AGENDA

IDAHO WATER RESOURCE BOARD

Board Meeting No. 10-17
September 15, 2017
8:00 a.m.
Idaho Water Center
Conference Rooms B, C & D
322 E Front Street
BOISE

1. Roll Call
2. Public Comment
3. Agenda & Approval of Minutes
4. Finance Report
5. Presentation by Oregon DWR
6. Dredge Mining Hearing Requests
7. Priest Lake Water Management Update
8. Elmore County Water Supply Study
9. Spokane River Forum
10. ESPA Recharge
11. Storage Study Update
12. IWWRI Remarks
13. Director's Report
14. Non-Action Items for Discussion
15. Next Meeting & 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 Department staff by email nikki.regent@idwr.idaho.gov or by phone at (208) 287-4800.

MATERIALS MAY BE PROVIDED AT THE

IWRB MEETING

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IWRB MEETING

MEMO

To: Idaho Water Resource Board
From: Brian Patton
Subject: Financial Status Report
Date: September 6, 2017

As of **July 31** the IWRB's available and committed balances are as follows:

Secondary Aquifer Fund:	
Committed/earmarked but not disbursed	$19,975,996
Loan principal outstanding	$4,000,000
Uncommitted Balance	$1,869,945
Revolving Development Account:	
Committed/earmarked but not disbursed	$21,078,206
Loan principal outstanding	$22,076,018
Uncommitted Balance	$3,686,214
Anticipated loanable funds available next 1 year	$7,186,214
Water Management Account	
Committed/earmarked but not disbursed	$111,376
Uncommitted Balance	$9,915

Total committed/earmarked but not disbursed	**$41,165,578**
Total loan principal outstanding	**$26,076,018**
Total uncommitted balance	**$5,566,074**

- Loan applications that we are tracking include:

Potential Applicant	Project	Loan Amount	Comment
Goose Lake Reservoir Company	Goose Lake Dam repairs	$100,000	
Minidoka Irrigation District	Replace canal drop structure	$300,000	
Big Wood Canal Company	Pipe major lateral at Dietrich	$1.4M	
North Fremont Canal Company (Marysville)	Continue installing gravity-pressure delivery system	$2.5M	Anticipate NRCS match. IWRB financed prior phases of project.

- The ESPA Ground Water Districts have made large prepayments in their loan. Recall that this loan was originally $6.9M for the construction of the Rangen Pipeline and the purchase of the Aqualife Hatchery from the IWRB. The loan was due in full on September 1st. Due to other expenses incurred by the Districts in implementing the IGWA-SWC Settlement Agreement, the IWRB extended the payoff date of the outstanding balance by three years, although at a higher interest rate of 4.5%. In July when the IWRB approved the extension the outstanding balance was $4.644M. As of September 1, the outstanding balance is **$3,208,115**. This amount is carried forward in the new 3-year loan agreement.

Idaho Water Resource Board
Budget and Committed Funds
as of July 31, 2017

SECONDARY AQUIFER PLANNING, MANAGEMENT, & IMPLEMENTATION FUND

FYE 2017 Cash Balance		**18,459,951.08**
FY 2018 Revenue		
Interest	17,604.76	
HB547 - State Recharge & Aquifer Stabilization (SRAS)		
SB1176, Section 4 - Water Sustainability	5,000,000.00	
TOTAL FY 2017 REVENUE		**5,017,604.76**
FY 2018 Expenditures		
SRAS Equipment & Supplies - FY 17	(12,305.00)	
SRAS Equipment & Supplies - FY 18	(1,348.75)	
SRAS Conveyance Costs - FY 17	(1,491,009.30)	
South Fork Engineering & Site Evaluation (CON01163 - Farmer's Friend)	(1,638.00)	
SRAS Site Monitoring	(76.45)	
SRAS Regional Monitoring	(10,012.16)	
The Ferguson Group	(16,000.00)	
Steve Stuebner - Media Services	(1,106.25)	
WS Hydrology Monitoring	(8,600.00)	
University of Idaho - (CON01152)	(19,227.50)	
ESHMC Meeting Refreshments	(24.75)	
USGS - 6601 (Wood River Modeling)	(10,145.82)	
USGS - 6605 (Treasure Valley Modeling)	(60,121.50)	
TOTAL FY 2018 EXPENDITURES		**(1,631,615.48)**
FY 2018 Cash Balance		**21,845,940.36**

FY 2014 - FY 2017 Committed Funds	**Budget**	**Amended**	**Obligated**	**Expenditures**	**Carry forward**	**Committed**
Water User Contribution	109,493.16		109,493.16	(106,537.50)		2,955.66
Measurement devices for AWEP conversion projects	200,000.00		200,000.00	(16,455.21)		183,544.79
Cooperative Weather Modification Program (Cloud Seeding - CON01	492,000.00		492,000.00	(354,917.64)		137,082.36
FY 2017 Conveyance Cost	1,500,000	1,150,000.00	2,650,000.00	(1,977,061.27)		672,938.73
FY 2017 Equipment & Supplies	87,000		87,000.00	(61,668.70)	25,331.30	0.00
FY 2017 Regional Monitoring	200,000		200,000.00	(148,594.88)		51,405.12
Milner-Gooding Dietrich Drop hydro plant bypass	50,000	1,450,000.00	1,500,000.00			1,500,000.00
NSCC Wilson Lake Infrastructure Project	4,000,000	800,000.00	4,800,000.00			4,800,000.00
SWID Recharge Project	1,000,000		1,000,000.00		400,000.00	600,000.00
South Fork Engineering & Site Evaluation (CON01165 & CON01163)	200,000		200,000.00	(23,920.28)	34,000.00	142,079.72
NSID Recharge Feasibility	200,000		200,000.00	(38,283.75)		161,716.25
Butte Market Lake			39,000.00	(16,791.08)		22,208.92
Woodville			17,000.00			17,000.00
Treasure Valley Modeling (USGS 6605)	500,000		500,000.00	(265,287.09)		234,712.91
Wood River Valley Aquifer GW Model (USGS 6601)	200,000		200,000.00	(20,390.41)		179,609.59
Aquifer monitoring network enhancements in priority aquifers	100,000		100,000.00	(99,905.56)	94.44	0.00
NRCS Snow Survey contribution USDA CON01177	100,000	100,000.00	200,000.00	(50,000.00)		150,000.00
Mountain Home Air Force Base	**1,000,000**		**1,000,000.00**			1,000,000.00

TOTAL FY 2014 - FY 2016 COMMITTED FUNDS	**9,938,493.16**	100,000.00	13,494,493.16	(3,179,813.37)	**459,425.74**	**9,855,254.05**
FY 2018 Budget	**Budget**	**Amended**	**Obligated**	**Expenditures**	**Carry forward**	**Committed**
ESPA Managed Recharge Operations						
Conveyance Cost	2,500,000		2,500,000.00			2,500,000.00
Equipment & Supplies	100,000		100,000.00	(1,348.75)		98,651.25
Site Monitoring	150,000		150,000.00	(76.45)		149,923.55
Regional Monitoring	200,000		200,000.00			200,000.00
Total ESPA Managed Recharge Operations	**2,950,000**	**0.00**	**2,950,000.00**	**(1,425.20)**	**0.00**	**2,948,574.80**
ESPA Managed Recharge Infrastructure						
Northside Canal Recharge Site	1,600,000		1,600,000.00			1,600,000.00
Richfield Site Development	150,000		150,000.00			150,000.00
Tailbay	200,000		200,000.00			200,000.00
SF Recharge Site Development	250,000		250,000.00			250,000.00
Development	250,000		250,000.00			250,000.00
NSID Recharge Site Development	250,000		250,000.00			250,000.00
Egin Lakes Phase II	500,000		500,000.00			500,000.00
Reserved for Additional Recharge Projects	1,000,000		0.00			0.00
Total ESPA Managed Recharge Infrastructure	**4,200,000**	**0.00**	**3,200,000.00**	**0.00**	**0.00**	**3,200,000.00**
Managed Recharge Investigations						
AFRD2 - MP 34 Investigation	100,000		100,000.00			100,000.00
BWCC Star Lake	60,000		60,000.00			60,000.00
Reserved for additional investigations and engineering	300,000					0.00
Total Managed Recharge Investigations	**460,000**	**0.00**	**160,000.00**	**0.00**	**0.00**	**160,000.00**
TREASURE VALLEY						
Treasure Valley Modeling (USGS 6605)	500,000		500,000.00			500,000.00
Boise River Storage Studies	1,000,000		1,000,000.00			1,000,000.00
Treasure Valley DCMI Water Conservation Study	200,000		200,000.00			200,000.00
TREASURE VALLEY TOTAL	**1,700,000**	**0.00**	**1,700,000.00**	**0.00**	**0.00**	**1,700,000.00**
ELMORE COUNTY						
Canyon Creek Recharge Site	50,000		50,000.00			50,000.00
WOOD RIVER VALLEY TOTAL	**50,000**	**0.00**	**50,000.00**	**0.00**	**0.00**	**50,000.00**
WEISER BASIN						
Weiser River Basin Project	100,000		100,000.00			100,000.00
WEISER BASIN TOTAL	**100,000**	**0.00**	**100,000.00**	**0.00**	**0.00**	**100,000.00**
BEAR RIVER BASIN						
Bear River Aquifer Study	50,000		50,000.00			50,000.00
BEAR RIVER BASIN TOTAL	**50,000**	**0.00**	**50,000.00**	**0.00**	**0.00**	**50,000.00**
NORTHERN IDAHO AQUIFERS						
Lewiston Study Phase II	109,273		109,273.09			109,273.09
NORTHERN IDAHO AQUIFERS TOTAL	**109,273**	**0.00**	**109,273.09**	**0.00**	**0.00**	**109,273.09**
STATE-WIDE						
Aquifer monitoring network enhancements in priority aquifers	100,000		100,000.00			100,000.00

Cooperative Cloud Seeding Program						
Operations & Maintenance (1/3 of total)	600,000		600,000.00			600,000.00
Cloud Seeding Modeling Project	540,000		540,000.00			540,000.00
Cloud Seeding Benefit Allocation Study	200,000		200,000.00			200,000.00
Ground water conservation grants in priority aquifers	200,000		200,000.00			200,000.00
Administrative expenses (public information, staff training, etc	80,000		80,000.00	(1,106.25)		78,893.75
Professional Assistance for securing Federal Funding	100,000		100,000.00	(16,000.00)		84,000.00
STATE-WIDE TOTAL	**1,820,000**	**0.00**	**1,820,000.00**	**(17,106.25)**	**0.00**	**1,802,893.75**
Unspecified Projects in Other Areas or Carry-over	**1,368,166**					**1,368,166.00**
NRCS Snow Survey contribution						
Boise Project Board of Control						
MP31 Check Dam						
TOTAL FY 2018 BUDGETED FUNDS	**12,807,439**	**0.00**	**10,089,273.09**	**(18,531.45)**		**10,120,741.64**
TOTAL FY 2018 COMMITTED FUNDS						**10,120,741.64**
PROJECTED FY 2018 CARRY FORWARD					**0.00**	
PROJECTED TOTAL FUNDS AVAILABLE FOR FY 2019 BUDGET						**1,869,944.67**

IDAHO WATER RESOURCE BOARD
Sources and Applications of Funds
as of July 31, 2017
REVOLVING DEVELOPMENT ACCOUNT

Original Appropriation (1969)			$500,000.00
Legislative Audits			($49,404.45)
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			$9,495,760.03
Interest Earned State Treasury (Transferred)			$1,789,939.66
Filing Fee Balance			$47,640.20
Bond Fees			$1,469,601.45
Arbitrage Calculation Fees			($12,000.00)
Protest Fees			($970.00)
Series 2000 (Caldwell/New York) Pooled Bond Issuers fees			$43,657.93
2012 Ground Water District Bond Issuer fees			$377,000.00
Bond Issuer fees			$21,107.59
Attorney fees for Jughandle LID			($3,600.00)
Attorney fees for A&B Irrigation			($4,637.50)
Water Supply Bank Receipts			$5,546,325.56
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			($1,229,460.18)
Weiser Galloway Study - US Army Corps of Engineers			($1,533,047.30)
Boise River Storage Feasibility Study			($333,000.00)
Geotech Environmental (Transducers)			($6,402.61)
Priest Lake Improvement Study (16-Mar-16)			($146,626.46)
Legislative Appropriation 2014, HB 479 Sec 1 and 2			$10,500,000.00
Appraisal (LeMoyne Appraisal LLC)			($10,500.00)
Payment to JR Simplot Co for water rights			($2,500,000.00)
IWRB WSB Lease Application			($750.00)
Mountain Home Misc Costs			($370,014.39)
Galloway Dam & Reservoir Project (HB 479)			($124,708.68)
Water District 02 Assessments for Mtn Home			($2,078.61)
Boise River (Arrowrock Enlargement) Feasibility Study (HB479)			($543,999.96)
Island Park Enlargement (HB 479)			($120,965.45)
Water Supply Bank Computer Infrastructure (HB 479)			($497,350.75)
Treasureton Irrigation Ditch Co			($5,000.00)
Aqualife Hatchery Sub-Account			
Aqualife Hatchery, HB644, 2014		($1,885,000.00)	
Aqualife Lease receipt from Seapac		$114,720.00	
Tax Payments		($1,419.15)	
Lemoyne Appraisal for Aqualife facility		($10,500.00)	
Loan payments received		$2,999,034.04	
Loans Outstanding			
ESPA Ground Water Districts (Aqualife purchase)	($99,034.04)		
Total Loans Outstanding	($99,034.04)		
Balance Aqualife Hatchery Sub-Account			**$1,216,834.89**
Bell Rapids Water Rights Sub-Account			
Legislative Appropriation 2005, HB392		$21,300,000.00	
Interest Earned State Treasury		$694,553.43	
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 Water District 02 Assessments		($44,088.60)	
Payment for Ongoing Bell Rapids Finance Costs (trustee fees, water bank, etc.)		($6,740.10)	
Commitments			
Ongoing Bell Rapids Finance Costs (trustee fees, WD02)		$136,708.18	
Committed for alternative finance payment		$0.00	
Total Commitments		$136,708.18	
Balance Bell Rapids Water Rights Sub-Account		**$1,616.09**	
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		$46,791.29	
Loan Interest		$2,117,507.93	
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		$4,483,708.42	
Appraisal		($25,500.00)	
Insurance		($48,494.25)	
Recharge District Assessment		($26,605.25)	
Water District 130 Annual Assessment		($3,841.45)	
Hydro Plants Engineering Certification (Straubhar)		($4,200.00)	
Payment to EHM Engineers for pipeline work		($1,200.00)	
Payment to John Root for Easement Survey		($1,000.00)	
Payment to MWH Americas Inc		($11,326.27)	
Payment to Dan Lafferty Contruction		($16,846.68)	
Telemetry Station Equipment		($15,193.92)	
Rein Tech LLC (Satellite phone annual payment)		($1,980.00)	
Standley Trenching (Trac system for communication equip)		($2,863.99)	
Property Taxes and other fee assessments (Jerome County)		($9,980.95)	
Rental Payments		$1,767,694.18	
Payments to Scott Kaster		($180,196.67)	
Utility Payments (Idaho Power)		($38,509.38)	
Costs for property maintenance		($203,267.04)	
Travel costs for property maintenance		($517.31)	
Pipeline repair (IGWA)		($170,000.00)	
Transferred to Secondary Aquifer Fund (2011 Legislature; HB 291)		($2,465,300.00)	
Transferred to Secondary Aquifer Fund (2012 Legislature; SB 1389)		($1,232,000.00)	
Transferred to Secondary Aquifer Fund (2013 Legislature; HB 270)		($716,000.00)	
Transferred to Secondary Aquifer Fund (2014 Legislature; HB 618)		($716,000.00)	
Transferred to Aquifer Planning Fund (2015 Legislature; HB 273)		($716,000.00)	
Transferred to Aquifer Planning Fund (2016 Legislature; SB 1402, Sec 3)		($716,000.00)	
Transferred to Aquifer Planning Fund (2017 Legislature; SB 1176, Sec 3)		($716,000.00)	
Pristine Springs Hydropower Projects			
Net power sales revenues		$721,375.59	
Pristine Springs Committed Funds			
To be transferred to Aquifer Planning Fund	$0.00		
Repair/Replacement Fund	$0.00		
TOTAL COMMITTED FUNDS	$0.00		
Loans Outstanding			
North Snake and Magic Valley Ground Water Districts	$5,516,291.58		
Total Loans Outstanding	$5,516,291.58		
Funds to RP CAMP & TV CAMP Sub-Account		**$271,672.34**	
Pristine Springs Revenues into Main Revolving Development Account			**$826,581.91**
Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account			
Pristine Springs Hydropower and Rental Revenues		$271,672.34	
Interest Earned State Treasury		$573.11	
Spokane River Forum		($13,000.00)	
Treasure Valley Water Quality Summit		($500.00)	
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station		($20,000.00)	
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study (CON00989)		($70,000.00)	
Idaho Washington Aquifer Collaborative		($10,000.00)	
Committed Funds			
Kootenai-Shoshone Soil & Water Cons. Dist. - Agrimet Station	$0.00		
Spokane River Forum	$0.00		
Rathdrum Prairie-Spokane Valley Aquifer Pumping Study	$0.00		
Treasure Valley Water Quality Summit	$0.00		
Idaho Washington Aquifer Collaborative	$0.00		
TOTAL COMMITTED FUNDS	$0.00		
Balance Rathdrum Prairie CAMP & Treasure Valley CAMP Sub-Account		**$158,745.45**	
Upper Salmon/CBWTP Sub-Account			
Water Transaction Projects Payment Advances from CBWTP/Accord		$3,390,123.05	
PCSRF Funds for Administration of Non-Diversion Easements on Lemhi River		$222,257.16	
Interest Earned State Treasury		$133,723.02	
Transfer to Water Supply Bank		($74,563.27)	
Change of Ownership		($600.00)	
Granite Creek Appraisal		($4,000.00)	
Alturas Lake Creek Appraisal		($8,989.23)	
Payments for Water Acquisition		($971,217.59)	
Committed Funds			
Administration of Non-Diversion Easements on Lemhi River	$130,906.59		
Alturas Lake Creek (Breckenridge)	$0.00		
Bayhorse Creek (Peterson Ranch)	$31,991.50		
Badger Creek (OWBP)	$27,400.99		
Beaver Creek (DOT LLP)	$127,068.66		
Big Hat Creek	$379.19		
Big Timber Tyler (Leadore Land Partners)	$472,363.54		
Canyon Creek/Big Timber Creek (Beyeler)	$438,232.87		
Carmen Creek (Bill Slavin)	$213,156.52		
Carmen Creek (Bruce Slavin)	$133,757.37		
Fourth of July Creek (Vanderbilt)	$17,120.22		
Iron Creek (Phillips)	$0.00		
Iron Creek (Koncz)	$225,880.88		
Kenney Creek Source Switch (Gail Andrews)	$24,442.45		
Lemhi - Big Springs (Merrill Beyeler)	$60,387.24		
Lemhi River & Little Springs Creek (Kauer)	$21,041.24		
Little Springs Creek (Snyder)	$281,025.24		
Lower Eighteenmile Creek (Ellsworth Angus Ranch)	$1,777.78		
Lower Lemhi Thomas (Robert Thomas)	$1,500.00		
P-9 Bowles (River Valley Ranch)	$293,013.69		
P-9 Charlton (Sydney Dowton)	$19,394.67		
P-9 Dowton (Western Sky LLC)	$232,409.77		
P-9 Elzinga (Elzinga)	$287,471.90		
Patterson-Big Springs (PBSC9)	$185,210.64		
Spring Creek (Richard Beard)	$1,085.76		
Spring Creek (Ella Beard)	$1,591.38		

Whitefish (Leadore Land Partners)	$176,197.30		
Total Committed Funds	$3,404,807.39		
Balance CBWTP Sub-Account		**($718,074.25)**	
Water District 02 WaterSmart Grant Sub-Account			
Received from BOR for BORWS2		$118,058.42	
Received from BOR for BORWS3		$59,960.43	
Payments made to contractors for BORWS2		($118,058.42)	
Payments made to contractors for BORWS3		($59,960.43)	
Committted Funds:			
Grant Approval for BORWS2	$29,866.58		
Grant Approval for BORWS3	$316,169.29		
Total Committed Funds	$346,035.87		
Balance WaterSmart Grant Sub-Account		**$0.00**	
Water Supply Bank Sub-Account			
Interest Earned State Treasury		$6,033.70	
Payments received from renters		$2,812,109.10	
Payments made to owners		($2,311,540.26)	
Water Supply Bank Sub-Account Subtotal		**$506,602.54**	
Committted Funds:			
Owners Share	$500,568.84		
Total Committed Funds	$500,568.84		
Balance Water Supply Bank Sub-Account		**$6,033.70**	
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		$1,940,368.18	
Loan Interest		$246,084.05	
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		($3,518,216.22)	
Reimbursement from BOR for Palisades Reservoir		$2,381.12	
W-Canal Project Costs		($326,834.11)	
Black Canyon Exchange Project Costs		($115,276.00)	
Black Canyon Exchange Project Revenues		$23,800.00	
2008 Recharge Conveyance Costs		($14,580.00)	
2009 Recharge Conveyance Costs		($355,253.00)	
2010 Recharge Conveyance Costs		($484,231.62)	
Additional recharge projects preliminary development		($28,909.30)	
Pristine Springs Cost Project Costs		($6,863.91)	
Loans and Other Commitments			
Commitment - Remainder of Bell Rapids Water Rights Purchase (1)		$361,620.00	
Commitment - CREP Program (HB392, 2005)		$2,419,580.50	
Commitment - Additional recharge projects preliminary development		$337,594.00	
Commitment - Palasades Storage O&M		$10,000.00	
Commitment - Black Canyon Exchange Project (fund with ongoing revenues)		$485,848.95	
Total Loans and Other Commitments		$3,614,643.45	
Loans Outstanding:			
American Falls-Aberdeen GWD (CREP)	$68,065.91		
Bonneville Jefferson GWD (CREP)	$42,625.18		
Magic Valley GWD (CREP)	$64,949.29		
North Snake GWD (CREP)	$32,129.59		
TOTAL ESP LOANS OUTSTANDING	$207,769.97		
Uncommitted Balance Eastern Snake Plain Sub-Account		**$592,792.27**	
Dworshak Hydropower Project			
Dworshak Project Revenues			
Power Sales & Other	$8,158,432.73		
Interest Earned State Treasury	$532,903.38		
Total Dworshak Project Revenues		$8,691,336.11	
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	$2,384,550.68		
Powerplant Repairs	$58,488.80		
Bond payoff	$391,863.11		
Capital Improvements	$318,366.79		
FERC Payments	$74,332.91		
Total Dworshak Project Expenses		($3,916,695.10)	
Dworshak Project Committed Funds			
Emergency Repair/Future Replacement Fund	$1,314,575.00		
FERC Fee Payment Fund	$6,039.00		
Total Dworshak Project Committed Funds		$1,320,614.00	
Excess Dworshak Funds into Main Revolving Development Account			$3,454,027.01
TOTAL			**$31,379,846.51**

Loans Outstanding:	Amount Loaned	Principal Outstanding
A&B Irrigation District (18-July-14; pipeline and conversion project)	$3,500,000.00	$3,241,869.89
A&B Irrigation District (18-July-14; pipeline and conversion project)	$3,500,000.00	$3,368,517.05

Aberdeen-Springfield Canal Company (WRB-491; Diversion structure)	$329,761.00	$71,665.88	
Bee Line Water Association (Sep 23, 2014; System Improvements)	$600,000.00	$455,844.38	
Bonnie Laura Water Corporation (14-Jul-06; Well repairs)	$71,000.00	$0.00	
Canyon County Drainage District No. 2 (28-Nov-12; Drain tile pipeline	$35,000.00	$23,073.23	
Challis Irrigation Company (28-Nov-07; river gate replacement)	$50,000.00	$3,725.59	
Chaparral Water Association (21-Jan-11; Well deepening & improvem	$68,000.00	$16,924.35	
Clearview Water Company	$50,000.00	$41,261.58	
Cloverdale Ridge Water Corp. (irrigation system rehab 25-sep-09)	$106,400.00	$19,226.65	
Consolidated Irrigation Company (July 20, 2012; pipeline project)	$500,000.00	$488,723.93	
Consolidated Irrigation Company (July 20, 2012; pipeline project)	$1,500,000.00	$101,399.85	
Country Club Subdivision Water Association (18-May-07, Well Project).	$102,000.00	$11,452.55	
Enterprise Irrigation District (14-Jul-06; Pipeline project)	$37,270.00	$660.60	
Enterprise Irrigation District (North Lateral Pipeline)	$105,420.00	$18,129.55	
Foothills Ranch Homeowners Association (7-oct-11; well rehab)	$150,000.00	$108,708.62	
Harvest Valley Homeowners Association (22-Mar-13; Pump Replacem	$4,500.00	$0.00	
Jefferson Irrigation Company (9-May-2008 Well Replacement)	$81,000.00	$22,994.95	
King Hill Irrigation District (24-Sep-10; Pipeline replacement_	$300,000.00	$51,675.92	
Lake Reservoir Company (29-July-11; Payette Lake-Lardo Dam Outle	$594,000.00	$61,094.80	
Last Chance Canal Company (14-July-2015, diversion dam rebuild)	$2,500,000.00	$2,133,510.64	
Lava Hot Springs, City of	$347,510.00	$82,161.12	
Lindsay Lateral Association (Engineering Design Project & Pipeline Stu	$19,700.00	$10,353.68	
Marsh Center Irrigation Company (13-May-05; Hawkins Dam)	$236,141.00	$80,262.78	
Marysville Irrigation Company (18-May-07, Pipeline Project Phase 1)	$625,000.00	$116,633.25	
Marysville Irrigation Company (9-May-08, Pipeline Project Phase 2)	$1,100,000.00	$315,795.08	
North Fremont Canal Systems (25-Jan-13; Marysville Project)	$2,500,000.00	$1,375,388.74	
North Side Canal Company (16-sep-16; canal rehab project)	$1,846,093.00	$1,846,092.61	
Outlet Water Association (22-Jan-16; new well & improvements)	$100,000.00	$100,000.00	
Pinehurst Water District (23-Jan-15)	$100,000.00	$66,171.05	
Point Springs Grazing Association (July 20, 2012; stock water pipeline)	$48,280.00	$31,403.98	
Preston-Whitney Irrigation Company (29-May-09; Fairview Lateral Pipe	$800,000.00	$37,895.96	
Producers Irrigation Company	$173,000.00	$102,127.50	
Skin Creek Water Association	$188,258.00	$27,551.12	
Spirit Bend Water Association	$92,000.00	$6,647.65	
St. Johns Irrigating Company (14-July-2015; pipeline project)	$1,429,775.00	$1,095,665.10	
Sunset Heights Water District (17-May-13; Exchange water project)	$48,000.00	$20,597.40	
Twin Lakes Canal Company (Winder Lateral Pipeline Project)	$500,000.00	$236,398.02	
Valley County Local Improvement District No. 1/Jughandle HOA (well p	$907,552.00	$560,351.45	
TOTAL LOANS OUTSTANDING			**$16,351,956.50**
Loans and Other Funding Obligations:			
Legislative Appropriation 2014, HB 479 Sec 1 and 2			
Mountain Home AFB Water Rights (HB479)		$1,153,935.27	
Galloway Dam & Reservoir Project (HB 479)		$1,912,390.00	
Boise River (Arrowrock Enlargement) Feasibility Study (HB479)		$1,122,310.89	
Island Park Enlargement (HB479)		$2,407,106.75	
Water Supply Bank Computer Infrastructure (HB 479)		$2,649.25	
Senate Bill 1511 - Teton Replacement and Minidoka Enlargement Studies		$678,161.82	
Boise River Storage Feasibility Study		$13,578.15	
Weiser-Galloway Study (28-May-10)		$461,620.87	
Priest Lake Improvement Study (16-Mar-16)		$252,002.57	
Bee Line Water Association (Sep 23, 2014; System Improvements)		$144,155.62	
Dover, City of (23-Jul-10; Water Intake project)		$194,063.00	
North Side Canal Company (16-sep-16; canal rehab project)		$3,353,907.39	
Producers Irrigation Company (23-May-16; new wells)		$70,872.50	
St. Johns Irrigating Company (14-July-2015; pipeline project)		$334,109.90	
TOTAL LOANS AND OTHER FUNDING OBLIGATIONS			**$12,100,863.98**
Uncommitted Funds			**$2,927,026.03**
TOTAL			**$31,379,846.51**

(1) Actual amount needed may vary depending on final determination of water actually purchased and interest income received.

(2) Debt service on the Dworshak Project bonds is paid before the Dworshak monies are deposited into the Revolving Development Account and is therefore not shown on this balance sheet.

Idaho Water Resource Board
Sources and Applications of Funds
as of July 31, 2017
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	$120,475.04
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	**$4,497,489.85**

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		**$121,290.57**
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	$0.00	
Roberts, City of	$23,750	$0.00	
Victor, City of	$23,750	$0.00	
TOTAL LOANS OUTSTANDING			**$0.00**
Uncommitted Funds			**$9,915.02**
CURRENT ACCOUNT BALANCE			**$121,290.57**

Water Management in Oregon

Before the Idaho Water Resources Board

September 2017

Racquel Rancier, Senior Policy Coordinator

Oregon Water Resources Department

Agenda

- Agency Overview
- Key Challenges
- Recent Initiatives
- Discussion and Questions

OWRD Mission and Co-Equal Goals

- **To serve the public by practicing and promoting responsible water management**

- **Restore and protect streamflows in order to ensure the long-term sustainability of Oregon's ecosystem, economy, and quality of life**

- **Directly address Oregon's water supply needs**

Water Resources Commission and Department

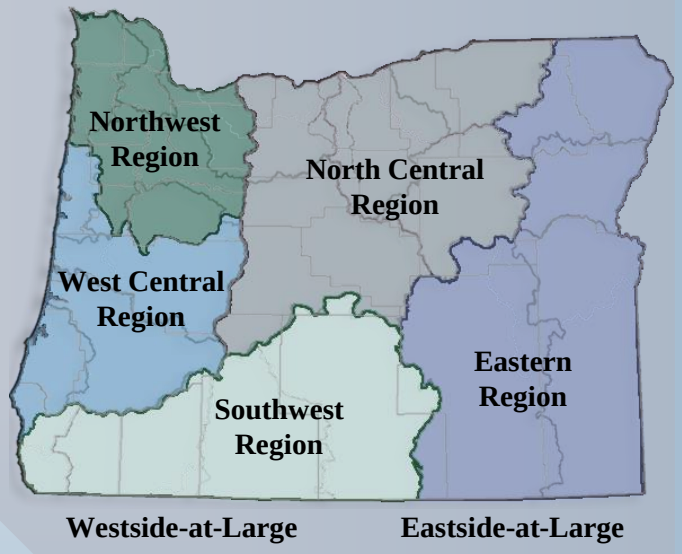
Governor

Director

Water Resources Commission

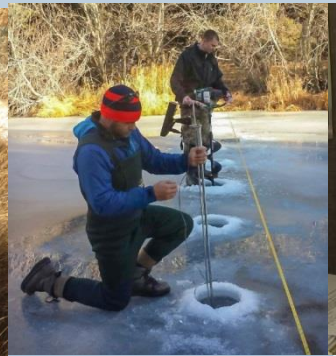
Water Resources Department

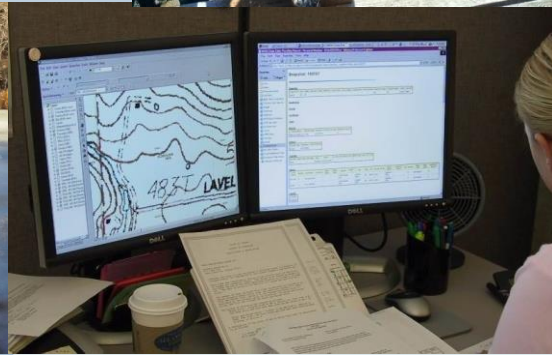
- Director's Office
- Field Services
- Water Right Services
- Administrative Services
- Technical Services



Recap: Key Responsibilities

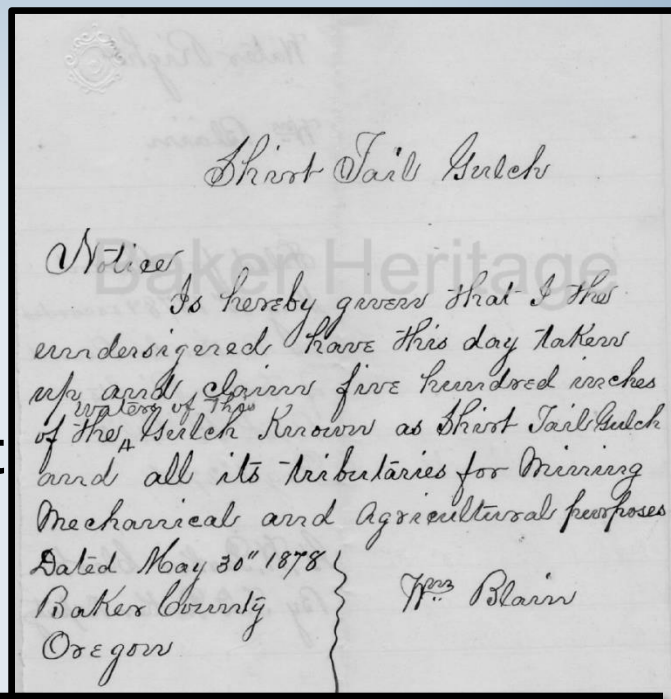
- Collecting, analyzing, and providing data
- Protecting public safety
- Distributing water under the system of prior appropriation
- Providing technical assistance and funding to address water supply needs
- Processing water rights transactions





Challenge: History and Complexity of the Laws

- Statehood 1859
- 1909 Water Code
- (1927) 1955 Groundwater Code
- (1955) 1987 Instream Water Rights Act
- 2015 formation of Water Resources Development Program


Shirt Tail Gulch

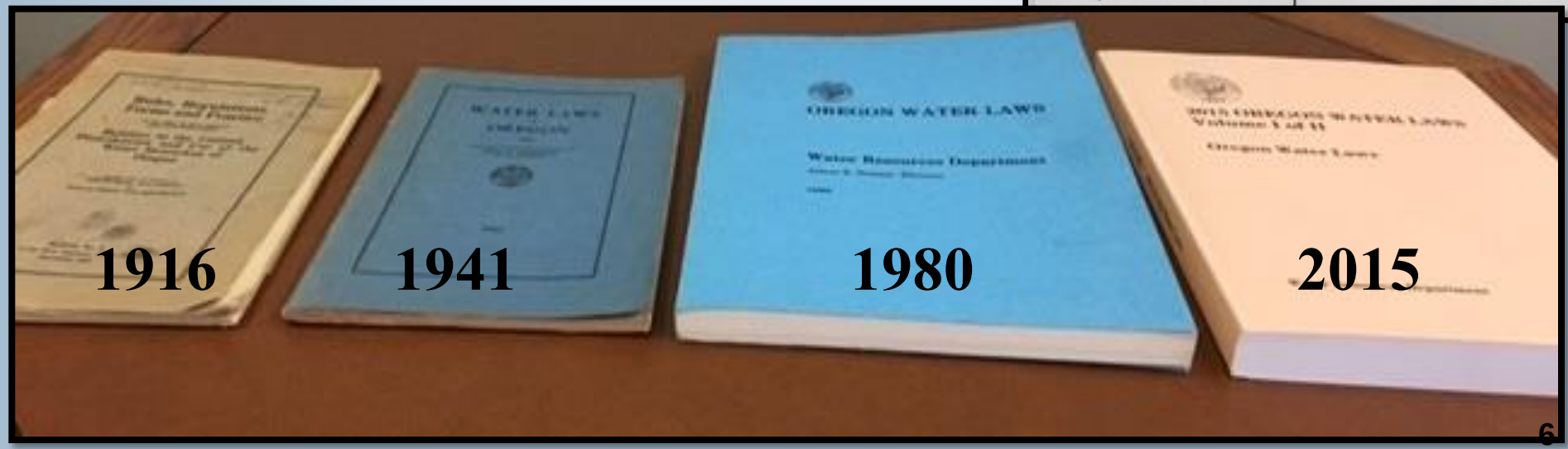
Notice

Is hereby given that I the undersigned have this day taken up and claim five hundred inches of the water of the Gulch known as Shirt Tail Gulch and all its tributaries for Mining Mechanical and Agricultural purposes

