IDAHO WATER RESOURCE BOARD

AGENDA
MEETING NO. 3-12 OF THE
IDAHO WATER RESOURCE BOARD

March 16, 2012, at 8:30 am.
immediately following Executive Session to be held at 8:00 am

Idaho Water Center
Conf. Rm. 602 C & D
322 E. Front St., Boise, ID 83702

1. EXECUTIVE SESSION – The Board will meet pursuant to Idaho Code Section 67-2345(1)(c) and (f) to communicate with legal counsel regarding pending litigation in the SRBA and acquisition of real property not owned by the State. Executive Session is closed to the public.
2. Roll Call
3. Agenda and Approval of Minutes 2-12
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. IWRB Committee and Other Reports
   a. Water Resource Planning
   b. Stream Flow Enhancement and Minimum Stream Flow
   c. Upper Snake River Advisory (Operations Forum)
6. IWRB Financial Program
   a. Status Report
   b. Ground Water Districts Bonds Update
   c. Water Transactions Program – Lower Lemhi
7. Water Supply Bank Rental Rate
8. RP CAMP Update
9. ESPA CAMP and Aquifer Management Efforts Update
   a. Managed Recharge
   b. MP31 Recharge Site
10. TV CAMP Update
11. Water Storage Studies Update
12. Director's Report
13. Other Items Board Members May Wish to Present
14. Next Meeting and Adjourn

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 Diana Ball, Administrative Assistant, by email diana.ball@idwr.idaho.gov or by phone at (208) 287-4800.

IDAHO WATER RESOURCE BOARD

Work Session in Preparation for
IWRB Meeting No. 3-12

March 15, 2012 at 8:30 am

Idaho Water Center
6th Floor, Conf Rms 602 C & D
322 E. Front St., Boise, Idaho 83702

WORK SESSION AGENDA

1. TV CAMP Recommended Plan (see Tab 10 under IWRB Meeting)
2. Treasure Valley Ground Water Model Presentation
3. Water Supply Bank
   a. Rental Fee Rate Change (see Tab 7 under IWRB Meeting)
   b. 2012 Annual Report
4. Water Supply Conditions
5. Water Transactions Program – 2012 Lower Lemhi (see Tab 6c under IWRB Meeting)
6. Pristine Springs and Twin Falls Geothermal System Presentation

   Board working lunch

7. Director's Presentation to House Resources and Environment Committee
8. ESPA Ground Water Model Status
9. ESPA CAMP and Aquifer Management Efforts
   a. Managed Recharge (see Tab 9a under IWRB Meeting)
   b. MP31 Recharge Site (see Tab 9b under IWRB Meeting)
   c. Minidoka Recharge Site
   d. AWEP Program Update and 2012 Plans

Americans with Disabilities

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Memorandum

To: Idaho Water Resource Board

From: Helen Harrington

Date: March 1, 2012

Re: Water Resource Planning ("Planning") Committee

The Planning Committee has meetings scheduled for March 14 and 28, 2012. The purpose of the meetings is to have the committee review and consider the revised Snake River Basin Section of the State Water Plan draft revisions. All proposed revisions are being coordinated with the Office of the Attorney General and staff.

The reason for a sequence of two meetings is to have an initial presentation at the first meeting to understand the overall intent of the section and for a detailed explanation of the comprehensive information contained within the section. A second meeting is scheduled for committee discussion to allow time for the committee and the public to review the proposed draft policies after hearing the presentation.

Once the committee approved the final section, the proposed revisions for entire State Water Plan will be submitted to the Idaho Water Resource Board for review. I anticipate a work session will be needed for the Board to review and discussion the final draft.

Memorandum

To: Idaho Water Resource Board

From: Helen Harrington

Date: March 1, 2012

Re: Stream Flow Enhancement and Minimum Stream Flow ("Stream Flow") Committee

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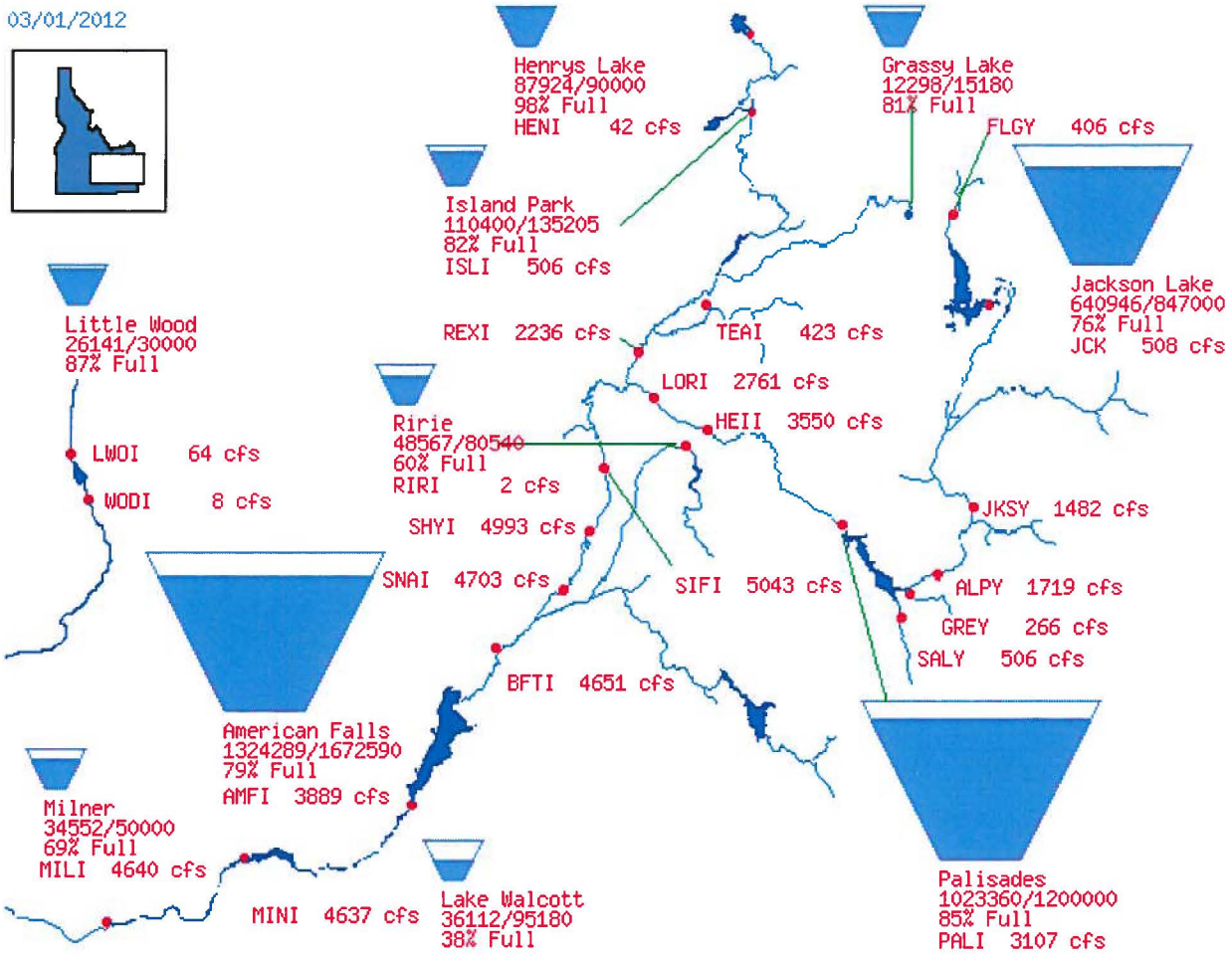
Discussion

The Stream Flow Committee will hold a meeting on March 14, 2012. Several agenda items will be discussed.

1. Per the IWRB direction at the January Board meeting, additional discussion of potential water transactions on Alturas Lake Creek will be discussed. Katie Breckenridge and Rob Struthers, owners of water rights on Alturas Lake Creek, requested an opportunity to discuss the issue with the Board.
2. A funding resolution to amend the Lemhi River Annual Contracts transaction will be considered and a recommendation will be made to the Board. The recommendation will be brought to the IWRB for action under a separate agenda item.
3. Legislative action on Cocolalla Lake minimum lake level permit and other activities will be discussed.

A summary of the discussion will be provided at the March 16 IWRB meeting.

Bureau of Reclamation, Pacific Northwest Region
Major Storage Reservoirs in the Upper Snake River Basin



PROVISIONAL DATA - SUBJECT TO CHANGE!

Average daily streamflows indicated in cubic feet per second.

Reservoir levels current as of midnight on date indicated.

Upper Snake River system (Jackson Lake,Palisades,
Grassy Lake,Island Park,Ririe,American Falls,LakeWalcott)
is at 79 % of capacity.
Total space available: 849,720 AF
Total storage capacity: 4,045,695 AF

Foothills Ranch Estates Irrigation and Fire Suppression System Upgrade

Financed by the Board With a Revolving Development Account loan for $150,000

The well has been reworked, two 20,000 gallon storage tanks have been installed, the storage tank pumps have been installed, and all of the system has been connected together. They are currently constructing the shelter buildings to protect the storage tanks, and this project will then be completed.

Removing one of the two 20,000 gallon storage tanks from the truck.

Placing the storage tank into the pre-dug pit.

Both storage tanks installed and buried with only the access ports visible.

The finished pumping system for the two storage tanks.

The piping coming from the pump house to the storage tanks.

A view of the construction of the storage structure.

MEMO

To: Idaho Water Resource Board
From: Brian W. Patton
Subject: Water Resource Projects Funding Program Status Report
Date: March 4, 2012

As of **February 1st** the IWRB's available and committed balances in the Revolving Development Account and Water Management Account are as follows:

Revolving Development Account (main fund)

Committed but not disbursed	
Loans for water projects	$3,279,636
Water storage studies	2,791,501
Total committed but not disbursed	$5,981,138
Loan principal outstanding	8,699,506
Uncommitted balance	1,669,329
Estimated revenues next 12 months	1,900,000
Commitments from revenues next 12 months	0
Estimated uncommitted funds over next 12 months	3,569,329

Rev. Dev. Acct. ESPA Sub-Account

Committed but not disbursed		
CREP	2,419,581	
Aquifer recharge	367,937	
Bell Rapids	361,620	
Palisades storage	10,000	
Black Canyon Exchange	443,645	
Loan for water project	250,000	
Total committed but not disbursed		$3,852,782
Loan principal outstanding		393,972
Uncommitted balance		109,341
Estimated revenues next 12 months		172,000
Commitments from revenues over next 12 months		0
Estimated uncommitted funds over next 12 months		281,341

Rev. Dev. Acct. Bell Rapids Sub-Account

Committed but not disbursed (finance costs)	$179,081
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.)	$1,292,531
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. Pristine Springs Sub-Account

Committed but not disbursed		
Repair fund	$1,164,228	
ESPA CAMP	1,232,000 (Being transferred to Secondary Aquifer Fund)	
Total committed but not disbursed		$2,396,228
Loan principal outstanding		8,652,165
Uncommitted balance		0
Estimated revenues next 12 months		1,732,000
Commitments from revenues over next 12 months		1,732,000
Estimated uncommitted funds over next 12 months		0

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

Committed but not disbursed	$2,614,207
(Upper Salmon flow enhancement projects)	
Estimated revenues next 12 months *(4)*	30,000
Commitments from revenues over next 12 months	30,000
Estimated uncommitted funds over next 12 months	0

Rev. Dev. Acct. Treasure Valley& Rathdrum Prairie Sub-Account

Uncommitted Balance	$21,952
Estimated revenues next 12 months	178,048
(Pristine hydropower & rental income)	
Commitments from revenues over next 12 months	0
Estimated uncommitted funds over next 12 months	200,000

Water Management Account

Committed but not disbursed:	$111,376
Loan principal outstanding	4,435
Uncommitted balance	4,756
Estimated revenues next 12 months	2,000
Commitments from revenues over next 12 months	0
Estimated uncommitted funds over next 12 months	$6,756

Secondary Aquifer Planning, Management, and Implementation Fund

Committed but not disbursed	$1,793,070
Uncommitted Balance	666,277
Estimated revenues next 12 months	1,232,000
(from Pristine Springs Sub-Account)	
Commitments from revenues over next 12 months	0
Estimated uncommitted funds over next 12 months	1,898,277

Total committed but not disbursed	**$18,220,413**
Total loan principal outstanding	**17,750,078**
Total uncommitted balance	**2,471,655**
Total estimated uncommitted funds over next 12 months	**5,055,703**

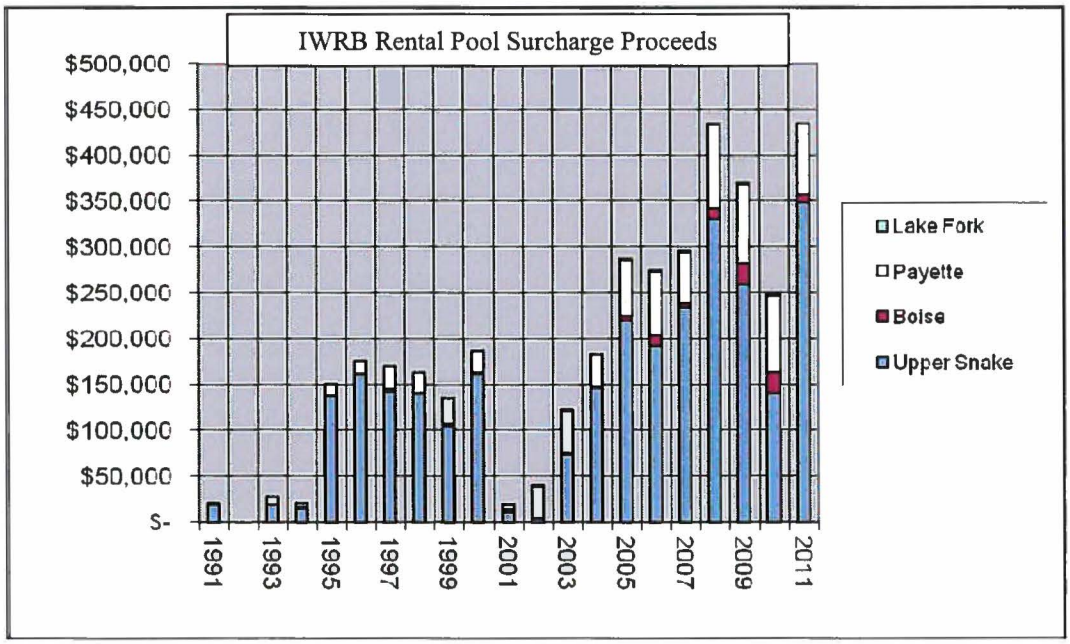
(1) Exclusive of pass-through payments made by the U.S. Bureau of Reclamation.
(2) Excess funds generated by the Dworshak Hydropower Project are deposited into the Revolving Development Account (Main Fund) on a monthly basis. To the date of this report this has totaled $2,010,780.
(3) This line item 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.

The **Conant Creek Canal Company** has repaid the IWRB in full. In 1996 the IWRB loaned Conant Creek about $240,000, to match federal grant funds from the NRCS, to convert the open canal to a gravity-pressure pipeline system. The Conant Creek Canal Company serves about 3,000 acres near Ashton.

The **IWRB's surcharge proceeds** from 2011 rental pool operations has been received from the WD01 (Upper Snake), WD63 (Boise) and WD65 (Payette) Rental Pools. (We are still waiting on WD65K but the amount is historically very small). Year 2011 rental pool operations are summarized below:

	AF rented through rental pool	Return to space-holders	Water District Fee	IWRB Surcharge
WD01 (Upper Snake)	352,846 AF	$2,925,688	$422,276	$348,399
WD63 (Boise)	6,841 AF	$82,864	$4,496	$8,414
WD65 (Payette)	165,440 AF	$805,319	$165,440	$78,528
TOTALS	**525,127 AF**	**$3,813,871**	**$592,212**	**$435,341**

The chart below shows the history amounts of received through the IWRB surcharge on rental pool operations by rental pool:



The following is a list of potential loans:

Potential Applicant	Potential Project	Preliminary Loan Amount	Comment
Marysville Canal Company	Phase 3 of gravity pressure pipeline project	$2,000,000	Waiting on outcome of federal (NRCS) grant request; IWRB has financed Phases 1 & 2 with $1.725M in loans
Cub River Irrigation Company	Gravity pressure pipeline	$1,000,000	Waiting on outcome of federal (BOR) grant request
Preston-Whitney Irrigation Company	Pipe canal	$1,300,000	Waiting on outcome of federal (BOR) grant request

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IDAHO WATER RESOURCE BOARD
Sources and Applications of Funds
as of January 31, 2012
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969)			$500,000.00
Legislative Audits			($42,264.45)
IWRB Bond Program			($15,000.00)
Legislative Appropriation FY90-91			$250,000.00
Legislative Appropriation FY91-92			$280,700.00
Legislative Appropriation FY93-94			$500,000.00
IWRB Studies and Projects			($249,067.18)
Loan Interest			$5,374,236.40
Interest Earned State Treasury (Transferred)			$1,561,053.58
Filing Fee Balance			$47,640.20
Bond Fees			$1,474,173.20
Arbitrage Calculation Fees			($9,000.00)
Protest Fees			($250.00)
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees			$43,657.93
Bond Issuer fees			$18,676.13
Water Supply Bank Receipts			$2,930,587.86
Legislative Appropriation FY01			$200,000.00
Pierce Well Easement			$2,000.00
Transferred to/from Water Management Account			$317,253.80
Legislative Appropriation 2004, HB843			$500,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies			$1,800,000.00
Legislative Appropriation 2009, SB 1511 Sec 2, Teton/Minidoka Studies Expenditures			($1,021,838.18)
Weiser Galloway Study - US Army Corps of Engineers			($123,367.01)
Bell Rapids Water Rights Sub-Account			
Legislative Appropriation 2005, HB392		$21,300,000.00	
Interest Earned State Treasury		$690,721.31	
Bell Rapids Purchase		($16,006,558.00)	
Bureau of Reclamation Principal Amount Lease Payment Paid		$8,294,337.54	
Bureau of Reclamation Interest Paid		$179,727.97	
Bureau of Reclamation Remaining Amount Lease Payment Paid		$9,142,649.54	
First Installment Payment to Bell Rapids		($1,313,236.00)	
Second Installment Payment to Bell Rapids		($1,313,236.00)	
Third Installment Payment to Bell Rapids		($1,313,236.00)	
Fourth Installment Payment to Bell Rapids		($1,040,431.55)	
Interest Credit due to Bureau of Reclamation (Part of Fourth Installment)		($19,860.45)	
Fifth Installment Payment to Bell Rapids		($1,055,000.00)	
Transfer to General Fund - Principal		($21,300,000.00)	
Transfer to General Fund - Interest		($772,052.06)	
BOR payment for Bell Rapids		$1,040,431.55	
BOR payment for Bell Rapids		$1,313,236.00	
BOR prepayment for Bell Rapids		$1,302,981.70	
BOR prepayment for Bell Rapids		$1,055,000.00	
BOR payment for Alternative Financing Note		$7,117,971.16	
Payment to US Bank for Alternative Financing Note		($7,118,125.86)	
Payment for Ongoing Bell Rapids Finance Costs (trustee fees, etc.)		($6,240.10)	
Commitments			
Ongoing Bell Rapids Finance Costs (trustee fees, etc.)		$179,080.75	
Committed for alternative finance payment		$0.00	
Total Commitments		$179,080.75	
Balance Bell Rapids Water Rights Sub-Account		**($0.00)**	
Pristine Springs Project Sub-Account			
Legislative Appropriation 2008, SB1511, Pristine Springs		$10,000,000.00	
Legislative Appropriation 2006, HB870, Water Right Purchases		$5,000,000.00	
Interest Earned State Treasury		$23,674.90	
Loan Interest		$1,174,478.75	
Transfer from ESP Sub-Account		$1,000,000.00	
Payment for Purchase of Pristine Springs (3)		($16,000,000.00)	
Payment from Magic Valley & Northsnake GWD for Pristine Springs		$2,524,249.57	
Appraisal		($15,000.00)	
Insurance		($10,475.00)	
Recharge District Assessment		($6,051.00)	
Hydro Plants Engineering Certification (Straubhar)		($1,500.00)	
Payment to EHM Engineers for pipeline work		($1,200.00)	
Property Taxes and other fee assessments (Jerome County)		($5,862.99)	
Rental Payments		$1,023,634.32	
Transferred to Secondary Aquifer Fund (2011 Legislature; HB 291)		($2,465,300.00)	
Pristine Springs Hydropower Projects			
Net power sales revenues		$177,531.41	
Pristine Springs Committed Funds			
ESPA CAMP	1,232,000.00		
Repair/Replacement Fund	$1,164,227.96		
TOTAL COMMITTED FUNDS	$2,396,227.96		
Loans Outstanding			
North Snake and Magic Valley Ground Water Districts	$8,652,165.33		
Total Loans Outstanding	$8,652,165.33		
Funds to Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account		**$21,952.00**	
Pristine Springs Revenues into Main Revolving Development Account Loan Fund			**($0.00)**
Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account			
Pristine Springs Revenues		$21,952.00	
Committed Funds		$0.00	
Balance Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account		**$21,952.00**	
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		$71,038.96	
Transfer to Water Supply Bank		($34,110.77)	
Payments for Water Acquisition		($215,651.80)	

