to its planning authorities in Article XV, Section 7 of the Idaho Constitution, and Idaho Code 42-1779, and as directed by House Bill No. 428 passed and approved by the 2008 Idaho Legislature, has undertaken the development of a comprehensive aquifer management plan for the Treasure Valley; and

WHEREAS, the Board has received a recommended Treasure Valley Comprehensive Aquifer Management Plan submitted by the advisory committee; and

WHEREAS, the Board is currently considering the Recommended Treasure Valley Comprehensive Aquifer Management Plan and is seeking public comment seek as required under Idaho Code 42-1734A prior to adoption of a final comprehensive aquifer management plan; and

WHEREAS, the Treasure Valley Partnership has requested financial support in the amount of $500 to match other funding to support the Treasure Valley Water Quality Summit, to be held in November 2012; and,

WHEREAS, the Treasure Valley Water Quality Summit support several actions delineated in the Recommended Treasure Valley Comprehensive Aquifer Management Plan, including:

1. Coordination and Implementation through coordinating with water users and evaluating and addressing environmental issues.
2. Partnership among stakeholders to fund activities and leverage programs with CAMP implementation
3. Overall IWRB efforts to resolve potential conflicts through cooperation and collaboration rather than crisis and litigation.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby IWRB approves the expenditure of a total of $500 from the IWRB Revolving Development Account’s Rathdrum Prairie/Treasure Valley CAMP Subaccount, to the Treasure Valley Partnership.

DATED this 7th day of September, 2012.

______________________________________
Terry Uhling , Chairman
Idaho Water Resource Board

ATTEST
______________________________________
Bob Graham, Secretary
August 3, 2012

Helen Harrington
The Idaho Water Center
PO Box 83720
Boise, Idaho 83720-0098

REQUEST FOR FUNDING
We request funding for the following project. Our budget for the project is approximately $1,750.

Our request is that you consider providing $500 toward the funding of this Treasure Valley Water Quality Summit.

PROJECT NAME
Treasure Valley Water Quality Summit (See Attached Agenda)

PROJECT SPONSOR’s
Boise River Water District #63
Idaho Water Engineering
City of Meridian
Riverside Irrigation District, Ltd.
Treasure Valley Partnership
Wilder Irrigation District
Department of Environmental Quality

Representatives from the above agencies and organizations have been meeting since March of 2012 around a simple idea to provide a summit for stakeholders in the Treasure Valley to come together and discuss water related issues. The idea was generated as a way to address the lack of familiarity and sometimes animosity among the water related stakeholders in the Treasure Valley. All of these and other organizations have collaborated and donated time and energy toward developing and holding a water quality summit.

The Treasure Valley Partnership, a non-profit organization consisting of Mayors and County Commissioners is acting as the organizational and administrative representative for the purpose of hosting this Summit.

PROJECT DESCRIPTION SUMMARY
Summit Goal: To provide a forum to improve dialogue, cooperation and collaboration among stakeholders toward addressing surface water quality issues in the Lower Boise River Watershed.
IMPLEMENTATION SCHEDULE
November 8, 2012, Nampa Civic Center, Nampa Idaho

DETAILED BUDGET
See Attached Treasure Valley Water Quality Summit Budget Estimate

MATCHING FUNDS
The following organizations have verbally contributed to provide funding for the Treasure Valley Water Quality Summit. At this point it is not known the extent of the funding levels from these organizations.

- Boise River Water District #63
- Bureau of Reclamation
- Idaho Department of Environmental Quality, Boise Regional Office
- Riverside Irrigation District, Ltd.
- Treasure Valley Partnership

We have requested and have received verbal commitments from two major organizations to provide $500 in funding each. A couple smaller regional organizations have committed to provide smaller amounts of funding depending on the end results of the funding request process. One organization, the Treasure Valley Partnership has already provided $237.50 toward the Treasure Valley Water Quality Summit to date.

PARTNERS
- Boise River Water District #63
- Idaho Water Engineering
- City of Meridian
- Riverside Irrigation District, Ltd.
- Treasure Valley Partnership
- Wilder Irrigation District
- Department of Environmental Quality

CAMP ALIGNMENT

According to the Treasure Valley CAMP, the vision of the Treasure Valley CAMP is to promote and protect Treasure Valley water resources through:
- Respect for Idaho water law and water rights
- A sustainable framework of collaboration, cooperation, and stewardship
- A commitment to ongoing research, data collection, and analysis

The goal of the Treasure Valley Water Quality Summit is to provide a forum to improve dialogue, cooperation and collaboration among stakeholders toward addressing surface water quality issues in the Lower Boise River Watershed.
WATER QUALITY
This Treasure Valley Water Quality summit is an attempt to get all the stakeholders in the Treasure Valley together to learn about the water quality issues and challenges that each other face. In addition, a section of the agenda specifically calls for participants to develop strategies to solve the issues and challenges and develop a plan of action for the future.
# Treasure Valley Water Quality Summit

## Projected Budget

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Deposit paid by Treasure Valley Partnership: $-237.50

Remainder: **$1,505.90**

## Cost Split for Participants

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Treasure Valley Water Quality Summit

November 8, 2012

Nampa Civic Center – Home Federal Room

**Summit Goal:** To provide a forum to improve dialogue, cooperation and collaboration among stakeholders toward addressing surface water quality issues in the Lower Boise River Watershed.