Dated May 30th 1878

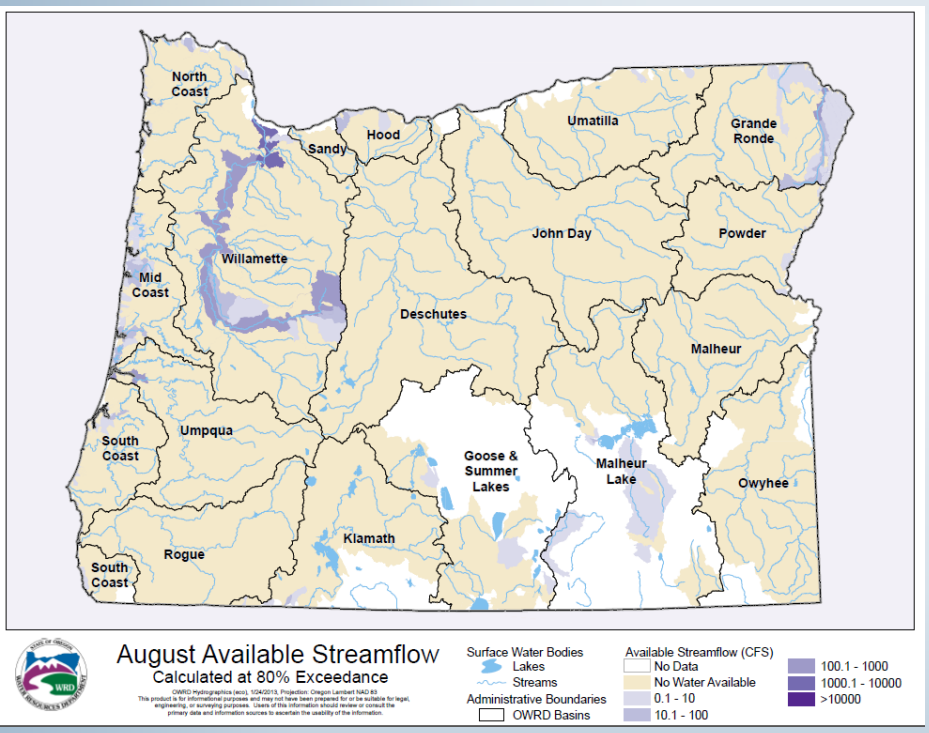
Baker County Oregon

Wm Blair

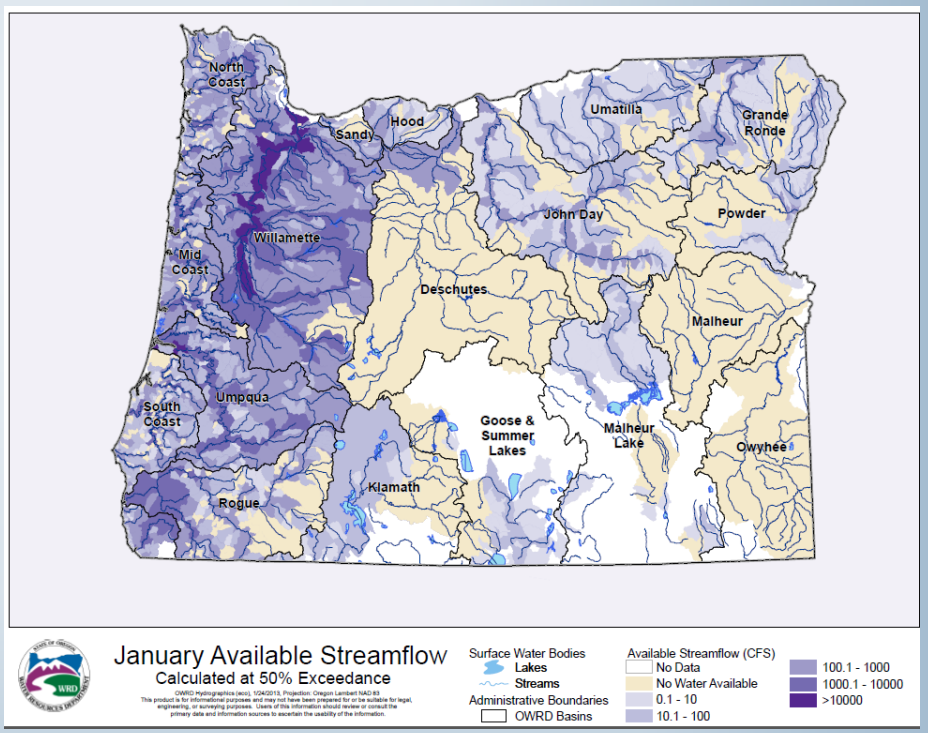


Challenge: Surface Water for New Projects

Water availability for live flow allocation in August

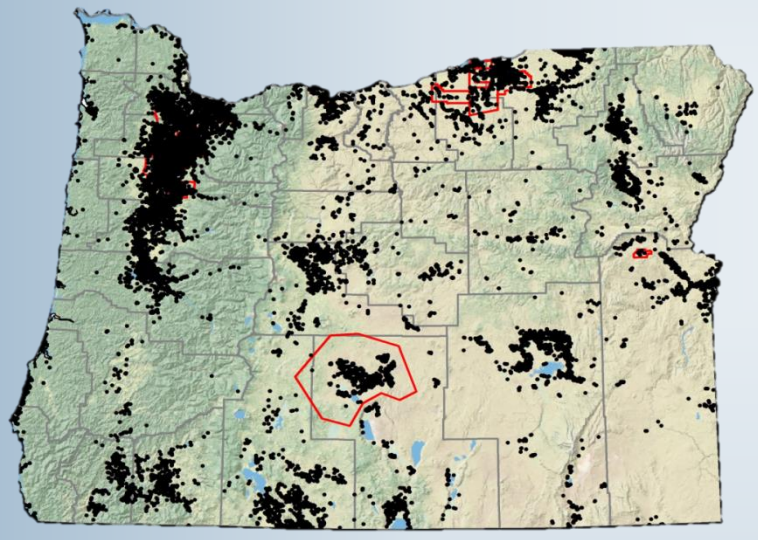


Water availability for storage in January

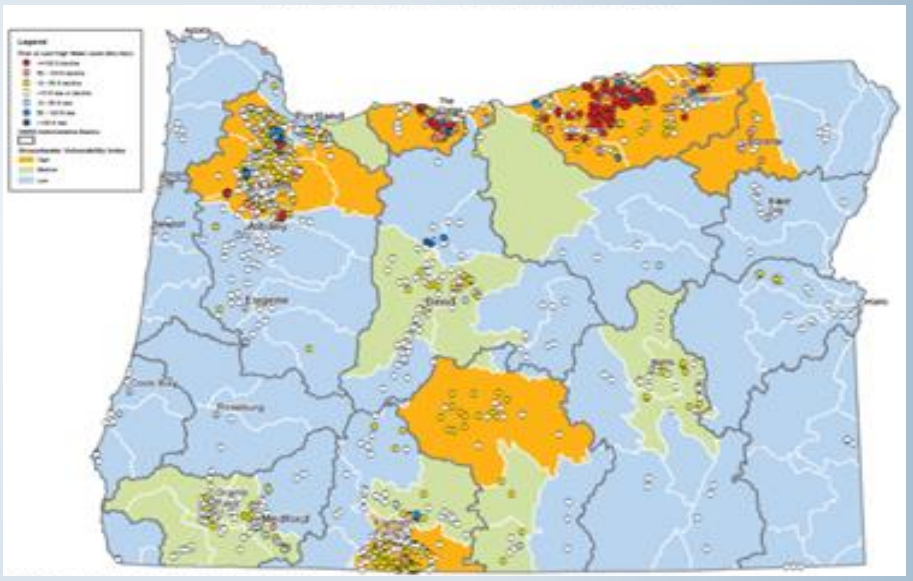


Challenge: Status of Groundwater

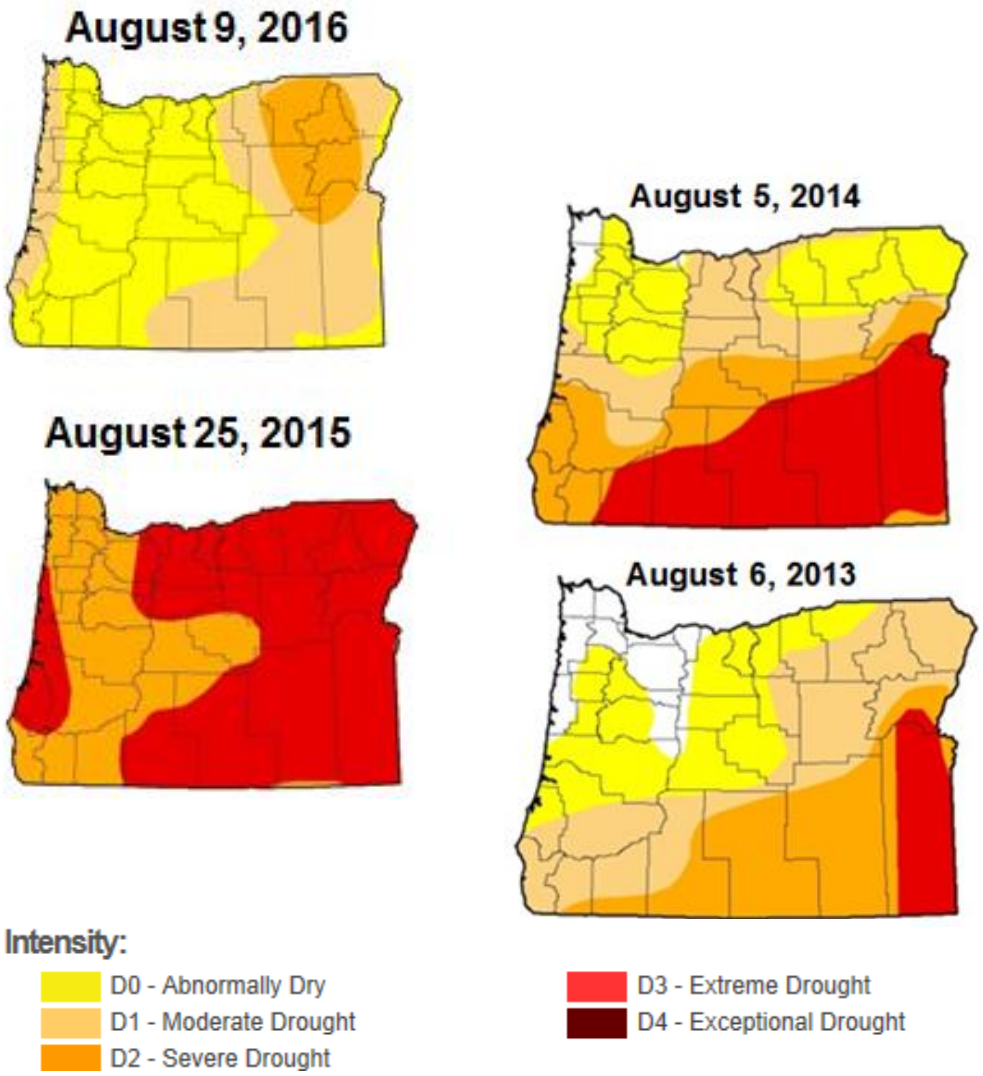
Groundwater Permitted Water Right Wells



Groundwater Areas of Concern



Challenge: Likely increase in Droughts



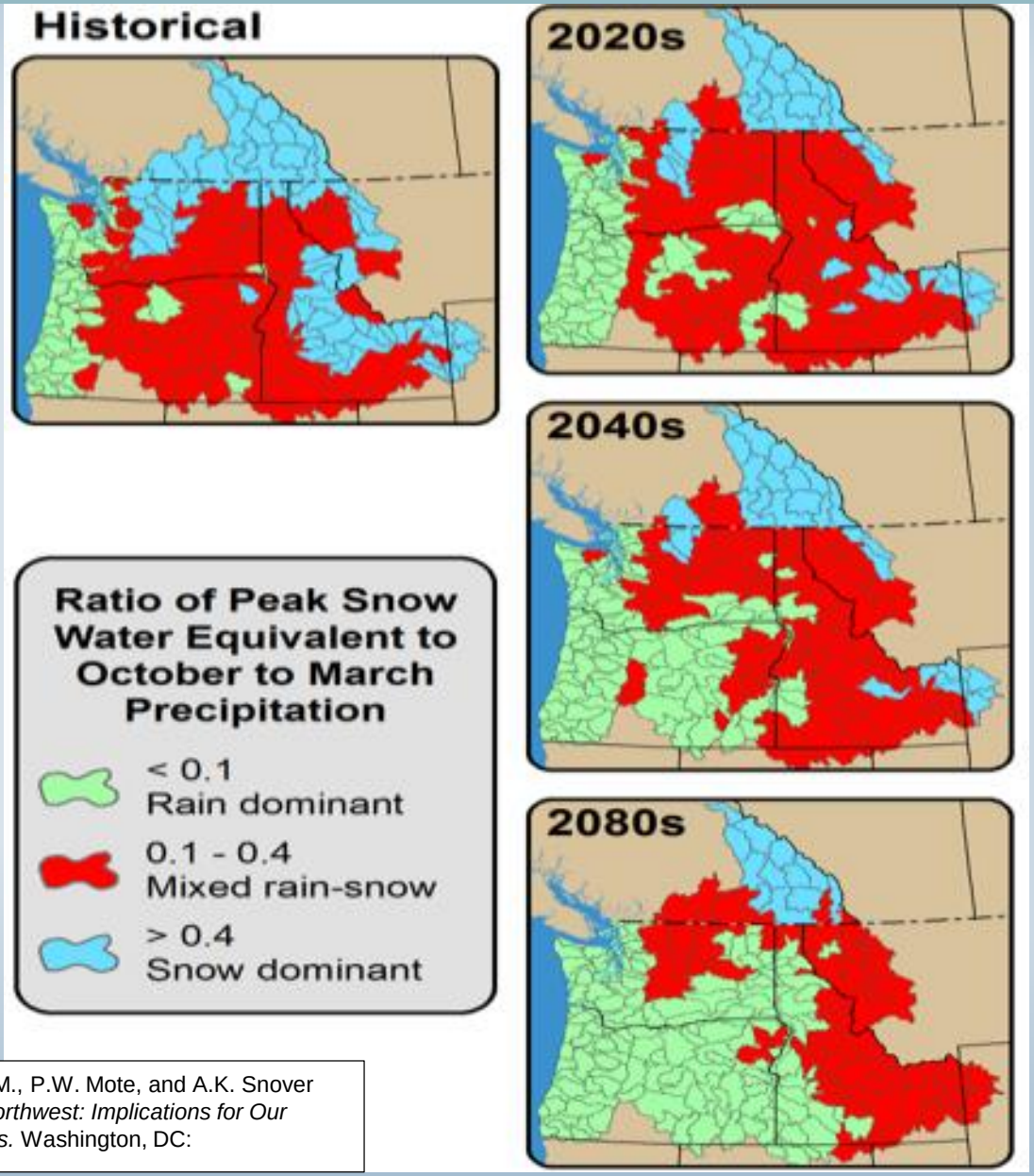
Drought is not an abnormal occurrence

2016 Drought Task Force

- **13 Recommendations**

http://droughtmonitor.unl.edu

Challenge: Climate and Loss of Snowpack



Hamlet et al. 2013, as cited in Dalton, M.M., P.W. Mote, and A.K. Snover [Eds.]. 2013. *Climate Change in the Northwest: Implications for Our Landscapes, Waters, and Communities.* Washington, DC: Island Press.

Challenges: Resources

Limited Budget and Increased Workloads

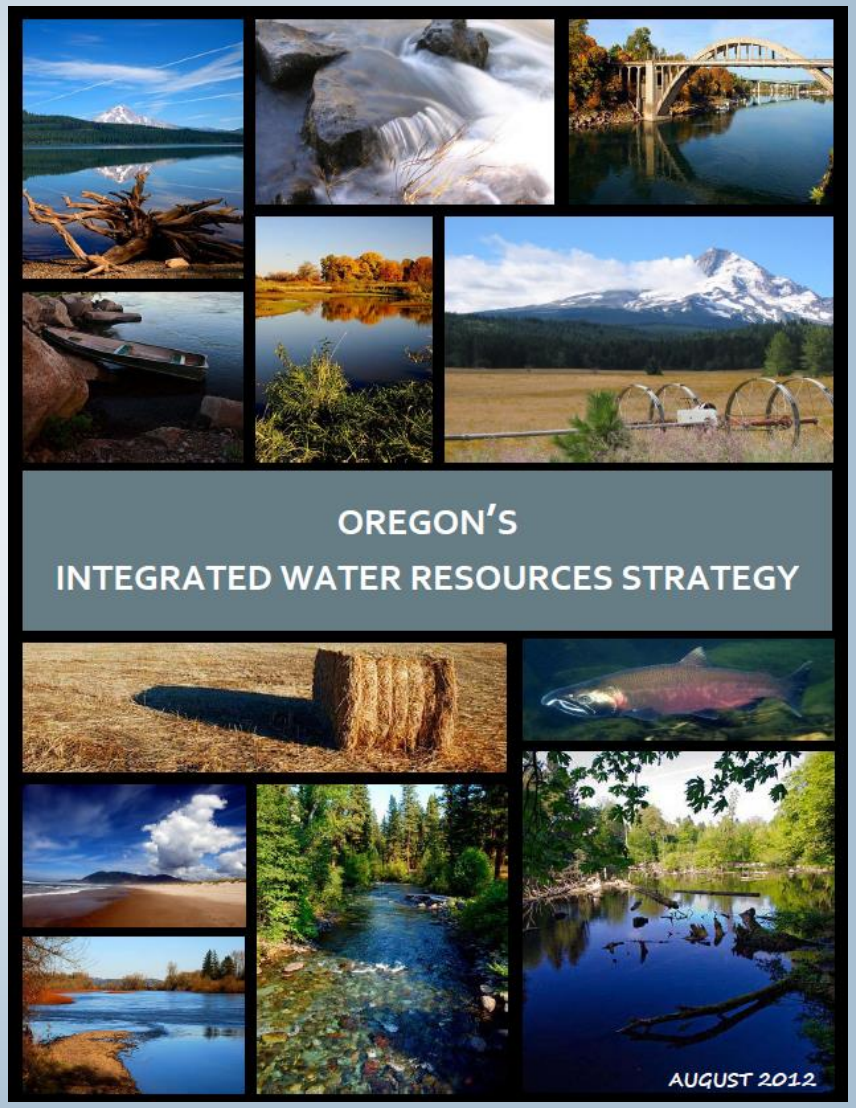
- More work than can be accomplished
- Creative solutions
- Increased complexity
- Need for more data
- Increased litigation
- Statewide: Cost containment / Revenue

Budget	2013-15	2017-19
General Fund	$ 26,504,946	$31,483,809
Other Funds (Including Fees)	10,626,121	12,633,833
Federal Funds	1,272,735	1,879,534
Full-Time Equivalent (FTE)	154.80	167.59

Strategies: IWRS

Integrated Water Resources Strategy

- Adopted in 2012
- Update every 5 years
- Understand Oregon's Water Resources, Needs, and Coming Pressures
- Meet Instream and Out-of-Stream Needs



Strategies: 2017 IWRS Update

Oregon's Integrated Water Resources Strategy Framework

PUBLIC REVIEW DRAFT

Understand Water Resources Today

OBJECTIVES

CRITICAL ISSUES

- Further Understand Limited Water Supplies & Systems (groundwater, surface water, and their interaction)
- Improve Water Quality & Quantity Information
- Further Understand Our Water Management Institutions

RECOMMENDED ACTIONS

Understanding Water Resources / Supplies / Institutions

- 1A. Conduct additional groundwater investigations
- 1B. Improve water resource data collection and monitoring
- 1C. Coordinate inter-agency data collection, processing, and use in decision-making

Understand Instream and Out-of-Stream Needs

OBJECTIVES

CRITICAL ISSUES

- Further Define Out-of-Stream Needs / Demands (i.e., diverted water)
- Further Define Instream Needs / Demands (i.e., left-in-place water)

RECOMMENDED ACTIONS

Understanding Oregon's Out-of-Stream Needs/Demands

- 2A. Regularly update long-term water demand forecasts [Revised]
- 2B. Improve water-use measurement & reporting
- 2C. Determine pre-1909 water right claims
- 2D. Authorize the update of water right records with contact information [Revised]
- 2E. Regularly update Oregon's water-related permitting guide [Revised]

Understanding Oregon's Instream Needs/Demands

- 3A. Determine flows needed (quality & quantity) to support instream needs
- 3B. Determine needs of groundwater dependent ecosystems

Understand the Coming Pressures That Affect Our Needs and Supplies

OBJECTIVES

CRITICAL ISSUES

- Economic Development
- Water & Energy
- Climate Change
- [New] Extreme Events
- Population Growth
- Water & Land Use
- Water-Related Infrastructure
- Education & Outreach

RECOMMENDED ACTIONS

Water & Energy

- 4A. Analyze the effects on water from energy development projects & policies
- 4B. Take advantage of existing infrastructure to develop non-traditional hydroelectric power [Revised]
- 4C. Promote strategies that increase/integrate energy & water savings

Climate Change

- 5A. Support continued basin-scale climate change research efforts
- 5B. Assist with climate change adaptation and resiliency strategies

Extreme Events

- 5.5A. Plan and prepare for drought resiliency [New]
- 5.5B. Plan and prepare for flood events [New]
- 5.5C. Plan and prepare for Cascadia subduction earthquake event [New]

Economic Development & Population Growth

(See Actions 2A and 3A)

Water & Land Use

- 6A. Improve integration of water information into land use planning (and vice versa)
- 6B. Improve state agency coordination [Revised]
- 6C. Encourage low-impact development practices and green infrastructure [Revised]

Water-Related Infrastructure

- 7A. Develop and upgrade water and wastewater infrastructure
- 7B. Encourage regional (sub-basin) approaches to water and wastewater systems
- 7C. Ensure public safety/dam safety [New]

Education and Outreach

- 8A. Support Oregon's K-12 environmental literacy plan
- 8B. Provide education and training for Oregon's next generation of water experts
- 8C. Promote community education and training opportunities
- 8D. Identify ongoing water-related research needs

Meet Oregon's Instream and Out-of-Stream Needs

OBJECTIVES

CRITICAL ISSUES

- Place-Based Efforts
- Water Management & Development
- Healthy Ecosystems
- Public Health
- Funding

RECOMMENDED ACTIONS

Place-Based Efforts

- 9A. Continue to undertake place-based integrated, water resources planning [Revised]
- 9B. Coordinate implementation of existing natural resource plans
- 9C. Partner with federal agencies, tribes, and neighboring states in long-term water resources management

Water Management & Development

- 10A. Improve water-use efficiency and water conservation
- 10B. Improve access to built storage
- 10C. Encourage additional water reuse projects
- 10D. Reach environmental outcomes with non-regulatory alternatives
- 10E. Continue the water resources development program [Revised]
- 10F. Provide an adequate presence in the field [New]
- 10G. Strengthen water quantity & water quality permitting programs [New]

Healthy Ecosystems

- 11A. Improve watershed health, resiliency, and capacity for natural storage
- 11B. Develop additional instream protections
- 11C. Prevent and eradicate invasive species
- 11D. Protect and restore instream habitat and habitat access for fish and wildlife
- 11E. Develop additional groundwater protections [New]

Public Health

- 12A. Ensure the safety of Oregon's drinking water
- 12B. Reduce the use of and exposure to toxics and other pollutants
- 12C. Implement water quality pollution control plans

Funding

- 13A. Fund development and implementation of Oregon's IWRS
- 13B. Fund water resources management activities at state agencies [Revised]
- 13C. Invest in local or regional water planning efforts [New]
- 13D. Invest in feasibility studies for water resources projects [Revised]
- 13E. Invest in implementation of water resources projects [New]

Strategy: 2017 IWRS Update

Oregon's Integrated Water Resources Strategy

Framework

PUBLIC REVIEW DRAFT

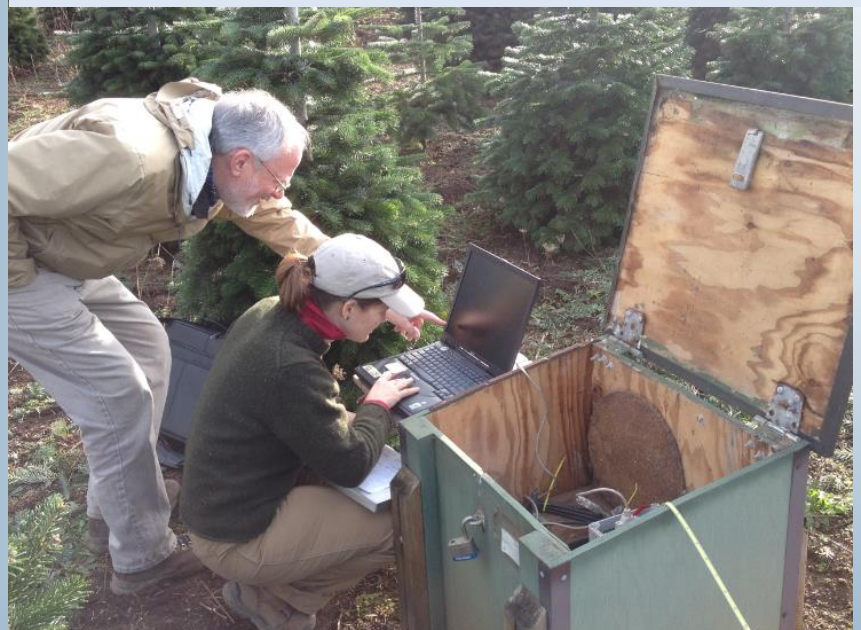
Understand Water Resources Today

Understanding Water Resources / Supplies / Institutions

1A. Conduct additional groundwater investigations

1B. Improve water resource data collection and monitoring

1C. Coordinate inter-agency data collection, processing, and use in decision-making



Strategy: 2017 IWRS Update

Oregon's Integrated Water Resources Strategy

PUBLIC REVIEW DRAFT

Framework

Understand Instream and Out-of-Stream Needs

Understanding Oregon's Out-of-Stream Needs/Demands

2A. Regularly update long-term water demand forecasts **[Revised]**
2B. Improve water-use measurement & reporting
2C. Determine pre-1909 water right claims
2D. Authorize the update of water right records with contact information **[Revised]**
2E. Regularly update Oregon's water-related permitting guide **[Revised]**

Understanding Oregon's Instream Needs/Demands

3A. Determine flows needed (quality & quantity) to support instream needs
3B. Determine needs of groundwater dependent ecosystems

Strategies: 2017 IWRS Update

Oregon's Integrated Water Resources Strategy

Framework

PUBLIC REVIEW DRAFT

Understand Coming Pressures that Affect Our Needs & Supplies

Water & Energy

4A. Analyze the effects on water from energy development projects & policies
4B. Take advantage of existing infrastructure to develop non-traditional hydroelectric power **[Revised]**
4C. Promote strategies that increase/integrate energy & water savings

Climate Change

5A. Support continued basin-scale climate change research efforts
5B. Assist with climate change adaptation and resiliency strategies

Extreme Events

5.5A. Plan and prepare for drought resiliency **[New]**
5.5B. Plan and prepare for flood events **[New]**
5.5C. Plan and prepare for Cascadia subduction earthquake event **[New]**

Economic Development & Population Growth

(See Actions 2A and 3A)

Water & Land Use

6A. Improve integration of water information into land use planning (and vice versa)
6B. Improve state agency coordination **[Revised]**
6C. Encourage low-impact development practices and green infrastructure **[Revised]**

Water-Related Infrastructure

7A. Develop and upgrade water and wastewater infrastructure
7B. Encourage regional (sub-basin) approaches to water and wastewater systems
7C. Ensure public safety/dam safety **[New]**

Education and Outreach

8A. Support Oregon's K-12 environmental literacy plan
8B. Provide education and training for Oregon's next generation of water experts
8C. Promote community education and training opportunities
8D. Identify ongoing water-related research needs

Strategy: 2017 Update

Oregon's Integrated Water Resources Strategy

Framework

PUBLIC REVIEW DRAFT

Meet Our Instream and Out-of-Stream Needs

Place-Based Efforts

9A. Continue to undertake place-based integrated, water resources planning **[Revised]**
9B. Coordinate implementation of existing natural resource plans
9C. Partner with federal agencies, tribes, and neighboring states in long-term water resources management

Water Management & Development

10A. Improve water-use efficiency and water conservation
10B. Improve access to built storage
10C. Encourage additional water reuse projects
10D. Reach environmental outcomes with non-regulatory alternatives
10E. Continue the water resources development program **[Revised]**
10F. Provide an adequate presence in the field **[New]**
10G. Strengthen water quantity & water quality permitting programs **[New]**

Healthy Ecosystems

11A. Improve watershed health, resiliency, and capacity for natural storage
11B. Develop additional instream protections
11C. Prevent and eradicate invasive species
11D. Protect and restore instream habitat and habitat access for fish and wildlife
11E. Develop additional groundwater protections **[New]**

Public Health

12A. Ensure the safety of Oregon's drinking water
12B. Reduce the use of and exposure to toxics and other pollutants
12C. Implement water quality pollution control plans

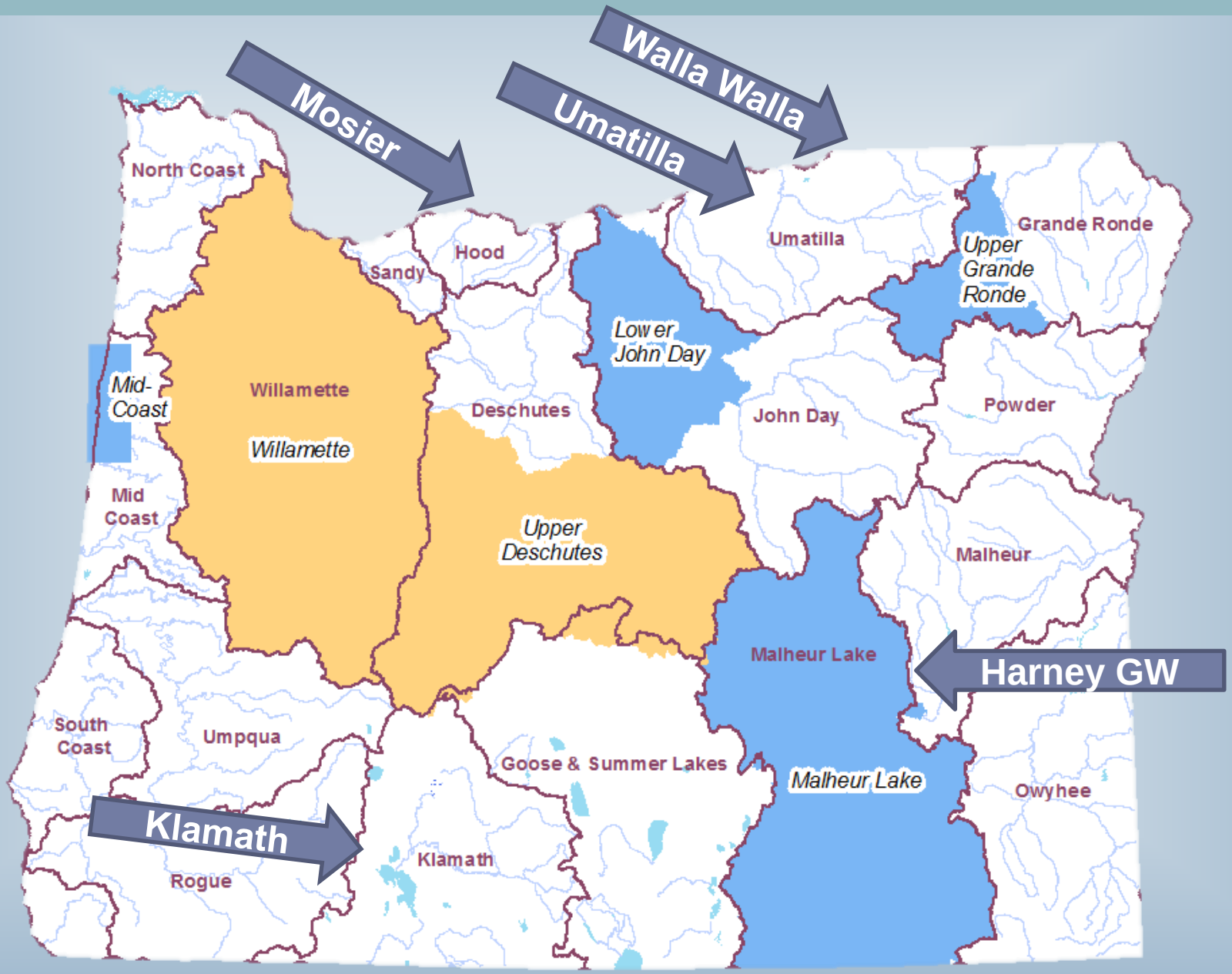
Funding

13A. Fund development and implementation of Oregon's IWRS
13B. Fund water resources management activities at state agencies **[Revised]**
13C. Invest in local or regional water planning efforts **[New]**
13D. Invest in feasibility studies for water resources projects **[Revised]**
13E. Invest in implementation of water resources projects **[New]**

Strategies: Meeting Future Needs

Water Resources Development Program

Strategies: Addressing Basin Water Issues

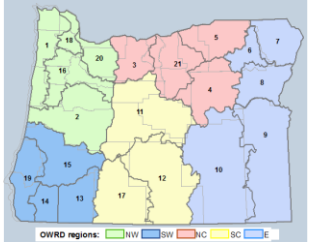


Strategies: Looking to the Future

Strategic Plan

Use existing mission, vision, and goals

Add values, core competencies, employee initiatives, and a prioritized list of work to be accomplished in the next 5 years



Use Department's existing capacity and resources as sideboards for the amount of work that could be done in the 5-year timeframe

Strategies: Looking to the Future

Other Work

- Developing a long-term groundwater work plan
- Reviewing Dam Safety laws
- Bolstering Well Construction program
- Assessing field staff workloads
- Drought mitigation and response
- Evaluating water use measurement programs
- Innovations in water policy: Role of mitigation?
- Facilitating investments in water resources

Opportunities for State Collaboration

Ongoing Collaboration

- METRIC Program
- Western States Water Council

Looking to the Future

- Columbia River
- Snake River
- Information Sharing and Developing Best Practices

Questions?

MEMO

To: Idaho Water Resource Board
From: Brian Patton
Subject: South Fork Clearwater/Red River Dredge Mining
Date: September 7, 2016

In August of 2017, IDWR denied to applications for suction dredge mining within the Red River, a tributary to the South Fork of the Clearwater River. Both applicants requested a hearing before the Water Resource Board on the denial of their applications.

At the Water Resource Board meeting on the 15th, you will have a resolution for your consideration that would appoint a hearing officer to preside over the hearing(s) and issue a recommended order for the Board's consideration.

Patton, Brian

Subject: FW: Request for Hearing

From: Golart, Aaron
Sent: Tuesday, August 15, 2017 5:28 PM
To: Gay Richardson <gayrichardson@idaho.net>
Cc: Luke, Tim <Tim.Luke@idwr.idaho.gov>; Patton, Brian <Brian.Patton@idwr.idaho.gov>; Weaver, Mathew <Mathew.Weaver@idwr.idaho.gov>
Subject: Request for Hearing

Mr. Richardson,

We received your letter to Tim Luke dated August 10, 2017, in which you request a hearing. Your letter was in response to a letter dated August 2, 2017, from IDWR, denying your most recent application for a Stream Channel Alteration permit (S82-20066) to dredge mine the Red River. Because you filed your request for hearing within 15 days of receipt of the denial, we consider your letter a timely request for hearing under § 42-3805 – DECSION OF DIRECTOR – HEARING – REVIEW BY DISTRICT COURT.

Because the Stream Channel Alteration program is overseen by the Idaho Water Resource Board (Board), they will need to consider this matter and appoint a hearing officer at their next Board Meeting. We have coordinated with Brian Patton the Executive Director of the Board and he has agreed to put this matter on the Board's September 15, 2017, agenda. To address your concerns of impartiality we will recommend that the Board assign a hearing officer who has not previously been involved in the South Fork of the Clearwater River basin dredging matters. Once the Board has appointed a hearing officer, he/she will follow up with you to schedule and coordinate the hearing.

Please expect further correspondence on this matter following the September 15 Board Meeting.

Thank you,

Aaron Golart
State Coordinator, Stream Protection Program
Idaho Department of Water Resources
322 E. Front St.
P.O. Box 83720
Boise, Idaho 83720-0098
(208) 287-4941
aaron.golart@idwr.idaho.gov

Patton, Brian

Subject: FW: Request for Hearing

From: Luke, Tim
Sent: Friday, August 18, 2017 4:38 PM
To: John Stickley <goldfinder2013@hotmail.com>
Cc: Golart, Aaron <Aaron.Golart@idwr.idaho.gov>; Weaver, Mathew <Mathew.Weaver@idwr.idaho.gov>; Patton, Brian <Brian.Patton@idwr.idaho.gov>
Subject: Request for Hearing

Mr. Stickley,

The Idaho Department of Water Resources ("Department") received your letter dated August 13, 2017, in which you request a hearing. Your letter was in response to a letter dated August 2, 2017, from IDWR, denying your Stream Channel Alteration permit application (S82-20067) to dredge mine a section of the Red River. Because you filed your request for hearing within 15 days of receipt of the denial, we consider your letter a timely request for hearing under § 42-3805 – DECSION OF DIRECTOR – HEARING – REVIEW BY DISTRICT COURT.

Because the Stream Channel Alteration program is overseen by the Idaho Water Resource Board (Board), they will need to consider this matter and appoint a hearing officer at its next Board Meeting. We have coordinated with Brian Patton, the Executive Director of the Board, and he has agreed to put this matter on the Board's September 15, 2017, agenda. To address your concerns of impartiality we will recommend that the Board assign a hearing officer who has not previously been involved in the South Fork Clearwater River dredge mining matters. Once the Board has appointed a hearing officer, he/she will follow up with you to schedule and coordinate the hearing.

Please expect further correspondence on this matter following the September 15th Board Meeting.

Thank you,

Tim Luke
Water Compliance Bureau Chief
Idaho Department of Water Resources
322 E Front St, PO Box 83720
Boise, ID 83720-0098
208-287-4959 (office)

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF STREAM CHANNEL ALTERATION PERMIT NOS. S82-20066 and S82-20067	)))	**RESOLUTION**

WHEREAS, on August 2, 2017, the Idaho Department of Water Resources ("Department") denied Joint Application for Permit No. S82-20066 in the name of Gay Richardson ("Richardson") for suction dredge mining within the Red River, a tributary of the South Fork Clearwater River; and

WHEREAS, on August 2, 2017, the Department denied Joint Application for Permit No. S82-20067 in the name of John Stickley ("Stickley") for suction dredge mining within the Red River, a tributary of the South Fork Clearwater River; and

WHEREAS, Richardson and Stickley had fifteen days from August 2, 2017, to notify the Department, in writing, of their request for hearing before the Idaho Water Resource Board ("IWRB") on the denial of their respective Joint Applications for Permit;

WHEREAS, the Department received a letter from Richardson on August 15, 2017, requesting a hearing on the denial of Joint Application for Permit No. S82-20066; and

WHEREAS, the Department received a letter from Stickley on August 17, 2017, requesting a hearing on the denial of Joint Application for Permit No. S82-20067; and

WHEREAS, it is necessary for the IWRB to appoint a hearing officer to preside over the hearings requested by Richardson and Stickley and issue a recommended order or recommended orders in accordance with Idaho Code §§ 67-5243(1)(a) and 67-5248; and

NOW THEREFORE BE IT RESOLVED, the IWRB hereby appoints Hon. John M. Melanson as the hearing officer in the above-captioned proceedings.

Adopted this _____ day of September 2017.

_____
ROGER CHASE, Chairman
Idaho Water Resource Board

ATTEST: _____
VINCE ALBERDI, Secretary

Memorandum

To: Idaho Water Resource Board (IWRB)

From: Neeley Miller, IDWR Planning & Projects Bureau

Date: September 12, 2017

Re: Priest Lake Water Management Study

Background:

- The Idaho Department of Water Resources (IDWR) owns the existing Priest Lake Dam (dam) which was constructed in 1978 as an outlet control structure to maintain lake levels in the Priest River in accordance with Idaho Code §70-507. Idaho Code §70-507 authorizes the director of IDWR to contract operation and maintenance of the dam, and requires that the water surface level of Priest Lake be maintained at 3.0 feet on the USGS Priest Lake Outlet gage (located upstream of the dam) after run-off of the winter snowpack until the close of the main recreational season.
- As a result of limited water supply and drought conditions in northern Idaho in 2015 and 2016, it was difficult to maintain required pool levels and downstream flow in the Priest River during the recreational season.
- The IWRB subsequently authorized expenditure of up to $300,000 from the Revolving Development Account to complete the Priest Lake Water Management Study (study) to evaluate strategies to meet long-term water management objectives for the Priest Lake and Priest River system. The study includes development of alternatives to maintain required lake levels and maintain current minimum river flows through improved operation of the Priest Lake Outlet Dam, increased water storage in the lake, and potential modifications to the dam. The study will also include options to improve conditions of the Priest Lake Thorofare. General elements of the study include the following:
    1) Analysis of hydrologic and hydrodynamic conditions;
    2) Identification of necessary improvements for water supply forecasting and monitoring (gaging);
    3) Identification of potential impacts or benefits to shoreline property owners, water quality, and fish and wildlife;
    4) Engineering analysis of potential improvements to the Priest Lake Outlet Dam structure; and
    5) Engineering analysis of potential improvements to provide for the sustainability of the Thorofare channel including access, navigability, self-scouring, and water quality.
- A Request for Proposals was issued to solicit consultant services to complete the study. The proposal submittal period closed in October 2016. Several proposals were submitted and staff review proposals and selected a consultant to perform the study: Mott MacDonald (MM).

Project Status:

- A project website has been developed within the project section of the IWRB webpage. Elements of the website include project overview, FAQ, Maps & Images, Meetings, Study Documents, and schedule. The website can be found at: http://www.idwr.idaho.gov/IWRB/projects/priest-lake/
- Staff is coordinating with project team to utilize the website to disseminate project information and solicit input on the project from the public.
- Held Public Meeting Open House on Thursday July 20.

- Water Level Management Alternatives: Focus is on dry-year alternatives; temporary 3 inch and 6 inches lake level raises to hold more water during the spring runoff and early recreation season. Additional water would slowly be released throughout the season.

- Once a preferred alternative is selected by the IWRB a detailed lake operation plan will be developed by IDWR in coordination with IWRB and stakeholders.

Schedule Summary:

1) Study Work Plan & Outreach Plan Development, Data Collection, Criteria Development: March to May
2) Analysis of Existing Conditions: April to June
3) Alternative Development & Evaluation: June to September
4) Finalization of Study & Reporting: September to December

Important Dates:

- Public Open House Meeting #1 was held on Thursday July 20, 2017
- Public Meeting #2 to be held Friday, September 22, 2017
    - Staff will arrange for Special Board Meeting in October) for consultant to present results/preferred alternative
- Draft report to IWRB in December 2017; Final report Jan 2018

Attached:

- Open House Flyer Initiation
- Poster Boards for Open House

HISTORY & PURPOSE OF STUDY

BRIEF HISTORY

In 2015, drought conditions made maintaining the required summer lake levels & minimum discharge from the dam very difficult. In addition, there are concerns about the breakwater structure & Thorofare access.