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Committed Funds			
Administration of Non-Diversion Easements on Lemhi River	$161,573.32		
Alturas Lake Creek (Breckenridge)	($0.00)		
Beaver Creek (DOT LLP)	$15,682.35		
Big Hat Creek	$269.58		
Big Timber Tyler (Leadore Land Partners)	$447,958.94		
Canyon Creek/Big Timber Creek (Beyeler)	$417,924.39		
Fourth of July Creek (Vanderbilt)	$17,499.37		
Iron Creek (Phillips)	$229,362.30		
Lemhi River & Little Springs Creek (Kauer)	$19,575.54		
Little Springs Creek (Snyder)	$261,822.80		
Lower Eighteenmile Creek (Ellsworth Angus Ranch)	$6,030.30		
Lower Lemhi M Olson (Mark Olson)	$11,165.84		
Lower Lemhi Thomas (Robert Thomas)	$2,657.97		
P-9 Bowles (River Valley Ranch)	$293,363.38		
P-9 Charlton (Sydney Dowton)	$19,417.82		
P-9 Dowton (Jim Dowton Ranch)	$232,687.14		
P-9 Elzinga (Elzinga)	$287,814.96		
Whitefish (Leadore Land Partners)	$189,401.08		
Total Committed Funds	$2,614,207.07		
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		$1,853,466.38	
Loan Interest		$140,799.38	
Bell Rapids Water Rights Closing Costs		($6,558.00)	
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)		($1,675,036.00)	
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		$500,000.00	
Reimbursement from North Snake GWD - Pristine Springs		$500,000.00	
Reimbursement from Water District 1 for Recharge		$159,764.73	
Palisades (FMC) Storage Costs		($3,508,224.83)	
Reimbursement from BOR for Palisades Reservoir		$2,381.12	
W-Canal Project Costs		($326,834.11)	
Black Canyon Exchange Project Costs		($71,680.00)	
2008 Recharge Conveyance Costs		($14,580.00)	
2009 Recharge Conveyance Costs		($355,253.00)	
2010 Recharge Conveyance Costs		($409,853.32)	
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)		$2,419,580.50	
Commitment - Recharge Conveyance		$17,936.59	
Commitment - Additional recharge projects preliminary development		$350,000.00	
Commitment - Palasades Storage O&M		$10,000.00	
Commitment - Black Canyon Exchange Project (fund with ongoing revenues)		$443,644.95	
Commitment - W-Canal Aquifer and Recharge Conveyance		$0.00	
Total Loans and Other Commitments		$3,852,782.04	
Loans Outstanding:			
American Falls-Aberdeen GWD (CREP)	$121,950.13		
Bingham GWD (CREP)	$16,607.32		
Bonneville Jefferson GWD (CREP)	$75,932.93		
Magic Valley GWD (CREP)	$116,841.90		
North Snake GWD (CREP)	$62,639.36		
TOTAL ESP LOANS OUTSTANDING	$393,971.64		
Uncommitted Balance Eastern Snake Plain Sub-Account		**$109,340.53**	
Dworshak Hydropower Project			
Dworshak Project Revenues			
Power Sales & Other	$5,317,863.87		
Interest Earned State Treasury	442,231.03		
Total Dworshak Project Revenues		$5,760,094.90	
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	$1,354,878.73		
Powerplant Repairs	$58,488.80		
Capital Improvements	$318,366.79		
FERC Payments	$35,956.16		
Total Dworshak Project Expenses		($2,456,783.29)	
Dworshak Project Committed Funds			
Emergency Repair/Future Replacement Fund	$1,262,530.00		
FERC Fee Payment Fund	$30,001.49		
Total Dworshak Project Committed Funds		$1,292,531.49	
Excess Dworshak Funds into Main Revolving Development Account			$2,010,780.12
TOTAL			**$16,349,972.40**

Loans Outstanding:	Amount Loaned	Principal Outstanding
Aberdeen-Springfield Canal Company (WRB-491; Diversion structure)	$329,761	$220,628.06
Bee Line Water Association	$157,500	$9,094.00
Big Wood Canal Company (23-Jan-09; Thorn Creek Flume)	$90,000	$44,541.67
Boise City Canal Company (WRB-492)...18th St Canal Rehab	$82,362	$31,581.42
Boise City Canal Company (WRB-492)...Grove St Canal Rehab	$110,618	$62,125.33
Bonnie Laura Water Corporation (14-Jul-06; Well repairs)	$71,000	$46,273.64

Caribou Acres Water Company	$88,769	$5,539.93	
Carlin Bay Property Owners Association	$115,609	$8,465.96	
Challis Irrigation Company (28-Nov-07; river gate replacement)	$50,000	$35,474.42	
Chaparral Water Association	$90,154	$22,735.64	
Chaparral Water Association (21-Jan-11; Well deepening & imprevem	68,000.00	$49,534.84	
Cloverdale Ridge Water Corp. (irrigation system rehab 25-sep-09)	106,400.00	$95,954.25	
Conant Creek Canal Company	$239,615	$0.00	
Country Club Subdivision Water Association (18-May-07, Well Project)	$102,000	$76,890.49	
Cub River Irrigation Company (18-Nov-05; Pipeline project)	$1,000,000	$881,018.35	
Cub River Irrigation Company	$500,000	$454,549.88	
Dalton Water Association (14-Mar-08; Water main replacement)	$375,088	$114,003.99	
Deep Creek Property Owners Association	$25,115	$6,064.63	
Enterprise Irrigation District (14-Jul-06; Pipeline project)	$37,270	$24,686.77	
Enterprise Irrigation District (North Lateral Pipeline)	$105,420	$60,507.44	
Evergreen Terrace Water Association (water study; 25-sep-09)	15,000.00	$13,683.91	
Firth, City of	$112,888	$55,700.46	
Foothills Ranch Homeowners Association (7-oct-11; well rehab)	150,000.00	$64,599.72	
Garden Valley Ranchettes Homeowners Association (25-Jan-05)	2,716.00	$1,928.48	
Genesee, City of (Storage tank, 22-Jan-10)	250,000.00	$170,517.05	
Georgetown, City of	$278,500	$114,444.43	
Harbor View Water & Sewer District (Combined Loans)	$602,819	$224,362.72	
Hoyt Bluff Water Association (Rathdrum Prairie Well)	$273,029	$38,929.46	
Jefferson Irrigation Company (well deepenings)	$207,016	$94,963.43	
Jefferson Irrigation Company (9-May-2008 Well Replacement)	$81,000	$71,530.68	
King Hill Irrigation District (24-Sep-10; Pipeline replacement_	300,000.00	$175,000.00	
Kulleyspell Estates Property Owners Assoc	$219,510	$9,110.36	
Last Chance Canal Company (WRB-497)	$500,000	$227,476.12	
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outle	$594,000	$308,243.11	
Lakeview Water District	$45,146	$4,301.08	
Lava Hot Springs, City of	$347,510	$213,581.53	
Lindsay Lateral Association (22-Aug-03)	$9,600	$4,274.14	
Lindsay Lateral Association	19,800.00	$19,700.00	
Live-More Lake Community (9-Jun-04)	$42,000	$20,498.62	
Lower Payette Ditch Company (2-Apr-04; Diversion dam replacement	$875,000	$550,550.34	
Marsh Center Irrigation Company (13-May-05; Hawkins Dam)	$236,141	$176,991.40	
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1)	$625,000	$414,501.22	
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2)	$1,100,000	$787,125.75	
Meander Point Subdivsion Homeowners Association (7-Sep-07; comr	$330,000	$99,942.16	
Meridian Heights Water & Sewer Association (18-May-07)	$350,000	$310,983.33	
McGuire Estates Water Users Association (4-Mar-05)	$60,851	$36,385.34	
Monument Ridge Homeowners Association (20-Mar-09; irrigation syst	$360,000	$101,448.55	
Mores Creek Rim Ranches Water District	$221,400	$97,673.35	
New Hope Water Corporation	$151,460	$67,112.12	
Oakley Valley Water Company	$138,331	$24,302.66	
PPRT Water System	$70,972	$29,901.31	
Picabo Livestock Co (Picabo town water system new well)	$38,000	$4,744.11	
Pinehurst Water District (14-mar-08; Water Storage tank)	$160,000	75,349.03	
Powder Valley-Shadowbrook Homeowners Assoc.	$201,500	$9,127.64	
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipe	$800,000	$435,175.70	
Producers Irrigation Company (17-Mar-06; well replacements)	$185,000	$80,197.32	
Ranch Subdivision Property Owners Assoc	$24,834	$13,671.36	
Riverside Independent Water District	$350,000	$221,757.40	
Robertson Ditch Co	$30,000	$3,731.08	
Skin Creek Water Association	$188,258	$117,423.09	
Sourdough Point Owners Association (23-Jan-07; water supply & treat	$750,000	$205,450.09	
Spirit Bend Water Association	$92,000	$62,866.82	
Thunder Canyon Owners Association (6-Feb-04)	$92,416	$54,674.81	
Twenty-Mile Creek Water Association	$104,933	$6,319.96	
Twin Lakes Canal Company - Winder Lateral Pipeline Project (13-Jul-0	$500,000	$376,757.34	
Twin Lakes Canal Company (2-Apr-04)	$90,000	$54,619.29	
Twin Lakes-Rathdrum Fld Cont Dist (24-Oct-02; Twin Lakes Dam)	$399,988	$107,203.73	
Whitney-Nashville Water Company	$225,000	$91,003.32	
TOTAL LOANS OUTSTANDING			**$8,699,505.63**
Loans and Other Funding Obligations:			
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies		$778,161.82	
Weiser-Galloway Study (28-May-10)		$1,923,339.60	
Canyon Creek Canal Company (14-Mar-08; Pipeline project)		$133,599.00	
Chaparral Water Association (21-Jan-11; Well deepening & imprevement)		$18,465.16	
Clearwater Water District - pilot plant (13-jul-07)		$80,000.00	
Dover, City of (23-Jul-10; Water Intake project)		$194,063.00	
Evergreen Terrace Water Association (water study; 25-sep-09)		$1,316.09	
Foothills Ranch Homeowners Association (7-oct-11; well rehab)		$85,400.28	
Garden Valley Ranchettes Homeowners Association (25-Jan-05)		$8,183.69	
Jughandle HOA/Valley County Local Improvement District No. 1 (well project, 27-Jan-12)		$907,552.00	
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outlet Gates)		$285,756.89	
Lindsay Lateral Association		$15,300.00	
North Snake & Magic Valley GWD Loan - Mitigation Pipeline		$250,000.00	
Portneuf Irrigating Company (29-July-11; Pipeline project)		$1,300,000.00	
TOTAL LOANS AND OTHER FUNDING OBLIGATIONS			**$5,981,137.53**
Uncommitted Funds			**$1,669,329.24**
TOTAL			**$16,349,972.40**

(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.

8

Idaho Water Resource Board
Sources and Applications of Funds
as of January 31, 2012
WATER MANAGEMENT ACCOUNT

Original Appropriation (1978)	$1,000,000.00
Legislative Audits	($10,645.45)
IWRB Appraisal Study (Charles Thompson)	($5,000.00)
Transfer funds to General Account 1101(HB 130, 1983)	($500,000.00)
Legislative Appropriation (6/29/1984)	$115,800.00
Legislative Appropriation (HB988, 1994)	$75,000.00
Turned Back to General Account 6/30/95, (HB988, 1994)	($35,014.25)
Legislative Appropriation (SB1260, 1995, Aquifer Recharge, Caribou Dam)	$1,000,000.00
Interest Earned	$119,751.04
Filing Fee Balance	$2,633.31
Water Supply Bank Receipts	$841,803.07
Bond Fees	$277,254.94
Funds from DEQ and IDOC for Glenns Ferry Water Study	$10,000.00
Legislative Appropriation FY01	$200,000.00
Western States Wate Council Annual Dues	($7,500.00)
Tranfer to/from Revolving Development Account	($317,253.80)
Legislative Appropriation (SB1239, Sugarloaf Aquifer Recharge Project)	$60,000.00
Legislative Appropriation (HB 843 Sec 6)	$520,000.00
Legislative Appropriation (SB1496, 2006, ESP Aquifer Management Plan)	$300,000.00
Legislative Appropriation (HB 320, 2007, ESP Aquifer Management Plan)	$849,936.99
TOTAL	**$4,496,765.85**

Grants Disbursed:

Completed Grants	$1,291,110.72
Arco, City of	$7,500.00
Arimo, City of	$7,500.00
Bancroft, 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
Bovill, 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		**($11,426.88)**
CURRENT ACCOUNT BALANCE		**$120,566.57**
Committed Funds:		
Grants Obligated		
Cottonwood Point Water & Sewer Association	$0.00	
Preston - Whintey 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	
ESP Aquifer Management Plan (HB320, 2007)	$48,829.24	
TOTAL GRANTS & LOANS OBLIGATED & UNDISBURSED		**$111,375.55**

Loans Outstanding:	Amount Loaned	Principal Outstanding	
Arco, City of	$7,500	$0.00	
Butte City, City of	$7,425	$1,969.94	
Roberts, City of	$23,750	$2,465.22	
Victor, City of	$23,750	$0.00	
TOTAL LOANS OUTSTANDING			**$4,435.16**
Uncommitted Funds			$4,755.86
CURRENT ACCOUNT BALANCE			**$120,566.57**

Idaho Water Resource Board
Sources and Applications of Funds
as of January 31, 2012
SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND

Legislative Appropriation (HB 291, Sec 2)	$2,465,300.00	
Interest Earned State Treasury (Transferred)	$15,579.93	
Water Users Contributions	$100.00	
Conversion project (AWEP) measurement device payments	($4,319.29)	
Contribution from GWD's for 2011 ESPA Managed Recharge	$48,224.00	
Contribution from GWD's for Revenue Bond Prep Expenses	$14,462.50	
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	
Five-Year Managed Recharge Pilot Program	$1,500,000.00	
Contribution from GWD's for 2011 ESPA Managed Recharge	($31,776.00)	
GWD Bond Prepatory Expenses	$37,500.00	
Idaho Irrigation District Recharge Phase 1	$13,200.00	
Fremont-Madison irrigation District Egin Recharge	$38,465.50	
Total Committed Funds	**$1,793,070.21**	
TOTAL UNCOMMITTED FUNDS		**$666,276.93**
CURRENT ACCOUNT BALANCE		**$2,459,347.14**

IWRB

LAW OFFICES OF

RACINE OLSON NYE BUDGE & BAILEY
CHARTERED

201 EAST CENTER STREET
POST OFFICE BOX 1391
POCATELLO, IDAHO 83204-1391

TELEPHONE (208) 232-6101
FACSIMILE (208) 232-6109

www.racinelaw.net

SENDER'S E-MAIL ADDRESS: rcb@racinelaw.net

W. MARCUS W. NYE
RANDALL C. BUDGE
JOHN A. BAILEY, JR.
JOHN R. GOODELL
JOHN B. INGELSTROM
DANIEL C. GREEN
BRENT O. ROCHE
KIRK B. HADLEY
FRED J. LEWIS
ERIC L. OLSEN
CONRAD J. AIKEN
RICHARD A. HEARN, M.D.
LANE V. ERICKSON
FREDERICK J. HAHN, III
PATRICK N. GEORGE
SCOTT J. SMITH
JOSHUA D. JOHNSON
DAVID E. ALEXANDER
STEPHEN J. MUHONEN
CANDICE M. MCHUGH
CAROL TIPPI VOLYN
JONATHON S. BYINGTON
JONATHAN M. VOLYN
THOMAS J. BUDGE
BRENT L. WHITING
DAVE BAGLEY
JASON E. FLAIG
FERRELL S. RYAN, III
AARON A. CRARY
JOHN J. BULGER
BRETT R CAHOON
JEFFREY A. WARR

BOISE OFFICE
101 SOUTH CAPITOL
BOULEVARD, SUITE 300
BOISE, IDAHO 83702
TELEPHONE: (208) 395-0011
FACSIMILE: (208) 433-0167

IDAHO FALLS OFFICE
477 SHOUP AVENUE
SUITE 107
POST OFFICE BOX 50698
IDAHO FALLS, ID 83405
TELEPHONE: (208) 528-6101
FACSIMILE: (208) 528-6109

ALL OFFICES TOLL FREE
(877) 232-6101

LOUIS F. RACINE (1917-2005)
WILLIAM D. OLSON, OF COUNSEL

March 1, 2012

Via U.S. Mail and Email:

Idaho Water Resource Board
Terry Uhling, Chairman (tuhling@simplot.com)
Roger Chase, Vice Chairman (rwchase33@gmail.com)
Bob Graham, Secretary (bobmag2@frontier.com)
Jeff Raybould, Member (jeffr@ida.net)
Peter Van Der Meulen, Member (lindavandermeulen@yahoo.com)
Charles Cuddy, Member (chuckcuddy@valint.net)
Leonard Beck, Member (lmbfarms@yahoo.com)
Vince Alberdi, Member (vla45@q.com)
P.O. Box 83720
Boise, Idaho 83720-0098

Re: Ground Water Districts' Acquisition of Blue Lakes, Clear Lake and Rim View Trout Hatcheries

Dear Chairman Uhling and Board Members:

We are pleased to announce that yesterday North Snake, Magic Valley, American Falls-Aberdeen and Bingham Ground Water Districts completed the acquisition of all real property, water rights and fish hatchery production and processing facilities of Blue Lakes, Rim View and Clear Lake Trout Farms from the Kay Hardy family. Since this historic agreement was first announced in March 2011, the parties diligently worked through a wide array of complex details and issues on a cooperative basis to enable the acquisition to be timely closed.

The Ground Water Districts wish to express their sincere thanks and appreciation to the Board for its support and encouragement. The revenue bonds issued by the Board provided the critically important financing of the purchase price at favorable interest rates that the Ground Water District members will be able to afford and repay over 20 years providing needed security and protection for their continued operations. The financing was unique in that the security for repayment of the bonds consists only of the assessment liens against their members' real property. This frees up the acquired assets to be utilized without constraint to help solve remaining problems. We also wish to make known to the Board and express our appreciation for the exemplary efforts of the Board's bond counsel, Rick Skinner, securities expert Jim Wrigley and Wedbush Securities, as well as Brian Patton and John Homan from the Department. Their efforts were instrumental to the bonding process.

These important acquisitions successfully set the stage to bring to a conclusion most of the long-standing legal battles and conflicts between spring water users and ground water users. These had intensified in recent years as delivery calls against junior ground water right holders gave rise to orders issued by the Idaho Department of Water Resources that required the curtailment of water rights of over 100,000 acres of irrigated farm land, as well as dairies, municipalities, and other commercial and industrial businesses which would have devastated the southern Idaho agricultural economy.

The Ground Water Districts' acquisitions will result in the permanent subordination of over 400 cfs of acquired spring water rights. The water rights and facilities acquired will now be used by the Ground Water Districts to provide mitigation, negotiate settlements and secure additional subordinations from other major aquaculture facilities in the Hagerman Valley. Negotiations are underway and we expect to announce additional agreements in the near future that will enable Blue Lakes, Clear Lake and Rim View to continue to operate as productive trout farms while resolving the vast majority of the water wars between spring users and ground water users. Bringing an end to these conflicts with fair and permanent solutions will protect and enhance not only the ground water right holders but also the regional economy.

In the course of our due diligence pertaining to the details of these acquisitions, we were also able to clear up easement and access problems that provides substantial benefit to the State of Idaho with respect to its Pristine Springs property which is immediately adjacent to Blue Lakes on the west. We secured permanent written easements and road maintenance agreements with the City of Twin Falls, Blue Lakes Country Club and other adjacent property owners confirming the use and maintenance of the common access roads. Additionally we provided a recorded written easement for the Pristine Springs pipeline which runs through the middle of the Blue Lakes property. The Ground Water Districts bore the expense of the surveys and document preparation and recording pertaining to these easements.

Thanks again for all of your help and support.

Sincerely,

RANDALL C. BUDGE

RCB:rr

cc: Governor Butch Otter
Gary Spackman, Director/IDWR
American Falls-Aberdeen Ground Water District
Bingham Ground Water District
Magic Valley Ground Water District
North Snake Ground Water District
Idaho Ground Water Appropriators, Inc.

PRESS RELEASE

Blue Lakes Trout Company and Ground Water Districts Finalize Historic Accord for Solving Eastern Snake Plain Aquifer Water Disputes

Boise, Idaho—February 29, 2012

Blue Lakes Trout Farm and its President, Kay Hardy, together with the North Snake, Magic Valley, Bingham, and American Falls - Aberdeen Ground Water Districts today announced that they have completed their historic agreement for the Districts to acquire real property, water rights and other assets of three fish hatcheries known as Blue Lakes, Rim View and Clear Lake that can be used to address pending water issues in the Eastern Snake River Plain Aquifer (ESPA). The parties to the Agreement, which was announced in March, 2011, have spent the ensuing period working through the numerous details and issues that any accord of this magnitude involves. According to Ms. Hardy, "We have now demonstrated what can be accomplished when mutual respect and a comprehensive vision form the basis for dealing with one another." The Agreement puts the Ground Water Districts in a position to address threatened curtailment of thousands of acres of irrigated farmland in southeastern Idaho and to end the years of litigation which have surrounded water issues in the ESPA.

The legal battles and tension between ground water users and surface water users in the area has intensified in the past years as orders from the Idaho Department of Water Resources indicated that ground water pumping was injuring the water rights of certain spring users whose water rights are senior to those of the ground water users. Ms. Hardy and her husband, Gregory Kaslo, participated in the Governor's Water Summit, as did the Ground Water Districts. According to Ms. Hardy, "This meeting reinforced our respect for the members of the districts. This Agreement enables the creation of the long envisioned comprehensive plan necessary to solve the problems."

The Agreement between the Districts and Ms. Hardy, daughter of Earl Hardy, a pioneer of the trout industry in Idaho and namesake of the Earl M. Hardy Box Canyon Springs Nature Preserve near Hagerman, Idaho, provides the Ground Water Districts with water rights to meet potential water shortages and allows for resolution of these conflicts between water users.

According to Ms. Hardy, "This Agreement is the culmination of years of working to address the disputes which have jeopardized the trout farming industry, family farms, and the economic well-being of the southeastern part of the state. My husband and I understood the relationships among the various users of water in this area. We watched with sorrow as friendships and livelihoods were under constant pressure due to never-ending litigation that often produced no clear solutions. Today I am pleased and encouraged because we set a stage for fair and permanent solutions to these issues."