7:30 - 8:00 am  **Sign-up and Registration**

8:00 – 8:05 am  **Welcome and Introductions**

8:05 – 8:30 am  **Keynote Address:**

8:30 – 9:15 am  **Surface Water Quality in the Treasure Valley – An Overview**

A Description and Summary of the Type and Extent of Surface Water Quality Issues in the Lower Boise River Watershed.

*Lance Holloway* – Watershed Manager, Boise Regional Office, Idaho DEQ

9:15 – 10:00 am  **Effluent and Pollution Trading**

*Robbin Finch* – Water Quality Programs Manager, City of Boise
*Bill Stewart* - Environmental Protection Agency – Boise
*Jack Harrison* – Owner, Hyqual

10:00 – 10:15 am  **Break**

10:15 – 11:15 am  **Municipal Water Quality Issues/Concerns and Strategies**

*Tom Barry* - Director of Public Works, City of Meridian
*Michael Fuss* – Director of Public Works, City of Nampa
*Paul Woods* – City of Boise

11:15 – 12:00 noon  **Storm Water Quality Issues/Concerns and Strategies**

*Mark Zirschky* – Pioneer Irrigation District
*Michael Fuss* – Director of Public Works, City of Nampa
*Erica Anderson McGuire* – Ada County Highway District
*Jack Harrison* – Owner, Hyqual
12:00 – 1:00 pm   Lunch

1:00 – 2:15 pm   Irrigation and Drainage Districts Water Quality Issues/Concerns and Strategies

   Paul Deveau - Boise Project Board of Control
   Mack Myers – Acting Manager, Settlers Irrigation District
   Greg Curtis - Nampa & Meridian Irrigation District
   Mark Zirschky - Pioneer Irrigation District

2:15 – 2:30 pm   Break

2:30 – 3:15 pm   Innovative Solutions – A Look at How One Community Partnered to Address local Water Quality Problems

   Brian Olmstead - Manager, Twin Falls Canal Company

3:15 – 3:30 pm   Break

3:30 – 4:15 pm   Action Steps – A Facilitated Discussion on How Entities in the Treasure Valley Can Work Together to Address Water Quality Issues

   Barry Burnell – Water Quality Division Administrator, Idaho DEQ
   Helen Harrington – Planning Section Manager, ID Dept. of Water Resources

4:15 – 4:30   Wrap-up

Sponsors: Solicitation for funding have been made to the three organizations below. I believe we will see each of these organizations contribute to the point that the Summit will be free to all participants.

Bureau of Reclamation
Idaho DEQ
ID Dept. of Water Resources
Harrington, Helen

From: Rex Barrie [waterdistrict63@qwestoffice.net]
Sent: Wednesday, August 29, 2012 7:25 AM
To: Harrington, Helen
Cc: 'Bill Larsen'
Subject: Treasure Valley Water Quality Summit

Helen,

I just want to drop you a note and ask the Idaho Water Resources Board for help in supporting our upcoming Water Quality Summit in Nampa.

Bill Larsen with Treasure Valley Partnership has lead the charge on this to help bring people to the table to address water quality issues in the Lower Boise River.
We hope to bring irrigators, municipal operators and others together to discuss how we can all work to improve the water quality in the Lower Boise River.
We are asking for $500.00 to help offset costs. We would like to be able to offer this summit to participants without a registration fee.
We have several speakers lined up to help explain the issues and we have asked Mr. Brian Olmstead with the Twin Falls Canal Company to present a success story on how they have improved water quality in the Snake River.

Please forward this request to the Water Board for their consideration.

Respectfully,

Rex R. Barrie
Boise River Watermaster
Briefing Memorandum

To: Idaho Water Resource Board
From: Mat Weaver
Date: August 29, 2012
Re: ESPA Recharge Activities: (1) Mile Post 31 Improvements; and
(2) 2012 Late-Season Recharge

Action Items:
- Mile Post 31 Improvements — Adopt Resolution
- 2012 Late-Season Recharge — No action necessary

Mile Post 31 Construction Improvements — Summary and Recommendation

1. In 2009 the Eastern Snake Plain Aquifer (ESPA) Comprehensive Aquifer Management Plan (CAMP) was approved by the Legislature through House Bill 264. The ESPA CAMP established a long term hydrologic goal of 600 kaf average annual change to the aquifer water budget. The CAMP identifies a number of management strategies to accomplish this goal, chief among which is aquifer recharge. The Phase 1 target established in the CAMP calls for 100 kaf of recharge per year on average.