PURPOSE OF STUDY

Evaluate operation improvements to achieve these three goals:

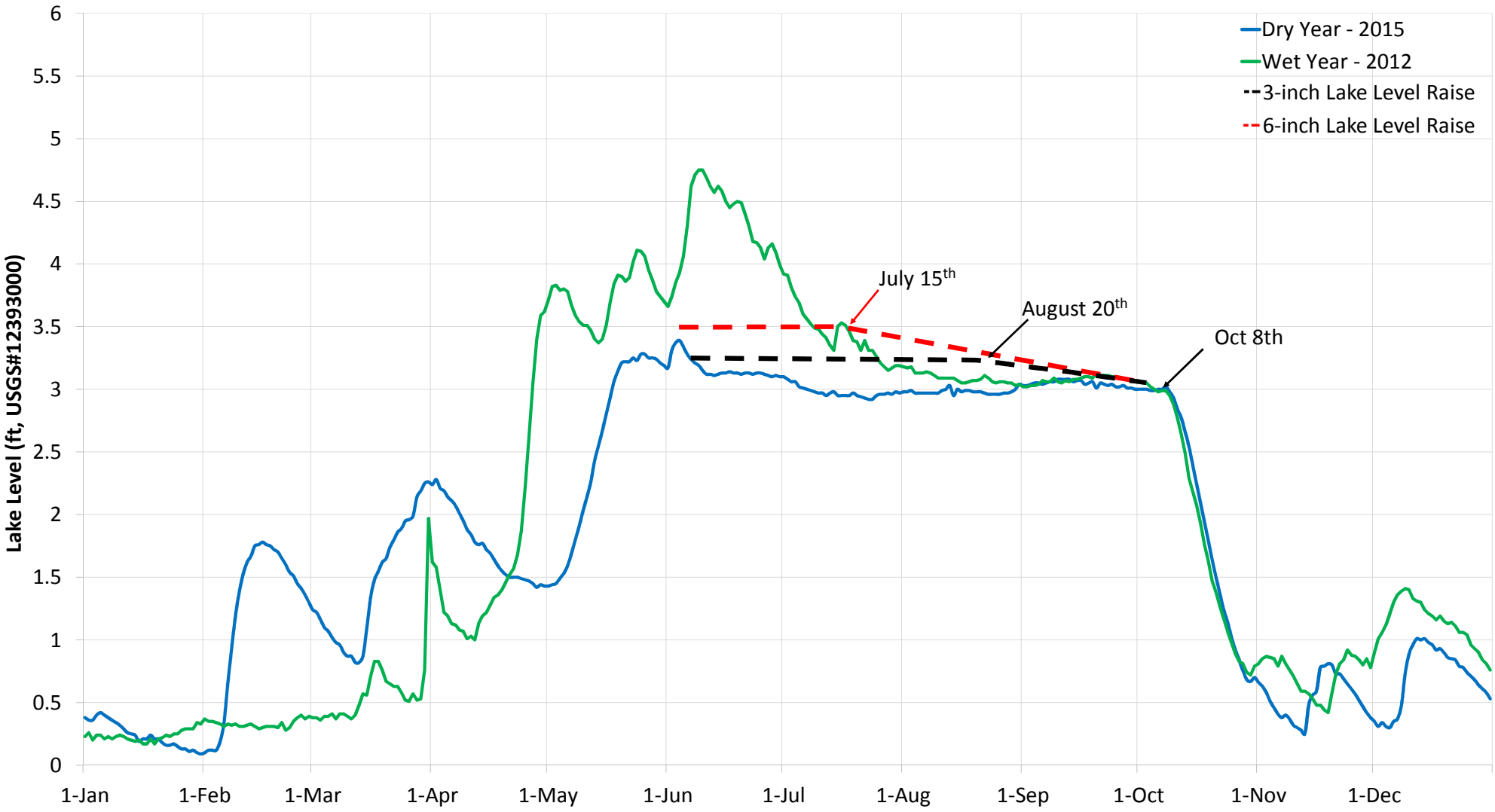
- Preserving lake levels through the recreational season during dry & marginally dry years. This goal supports the local economy and meets statutory lake level requirements.

- Maintaining a minimum discharge of 60 cfs from the dam during recreational season.

- Providing sustainable modifications to improve Thorofare access, navigability, & water quality.

WATER LEVEL MANAGEMENT ALTERNATIVES FOR DRY YEARS

Temporary 3-inch & 6-inch Lake Level Raise Alternatives

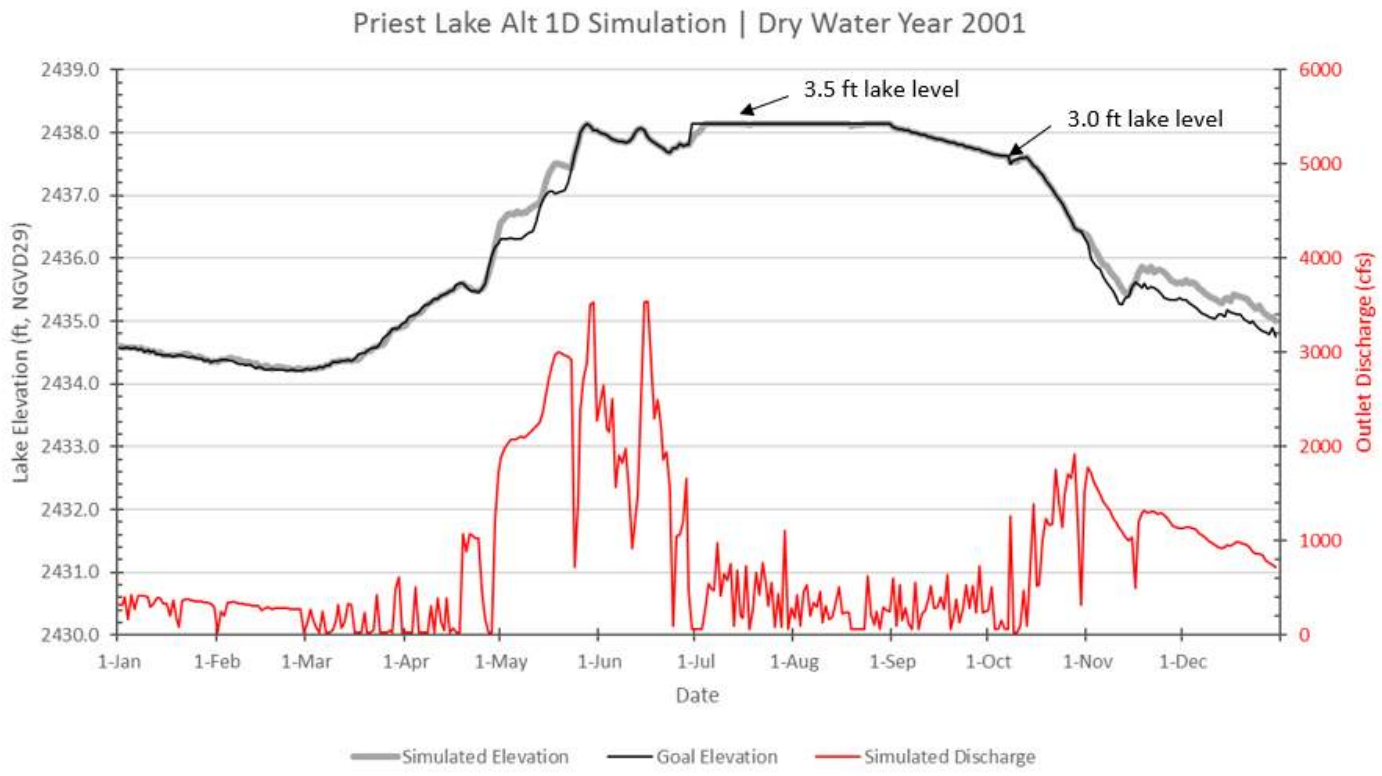


WATER LEVEL MANAGEMENT ALTERNATIVES

Alt 1D
Dry Year 2001

Alternative 1D Definition | Dry Water Year 2001

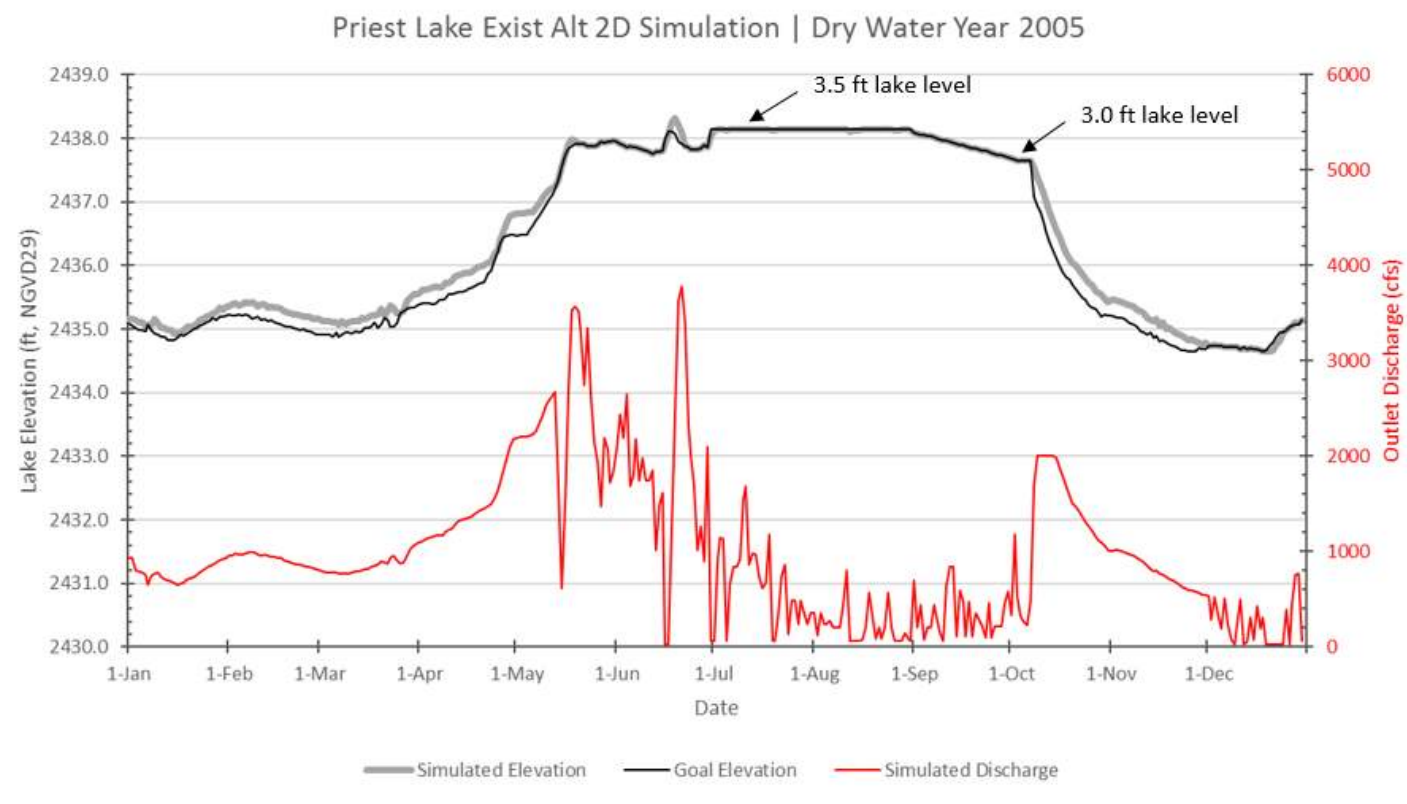
Recreation Lake Level			Priest River Discharge (Q)		
Stage (ft)	Start Date	End Date	Q (cfs)	Start Date	End Date
3.5	Jul 01	Aug 31	60 (min)	Jul 01	Oct 8
3.5 to 3.0	Sept 1	Oct 8	2,000 (max)	Oct 1	Oct 31
			1,200 max increase per day	Oct 1	Oct 31



Alt 2D
Dry Year 2005

Alternative 2D Definition | Dry Water Year 2005

Recreation Lake Level			Priest River Discharge (Q)		
Stage (ft)	Start Date	End Date	Q (cfs)	Start Date	End Date
3.5	Jul 01	Aug 31	60 (min)	Jul 01	Oct 8
3.5 to 3.0	Sept 1	Oct 8	2,000 (max)	Oct 1	Oct 31
			1,200 max increase per day	Oct 1	Oct 31



ASSESSMENT OF HIGHER WATER LEVEL

Shoreline Features

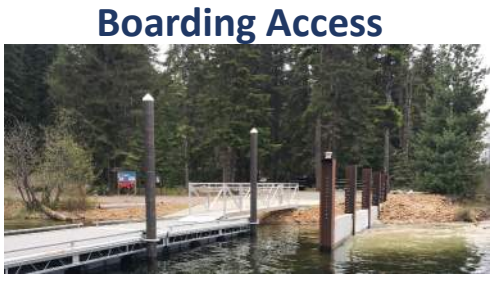
Recreational Beaches




- Pier Access
- Benches
- Beaches

- Stairs
- Fire Pit

Public/Private Boarding Access



- Beach
- Boat Ramps

Boat Covers

- Fixed Height Structures
- Height of Vessel Adjustments

Natural Shoreline

- Natural Shoreline Features
- Rocks, Vegetation
- Large % of Overall Lake Shoreline

Additional Considerations

Vessel Wakes

Basement Flooding

Wetlands

Dry Year Pool Raise Assessment Summary

Temporary pool raise is being considered as an improvement measure **only** for dry and marginally dry years. Therefore, any possible impact will be limited to these years.

Alternative	Recreational Beach Use	Lake Shoreline Erosion	Access to Fixed Structures	Navigation Access to Marinas	Boat Launch Facilities	Fish Habitat	Thorofare Navigation	Wetland & Riparian Vegetation	Basement Flooding
3-inch Pool Raise									
6-inch Pool Raise	(1)		(2)						

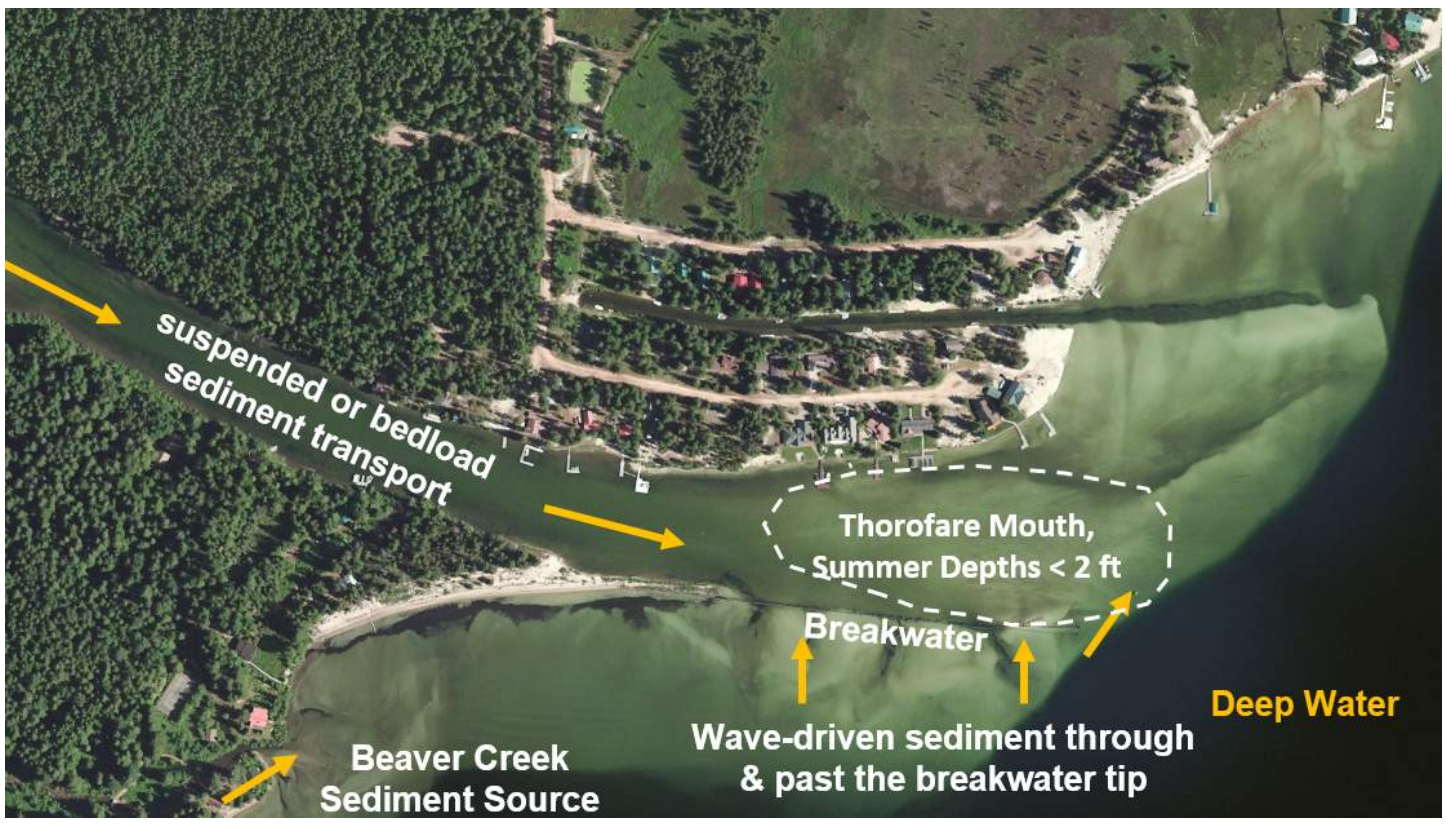
Change with respect to a typical or a wet year: Positive Change; No or Negligible Change; Low Impact; High Impact

Footnotes:
(1): There will be no impact on majority of the beaches. Localized areas will see loss of usable dry beach.
(2): There will be no impact on majority of fixed structures. A low percentage of structures will see low impacts.

THOROFARE HYDRAULICS & SEDIMENTATION

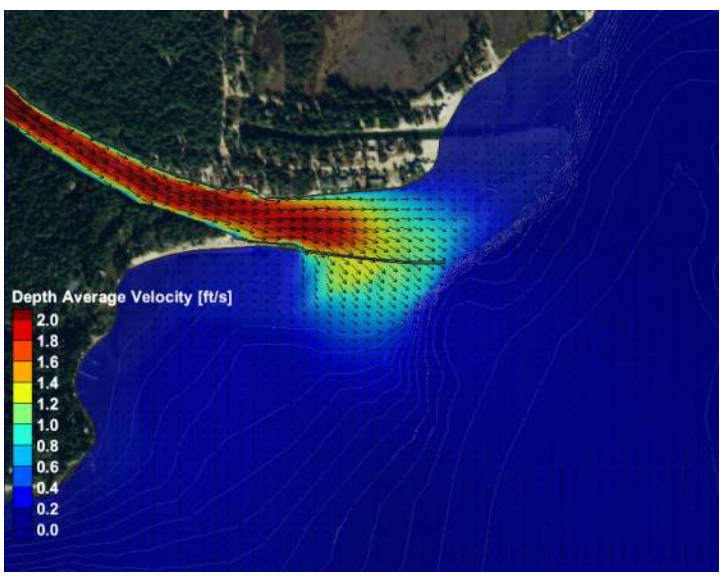
Thorofare Sustainability
Promote self-sustaining improvements to
Thorofare access, navigability and water quality.

Natural Processes

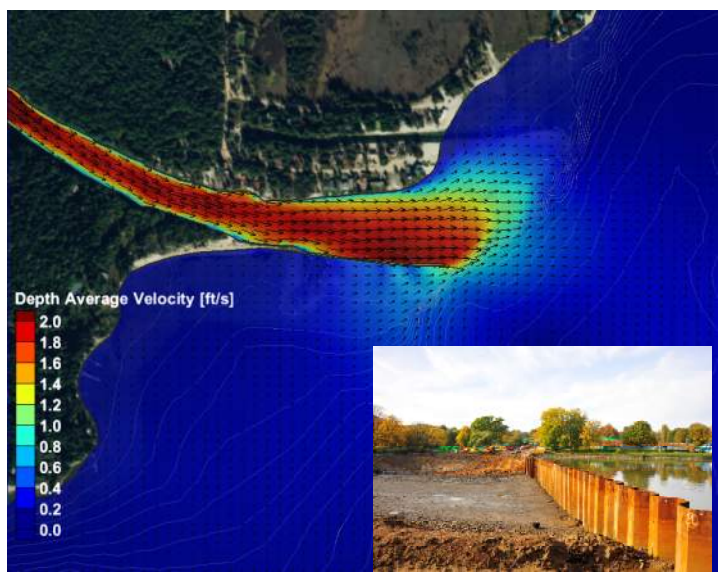


Velocity

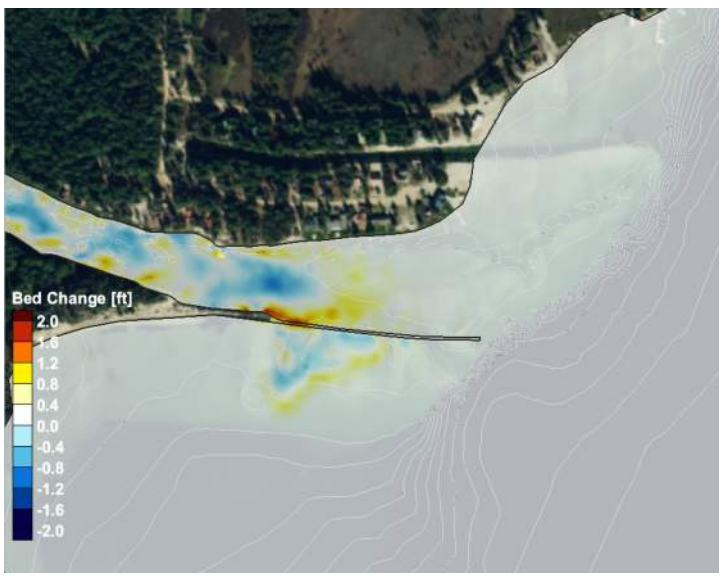
Porous Breakwater

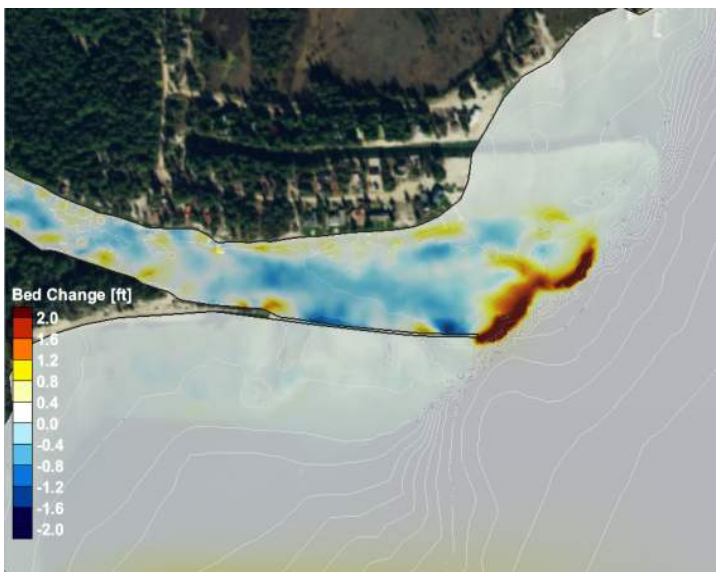


Solid Breakwater



Sedimentation





THOROFARE IMPROVEMENT ALTERNATIVES

No Action

Removal of Breakwater

Rehabilitate Existing Porous Breakwater

Replace Existing Porous Breakwater with Sediment Retention Feature

In-channel Flow Diversion

Partial In-channel Flow Diversion

THOROFARE IMPROVEMENT CONCEPTS

Stone

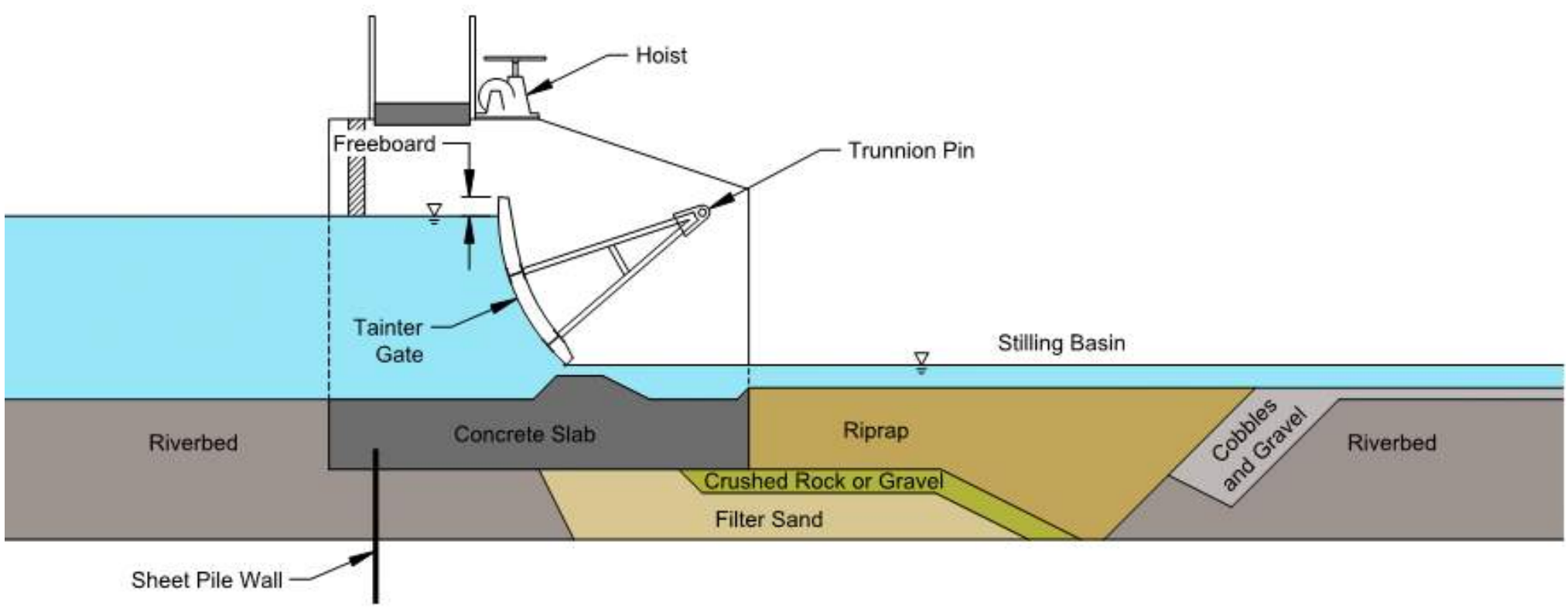
Bio-engineered / Large Woody Debris

Sheet Pile Wall

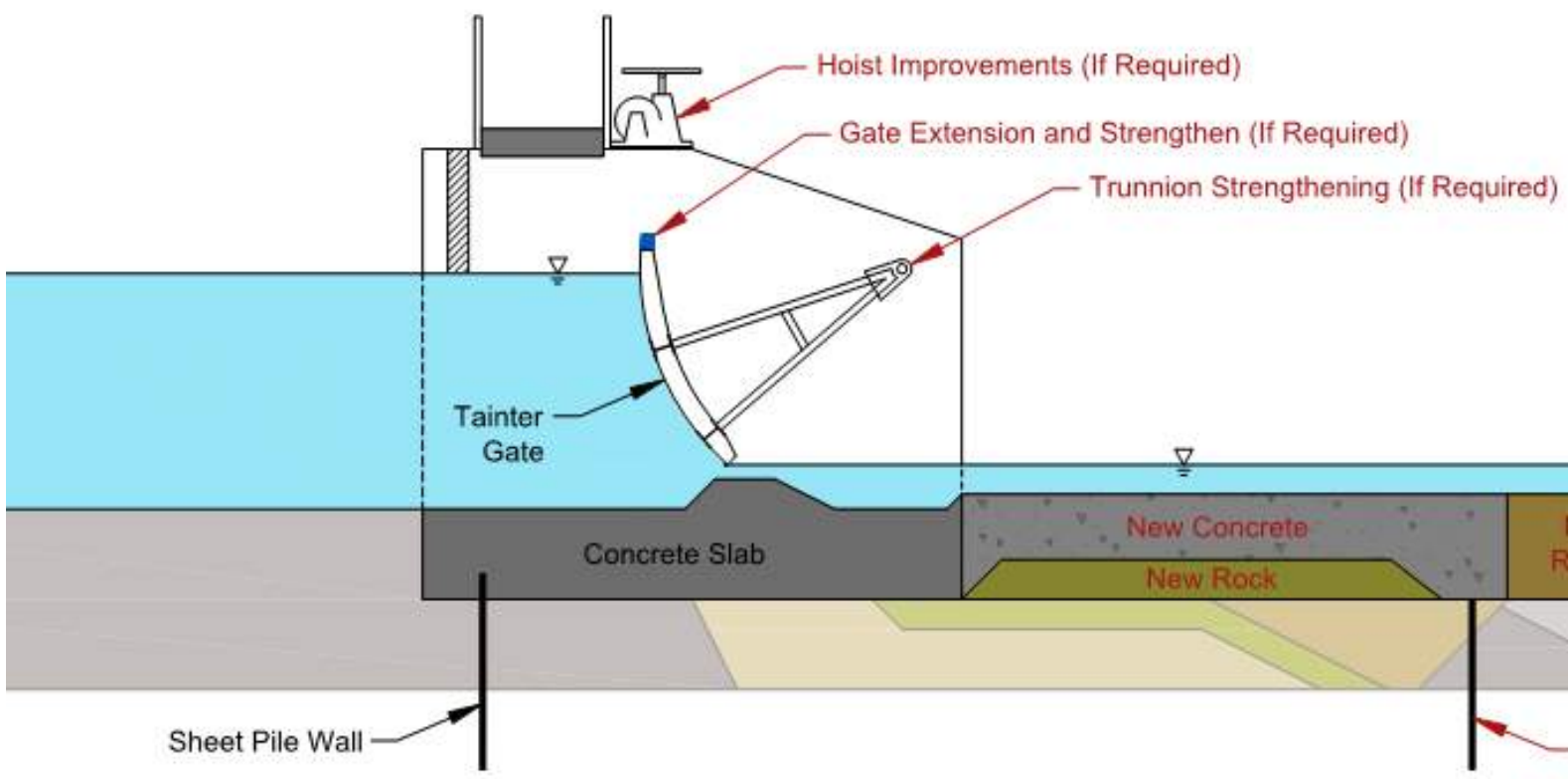
Flow Diversion Features

OUTLET DAM STRUCTURE

Existing Conditions



Improvement Measures



You're Invited!

PRIEST LAKE WATER MANAGEMENT STUDY

PUBLIC INFORMATION MEETING & OPEN HOUSE

FRIDAY, SEPTEMBER 22, 2017

4:00 - 7:00pm

Priest Lake Elementary School
27732 Hwy 57 Priest Lake, Idaho

WHAT CAN YOU EXPECT?

Stop by the informational meeting and open house anytime between **4:00 - 7:00pm**, view the display materials, and talk to project representatives.

No formal presentation is scheduled.

The public will have an opportunity to provide written comments and information on the proposed study alternatives for the project team to consider.

ABOUT THE STUDY

The purpose of the study is three-fold:

- Preserving lake levels through the recreational season. This goal supports the local economy and meets current lake level requirements. It also avoids any negative impacts to downstream river flows.
- Maintaining a minimum discharge of 60cfs from the dam during the recreational season.
- Providing sustainable modifications to improve thorofare access, navigability & water quality.

If you require any special assistance to attend this meeting or have any questions regarding the study, contact the project team at 208-597- 4219. Additional information about the study can be found at: www.idwr.idaho.gov/IWRB/projects/priest-lake

TO: Idaho Water Resource Board (IWRB)

FROM: Neeley Miller, IDWR Planning and Projects Bureau

DATE: September 1, 2017

RE: Elmore County Water Supply Alternatives Study

Background

In January 2016 SPF Engineering (SPF) at the request of Elmore County developed a proposal for an Elmore County Water Supply Study. The specific objectives of the study (according to Proposal dated Jan 4, 2016) were to 1) estimate existing and future irrigation, municipal, industrial and other water demand, 2) quantify current water supply deficits, 3) determine the economic benefit from improving Elmore County water supply to meet demands, and 4) estimate the approximate cost to develop additional water supplies. The cost of the study was indicated to be $109,000.

The Idaho Water Resource Board (IWRB) passed a funding resolution at their January 2016 meeting authorizing the expenditure of $65,000 to Elmore County for the Water Supply Study. In the IWRB's funding resolution the Board indicated that the report shall identify the most cost-effective water supplies that can be developed to achieve aquifer stabilization and include a recommended course of action regarding future water supplies for the Elmore County area.

SPF submitted the final report to the IWRB in the spring of 2017. The executive summary is attached for review. Staff can provide IWRB members with a copy of the full report upon request. Representatives from SPF and Elmore County are here today to provide you with a presentation on the results of this study and to preview an upcoming funding request related to recharge.

ELMORE COUNTY
WATER SUPPLY ALTERNATIVES

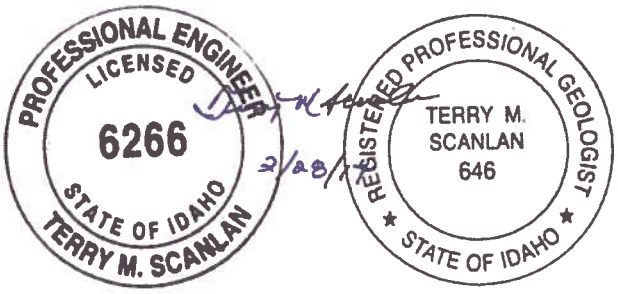
Prepared for

Elmore County Board of County Commissioners
c/o Scott Campbell, Campbell Law, Chtd. PO Box 170538
Boise, ID 83717

Prepared by

SPF Water Engineering, LLC
300 East Mallard, Suite 350
Boise, Idaho 83706
(208) 383-4140

February 28, 2017



SPF WATER ENGINEERING

Executive Summary

Background and Purpose

Groundwater pumping in portions of the Mountain Home Plateau in Elmore County has resulted in chronic water-level declines. Appropriation of groundwater for new consumptive uses in these areas is prohibited, and curtailment of some groundwater rights is possible as water levels continue to decline. This has led to concerns that (1) water supplies are insufficient to support existing uses and future development, and (2) a curtailment of groundwater rights will result in substantial impacts to the local economy.

The purpose of this water-supply study (study) was to quantify study-area water needs and explore possible sources of additional supply. Specific objectives of the study were to:

1. Estimate existing and future irrigation, municipal, industrial, and other water demands;
2. Quantify current water supply deficits;
3. Determine the economic benefit from improving Elmore County water supplies to meet demands;
4. Estimate the approximate costs of developing additional water supplies to achieve water-supply sustainability and support future economic development.

Water Supply Sources and Groundwater Use

The study area for this analysis is the portion of Elmore County coinciding with Mountain Home Area Water District 161 (Figure 1). Surface water and groundwater are used as water supply sources within the study area. Irrigation is the primary water use. Approximately 70,000 acres are irrigated within the study area.

Surface water sources utilized within the study area include (1) local drainages that discharge to the Mountain Home Plateau, (2) Boise River tributaries discharging to Little Camas Reservoir, and (3) the Snake River. Local drainages and Little Camas Reservoir supply irrigation to approximately 20,000 acres. These water sources are subject to drought and are not reliable for full irrigation supplies each year. The Snake River provides reliable full-season irrigation supplies to approximately 33,000 acres.

Groundwater is used as a primary supply for irrigation of approximately 18,000 acres, and as a supplemental supply on approximately 8,000 acres. Groundwater is also used for municipal (including municipal irrigation), stockwater, domestic, commercial, and industrial purposes.

Total annual groundwater diversion within the study area is estimated to be approximately 80,000 acre feet (AF), of which 85% is diverted for agricultural irrigation, 5% for municipal-

supplied irrigation, and 10% is supplied for other uses including domestic (including municipal-supplied domestic), stockwater, commercial, and industrial.

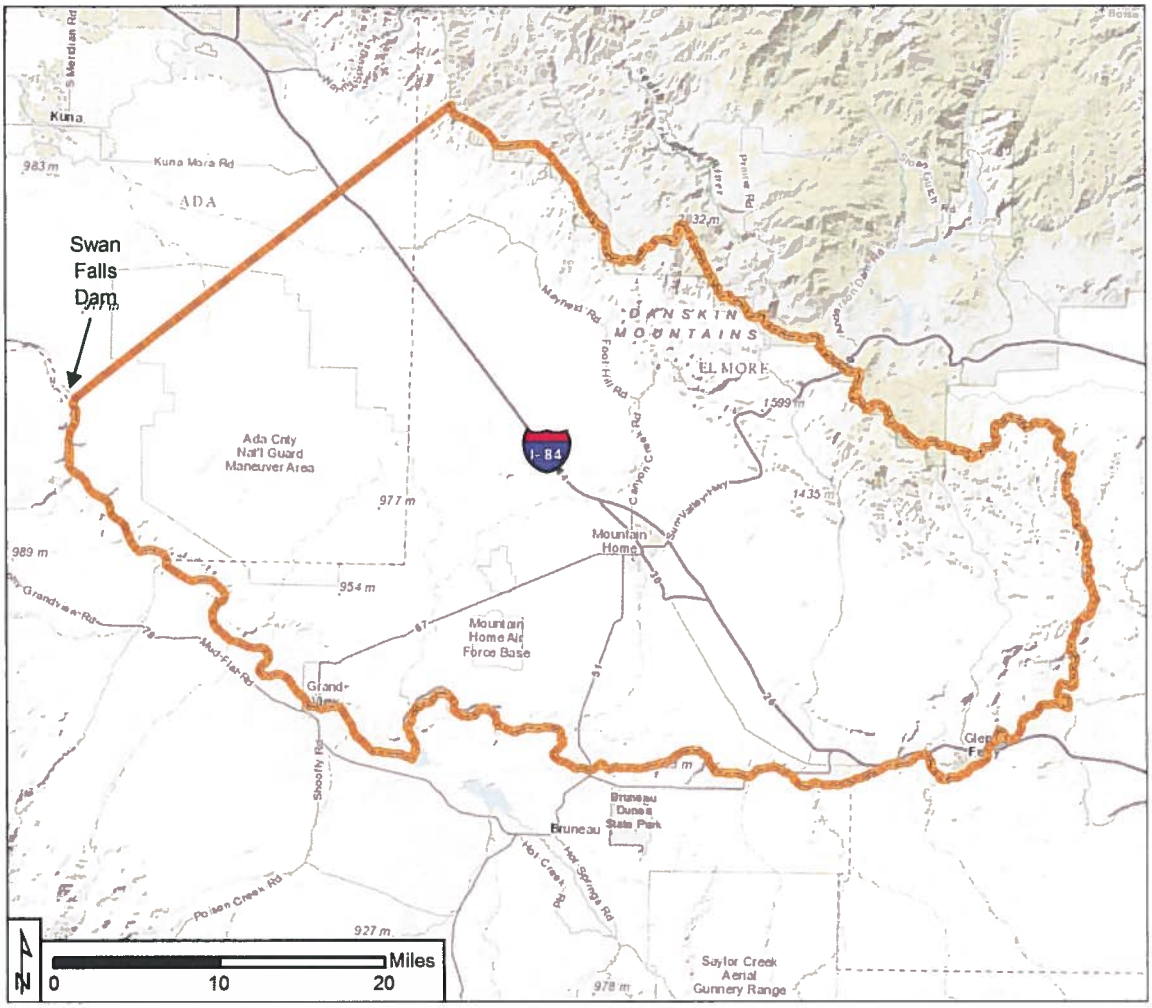


Figure 1. Study Area Boundary

Groundwater Conditions

Groundwater is found in a regional aquifer in basalt and sediments of the Bruneau Formation and in sediments of the Glenns Ferry Formation. Groundwater is also found locally in perched aquifers near Mountain Home and approximately 10 miles northwest of Mountain Home near Tipanuk. The perched aquifers are not a significant source of supply.

Groundwater levels within the regional aquifer show declines in areas of concentrated pumping. The areas of significant decline are east of Cinder Cone Butte, within and south of

the City of Mountain Home, Mountain Home Air Force Base (MHAFB), and ground-water irrigated lands to the east and west of MHAFB.

- Cumulative water-level declines since the 1960s near Cinder Cone Butte exceed 100 feet, and may be approaching 200 feet in some locations. Water levels are currently declining at a rate of approximately 5 feet per year in some wells.

- Cumulative water-level decline on the south side of the City of Mountain Home appears to be approximately 80 feet. Water levels are declining at a rate of approximately 3 feet per year. Water levels do not show declines in zones above the regional aquifer, or within the regional aquifer on the northeast side of the City.

- Cumulative water-level declines at MHAFB are approximately 60 feet, with current declines of approximately 1.5 feet per year.

- Declines of nearly 100 feet have been recorded beneath ground-water irrigated lands west of MHAFB. Declines appear to have stabilized in this area, potentially due to changes in pumping patterns.