Asked how, after so many years of legal and political disputes, a solution is now foreseeable, Ms. Hardy and Mr. Lynn Carlquist, Chairman of the North Snake Ground Water District both acknowledged that "When we committed to talk to one another in a different way, we were able to focus on a solution. We based our Agreement on sound business principles and an understanding of the different positions of water users. We have worked diligently and in good faith to bring our Agreement to conclusion. Beneficiaries of the Agreement are spring and surface water users. Additionally, the Ground Water Districts' members who will benefit from the Agreement include farmers, dairies, municipalities and other commercial businesses that reply upon ground water rights. Agriculture, aquaculture and the general public in will benefit for generations to come."

Mr. Orlo Maughan of the Magic Valley Groundwater District pointed out that "With this resolution now in place, we can address the issues that have caused us much concern. We can help protect the economic viability of the area, the long-term sustainability of family farms, and a resource upon which all depend."

Ms. Hardy, when asked about the pivotal role she has played in resolving the issues, responded . "My Dad taught me to be farsighted. He loved this area and its people and would be pleased by this Agreement. Contacts:

Randy Budge
Racine, Olson, Nye, Budge & Bailey, Chtd.
<rcb@racinelaw.net>
208-232-6101

Bruce Smith
Moore Smith Buxton & Turcke, Chtd.
bms@msbtlaw.com
208-331-1800

Memorandum

To: IWRB – Streamflow Enhancement and Minimum Streamflow Committee

From: Morgan Case and Helen Harrington

Date: March 2, 2012

Re: Water Transactions Program – 2012 Lower Lemhi Annual Transaction AMENDED

Action Item

Attached is an expenditure of funds resolution for the annual Lower Lemhi 2011 agreements not to divert in order to bridge to gap between the permanent acquisitions and the flow target in the Lower Lemhi River. The agreement not to divert contracts will not exceed **$82,343.65** and the Water District 74 contract will not exceed **$12,800.00**.

Background

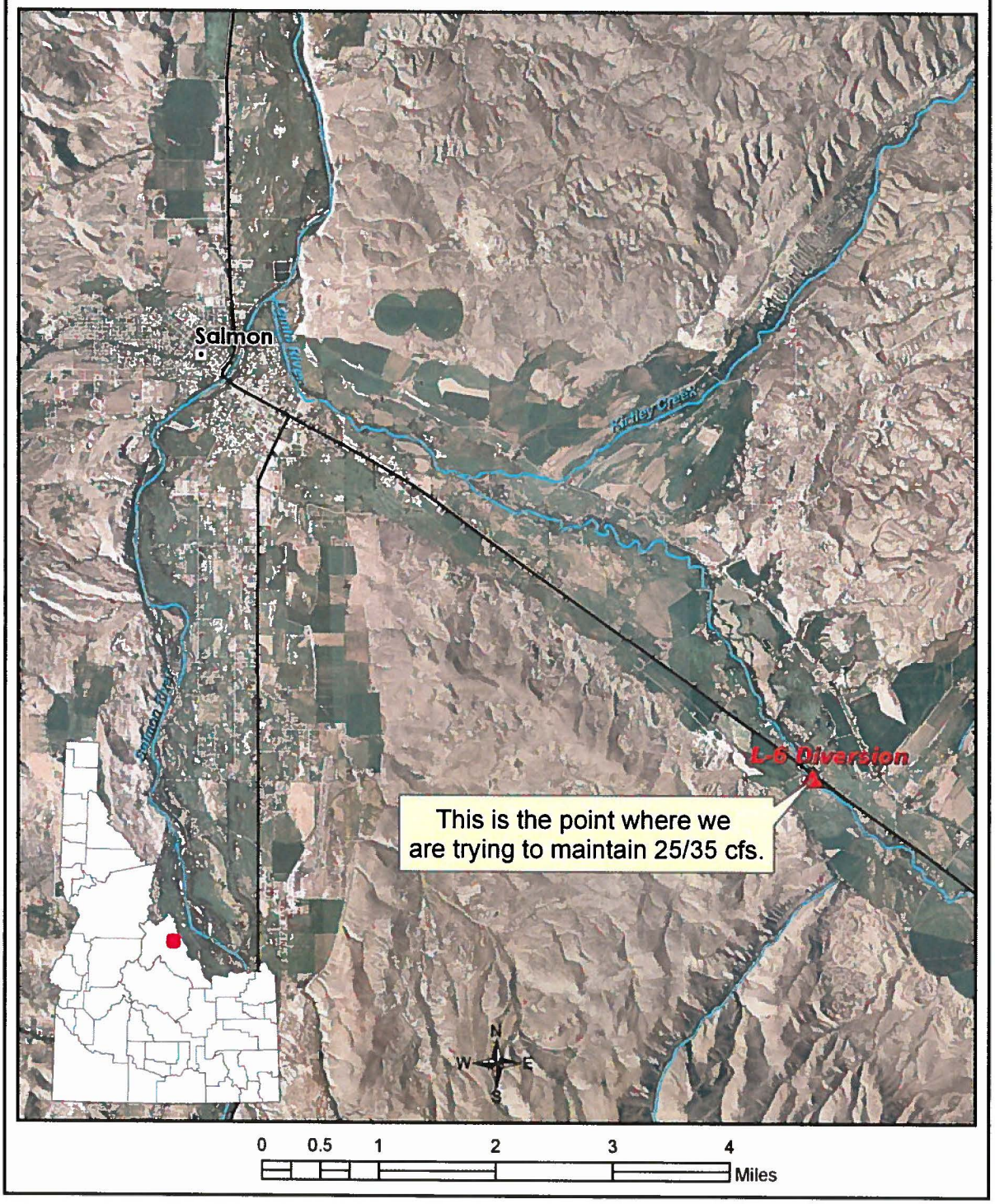
For the past several years, the Board has been working to meet the 35 cfs target at the L-6 diversion on the Lemhi River. At the January 2012 IWRB meeting, the Board approved a resolution to fund 2012 Lower Lemhi Annual Transaction in the amount of $47,583.50. The annual transaction is negotiated with willing water right holders to meet the state's flow target. As permanent agreements have been acquired the amount needed from annual leases has decreased. The annual transaction is calculated based on the amount of unmet target. The resolution approved in January was intended to meet the unmet target of 11.9 cfs. This flow was based on the expected completion of a permanent easement for 4.32 cfs with Lowell Cerise. Since the approval of that resolution, the anticipated completion of the Cerise easement has not occurred nor is it expected to be completed during the 2012 diversion season. Therefore, in order to meet the target flow of 35 cfs, an additional annual rental of the 4.32 cfs needs to be incorporated into the 2012 Lower Lemhi annual transaction.

These agreements have been administered according to a contract between the Board and Water District 74. The annual leases have been done for several years.

Funds would be provided to the Board from the Idaho Fish Accord Water Transactions Fund. Payment is based on the number of days the irrigators are turned off. Compensation is $80.65/24-hour cfs. Funding for administration by the WD 74 Watermaster will come from the Accord and funds placed in the Board's Revolving Development Water Transactions sub-account, in proportion to the flows secured by each method.

The agreement not to divert contracts will not exceed the new total of $82,343.65 and the Water District 74 contract will not exceed $12,800.00. Funding for the Water District 74 contract will be allocated as follows: $6,000.00 coming from the Idaho Fish Accords and $6,800.00 coming from funds in the Revolving Development Transactions Sub-account.

Lower Lemhi River
Reach of Concern - L-6 to Salmon River



BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE LOWER LEMHI 2012 ANNUAL WATER TRANSACTION AND MINIMUM FLOW ADMINISTRATION CONTRACTS	))))))	A RESOLUTION TO MAKE A FUNDING COMMITMENT AMENDED

WHEREAS, the Idaho Water Resource Board holds eight conservation easements, restricting diversion from the Lemhi River; and

WHEREAS, staff has developed draft one-year agreements not to divert water from the Lemhi River to improve stream flow for anadromous and resident fish; and

WHEREAS, $88,343.65 is available through the Idaho Fish Accord – Idaho Water transactions Fund to fund the cost of said agreements; and

WHEREAS, for all agreements, the water users have agreed to limit their diversions during times of low flow; and

WHEREAS, the 2012 Lower Lemhi transactions are in the public interest and in compliance with the State Water Plan.

NOW THEREFORE BE IT RESOLVED that the IWRB authorizes the Chairman to enter into contracts with lower Lemhi River irrigators to not divert out of the Lemhi River, using an amount not to exceed $82,343.65.

NOW THEREFORE BE IT FURTHER RESOLVED that the IWRB authorizes the Chairman to enter into contract with Water District 74 to administer said agreements and previous conservation easements using an amount not to exceed $12,800.00, with $6,000.00 coming from the Idaho Fish Accords and $6,800.00 coming from funds in the Revolving Development Transactions Sub-account

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 Fish Accord – Idaho Water Transactions Fund in the amount of $88,343.65.

DATED this 16th day of March, 2012.

_____

TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST: _____

BOB GRAHAM, Secretary

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE WATER SUPPLY BANK	))))	A RESOLUTION ESTABLISHING THE RENTAL RATE

WHEREAS, Idaho Code 42-1761 established the Water Supply Bank; and

WHEREAS, Water Supply Bank Rule 30.01 establishes that the Idaho Water Resource Board (IWRB) may determine the rental price;

WHEREAS, on March 17, 2006 the IWRB established the Water Supply Bank rental price at $14/acre-foot to be consistent with the price of storage water rented through the various local rental pools for flow augmentation; and

WHEREAS, according to the terms of the Snake River Water Rights Agreement of 2004, sometimes known as the Nez Perce Agreement, the price for stored water used for flow augmentation increases to $17/acre-foot in 2013, with additional increases in future years; and

WHEREAS, on January 12, 2012, the Water Supply Bank and Rental Pool Committee of the IWRB met and examined this issue and issued a recommendation to the IWRB that the Water Supply Bank rental price be increased to be consistent Nez Perce Agreement flow augmentation rate.

NOW THEREFORE BE IT RESOLVED that, unless otherwise agreed to between lessor and lessee and approved by the Director of the Department of Water Resources, the price for water rights rented through the Water Supply Bank shall be equal to the Nez Perce Agreement flow augmentation rate in effect at the time that a rental is made.

NOW THEREFORE BE IT FURTHER RESOLVED that this rate shall be inclusive of all administrative fees and charges.

DATED this 16th day of March, 2012.

_____

TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST _____

BOB GRAHAM, Secretary

Memorandum

To: Idaho Water Resource Board

From: Helen Harrington

Date: March 1, 2012

Re: Rathdrum Prairie Comprehensive Aquifer Management Plan (RP CAMP)

No action required.

Discussion

The Rathdrum Prairie Comprehensive Aquifer Management Plan (RP CAMP) adopted by the IWRB in July, was approved by the Idaho House on January 23, 2012 by a vote of 61 in favor, 7 opposed. House Bill 396 was sent to the Idaho Senate for consideration.

The Senate Resources and Environment Committee has scheduled a hearing on the legislation for March 7 to consider the legislation (House Bill 396). IWRB Member Bob Graham is planning to attend the hearing along with staff.

As mentioned at the January meeting, a regional water coordination meeting, titled "H20 Breakfast" was held on February 9. Interim Director Spackman spoke, along with Pat Mulroy, General Manager of the Southern Nevada Water Authority, and Ted Sturdevant, director of the Washington Department of Ecology. No materials were distributed; a copy of an article discussing the forum is attached to this memo.

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H2O Breakfast serves up regional water conversation

Posted By admin On February 23, 2012 @ 5:50 pm In Uncategorized | Comments Disabled

"When we no longer had the luxury of battle, collaboration was our only alternative."
Pat Mulroy, Southern Nevada Water Authority
H20 Breakfast, Coeur d'Alene, Idaho

At a sold out breakfast attended by over one hundred sixty people from the bi-state region, Mulroy's message was loud and clear. Argue and fight over water for as long as you want, but at the end of the day there's only so much to go around, particularly for a growing population. When the survival of all is at stake, collaboration is the only viable option.

Of course our region isn't Las Vegas. Here, water has historically been a plentiful resource to help drive our local economies. Times, however, are slowly changing. Our regional population is expected to grow from today's five hundred fifty thousand to between eight hundred thousand and one million over the next thirty years. That's a lot of new people and businesses consuming water from the Spokane Valley-Rathdrum Prairie Aquifer.

As a sole source aquifer, meaning it's the principle source of drinking water in our bi-state region, experts on both sides of the border agree our region's future depends on maintaining the aquifer's water quality and availability. Said Guy Gregory with the Department of Ecology, "One thing we learned from a study jointly conducted by both states and the U.S. Geological Survey is that there isn't a significant danger that we're over utilizing the aquifer. But the other thing we learned is how significantly the groundwater aquifer and the surface water of this region depend on each other, and how much pumping affects it. To sustain our lakes and river flows for people, fish and habitat, we're going to need to work together to manage this magnificent system."

Mulroy's perspective was echoed at the breakfast by Gary Spackman, Interim Director of the Idaho Water Resources Department, and Ted Sturdevant, Director of Washington Department of Ecology. The directors shared their belief that the best solutions are those that will come from local water purveyors, municipalities and other stakeholders. Local authorities were encouraged to work cooperatively across state lines.

From Mulroy's perspective, "... your water right seniority makes no difference in a municipal environment. Shortage must be shared across political lines." Although her perspective challenges the history of water rights and allocation in both states, its reality begins the conversation of what cooperation instead of litigation looks like.

In Idaho, the Idaho Water Resource Board recently adopted the locally developed Comprehensive Aquifer Management Plan (CAMP). One objective of the plan is to "Prevent and Resolve Water Conflicts," including "developing a framework for regional discussion and cooperation for SVRPA water issues." Said Alan Miller with the Hayden Lake Irrigation District, "We're taking the CAMP objective seriously. With the breakfast as a springboard, we're reaching out to the Spokane Aquifer Joint Board and others in Washington to consider how to go about cooperatively planning."

Both the CAMP [1] and Washington Watershed Planning (WRIA) [2] plans point at conservation, best management practices and other tools as ways to help assure meeting our future needs.

Said Rob Lindsay with Spokane County Utilities, "Both plans arrive at similar conclusions from different directions. We need to collaborate regionally to secure our regional water future."

As with many questions about our region's future, we must ask ourselves if a crisis must be at hand before collective action ensues. The hope from most who attended the H20 breakfast is that we begin in earnest now as the best investment possible to assure quality of life and growth opportunities for future generations.

Article printed from River News: **http://www.spokaneriver.net**

URL to article: **http://www.spokaneriver.net/?p=6189**

URLs in this post:
[1] CAMP:
http://www.idwr.idaho.gov/waterboard/WaterPlanning/CAMP/RP_CAMP/pdf/2011/RP_CAMP_Draft_Final_for_Board.pdf
[2] Washington Watershed Planning (WRIA):
http://www.spokanecounty.org/WQMP/content.aspx?c=1805

Memorandum

To: Idaho Water Resource Board

From: Rich Rigby

Date: March 2, 2012

Re: Managed Aquifer Recharge in 2012

Action Item: Approve Funding

We are implementing the Board's resolution of January 27, 2012 regarding managed aquifer recharge. A copy of the resolution is attached. A contract has been executed with the University of Idaho's Idaho Water Resources Research Institute (IWRRI) and IWRRI is working on a report that identifies high priority recharge sites and a monitoring plan. IWRRI is scheduled to provide a draft report to the Board on March 23 for technical review by Board staff, with a final report due on April 13. It appears that the following steps will be necessary to implement the plan:

1. The Board receives IWRRI's final report
2. The Board formally selects canals where recharge will be undertaken
3. Board staff contacts canals and prepares, negotiates, and executes five year contracts
4. Notices are provided to contracting canals
5. Recharge commences

We would hope that all these steps can be undertaken prior to the time when recharge can commence. However, the Watermaster has advised us that the Board's recharge right may be in priority in early April above American Falls, and is currently in priority below American Falls. In all likelihood the right will be out of priority this spring before the above listed steps are complete. This leaves the Board with two apparent options:

1. Undertake no recharge until the above steps are complete, in which case recharge under the Board's program may be very limited in 2012 or occur not at all.
2. Undertake recharge opportunistically within identified limits and initiate the five year plan in 2013.

We have explored whether it would be possible to accelerate the contract with IWRRI so the information is available prior to the Board's March 16 meeting. IWRRI has informed us that they need the entire time in order to do a proper analysis and report. IWRRI's report is a critical piece of the five year pilot program and should not be short-circuited.

In the event the Board selects the second option, which staff recommends, we would propose to apply the following principles:

1. No more than 100,000 acre-feet will be recharged. Given the current snowpack it is quite possible that less than 100,000 acre-feet can be recharged.
2. We will endeavor to split recharge opportunities 50/50 above and below American Falls.
3. Canals that have participated in the Board's program in recent years will be provided the opportunity to participate.

4. The concepts on page two of the Board's resolution will apply: recharge in 2012 will only involve natural flows; and Board sponsored recharge will not preclude privately funded recharge efforts consistent with Idaho law.

We have prepared the attached draft resolution for your consideration and recommend its approval.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE EASTERN SNAKE PLAIN AQUIFER MANAGED RECHARGE PILOT PROGRAM	))))	A RESOLUTION TO CHANGE CONDITIONS ASSOCIATED WITH ALLOCATED FUNDS

WHEREAS, on January 27, 2012 this Board adopted a resolution calling for a five-year pilot program to undertake managed aquifer recharge on the Eastern Snake Plain Aquifer; and

WHEREAS, it is likely that the prerequisites identified in the January 27 resolution will not be complete while the Board's recharge water right is in priority in the spring of 2012; and

WHEREAS, the Idaho Water Resources Board desires to undertake recharge in 2012.

NOW THEREFORE BE IT RESOLVED that for 2012, the first year of the 5-year pilot recharge program, the delivery contracts will be for a period of one year, and that recharge will be divided 50/50 above and below American Falls Dam to the extent practical.

BE IT FURTHER RESOLVED that remainder of the 5-year pilot program shall be according to the terms and conditions laid out in the Board's January 27, 2012 resolution authorizing and funding the 5-year pilot program.

BE IT FURTHER RESOLVED that for 2012 the pilot managed recharge project will be limited to recharging natural flow to avoid placing additional pressure on storage supplies above Milner Dam.

BE IT FURTHER RESOLVED that the for 2012 IWRB will limit its recharge efforts to implementation of the ESPA CAMP managed recharge goal, nothing herein precludes privately funded recharge efforts consistent with Idaho law.

DATED this 16th day of March, 2012.

_____

TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST _____
BOB GRAHAM, Secretary

Memorandum

To: Idaho Water Resource Board

From: Rich Rigby, Senior Advisor

Date: March 2, 2012

Re: Proposed Cost Sharing with the American Falls Reservoir District No. 2—Mile Post 31 Recharge Site

Action Item: Approve Expenditure of Funds for Engineering Design of Turnout

We are pleased to report that American Falls Reservoir District No. 2 has proposed improvements on the Mile Post 31 recharge site that will increase recharge capacity at the site and allow tests to confirm the site's potential to accomplish significant recharge.

Currently there is a six inch turnout at the site which was installed to test the recharge capacity of the site. Those tests have proven that the site can readily accommodate all the water that can be delivered through the turnout. The capacity of the turnout is about seven cfs. Diversions are not possible until the canal is diverting about 1,000 cfs due to the elevation of the turnout on the canal bank. In the 2011 irrigation season the canal flow did not exceed 1,000 cfs until May 5.

The District has some 72 inch diameter steel epoxy coated pipe remaining from a siphon replacement project that it is willing to donate for a high capacity turnout. The turnout would require excavation of the canal, a sluice gate to regulate flows into the pipe, and concrete work. The new turnout would be located at or near the bottom of the canal prism to enable diversions at any time water is in the canal. The District is willing to contribute the cost of the pipe and perform the installation at its expense if the Board will cover the costs of design and other materials. District Manager Lynn Harmon has estimated the value of the Districts contribution to be in the range of $35,000 and the Board's share to be in the range of $45,000. These are relatively rough estimates that will need to be confirmed.

We proposed jump starting the process by funding a design and a cost estimate. Funding would come from the Secondary Aquifer Planning, Management, and Implementation fund. The District is in the process of securing a bid for the design work which should be available at your upcoming meeting. The total cost should be relatively low.

It is appropriate to question whether the engineering design work should be delayed until the recharge report being undertaken by the Idaho Water Resources Research Institute, to identify high priority recharge locations, is complete. We are of the view that the Mile Post 31 site is valuable for a variety of reasons:

- Aquifer retention time is equal to or greater than any available recharge site on the plain.
- The Board has secured a right of way to the infiltration area from the Bureau of Land Management that runs to the year 2029.
- Recharge provides significant benefits to the springs in the Kimberly to King Hill Reaches of the Snake River.
- Recharge provides significant long term benefits to the Snake River above American Falls Dam.

We have prepared the attached resolution for your consideration and recommend its adoption.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE EASTERN SNAKE PLAIN AQUIFER MANAGED RECHARGE PILOT PROGRAM MILE POST 31 RECHARGE SITE	)))))	A RESOLUTION AUTHORIZING THE EXPENDITURE OF FUNDS

WHEREAS, By letter dated February 7, 2012, the American Falls Reservoir District No. 2 (AFRD2) requested to partner with the Board to develop the Mile Post 31 Recharge Site; and

WHEREAS, recharge at Mile Post 31 would create widespread and long term benefits to the Eastern Snake Plain Aquifer and the Snake River; and

WHEREAS, managed aquifer recharge is a major water management strategy spelled out in the Eastern Snake Plain Aquifer Comprehensive Aquifer Management Plan (ESPA CAMP).

NOW THEREFORE BE IT RESOLVED that the IWRB approves the expenditure of funds from the Secondary Aquifer Planning, Management, and Implementation Fund (Secondary Fund) for engineering design and cost estimates for the expansion of recharge capacity at Mile Post 31 in line with the proposal addressed in the AFRD2's February 7, 2012 letter, in the amount not to exceed _____.

BE IT FURTHER RESOLVED that AFRD2 shall submit a cost estimate prepared by a licensed professional engineer on which to base future expenditure in the Mile Post 31 Recharge Site.