2. In April 2012 Dr. Gary Johnson with the Idaho Water Resources Research Institute (IWRRI) prepared a Prioritization of Aquifer Recharge Sites Based on Hydrologic Benefits report for the Idaho Water Resource Board (IWRB or Board). Dr. Johnson’s report was prepared in response to the Board’s resolution of January 27, 2012 regarding managed aquifer recharge.

3. Mike McVay with the Idaho Department of Water Resources (IDWR or Department) reviewed the IWRRI report and made specific recommendations for recharge to the Board using the goals established in the ESPA CAMP as guidance. In a series of presentations to the Board in the spring and summer of 2012, Mike McVay recommended that recharge activities be focused in the lower valley, below American Falls Reservoir, to maximize the long term beneficial increase in overall aquifer storage.

4. Since 2008 the Board has recharged approximately 416,000 acre-feet in the ESPA. Approximately 60% of that has been recharge above American Falls and 40% below. In part, recharge below American Falls has been limited due to a lack of recharge locations, facilities, and capacity. Specifically a lack of off-canal recharge capacity has limited lower valley recharge to a certain degree.
5. Mile Post 31 is an off-canal recharge location below American Falls with the potential to “drink” large volumes of recharge water. Mile Post 31 was first identified as a promising point of recharge in the Feasibility of Large-Scale Managed Recharge of the ESPA report prepared for the Board by the Department in 1999.
   a. Pilot recharge efforts conducted in 2010 confirmed the ability of the Mile Post 31 site to recharge as much water as could be diverted through an 18-inch turn out.
   b. With the positive results of the pilot recharge effort in mind we have since moved forward with a goal to increase diversion capacity at the Mile Post 31 site.

6. In 2012 the Board has coordinated with the American Falls Reservoir District #2 (AFRD2) to expand diversion capacity at the Mile Post 31 site. A 60:40 cost sharing split has been agreed to, with the Board agreeing to fund 40% of the total project costs.

7. AFRD2 has contracted with EHM Engineering, Inc. to prepare construction plans and cost estimates associated with permanent check dam and diversion structures at the Mile Post 31 recharge basin. The propose construction improvements consist of twin 36-inch diameter culverts, which should increase diversion capacity at the location by an order of magnitude. The construction plans, cost estimate, and cost estimate cover letter from Lynn Harmon (AFRD2 Manager) are included as an attachment to this memo.

8. Board staff has reviewed the plans and cost estimates and we ultimately recommend moving forward in constructing the new diversion improvements detailed in the construction plans. We recommend that construction be completed in the fall of 2012, to be ready for utilization in the 2013 water year.

9. I have prepared a Board Resolution to allocate funds for the construction of the Mile Post 31 improvements, not to exceed $35,000 or the 40% of actual project costs. I recommend that the resolution be adopted by the Board at this time. The proposed resolution is included as an attachment to this briefing memo.

**2012 Late-Season Recharge — A Summary of Goals and Expectations**

1. To date in 2012 we have recharged 107,371 ac-ft of water in the ESPA.
   a. The Board has spent $242,963 dollars from the Idaho Water Resource Board’s (IWRB) Secondary Aquifer Planning, Management, and Implementation Fund (i.e. Secondary Fund) supporting this effort.
   b. Generally the IWRB has targeted an average annual expenditure of $300,000 to pursue recharge in the Eastern Snake Plain Aquifer region.
2. In anticipation of a potentially dry water year in 2013, the Board should continue to recharge in 2012 to “bank” as much recharge as possible.
   a. To this end we are targeting a late season recharge goal of approximately 20,000 ac-ft.
   b. We anticipate spending an additional $57,037 dollars in support of that goal.

3. We anticipate recharging primarily in the main North Side canal at a diversion rate of 500 cfs for a period of 20 days.
   a. The source of the recharge water will be normal United States Bureau of Reclamation (USBR) operational spills at the American Falls Reservoir Dam, which historically have been in the range of 250-300 cfs. Due to reach gains, the USBR operational spills historically are in the range of 400-500 cfs by the time they reach the Milner Dam (Milner). We propose diverting the full flow of water at the Milner Dam (i.e. 0 cfs spill past Milner) until our late-season recharge goal is met.
   b. We anticipate ramping up recharge diversions to coincide with the ramping down of irrigation deliveries in the NSCC system and continuing until our goal is met. To accommodate several Highway District bridge construction projects across the main North Side canal, we need to have all recharge concluded by December 1, 2012.
   c. Depending on operation and maintenance issues, as well as construction activity associated with the Mile Post 31 recharge site, we may accomplish some recharge with the American Falls Reservoir District No. 2 through their Milner-Gooding canal.