- East of MHAFB, the cumulative decline is approximately 80 feet, and the current rate of decline is approximately 2 feet per year.

In contrast to the water-level declines described above, other areas within Water District 161 generally show stable long-term water-level trends. North of Mountain Home, stable water levels appear to be related to groundwater recharge from Canyon Creek and Mountain Home Irrigation District (MHID) facilities. In other areas, stable groundwater levels occur in areas without local irrigation pumping. For example, water levels are relatively stable within only a few miles of the areas of significant decline at Cinder Cone Butte and east of MHAFB. These data demonstrate that water-level declines are localized to the areas of significant groundwater pumping and are not pervasive across the study area. Unlike some other aquifers within the state (i.e., Eastern Snake Plain Aquifer), aquifer stabilization activities in one location on the Mountain Home Plateau might not provide benefit to areas only a few miles distant. The local effects of pumping also pose challenges for water right administration, as curtailment of junior-priority groundwater rights in one area is unlikely to provide relief to senior-priority groundwater rights in an area ten miles away.

Groundwater deficits were determined by calculating the estimated volume of water lost from groundwater storage. The volume was estimated based on comparison of groundwater levels in the 1970s to recent groundwater levels. The annualized average annual pumping deficit is estimated to be 43,000 AF per year. The estimated annual pumping deficits are 24,000 AF in the Cinder Cone Butte area, 7,000 AF in the City of Mountain Home vicinity, and 12,000 AF in the MHAFB vicinity (including lands to the east near Highway 51).

Methods to Achieve Groundwater-Level Stabilization

Groundwater-level stabilization can be achieved by reducing the net groundwater use within the areas of water-level decline. Net reductions can be achieved by reducing groundwater pumping or increasing groundwater recharge.

- Groundwater pumping can be reduced by conversion of existing groundwater irrigation supplies to imported surface-water supplies from the Boise River or Snake River. Imported water supplies would also be beneficial for supplemental irrigation of lands without reliable surface water irrigation supplies and for municipal and industrial uses. Groundwater pumping can also be reduced through conservation; however, given that 85 percent of groundwater use is associated with agricultural irrigation, conservation would consist of either increasing efficiency or reducing pumping. Most groundwater irrigated lands utilize relatively efficient sprinkler systems to minimize power use; hence, the opportunities to significantly reduce water use through increased efficiency are probably limited. Switching to less water-intensive crops can allow reduced pumping, but such crops provide less economic benefit to the county. There may be some potential to reduce municipal water use through conservation, although the total water savings is likely to be relatively small compared to overall groundwater use within the study area.
- Groundwater recharge, through either surface recharge or injection wells, can also provide a net reduction in groundwater use.

Availability of Boise River and Snake River Water Supplies

Flows in the Boise River basin within Ada and Elmore counties are generally fully appropriated, except in years of above average supply and only for a limited duration. Boise River flows that might be appropriated have occurred in 24 of the last 34 years, but the duration of the flows range from only a few days to a few months. A more reliable source of supply would be stored water in the Boise River reservoir system or senior-priority natural flow water rights. Contracts for stored water are not currently available, but could become available in the future due to either freeing up of currently "uncontracted" storage that has been dedicated to flow augmentation or through creation of new storage space. However, the effective annual cost for new storage space is expected to be high, in the range of $100 to $160/AF. It is likely that storage space contracts, for new or existing uncontracted storage, will not be available for many years. Similarly, senior-priority Boise River natural flow water rights are not readily available for purchase; if available, annualized costs might be similar to the costs for new storage space.

Flows in the Snake River exceed established minimum stream flows more than 99% of the time.

- Snake River flows above the minimum streamflow, but less than 8,400 cfs, are classified as "trust water" in the reach of the river upstream from Swan Falls Dam

(Figure 1). Appropriation of trust water from the Snake River is currently restricted by statute and rule, and must be determined to be in the public interest. A finding that appropriation of trust water is in the public interest will be necessary to support a large-scale project to divert Snake River water from points within Elmore County for aquifer stabilization and economic development. Such a finding will require an appropriator to show that the benefit of the appropriation outweighs impacts to hydropower generation, electrical utility rates, and the full economic development and multiple use of the water in the Snake River Basin.

- Snake River flows downstream of Swan Falls Dam in Ada County are available for appropriation without trust water restrictions. Water can be appropriated on a year-round basis for all beneficial uses, including primary irrigation.

Acquisition of existing Snake River natural flow water rights might be considered if appropriation of trust water is prohibited and the costs to convey water from downstream of Swan Falls are infeasible. Due to costs, acquisition of existing water rights is unlikely to be practical for irrigation.

Infrastructure Alternatives for Water Importation

Five infrastructure alternatives for delivering Boise River water supplies to the study area were evaluated. Two alternatives propose diversion from Anderson Ranch Reservoir and two alternatives propose diversion from the South Fork Boise River. All four of these alternatives would deliver water to the vicinity of the City of Mountain Home through Canyon Creek and associated MHID facilities. The fifth alternative proposes diversion of water from Lucky Peak Reservoir to the Cinder Cone Butte vicinity. Unit costs for delivery of Boise River water range from approximately $100 to $200/ AF. The annual volumes delivered were 10,000 AF for the Anderson Ranch Reservoir and South Fork Boise River alternatives and 25,000 AF for the Lucky Peak alternative. Increasing durations of pumping to deliver a given annual volume, or increasing the annual volumes pumped, will decrease the per AF cost for each alterative. Costs of less than $100/ AF were calculated for three alternatives with longer pumping durations. These annual costs do not include any costs for acquisition of water rights. Water acquisition could increase costs by an additional $100/AF or more for a project supported by a combination of appropriated junior-priority natural flow and new storage.

Eight infrastructure alternatives for delivering Snake River water supplies to the study area were evaluated. Four of the alternatives each provide 10,000 AF annually of water to the vicinity of the City of Mountain Home for supplemental irrigation, municipal, and groundwater recharge uses. Two alternatives provide 25,000 AF to Cinder Cone Butte, and one alternative provides 10,000 AF to groundwater-irrigated lands located south of the City of Mountain Home and east of MHAFB. The final alternative provides 20,000 AF annually for replacement of groundwater diversions on lands located south of the City of Mountain Home and east of MHAFB and for supplemental irrigation, municipal, and recharge uses near Mountain Home. Unit costs for delivery of Snake River water range from approximately $90

to $270/AF. These costs do not include water right acquisition; however, such costs may be minimal if new supplies can be appropriated. If water cannot be appropriated, delivered costs for each alternative will increase by an estimated $75/AF.

Economic Evaluation

Significant economic benefits could potentially be realized by improving the water supply to the study area. Municipal and industrial users can most readily bear the burden of higher cost water. Water costs above $50/AF would not be viable for many irrigators, and costs above $100/AF would not be viable for most irrigators. As a result, a water supply improvement project may need to be subsidized to be successful.

Recommendations

Elmore County can organize and assist water users to improve water supplies within the study area. The following steps are recommended.

1. Seek a determination from the director of the Idaho Department of Water Resources that diversion of trust water from the Snake River upstream from Swan Falls Dam for supplemental irrigation, aquifer recharge, and municipal purposes that results in Snake River depletions of more than 2 acre feet per day are in the public interest under the criteria of Idaho Code 42-203C(2). The public interest arguments could focus on aquifer stabilization, preservation of the local economy, and compliance with State Water Plan goals. Recent developments of wind and solar power generation within the County may serve as an offset to depletions in power generation due to reduced Snake River flows. Development of projects seeking appropriation of Snake River water are predicated on a determination that such an appropriation is in the public interest.
2. Conduct a value engineering study for a pumping station and pipeline from the Snake River directly north to Mountain Home. The study would seek ways to minimize project costs and maximize project benefits. The pumping station and pipeline would supply the following uses.
    - A replacement supply for up to 4,000 acres that are currently irrigated with groundwater in this area. The Snake River water would be used when available to reduce groundwater diversions for aquifer stabilization purposes.
    - A supplemental supply for participating acres within MHID. The Snake River water would be used when MHID supplies are limited due to water supply conditions.
    - An available municipal supply for the City of Mountain Home. The water could be appropriated under a reasonably anticipated future needs application, and be made available to support City growth. To the extent utilized, the water could be used as raw water in pressurized irrigation or be treated to support new industry and residential growth.

- An available supply for aquifer recharge to support municipal and existing irrigation uses. It may be possible to exchange Snake River water delivered to the southern end of MHID for Canyon Creek water used for aquifer recharge north and west of Mountain Home in the Canyon Creek streambed, gravel pits, or Mountain Home Reservoir.

3. Conduct a value engineering study for a pumping station and pipeline from the Snake River to Cinder Cone Butte. Use of this water would be for replacement of existing groundwater supplies, by direct irrigation use, aquifer recharge, or both.
4. Participate in activities to develop additional Boise River water storage for the benefit of Elmore County. In the event that storage should become available, conduct value engineering of water delivery infrastructure.
5. Increase aquifer recharge from Canyon Creek and tributary streams crossing the Mountain Home Plateau to prevent runoff to the Snake River during years of above average precipitation. Aquifer recharge can be enhanced through diversion to gravel pits and construction of check structures on stream channels (including reconstruction of Fraser Dam on Canyon Creek).

SPF WATER ENGINEERING

MEMORANDUM

DATE: September 7, 2017

TO: Bud Corbus – Elmore County Commissioner

FROM: Scott King, P.E., Scott McGourty, P.E.

CC: Terry Scanlan, P.E., P.G., Ken Fonnesbeck, P.E.

RE: Potential Canyon Creek Aquifer Recharge Infrastructure Improvements

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SPF Water Engineering was engaged by the Elmore County Board of Commissioners to assist with evaluation of potential aquifer recharge features and subsequently conducted a site visit of three proposed aquifer recharge sites on August 23, 2017. The recharge sites considered are gravel pits in various states of use and activity, and are located south of Canyon Creek approximately 3 miles northwest of the City of Mountain Home. Two diversions from Canyon Creek currently exist; the "Lower Diversion", which diverts flow from Canyon Creek to the Simplot Pit, and the "Upper Diversion", which diverts flow to the Bureau of Land Management (BLM) Pit. A third diversion in Canyon Creek is proposed upstream of the Upper Diversion to divert flow to the "Ireland Pit". SPF understands that Elmore County would like to upgrade existing check dams and conveyance structures to convey more flow from Canyon Creek to the three recharge pits to take advantage of surplus runoff flows during events such as occurred in the spring of 2017. The intention of this evaluation is to determine means and costs to increase capacity for diversion of Canyon Creek flood flows to these existing gravel pits for aquifer recharge.

Elmore County recently submitted a Statement of Completion for Submitting Proof of Beneficial Use on water right permit 61-7731. Permit 61-7731 authorized diversion of 200 cfs from Canyon Creek for groundwater recharge. The permit was originally issued to the Mountain Home Groundwater Advisory and had lapsed due to the Advisory Committee's dissolution and failure to submit timely Proof. SPF completed and submitted to IDWR in June a Beneficial Use Field Exam (BUFE) recommending the permit be reinstated and license issued to Elmore County. The BUFE recommended a water right authorizing diversion 49.2 cfs and 4,455 AFA from Canyon Creek for recharge in the Simplot and BLM pits. IDWR's review of the exam and issuance of a license is pending.

In March 2017, Elmore County submitted an Application for Permit seeking authorization to develop a water right for up to 200 cfs from Canyon Creek for ground water recharge in the Ireland and BLM pits. This application may need to be amended to include the Simplot pit.

300 E. Mallard Drive, Suite 350, Boise, Idaho 83706 Tel: 208-383-4140 Fax: 208-383-4156

1 Existing Conditions

SPF examined the existing water conveyance infrastructure presented in Table 1 during the site visit on August 23. The Lower Diversion site currently has an existing concrete weir, and a single 24-inch corrugated metal pipe (CMP) culvert and concrete headwall with a single circular sluice gate valve, which diverts flow from Canyon Creek south to the Simplot pit via a system of existing ditches and culverts. The Upper Diversion site currently consists of a single 30-inch CMP culvert and concrete headwall (with no control valve or permanent check structures) which can divert flow south to the BLM pit.

Table 1. Existing Canyon Creek Diversion Infrastructure

Existing Infrastructure	Simplot Pit Lower Check/Diversion		BLM Pit Upper Check/Diversion		Ireland Pit	
Existing Check	Concrete Weir	~195 cfs	None	N/A	None	N/A
Existing Control	24" Circular Sluice Gate Valve	19 cfs	None	N/A	None	N/A
Existing Conveyance	24" CMP, 18-LF	19 cfs	30" CMP, 49-LF	31 cfs	None	N/A

No diversion features or structures currently exist at the Ireland pit; however, the southern bank of Canyon Creek is reported to have historically failed near the Ireland pit which has resulted in uncontrolled flow entering into the Ireland pit. During the August 23 site visit, SPF observed that the southern bank of Canyon Creek near the Ireland pit appears to consist of relatively loosely compacted pit-run and native gravel and cobble material, which may continue to be prone to fail during years when flow in Canyon Creek is high.

SPF also observed extensive scour protection armoring along the floor of Canyon Creek immediately downstream of the Ireland pit, which appears to have been constructed to protect an existing gas pipeline which crosses under Canyon Creek to the west of the Ireland Pit.

As previously noted, SPF conducted a BUFE in March 2017, and observed high flows in Canyon Creek and the performance of existing diversion structures. Table 2 presents estimated flows at the existing Upper and Lower diversions based on observations by SPF during the March 2017 BUFE. SPF performed culvert flow calculations based on the estimated maximum water depth observed in Canyon Creek during 2017.

Table 2. Approximate March 2017 Diversion Flows

Observation Date	Estimated Flow (cfs)	
	Lower (Simplot) Diversion	Upper (BLM) Diversion
3/20/2017	13.5	20.3
3/29/2017	8.4	10.9
3/20 Plus one foot	18.6	30.6

2 Proposed Improvements

Based on the flow values summarized in Table 2, the Upper and Lower diversions appear to have been operating at about 65-70% of potential flow capacity on March 20, 2017. In order for the existing culverts to operate near capacity, the water level in Canyon Creek would need to increase by over one foot higher than flows observed during the BUFE event, which could result in bank stabilization concerns and erosion in other sections of the creek. Alternatively, constructing additional diversion culverts near the floor of the creek would allow for higher flow diversion with lower water levels in the creek. SPF recommends the measures presented in Table 3.

SPF has developed a conceptual cost estimate for the proposed improvements to allow for maximum recharge potential. The cost estimates (included as Attachment 2) are based on conceptual proposed improvements and are intended to support planning decisions. The locations of proposed improvements are depicted in Attachment 1.

2.1. Lower (Simplot Pit) Diversion

For this site, SPF proposes to construct a second 24-inch diameter CMP culvert with concrete headwall and sluice gate valve, similar to the existing control structure currently in place at the lower diversion. The existing concrete weir for this diversion appears to be functional, however additional ecology blocks could be placed upstream of the weir crest to reduce the weir opening and raise the water level in Canyon Creek. With the addition of a second culvert to increase diversion flow, the downstream ditch and culverts in Mashburn Road (near the Danskin Power Plant) that convey flow to the Simplot pit will also need to be upsized. Estimated earthwork quantities for widening the existing ditch and installing double barreled culverts in Mashburn Road are included in the conceptual cost estimate.

2.2. Upper (BLM Pit) Diversion

For the Upper Diversion site, SPF proposes constructing a second 30-inch diameter CMP culvert with concrete headwall similar to the existing control structure currently in place at the upper diversion. Sluice gate valves should be installed on the inlets of both the existing and new culverts. Since there is no existing check structure at the upper diversion, SPF recommends constructing a temporary weir in Canyon Creek using ecology blocks. SPF observed significant scouring downstream of the existing diversion culvert which should be addressed. In our judgment, the scour pit should be backfilled with 12-inch-plus diameter riprap to the height of the existing culvert outlet invert.

2.3. Ireland Diversion

For this potential aquifer recharge site, SPF proposes installing two 30-inch diameter CMP culverts with a concrete headwall and sluice gate valves, similar to the existing control structure currently in place at the Lower Diversion. Since there is no existing check structure at the Upper Diversion, SPF recommends constructing a temporary weir using ecology blocks in the narrow section of Canyon Creek that is lined with scour protection armoring. The

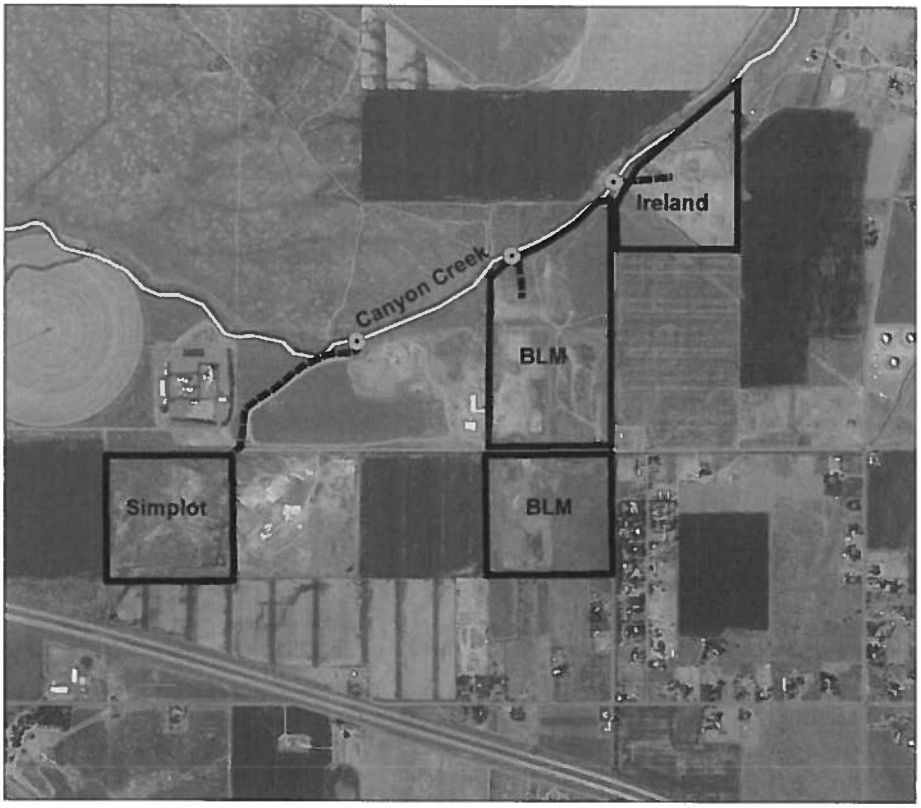
diversion culverts should be constructed in the south bank of Canyon Creek upstream of the scour protection armoring to minimize the length of culvert required.

Table 3 below summarizes the proposed features needed to maximize recharge potential at each of the three sites considered.

Table 3. Proposed Canyon Creek Diversion Improvements

Proposed Infrastructure	Simplot Pit Lower Check/Diversion	BLM Pit Upper Check/Diversion	Ireland Pit
Proposed Check	Keep Existing + Eco Blocks	Temp Eco Blocks	Temp Eco Blocks
Proposed Control	Circular Sluice Gate Valves	Circular Sluice Gate Valves	Circular Sluice Gate Valves
Proposed Conveyance	2x 24" CMP (37 cfs)	2x 30" CMP (61 cfs)	2x 30" CMP (61 cfs)

Figure 1. Recharge Pit Locations



2.4. BLM Pit Berm Excavation

During the March 2017 BUFE event, SPF observed groundwater upwelling in the east BLM pit (presumably originating from the adjacent west BLM pit, which at that time was inundated with water diverted from Canyon Creek). SPF proposes excavating a channel in the existing north-south berm that divides the east and west BLM pits to provide above ground hydraulic connectivity between the pits. Constructing an open channel for flow to equalize between the east and west BLM pits will result in faster infiltration (larger recharge footprint). In addition, continued subsurface seepage/upwelling over the long term could lead to unstable conditions and potential failure of the berm (similar to the failure of the nearby berm along the north side of the west BLM pit). Additionally, SPF recommends installation of a CMP culvert in NW Mashburn Road to convey flow from the northern BLM pits to the BLM pit south of Mashburn Road (see Figure 1 and Attachment 1).

3 Conclusion

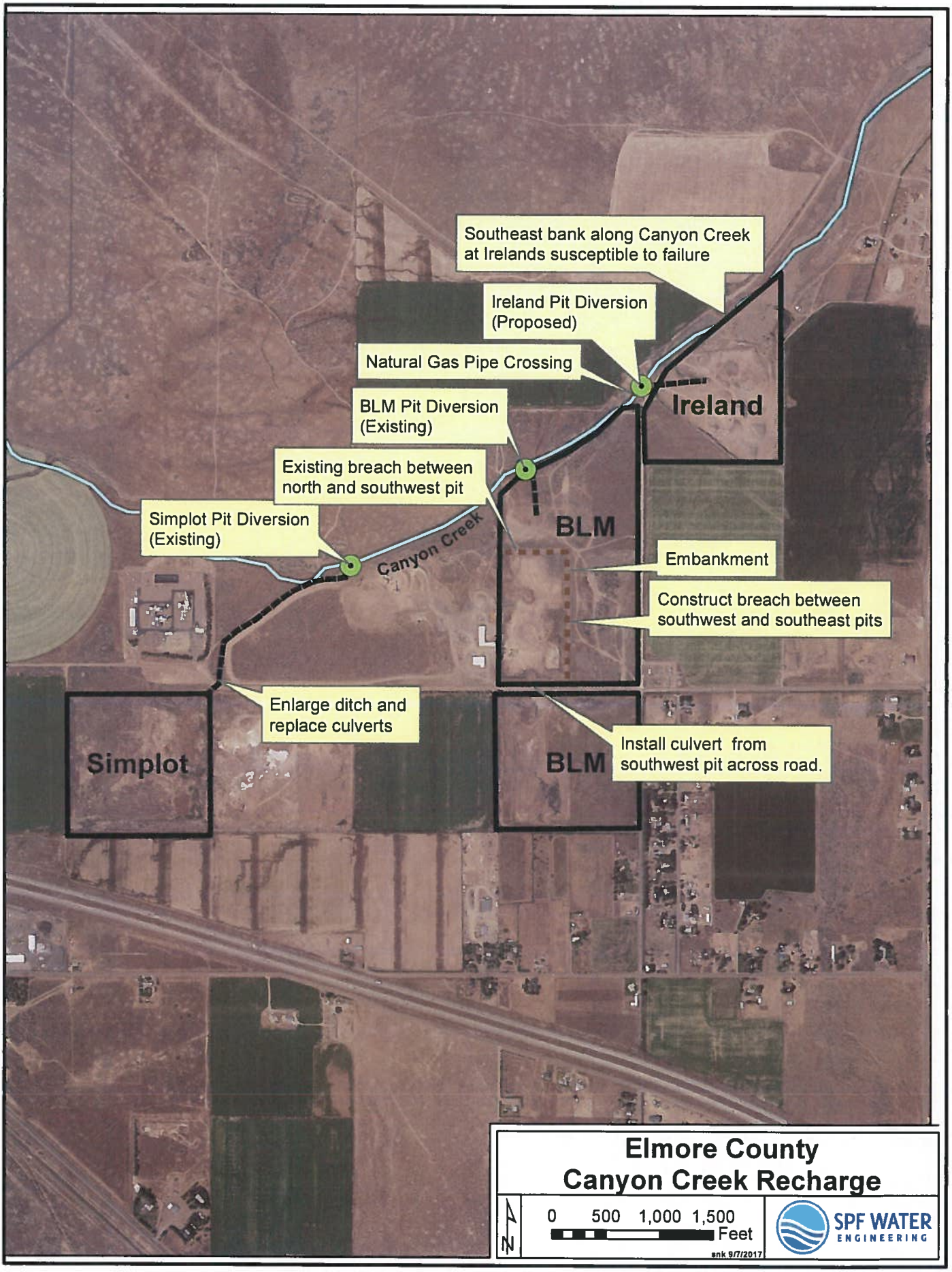
Construction costs and cost per cfs for improvements to each recharge pit are presented in Table 4. The "BLM Pit Excavation" portion of the project enhances aquifer recharge by providing additional infiltration area, but does not increase the flow diverted from Canyon Creek. As a result, no cost per cfs is provided in Table 4 for the "Pit Excavation". The total estimated project cost is $115,900 (see Attachment 2). The flow rates presented for the Simplot and BLM pits represent the estimated increase in flow due to proposed improvements (not the total flow following improvements). We understand that the Commissioners are pursuing license agreements or easements for the use of the gravel pits and conveyance works.

Table 4. Cost Per CFS

Item	Simplot Pit Lower Diversion	BLM Pit Upper Diversion	Ireland Pit	BLM Pit Excavation
Increase in Recharge Flow (cfs)	23.5	40.7	61	-
Construction Cost	$ 27,400	$ 32,300	$ 25,900	$ 29,900
Cost per cfs	$ 1,166	$ 794	$ 425	-

Attachment 1

Recharge Improvements Map


Southeast bank along Canyon Creek at Irelands susceptible to failure
Ireland Pit Diversion (Proposed)
Natural Gas Pipe Crossing
BLM Pit Diversion (Existing)
Existing breach between north and southwest pit
Simplot Pit Diversion (Existing)
Canyon Creek
Ireland
BLM
Embankment
Construct breach between southwest and southeast pits
Enlarge ditch and replace culverts
Simplot
BLM
Install culvert from southwest pit across road.
Elmore County
Canyon Creek Recharge
N
0 500 1,000 1,500
Feet
snk 9/7/2017
SPF WATER ENGINEERING

Attachment 2

Recharge Improvements Cost Estimate

SPF WATER ENGINEERING

ELMORE COUNTY AQUIFER RECHARGE
CANYON CREEK DIVERSION IMPROVEMENTS

PROJECT : ELMORE COUNTY AQUIFER RECHARGE
JOB # : 1188.0040
LOCATION : ELMORE COUNTY, ID

ESTIMATE CLASS : 5
DATE : 9/7/2017
BY : SM
REVIEWED : SK

NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	COST
1.0	**LOWER DIVERSION (SIMPLOT PIT)**				
1.1	24" CMP (1X)	20	LF	$ 24.00	$ 500.00
1.2	24" CANAL SLUICE GATE	1	EA	$ 1,888.80	$ 1,900.00
1.3	ECOLOGY BLOCKS (2'X2'X6')	3	EA	$ 40.00	$ 100.00
1.4	CANAL WIDENING/EARTHWORK (2,000-LF)	1,852	CY	$ 4.00	$ 7,400.00
1.5	INLET/OUTLET RIPRAP	27	TN	$ 35.00	$ 900.00
1.6	INLET HEADWALL	2	EA	$ 735.00	$ 1,500.00
1.7	MASHBURN RD CULVERTS (ADD 24" CMP) (2X)	55	LF	$ 24.00	$ 1,300.00
1.8	LABOR, EQUIPMENT, & FUEL	1	LS	$ 6,700.00	$ 6,700.00
1.9	CONTINGENCY	1	LS	$ 4,060.00	$ 4,100.00
2.0	ENGINEERING, PERMITTING, CONSTRUCTION MGMT	1	LS	$ 2,970.00	$ 3,000.00
	SUBTOTAL				**$ 27,400.00**
2.0	**UPPER DIVERSION (BLM PIT)**				
2.1	30" CMP (1X)	52	LF	$ 36.76	$ 1,900.00
2.2	30" CANAL SLUICE GATE	2	EA	$ 3,015.60	$ 6,000.00
2.3	ECOLOGY BLOCK WEIR (2'X2'X6' BLOCKS)	8	EA	$ 40.00	$ 300.00
2.4	CANAL WIDENING/EARTHWORK	0	CY	$ 4.00	$ -
2.5	INLET/OUTLET RIPRAP	270	TN	$ 35.00	$ 9,500.00
2.6	INLET HEADWALL	2	EA	$ 882.00	$ 1,800.00
2.7	LABOR, EQUIPMENT, & FUEL	1	LS	$ 4,400.00	$ 4,400.00
2.8	CONTINGENCY	1	LS	$ 4,780.00	$ 4,800.00
2.9	ENGINEERING, PERMITTING, CONSTRUCTION MGMT	1	LS	$ 3,585.00	$ 3,600.00
	SUBTOTAL				**$ 32,300.00**
3.0	**IRELAND DIVERSION (IRELAND PIT)**				
3.1	30" CMP (2X)	160	LF	$ 36.76	$ 5,900.00
3.2	30" CANAL SLUICE GATE	2	EA	$ 3,015.60	$ 6,000.00
3.3	ECOLOGY BLOCK WEIR (2'X2'X6' BLOCKS)	10	EA	$ 40.00	$ 400.00
3.4	CANAL WIDENING/EARTHWORK	0	CY	$ 4.00	$ -
3.5	INLET/OUTLET RIPRAP	27	TN	$ 35.00	$ 900.00
3.6	INLET HEADWALL	2	EA	$ 882.00	$ 1,800.00
3.7	LABOR, EQUIPMENT, & FUEL	1	LS	$ 4,200.00	$ 4,200.00
3.8	CONTINGENCY	1	LS	$ 3,840.00	$ 3,800.00
3.9	ENGINEERING, PERMITTING, CONSTRUCTION MGMT	1	LS	$ 2,880.00	$ 2,900.00
	SUBTOTAL				**$ 25,900.00**
4.0	**BLM EAST PIT/WEST PIT CHANNEL & SOUTH CULVERT**				
4.1	EXCAVATION/EARTHWORK	3,066	CY	$ 4.00	$ 12,300.00
4.2	12" CMP (1X)	80	LF	$ 16.00	$ 1,300.00
4.3	INLET HEADWALL	1	EA	$ 882.00	$ 900.00
4.4	12" CANAL SLUICE GATE	1	EA	$ 1,638.00	$ 1,600.00
4.5	INLET/OUTLET RIPRAP	27	TN	$ 35.00	$ 900.00
4.6	LABOR, EQUIPMENT, & FUEL	1	LS	$ 5,400.00	$ 5,400.00
4.3	CONTINGENCY	1	LS	$ 4,480.00	$ 4,500.00
4.4	ENGINEERING, PERMITTING, CONSTRUCTION MGMT	1	LS	$ 3,360.00	$ 3,400.00
	SUBTOTAL				**$ 30,300.00**
	TOTAL ESTIMATED PROJECT COST				**$ 115,900.00**

This cost estimate reflects our professional opinion of accurate costs at this time based on current conditions at the project location. This estimate is subject to change through the project planning and design process. Actual construction cost will depend on the cost of labor, materials, equipment, and services provided by others, contractor's methods of determining prices, competitive bidding and market conditions.

Elmore County Water Supply Alternatives and Canyon Creek Aquifer Recharge Improvements

Presented to
Idaho Water Resources Board
on behalf of the
Elmore County Board of Commissioners

September 15, 2017

Terry Scanlan, P.E., P.G.
SPF Water Engineering, LLC

Elmore County's Water Supply Goals

- Stabilize aquifer water levels in areas of decline to
  - Prevent curtailments
  - Reduce well deepening and replacement costs
  - Stabilize pumping costs
  - Increase water supply certainty
  - Maintain economic benefits
- Increase overall water supply to support economic growth

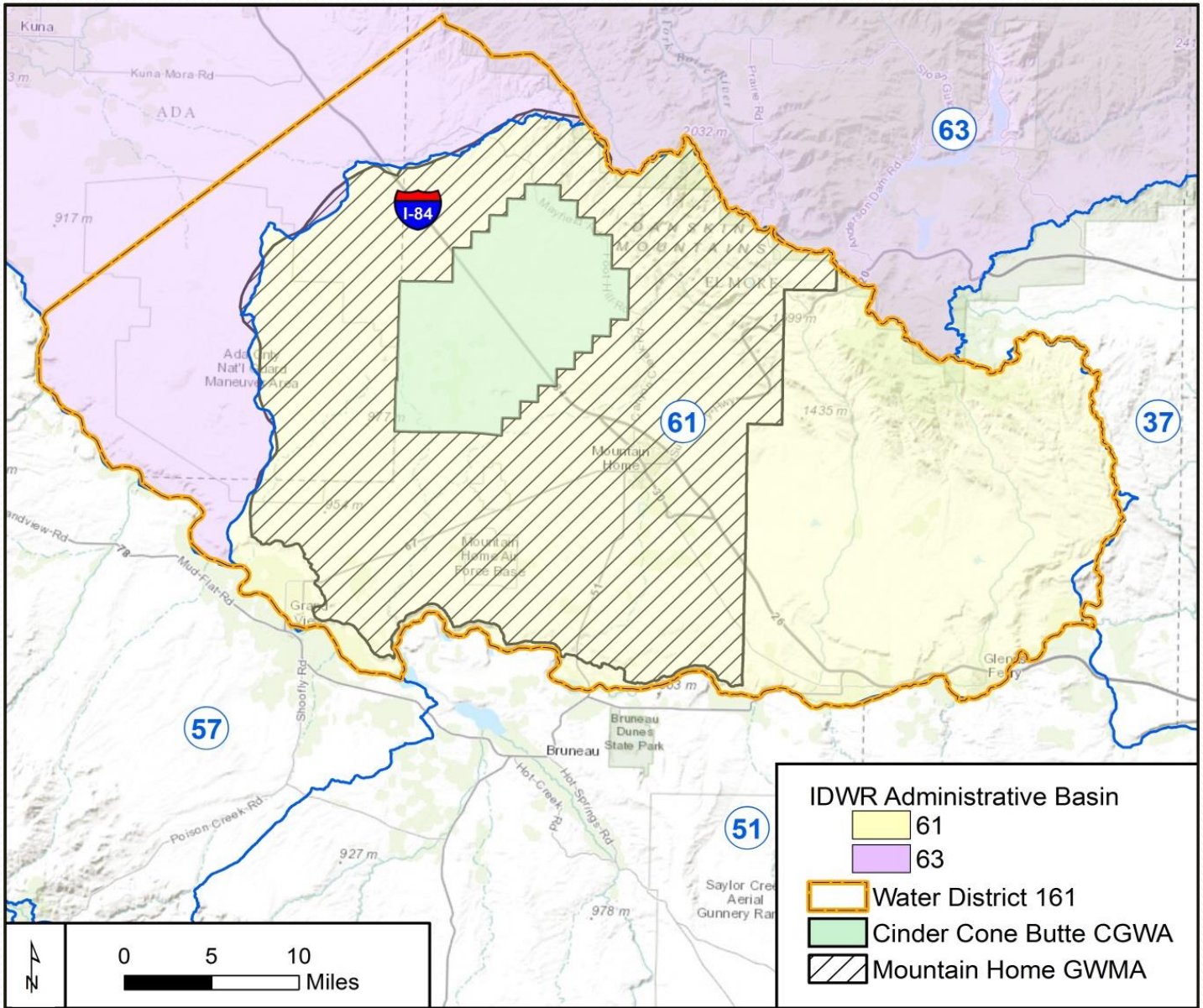
Presentation Outline

- Elmore County Water Supply Alternatives Study
  - Study Objectives
  - Existing Water Sources and Water Use
  - Groundwater Level Trends
  - Alternative Water Sources
  - Infrastructure Alternatives
  - Economics
  - Summary Findings and Recommendations
- Canyon Creek Recharge Improvements

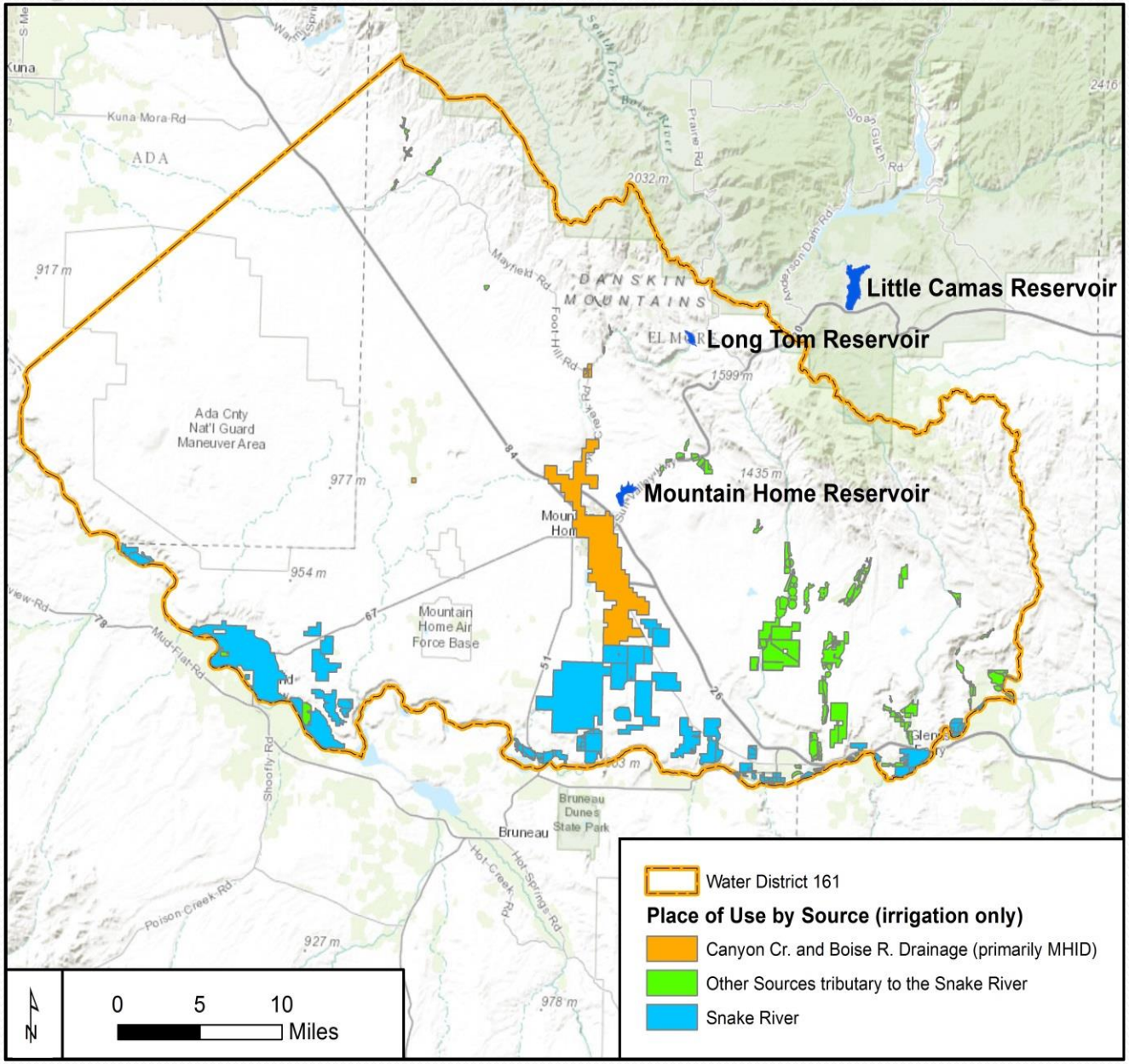
Study Objectives

- Estimate water demands on the Mountain Home Plateau
- Quantify current water supply deficits (groundwater and surface water)
- Determine benefit of improving Elmore County water supplies
- Estimate the approximate costs of developing additional water supply to achieve sustainability and support economic development