BE IT THEREFORE FURTHER RESOLVED that additional work at the Mile Post 31 site involving Board funds will require additional approvals by the Board.

DATED this 16th day of March, 2012.

_____
TERRY T. UHLING, Chairman
Idaho Water Resource Board

ATTEST _____
BOB GRAHAM, Secretary

American Falls Reservoir District No. 2
409 North Apple Street
Shoshone, Idaho 83352
Tel. (208) 886-2331 Fax (208) 886-2010

February 7, 2012

Rich Rigby
Idaho Department of Water Resources
322 East Front Street
P. O. Box 83720
Boise, Idaho 83720-0098

RE: Recharge / Liability

Dear Mr. Rigby,

American Falls Reservoir District No. 2 has been an active participant in recharge activity the last several years. We would like to help the Water Resource Board develop the mile post 31 site located on the Milner-Gooding Canal so that additional recharge could take place when water is available. If the State has funds to cover the cost of the engineering, installation of a large sluice gate and the concrete we could supply the pipe and perform the installation. Work could not start until the fall of 2012 due to time constraints for this spring. I am still working on the cost estimates but I think $35,000 would cover the above costs. We have a 72" steel epoxy coated pipe that could be installed. The cost for installation of the pipe, a measurement structure and labor is approximately 44,000.00 for AFRD# 2 portions of a cost share.

The large pipe would handle enough water to be able to get a true evaluation of just how much water can be infiltrated into the ground. The pipe installation could be placed so that large amounts of water could be diverted without the need for a check structure in the canal.

There are some concerns however held by the AFRD# 2 Board of Directors with potential liability from pollution of the aquifer. We feel that since AFRD# 2 doesn't own the recharge site and that the water that normally is used for recharge is a portion of the Water Resource Boards recharge right that the State should step up to cover any potential liability that might occur. We have expressed this concern previously in meetings with representatives of IDWR. In spite of those concerns we have proceeded with recharge

activity in an effort to help the State of Idaho stabilize the ESPA levels. Now we feel it's up to someone else to take on the liability.

The Board has expressed that they would like for the next recharge contract to have language that would hold them harmless from this liability issue. I hope that this issue can be negotiated out so that we can proceed with recharge activity.

Sincerely,

Ellis Gooch, President American Falls
Reservoir District No. 2 Board of Directors

Carl Pendleton, Chairman, Big Wood Canal Co.
Board of Directors

cc: Idaho Water Resource Board

Memorandum

To: Idaho Water Resource Board

From: Helen Harrington

Date: March 1, 2012

Re: Recommended Treasure Valley Comprehensive Aquifer Management Plan (TV CAMP) Submission and Unresolved Issue

Action Item

Consider attached resolution accepting the Recommended Treasure Valley Comprehensive Aquifer Management submitted by the Treasure Valley CAMP Advisory Committee.

Background

The TV CAMP Advisory Committee has been meeting since April 2010 to assist the IWRB in developing recommendations for a TV CAMP. The Committee has found consensus on all elements of the recommended plan being submitted today.

Remaining Issue

The Committee has not come to agreement on action item on Page 28, titled Municipal Water Rights Act of 1996. Two optional texts have been suggested for inclusion. The Committee does not appear to be able to resolve the disagreement. Therefore, staff suggests that the IWRB consider the two options offered and take the issue under advisement. This issue will be discussed at the March 15 work session and will allow for the interested Advisory Committee members to discuss the proposed language with the Board. The optional language suggested:

- The Municipal Water Rights Act of 1996 is an essential tool to meeting the goals of the TV CAMP. The reasonably anticipated future needs (RAFN) provision in the Act is a tool available to municipal water providers to secure water rights for growing municipal water demands based on anticipated future needs. The Act sets out a process through which municipal water providers can apply for and perfect water rights which may be needed over a longer time period than traditionally used for perfecting water rights.

  All municipal providers should be encouraged to develop reasonably anticipated future water supply needs over the same time horizon as the Treasure Valley CAMP. Developing a basin-wide projection of municipal water supply needs over a common planning timeframe will enable better planning and create opportunities to avoid potential conflicts in advance. Municipalities should bear the cost of this planning effort but in return the Department must allocate resources to process RAFN applications in a timely manner that result from this effort.

- The Municipal Water Rights Act of 1996 is a tool available to municipal water providers to secure water rights for growing municipal water demands based on anticipated future needs.

Next Steps

After acceptance of the Recommended TV CAMP from the Advisory Committee, the Board will need to make a decision on the language which will be incorporated into the Board's draft TV CAMP. Staff recommends that the Recommended Plan be assigned to the Water Resource Planning Committee for recommendations on language to include in the Board's Draft Plan. The draft plan will then be issued for public comment, hold public hearings, and consider final revisions prior to considering adopting the final Plan.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF THE RECOMMENDED TREASURE VALLEY AQUIFER COMPREHENSIVE AQUIFER MANAGEMENT PLAN	))))	RESOLUTION

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 has undertaken the development of a comprehensive aquifer management plan for the Treasure Valley; and

WHEREAS, the Board established a Treasure Valley Comprehensive Aquifer Management Plan Advisory Committee (Advisory Committee) to assist in developing recommendations for a comprehensive aquifer management plan; and

WHEREAS, the Advisory Committee has recommended a Treasure Valley Comprehensive Aquifer Management Plan to the Board; and

NOW, THEREFORE, BE IT RESOLVED that the Board hereby accepts the attached Recommended Treasure Valley Comprehensive Aquifer Management Plan for consideration and public comment; and

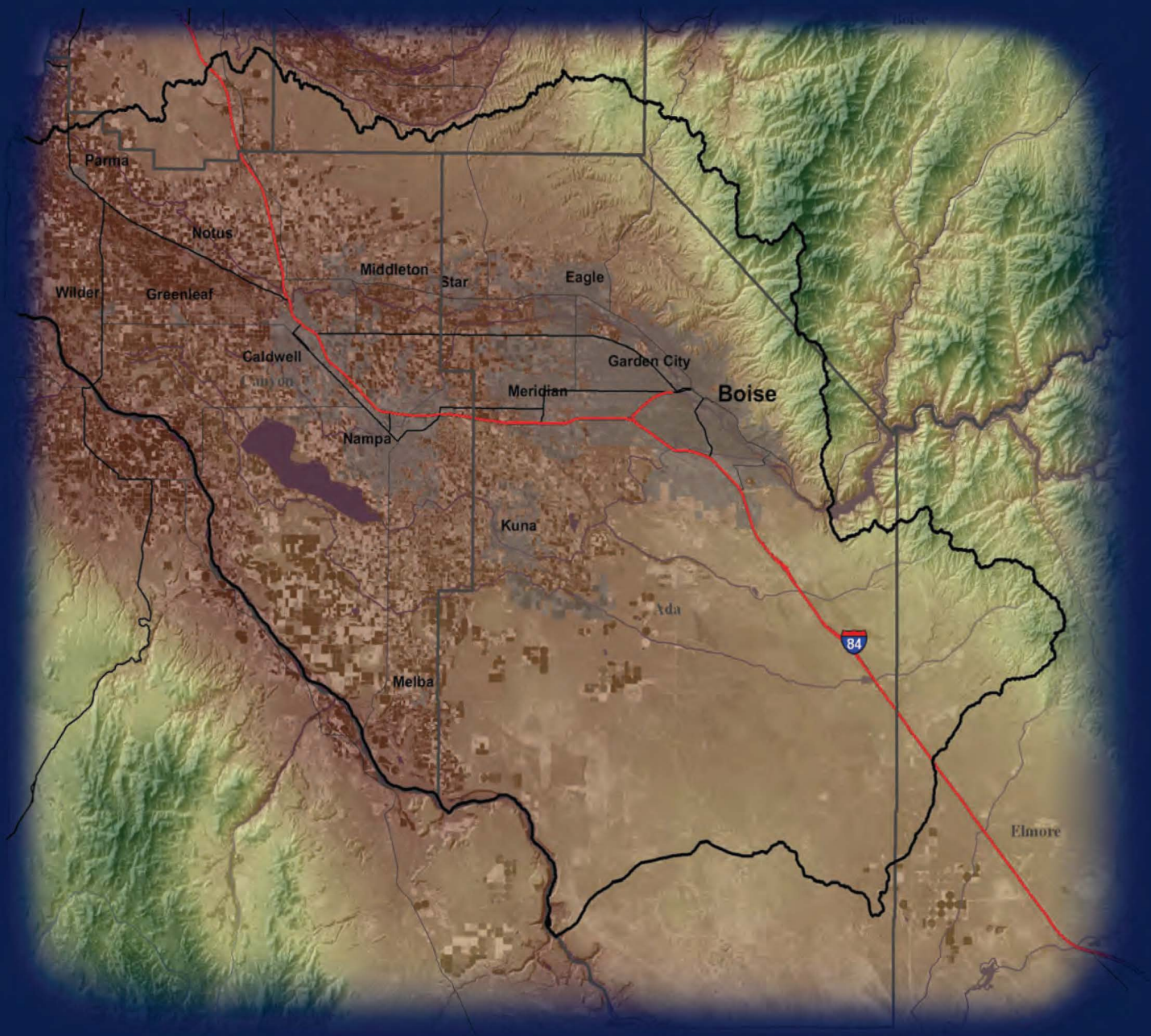
NOW, THEREFORE, BE IT FURTHER RESOLVED that the Board will continue to seek substantial public participation and comment throughout the planning process as required under Idaho Code 42-1734A prior to adoption of a final comprehensive aquifer management plan.

DATED this 16th day of March, 2012.

_____
Terry Uhling , Chairman
Idaho Water Resource Board

ATTEST _____
Bob Graham, Secretary

Treasure Valley
Comprehensive Aquifer Management Plan



IDAHO WATER RESOURCE BOARD

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*

This document presents a Comprehensive Aquifer Management Plan (Plan) for the Treasure Valley. At the direction of the Idaho Water Resource Board (IWRB), the Plan was developed collaboratively by the Treasure Valley Advisory Committee (Committee). This Plan in no way modifies or diminishes existing state water law, including the prior appropriation doctrine, or the power and duties of the Director of the Idaho Department of Water Resources (IDWR).

Treasure Valley Comprehensive Aquifer Management Plan

Figures

Tables

Executive Summary

The Treasure Valley Comprehensive Aquifer Management Plan (Plan) provides a framework for long-range management of the aquifer. The Plan describes the overarching goals and actions that can be implemented to successfully accomplish the stated goals for local residents and the state of Idaho and to promote productive regional cooperation to benefit the area over the next 50 years.

The Treasure Valley is in southwestern Idaho. The Treasure Valley Aquifer System (TVAS) is a valuable and significant resource to the region and the state of Idaho. Lying primarily under Ada and Boise Counties, the aquifer is a key part of the regional water resources that make the area attractive for economic growth and an appealing place to live and work.

.

At the direction of the Idaho Water Resource Board (IWRB) and Idaho Legislature, the Plan is founded on recommendations developed collaboratively by the Treasure Valley Comprehensive Aquifer Management Plan (CAMP) Advisory Committee (Committee). This Plan will be a component of the State Water Plan, which guides the development, use, conservation, and management of water resources in Idaho.

The IWRB recognizes that the long-term management of the water resources of the Treasure Valley must be acceptable to the local community and take into account the social and economic interests of the residents and public interest. The long-range plan must also be consistent with the legal constraints and laws of Idaho.

The Committee developed the following vision for the Plan:

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, and***
- ***A commitment to ongoing research, data collection, and analysis***

The Treasure Valley CAMP Committee identified several challenges facing the region over the next 50 years (these actions have not been ranked or placed in order of priority):

- Predicted future demand cannot be met solely by readily available ground water supplies in some areas
- Uncertainty for meeting existing and future needs utilizing the existing water supply infrastructure will increase as annual precipitation variability increases
- Natural flow in the summer and fall is predicted to be reduced
- Currently there is no Treasure Valley drought plan
- Ability of water infrastructure to meet existing and future needs
- Management of interconnected sources
- Meeting water needs and uses associated with future development patterns in a manner that minimizes conflict
- Maintaining quality of life
- Meeting environmental needs
- Meeting water supply needs
- Lack of an organizational structure for ground-water users to collectively plan for and respond to future challenges
- Advanced technical capabilities are needed to meet increasingly complex water management challenges
- Existing water management tools that appear to be under-utilized could help provide solutions to meeting water needs in the future

Guided by the CAMP goals and vision, the Committee identified several recommended actions for addressing the challenges discussed in this plan. Understandably, these actions will need to be more fully refined during the implementation phase, but the Plan, by adopting a mix of strategies, represents a balanced approach to addressing the future water challenges in the Treasure Valley (these actions have not been ranked or placed in order of priority):

- Enhance water data collection, analysis, and planning
- Investigate and support additional storage and supply
- Reduce demand through water conservation taking into consideration the benefits of incidental recharge
- Preserve and protect water delivery infrastructure
- Use tools associated with the Municipal Water Rights Act of 1996 (placeholder)
- Encourage the use of water marketing to address the conversion of water use throughout the valley

Management of the Treasure Valley Aquifer affects numerous stakeholders. Effective implementation of the Plan will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities. The IWRB may continue to convene the Committee to guide and make recommendations concerning the implementation of management strategies and review of goals and objectives.

1. Introduction

In 2008, the Idaho Legislature passed House Bills 428 and 644, establishing the statewide comprehensive aquifer planning and management effort and creating a fund to support the effort. The Idaho Water Resource Board (IWRB) and the Idaho Department of Water Resources (IDWR) initiated work in the Treasure Valley to establish a framework and path forward that will lead to sustainable water supplies, optimum use of the aquifer, and development of strategies to minimize potential future conflicts.

This effort was conducted under the leadership of the IWRB. The IWRB is the constitutionally established agency responsible for formulating and implementing the State Water Plan for optimum development of the water resources in the public interest. This Plan is a component of the State Water Plan, which guides the development, use, conservation, and management of water resources in Idaho. The specific goals of the statewide Comprehensive Aquifer Management Plan (CAMP) program are to:

- Provide reliable sources of water, projecting 50 years into the future
- Develop strategies to avoid conflicts over water resources
- Prioritize future investments in water

The IWRB recognizes that the long-term management of the water resources of the Treasure Valley must be acceptable to the local community and take into account the social and economic interests of the residents and public interest. The long-range plan must also be consistent with the legal constraints and laws of Idaho. The IWRB appointed an Advisory Committee (Committee) to consider these interests and develop recommendations for this Plan. For a list of Committee members see Appendix 2.

As the Committee progressed in their work, the members built on the CAMP goals and developed a unanimously supported vision for the Treasure Valley CAMP.

This Plan and the recommended actions described are guided by this vision:

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, and***
- ***A commitment to ongoing research, data collection, and analysis***

2. Background and Current Condition

The Treasure Valley water system is a complex system of dynamic hydrologic interconnection. The connection between these waters is a critical element in the location and availability of water for the needs of the Treasure Valley. Water used in one location will likely be the supply for a different water need elsewhere in the basin. Although comprehensive studies have been undertaken, and continue today, the full extent of when, how, and where the ground and surface waters interact is not fully understood. The contribution of surface water to recharge of the aquifer system and the importance of aquifer discharge to drains and the rivers does, however, require that any discussion of the Treasure Valley Aquifer System (TVAS) will inevitably be a discussion about both ground and surface water.

Hydrology and Water Supply

Most of the surface water used in the Treasure Valley originates as snow in the higher elevations of the upper Boise basin where precipitation can be as high as 60 inches annually. This upper basin supplies an estimated 90 percent of the water for the Treasure Valley. The snowpack is important to the Boise River as the March-July runoff season provides 77 percent of the annual stream flow at the Boise River near the Boise gaging station while only 23 percent of the natural flow occurs during the August-February season. The upper Boise basin is approximately 2,650 square miles and consists of four major tributaries, including the North, Middle, and South Forks of the Boise River, and Mores Creek. From Lucky Peak Dam, the lower Boise River flows about 64 (river) miles northwestward through the Treasure Valley to its confluence with the Snake River.

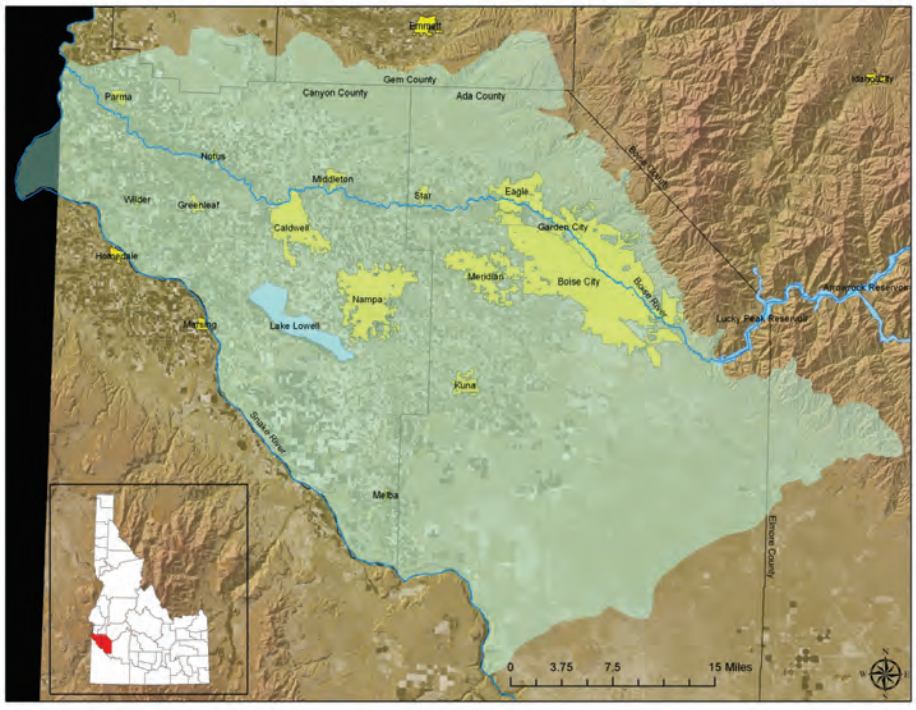


Figure 1. Map of the Treasure Valley Study Area (green-shaded area)

Hydrogeology

The TVAS underlies the lower Boise basin in southwestern Idaho (Figure 1). The TVAS extends downstream from Lucky Peak Dam to the confluence with the Snake River and serves as the primary source of drinking water for the communities and residents within the Treasure Valley. Approximately 95 percent of the valley's drinking water is pumped from the TVAS.

The TVAS can be conceptualized as a complex system of shallow, intermediate, and deep aquifers (Figure 2). The depths and thicknesses of the aquifers vary spatially and are controlled by geologic faulting, topography, and local land use characteristics (e.g., flood irrigation). The hydraulic communication between the various aquifers varies throughout the Treasure Valley adding to the complexity. Hydraulic connections to aquifers underlying areas to the north (Boise foothills to the Payette River) and to the east (Mountain Home Plateau) are currently not fully understood.

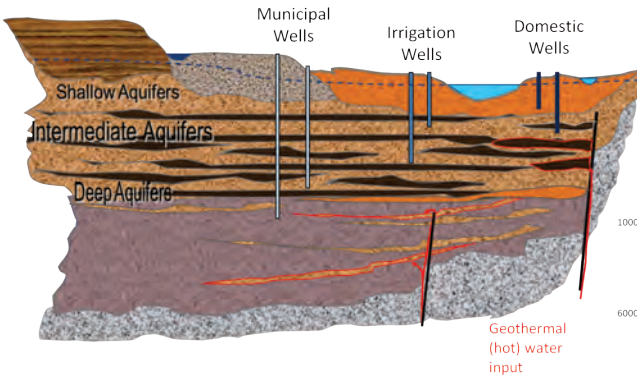


Figure 2. Conceptual Schematic of the Treasure Valley Hydrogeology

The Aquifer system in the Treasure Valley consists of:

- Shallow aquifers – These aquifers supply water to rural domestic and some irrigation wells. Shallow aquifers are generally in direct hydraulic communication with surface water features and form localized flow systems with the nearest surface water body. The shallow aquifers are generally unconfined (the water level represents the top of the saturated zone), and water levels are typically controlled by topography (e.g., the elevations of canals or drains).
- Intermediate aquifers – These aquifers supply water for domestic, irrigation, and municipal uses. The hydraulic communication between the intermediate aquifers and the surface water features of the valley is unknown.
- Deep aquifers – Municipal, industrial, and some irrigation wells typically draw water from deeper aquifers. The hydraulic communication between the deeper aquifers and the surface water features of the valley is limited due to the depths below land surface where the deeper aquifers are found. The deeper aquifers are generally confined (water levels rising above the depth of the water bearing zone), and flowing artesian wells exist within the Treasure Valley. The hydrology of the deeper aquifers is not fully understood.

Ground Water Flow Direction and Water Levels

The ground water flow direction in the TVAS is generally east to west and follows the course of the Boise River. In the southern portion of the TVAS, ground water flows to the south and discharges into the Snake River. Locally, ground water flow

directions are dependent on the location (spatially) within the valley.

Water level trends are a good indication of a stable storage of water in an aquifer system. Rising water levels indicate an increase in water stored, and declining water levels indicate a reduction in water stored. Stable water levels generally indicate an aquifer storage that is in equilibrium.

In the early to mid 1900s, water levels in the shallow aquifer rose significantly because of the development of the valley's irrigation network and continued to rise until the aquifer system eventually reached equilibrium with the drains and river, as indicated by stable water levels. In general, water levels in the shallow aquifer system have remained stable and are controlled by the operation and elevation of the surface water features. Water levels in the intermediate and deep aquifers also appear relatively stable, but some areas of water level decline have been identified in the valley, particularly in the southeast Boise and Lake Lowell vicinities (Petrich and Urban, 2004).

There are existing mathematical models of the Treasure Valley aquifer of various ages and scopes; however they are not adequate to address aquifer management needs.