4. We have coordinated our proposed late-season recharge goals with many of the relevant parties on the Upper Snake River.
   a. We have coordinated the proposed recharge effort with the North Side Canal Company (NSCC) and they have committed to making every effort in realizing our late season recharge goal.
   b. We have presented and coordinated the proposed recharge effort with Lyle Swank the Watermaster of Water District 01. He is in full support of our goals.
   c. We have coordinated with the USBR and they anticipate American Falls Dam operational spills will be consistent with historical practices.
   d. We have coordinated with the Idaho Power Company (IPCO) and they have indicated they are supportive of the recharge effort. However, to the extent we are able, they would like us to minimize the variation in spill past Milner.
   e. We presented our late-season recharge goals to the Upper Snake River Advisory Committee at the most recent meeting held on September 5, 2012.
LOCATED IN
SW 1/4 SECTION 2
TOWNSHIP 8 SOUTH
RANGE 19 EAST
BOISE MERIDIAN
2012

VICINITY MAP N.T.S.
August 24, 2012

Brian Patton
Idaho Water Resource Board
322 East Front Street
P. O. Box 83720
Boise, Idaho 83720-0098

Re: Estimated cost for Mile Post 31

Brian,

I reviewed the engineer's preliminary design and estimated the cost for the installation of the recharge structure at Mile-Post 31. The total cost estimate with contingencies is $86,995.20. I hope to have final design for the structure soon. I will forward you a copy as soon as I receive the design. There was a question of the capacity of the two 36" pipes? We should be able to handle approximately 70 cfs per pipe with a foot of head pressure which if we are only running recharge flow is about the operational level.

Sincerely,

[Signature]

Lynn Harmon,
General Manager
# Mile Post 31 - Cost Estimates

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Assumptions:
- all walls are 1 foot thick
- the base of the structures is 2 feet thick
- concrete checks are 3 feet in height with one foot below grade and 2 feet above grade
- baffles are 1 foot thick

MISC. - includes rebar, boards for check, nuts & bolts, expanded metal and other materials associated with the walk way

Contingencies are at 20% of estimated cost
BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE ) A RESOLUTION TO ALLOCATE
EASTERN SNAKE PLAIN AQUIFER ) FUNDS
MANAGED RECHARGE PROGRAM )
MILE POST 31 RECHARGE SITE )

WHEREAS, the Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan (ESPA CAMP) was approved in 2009 by the Legislature and Governor Otter through House Bill 264; and

WHEREAS, Phase 1 of the ESPA CAMP established a goal of implementing a managed aquifer recharge program for the ESPA designed to recharge 100,000 acre-feet of natural flow water on an average annual basis; and

WHEREAS, the IWRB desires to accomplish the Phase 1 ESPA CAMP goal for managed recharge and optimize the benefits of managed recharge in the ESPA; and

WHEREAS, in order to optimize the benefits of ESPA managed recharge, hydrologic modeling indicates that additional recharge capacity is needed below American Falls Reservoir; and

WHEREAS, the American Falls Reservoir District No. 2 (AFRD2) proposes the construction of a large-scale managed recharge site along the Milner-Gooding Canal near canal mile post 31, which will provide additional recharge capacity below American Falls Reservoir.

NOW THEREFORE BE IT RESOLVED that the IWRB approves the expenditure of up to $35,000 from the Secondary Aquifer Planning, Management, and Implementation Fund (Secondary Fund) to assist the AFRD2 with construction of the Mile Post 31 Managed Recharge Site, not to exceed 40% of actual project costs.

BE IT FURTHER RESOLVED that AFRD2 shall make best efforts to deliver recharge water to the Mile Post 31 Recharge Site, and to the existing Shoshone Recharge Site, in coordination with the IWRB.

BE IT FURTHER RESOLVED that final construction and installation of the Mile Post 31 Managed Recharge Site shall incorporate a permanent means of water measurement that can accurately determine the quantity of water diverted for recharge at the Mile Post 31 location.

BE IT FURTHER RESOLVED that should the Mile Post 31 recharge location demonstrate the ability to recharge water in excess of the maximum capacity of the currently proposed improvements, the AFRD2 will work with the IWRB to expand the diversion capacity of the Mile Post 31 location with additional future diversion improvements.
BE IT FURTHER RESOLVED that AFRD2 shall enter into a 5-year delivery agreement with the IWRB that defines the delivery rate to $3/acre-foot for the duration of the agreement.

DATED this 7th day of September, 2012.