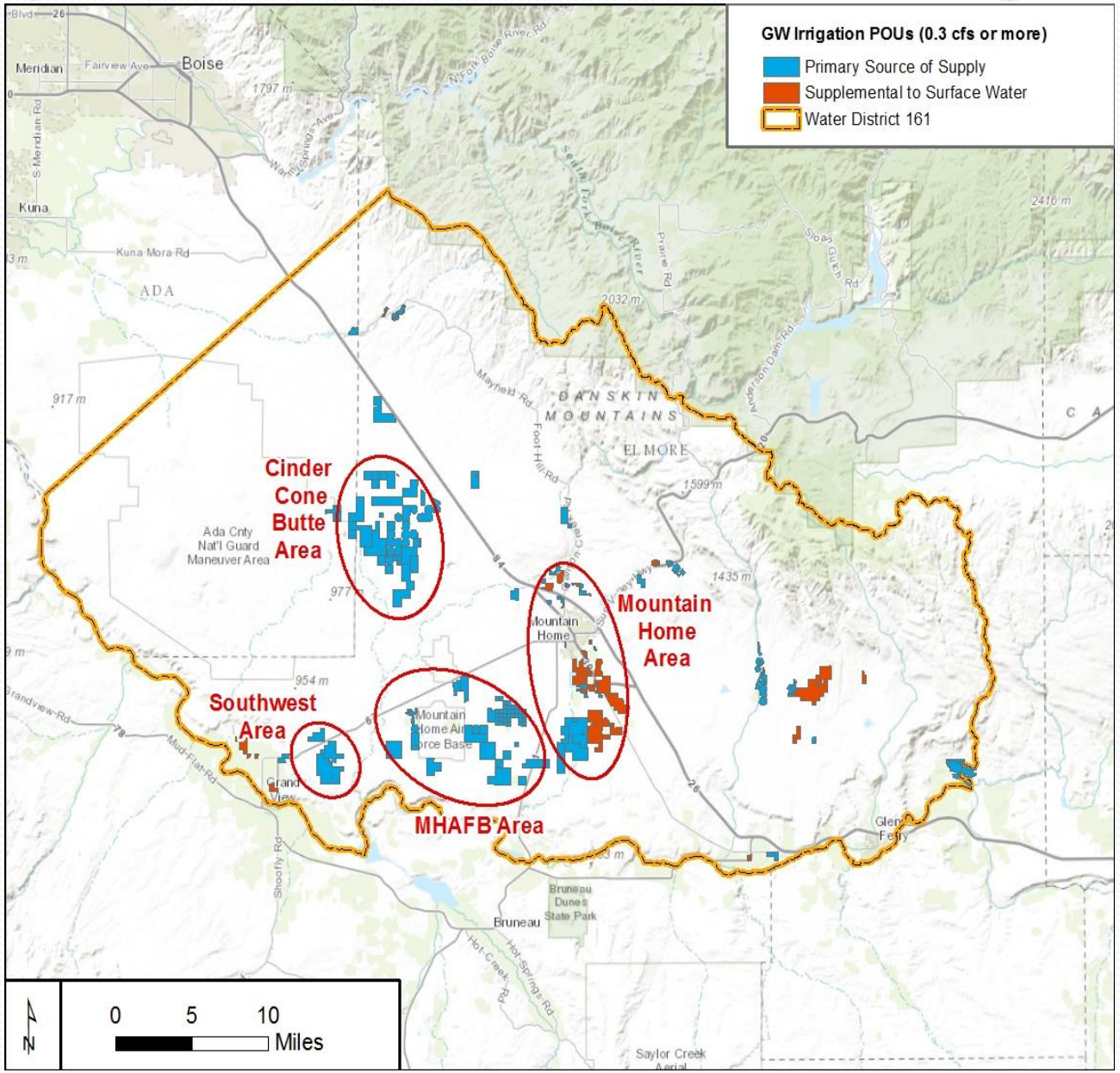
Study Area – Water District 161



Study Area – Surface Water Irrigation



Study Area – Groundwater Irrigation



Groundwater Use

- 80,000 acre feet per year
  - Agricultural irrigation – 85%
  - Municipal-supplied irrigation – 5%
  - Other (domestic, commercial, stockwater, industrial, municipal) – 10%
- 43,000 AF/yr estimated annual deficit

Groundwater Level Trends

- Mayfield-Orchard – Stable
- Mountain Home – 0 to 100’ decline (0-3’/yr)
- MHAFB – 60 to 80’ decline (1.5’/yr)
- South of Mtn Home – 0 to 100’ decline (2’/yr)
- Cinder Cone Butte – 0 to 200’ decline (0 to 5’/yr)

Alternative Water Supply Sources

- Boise River
- Snake River
- Canyon Creek (aquifer recharge w/flood water)

Alternative Water Supply Sources

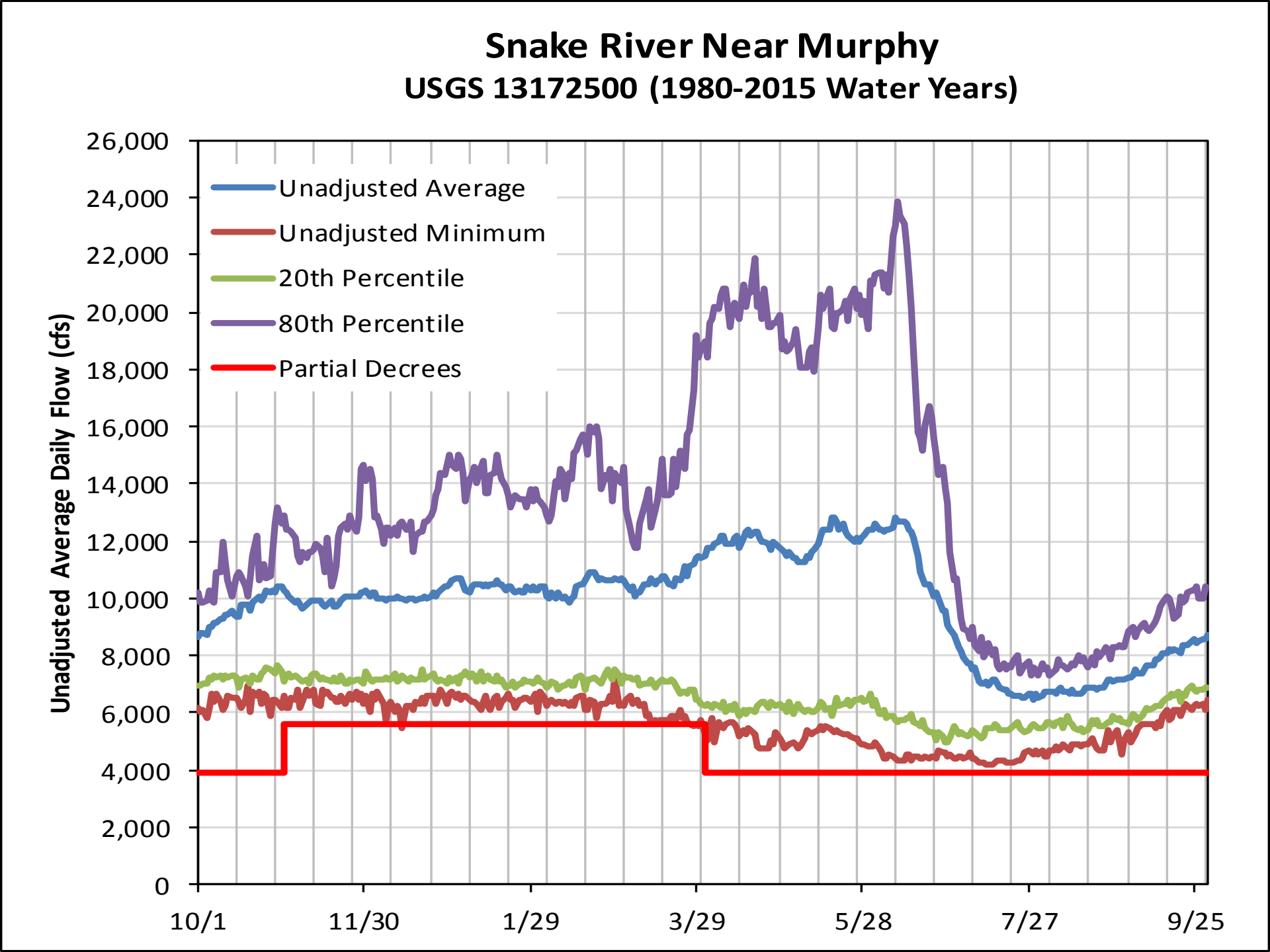
- Means to obtain authorization to divert water
  - New appropriations of natural flow
  - Create new storage space (raise Anderson or Arrowrock)
  - Annual leases (Rental Pool)
  - Purchase existing water rights

Boise River Water Supply Availability

- Boise River Appropriations (Flood Water)
- Boise River Storage
- Purchase Existing Water Rights - $50 to $100 per AF annually if available

Snake River Water Supply Availability

- Snake River Water Right Purchase - $75 per AF annualized cost
- Snake River Appropriations
  - >1,000,000 AF available over minimum stream flows 4 out of 5 years (1980-2015 data)
  - >2,000,000 AF available over minimum stream flows on average year (1980-2015 data)
  - Flows are above minimum stream flows more than 99% of the time
  - Policies restrict but do not prevent new appropriations of Trust Water


Snake River Near Murphy
USGS 13172500 (1980-2015 Water Years)
Unadjusted Average Daily Flow (cfs)
26,000
24,000
22,000
20,000
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
Unadjusted Average
Unadjusted Minimum
20th Percentile
80th Percentile
Partial Decrees
10/1
11/30
1/29
3/29
5/28
7/27
9/25

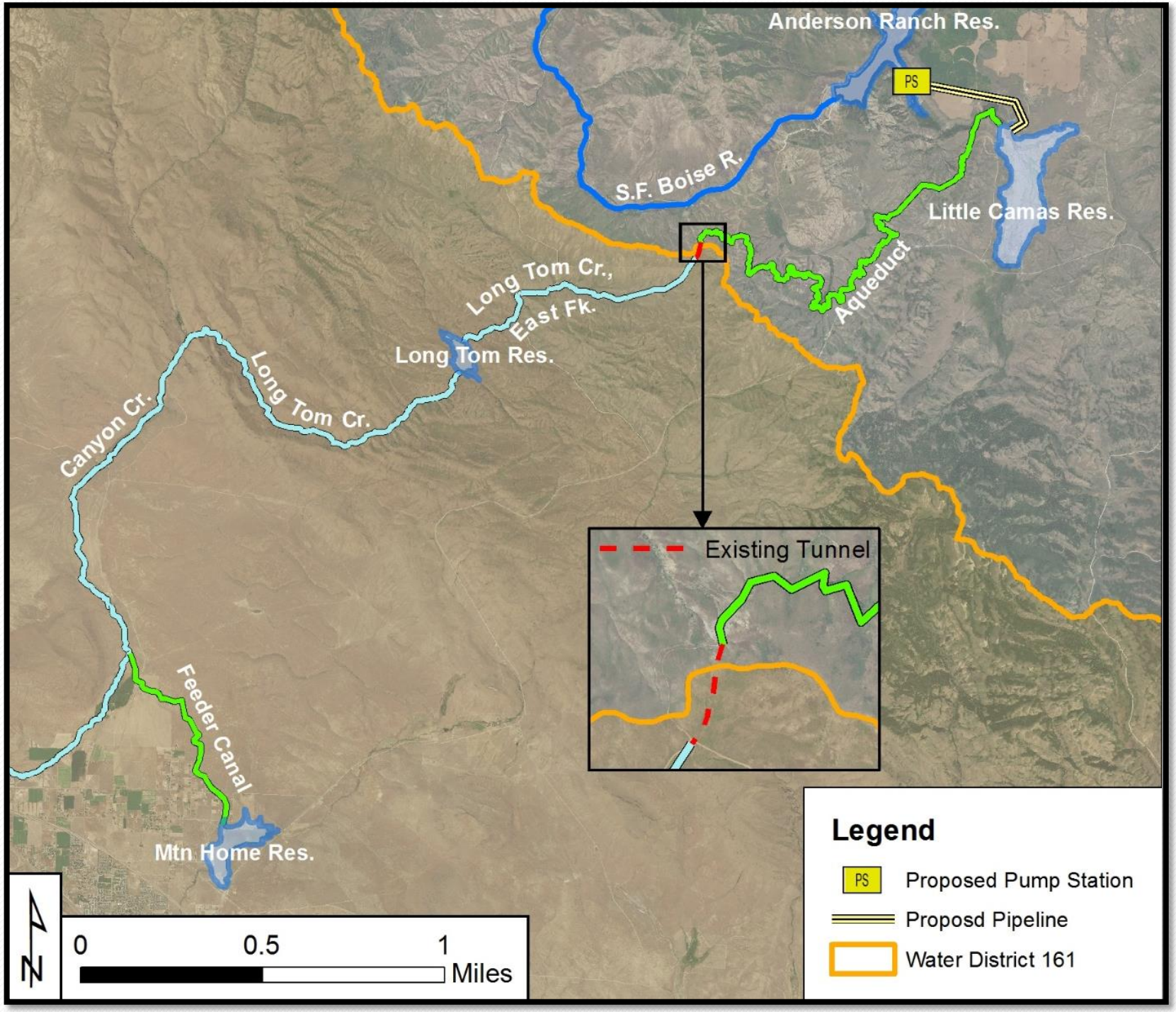
Infrastructure Alternatives to Deliver Water

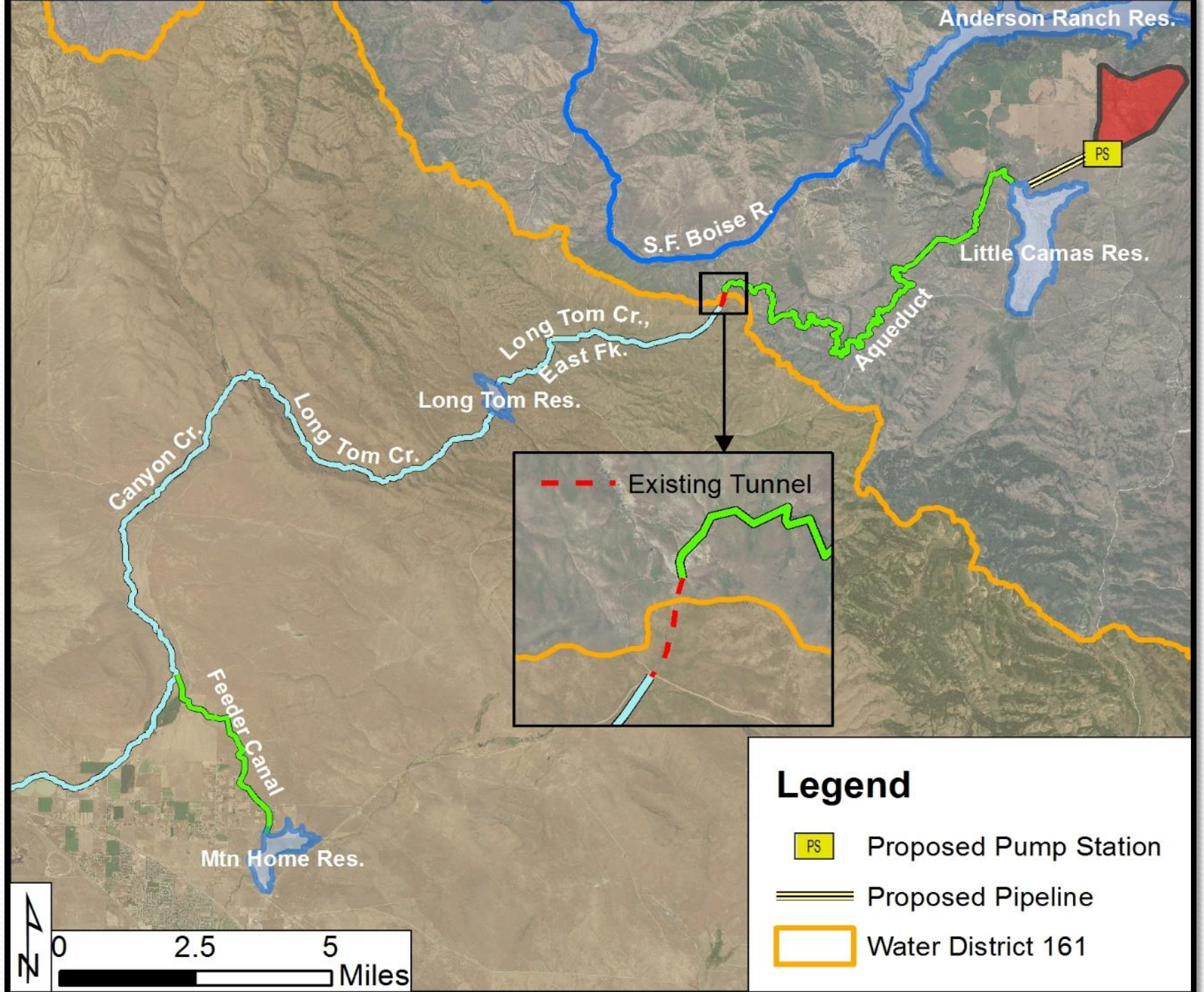
- 5 Boise River and 8 Snake River alternatives
- 10,000 to 25,000 AF per year volumes
- Costs per acre foot delivered will
  - increase or decrease based on the annual volume delivered, days of pumping, and capacity
- Cost do not include water acquisition

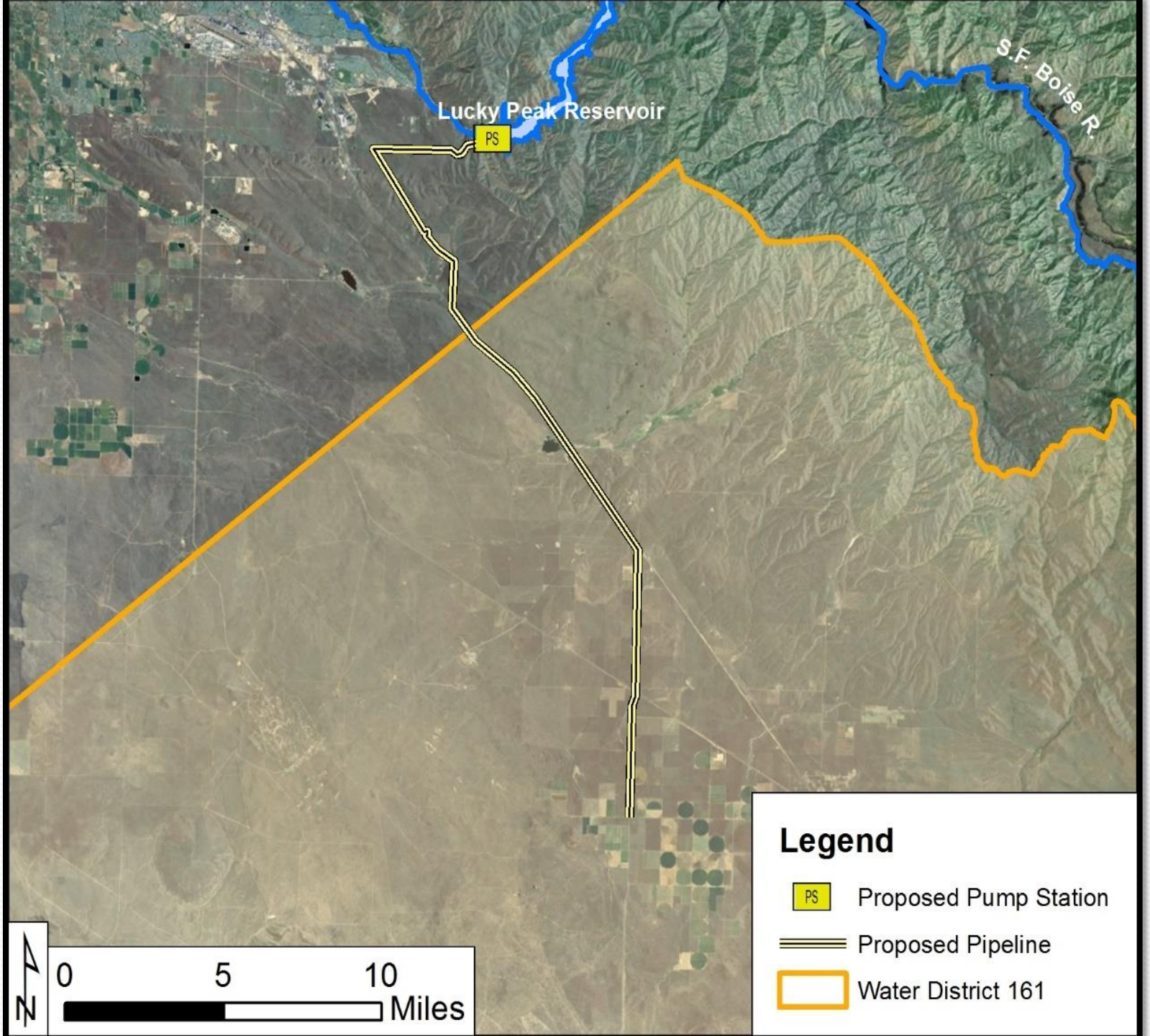
Boise River Water Supply Alternatives

ALTERNATIVE		WATER SUPPLY				PIPELINE		PUMP STATION	
		Annual Vol (AF)	Duration (Days)	Flowrate (gpm)	Flowrate (cfs)	Length (mi)	Dia (in)	TDH[1] (ft)	Power (hp)
B1	Anderson Ranch Res	10,000	90	25,100	55.9	2.3	48	810	6,420
B2	South Fork Boise R.	10,000	90	25,100	55.9	0.65	48	1030	8,160
B3	Pump Storage Proj.	10,000	90	25,100	55.9	1.6	48	860	7,270
B4	Long Tom Tunnel	10,000	90	25,100	55.9	1.7	48	1060	8,400
B5	Lucky Peak Res.	25,000	180	31,400	70.0	27	48	580	5,750

[1] TDH is total dynamic head.


Anderson Ranch Res.
PS
S.F. Boise R.
Little Camas Res.
Aqueduct
Long Tom Cr., East Fk.
Long Tom Res.
Long Tom Cr.
Canyon Cr.
Existing Tunnel
Feeder Canal
Mtn Home Res.
N
0
0.5
1
Miles
Legend
PS
Proposed Pump Station
Proposd Pipeline
Water District 161

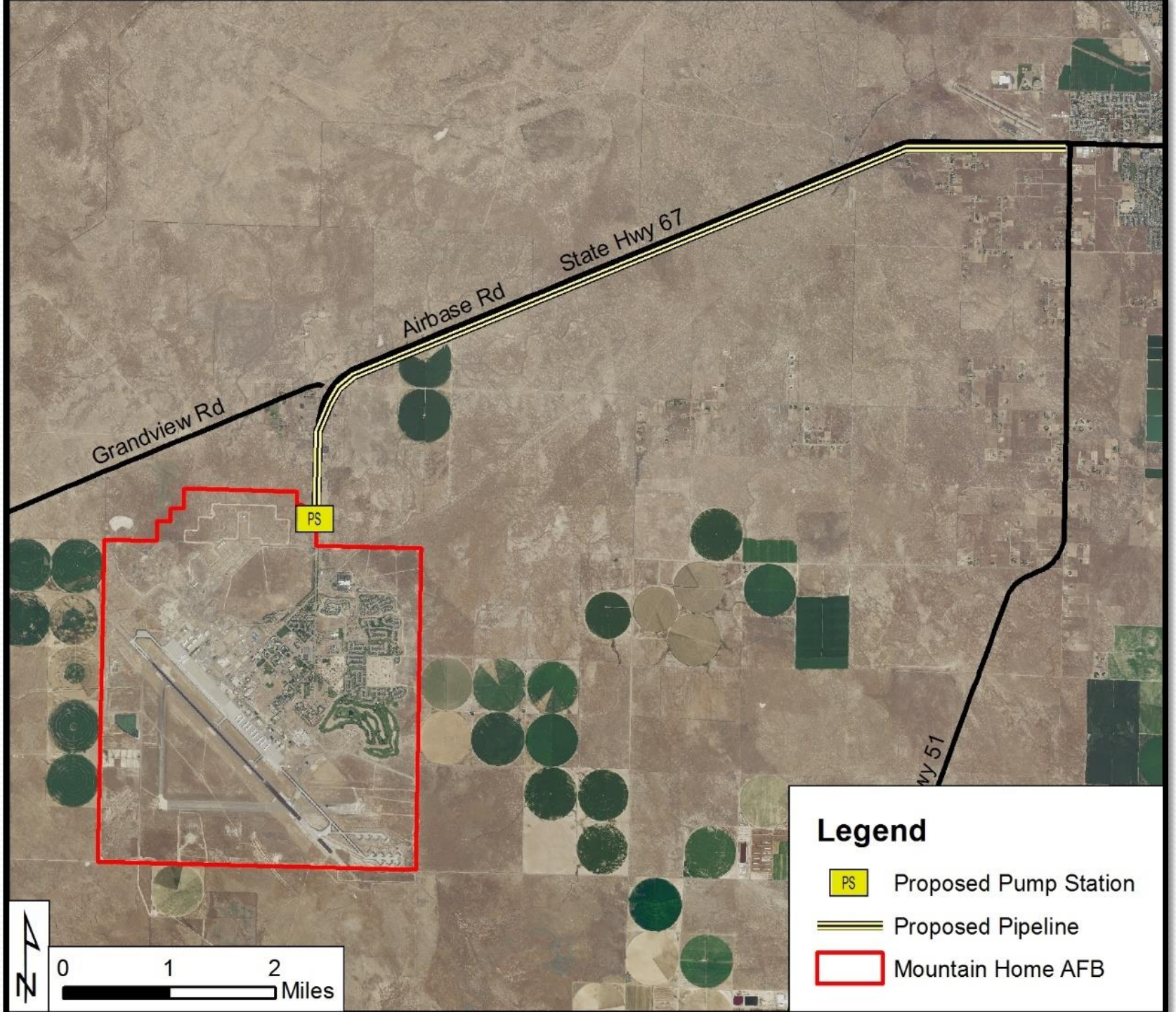

Anderson Ranch Res.
PS
S.F. Boise R.
Little Camas Res.
Aqueduct
Long Tom Cr., East Fk.
Long Tom Res.
Long Tom Cr.
Canyon Cr.
Existing Tunnel
Feeder Canal
Mtn Home Res.
N
0
2.5
5
Miles
Legend
PS
Proposed Pump Station
Proposed Pipeline
Water District 161

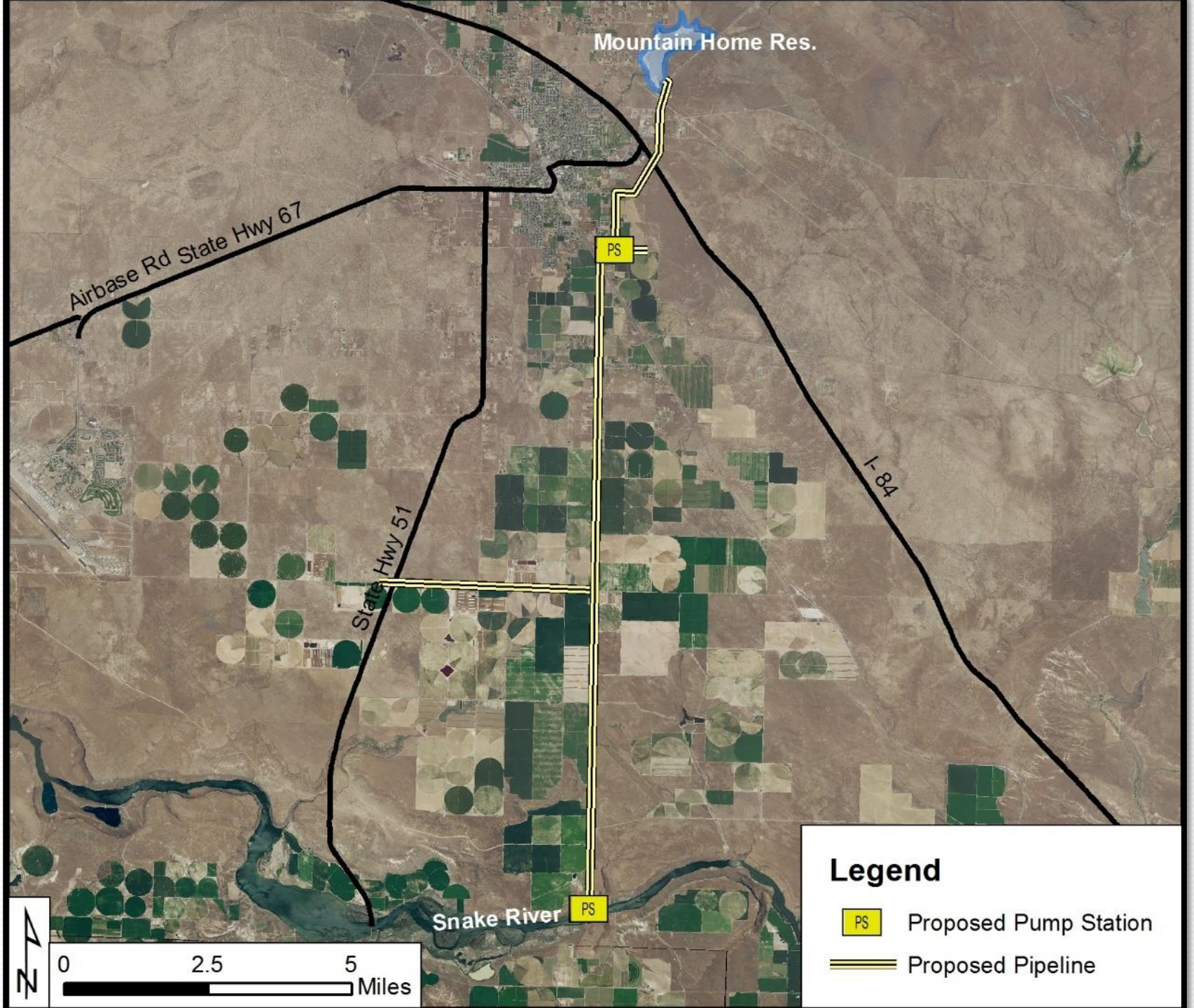

Lucky Peak Reservoir
PS
S.F. Boise R.
Legend
PS
Proposed Pump Station
Proposed Pipeline
Water District 161
N
0
5
10
Miles

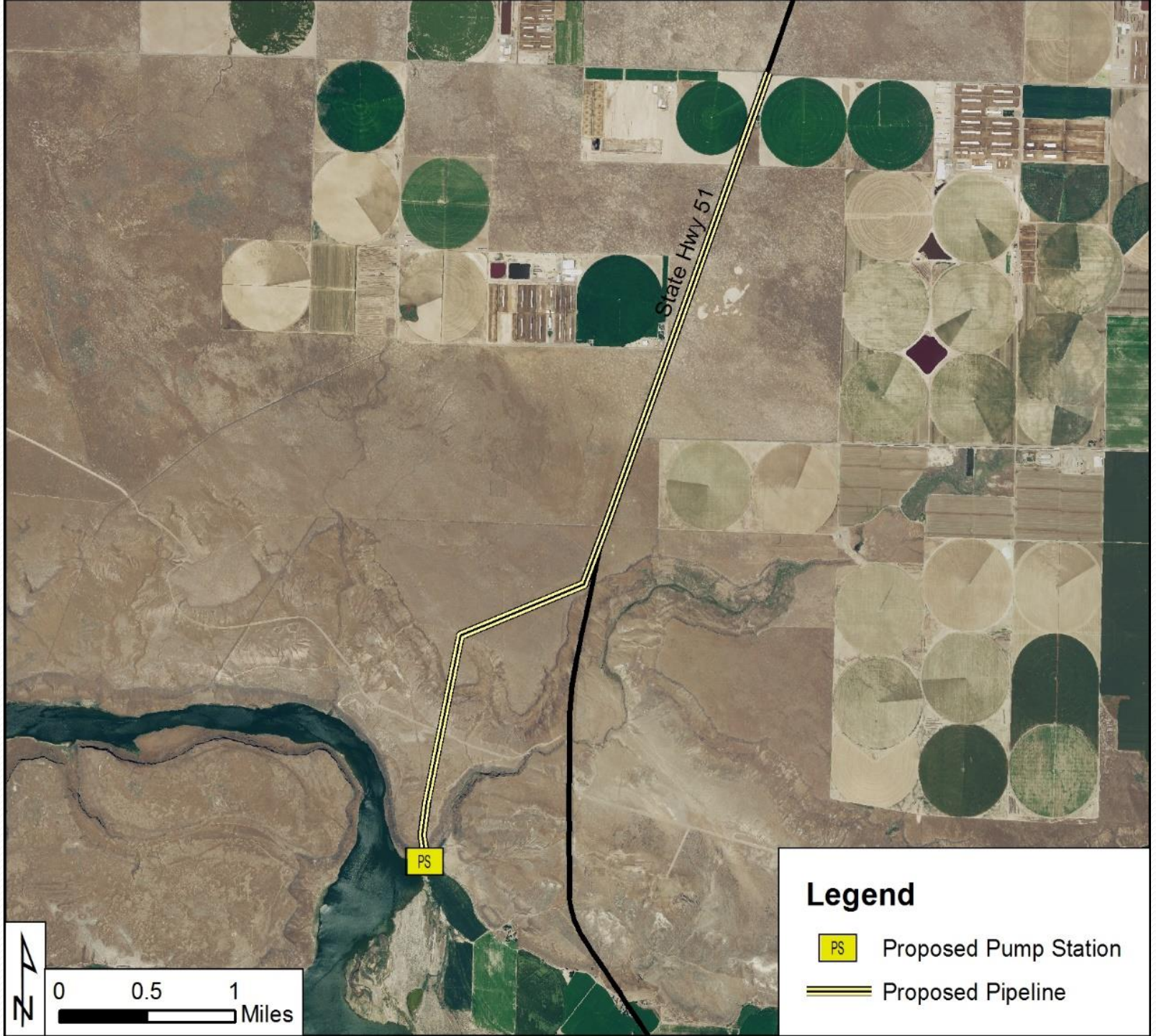
Snake River Water Supply Alternatives

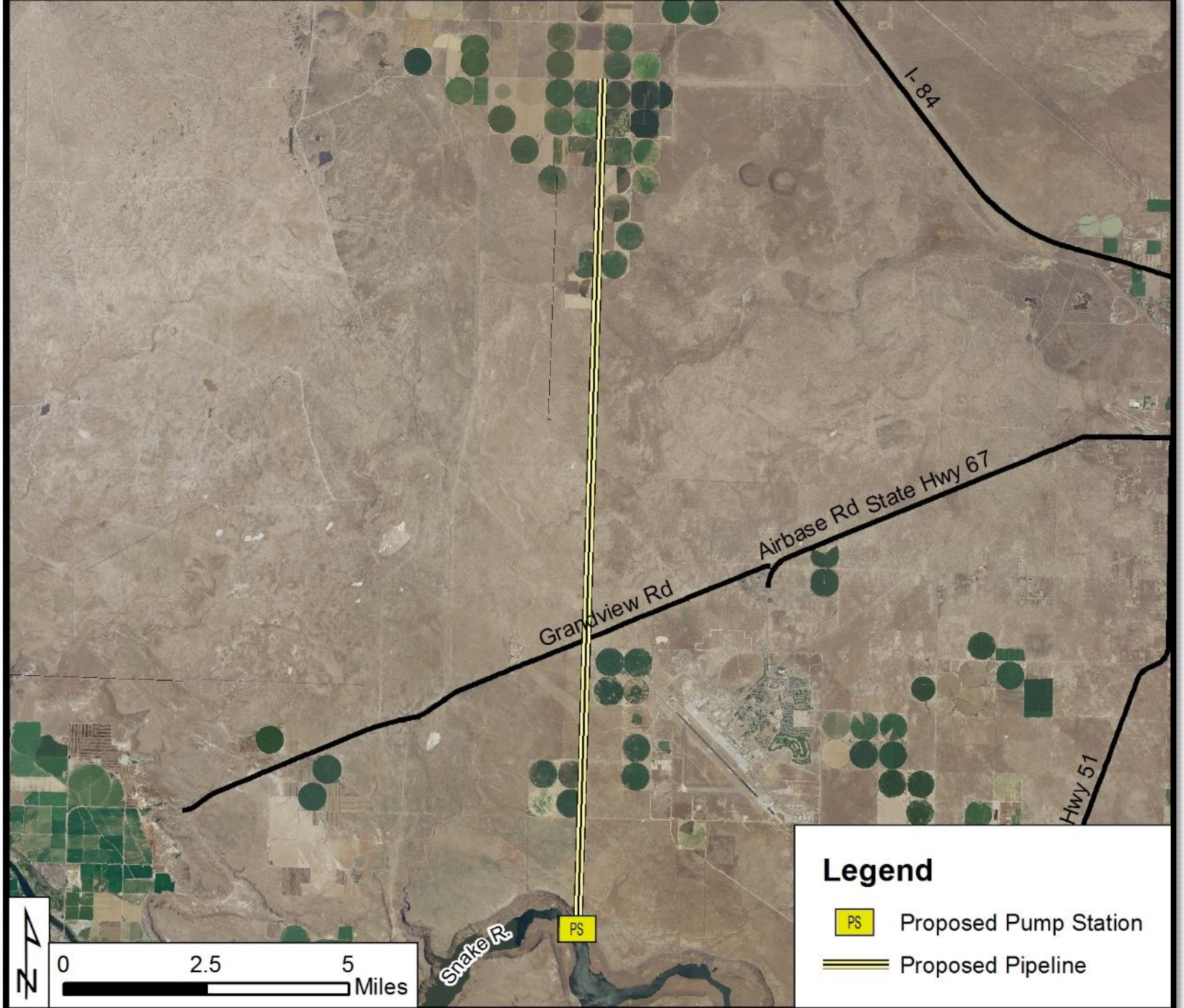
ALTERNATIVE		WATER SUPPLY				PIPELINE		PUMP STATION	
		Annual Vol (AF)	Duration (Days)	Flowrate (gpm)	Flowrate (cfs)	Length (mi)	Dia (in)	TDH[1] (ft)	Power (hp)
S1	MHAFB to Mountain Home	10,000	365	6,200	13.8	9.0	24	1070	2,090
S2	S. Elmore I.D. Res. to Canyon Cr.	10,000	180	12,600	28.1	16.7	36	955	3,800
S3	Bennett Creek to Mtn Home Reservoir	10,000	90	25,100	55.9	13.3	48	990	7,840
S4	RM517 to Mtn Home Reservoir	10,000	180	12,600	28.1	15.7	36	940	3,740
S4B	RM517 to Mtn Home and Areas South	20,000	365	12,400	27.6	19.5	36	970	3,800
S5	CJ Strike to Cinder Cone Area	25,000	180	31,400	70.0	15.0	48	825	8,180
S6	RM510 to East of MHAFB	10,000	180	12,600	28.1	5.0	36	625	2,490
S7	Below Swan Falls to Cinder Cone Area	25,000	180	31,400	70.0	25.0	48	1185	11,750

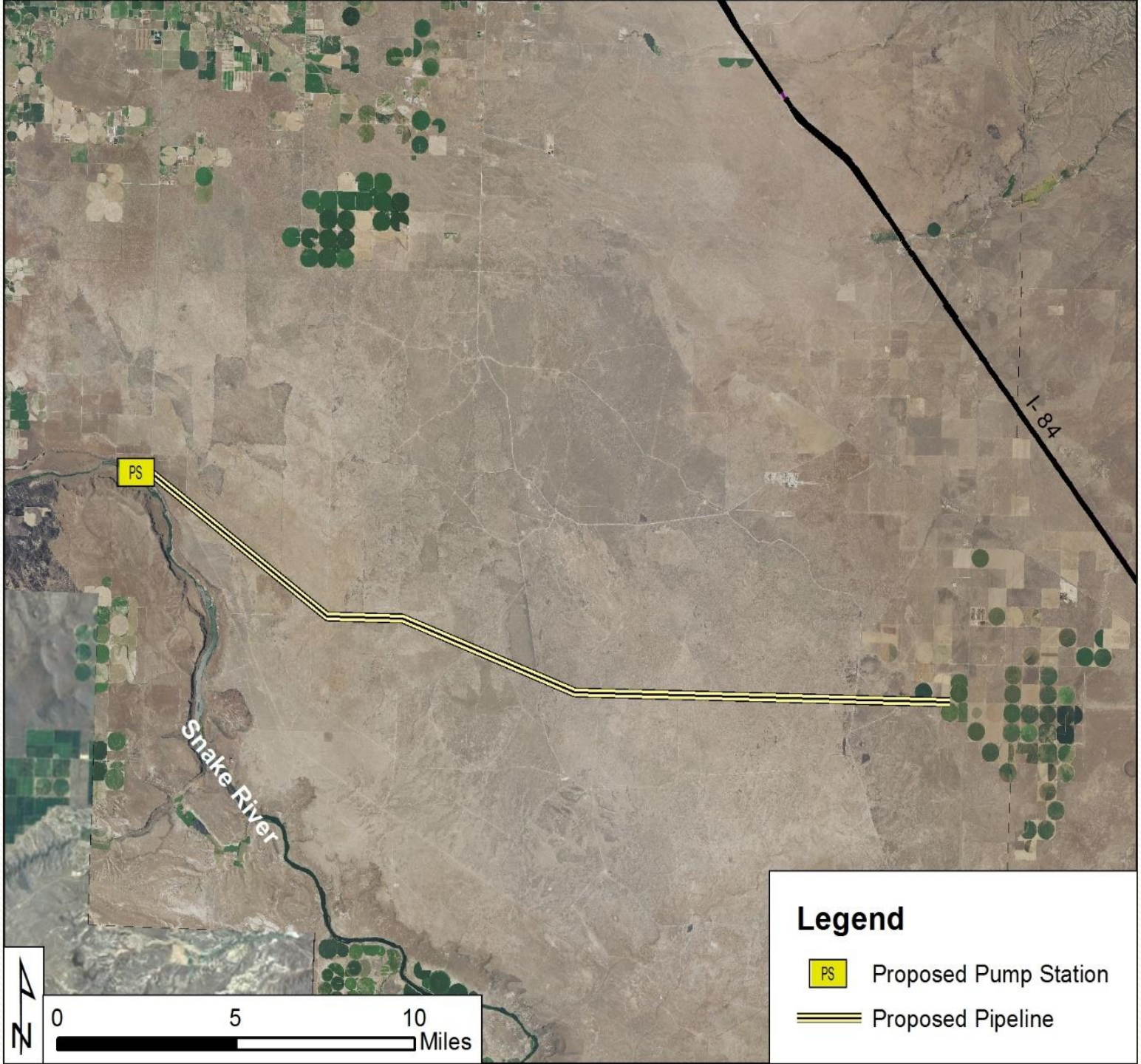
[1] TDH is total dynamic head.