TVAS Ground Water Budget

The annual ground water budget for the TVAS varies from year to year (Table 1). For illustration purposes, estimates for water year 2000 are used to show the components of the annual water budget for the TVAS because total precipitation and temperature during the 2000 water year were near normal.

The shallow aquifers of the TVAS are generally in direct hydraulic communication with the Boise River and to a lesser extent the Snake River throughout most of the Treasure Valley. The aquifer discharges directly to the rivers and the ground water drainage network constructed in the Treasure Valley to drain shallow ground water from low-lying areas. It is estimated that over 80 percent of the TVAS total discharge enters the rivers and the drain network. Some of the drain water is also re-diverted and used for irrigation by

Table 1. Summary of TVAS Ground Water Budget (modified from Urban, 2004).

Sources of Recharge and Discharge	Estimated Recharge and Discharge for 2000	
	(acre-feet)	(% of total)
Recharge		
Canal seepage	521,500	50
Flood irrigation	404,400	35
Other sources	172,800	15
Total Recharge	**1,098,700**	**100**
Discharge		
Discharge to rivers and drains	881,600	83
Pumping from wells	175,000	17
Total Discharge	**1,056,600**	**100**

downstream users. The amount of water leaving the TVAS through discharge to the drains, tributaries, or the rivers in 2000 was over 881,000 acre-feet (Urban, 2004).

Surface Water Flows

Unregulated natural flow volumes in the Boise River basin have varied from a low of 676,000 acre-feet annually to a high of 3.6 million acre-feet (MAF) annually. The average unregulated natural flow (1929 – 2010) is 1.9 MAF annually. These volumes were calculated at Lucky Peak and are published by the U.S. Bureau of Reclamation (USBOR). On average 1.6 MAF annually are diverted for irrigation and serves as a significant source of recharge to the TVAS (BOR, 2007). Table 2 displays a summary of historical Boise River (Nov 1 – Oct 31) runoff (at Lucky Peak), outflow (near Parma), and reservoir storage on November 1. Figure 3 shows the variation of runoff (at Lucky Peak) and November 1 storage from 1929 to 2010.

The average annual basin outflow (1972 – 2010) is 1.1 MAF, with outflow volumes varying from 334,000 acre-feet annually to 2.8 MAF annually. The basin outflow is measured at the Boise River near Parma gage, which is operated by the U.S. Geological Survey (USGS) in cooperation with IDWR.

Table 2. Summary of Historical Boise River Nov. 1 – Oct. 31 Runoff and Outflow (IDWR, 2011)

	Boise River Runoff (at Lucky Peak)		Boise River Outflow (near Parma)		November 1 Storage	
	Acre-Feet	Years	Acre-Feet	Years	Acre-Feet	Years
Long-term average	1,929,000	1929-2010	1,120,000	1972-2010	390,000	1956-2010
Maximum	3,673,000	1965	2,820,000	1983	665,000	1965
Minimum	676,000	1977	334,000	1992	65,000	1992

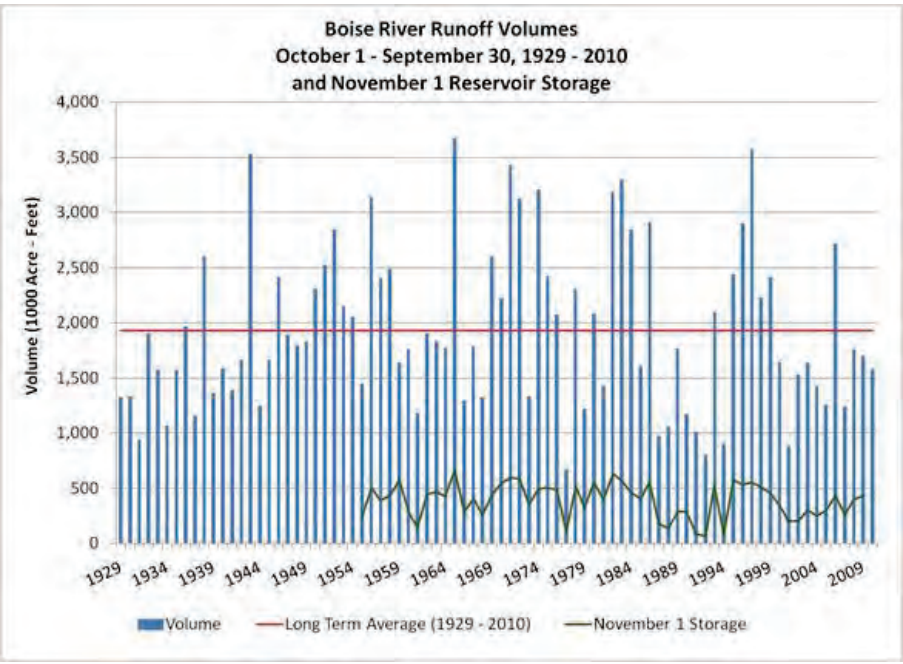


Figure 3. Boise River Annual Unregulated Natural Flow Volumes 1929-2010 and November 1 Reservoir Storage Volumes (U.S. Bureau of Reclamation Hydromet, 2011)

The remaining storage water left in the reservoirs (Arrowrock, Anderson, and Lucky Peak) at the end of an irrigation season is highly dependent on snowfall and irrigation demand for that season. The average reservoir storage on November 1 (1956 – 2010) is 390,000 acre-feet and has varied from a low of 65,000 acre-feet to a high of 665,000 acre-feet. The availability of this "carry over" water reduces the risk of a shortage of irrigation water in the succeeding year. Wise and efficient use of water from year to year helps to ensure better carryover storage for the next year, especially during consecutive dry years.

The hydrograph below (Figure 4) summarizes the historical data from the Boise River at Glenwood Bridge for the period of record (1982 – 2010). The U.S. Army Corps of Engineers (USACE) utilizes the Boise River gage at Glenwood Bridge to monitor and evaluate flood impacts on the river. Currently, flood stage as measured at the Glenwood Bridge gage is 10.01 feet (approximately 7,000 cfs). The maximum discharge since the completion of the reservoir system was 9,840 cfs on June 13, 1983 (USGS, 2011). Typical winter flow out of Lucky Peak (November – March) is approximately 250 cfs. Typical flow at Glenwood after the spring runoff and during the irrigation season (July – September) is approximately 1,000 cfs.

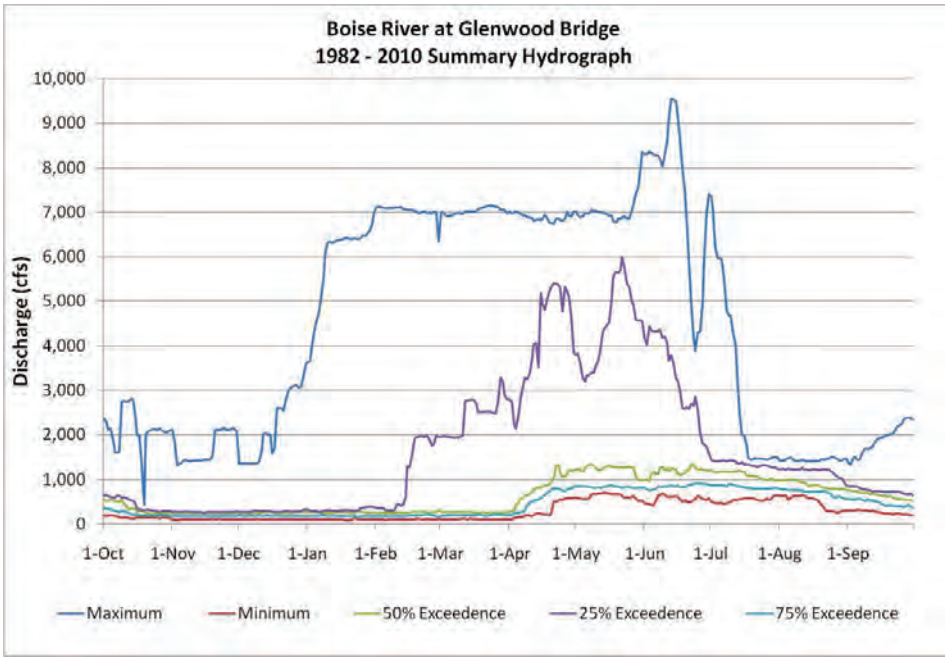


Figure 4. Summary Hydrograph of Boise River Flow from 1982 through 2010 at the Glenwood Bridge

Note: 25% exceedence means that for the specified day of the year the flow was greater than this value 25% of the time for the same day from 1982 through 2010. 50% exceedence is the median and means that for the specified day of the year the flow was greater than this value for 50% of the time for the same day from 1982 through 2010. 75% exceedence means that for the specified day of the year the flow was greater than this value 75% of the time for same day from 1982 through 2010.

During the irrigation season, the Boise River from Lucky Peak Dam to Middleton does not have enough natural flow to meet irrigation demands. Irrigators rely on storage water to supplement the limited natural flow supplies. Below Middleton, there are often enough return flows from drains or ground water seepage into the river to satisfy existing irrigation demands. On average, there are approximately 310,000 acre-feet per year of gain in flow between the Middleton and Parma gages. These gains, 310,000 acre-feet, make up 28 percent of the 1,112,000 acre-feet of outflow from the basin near Parma. The return flows that increase river flows downstream are important and help to provide the necessary water and elevation head to deliver water in the lower Treasure Valley. These base flows are an important part to efficiently deliver irrigation water in the Treasure Valley.

Climate Variability

Climate variability adds another element of uncertainty to planning for future water needs. The IWRB contracted with Boise State University to evaluate potential changes to water supply and demand that might result from climate variability on a watershed scale. There is a large range of uncertainty to climate model predictions; however, general trends are indicated.

Multiple studies of climate change in the Pacific Northwest and northern Rockies estimate increases in mean monthly temperatures of 0.48 to 3.05 (Celsius) for the 2040 irrigation season compared to the 1971 – 2010 temperature average (BOR, 2008, 2011).

Regional studies for the northwest United States indicate greater climate variability conditions (floods and droughts) will be more severe and change the flow regime on which current hydrologic operating procedures are based. For example, temperature increases would allow more winter precipitation to fall as rain instead of snow, alter the timing of snowmelt, and result in earlier snow melt. On average, peak flows in the Boise River basin may be higher in the future than current historic high flows. Timing of spring runoff is complex and a function of climatic indexes (e.g., El Niño-southern oscillation, Pacific decadal oscillation), forest fires, and climatic change. Analysis of stream flow measurements shows peaks are occurring a few weeks earlier as also predicted by the climate change models. Peak flow and trends are also influenced by phenomenon such as El Nino and La Nina and other longer term climatic cycles. Other impacts of snowpack melting earlier in the summer are increased annual evapotranspiration and lower summer/base flows. Fall precipitation could occur more frequently as rain and less frequently as snow.

Climate change projections indicate the Boise River basin may experience wetter wet years and drier dry years. However because our water storage capacity in the basin is fixed, the increased water supplies during the wet years cannot be captured and held over for use during the dry years. Consequently, wet years do not offset dry years.

Drought

Drought is a significant concern for all Treasure Valley water interests. One major drought of the 20th century that affected the Treasure Valley extended from 1987 – 1992. During those six years, the Palmer Drought Severity Index (Figure 5) classified conditions as extreme drought for 28 of the 36 months that comprised the irrigation seasons in the Treasure Valley. The series of dry, hot summers made response more difficult than the drought of 1977 because, although 1977 set the record low flow for the upper Boise River, 1976 and 1978 had wet irrigation seasons, reducing the stress on water supply. The Boise reservoir system is designed to provide carryover storage to get through consecutive dry years. The most severe droughts are consecutive dry years that last for two to three or more years when annual runoff is below average and carryover storage is minimal because it has been used in previous dry years.

The Idaho Drought Plan (IDP) encourages local communities to plan and mitigate for future droughts. The IDP describes the authority counties and cities have to restrict water use and raise funds through ordinances, rules, regulations, proclamations, and short-term levies. It also authorizes the IDWR to take actions to provide for full use of the available water supply in accordance with valid rights for its use during shortages by increasing supervision of water distribution from adjudicated sources, increasing water-right enforcement for non-adjudicated sources, and defining procedures to expedite processing of applications for replacement water supplies.

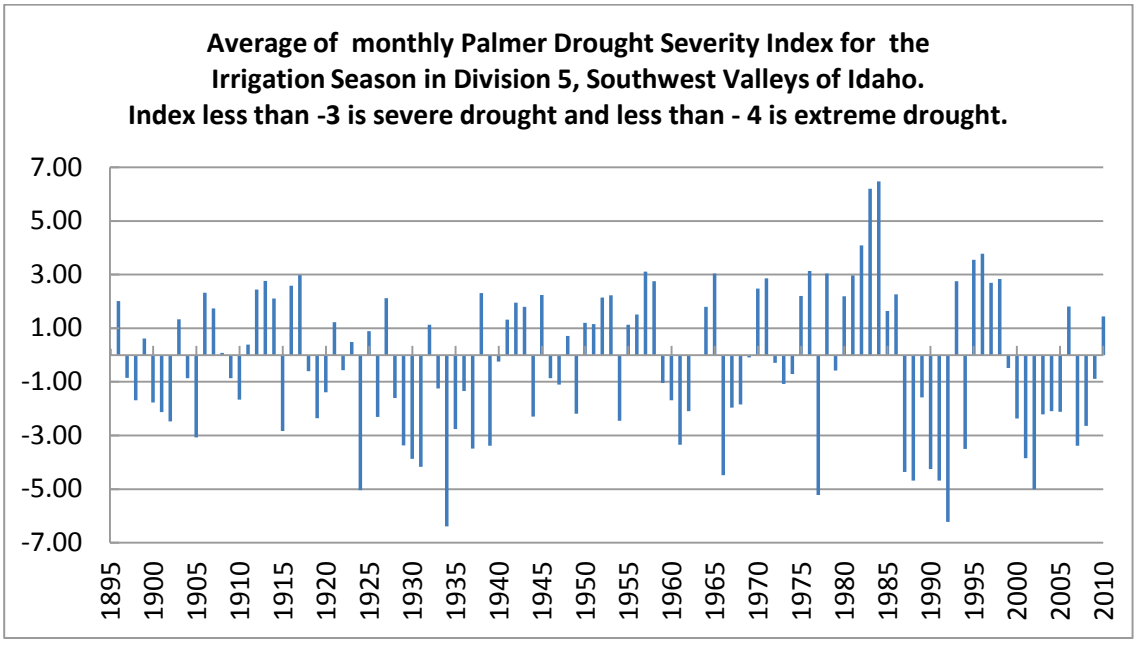


Figure 5. Historic Drought during the Irrigation Season in Southwest Valleys of Idaho. (NOAA and National Climate Data Center http://www.ncdc.noaa.gov/sotc/drought)

In conjunction with the IDWR's Drought Plan and Water Supply Committee, the Natural Resource Conservation Service (NRCS) compiles a monthly SWSI to illustrate the total seasonal water supply. NRCS uses 1.5 MAF as the threshold for when water supply shortages start to appear in the Treasure Valley. This is based on past years when shortages were realized by irrigation districts. For the period 1987 – 1992, 5 of the 6 years had shortages and below normal carryover storage (Figure 6).

Available records indicate that during drought years surface water irrigation is supplemented with ground water by as much as 300,000 acre-feet. This situation places additional stress on ground water supplies.

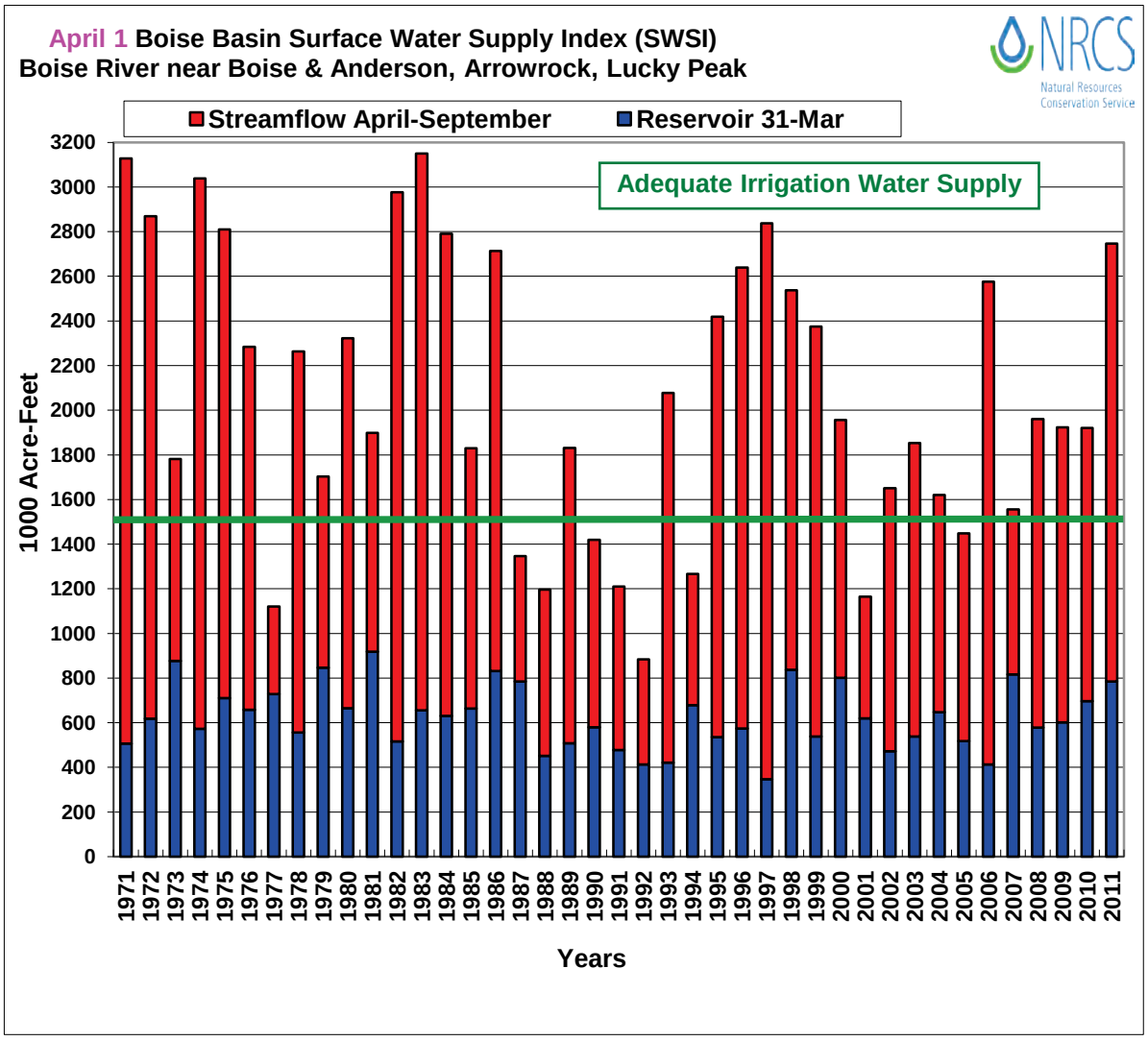


Figure 6. April 1 Boise Basin Surface Water Supply Index

Challenges Associated with Water Supply:

Predicted future demand cannot be met solely by readily available ground water supplies in some areas.

Ground water supplies are not infinite. There is potential for additional ground water development, however the Treasure Valley aquifer is not homogeneous. Characteristics vary locally and regionally (and by depth). This variation results in limited availability of ground water supplies to meet existing and future needs in some areas. Ground water supplies are especially limited in southeast Ada County and the Lake Lowell area. There are also concerns about ground water levels in the north foothills. (IDWR data was used.)

Uncertainty for meeting existing and future needs utilizing the existing water supply infrastructure will increase as annual precipitation variability increases.

Historical hydrological records may not be sufficient for forecasting future conditions because of increased variability. Water supply solutions may include better monitoring to improve flow predictions, which allow better planning in the short-term while planning for future longer-term needs in the valley.

Natural flow in the summer and fall is predicted to be reduced.

Reduced natural flows will result in less water available to fill natural flow water rights. This phenomenon results in increased use of stored water from the reservoirs leading to less reservoir carryover. Warmer temperatures during the growing season would increase water demand for all uses.

Currently there is no Treasure Valley drought plan.

Lack of a comprehensive regional response before the next drought will delay demand reduction actions needed to reduce the negative impacts of drought and increase the likelihood of conflict between water-right holders.

Distribution

Reservoir System

The irrigation water supply of the Treasure Valley relies upon a reservoir system capable of storing approximately 1,000,000 acre-feet of water (as shown in Table 3), which equals about one-half of the average annual inflow of the Boise River. Four reservoirs make up the reservoir system. Three of those reservoirs—Arrowrock, Anderson Ranch, and Lake Lowell—were constructed in the early to mid-1900s by the USBOR as part of the development of the Boise Project Board of Control (BPBC). A fourth reservoir, Lucky Peak, was constructed in 1957 by the USACE for flood control, irrigation, and other congressionally authorized purposes. Combined, these reservoirs provide water supplies for congressionally authorized purposes.

To meet irrigation demand, flows past Lucky Peak Dam average approximately 3,900 cfs during the irrigation season, which spans April through October. During periods of peak irrigation demand, flows past the dam are kept at about 4,500 cfs. Reservoir space is allocated to storage users according to terms set out in spaceholder contracts entered into between the various users and the Secretary of Interior through the USBOR. While the majority of the contracted reservoir space is used for irrigation storage, approximately 5,000 acre-feet in Anderson Ranch Reservoir is used to store water for municipal and industrial purposes.

Arrowrock, Anderson Ranch, and Lucky Peak are operated as a unified system for flood control and refill purposes. Flood control operations are governed by flood control rule curves developed by the USACE. Taking into account various hydrological data, the rule curves attempt to fix the amount of empty reservoir space needed to intercept and capture peak spring runoff flows in order to minimize the effects of flooding downstream. Presently, the flood control objective is to limit flood flows to 6,500 cfs at the Glenwood Bridge.