______________________________
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST
______________________________
BOB GRAHAM, Secretary
Memorandum

To: Idaho Water Resource Board
From: Cynthia Bridge Clark
Date: August 28, 2012
Re: Status of Ongoing Storage Water Studies

Weiser-Galloway Project

BACKGROUND: Two studies are underway to investigate the viability of a dam at the previously proposed Galloway Dam site on the Weiser River: 1) The Weiser River Geologic Investigation and Analysis Project (Geologic Investigation) is intended to determine the safety, suitability and integrity of geologic structures at the potential dam and reservoir site; and 2) the Snake River Operational Analysis Project (Operational Analysis) will evaluate whether benefits would be realized from the Weiser-Galloway project by analyzing a series of operating scenarios (potential benefits include flood control, hydropower, water storage, pump back, irrigation, recreation and flow augmentation requirements for anadromous fish recovery). Both studies are being completed through a cost-sharing partnership with the U.S. Army Corps of Engineers (Corps) and are intended to help decision makers determine whether to move forward with comprehensive new feasibility, environmental and engineering studies of the Weiser-Galloway project.

PROGRESS SINCE LAST UPDATE:

Geologic Investigation:

• The U.S. Bureau of Reclamation (BOR) is performing the drilling and testing activities in coordination with the Corps. The BOR has completed two holes on the West abutment (drilled 268 and 313 feet) and is beginning drilling activities on the East abutment. Seven holes are currently planned at the potential dam site. Samples of the cores are being selected for strength testing by the BOR. The Corps has also been performing a geologic survey of the reservoir and project area.

• The IWRB Storage Committee visited the drill site on August 20, 2012 and tours of the project area have been provided by IDWR staff to interested entities and individuals (including representatives from the Idaho Conservation League, Idaho Rivers United, and Trout Unlimited, as well as Congressional staff). In addition, IDWR staff continues to respond to requests for information and provide project briefings. A meeting is scheduled with the Mayor of Weiser and possibility the Weiser City council in September.

• Estimated timeline: Drilling activities are scheduled through the end of October 2012 and may extend into November. Results of core tests are scheduled for completion by December 2012 (interpretation of samples may be possible prior to completion of testing).

Operational Analysis:

• The bulk of the Operational Analysis will be delayed until results of the Geologic Analysis are available.

• Estimated timeline: Completion scheduled for fall 2013.

REQUIRED ACTIONS: No action is required by the IWRB at this time.

Lower Boise River Interim Feasibility Study

BACKGROUND: The IWRB and the U.S. Army Corps of Engineers (Corps) began a feasibility study on the Boise River in 2009. The agreement does not include all of the tasks necessary to complete a feasibility study, but focuses on evaluating whether new surface water storage can help address water supply and flood risk reduction needs on the Boise River. The Water Storage Screening Analysis was completed in August 2010. The top three ranked storage
sites identified through the analysis were a raise or new dam at the existing Arrowrock Dam site, the Alexander Flats site, and the Twin Springs site.

The Corps performed additional engineering analysis of the Arrowrock storage concept, the top ranked site in the screening analysis, to identify 1) the most appropriate storage concept (a raise of the existing structure or construction of a new facility downstream); 2) whether there were any major engineering or geological constraints that would make either concept unfeasible; and 3) issues for future study. Results of the analysis are reflected in the Lower Boise River Interim Feasibility Study, Preliminary Evaluation of Arrowrock Site, October 2011.

The analysis did not identify any geologic or engineering constraints that could discount one concept over the other, but recommended further study of raising the existing Arrowrock Dam if only one concept is pursued. The report also identifies additional issues that should be evaluated in order to better understand the viability of Arrowrock site.

**PROGRESS SINCE LAST UPDATE:**

- In response to a recent effort by the Corps to modernize and streamline the feasibility process (Planning Modernization initiative) the Corps has advised the IWRB that federal support of the study may be contingent on a revision of the agreement to include completion of a full feasibility study.
- In May 2012, the IWRB directed IDWR staff to coordinate with the Corps to develop a project management plan (PMP) to complete the feasibility study. The PMP will describe study scope, costs, and schedule and will be presented to the IWRB for consideration.
- A scoping effort is currently being scheduled by the Corps for this fall and will include a comprehensive technical team. In the interim, the Corps and IDWR staff has been briefing Treasure Valley community leadership on the study and opportunities to participate in the study process.

**REQUIRED ACTIONS:** No action is required by the IWRB at this time.

### Henrys Fork Basin Study

**BACKGROUND:** The IWRB and the Bureau of Reclamation (Reclamation) are conducting a study of water resources in the Henrys Fork River basin to develop alternatives to improve water supply conditions in the Eastern Snake Plain aquifer and Upper Snake River basin. The study is intended to identify opportunities for development of water supplies and improvement of water management while sustaining environmental quality. Reclamation performed a technical analysis on alternatives identified for study, requested comments from the public and stakeholders participating through the Henrys Fork Watershed Council, and is in the process of identifying a short-list or combination of alternatives to move forward for further study.