Grandview Rd
Airbase Rd
State Hwy 67
PS
Legend
PS
Proposed Pump Station
Proposed Pipeline
Mountain Home AFB
N
0
1
2
Miles


Mountain Home Res.
Airbase Rd State Hwy 67
PS
State Hwy 51
I-84
Snake River
PS
N
0
2.5
5
Miles
Legend
PS
Proposed Pump Station
Proposed Pipeline


State Hwy 51
PS
N
0
0.5
1
Miles
Legend
PS
Proposed Pump Station
Proposed Pipeline


I-84
Airbase Rd State Hwy 67
Grandview Rd
Hwy 51
PS
Snake R.
N
0
2.5
5
Miles
Legend
PS
Proposed Pump Station
Proposed Pipeline


PS
I-84
Snake River
N
0
5
10
Miles
Legend
PS
Proposed Pump Station
Proposed Pipeline

Opinion of Costs for Water Supply Alternatives*

Alternative		CAPITAL COST	ANNUALIZED CAPITAL COST	ANNUAL O&M COST	ANNUAL POWER COST	UNIT COST OF WATER ($/AF)
BOISE RIVER ALTERNATIVES						
B1	Anderson Ranch to Little Camas	$6,510,000	$329,000	$130,000	$572,100	$103
B2	South Fork Boise R. to Long Tom Cr.	$5,710,000	$288,000	$114,000	$727,100	$113
B3	Cat Creek Reservoir to Little Camas	$8,960,000	$453,000	$179,000	$647,800	$128
B4	Long Tom Tunnel to Long Tom Creek	$13,270,000	$670,000	$265,000	$748,500	$168
B5	Lucky Peak to Cinder Cone Area	$56,960,000	$2,878,000	$1,139,000	$1,024,700	$202
SNAKE RIVER ALTERNATIVES						
S1	MHAFB to Mountain Home	$13,600,000	$687,000	$272,000	$755,300	$171
S2	S. Elmore I.D. Res. to Canyon Cr.	$24,510,000	$1,238,000	$986,000	$677,200	$290
S3	Bennett Creek to Mtn Home Reservoir	$18,050,000	$912,000	$1,396,000	$178,100	$249
S4	RM517 to Mtn Home Reservoir	$28,410,000	$1,435,000	$568,000	$666,500	$267
S4B	RM517 to Mtn Home and Areas South	$19,730,000	$997,000	$395,000	$1,228,700	$131
S5	CJ Strike to Cinder Cone Area	$25,750,000	$1,301,000	$515,000	$1,457,800	$131
S6	RM510 to East of MHAFB	$6,430,000	$325,000	$129,000	$443,800	$90
S7	Below Swan Falls to Cinder Cone Area	$47,140,000	$2,382,000	$943,000	$2,094,000	$217

*Costs do not include land, easements, water rights, environmental, or legal costs

Economics of Additional Water Supply

- More water is needed to meet 2014 Comprehensive Plan projections
- County is loosing potential economic opportunities due to lack of water supply
- Water costs of more than $50 per AF not viable for many agricultural operations and more than $100 per AF are not viable for nearly all agricultural operations

Summary Findings

- **80,000 AF of groundwater is currently pumped on the Mountain Home Plateau, with a pumping deficit approximately 43,000 AF per year.**
- **Water levels are generally stable north of the Union Pacific railroad tracks**

Summary Findings

- **Water level declines in the deep aquifer south of the RR tracks range from 1 to 5 feet per year, and probably average more than 2 feet.**
- **As water levels decline, the more productive aquifer zones in basalt and gravel are dewatered. Deeper aquifer zones in fine-grained sands and clays are less productive.**

Summary Findings

- **Water is available for appropriation from the Snake River on nearly a year-round basis provided that applications are determined to be in the public interest**
- **Water is available for appropriation from the Boise River only during times of flood release (when the water may not be needed on the Mountain Home Plateau).**

Summary Findings

- There are only limited opportunities to acquire existing water rights from both the Boise River and Snake River, and costs are expected to be high (up to $100 per AF annualized cost).
- There may be opportunities to obtain future storage contracts in the Boise River, but costs are expected to be high (>$100/AF annualized cost). Water can currently be leased on a year-to-year basis for $17 per AF

Summary Findings

- Estimated importation costs for water (not including water rights)
  - $100 to $200 per AF Boise River
  - $90 to $300 per AF Snake River
- Costs in excess of $100 per foot are not viable for agricultural irrigation but may be viable for domestic, commercial, municipal, and industrial uses

Recommendations

- **Seek a determination from the director of the Idaho Department of Water Resources that diversions of trust water from the Snake River upstream from Murphy gage for supplemental irrigation, aquifer recharge, and municipal purposes are in the public interest under the criteria of Idaho Code Section 42-203C(2)**

Recommendations

- **Conduct a value engineering study for a pumping station and pipeline from the Snake River north toward Mountain Home. The study would seek ways to reduce water costs so that Snake River water supplies would be feasible for current agricultural irrigation.**

Recommendations

- **Conduct a value engineering study for a pumping station and pipeline from the Snake River to Cinder Cone Butte.**

Recommendations

- **Participate in activities to obtain storage space within the Boise River reservoir system, either through development of additional storage space or through obtaining uncontracted storage**

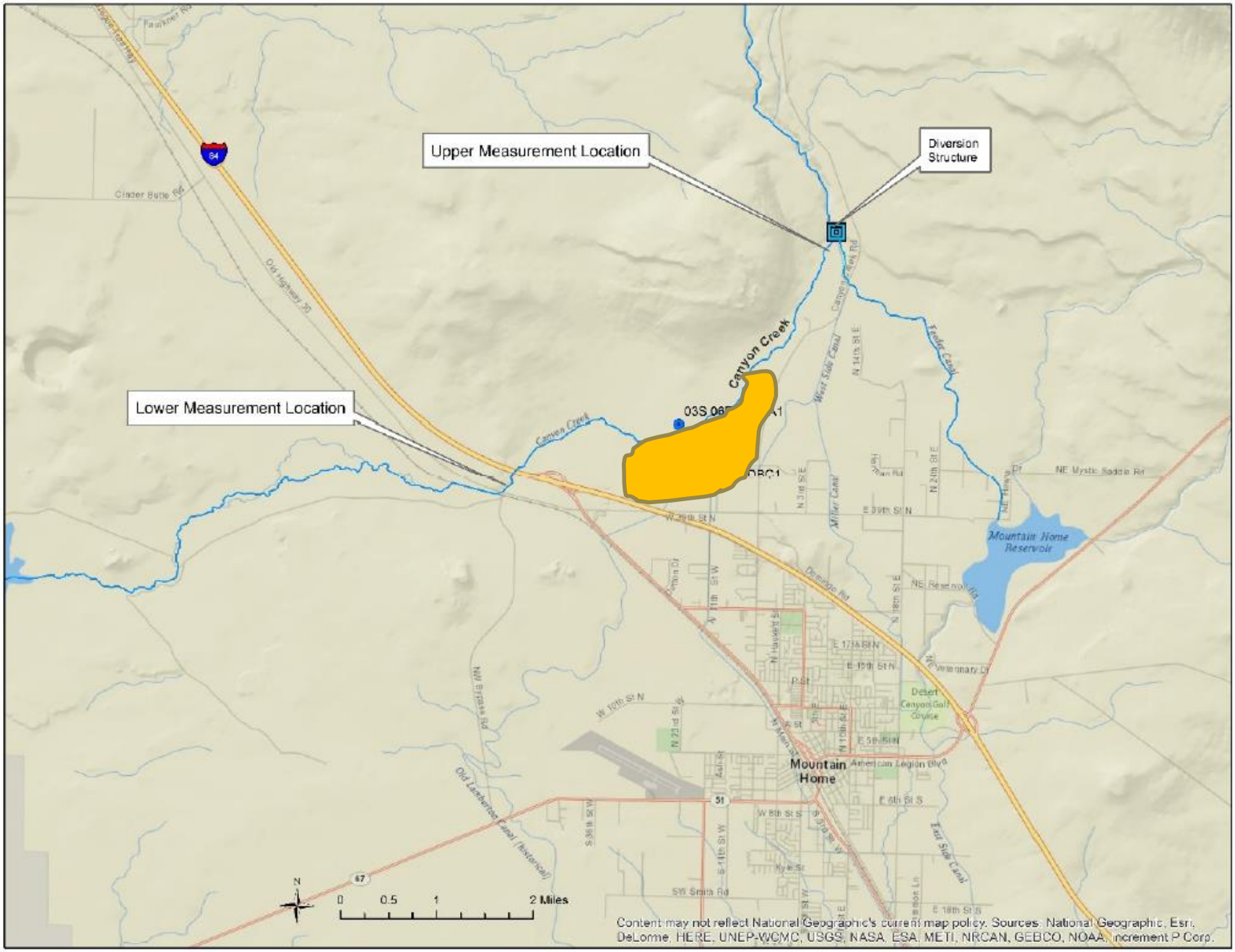
Recommendations

- **Increase aquifer recharge from Canyon Creek**

Canyon Creek Aquifer Recharge

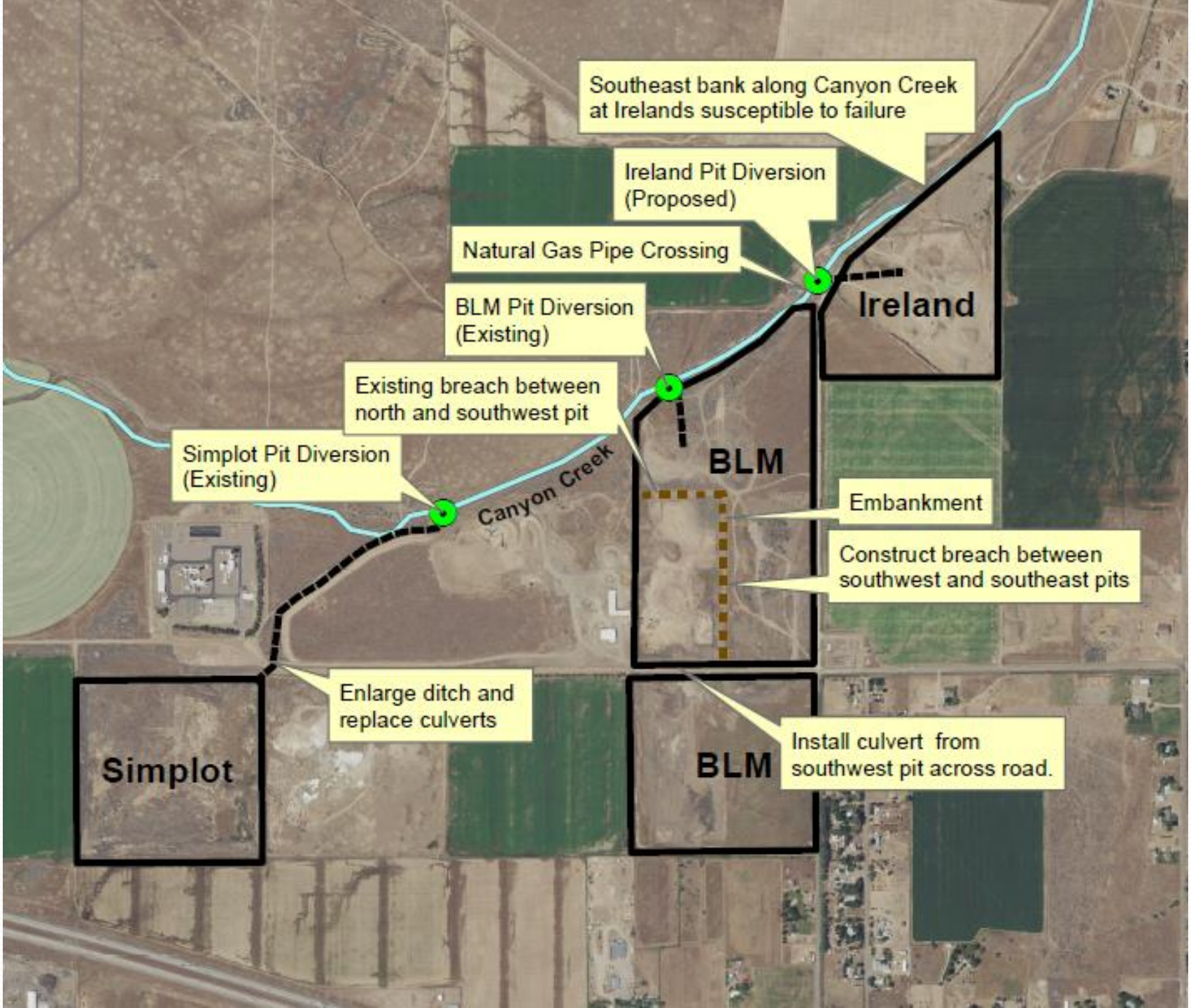
- Canyon Creek water is available for 0 to 2 months below the Mtn Home Reservoir feeder; approx. 17,000 AF in 2017*
- 4460 AF* was recharged in gravel pits north of I84 in 2017*
- Recharge was limited by conveyance capacity to gravel pits

*Owsley, 7/2017


Upper Measurement Location
Diversion Structure
Lower Measurement Location
Canyon Creek
Mountain Home
Mountain Home Reservoir
Desert Canyon Golf Course
0 0.5 1 2 Miles
Content may not reflect National Geographic's current map policy. Sources: National Geographic, Esri, DeLorme, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.

Proposed Recharge Improvements

- Increase diversion capacity to three gravel pits
  - BLM – increase from 31 to 61 cfs
  - Simplot – increase from 19 to 37 cfs
  - Ireland – construct 61 cfs
- County has an existing permit (49.2 cfs and 4455 AF pending recommendation) and pending permit application (200 cfs)
- Estimated project cost - $115,900


Southeast bank along Canyon Creek at Irelands susceptible to failure
Ireland Pit Diversion (Proposed)
Natural Gas Pipe Crossing
Ireland
BLM Pit Diversion (Existing)
Existing breach between north and southwest pit
Simplot Pit Diversion (Existing)
Canyon Creek
BLM
Embankment
Construct breach between southwest and southeast pits
Enlarge ditch and replace culverts
Simplot
BLM
Install culvert from southwest pit across road.

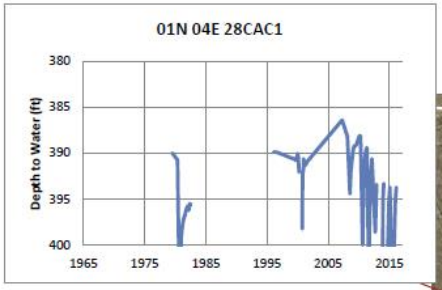
Parting Comments

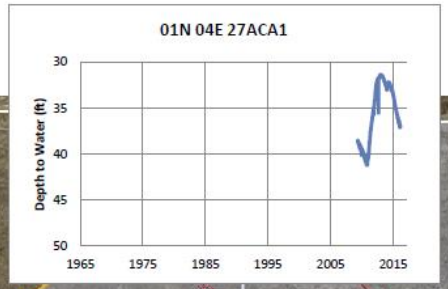
- Elmore County is trying to maintain and improve water supply
- Elmore County hopes to obtain IWRB funding for currently proposed recharge projects
- Elmore County would like to obtain IWRB support to develop additional water supplies from the Snake or Boise Rivers

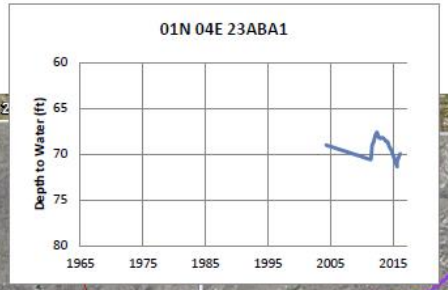
Questions?