Table 3. Capacities of Federal Reservoirs in the Boise Basin (Source: USACE).

Reservoir	Elevation at Full Pool	Capacity (Acre-Feet)			
		Active	Inactive	Dead	Total
Lake Lowell	2531.2	159,400	--	--	159,400
Arrowrock	3216.0	272,200	--	--	272,200
Anderson Ranch	4196.0	413,100	37,000	24,900	475,000
Lucky Peak	3055.0	264,370	28,730	--	293,100

Note: Active capacity is space from which water can be released for specifics purposes. Inactive capacity is space from which water can be released but is normally retained for a specific purpose, for example, Anderson Ranch inactive space is reserved for power head. Dead capacity is space from which water cannot be released by gravity because it is below the elevation of the lowest outlet.

Operation of the reservoir system, with the exception of Lake Lowell, is coordinated between the USBOR, which operates Arrowrock and Anderson Ranch, and the USACE, which operates Lucky Peak. By agreement between the two federal agencies, the storage system is operated as a unified system to maximize the capabilities of the reservoirs. Reservoir operations are generally defined by three operating periods, which are based on climatological patterns, runoff, and irrigation demand as shown below in Figure 7.

During the maintenance period, the system is operated primarily for carry over and storage as allowed by flood control requirements; however, storage releases continue for municipal and industrial and stream flow maintenance uses. During the flood control and refill period, operation is adjusted continually based on runoff forecasts to provide space for flood control and to assure storage refill for water users, while releasing water necessary to satisfy irrigation demand. The drawdown period is operated for release of irrigation storage water. To the extent possible, water is typically stored as high in the system as possible, although storage accrues to accounts in order of priority. During the summer, Lucky Peak is held near full pool for recreation purposes and water is released from Arrowrock and Anderson Ranch Reservoirs to meet irrigation demand.

Lake Lowell is operated by the BPBC to store water and regulate water supplies for the lower end of the project. Lake Lowell is drawn down during the summer when irrigation demands exceed the capacity of the New York Canal.

Canals

An extensive distribution system carries water to 75 points of diversion and provides irrigation to 350,000 acres of land below Diversion Dam. Most large canals branch into sub-canals and laterals to distribute water throughout the valley. Irrigation districts and canal companies maintain their individual systems of delivery for their patrons. There are approximately 1,170 miles of major irrigation canals (see Figure 8).

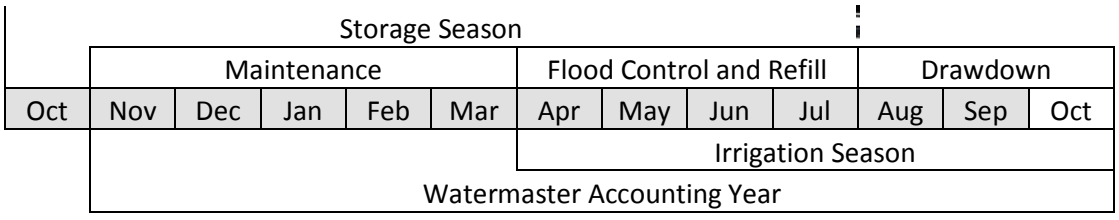


Figure 7. Operating Periods and Seasons (water year shown by shaded blocks) (Source: USBOR)

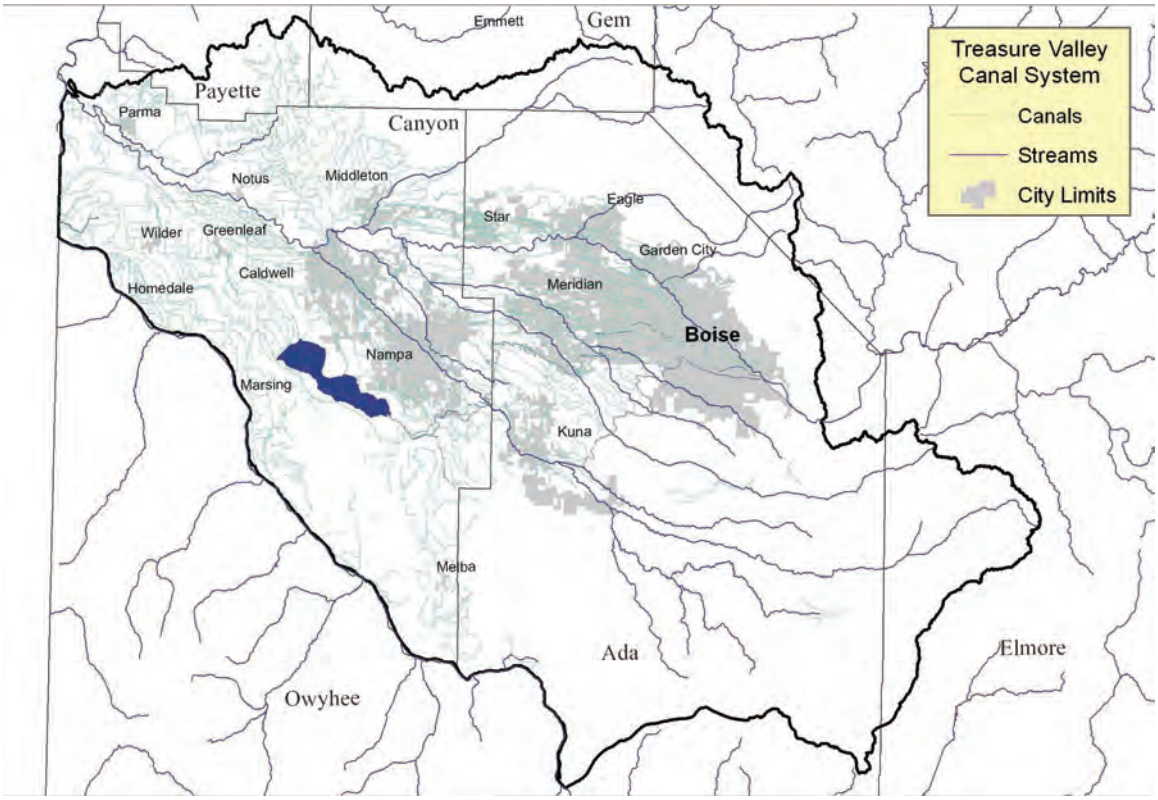


Figure 8. Treasure Valley Canal System

Drains

Approximately 195 miles of drains channel water out of low lying areas and 11 principle drain systems discharge into the Boise River. Most drains were constructed to drain ground water from shallow aquifers and reduce the incidence of water logged soils. Some of these drains were modified or expanded existing natural drainage systems. Some drains also serve as canals, providing additional irrigation water through re-diversion. Some drains flow year round because of ground water discharge. Ground water discharge to the drains will fluctuate due to water table changes. These fluctuations can be caused by a variety of reasons, including seasonal changes, ground water withdrawals, irrigation practices, recharge, drought, and other changes in the water budget. Studies are currently underway to better understand the drainage system and quantify seasonal and annual flows.

Challenges Associated with Distribution:

Ability of water infrastructure to meet existing and future needs

Protection of existing infrastructure of wells, canals, ditches, and collection systems that have existed for decades is needed to retain the regional benefits expected of it now and into the future. An additional challenge is the need to modernize existing infrastructure to optimize the beneficial use of water.

Management of interconnected sources

Surface water and ground water are hydraulically connected. This interconnection presents a challenge for future management of surface and ground water rights, which historically have been managed separately. Further complicating this challenge is the recognition that while we understand that a connection exists, our understanding of the timing, extent, and location of the interconnected sources is limited and needs further study in order to provide effective management.

Water Use and Needs

Ninety-five percent of the Treasure Valley water use falls into one of two major categories: domestic, commercial, municipal, and industrial use (DCMI), and irrigation. While not always included in water-use estimations (Figure 9), water is used to recharge the aquifer, support the river and tributary biological systems, and provide delivery head to convey irrigation water (including conveyance losses). Some municipal and industrial systems implement aquifer storage and recovery techniques to store treated water off peak and re-pump during summer demand. Water leaving the Valley passes through downstream hydropower plants that generate low-cost electricity used in the valley.

In the Treasure Valley, the principal source of water for DCMI is ground water. For DCMI, 94 percent of the water comes from ground water sources and 6 percent comes from surface water sources. For irrigation water, 3 percent of water comes from ground water sources and 97 percent comes from surface water sources. Large and small community systems, as well as individual wells, all provide water for domestic use in the Treasure Valley. Per Capita daily use is approximately 160 gallons (WRIME 2010, USGS 2005).

Individual homes that are not on a water supply system use ground water for drinking water, culinary uses, and irrigation. There are over 23,500 domestic wells in the Treasure Valley. This is a minimum number because there are domestic wells that have not been documented in IDWR records.

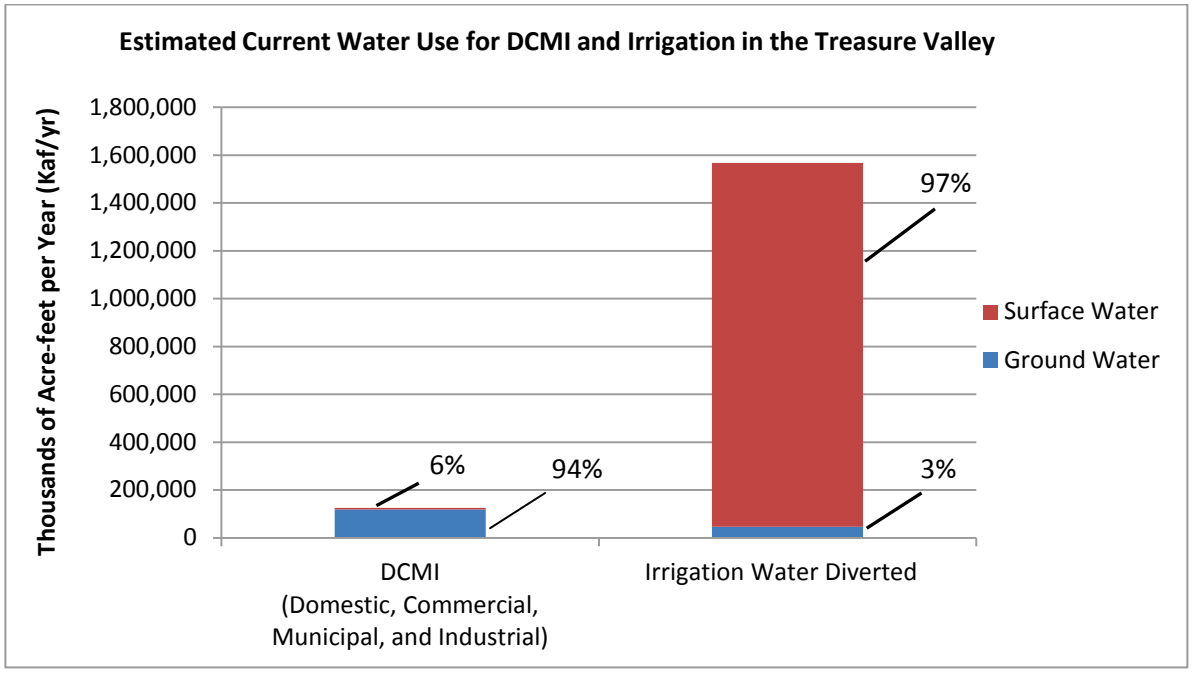


Figure 9. Estimated Current Water Use for DCMI and Irrigation in the Treasure Valley (Urban, 2004)

The single largest supplier of ground water is United Water Idaho, whose service area includes the City of Boise and part of Ada County. United Water is currently the only municipal supplier that also delivers treated surface water for DCMI uses. United Water serves a population of approximately 240,000. United Water produces about 45,000 acre-feet/year (32,000 acre-feet from ground water and 13,000 acre-feet from surface water) and regularly updates its water demand projections based on records of customer usage and modeling future growth. The other large suppliers are the Meridian Water Department (78,000 people served), City of Nampa (81,000 people served), and the City of Caldwell (46,000 people served). These three systems use ground water exclusively for supply.

While surface water is the primary source of water for irrigation, ground water is also a source for irrigation. The annual demand varies because some irrigators rely on ground water every year and some use it to supplement surface water. Weather conditions strongly influence irrigation demand and therefore the necessity of using ground water in a particular year.

The IDWR records show there are almost 30,000 total wells in the Treasure Valley. Ground water quality in the Treasure Valley Shallow and Treasure Valley Deep hydrogeologic subareas is regularly determined from data collected through the Statewide Ambient Ground Water Quality Monitoring Program. The statewide program is administered by the IDWR in cooperation with the USGS. The Treasure Valley Shallow and Treasure Valley Deep subareas are located primarily in Ada and Canyon Counties and generally correspond to the Treasure Valley CAMP study area. USGS in cooperation with the IDEQ has performed a comprehensive survey of existing wells in the Treasure Valley CAMP study area from 1992 to 2000.

Water Quality

Water quality is an important characteristic in meeting future water needs in the Treasure Valley. Ground water in the TVAS is generally of good quality for drinking and other uses. Surface water quality is variable and has been impacted by both natural and anthropogenic sources. Public drinking water systems are required to monitor their water supply for compliance with drinking water regulations and report the results to their users. Individual private wells generally do not have this requirement. Overall, the water quality throughout the system could constrain the availability of water supplies to meet current and future water needs if the water quality is degraded.

The IDWR has statutory authority for statewide administration of the rules regarding well construction, licensing of drillers, and proper abandonment of wells in Idaho. Well construction standards are designed to protect the quality of water in the aquifer. Additionally, the IDEQ administers the Idaho Wellhead Protection Program. The purpose of this program is to prevent the contamination of ground water that is used for drinking water. The Idaho Wellhead Protection Program is voluntary for local government and water purveyors to implement.

Degraded water quality can impact both supply as well as significantly increase costs for ground water providers and surface water users.

Fisheries and Biological Flows

Native coldwater species, including trout and whitefish, inhabit the middle and upper reaches of the Boise River from Lucky Peak Dam to Star. Winter stream flows below Lucky Peak Dam are the largest constraint on fish populations. Prior to the 1990s, winter flows were often 150 cfs or lower, providing only marginal overwinter habitat for wild trout and other sportfish.

The USBOR holds 152,300 acre-feet of un-contracted storage space that it has used in consultation with the IDFG to provide flows in the Boise River below Lucky Peak Dam during the non-irrigation season. Storage releases have increased typical winter flows to 240 cfs, which requires approximately 86,000 acre-feet of storage for about 180 days. During drought periods, these flows have been reduced to avoid exhausting the winter storage supply. Since winter flows increased in the mid-1990s, wild trout populations have increased 17-fold, with an estimated 2,000 fish per mile in some reaches.

The Boise River is generally a gaining reach from Star to its confluence with the Snake River and therefore has good stream flows, but water quality conditions can only seasonally support a cold-water fishery. This section of river supports a fair fishery for introduced sport fish, including largemouth bass, smallmouth bass, and channel catfish. The Lake Lowell fishery consists primarily of largemouth bass, smallmouth bass, yellow perch, black crappie, bullhead, bluegill, and channel catfish.

Some tributaries to the lower Boise were channelized and capacities have changed, which may have altered aquatic and riparian habitat. Functional riparian zones and wetlands adjacent to the Boise River and tributaries provide ecological services, such as water quality protection, storm water control, aquifer recharge, and ground water protection and provide important habitat for fish and wildlife. Riparian and wetlands support a disproportionately large number of species and diversity relative to other areas.

Recreation and Aesthetic Values

The Boise River contributes greatly to the quality of life in the Treasure Valley and is partly responsible for the growth in the area. Cultural attractions include a string of city parks and greenbelt trails, undeveloped areas within an urban setting, and sportsman's access areas. Natural attractions along the river range from basalt cliffs to a gallery of cottonwood forests and an extensive riparian zone.

There are water recreation opportunities available from the upper reaches of the Boise basin, on each of the reservoirs, and on the Boise River below Lucky Peak.

Boaters, fisherman, and waterfowl hunters access the lower Boise River from Lucky Peak Dam to the confluence with the Snake River. Floating the five-mile reach from Barber Dam to the center of Boise is especially popular in the hot summer

months. Likewise, water skiing is popular on Lucky Peak Reservoir.

Hydropower

Hydropower is generated below the reservoirs at both federal and non-federal hydroelectric power plants. Federal reclamation power plants were constructed at Anderson Ranch Dam (40,000 kW) and Boise Diversion Dam (1,500 kW) as part of the development of the Boise project. These power plants provide power to operate project facilities and to help reduce power costs to Project farmers who depend on pumping water for irrigation. In 1988, four of the five irrigation districts who make up the BPBC completed construction of a power plant at Lucky Peak Dam (101,250 kW). Power generated at the facility is under contract with the Seattle Light Company. More recently in 2010, the BPBC completed construction of a hydropower facility on the Boise River at Arrowrock Dam (18,000 kW). Ada County owns a 3,700 kW power plant located at Barber Dam that is located just upstream of Boise. Upstream of the reservoir system the, Atlanta Power Company owns a 187 kW hydro power plant at Kirby Dam that supplies electricity to the town of Atlanta. A number of hydro plants have been constructed on canal drops in the Treasure Valley. Water leaving the Boise River basin enters the Snake River and continues to generate low-cost electricity at Idaho Power's Hells Canyon Complex for Idaho Power customers in the Treasure Valley.

Anticipated Changes in Water Use

Water demand in the Treasure Valley is expected to increase, although there is no consensus on the amount as demonstrated by three recent studies. The USBOR projected in a 2006 assessment level study that annual consumptive water demand in the Boise basin could increase by as much as 124, 085 acre-feet by 2050. WRIME's detailed 2010 demand study determined that annual demands for water in the Treasure Valley would increase by 82,880 acre-feet by 2060. The IDWR staff estimates that new water demands and shortfalls in water supply for existing demands could result in a need for new annual water supplies of approximately 170,000 acre-feet.

New water needs are difficult to quantify because there are areas of uncertainty, along with many variables that will determine actual water use and need. Changing land uses and social attitudes, as well as economic conditions, are all factors that will affect water use in the Treasure Valley.

Future water demand, driven mostly by increased population and economic growth, may be partially met by water conservation and land use and water use changes. Particularly difficult to anticipate is what proportion of growth will be on undeveloped land, rather than farm land, and what industrial or commercial uses might develop. Those changes are most likely to increase demand for water above current usage.

Challenges Associated with Water Use and Needs:

Meeting water needs and uses associated with future development patterns in a manner that minimizes conflict

The Treasure Valley population and economy has grown over the past decade and is expected to do so in the future. A recent study projects up to 650 KAF (WRIME 2010) could transition in use from agricultural to DCMI although a wide range of possible scenarios could occur.

The Treasure Valley must begin to evaluate how best to fulfill the anticipated new demand for water, actively planning for expansion, while encouraging conservation and protecting existing uses and benefits.

Maintaining quality of life

A challenge for the Treasure Valley will be to preserve the quality of life while being sensitive to the changing needs of the Treasure Valley into the future. Quality of life can include aesthetics, recreational needs, property values, socio-economic values, and influences economic development. Issues of quality of life are often subjective and water management decisions can affect quality of life in the Treasure Valley. How these issues influence water management will remain a challenge.

Meeting environmental needs

A challenge over the next 50 years will be to conserve and protect the water resources in the Treasure Valley's streams and aquifers and the riparian habitat it supports, while providing the water supplies for the current and future use. An incomplete understanding of the effect of water diversions for both consumptive and non-consumptive uses on the surface water and ground water leads to a difficulty in assessing their impact on the natural environment. Water managers and water users will be challenged to voluntarily and collaboratively provide functional habitats and mitigate the impacts of water diversions and discharges on the natural environment.

Meeting water supply needs

A challenge for the Treasure Valley will be to meet new and on-going water demands over the next 50 years. The size and location of future water demands, as well as projections for shortfalls in meeting current demands, is uncertain. Water supply solutions involve resolving difficult social and economic issues depending on form, size, and location. Some solutions, such as ground water and surface water storage proposals, require a long lead time to plan and construct so must be commenced long before there is consensus regarding the size and scope of future water demands. The challenge will be to conduct wise, proactive planning and marrying that with careful monitoring of demand increases and supply shortfalls to develop appropriate, timely, and economical water supply solutions.

Management and Administration

A long history of water development and legal decisions has led to a complex system of interaction among water managers in the Treasure Valley. Water administration is under the authority of the Director of the IDWR. However, numerous organizations and agencies are involved in the practical management of water. The IWRB is a constitutionally created body responsible for formulating, adopting, and implementing a comprehensive State Water Plan for conservation, development, management, and optimum use of all unappropriated water resources and waterways of this state in the public interest. The State Water Plan is a guiding document for all state actions and activities. The IWRB undertakes water projects for a variety of purposes throughout the state. The IWRB also provides financing for local water entities, such as canal companies, irrigation districts, cities, and others to undertake water projects, including improvement, expansion, and reconstruction of facilities.

Water District #63 was created by the Director of the IDWR to administer surface water rights from the Boise River currently subject to administration. The administration is carried out under state water law and court decrees. Water rights to more than 330,000 irrigated acres are administered in the Treasure Valley from the Boise River. In addition to irrigation, water rights for other uses are also administered.

Throughout the water year, the watermaster works closely with the NRCS Snow Survey, IDWR, the USBOR, and the USACE. The information provided by these agencies help the water users understand predictions for the total amount of water available each year. Water District #63 currently records 75 points of diversion weekly during the irrigation season. This information is used with the IDWR accounting program to track natural flow and storage use at each diversion. Data from the water district, the USGS, the USBOR, and Idaho Power Company are compiled to run the water rights accounting model. The IDWR operates the daily water rights accounting model, and the water master uses the model output to administer the water rights and storage water in the basin.

Ground Water Rights not Currently Administered (as of 2012)

The administration of water rights generally refers to the curtailment of junior water rights to satisfy senior water rights. Water rights are administered by a watermaster appointed by the IDWR. In order to administer water rights, they must be legally quantified through adjudication or other administrative action, such as a license.