**PROGRESS SINCE LAST UPDATE:**

- Reclamation staff presented results of the technical analyses to the IWRB Storage Committee on August 20, 2012. The alternatives recommended for further study (“appraisal level”) include surface water storage projects, agricultural conservation and management (canal automation, pipeline in North Fremont area), and market based alternatives in conjunction with conservation and storage alternatives (see attached list).
- Storage Committee members generally agreed with the recommended list and acknowledged that additional information may be required to narrow the alternatives further. Committee members requested a breakdown of potential study costs to assist with prioritization of the alternatives (to be provided at the September IWRB meeting).

**REQUIRED ACTIONS:** Staff request further guidance from the IWRB regarding prioritization of alternatives for further study.
## HENRY'S FORK BASIN STUDY - ALTERNATIVES FOR FURTHER STUDY

### Existing and New Surface Water Storage Alternatives

<table>
<thead>
<tr>
<th>No.</th>
<th>Dam Site *</th>
<th>Type</th>
<th>Tributary</th>
<th>Storage Volume (af)</th>
<th>Total Estimated Construction Cost</th>
<th>Cost/af</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Spring Creek</td>
<td>On stream - Spring Ck</td>
<td>Canyon Ck, Teton River</td>
<td>10,800</td>
<td>$42,120,000</td>
<td>$3,900</td>
</tr>
<tr>
<td>2</td>
<td>Moody Creek</td>
<td>On stream - Moody Ck</td>
<td>Teton River</td>
<td>15,000</td>
<td>$55,500,000</td>
<td>$3,700</td>
</tr>
<tr>
<td>3</td>
<td>Upper Badger</td>
<td>On stream - Badger Ck</td>
<td>Teton River</td>
<td>47,000</td>
<td>$126,900,000</td>
<td>$2,700</td>
</tr>
<tr>
<td>4</td>
<td>Lane Lake - Off-stream</td>
<td>Off stream</td>
<td>Off Stream (off Teton R.)</td>
<td>68,000</td>
<td>$312,800,000</td>
<td>$4,600</td>
</tr>
<tr>
<td>5</td>
<td>Teton **</td>
<td>On stream - Teton River</td>
<td>Henrys Fork River</td>
<td>288,000</td>
<td>$159,329,000</td>
<td>$553</td>
</tr>
<tr>
<td></td>
<td>Teton (Rockfill, no flood control)</td>
<td>On stream - Teton River</td>
<td>Henrys Fork River</td>
<td>288,000</td>
<td>$315,996,000</td>
<td>$1,097</td>
</tr>
<tr>
<td></td>
<td>Teton (RCC, no flood control)</td>
<td>On stream - Teton River</td>
<td>Henrys Fork River</td>
<td>50,000</td>
<td>$65,680,000</td>
<td>$1,314</td>
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<td></td>
<td>Teton Small Dam - A</td>
<td>On stream - Teton River</td>
<td>Henrys Fork River</td>
<td>100,000</td>
<td>$83,874,000</td>
<td>$839</td>
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<tr>
<td>6</td>
<td>Island Park Raise (1 ft)</td>
<td>On stream - Henrys Fk</td>
<td>Snake River</td>
<td>8,000</td>
<td>$800,000</td>
<td>$100</td>
</tr>
<tr>
<td>7</td>
<td>Ashton Dam Raise (43 ft)</td>
<td>On stream - Henrys Fk</td>
<td>Snake River</td>
<td>24,000</td>
<td>$45,600,000</td>
<td>$1,900</td>
</tr>
</tbody>
</table>

### Agricultural Conservation and Management

- 8 Canal Automation
- 9 Piping and Lining (North Fremont irrigated region only)

### Market Based Alternatives

- 10 Evaluate Existing and Potential Market Based Mechanisms - Investigate use of water market in conjunction with other alternatives evaluated

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* Multiple concepts at each site under consideration.


*** Interest in additional analysis of ground water recharge and demand reduction alternatives is desired by certain stakeholders.
Introduction to ESPAM2

Allan Wylie IDWR
Overview

• Why a model?
• Snake River Plain Aquifer Model (SRPAM)
• Enhanced Snake Plain Aquifer Model Version 1.1 (ESPAM1.1)
• Eastern Snake Plain Aquifer Model Version 2 (ESPAM2)
Why a Model?

- Models quantify complex relationships
- ESPA models are physically based models
  - Allow evaluation of stresses not included in calibration data
    - On ESPA
      - Stress = irrigated agriculture
        » About 95% of water use on ESPA is from agriculture
        » Have records
      - Irrigated agriculture impacts Snake River reach gains
        » Have records
Sources of Data

• Land use
  – Previous surveys
  – Satellite and air photos

• Measured diversions and returns from surface water users

• Use Satellite data and an algorithm to compute crop evapotranspiration (ET)
  – Surface water irrigation subtract ET from diversions less returns and allow excess to infiltrate
  – Ground water irrigation pump ET

• Gains in Snake River
  – Difference gauges and account for diversions, returns and surface inflows