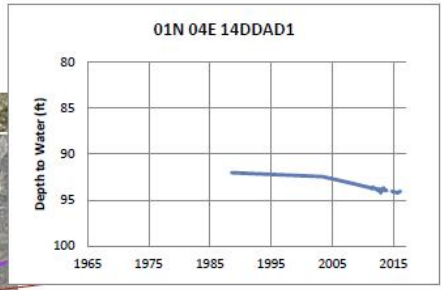
Mayfield-Orchard - Water Level Trends

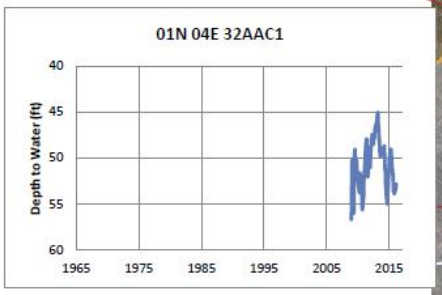
20-foot scale

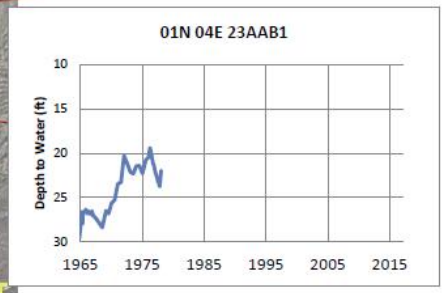


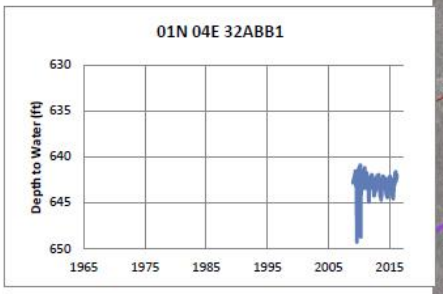


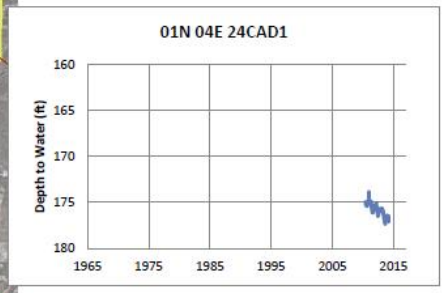


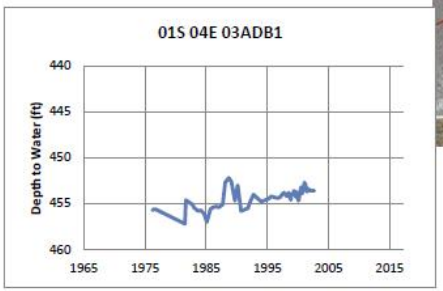


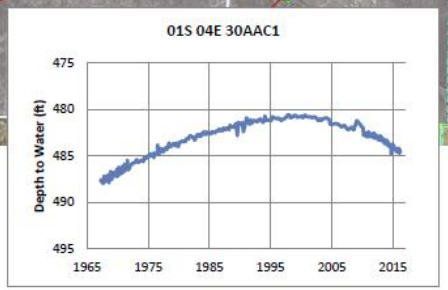


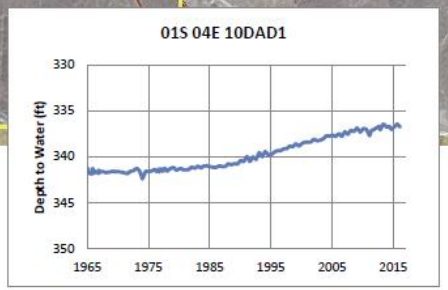


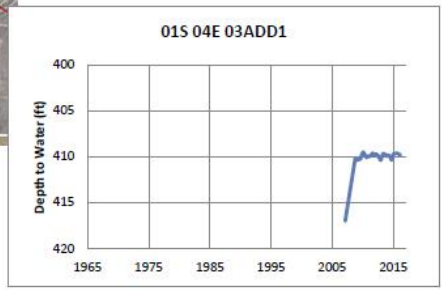


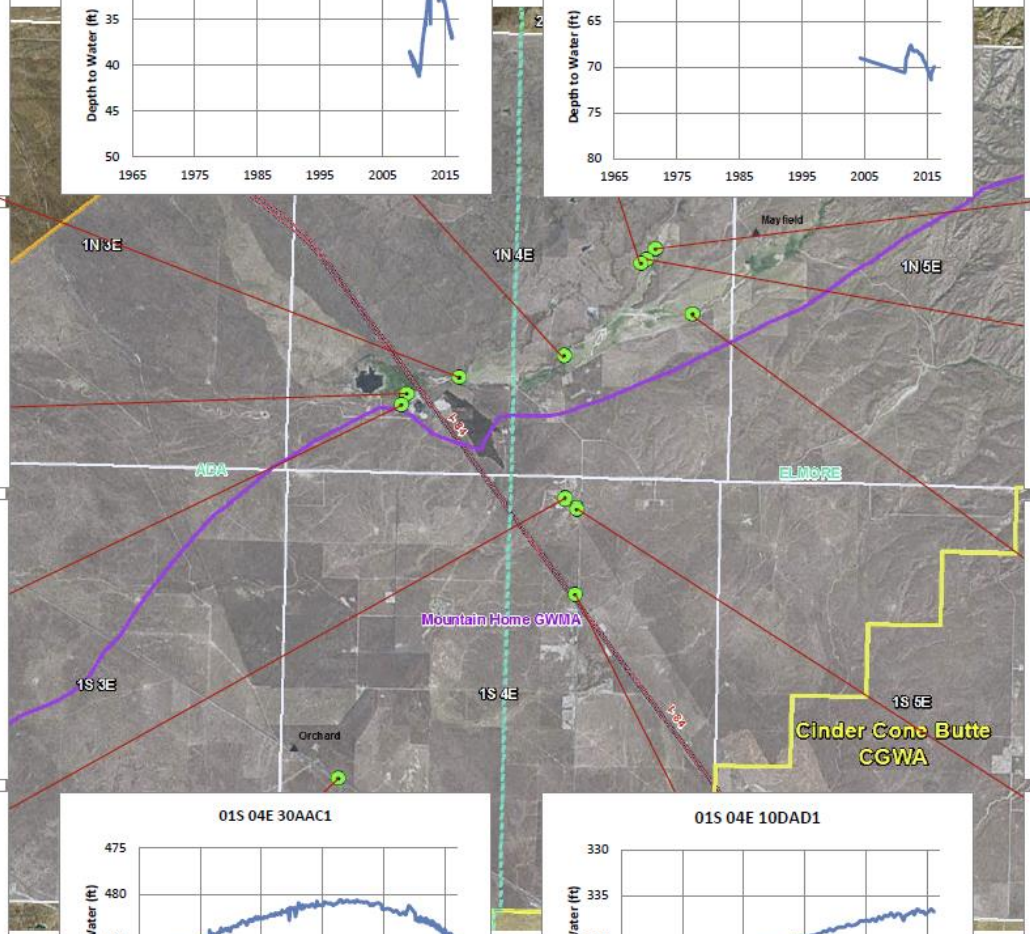






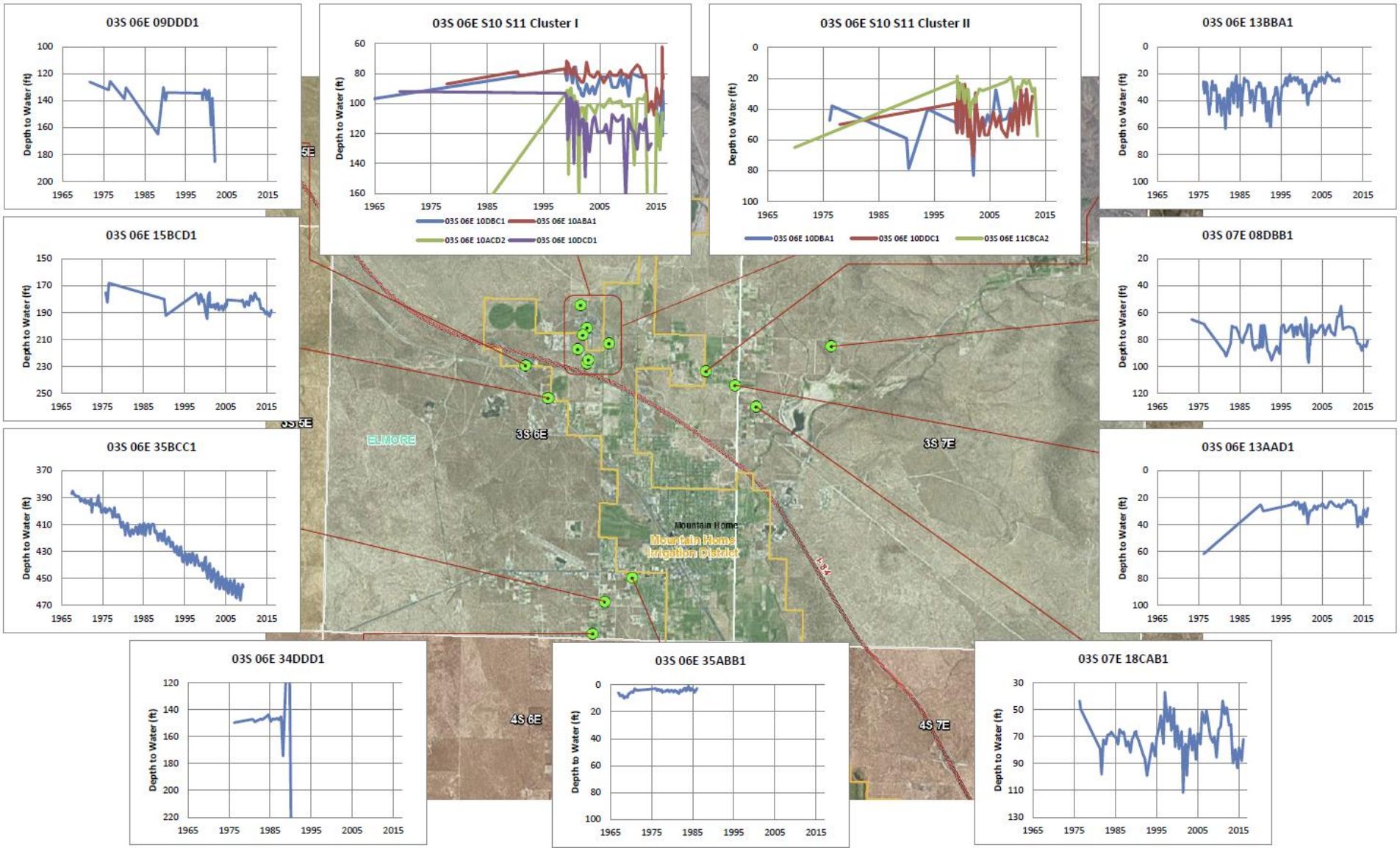






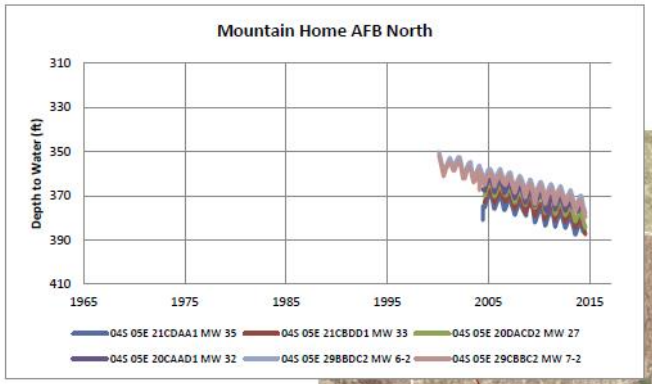
Mountain Home - Water Level Trends

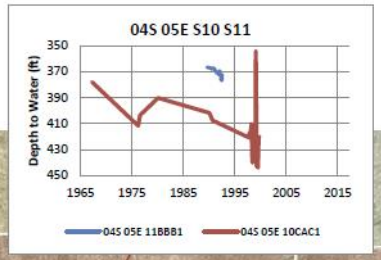
100-foot scale

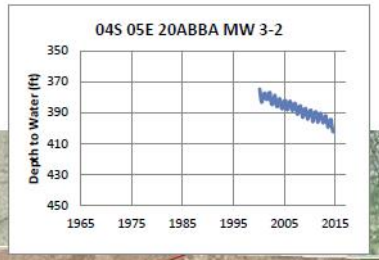


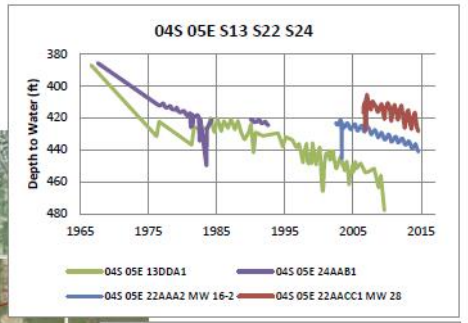
Mtn. Home AFB - Water Level Trends

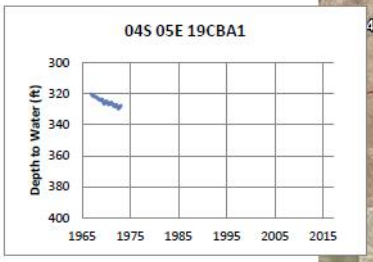
100-foot scale

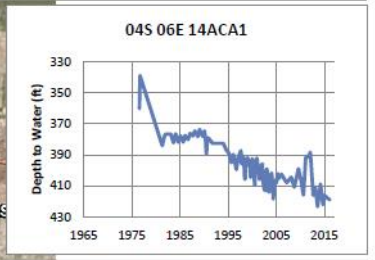


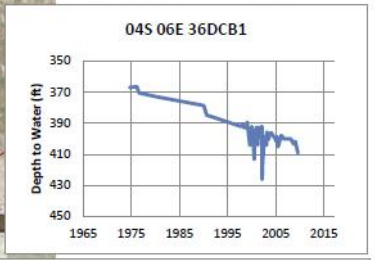


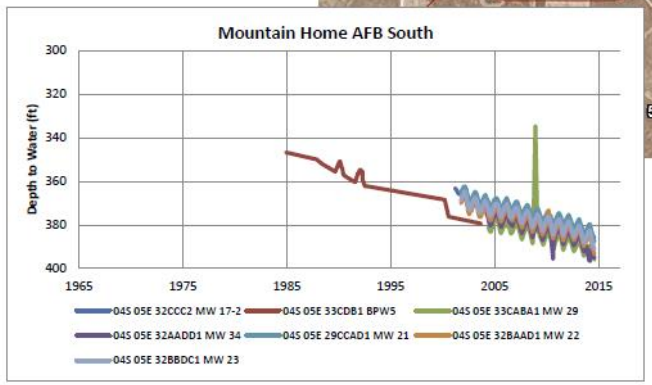


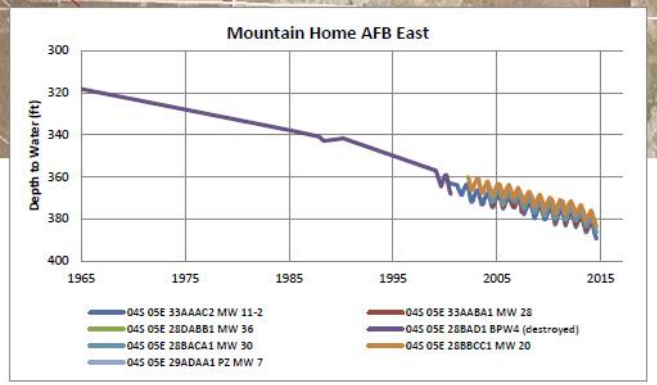


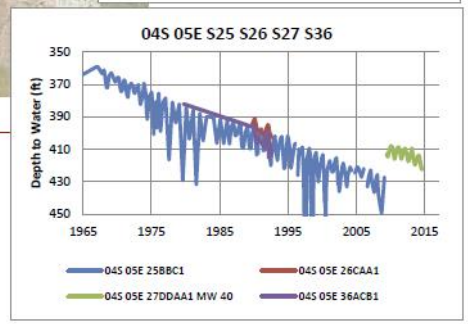






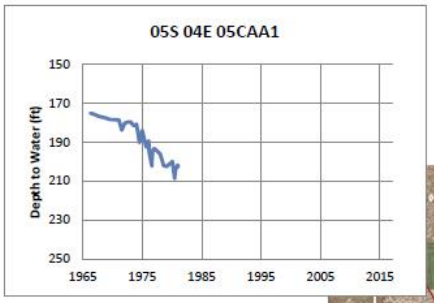


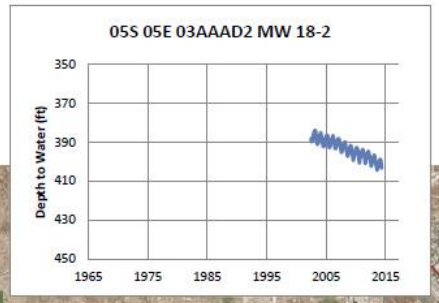


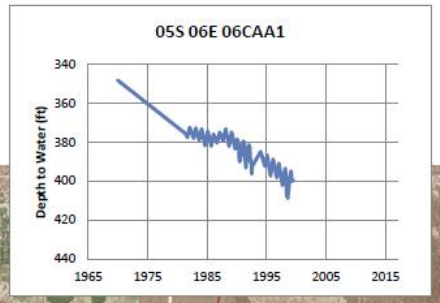


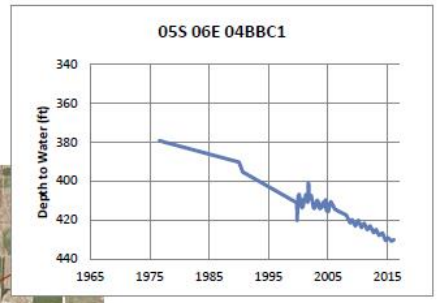
SW and SE of MHAFB- Water Level Trends

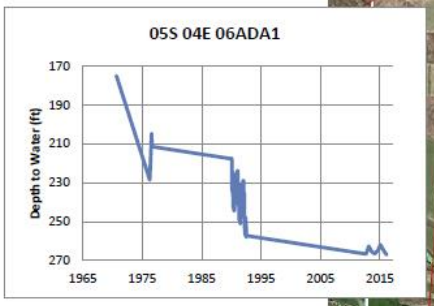
100-foot scale

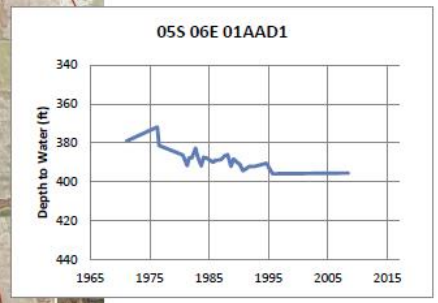


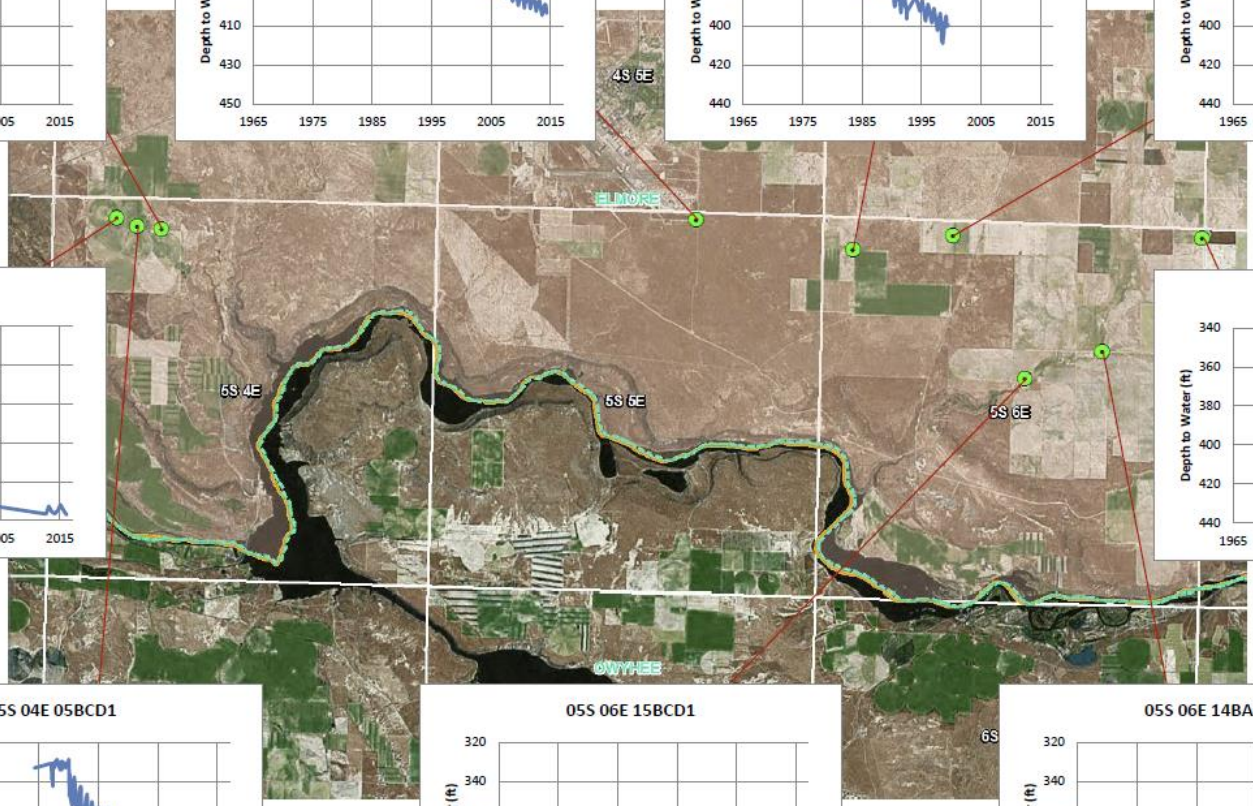


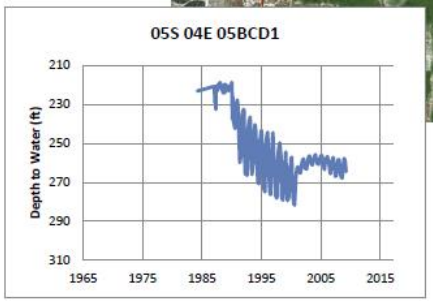


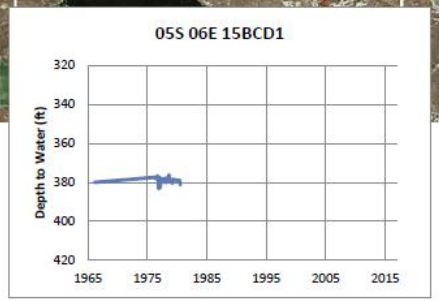


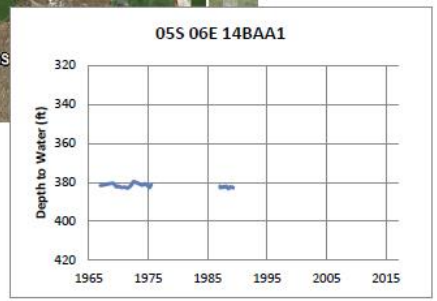






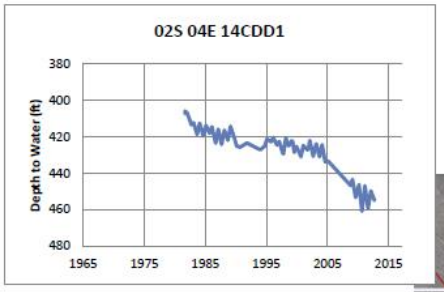


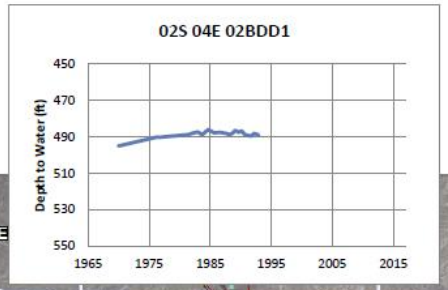


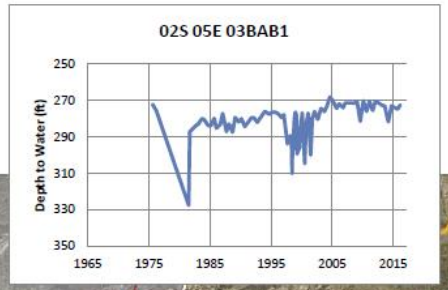


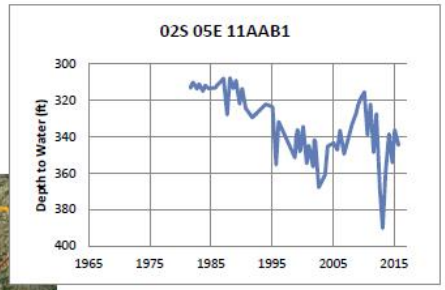
Cinder Cone Butte - Water Level Trends

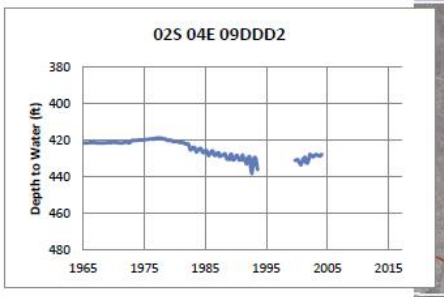
100-foot scale

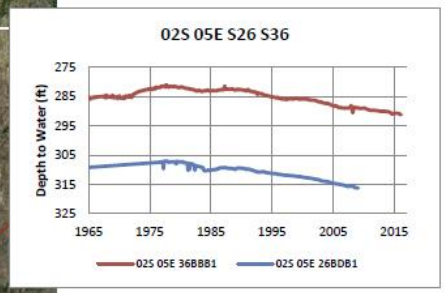


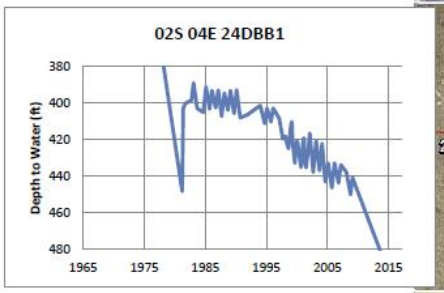


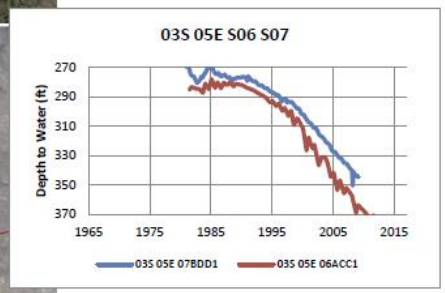


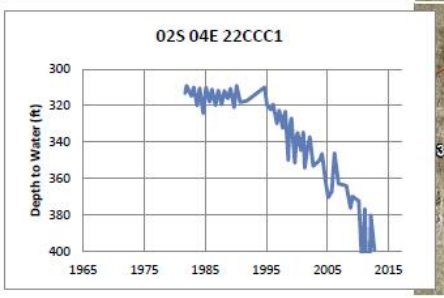


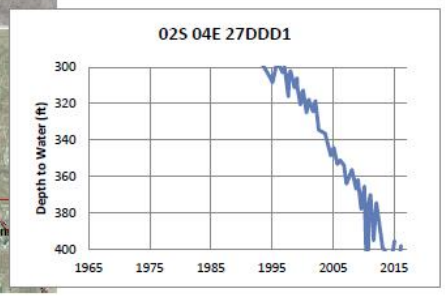


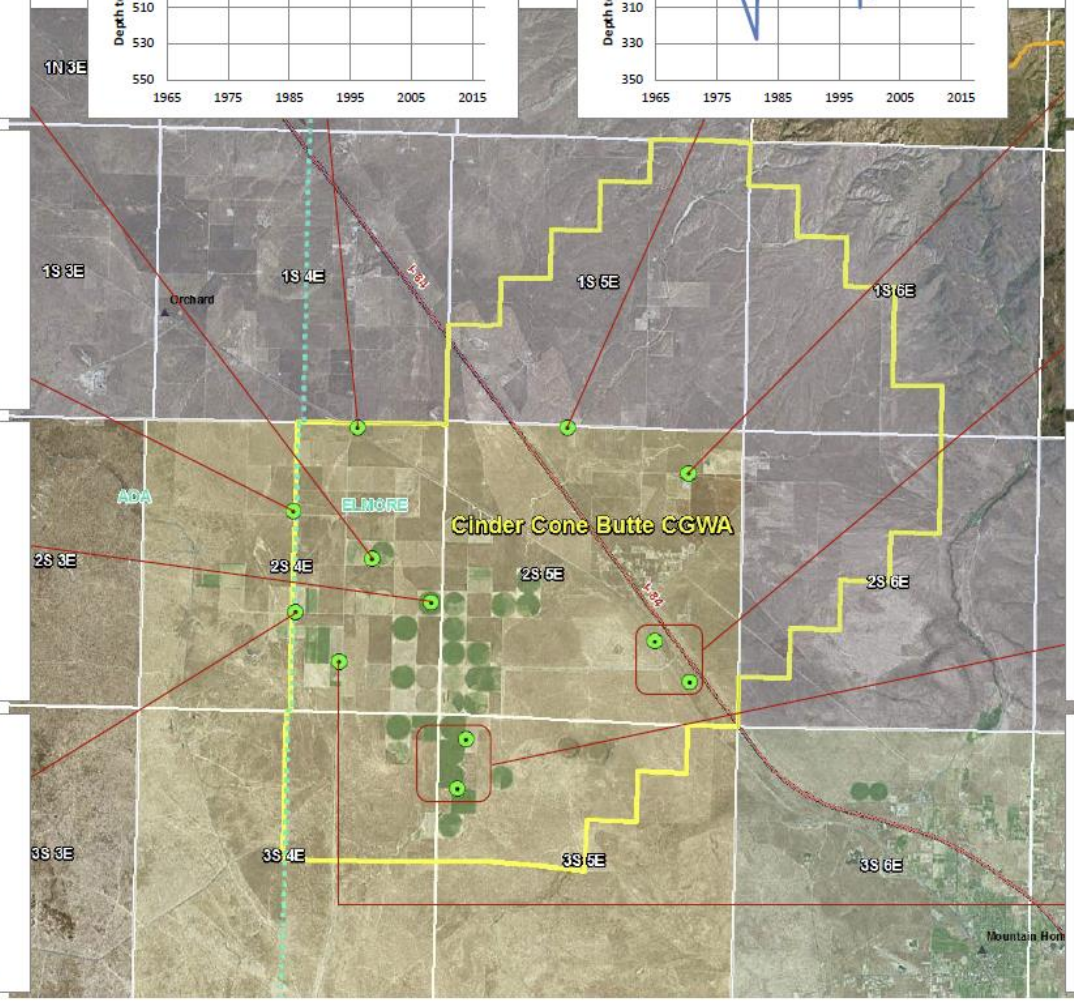












Memorandum

To: Idaho Water Resource Board (IWRB)

From: Neeley Miller, IDWR Planning & Projects Bureau

Date: September 1, 2017

RE: Spokane River Forum Conference Funding Request

ACTIONS: Consider request to provide funding in support of the Spokane River Conference

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Spokane River Forum

The Spokane River Forum has submitted a request to support the Spokane River Conference scheduled for November 14th-16th at the Coeur d'Alene Resort in Coeur d'Alene, Idaho. The Spokane River Forum organizers are requesting a $5,000 contribution. A copy of the request is attached.

The Spokane River Forum (SRF) is a clearinghouse of information about the Spokane River and more recently has been involved with the regional water issues, including the Spokane Valley-Rathdrum Prairie Aquifer. Andy Dunau, Executive Director of the SRF, is an active member of the RP CAMP Advisory Committee and is familiar with the RP CAMP goals and objectives. The 2017 Spokane River Conference brings together the public, technical experts and researchers, water users and government representatives from all levels to learn about and discuss regional water issues and solutions.

The Board provided $5,000 for the 2016 Spokane River Conference. Staff recommends continuing to support the Spokane River Conference because the Spokane River Forum supports the following CAMP actions:

1. Objective #2: Prevent and Resolve Water Conflicts
    a. Regional discussion and encouraging cooperation for Spokane Valley-Rathdrum Prairie Aquifer water issues;
    b. Encourage mechanisms that resolve local issues before they become conflicts;
2. Objective #3: Protect the Aquifer, through bringing the key agencies together in an effort to address overlapping jurisdictions with the goal of improving efficiency and sharing knowledge; and
3. Adaptive Management, Monitoring and Data Gathering: Present information about 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

Attached to this memo is a resolution for your consideration.

BEFORE THE IDAHO WATER RESOURCE BOARD

IN THE MATTER OF PROJECTS ASSOCIATED WITH RATHDRUM PRAIRIE COMPREHENSIVE AQUIFER MANAGEMENT PLAN	A RESOLUTION TO ALLOCATE FUNDS FOR THE SRF CONFERENCE

WHEREAS, the Idaho Water Resource Board (IWRB), pursuant to its planning authorities in Article XV, Section 7 of the Idaho Constitution, and Idaho Code 42-1779, and as directed by House Bill No. 428 passed and approved by the 2009 Idaho Legislature, has undertaken the development of a comprehensive aquifer management plan for the Rathdrum Prairie Aquifer; and

WHEREAS, the IWRB adopted the Rathdrum Prairie Comprehensive Aquifer Management Plan on July 29, 2011; and

WHEREAS, the Spoke River Forum (SRF) has requested financial support in the amount of $5,000 to match other funding support for the Spokane River Conference scheduled for November 14th – 16th, 2017; and,

WHEREAS, the Spokane River Conference supports several actions described in the Rathdrum Prairie Comprehensive Aquifer Management Plan, including:

1. Objective #2: Prevent and Resolve Water Conflicts
    a. Regional discussion and encouraging cooperation for Spokane Valley-Rathdrum Prairie Aquifer water issues;
    b. Encourage mechanisms that resolve local issues before they become conflicts;
2. Objective #3: Protect the Aquifer, through bringing the key agencies together in an effort to address overlapping jurisdictions with the goal of improving efficiency and sharing knowledge; and
3. Adaptive Management, Monitoring and Data Gathering: Present information about 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

NOW, THEREFORE, BE IT RESOLVED that the IWRB hereby approves the expenditure of a total of $_____ from the IWRB Revolving Development Account's Rathdrum Prairie CAMP subaccount, to the Spokane River Forum.

DATED this 15th day of September, 2017

_____
Roger Chase, Chairman, IWRB

ATTEST_____
Vince Alberdi, Secretary, IWRB

Spokane RIVER forum

August 14, 2017

Idaho Department of Water Resources
Neeley Miller
322 East Front St
Boise, ID 83720

Dear Neeley,

The Spokane River Forum Conference is scheduled for November 15 -16, 2017 at the Coeur d'Alene Resort. We're also excited to be co-hosting the Coeur d'Alene Lake "Our Gem" Symposium on November 14th with the Coeur d'Alene Tribe of Indians and Idaho Department of Environmental Quality.

The Forum hopes the Idaho Water Resources Board can provide a $5,000 sponsorship for this year's conference. Sponsorships assure we can keep the cost of attendance quite low, including scholarships for community members.

Begun in 2009, the conference has proven very successful as a bi-state regional event featuring key Spokane River watershed issues, offering unique opportunities to share information, network with others and reach out to the public on water quality, water resource and other issues. As with past years, we expect over 250 people to attend one or both days of the conference.

Currently, we are working with IWAC and SAJB on agenda development that will feature a water resource plenary session and break out sessions. I look forward to your input on developing these sessions.

We are also working closely with Idaho Department of Environmental Quality, the Aquifer Protection District and The Idaho Water Resources Research Institute to bring in a number of related topics.

Thank you for considering this request. Please contact me with any questions.

Sincerely,

Andrew Dunau
Executive Director

2206 S. Sherman St. | Spokane, WA 99203
PH 509-535-7084 | FX 509-535-3986 | info@spokaneriver.net
spokaneriver.net

Spokane RIVER forum

INVOICE

Invoice #: 412
Invoice Date: 8/14/2017

To: Idaho Water Resource Board
Attn: Brian Patton
PO Box 83720
Boise, ID 83720-0098

Spokane River Forum Conference 2017 Funding Support	$5,000.00
TOTAL AMOUNT DUE	$5,000.00

Terms: Net 30 days
Federal Tax ID #61-1566039

2206 S. Sherman St. | Spokane, WA 99203
PH 509-535-7084 | FX 509-535-3986 | info@spokaneriver.net
spokaneriver.net

Memorandum

To: Idaho Water Resource Board

From: Wesley Hipke

Date: August 30th, 2017

Re: ESPA Managed Recharge Program Status Report

I. 2017/2018 Recharge Season Status

The 2017/2018 Recharge Season is looking promising considering the predicted high of carry-over in the Snake River Reservoir system. The system is current at 76% capacity as of the date of this report. After the irrigation season Jackson Lake, Palisades Reservoir, and Ririe Reservoir and potentially other reservoirs will have to release water to reach winter-time flood control levels. The US Bureau of Reclamation (USBR) is currently running different scenarios to determine how best to store and release this water from the reservoir system. The USBR's preliminary plan is to store as much as possible at American Falls Reservoir and keep flows out of the reservoir at minimal levels. Flow releases out of American Falls Reservoir would potential be adjust mid-December depending on current and predicted precipitation and the state of the reservoir system at that time.

This year's IWRB recharge season will start earlier due to a donation of water from the Surface Water Coalition (SWC). As part of the SWC Settlement agreement, the Idaho Groundwater Appropriators (IGWA) agreed to provide the SWC with 50,000 af of storage water per year from the Upper Snake Reservoir system. Given the natural flow available on the Snake River this past year and the current state of the reservoir system SWC and IGWA have agreed to donate the 50,000 af of storage water to the IWRB managed recharge program. The recharge of this water will begin on August 30th after the IWRB approves a resolution accepting this water.

This recharge season will also see an increase in the volume of natural flow the IWRB can recharge as their recharge water rights are expanding from the current 01-7054 recharge water rights (1980 priority for 1,200 cfs) to include permitted recharge water rights in the Lower Valley with a 1998 priority. The water rights are 01-7142 for 2,831 cfs limited to the North Side Canal and 01-10609 for 3,738 cfs that can be diverted by numerous entities below Minidoka Dam.

II. 2017/2018 Recharge Season Projections

The most immediate preparations are for the recharge of the SWC storage water in the Upper Valley. The current plan for recharging the 50,000 af in the Upper Valley is summarized in Table 1. Staff will be working with our recharge partners to ensure if an entity cannot recharge the allocated volume the water will be reallocated so the full volume is recharged. All efforts will be made to ensure the water is recharged, preferable in the Upper Valley. A reserve of 3,000 af is being held to conduct various potential recharge site testing, this water will be reallocated to established recharge areas if not used for testing.

Table 1. IWRB Managed Recharge Plan - Fall 2016				
Canal System	**Recharge Est. Start Date**	**Recharge Est. End Date**	**Est. Max. Recharge Capacity (cfs)**	**Est. Total Recharge Volume (Acre-feet)***
Fremont-Madison ID	Aug 30th	Nov 30th	150	20,000
New Sweden ID	Aug 30th	Oct 15th	30	2,500
Snake River Valley ID	Aug 30th	Nov 30th	60	7,000
Enterprize Canal Co.	Sept 15th	Nov 30th	70	7,000
Great Feeder Canal Co.	Nov 1st	Nov 14th	600	10,500
Aberdeen Springfield Canal Co.	?	?	200?	----
			TOTAL	**47,000**

In the Lower Valley, IWRB recharge is expected to start around the end of October once irrigation deliveries cease and the IWRB recharge rights come into priority. As stated earlier the USBR's preliminary plan is to keep flows out of American Falls at minimal levels to capture as much of the water released from the upstream reservoirs as possible adjusting their operations mid-December based on conditions at that time (per Upper Snake Advisory Committee meeting on August 23rd). This is a preliminary plan that the USBR will be finalizing in the next couple of months.

The IWRB's current fall recharge capacity in the Lower Valley is estimated between 800-900 cfs with the following breakdown:

- ARFD2 – Milner-Gooding Canal ~ 750 cfs:
  - MP31 Recharge Site = 500-600 cfs
  - Shoshone Recharge Site = 250 cfs
  - Big Wood Site = 60 cfs (potential capacity depending on water availability)
- TFCC – Murtaugh Lake = 30 cfs
- SWID – Injection Wells = 50 cfs

Once freezing conditions become an issue the Shoshone and Big Wood sites would not be available for recharge. Over the colder months (normally December through February) the estimated capacity is 500 to 600

cfs in the Lower Valley. Once freezing conditions are no longer a concern the potential capacity should be similar to the fall levels between 800 to 900 cfs. In previous years the recharge capacity normally increases as the canal operators are able to utilize more of their canal system for recharge.

In the Lower Valley assuming a normal operating window of 150 days and there is water available equal to the recharge capacity over 180,000 af could be recharged in the Lower Valley. Combined with 50,000 af of recharge in the Upper Valley this fall the estimated IWRB recharge for this next season is 230,000 cfs. This volume could be significantly increased if there is water available in the Upper Valley to recharge this spring.

III. 2017/2018 Recharge Season Preparations

The following is a brief summary of the task that have been completed or started in preparation for the 2017/2018 IWRB Recharge Season.

- **Upper Valley Conveyance contracts**: The entities listed in Table 1 have signed one-year conveyance contracts with the exception of Enterprize Canal Co. and Aberdeen-Springfield Canal Co. The contract with the Enterprize Canal is scheduled to be completed by the first week of September.

- **Coordination with our Recharge Partner:** Meeting with the various canal companies and irrigation districts that the IWRB Recharge Program is partnering with this recharge season to ensure we can maximize our recharge operations and they can accomplish their required maintenance.

- **Environmental Resource Technical Working Group:** As part of the settlement with protestors to IWRB's recharge water right applications 01-7142 and 01-10609 an Environmental Resources Technical Working Group (Working Group) would be established. The Working Group is to be convened at least twice annually, once prior to the initiation of any planned recharge activities associated with these water rights and once following termination of managed recharge activities. Staff have begun work on scheduling the first meeting in October.

- **Water Quality Monitoring:** Staff are working with Idaho Department of Labs concerning finalizing the 2016/2017 water quality reporting, improving procedures/processes, and scheduling water quality sampling for the Shoshone and MP 31 recharge sites for this next season.

- **Coordinating with US Bureau of Reclamation:** Staff is continuing to work with the USBR on a variety of issues including Snake River operations, winter-water savings agreements in relationship to managed recharge, and furthering interagency communications.

IV. ESPA Recharge Program Projects and Buildout Activities

A number of projects have been undertaken to enhance the IWRB's ability to recharge in the ESPA. The following summary is a brief overview of the projects the IWRB is currently pursuing to meet the managed recharge goal of an average 250,000 af/yr.

For managed recharge projects involving infrastructure improvements to which the IWRB provided funding, a Memorandum of Intent (MOI) was developed to establish a long-term agreement (twenty years) between the IWRB and the entity implementing the project. The MOI acknowledges: 1) the IWRB provided financial assistance for a project; and 2) the entity agrees to deliver the IWRB's recharge water as compensation for financial assistance from the IWRB.

ESPA Managed Recharge Infrastructure Project Summary

The IWRB has allocated over $14 million dollars from 2013 through fiscal year 2018 infrastructure improvements to increase managed recharge throughout the ESPA. A summary and status of the current projects in the Lower Valley and Upper Valley are included in Tables 2 and 3, respectively.

IWRB staff are working on developing more infrastructure projects throughout the ESPA. In the Lower Valley the priority is developing projects on the North Side Canal system below Wilson Lake, investigating potential projects on the Milner-Gooding canal, and other opportunities as they arise. Develop/construction projects are planned for this fall in the Upper Valley utilizing the data obtain from various IWRB investigations/evaluations that will be completed this summer. A summary of the projected projects are listed in Tables 4 and 5 for the Lower and Upper Valleys, respectively.

Table 2. Current IWRB ESPA Managed Recharge Projects - Lower Valley						
IWRB Partner	**Project Name**	**Project Type**	**Status**	**Approved Funds**	**Scheduled Completion**	**Description /** Key Items
AFRD2	Dietrich Drop Hydro Plant Winter By-pass	Design / Construction	On Hold	$1,500,000	2018	**Winter recharge by-pass of the Dietrich Drop Hydro plant** • AFRD2 has sent communications to ENEL concerning the purchase of the Hydro Plant.
North Side CC	Hydro Plants (4) Improvements for Winter By-pass	Design / Construction	Active	$5,074,581	2018	**Winter recharge by-pass of the hydro plants between the Milner Pool and Wilson Lake** • 60% Design complete = Sept 2017 • Bid Opening – Nov 2017 • Major Construction complete – March 2018
Southwest ID	Buckhorn Pipeline	Construction	Active	$600,000	Fall 2017	**$15 million dollar new pipeline - IWRB funding recharge related infrastructure** • Testing complete – Summer 2017 • Construction of Building(s) Fall 2017
Big Wood CC	Richfield Recharge Site	Construction	Active	$150,000	Fall 2017	**Construction and development of the Richfield Site** • Construction and development of site – Fall 2017 • Groundwater Monitoring plan and 2 monitor wells – Fall 2017

Table 3. Current IWRB ESPA Managed Recharge Projects - Upper Valley						
IWRB Partner	**Project Name**	**Project Type**	**Status**	**Approved Funds**	**Scheduled Completion**	**Description /** Key Items
South Fork canal companies	South Fork Managed Recharge Site Evaluations	Evaluation	Active	$166,000	Oct 2017	**Working with Great Feeder, Farmers Friend, & Enterprize canals to evaluate potential recharge sites in the South Fork area** • IDEQ approval for infiltration testing – July 2017 • Conduct infiltration testing – Sept 2017
Fremont-Madison ID	Egin Lakes Phase II	Construction	Active	$580,000	Summer 2018	**Construction of Egin Lakes Phase II Recharge Capacity Expansion** • Submittal of EA/Evaluation – Oct 2017 • Construction scheduled to begin after EA complete by BLM – Winter 2018
New Sweden ID	New Sweden Site Testing & Groundwater Monitoring Plan	Evaluation of Sites	Active	$200,000	Fall 2017	**Preliminary survey of the New Sweden system and hydraulic modeling** • Completed Preliminary survey and modeling – March 2017 ($38,284) • Approved $200,000 for testing of sites and a Groundwater Quality Monitoring Program – May 2017 • Sept 2017 – Field-trip with NSID, Board members and staff to determine which projects to move forward
Butte Market Lake Co.	Managed Recharge Canal System Evaluation	Evaluation	Active	$39,000	Oct 2017	**Evaluation of potential recharge sites and canal infrastructure improvements** • Infiltration testing of 3 sites – end of July 2017
Woodville CC	Managed Recharge Site Evaluation	Evaluation	Active	$17,000	Oct 2017	**Evaluation of potential recharge site** • Working with Dept. of Lands to get access to the site to conduct infiltration test.

Table 4. Projected Lower Valley - IWRB ESPA Managed Recharge Projects						
IWRB Partner	**Project Name**	**Project Type**	**Status**	**Approved Funds**	**Scheduled Completion**	**Description /** Key Items
AFRD2	MP 28 Hydro Plant Tailbay	Design / Construction	Planning	None at this time	Dec 2018	**Isolating tailbay and improving forebay of the hydro plant during winter recharge** • Minor Modification to current tailbay and forebay – Fall 2017 • Working with AFRD2 and Hydro Plant owner considering various long-term options
AFRD2	New Recharge Site Identification	Survey	Planning	None at this time	Summer/Fall 2017	**Preliminary Survey and analysis to determine potential recharge site at MP29, MP34, and others** • Contract with consultants to do survey - Fall 2017
North Side CC	New Recharge Site Development and Identification	Survey, Design / Construction	Planning	None at this time	2018	**Design, Construction, and development of a Groundwater Quality Monitoring Program for site(s) below Wilson Lake** • Contract with consultants to do survey - Sept 2017 • Design and construction of Wilson Canyon site - Fall 2017/Winter 2018 • Design and construction of other site(s) - 2018
Southwest ID	New Injection Wells	Construction	Planning	None at this time	Fall 2017	**Construction of an injection well near the SWID-Milner Pump Station and off of Dry Creek** • Proposed cost for both wells $140,000 • Construction – Fall 2018

Table 5. Projected Upper Valley - IWRB ESPA Managed Recharge Projects						
IWRB Partner	**Project Name**	**Project Type**	**Status**	**Approved Funds**	**Scheduled Completion**	**Description /** Key Items
South Fork canal companies	South Fork Managed Recharge Site Constructions	Construction	Planning	None at this time	Fall 2017	**Design and Construction of proposed recharge sites** • Construction of a 4 recharge sites along with corresponding Groundwater Monitoring Plans and monitor wells - Fall 2017
Butte Market Lake Co.	Managed Recharge Canal System Evaluation	Construction	Planning	None at this time	Fall 2017	**Design and Construction of proposed recharge sites** • Construction of a recharge site along with corresponding Groundwater Monitoring Plans and monitor wells - Fall 2017
Progressive ID	Managed Recharge Canal sites	Evaluation	Planning	None at this time	Fall 2017	**Evaluation of proposed recharge sites** • Working with groundwater districts to identify potential recharge sites off of the Progressive canal system - Fall 2017

IDAHO
Water Resource Board

ESPA Managed Recharge 2016/2017

IWRB Board Meeting

Wesley Hipke
IWRB Recharge Program Manager

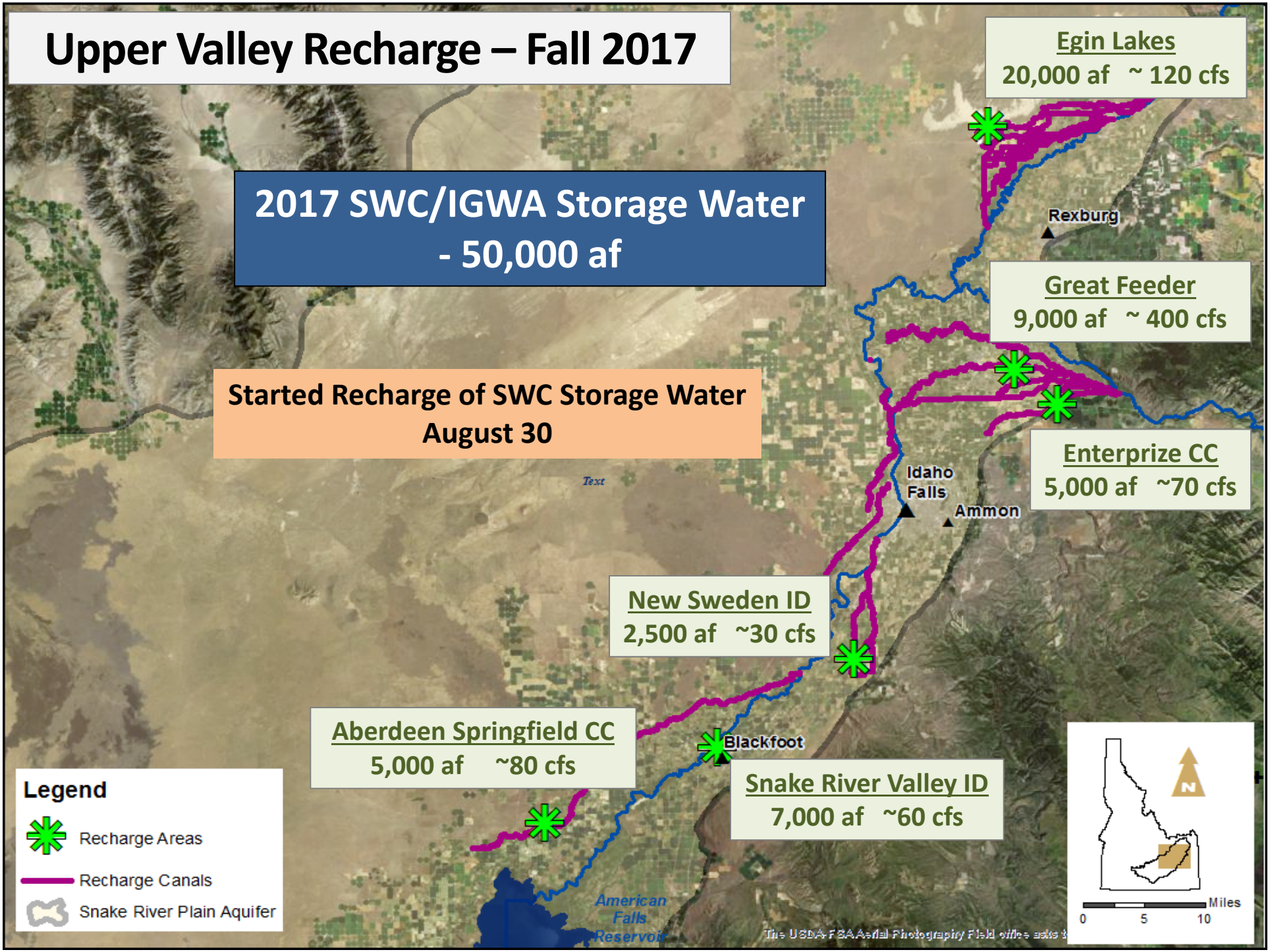
September 15, 2017

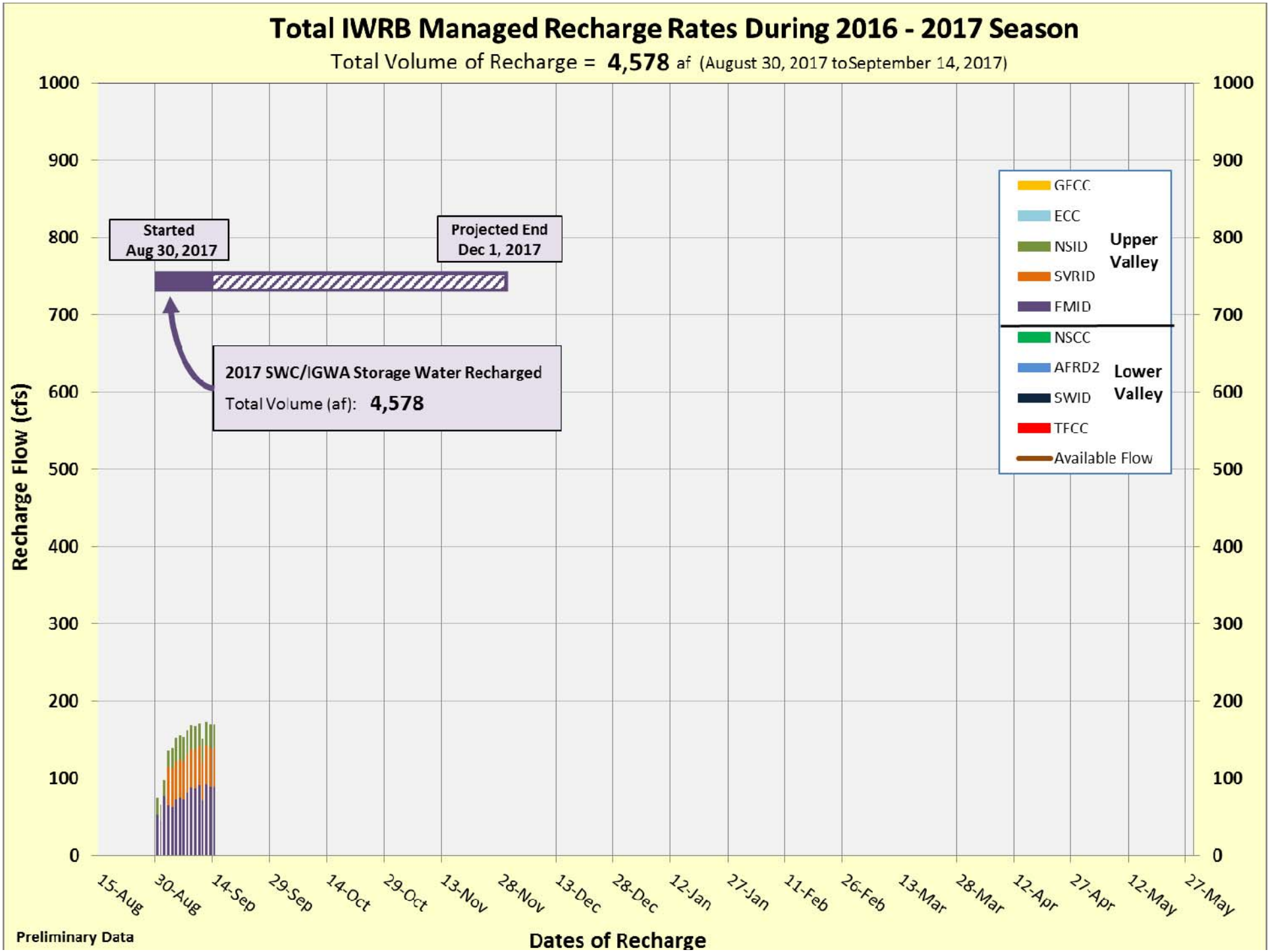
IDAHO Water Resource Board

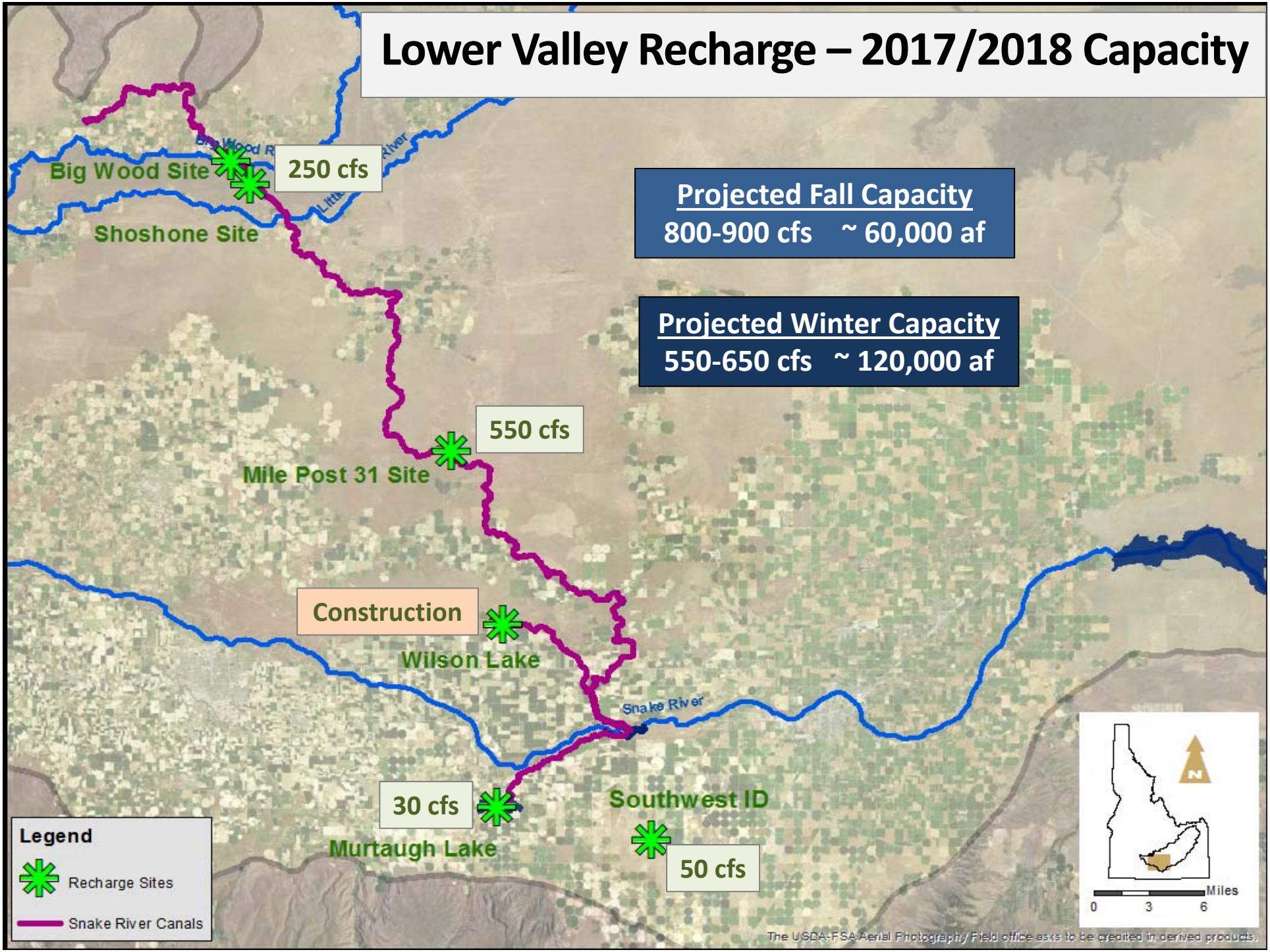
ESPA Managed Recharge Program

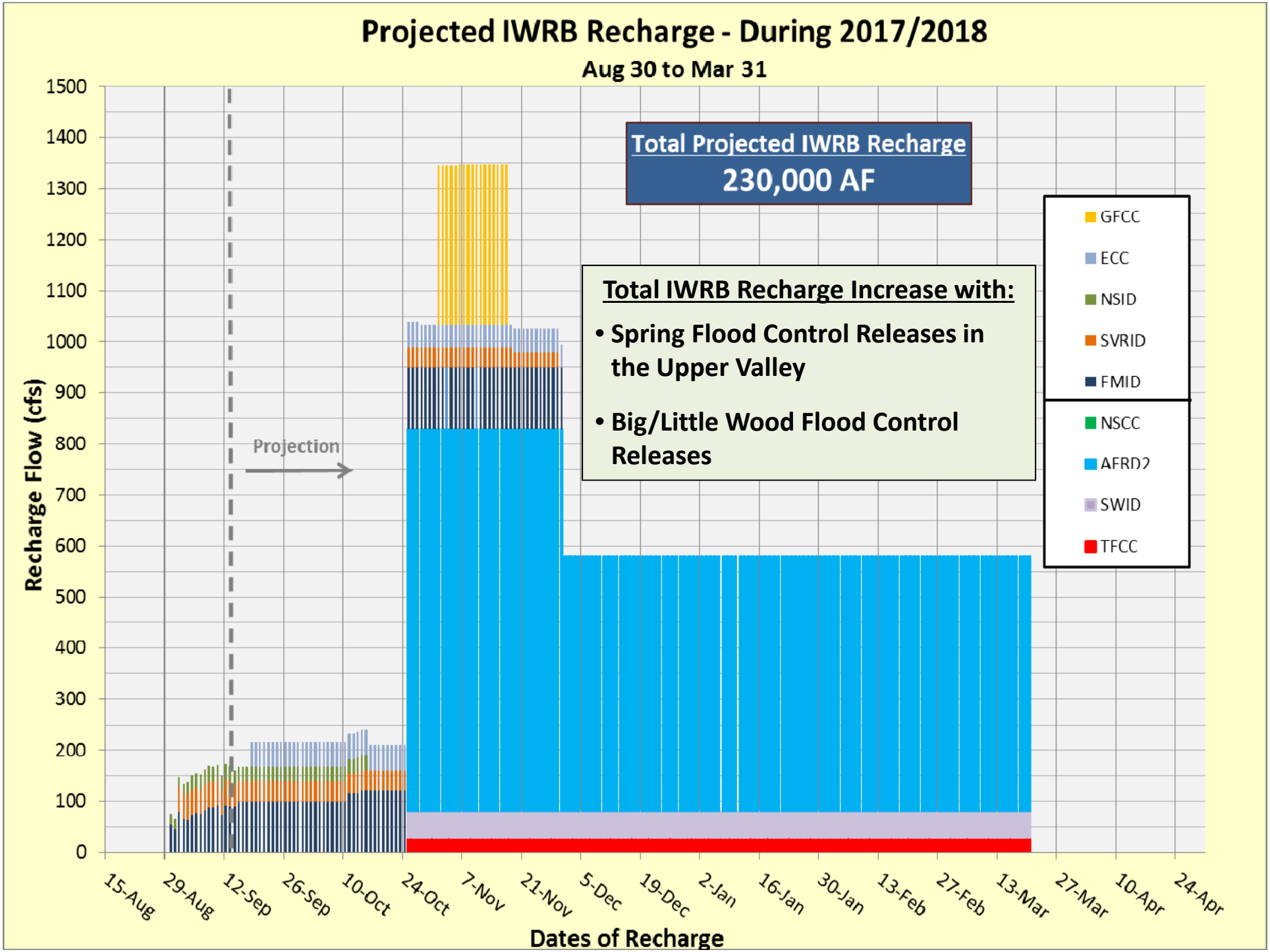
- **IWRB Managed Recharge Update – 2017/2018**

- **IWRB Infrastructure Projects**


Upper Valley Recharge – Fall 2017
2017 SWC/IGWA Storage Water - 50,000 af
Started Recharge of SWC Storage Water August 30
Egin Lakes
20,000 af ~ 120 cfs
Great Feeder
9,000 af ~ 400 cfs
Enterprize CC
5,000 af ~70 cfs
New Sweden ID
2,500 af ~30 cfs
Aberdeen Springfield CC
5,000 af ~80 cfs
Snake River Valley ID
7,000 af ~60 cfs
Rexburg
Idaho Falls
Ammon
Blackfoot
American Falls Reservoir
Legend
Recharge Areas
Recharge Canals
Snake River Plain Aquifer
N
Miles
0
5
10


Total IWRB Managed Recharge Rates During 2016 - 2017 Season
Total Volume of Recharge = 4,578 af (August 30, 2017 toSeptember 14, 2017)
Started Aug 30, 2017
Projected End Dec 1, 2017
2017 SWC/IGWA Storage Water Recharged
Total Volume (af): 4,578
GFCC
ECC
NSID
SVRID
FMID
Upper Valley
NSCC
AFRD2
SWID
TFCC
Lower Valley
Available Flow
Recharge Flow (cfs)
0
100
200
300
400
500
600
700
800
900
1000
15-Aug
30-Aug
14-Sep
29-Sep
14-Oct
29-Oct
13-Nov
28-Nov
13-Dec
28-Dec
12-Jan
27-Jan
11-Feb
26-Feb
13-Mar
28-Mar
12-Apr
27-Apr
12-May
27-May
Dates of Recharge
Preliminary Data


Lower Valley Recharge – 2017/2018 Capacity
Big Wood Site
250 cfs
Shoshone Site
Projected Fall Capacity
800-900 cfs ~ 60,000 af
Projected Winter Capacity
550-650 cfs ~ 120,000 af
550 cfs
Mile Post 31 Site
Construction
Wilson Lake
Snake River
30 cfs
Murtaugh Lake
Southwest ID
50 cfs
Legend
Recharge Sites
Snake River Canals
N
Miles
0 3 6
The USDA-FSA Aerial Photography Field office asks to be credited in derived products.