In the Treasure Valley, only surface water rights are currently administered by the watermaster because ground water rights have not been fully adjudicated. Following the completion of the Snake River Basin Adjudication (SRBA), it is expected that ground water rights may be included in a water district and conjunctively administered in priority. Conjunctive administration is the term used to describe

administration of both ground water and surface water under a common system. Administration of ground water rights, or the implementation of conjunctive administration in the Treasure Valley, is not currently underway.

The legislature adopted the Ground Water District Act in 1995 to create a mechanism to allow ground water users to organize and to formulate mitigation plans to provide protection for senior surface water rights that otherwise would be materially injured by ground water pumping. To date the ground water users in the Treasure Valley have not elected to form such a district.

Irrigation Districts/Canal Companies/Lateral Associations

There are 47 Irrigation entities that operate within the Treasure Valley. These entities were created locally for the purpose of new irrigation development. Irrigation entities usually hold water rights and own diversion facilities and infrastructure. The majority of storage space in the reservoir system is used for irrigation by these entities that hold spaceholder contracts with the USBOR.

State Law Associated with Requiring the Continued Use of Irrigation Water for Landscaping

In 2005, the Idaho Legislature adopted Idaho Code 67-6537, which encourages the use of surface water for irrigation, a requirement directed at applications for land use changes, such as from agricultural land to residential subdivisions. The law amended the Local Land Use Planning Act and requires that if land has irrigation water appurtenant and is reasonably available, access and use of the surface water for irrigation will be used.

Flows Regulated to Star

Average summer flows at Star vary with irrigation demand but 250 cfs is the target flow for the administration of water deliveries below Star. Surface water in the Boise River and its tributaries upstream from Star is considered fully appropriated during the irrigation season and during much of the rest of the year. In 1995, the Director of the IDWR issued a moratorium order stating that new applications for water would be denied unless it included an acceptable plan to mitigate or avoid injury to existing water rights. The order also describes an area in which applications for ground water shallower than 200 feet below the surface would only be processed if they included mitigation measures or could show no adverse impacts to existing water rights.

Downstream from Star, surface water (as well as ground water) is available for new appropriation, but the actual amount will vary from year to year and season to season.

Salmon Flow Augmentation

The USBOR holds 40,932 acre-feet of storage space in Lucky Peak Reservoir to be used for downstream salmon flow augmentation. This is a component of the (up to) 427,000 acre-feet of storage water that USBOR delivers from the Snake River above Brownlee Reservoir every year for salmon flow augmentation, consistent with the Nez Perce term sheet and Idaho Code 42-1763B. If replacement water supplies

could be found in another basin (consistent with the Nez Perce term sheet) and delivered for salmon flow augmentation, this 40,932 acre-feet in Lucky Peak could potentially be made available to help meet future water needs in the Treasure Valley.

Water Markets

The Idaho Water Supply Bank (Bank) was legislatively recognized in 1979 (Section 42-1761, Idaho Code) and is operated under the authority of the IWRB. The state program includes two distinct programs, **Rental Pools** and the **Water Supply Bank**, which are both essentially water exchange markets intended to assist in the marketing of natural flow and water stored in Idaho reservoirs. They also provide a mechanism by which water rights and stored water that is not being used can be made available for use by others through a lease and rental process.

The Bank includes water rights from surface water and ground water sources throughout Idaho. Water rights may be leased (deposited) to the Bank if not currently in use and then rented (withdrawn) from the Bank by another water user for beneficial uses such as commercial, industrial, irrigation, or mining. In addition, water rights leased to the Bank are protected from forfeiture. Applications to lease and rent water from the Bank are currently received and processed by the IDWR. The Boise River drainage had the most activity in the state in 2010 for leasing water rights into the Bank but only 9% of these rights were rented back out for actual use (2010 Water Supply Bank Annual Report, IDWR).

Water District #63 Rental Pool (Rental Pool) is a mechanism for reservoir spaceholders to make stored water available to other entities in short supply in a given year. The Rental Pool also provides a source of revenue for Water District #63 to make improvements in water distribution while encouraging the maximum beneficial use of stored water. The Rental Pool is under the jurisdiction of and operated by the local committee appointed by the IWRB. The local committee develops the rules of procedure, lease pricing, and operation requirements for their Rental Pool, which then must be approved by the IWRB. The USBOR must also approve the rules and rates for Federal storage as a facility owner. The watermaster administers the Rental Pool under the guidance of the local committee.

The Rental Pool has rented an average of 6,236 acre-feet over the past 8 years, excluding the USBOR-held uncontracted space. Use of the Rental Pool appears to be low compared with other rental pools in the state despite the rapid growth of DCMI uses in the basin.

Several water management tools exist that could be utilized to help meet future water needs but currently appear to be under-utilized. The Boise River (Water District #63) Rental Pool, which facilitates marketing of reservoir storage water, has a lower level of activity when compared with the Payette and upper Snake Rental Pools, despite the Treasure Valley having rapidly growing water needs. The Bank, which facilitates marketing of natural flow and ground water rights, shows that in the Treasure Valley there is considerable

activity to lease water rights into the Bank but little demand to rent water rights out of the Bank, again with the Treasure Valley having rapidly growing DCMI water needs. Another tool is the Municipal Water Rights Act of 1996, which provides for growing municipalities to acquire water rights based on future growth projections. However due to lack of a defined process and criteria and high costs, both the IDWR and municipal water users have been somewhat unsure with how to proceed, resulting in under-utilization of this statute.

Challenges Associated with Management and Administration:

Lack of an organizational structure for ground water users to collectively plan for and respond to future challenges

Solutions to meeting long-term water needs and avoiding conflict may require action beyond single individuals. Long term successful solutions may require cooperative/collaborative efforts within and among ground water users who share a common interest.

Advanced technical capabilities are needed to meet increasingly complex water management challenges

Although we understand a great deal about the regional hydrology, our information does not provide a full understanding of the localized interaction between ground and surface water, and between the shallow aquifer and deep aquifer. Knowledge is not sufficient to fully characterize the hydrologic system which results in difficulty predicting system responses to management actions. Historical hydrological records may not be sufficient for forecasting future conditions. Existing ground water models do not incorporate newer information or forecasts.

Existing water Management tools that appear to be under-utilized could help provide solutions to meeting water needs in the future

Several water management tools exist that could be utilized to help meet future water needs, but currently appear to be under-utilized. The Boise River (Water District 63) Rental Pool, which facilitates marketing of reservoir storage water, has a lower level of activity when compared with the Payette and Upper Snake Rental Pools, despite the Treasure Valley having rapidly growing water needs. The Water Supply Bank, which facilitates marketing of natural flow and ground water rights, shows that in the Treasure Valley there is considerable activity to lease water rights into the Bank, but little demand to rent water rights out of the Bank, again, with the Treasure Valley having rapidly growing DCMI water needs. Another tool is the Municipal Water Rights Act of 1996 which provides for growing municipalities to acquire water rights based on future growth projections. However due to lack of a defined process and criteria and high costs, both IDWR and municipal water users have been somewhat unsure with how to proceed, resulting in under-utilization of this statute.

3. Actions Needed

Guided by the CAMP goals and vision, the Committee identified several recommended actions for addressing the challenges discussed in previous sections of this Plan. Understandably, these actions will need to be more fully refined during the implementation phase, but the Plan by adopting a mix of strategies represents a balanced approach to addressing the future water challenges in the Treasure Valley. These actions have not been ranked or placed in order of priority.

Enhance Water Data Collection, Analysis, and Planning

Water planning and management tools developed and updated using accurate data and current interpretations of the hydrology and estimates of water use of the Treasure Valley are needed to reduce uncertainty, effectively and efficiently use the water resources of Idaho, and better manage the resource. Taking the following actions will contribute to successful water management that protects the public health and safety, minimizes conflicts, and promotes the economic and environmental health of Idaho:

- Improve ground water models and technical tools to meet administrative purpose and to facilitate decision making;
- Support water supply modeling and stream flow monitoring;
- Measure water-usage changes and report demand trends to the IWRB;
- Support drought planning to increase the resiliency of the water supply specific to the Boise drainage;
- Support efforts at assessing potential effects of water management on the natural environment;
- Create a mechanism for coordination within the ground water community;
- Continue to increase transparency of planning process;
- Organize a periodic Water Forum ("Water Summit") to assess the state of the aquifer and discuss emerging issues and opportunities.

Additional Storage and Supply

Additional storage or other sources of water supply may be needed in the future to offset the increased variability of water supply and additional water demand. Due to the complexity and extended lead time required for initiating storage and water supply projects, study of these projects should be continual to ensure the information is available when decisions need to be made. The following actions should be part of the evaluation of future supply options:

- Continue the study of the feasibility of potential surface water storage projects in a manner that comprehensively addresses supply options and avoids conflict;
- Investigate the feasibility of utilizing managed recharge for meeting future water demands;
- Support the exchange of the USBOR's salmon flow augmentation space in Lucky Peak (excluding stream flow maintenance) with replacement water supply consistent with the Nez Perce term sheet;

- Evaluate augmentation of existing cloud-seeding programs as an option for increasing water supply.

Reducing Demand through Water Conservation

Reducing demand through water conservation should be adopted as one of the strategies for meeting future water needs in the Treasure Valley. Capital costs associated with new supply may be avoided through the reduction of per capita demand. Addressing these issues is a multi-jurisdictional responsibility; therefore the IDWR should work in cooperation with water users and water providers to collaboratively develop incentives to reduce demand. The following actions should be taken to conserve water and reduced demand:

- Use education to encourage conservation;
- Encourage conservation and efficient use of ground water;
- Encourage conservation and efficient use of surface water, where a viable opportunity exists, taking into consideration the benefits of incidental recharge;
- Support efforts for retrofitting neighborhoods with pressurized irrigation;
- Encourage and support wastewater/gray water reuse;
- Encourage or support incentives for conservation;
- Develop guidelines for conservation programs;
- Consider conservation requirements for new water appropriations.

Potential Conversion of Water Use from Agriculture to Other Uses

Urbanization has changed some water demand from agricultural irrigation to residential irrigation and other uses. This trend is expected to continue into the future as additional growth occurs. The intent is to ensure irrigation water is available for residential use and irrigation entities continue to have a financial basis and protection of infrastructure. Provision of domestic irrigation through the canal systems is also beneficial because it reduces the amount of water that municipal water systems need to provide. The following actions should be undertaken to ensure orderly transition of water use from agriculture to DCMI and other uses:

- Continue to support the use of surface water on those lands that convert from agriculture to DCMI and other uses utilizing the existing irrigation entities;
- Support voluntary cooperative arrangements between irrigation entities and municipal providers to deliver surface water recognizing the long-term challenges associated with maintaining Homeowners Association-owned systems;
- Encourage the use of water marketing to meet current and future needs including the use of the Rental Pool and the Bank.

Municipal Water Rights Act of 1996

[Placeholder]

Preserve and Protect Water Delivery Infrastructure

The integrity of the delivery system is vital to the optimal use of water in the Treasure Valley. The following actions recognize specific components of the water delivery system that will ensure continued integrity into the future:

- Support voluntary arrangements between irrigation entities and municipalities to ensure long-term maintenance of new residential irrigation systems;
- Encourage the use of funding sources;
- Ensure easements/access to canals for maintenance in face of growth;
- Continue to support considerations of security, both in terms of infrastructure and on water quality;
- Support the rehabilitation and modernization of water delivery infrastructure;
- Explore opportunities to minimize fish entrainment in the canal systems;
- Inform land-use entitlement and transportation authorities at both the local and state level to help the Irrigation community protect its easements and rights of way to maintain the canals and ditches that provide irrigation water.

4. Treasure Valley Camp Implementation

Management of the Treasure Valley Aquifer affects numerous stakeholders. Effective implementation of the Plan will require the participation and cooperation of stakeholders and governmental entities with jurisdictional authorities and responsibilities.

The IWRB staff will provide leadership and coordinate activities for the implementation of this plan.

The IWRB may continue to convene the Committee to guide and make recommendations concerning the implementation of management strategies and to review goals and objectives. The Committee could provide a forum for discussing implementation, establishing benchmarks for evaluating the effectiveness of actions, coordinating with water users and managers, evaluating and addressing environmental issues, and identifying and pursuing funding opportunities.

The Committee will continue to include interest groups currently represented and may expand or contract as appropriate to include other interested people, per the IWRB direction. In addition, the IWRB will appoint at least one of its members to serve as a liaison between the Committee and the IWRB. The Committee will serve at the pleasure of the IWRB and provide a forum for public participation. The IWRB staff will facilitate the work of the Committee and provide the technical information needed for its deliberations. The IWRB will make all final decisions concerning Plan project priorities, implementation, and funding.

As various programs are implemented, additional monitoring or modifications will likely be needed. Specific projects may require site-specific measurement and analysis that are not currently available. Additional analysis will likely be required to assist the IWRB and the Committee.

Outreach and Education

During implementation of the Treasure Valley CAMP, the Committee will help develop a plan for broad water education and outreach, building on existing efforts and programs. Emphasis will be placed on education efforts that promote conservation and a reduction in consumptive use.

Funding

Implementation of the CAMP actions will be a partnership among the state, local, and federal governments, stakeholders, water users, and non-governmental organizations. Partnerships among local, state, and federal interests would advance the goals of CAMP because capabilities and resources could be combined to accomplish shared goals. The costs of implementation are anticipated to be shared among willing partners. As the implementation plan is developed, the funding needs for the Plan components will be evaluated and potential funding sources, including federal grants, will be identified.

The many existing activities for maintaining the health of the Treasure Valley Aquifer reflect the value and importance the aquifer and water resources have to the region. These existing activities are undertaken by a myriad of governments,

agencies, and others. They activities are funded through various sources and through various programs. The IWRB supports existing programs that protect and enhance the water resources of the area. Opportunities to combine resources and leverage existing programs with CAMP implementation will be encouraged and supported.

Additionally, the IWRB has an existing financial program that can provide financial assistance to improve infrastructure for irrigation and community water supplies and for flood control and hydroelectric power. This assistance is provided in the form of loans and IWRB-issued revenue bonds.

Adaptive Management

The goal of adaptive management is to support improved decision making and performance of water management actions over time.

Key principles fundamental to this approach include:

1. Anticipating possible future uncertainties and contingencies during planning
2. Employing science-based approach to build knowledge over time
3. Designing projects that can be adapted to uncertain or changing future conditions

Adaptive management involves taking actions, testing assumptions, and then monitoring and adapting/adjusting the management approach as necessary. It is a way of taking action in a complex system with many variables and constant change.

Developing perfect knowledge concerning any system, including the Treasure Valley Aquifer, is impossible. Therefore, an adaptive management approach is critical to the successful attainment of the qualitative and quantitative goals set forth in the Plan. Successful adaptive management requires patience and long-term commitment, just as acquiring enough data to make decisions about program changes takes time.

The adaptive management strategy will allow the IWRB to:

- Develop protocols for revising management actions;
- Compare costs and impacts of different actions on the Treasure Valley Aquifer;
- Adjust funding allocation between projects to get the most “bang for the buck”;
- Concentrate funding on management actions that produce results;
- Make adjustments and revisions to the Plan as new information becomes available or in response to changing water supply and demand needs;
- Proceed with flexibility, depending on results and analysis of monitoring and measurement data.

Coordination and Implementation

Management of the Treasure Valley Aquifer affects numerous stakeholders within Idaho and requires coordination. The Committee will be charged with providing guidance and recommendations concerning the implementation of management strategies. The Committee will provide a forum for discussing implementation, establishing

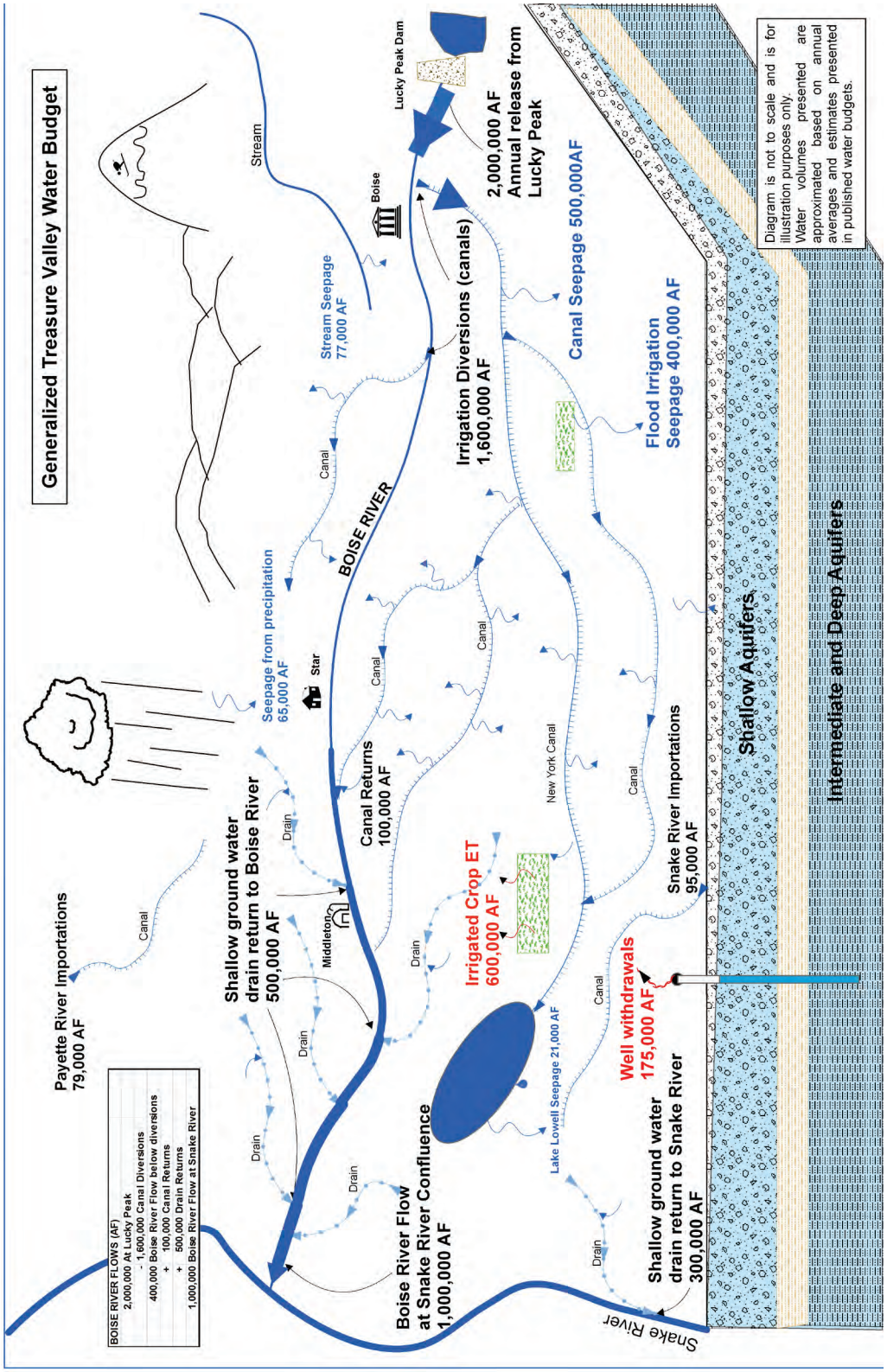
benchmarks for evaluating the effectiveness of actions, coordinating with water users and managers, evaluating and addressing environmental issues, and identifying and pursuing funding opportunities.

Monitoring and Data Gathering

The Advisory Committee and Board staff will be able to assess the impacts of various management activities using data gathered through the monitoring process. In some cases, it may take a number of years to obtain sufficient data to achieve a comprehensive understanding of the effects of particular actions. Regardless, the success of the plan depends upon the development and maintenance of state-of-the-art monitoring and evaluation tools that provide the information necessary to make sound planning decisions for the future.

Appendices

Appendix 1. Water Budget Schematic



Appendix 2. Treasure Valley Comprehensive Management Plan Advisory Committee Members and Affiliations

TV CAMP MEMBER*	AFFILIATION
Abramovich, Ron	Natural Resources Conservation Service
Adamson, Brent	Boise County
Amick, Doug	City of Greenleaf
Anderson Jamie	Boise County
Ben Kennedy	Micron Technology, Inc.
Barrie, Rex	Water District #63
Vern Case	Wilder Irrigation District
Berggren, Ellen	U.S. Army Corps of Engineers
Bowling, Jon	Idaho Power Company
Burnell, Barry	Idaho Department of Environmental Quality
Dane, Russ	Keller Williams Realty
Decker, Kevin	Idaho Wildlife Federation
Deveau, Paul	Boise Project Board of Control
Dixon, Dave	Greenleaf Farms Inc.
Duspiva, Gary	Canyon County Planning and Zoning Commission
Echeita, Mike	City of Eagle
Funkhouser, Allen	Drainage District # 2
Fuss, Michael	Nampa Public Works
Goodson, Stephen	Governor's Office
Howard, Matt	U.S. Bureau of Reclamation
Jones, Chris	Ted Trueblood Chapter, Trout Unlimited
Larson, Bill	Treasure Valley Partnership
Leatherman, Megan	Ada County
McKee, Lynn	Ada County Soil and Water Conservation District
Nelson, Greg	Idaho Farm Bureau
Patton, Brian	Idaho Department of Water Resources
Peter, Kathy	Unaffiliated
Pline, Clinton	Nampa-Meridian Irrigation District
Prigge, John	Sorrento Lactalis
Rhead, Scott	United Water of Idaho
Ronk, Jayson	Idaho Association of Commerce & Industry
Schmillen, Bob	City of Middleton
Shoemaker, Gary	City of Caldwell
Stewart, Lon	Sierra Club
Stewart, Warren	City of Meridian
Telford, Craig	City of Parma
Thornton, John	North Ada County Technical Working Group
Ward, Rick	Idaho Department of Fish and Game
Woods, Paul	City of Boise
Yerton, Janice	City of Kuna
Zirschky, Mark	Pioneer Irrigation District

*Former members: Gayle Batt, Michelle Atkinson

Appendix 3. Abbreviations and Terms

acre-foot	A volume of water equivalent to one acre covered in water one foot deep. One acre-foot (af) equals 325,851 gallons
aquifer	A water-bearing layer of rock that will yield water in a usable quantity to a well or spring
Bank	Water Supply Bank
CAMP	Comprehensive Aquifer Management Plan
cfs	Cubic feet per second. A rate of flow equal to one cubic foot of water passing a point each second. One cfs equals approximately 7.48 gallons per second or 449 gallons per minute.
Committee	Treasure Valley CAMP Advisory Committee
consumptive use	Consumptive use is water that is actually consumed and not returned to the immediate water environment. It is the portion of water that evaporates, is used in products or crops, or consumed by humans or livestock.
DCMI	Domestic, Commercial, Municipal, and Industrial
GWMA	Ground Water Management Area
IDP	Idaho Drought Plan
KAF	Thousand acre-feet
kW	Kilowatt, one thousand Watts of electric power
MAF	Million acre-feet
Plan	Treasure Valley Comprehensive Aquifer Management Plan
Rental Pool	Water District #63 Rental Pool
SRBA	Snake River Basin Adjudication
TVAS	Treasure Valley Aquifer System

Appendix 4. Key Agencies/Entities

BPBC	Boise Project Board of Control
IDEQ	Idaho Department of Environmental Quality
IDWR	Idaho Department of Water Resources
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
IWRB	Idaho Water Resource Board
NRCS	Natural Resources Conservation Service
USACE	U.S. Army Corps of Engineers
USBOR	U.S. Bureau of Reclamation
USGS	U.S. Geological Survey
WRIME	Water Resources & Information Management Engineering, Inc.