• Water table elevation measured in wells
SRPAM

- MODFLOW
  - Grid north south
    - 3.1 mi X 3.1 mi
  - River
    - 3 river reaches
      - Based on gauge locations
    - 1 spring reach
      - Based on gauge locations
  - Time discretization
    - 1 year time period
      - Monthly stress periods
      - One land use distribution
Use of SRPAM

• Was used for about two decades
  – 198?-2005
• Used for planning
• Used to evaluate impact of ground water irrigated agriculture on reaches
ESPAM1.1

- **MODFLOW**
  - Grid rotated 31.4° counter clockwise
    - 1 mi X 1 mi
  - River
    - 5 river reaches
      - Based on gauge locations
    - 6 spring reaches
ESPAM1.1 Spring Reaches
ESPAM1.1 Spring Reaches

• Did not use measured reach gains for targets
• Used technique developed by Kjelstrom (1995) to compute annual spring discharge
  – divided into 6 reaches based on percentages in Covington & Weaver (1989)
Time Discretization

• 22 year time period
  – 6 month stress periods
    • Irrigation season
    • Non-irrigation season

• One land use distribution
  – Based on most recent survey by IDWR
Use of ESPAM1.1

- Used from 2005-2012
- Used for planning
- Used to evaluate impact of ground water irrigated agriculture on reaches
  - ESPAM1.1 was used to predict impact at reaches, not individual springs
ESPAM2

- **MODFLOW**
  - Grid rotated 31.4° counter clockwise
    - 1 mi X 1 mi
    - 104 rows
    - 209 columns

- **River**
  - 5 river reaches
    - Based on gauge locations
  - 3 spring reaches
    - Based on gauge locations
  - 14 spring discharge targets
ESPAM2 Spring Cells
ESPAM2 Base Flow Reaches

- **Base Flow**
  - The portion of aquifer discharge that does not show up as spring discharge
- **Based on gauges**
  - Kimberly-Buhl
    - Devils Washbowl-Buhl
  - Buhl-Lower Salmon Falls
    - Buhl-Thousand Spgs
    - Thousand Spgs
    - Thousand Spgs-Malad
  - Lower Salmon Falls-King Hill
    - Malad
    - Malad-Bancroft

Spring daylights, gets used, and measured

Part of discharge goes directly into the river without a surface expression
Time Discretization

- 26 year time period
  - 1 month stress periods
    - Allows model to evaluate the impact of filling and draining of American Falls Reservoir
    - Allows irrigation to start later and finish earlier in the northern portion of the aquifer than in the southern portion
- Changes in irrigated agriculture
  - 1980
    - USGS study
  - 1986
    - Classification of LANDSAT IDWR GIS
  - 1992
    - From IDWR data used for ESPAM1.1
  - 2000
    - Classification of LANDSAT IDWR GIS
  - 2002
    - IDWR GIS
  - 2006
    - IDWR GIS
Calibration Results

- Water levels in wells
  - Average difference between modeled and observed 0.667 ft
  - Median difference between modeled and observed -0.493 ft
  - Standard deviation 33.1 ft

- River Gains
  - Average difference between modeled and observed -10.6 cfs
  - Median difference between modeled and observed -23.0 cfs
  - Standard deviation 297 cfs

- Spring Discharge
  - Average difference between modeled and observed -0.0438 cfs
  - Median difference between modeled and observed -0.389 cfs
  - Standard deviation 16.5 cfs
Validation and Uncertainty Analysis

• Validation
  – 2009-2010 scenario
    • Added 2009-2010 to the model
  – 1900 scenario
    • Used archived data and data from USGS reports to simulate aquifer water levels and spring discharges from around 1900
    – Neither scenario identified any problems

• Predictive Uncertainty Analysis
  – 34 uncertainty runs conducted
  – Average change from calibration prediction = 3.8%
  – 6 have changes greater than 10%
Use of ESPAM2

• IDWR personnel believe ESPAM2 is
  – useful for planning
  – useful for evaluating impact of ground water irrigated agriculture on Snake River reaches
  – useful for evaluating impact at a single spring cell
    • Many spring cells contain more than one spring
Comparison of ESPAM2.0 with ESPAM1.1 via the Curtailment Scenario

Jennifer Sukow, P.E., P.G.

September 6, 2012
Comparing Model Predictions

• Director Spackman requested that results of ESPAM2.0 simulations be compared with outcomes from the previous model version.

• ESPAM1.1 Curtailment Scenario simulations were selected for comparison with ESPAM2.0.
ESPAM1.1 Curtailment Scenario

- IWRRI modeled curtailment of groundwater irrigation within model boundary junior to five selected priority dates

- No administrative boundaries were applied (no trim line, no area of common groundwater)
ESPAM2.0 Curtailment Scenario

• IDWR presented proposed work plan to Eastern Snake Hydrologic Modeling Committee (ESHMC)

• IDWR modeled curtailment junior to same five priority dates using updated and enhanced input data

• For comparison purposes, ESPAM2.0 results were aggregated into ESPAM1.1 reaches where necessary
River Reaches for Calibration of ESPAM1.1

ESPAM1.1 River Reaches
- Ashton to Rexburg
- Heise to Shelley
- Shelley to Near Blackfoot
- Near Blackfoot to Neeley
- Neeley to Minidoka

ESPAM1.1 Spring Reaches
- Devils Washbowl to Buhl
- Buhl to Thousand Springs
- Thousand Springs
- Thousand Springs to Malad
- Malad
- Malad to Bancroft
Spring Reaches for Calibration of ESPAM1.1
River Reaches for Calibration of ESPAM2.0
Spring Reaches for Calibration of ESPAM2.0
Comparison of Modeled Responses to Curtailment

• Report compares results for five priority dates:
  – January 1, 1870
  – January 1, 1949
  – January 1, 1961
  – January 1, 1973
  – January 1, 1985

• Simulation of curtailment junior or subordinate to 1/1/1961 will be presented here
Response to curtailment, January 1, 1961

Predicted Gain at Steady State (cfs)

- Ashton to Rexburg: 167, 222
- Heise to Shelley: 234, 141
- Shelley to Near Blackfoot: 255, 240
- Near Blackfoot to Neeley: 755
- Neeley to Minidoka: 40, 84
- Devil's Washbowl to Buhl: 135, 160
- Buhl to Thousand Springs: 150, 81
- Thousand Springs: 68, 54
- Thousand Springs to Malad: 47, 6.4
- Malad: 51, 47
- Malad to Bancroft: 4, 4
- Sum of baseflow below Milner: 22

ESPAM2.0 Predicted Response
ESPAM1.1 Predicted Response
Sources of Differences in Model Predictions

**Input Data**
- Updated/enhanced representation of irrigated lands & updated water rights data (9% increase in junior acreage)
- Updated precipitation and evapotranspiration data (9% increase in crop irrigation requirement per acre)

**Model Parameters & Structure**
- Addition of calibration targets between Kimberly and King Hill
- Updated calibration target data
- Monthly stress periods provide finer resolution of seasonal fluctuations
- Enhancements to input data and model structure affect calibration of conductivity and aquifer storage parameters
Difference in predicted response to curtailment

Ashton to Rexburg
Heise to Shelley
Shelley to Near Blackfoot
Near Blackfoot to Neeley
Neeley to Minidoka
Devil’s Washbowl to Buhl
Buhl to Thousand Springs
Thousand Springs
Thousand Springs to Malad
Malad to Bancroft

Difference in Predicted Gain at Steady State (cfs)

Net difference  Attributed to updated/enhanced input data  Attributed to model parameters and structure
Time to reach 90% of steady state response

Heise to Shelley reach

Years of continuous curtailment

Response (cfs)

- Steady state (ESPAM2.0)
- 90% of steady state (ESPAM2.0)
- ESPAM2.0 (1961)
- ESPAM1.1 (1961)
- ESPAM1.1 (90% of steady state)
Time to reach 90% of steady state response

Near Blackfoot to Neeley reach

- Steady state (ESPAM2.0)
- 90% of steady state (ESPAM2.0)
- ESPAM1.1 (1961)
- ESPAM1.1 (90% of steady state)
Time to reach 90% of steady state response

Kimberly to Buhl springs

- Steady state (ESPAM2.0)
- 90% of steady state (ESPAM2.0)
- ESPAM1.1 (1961)
- ESPAM1.1 (90% of steady state)
Seasonal response to curtailment

Shelley to near Blackfoot reach

April 1
October 1

Response (cfs)

Years

ESPAM2.0 (1961)  ESPAM1.1 (1961)
Seasonal response to curtailment

Kimberly to Buhl springs

Years

Response (cfs)

0 1 2 3 4 5 6 7 8 9 10

0 1 2 3 4 5 6 7 8 9 10

April 1

October 1

ESPAM2.0 (1961)

ESPAM1.1 (1961)
Conclusions

• Updated/enhanced irrigated lands and water rights data result in 7-11% increase in calculated junior irrigated land area (varying with year of curtailment scenario)

• Updated/enhanced evapotranspiration and precipitation data result in 9-10% increase in calculated crop irrigation requirement per acre (varying with year of curtailment scenario)

• Changes in calibrated model parameters result in significant changes in the relative responses of some spring and river reaches, other reaches have similar responses
Conclusions

• Time required to reach 90% of the steady state response is similar for reaches upstream of Blackfoot

• Time required to reach 90% of the steady state response has decreased significantly for reaches downstream of Blackfoot

• Seasonal response patterns are similar. Timing of peak seasonal response has changed slightly in response to use of monthly input data for crop irrigation requirement (net groundwater pumping)