Appendix 5. Resource Directory

For more information about the Comprehensive Aquifer Management Planning Program:
http://www.idwr.idaho.gov/waterboard/WaterPlanning/CAMP/CAMP.htm

For information about the Idaho Water Resource Board:
http://www.idwr.idaho.gov/waterboard/

For information about the Idaho Department of Water Resources:
http://www.idwr.idaho.gov/

For additional information on Water District #63:
http://www.idwr.idaho.gov/WaterManagement/waterDistricts/BoiseRiver/default.htm

For information on the Water Supply Bank and Water District #63 Rental Pool:
http://www.idwr.idaho.gov/WaterManagement/WaterRights/WaterSupply/ws_default.htm

For additional information on the Boise Project Board of Control:
http://www.boiseproject.org/
http://www.usbr.gov/projects/Project.jsp?proj_Name=Boise+Project

For information on the Treasure Valley Hydrologic Project:
http://www.idwr.idaho.gov/WaterInformation/projects/tvhp-revised/

For additional USGS water data:
http://id.water.usgs.gov/water_data/

For additional information on ground water levels in the Treasure Valley:
Public access to ground-water measurement data is available at Hydro.Online or by contacting IDWR staff

For additional information on hydropower production in the region:
http://www.idahopower.com/AboutUs/OurPowerPlants/Hydroelectric/hydroelectric.cfm

For additional information on water quality, see the Idaho Department of Environmental Quality:
http://www.deq.idaho.gov/

For more information on the Idaho Snow Survey Program, see the Natural Resource Conservation Service:
http://www.id.nrcs.usda.gov/

For more information on Bureau of Reclamation activities in the region:
http://www.usbr.gov/pn/

For more information on US Army Core of Engineers activities in the region:
http://www.nww.usace.army.mil/boise/outreach.html

Appendix 6. References and Information Sources

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Memorandum

To: Idaho Water Resource Board

From: Cynthia Bridge Clark

Date: March 5, 2012

Re: Status of Ongoing Storage Water Studies

Weiser-Galloway Project

BACKGROUND: A series of studies have been initiated to determine whether to move forward with comprehensive feasibility, environmental and engineering studies of the previously proposed Galloway Dam and Reservoir project on the Weiser River. The first study, the *Weiser-Galloway Gap Analysis, Economic Evaluation and Risk-Based Cost Analysis Project, March 2011* (Gap Analysis), was a reexamination of the U.S. Army Corps of Engineers (Corps) studies (1987-1994) of the dam site based on current conditions and new information. It identified 181 gaps in information in the earlier studies, two of which were identified as critical to determining whether Weiser-Galloway is a viable project:

1. Determining the safety, suitability and integrity of geologic structures at the potential dam and reservoir site.
2. Determining 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.)

On July 29, 2011, the IWRB passed a resolution authorizing expenditure of up to $2 million dollars to study the two major data gaps identified in the Gap Analysis. The IWRB entered into cost-sharing partnership agreements with the Corps on August 26, 2011 to execute the two technical studies: 1) the *Weiser River Geologic Investigation and Analysis Project* (Geologic Investigation), and 2) the *Snake River Operational Analysis Project* (Operational Analysis).

PROJECT STATUS:

Geologic Investigation

- Drilling/Exploration plan: A draft exploration plan has been developed by the Corps which includes up to 7 drill holes on the abutments approximately 150 to 300 feet deep depending on the location. Cost and scheduling details are being developed.
- Coordination with landowners along the access routes is ongoing.
- An Environmental Assessment in the areas impacted by drilling activities is underway in coordination with the BLM.
- Estimated timeline: Mobilization by early June; approximately 4 months to complete drilling activities; completion of testing and results by December 2012 (interpretation of samples may be possible prior to completion of testing).
- See attached article published by the Capitol Press on February 24, 2012.

Operational Analysis

- The bulk of the Operational Analysis will be delayed until results of the Geologic Analysis are available.
- Preliminary tasks have been initiated including updating of basin hydrology; basic hydraulic modeling; identification of appropriate system optimization models; and identification of operational constraints.
- 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 *Water Storage Screening Analysis* was completed in August 2010 by the U.S. Army Corps of Engineers (Corps) in partnership with the IWRB. 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 IWRB recommended the top three ranked sites be carried forward for more in-depth analysis as called for in the Interim Feasibility Study agreement.

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 (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.*

Based on available information, 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.

PROJECT STATUS: The Corps continues to seek the additional federal funding required to continue study activities. In the interim, the Corps, in partnership with Ada County, is generating a public outreach tool to illustrate floodplain boundaries along the Boise River under a series of different flow conditions. The Corps is also developing estimates of potential flood damages. A presentation of the results of the floodplain modeling is anticipated for the May IWRB meeting.

See attached article recently published by The Idaho World on February 8, 2012.

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 will identify opportunities for development of water supplies and improvement of water management while sustaining environmental quality.

PROJECT STATUS: Reclamation is currently performing a "reconnaissance level" evaluation and technical analysis of alternatives identified for further study. These include new or existing surface water storage projects, as well as managed ground water recharge, agricultural conservation and management, municipal and industrial conservation, and market based alternatives.

Reclamation continues to provide updates on the progress of the technical analysis to the Henry's Fork Watershed Council and is coordinating directly with the stakeholders for data and feedback. Reclamation expects to complete the reconnaissance phase in fall 2012 with recommendations for a short-list of alternatives to move forward for appraisal level analysis.

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

Geologists study potential dam site on Weiser

Updated: Friday, February 24, 2012 10:08 AM

Rare site has 'potential to provide benefits across state'

By JOHN O'CONNELL

Capital Press

Work is underway to determine the geologic feasibility of a proposed large reservoir on the Weiser River, which proponents say would benefit irrigators statewide.

Officials are coordinating access routes with landowners and finalizing details of a drilling plan for a $1.5 million geologic study. Core sample drilling is on track to commence in early summer, with study results due by the year's end, said Cynthia Bridge Clark, Idaho Department of Water Resources staff engineer.

The board is revisiting a 1990s feasibility study by the Army Corps of Engineers, calling for a 300-foot-tall rock-fill embankment that would inundate up to 6,918 acres and have a 900,000-acre-foot storage capacity. The so-called Weiser-Galloway Dam would be 13.5 miles east of the city of Weiser, upstream from the Snake River confluence.

Aside from direct irrigation, recreational and flood-control benefits, the dam could free volume for Snake River water users upstream of Hell's Canyon, Clark said. The state and Bureau of Reclamation must dedicate an annual average of 427,000 acre-feet of Snake River flows to aid Columbia Basin salmon. Located on a Snake River tributary, the Weiser project could fill the flow requirement instead.

Clark considers the project unique because most U.S. sites with potential for large dams have already been taken.

"It's also an interesting site because it has the potential to provide benefits across state, not just the basin it's in," she said.

If drilling reveals no seismic or other geologic risks, a $500,000 cost-benefit study is scheduled in 2013 to analyze issues including how reduced flows could affect a reach of the Snake.

"If the study comes back and says a dam would work there, one of our top priorities would be to get that dam built," said Roger Chase, vice chairman of the Idaho Water Resource Board. "Of all the sites we've looked at (for a dam) it's the one that looks the best."

Idaho Power Co., which hasn't taken a position on the issue, could be affected by reduced flows to its Snake River hydroprojects. Mark Stokes, manager of power-supply planning, said the utility plans to offer input "on the possible benefits of hydroelectric development at the site ... and potential impacts to Idaho Power's existing hydroelectric resources."

Awaiting project study results, Trout Unlimited also hasn't taken a formal position.

"In general, I would say a new dam of that size on an undammed river is going to be a heavy lift for a number of reasons," said Peter Anderson, with Trout Unlimited in Boise.

Responding to a 2008 legislative directive to pursue more water storage, the board completed an analysis in March 2011 outlining 181 information gaps to update in a new Weiser-Galloway proposal. Geologic and cost-benefit studies were named as the top priorities.

Based on the Legislature's request, the board also initiated three other dam studies, exploring possible new storage options on the Henry's Fork and Boise River and a potential expansion of Minidoka Dam on the Snake River.

Hearing planned on dam

POCATELLO -- The Twin Lakes Canal Co. has a hearing March 5-9 to seek approval of additional water rights for its planned dam on the Bear River.

The meeting will be conducted at Clarion Inn, 1399 Pocatello Bench Road, by James Cefalo, watermaster of the Eastern Region with the Idaho Department of Water Resources.

The canal company has applied with the Federal Energy Regulatory Commission for a license to build a dam within the Oneida Narrows of Franklin County. It would inundate nearly 4 miles of the river for water storage and hydropower.

Presentation to House Resources and Environment Committee
Gary Spackman January 19, 2012

Article XV, Section 7 of the Idaho Constitution creates a State Water Resource Agency. This entity today is the Idaho Water Resource Board. The Director provides staff for the Board, and our goals should be identical. The Constitution directs the Board to "implement a state water plan for optimum development of the water resources in the public interest." Idaho Code § 42-1805 states that the Director shall "determine as accurately as possible the most effective means by which these water resources may be applied for the benefit of the people of this state." Other portions of the law require that the director regulate water rights in times of shortage and that senior water rights be protected. My presentation today will focus on how the Department and the Idaho Water Resource Board have accomplished these broad directives.

Thirty-five to 40 years ago, electrical rate payers, Idaho Power Company, water users, and the State of Idaho were litigating about Snake River water rights held by Idaho Power, and how those hydropower water rights would affect other uses of water in the Snake River. As the litigation progressed, much of the attention was focused on water rights held by Idaho Power at Swan Falls Dam south of Kuna. (Slide of Swan Falls Dam). The general, central issue was whether the hydropower water rights at Swan Falls Dam could negatively impact existing upstream water rights, both from surface and ground water, and might also prevent future upstream uses of water. This litigation caused tremendous turmoil and uncertainty in the water user community and clouded the outlook for future economic growth.

As is often the case with litigation, decisions issued by the courts did not assure any of the parties of absolute success. Some Idaho visionaries representing various party interests determined the state would be better served by agreeing on a path forward rather than litigating. As a result, in 1984, the State of Idaho and Idaho Power signed an agreement to settle the dispute. The agreement was appropriately called the Swan Falls Agreement. The agreement contained the following major components:

- Established protected minimum flows for the power company at Murphy Gage, just downstream from Swan Falls.
- Subordinated the power company's water rights to existing upstream water uses. This gave water users certainty about future use.
- Placed the power company's Swan Falls water rights exceeding the minimum flows at Murphy Gage in trust with the State of Idaho. The State of Idaho could approve additional water rights if certain conditions were satisfied.
- Required a general adjudication of the water rights of the Snake River Basin, both ground water and surface water.
- Recognized the hydraulic connection between ground water and surface water, and contemplated that the two would be regulated together after the rights were adjudicated.
- Established that Snake River water rights would be regulated above Milner Dam as a separate river system, and below Milner Dam as a separate river system. This was accomplished by also recognizing that, at times, the flow below Milner Dam could be zero.

Much of the Department's work in Idaho has concentrated on addressing these components of the Swan Falls Agreement. The concepts of the Swan Falls Agreement, together with the laws, legal interpretations, and technical advances associated with the agreement have affected all the water resources of the State of Idaho.

I will start with the Snake River Basin Adjudication. The SRBA was one of the largest water adjudications initiated in the United States. Over 150,000 claims were filed, evaluated, and recommended to the SRBA Court. The SRBA Court, most recently, Judge Eric Wildman, has been a superb partner in this effort. (Pie chart slide of remaining SRBA). There are now less than 1,000 contested claims in the SRBA. We anticipate a completed unified decree within the next few years. This accomplishment is unprecedented in the Western United States. Water adjudications of much lesser magnitude commenced in other states have been mired in legal wrangling for decades.

The litigation that spawned the Swan Falls agreement foreshadowed the larger issue of water regulation and administration as demands for a limited resource increased. When the SRBA court decreed water rights in a water basin, the Director created water districts for the administration of water rights. (Slide showing water districts). In parallel with the creation of these water districts, senior water right holder depending on spring flows from the Snake River or senior ground water right holders filed petitions with the Director to deliver their water rights. These delivery calls resulted in contested cases and determinations that junior ground water uses could be curtailed unless the holders of the junior water rights made the senior water right holders whole by mitigating. Though painful and time consuming, the Department, applying its expertise, has issued orders that are being challenged. The rights of the parties are being defined, and certainty of right and obligation is being established.

At approximately the same time, the legislature authorized and funded Comprehensive Aquifer Management Planning for the Eastern Snake River Plain to optimize the development of the water resources of the state. The legislature also contemplated water disputes in other areas of the state – notably the Rathdrum Prairie, the Treasure Valley, the Wood River Basin, and the Mountain Home area.

Through the Eastern Snake River Comprehensive Management Plan, the Board has:

- Averaged over 100,000 acre feet of managed recharge beginning in 2009. (Slide of Shoshone recharge site).

- Established a cloud seeding program in cooperation with Idaho Power and the High Country Resource Conservation and Development Council that IPCO estimates will produce 170,000 AF of additional precipitation.

- Converted 6,380 acres from ground water irrigation to surface water irrigation, with a large 5,257-acre project under construction at Hazelton Butte. Estimated to reduce GW demand by 14,000 AF. (Slide of construction)

- Acquired the Pristine Springs fish facility. In the transaction the City of Twin Falls obtained a long term water supply and the ground water users obtained surface water rights with which they could address a required obligation to a senior water right holder. (Slide of Pristine Springs facility).

- Just yesterday, sold over $30 million in bonds to fund the ground water users' purchase of one of the large fish production facilities in the Thousand Springs area that should largely address delivery calls from spring users below Milner Dam.

To adequately administer water, the Department has had to improve its technical competency and develop tools to more accurately and efficiently understand the complex relationships between ground water and surface water. We can no longer guess at or ignore these relationships. As a result the Department and the Board have developed ground water models for the Eastern Snake River Aquifer and the Rathdrum Prairie/Spokane River Aquifer. Another model is now being developed in for the Treasure Valley. Ground water models will probably be necessary in the Wood River Basin and other areas of the state.

A ground water model divides the entire aquifer into grid cells, and each of the cells is assigned unique water attributes. The computer then simulates how the ground water and spring flows will respond to changes in stresses to the water resources. (Show ESPAM model grid slide). The Department is poised to roll out the next version of the model once the calibration and testing of the model is complete. This has been a significant scientific effort by the Department and a modeling committee comprised of experts in ground water modeling.

The statewide monitoring and measurement program has significantly expanded since 2007. The number of surface water gages increased 48%, from 124 to 184, and the number of wells monitored by IDWR personnel increased 500%, from 136 to 825.

The Department has systematically automated many of these measurement sites so measurements are recorded remotely and electronically relayed to the Department without an onsite visit every time a measurement is needed.

The Department signed agreements with the Shoshone-Bannock Tribe to coordinate water measurement and other monitoring. The agreements allow for collection of surface and ground water monitoring data and information to calibrate the ESPA ground water model. Improved relations, communication, technical cooperation, and data sharing have resulted. This is significant change from a somewhat suspicious relationship to one of cooperation.

The Department and the University of Idaho were jointly received a national efficiency in government award for their technical ability to evaluate water use by crops by evaluating infrared reflective intensity of crop images taken by satellites. This capability saves the Department significant staff resources that would otherwise be required to estimate the same information. The award funded Department staff to train others, including other state governments, to utilize the tools. It is also is the visible crown of a more significant Department underpinning: The Department is recognized in the Western states as a leader in analyzing aerial

imagery and using spatial or image related information to locate water related information. It is merged into our process in a way that is unparalleled in any Western State.

As part of the Snake River Adjudication, the details of the Swan Falls Agreement needed to be decreed. During the last three years, the state signed a Swan Falls reaffirmation agreement with Idaho Power describing a process for how the rights would be considered and decreed, and also how the state and Idaho Power would cooperate. As of Friday, all of the water rights that were the subject of the Swan Falls Agreement have been decreed by the SRBA Court. We also have a warm working relationship with Idaho Power and feel we can accomplish more through cooperation than through an adversarial relationship.

The concern over ground water the relationship between ground water and surface water extends into Northern Idaho as well. The State of Washington has been looking upstream from Spokane toward Coeur d'Alene and questioning water use in the State of Idaho. (Rathdrum Prairie Slide). Anticipating a future interstate water dispute, the State of Idaho, through the US Geological Service, jointly created a ground water model with the State of Washington. In addition, the State of Idaho initiated an adjudication of water rights in the Rathdrum Prairie/Coeur d'Alene River Basin. The Department's CDA office has taken over 10,000 adjudication claims during the past three years and completed the first round of claims taking in December on schedule. Through the Rathdrum Prairie Comprehensive Aquifer Management Plan that will be presented to you, the Board, Department, and the local Northern Idaho people are taking steps to protect their long term water supplies. The State of Washington is envious – they have yet to initiate an adjudication, and until they do so, they are frustrated in their attempts to try to limit Idaho's use of water.

Through all of the above, the Department has some core responsibilities – to process proposals for the use of water. In 2007, the Department had over 500 applications for transfer pending with many delays and complaints that businesses couldn't timely obtain a source of water for use. (Transfer processing slide) From a high of about 500 applications, the Department now has less than 100 pending transfers.

Another place where business is rapidly transacted is the water supply bank. Backlogs of applications were preventing the needed immediate response for a temporary water supply. (Slide of water supply bank reductions). In the last year, the backlog in both leases to the bank and the backlog in rentals from the bank have been reduced to essentially zero.

These two backlogs were eliminated by dedicating additional staff to these important tasks, streamlining process, delegating authority, and assigning some of the best staff I have to these tasks. We are now trying to address another backlog in issuing water right licenses that has been around for decades. I'm convinced we can reduce it.

Water board staff is working in the Salmon River Basin to deflect the impact of the listing of several fish species under the Endangered Species Act. Through water right agreements and transactions the Board has enhanced streamflows while maintaining the agricultural and ranching values in the area. (Slide of Patterson Creek). The federal regulators

have been significantly impressed by these state and local efforts. (Reference to Steubner video and Martinez quotes).

The Department is maintaining its safety of dams, stream channel alteration, and well construction programs. They are stressed because of limited resources and we are not able to personally respond to issues as we were once able to. In the last three years, the Department amended well construction rules. Construction is better, the ground water resources are better protected, and Department staff are inspecting well at critical times during construction.

Two more Department efforts deserve attention. One is a Water Board effort to study storage in various locations statewide. These evaluations are ongoing in the Boise, the Upper Snake and Teton Basins. One is a study of the Galloway dam site. Over the past two years, the Board dedicated funds for a study to determine what information was needed to assess whether the dam could be built and operated. Department staff completed the study on time and significantly under budget. The study determined two major areas of lack of understanding. The integrity of the foundational material and whether, if built, the operation would benefit the local community and offset the overall costs. Last year, the Board dedicated $2 million to address these uncertainties. Core drilling at the site will proceed this year when the weather approves. Following the drilling, the operational analysis will be completed. This work has a particular local sensitivity and anything that is done must be an improvement for the residents in the Weiser River Valley.

Now, I want to talk about Mountain Home. For two decades, IDWR has recognized that ground water in the Mountain Home area is a finite resource. Declines in ground water levels have raised the specter of limited future growth or even reduction of existing uses of water. These declines in ground water levels had the potential of negatively affecting the City of Mountain Home, Mountain Home Air Force Base, and other interests. In particular, Mountain Home Air Force Base expressed a desire to develop an alternative supply of water to serve its long term water needs.

In the last two years, management from IDWR, Mountain Home Air Force Base, and several private and corporate interests, developed a plan to acquire and deliver Snake River water to Mountain Home Air Force Base. At the present time, the Snake River water rights have been acquired, water delivery alternatives have been presented to the Air Force, and the Air Force is conducting a final evaluation of the alternatives through a private consulting firm. Execution of the plan would provide a reliable, long term water supply to Mountain Home Air Force Base.

The things I have told you about today have been accomplished with a 28% reduction in general fund appropriation to the Department. We cannot do everything. Nonetheless we have focused on the most important tasks assigned to the Department and employed many strategies to accomplish these tasks. Taken comprehensively, the accomplishments of the Department have resulted from a zealous striving to optimize the development of the water resources to benefit the citizens of the state of Idaho while protecting senior water rights. The Governor's Project 60 Initiative has given guidance to this effort. I am proud of my staff and these accomplishments.