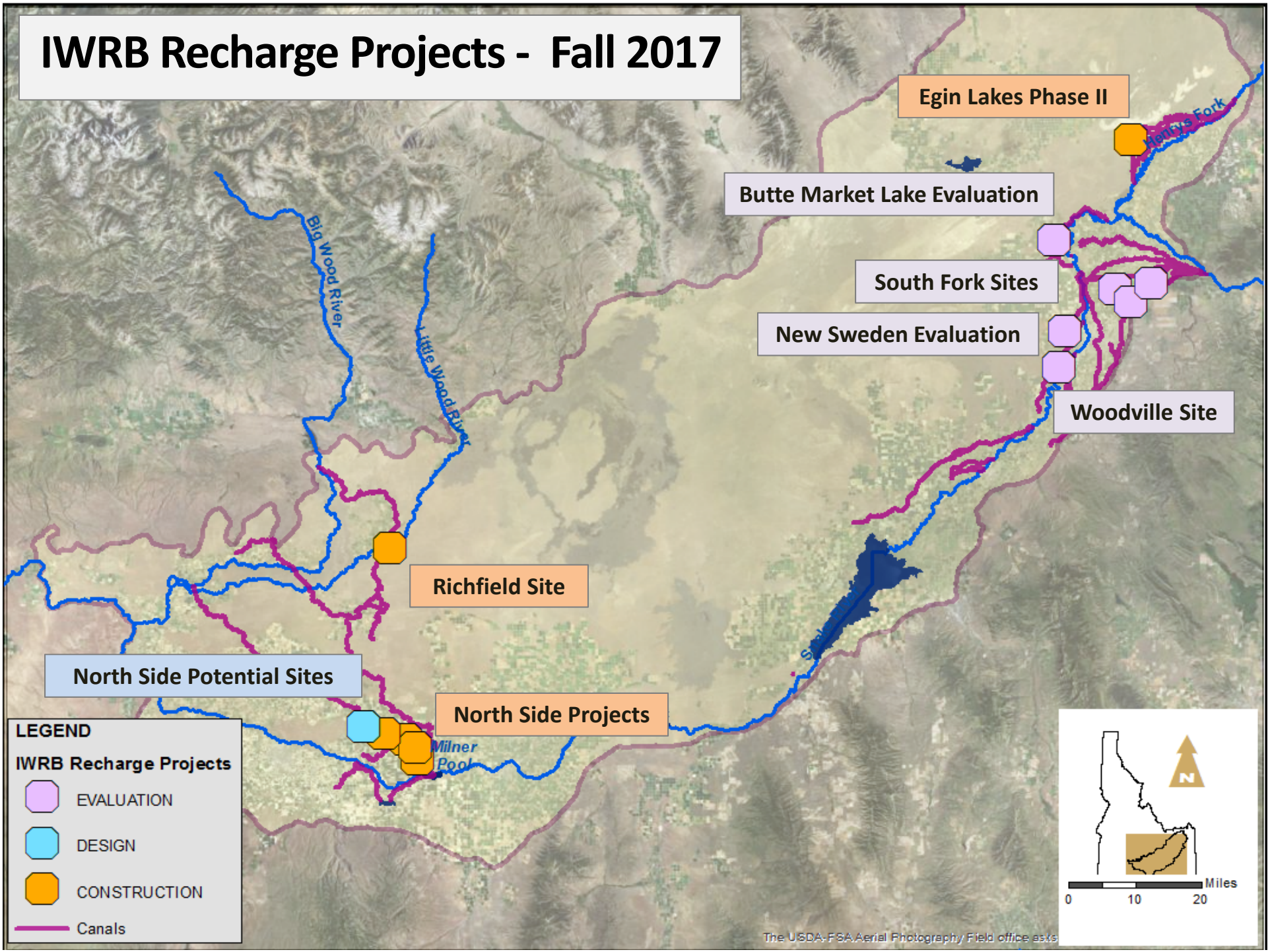

Projected IWRB Recharge - During 2017/2018
Aug 30 to Mar 31
Total Projected IWRB Recharge
230,000 AF
Total IWRB Recharge Increase with:
• Spring Flood Control Releases in the Upper Valley
• Big/Little Wood Flood Control Releases
Projection
GFCC
ECC
NSID
SVRID
FMID
NSCC
AFRD2
SWID
TFCC
Recharge Flow (cfs)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
15-Aug
29-Aug
12-Sep
26-Sep
10-Oct
24-Oct
7-Nov
21-Nov
5-Dec
19-Dec
2-Jan
16-Jan
30-Jan
13-Feb
27-Feb
13-Mar
27-Mar
10-Apr
24-Apr
Dates of Recharge

IDAHO Water Resource Board

ESPA Managed Recharge Program

- **IWRB Managed Recharge Update – 2017/2018**

- **IWRB Infrastructure Projects**


IWRB Recharge Projects - Fall 2017
Egin Lakes Phase II
Henrys Fork
Butte Market Lake Evaluation
Big Wood River
Little Wood River
South Fork Sites
New Sweden Evaluation
Woodville Site
Richfield Site
North Side Potential Sites
North Side Projects
Milner Pool
LEGEND
IWRB Recharge Projects
EVALUATION
DESIGN
CONSTRUCTION
Canals
N
Miles
0
10
20
The USDA-FSA Aerial Photography Field office exists

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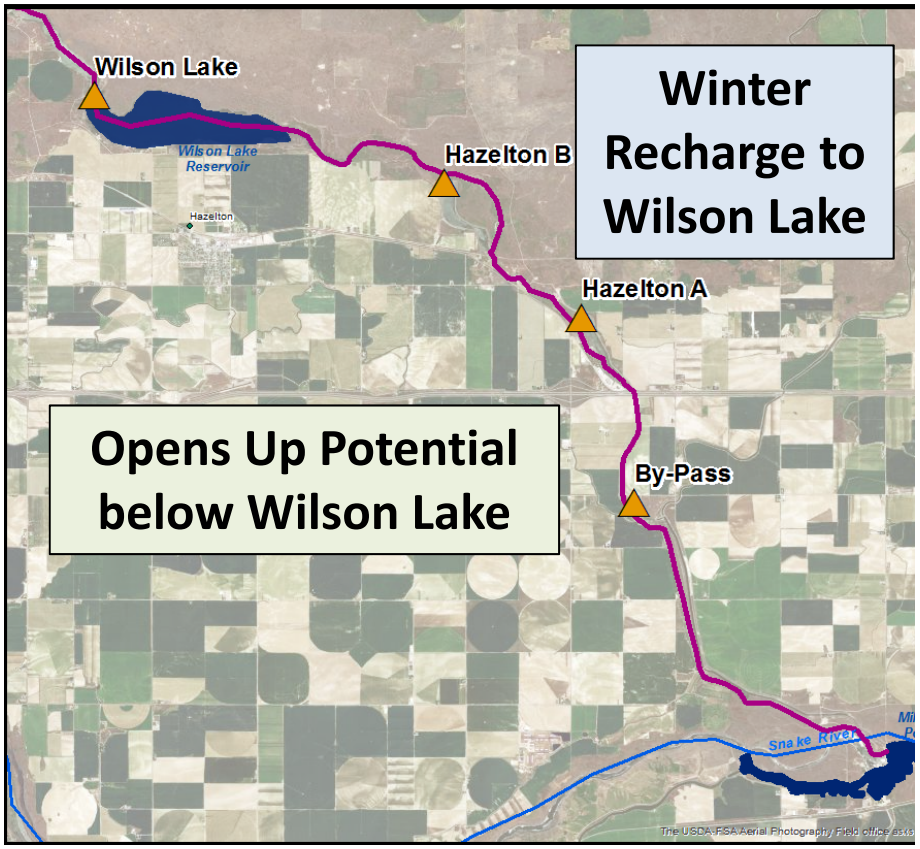
North Side Canal Hydro-Bypass Projects



Recharge Capacity
130 cfs
(Fall/Winter 2017/2018)

- 60% design completed — Sept 2017
- Design Meeting — Sept 19, 2017
- Construction Begin: — Dec 2017
- Major Const. Complete: — Mar 2018

Sept 2017 - FERC Determined Proposed Work Facility Maintenance

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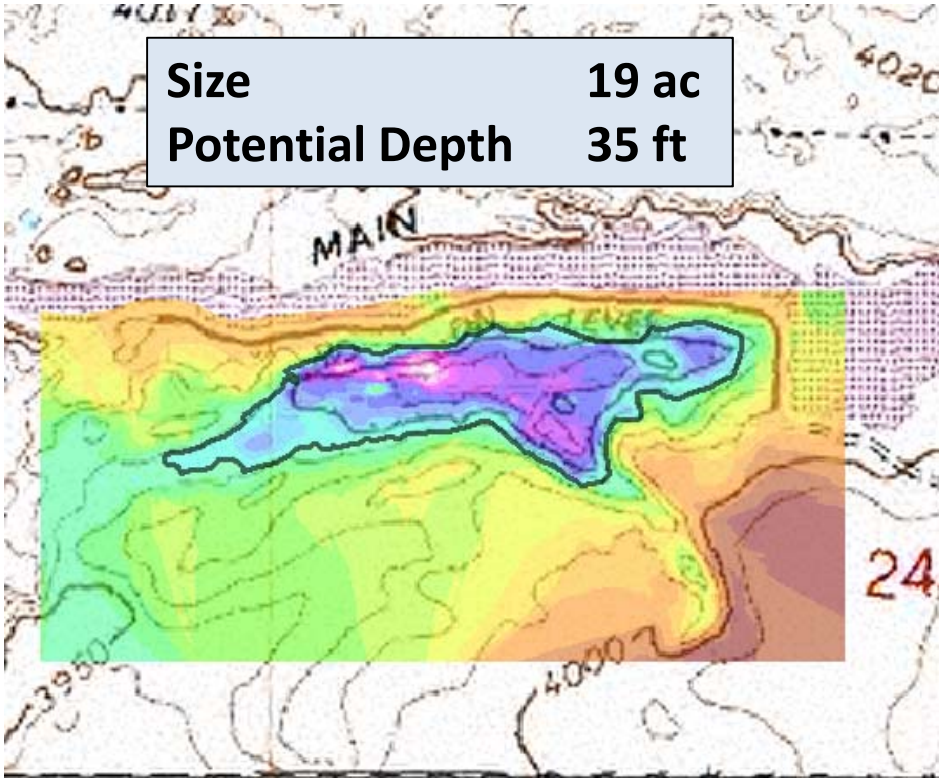
North Side Canal Wilson Canyon Site



Recharge Capacity 50 - 200 cfs
(Fall/Winter 2017/2018)

- **Field-Trip w/ NSCC Aug 24, 2017**
- **Survey Sept 2017**
- **Delivery Option/ Cost Estimates: Oct 2017**
- **Design/Construction: 2018**

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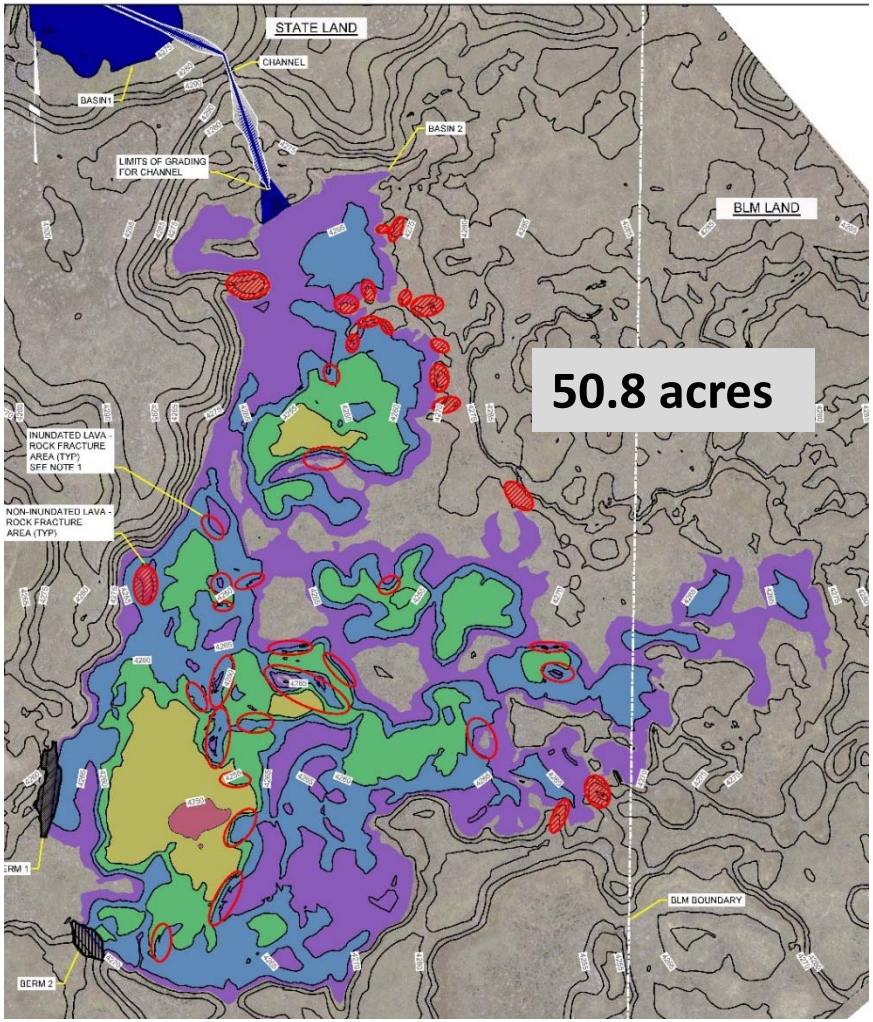
Richfield Site – Dietrich Canal



Potential Recharge Capacity
100 cfs - Big/Little Wood Rivers
(Fall/Winter 2017)

- **Design** — **Fall 2017**
- **Construction** — **Winter 2017/2018**
- **Monitoring Plan** — **Fall 2017**
- **Monitor Wells** — **Winter 2017/2018**

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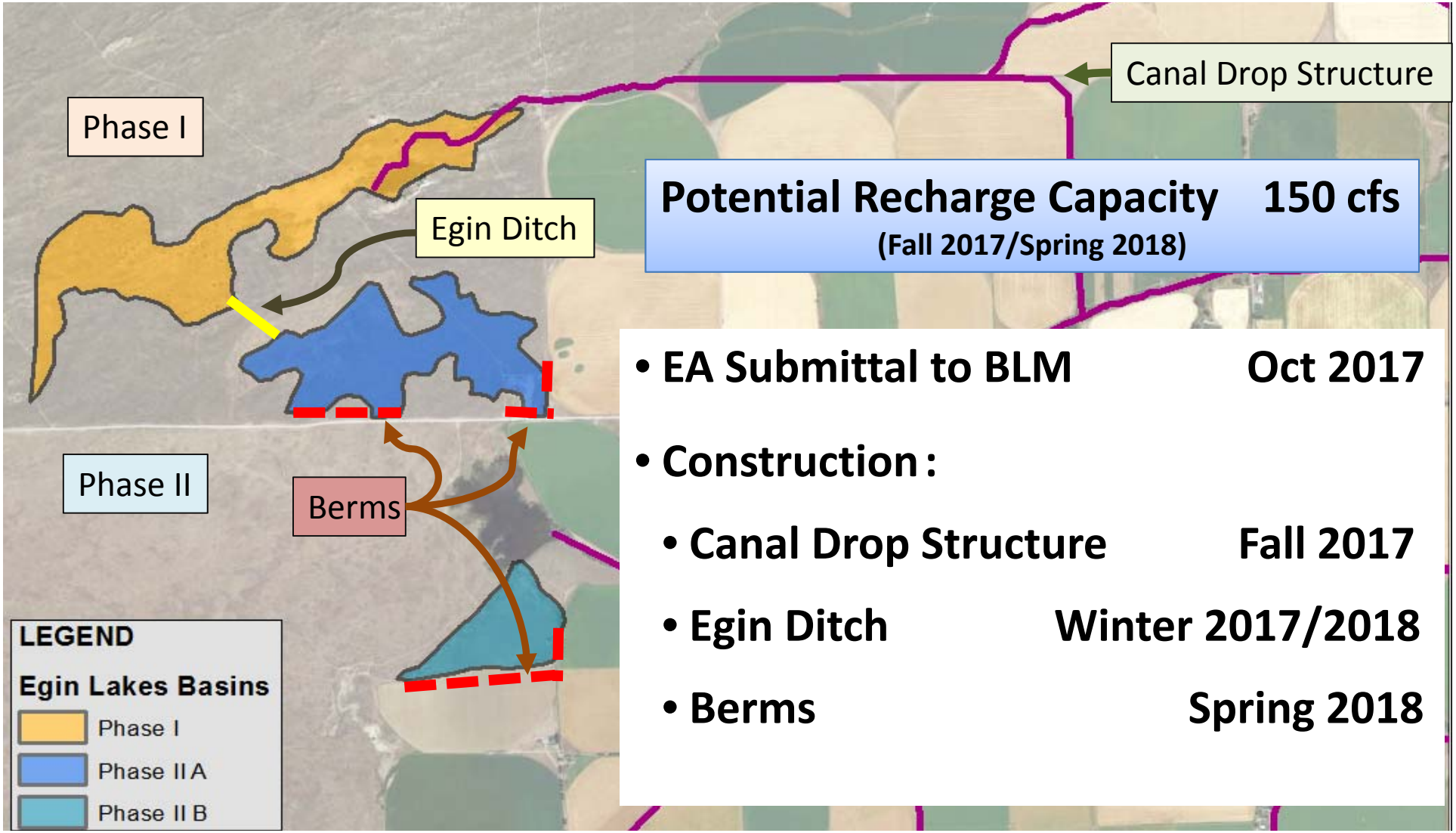
Egin Lakes Phase II



Potential Recharge Capacity 150 cfs
(Fall 2017/Spring 2018)

- **EA Submittal to BLM — Oct 2017**
- **Construction:**
  - **Canal Drop Structure — Fall 2017**
  - **Egin Ditch — Winter 2017/2018**
  - **Berms — Spring 2018**

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New Sweden ID System Evaluation/Testing

Potential Recharge Capacity
50-200 cfs - (Fall/Winter 2017/2018)

- **Field-Trip w/ NSID** — **Sept 6, 2017**
- **Basin Test**
  - **Construction** — **Fall 2017**
  - **Testing** — **Spring 2018**
- **Flume Cost Estimates:** — **Fall 2017**
- **Reservoir Site WQ Plan:** — **Fall 2018?**


Questions ??

Memorandum

To: Idaho Water Resource Board

From: Cynthia Bridge Clark

Date: September 6, 2017

Re: Status of Storage Water Studies

The following is a status report on the surface water storage studies initiated by the Idaho Water Resource Board (IWRB). An update will be provided by staff at the upcoming IWRB Work Session on September 15, 2017.

Weiser-Galloway Project

Water storage on the Weiser River and at the Galloway site has been studied for decades -- the U.S. Army Corps of Engineers (Corps) first received a study authorization resolution for the Galloway Project from the U.S. Senate Public Works Committee in 1954 and, in the early 1970s, Federal lands for the potential Galloway dam and reservoir site were classified and withdrawn for hydropower purposes by the Federal Power Commission (now the Federal Energy Regulatory Commission). In 2008, the Idaho Water Resource Board (IWRB) was directed by the Idaho Legislature through House Joint Memorial 8 to investigate water storage projects statewide, including the Weiser-Galloway Project. Potential project benefits include flood risk reduction, hydropower, additional water storage, irrigation, regional economic development, recreation and flow augmentation requirements for anadromous fish recovery.

The IWRB partnered with Corps through its Planning Assistance to States (PAS) program to perform a series studies to assess the feasibility of a new dam and reservoir on the Weiser River in southwest Idaho. The status of these studies and other actions is summarized below.

- Gap Analysis - In 2011, a gap analysis and economic evaluation was completed to review previous studies, update project costs, and identify critical gaps in the project concept.
- Geologic Investigation - In 2012, based on the findings of the gap analysis the IWRB authorized completion of additional analyses and core drilling to determine the safety and suitability of the geologic structures at the potential dam and reservoir site. The geologic analysis, which included project area field investigation as well as drilling six additional core holes to supplement holes drilled by the Corps in 1984, concluded that while the upper abutments would require special treatment during design and construction, a safe facility could be constructed.
- Operational Analysis - The gap analysis also recommended further evaluation of potential local and regional benefits from storage on the Weiser River. In 2012, the IWRB authorized completion of an evaluation of different operational scenarios of the dam to optimize hydropower (40-60MW), reduce flood risk, and provide recreation, additional water supply for the basin, and flow for anadromous fish recovery efforts that involve the entire Snake River system within Idaho. Potential integration of hydropower generated at the dam site with the Northwest power grid was also evaluated. The study has not been finalized as results are being incorporated with the analysis referenced below.
- Galloway Dam and Reservoir Concept Development Study – This additional analysis was initiated in 2014 to supplement data generated from the Operations Analysis models (hydrologic, hydraulic, flood, operational, water demands, and hydropower) to optimize the conceptual design layout of the dam and revise construction costs. The intent was to provide a more refined project design while leveraging the

project expertise of the technical study team who performed the Operations Analysis and previous PAS studies.

Preliminary results and a draft report have been provided to IWRB staff. Completion of the final report was delayed this summer due to other project priorities. However, efforts are underway to finalize both the Operational Analysis and the Dam and Reservoir Concept study and to present findings to the IWRB and the public in early 2018.

- Weiser River Trail Impacts and Relocation Options: The project as proposed would inundate approximately 15 miles of the Weiser River Trail (WRT) adjacent to the Weiser River. An analysis was initiated in 2015 to identify potential relocation options to better understand impacts and mitigation or enhancement opportunities for the WRT. Through a contract with a private consultant, preliminary field data was collected and coordination was initiated with WRT stakeholders. However, further work was put on hold to finalize the other ongoing studies.
- Federal Energy Regulatory Commission (FERC) preliminary permit: The IWRB holds a FERC preliminary permit. In accordance with permit requirements, progress reports have been filed every six months.

REQUIRED ACTIONS: No action is required by the IWRB at this time. In the next several months, staff intends to finalize ongoing studies, review options with the IWRB for project development at this time or in the future, and to complete engagement efforts with stakeholders and Idaho leadership.

Boise River Feasibility Studies

U.S. Army Corps of Engineers Feasibility Study/General Investigation (GI)

In January 2015, the Corps initiated the Boise River Feasibility Study in partnership with the IWRB to evaluate alternatives for flood risk reduction and water supply in the Boise River drainage. The most promising alternative included a raise of Arrowrock Dam.

After completion of extensive hydrologic and economic modeling, the Corps determined that based on current potential flood damage conditions in the Treasure Valley project costs exceeded the benefits of the Arrowrock Dam raise options. Corps policy required a Benefit to Cost Ratio (BCR) of 1.0 or greater for the primary purpose of the project (flood risk management). The Corps reported a BCR of 0.7. Based on the results, the Corps determined that federal interest in the project could not be justified and it could not pursue a raise of Arrowrock Dam or recommend the project for Congressional authorization at this time.

On January 24, 2017, the IWRB approved termination of the Boise River Feasibility Study and initiation of close-out activities with the Corps. However, given that results of the study established a need for additional water and significant flood risk reduction in the Treasure Valley, the IWRB encouraged the Corps to continue to coordinate with the U.S. Bureau of Reclamation (Reclamation) to leverage resources for the development of multi-purpose water projects and to coordinate with cities, counties and other entities to develop projects to reduce flood risk in the Treasure Valley.

Data and documentation of work completed for the Corps' Boise Feasibility Study have been compiled and submitted to the IWRB staff for review and provided to Reclamation for use in future studies.

U.S. Bureau of Reclamation Feasibility Study

Reclamation also has authority under the Omnibus Public Land Management Act of 2009, PL111-11, to study projects that address water shortages within the Boise River system. Beginning in 2015, to determine whether local

water users were interested in partnering in efforts to advance projects under this authority, Reclamation developed an initial scope of work to complete a full feasibility study of a raise of Anderson Ranch Dam. The total estimated study cost was $3 million.

The IWRB subsequently requested that Reclamation and the Corps build on the findings of the Corps' recent study to identify alternative storage project options. Reclamation and the Corps determined that Reclamation's proposed feasibility study could be expanded to include a 6 ft raise of Anderson Dam, 10 ft raise of Arrowrock Dam and a 4 ft pool raise at Lucky Peak reservoir, resulting in approximately 60,000 acre-feet of additional storage water. This combination of alternatives was not pursued by the Corps because it would not provide significant flood risk reduction. However, additional water supply is a priority objective for the IWRB and Reclamation. Reclamation estimated expansion of the initial scope of work would increase study costs to approximately $5.6 million, resulting in a partner cost-share of $2.8 million, and an estimated time for completion of approximately six years.

Reclamation recently identified the 2016 Water Infrastructure Improvements for the Nation (WIIN) Act as another potential option to authorize and fund both investigation and construction of affordable water storage infrastructure projects that support water supply, hydropower, flood control, and fish and wildlife in the Treasure Valley. Funding through the WIIN Act for feasibility studies is authorized through FY2021. In late August, Reclamation submitted a request for study authorization and funding for the federal cost-share under the WIIN Act to complete a feasibility study of new storage options in the Boise River basin.

The IWRB submitted a letter of support for the request on August 23, 2017. Reclamation expects notice of project awards as early as October 1, 2017. If awarded, Reclamation will request a formal cost-share commitment (50%) from the IWRB to initiate project activities as soon as possible to meet the completion deadline of 2021. Reclamation is refining the study scope and cost to accommodate the accelerated timeline for completion. If the IWRB is supportive of the funding commitment, a special IWRB meeting can be scheduled to review Reclamation's revised study scope, cost and schedule as well as the specifics of the WIIN Act policy requirements and potential advantages for project approval and construction.

REQUIRED ACTIONS: Direction from the IWRB regarding a follow-up meeting is requested by staff.

Island Park Reservoir Enlargement Project

The Henrys Fork Basin Study, completed by Reclamation in 2014 in partnership with the IWRB, identified an option to increase surface water storage in the basin through an enlargement of the Island Park Reservoir. The Basin Study provided a conceptual level analysis of a proposal to increase the operational water surface elevation of the reservoir 1 to 4 feet resulting in approximately 30,000 acre-feet of additional storage water. The additional water would be captured and stored using existing reservoir space currently reserved for flood flows. The relative construction cost was estimated to be $6.4 million with limited required modifications to the dam and reservoir:

- Minimal modifications to the existing embankment dam.
- Modification of the emergency spillway to provide additional discharge capacity (offset current flood surcharge space in the reservoir).
- Increase in the height of the bladder on the Operational Spillway.
- Possible modifications to the dike adjacent to the embankment dam.

To better understand the viability of the proposal, several threshold issues were identified for further study by IDWR/IWRB and Reclamation staff: 1) a more detailed assessment of potential impacts to property resulting from a raise in reservoir pool elevation; 2) refinement of the hydrologic analysis of reservoir yield; and 3) analysis of potential dam safety constraints.

The IWRB initiated the Island Park Reservoir Enlargement Land and Real Estate Assessment (Assessment) to evaluate and quantify potential property impacts. The IWRB will consider future action on the project based upon the results of the Assessment.

Status

- Forsgren Associates, Inc. (Forsgren) is under contract with the IWRB to evaluate and quantify potential impacts to land, real estate, roads, utilities, septic systems, easements, shoreline and other appurtenant structures resulting from a 1 to 4 foot raise of the reservoir water surface elevation, and to estimate associated costs. The scope of work generally includes:
    1) Inventory and quantify effects to shoreline structures, roads, bridges, utilities, and septic systems resulting from a raise of the operational reservoir water surface 1 to 4 feet (from elevation 6303 to 6307).
    2) Evaluation of existing Lidar and collect necessary survey data to complete assessment.
    3) Identify land ownership (private, state or federal) and boundary of U.S. Bureau of Reclamation's (Reclamation) permanent flood easement.
    4) Coordinate with Reclamation to determine extent and conditions of the flood easement.
    5) Develop a GIS base map with all relevant data and document results of assessment in a final report.

- Forsgren Associates has developed a base map and evaluation methodology and criteria for quantifying effects. Forsgren continues to collect other appurtenant data to locate and assess septic systems, basements, utilities, and to evaluate local real estate values.

- Reclamation's realty specialists and solicitors are reviewing the extent and conditions of the flood easement. Reclamation also recently completed routine dam safety studies and associated flood routing analyses that can be utilized to assess required modifications to the dam and appurtenant structures following a decision to proceed with the project.

- On July 5, 2017, Forsgren Associates presented evaluation methodology to Reclamation, IDWR and several IWRB members for comment and direction. In coordination with Reclamation, the IWRB also toured the reservoir to view the project area on July 27, 2017.

- In anticipation of development of the project, Reclamation also submitted a request for authorization under the WIIN Act to fund the federal cost-share portion of the remaining requirements of a feasibility study. The IWRB submitted a letter of support for the request on August 23, 2017. Similar to the Boise River basin, IDWR staff will brief the IWRB on the status project awards.

Schedule

- October 2017 – Draft report for IDWR & Reclamation review
- November 7, 2017 – IWRB meeting (Boise), present results (Storage Committee may be required in advance of IWRB meeting)
- December 2017 – Final report

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

Nov 16-17

2017

Safeguarding
Idaho's Economy
In a Changing Climate

Our Water, Our Land, Our Health, Our

IDAHO CHAPTER THE WILDLIFE SOCIETY
Est. 1964

BOISE STATE UNIVERSITY

Idaho State UNIVERSITY

University of Idaho

The Nature Conservancy Idaho

Idaho Climate Summit
Sponsorship Information

Overview

The 2017 Idaho Climate Summit is a two-day conversation about Idaho's changing climate led by:

- Businesses
- Resource and land managers
- Idaho tribes and tribal organizations
- Researchers and topical experts
- Public interest organizations
- Community members
- Government officials

The Summit will explore market-based solutions for safeguarding Idaho's economy, health, landscape and lifestyle.

Event Details

Schedule

November 16 & 17, 2017

Full Thursday and Friday conference
Thursday evening reception

Venues

- Boise State University
- Idaho State University, Pocatello
- University of Idaho, Moscow
- Other locations, as requested

Outcomes

The 2017 Idaho Climate Summit will:

- Share how Idahoans and communities have planned/are planning to address climate risks
- Explore economic opportunities and efficiencies and build upon innovative ideas
- Expand discussions on local solutions and adaptations
- Build new collaborations, commitments and ongoing forums
- Provide resources and references for short and long term actions and small and large-scale innovations

Summit Themes

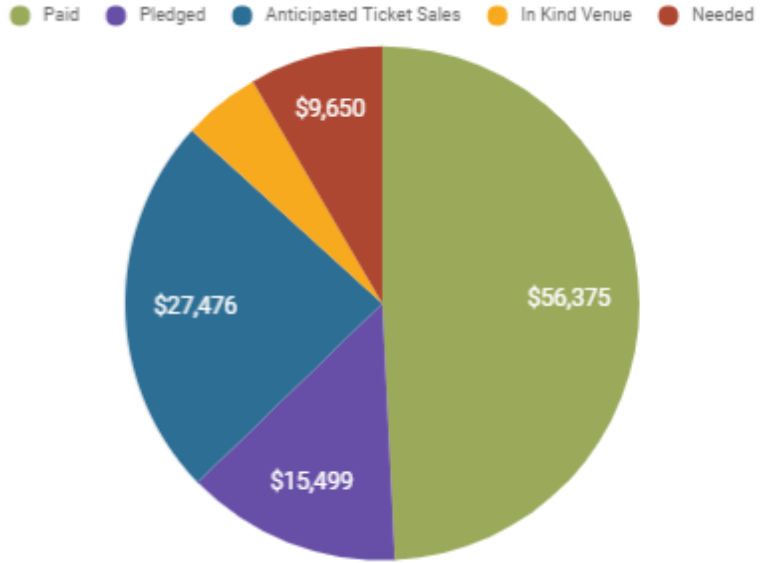
Topics

Topics will be confirmed once speaker agreements are in place. Potential topics include:

- Agriculture
- Air quality
- Dairy
- Drought
- Economic risk and opportunity
- Energy
- Engineering and architecture
- Finance and insurance
- Fish and wildlife
- Food
- Forests, forestry and forest products
- Human health
- Law and policy
- Outdoor recreation, outfitters and guides
- Rangeland and ranching
- Real estate
- Technology and manufacturing
- Transportation
- Tribal practices and policies
- Waste management
- Water quality
- Water supply
- Wildfire

Budget and Funding

The Summit budget is approximately $109,000. As of August, founding sponsors pledged and paid $72,000 in seed funding.



For more information about the Summit or sponsoring,* **contact Amber Bieg at amber@warmspringsconsulting.com or (208) 918-1707 or visit www.idahoclimatesummit.com**

**Sponsorship payments are not charitable contributions. Funds raised beyond what is needed for Summit expenses will go to furthering climate adaption and mitigation solutions in Idaho.*

Sponsors

Platinum Level Sponsors

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SAF Society of American Foresters

IDAHO WATER RESOURCES RESEARCH INSTITUTE University of Idaho

MONSANTO

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hp

IDAHO FISH & GAME

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SIERRA CLUB IDAHO CHAPTER

FUTURE

IDAHO POWER An IDACORP Company

AMERICAN LUNG ASSOCIATION IN IDAHO

Potlatch

Sponsorship Opportunities

Contribution Level		Benefits
$25,000+	**Exclusive Partner**	- Co-branding with event - Option for 10-minute reception address, MC or keynote introduction, including public recognition as solution provider - Logo and name on printed materials, press releases, and website - Name mention, logo placement and possible interview with earned media - Free reception & conference exhibit space - Seat on advisory committee to Summit, if desired
$10,000+	**Platinum Sponsor**	- Co-branding with event - Logo and name on printed materials, press releases, website - Name mention, logo placement and possible interview with earned media - Free reception & conference exhibit space - Seat on advisory committee to Summit, if desired
$9,999 to $5,000	**Gold Sponsor**	- Logo and name on printed materials, press releases, website - Name mention on earned media - Free reception & conference exhibit space - Seat on advisory committee to Summit, if desired
$4,999 to $1,000	**Silver Sponsor**	- Logo and name on printed materials, press releases, website - Free conference exhibit space - Seat on advisory committee to Summit, if desired
$999 to $500	**Bronze Sponsor**	- Name listed on website and printed materials - Free conference exhibit space
$499 to $100	**Supporting Sponsor**	- Name listed on website and conference handout
In-kind	**Per value**	- Benefits correlate with value of in-kind donation

Safeguarding Idaho's Economy In a Changing Climate

Nov 16 -17 2017

Our Water, Our Land, Our Health, Our Future

Thursday Morning, November 16, 8:30AM - 2:30PM		
8:30-9:00 am	**Welcome**	Invocation, welcome and overview of the summit
9:00-9:30 am	**Safeguarding Idaho's Economy in a Changing Climate**	Kate Gordon from Risky Business Project will frame the economic risks and opportunities presented by Idaho's changing climate and emphasize solutions that can be implemented by Idaho's business sectors.
9:30-10:15 am	**Risks and Impacts: Water, Land, Health, Businesses and Communities**	Idaho's economy is dependent upon our natural resources and various sectors are experiencing impacts from higher temperatures. Panelists will discuss what they are seeing and introduce ideas for responding strategically to safeguard Idaho's economy.
10:15-10:30 am	**Break**	
10:30-11:30 am	**The Effects of Drought and Increased Water Temperatures**	Panelists will address their concerns and approaches related to water availability, usage, and habitat viability as Idaho continues to experience changes in form, quantity, temperatures and timing of precipitation. Panelists will address how they are planning for and adapting to changes in water availability, water quality, and timing/type of precipitation.
11:30-12:30 pm	**The True Cost of Wildfire**	Panelists will discuss how we can manage wildfire and create market opportunities that protect Idaho's economy as we respond to impacts on rangelands, farms, forests, fish, wildlife, recreation, air quality and human health.
12:30-1:15pm	**Lunch**	Free time to build connections and collaborations
1:15-2:15 pm	**Challenges to Human Health and Quality of Life**	Panelists will discuss Idaho's changing climate within a cultural framework that acknowledges the responses to changes in tourism, recreation, business recruitment, quality of life, rural and urban economies, and common reasons Idahoans choose to live in Idaho.

2:15-2:30 pm	**Introduction to Breakout Sessions**	Participants will gain insights on the Summit's model for facilitated problem solving and how to most effectively participate in the afternoon's workshops. Participants are encouraged but not required to attend the same workshop both days.
2:30-2:40pm	**Break & Snacks**	Short break and head to breakout sessions

Thursday Afternoon Facilitated Breakout Sessions, 2:40 - 5:00 PM		
2:40-3:15 pm	**Five Break-Out Session Panel Discussions**	Each of the five break-out session will begin with a panel of topical experts outlining the major climate-related issues facing their industry, framing the questions for workshops, and leading Q&A. (35 min). Q/A for 15 min.
3:15-5:00 pm	**(1) Forests and Wildfire**	How might we seize market opportunities while adapting to increased forest/wildfires? How might we manage silvicultural operations to protect the industry for future generations, create new markets for forest residues and fire damaged resources, manage habitat and recreation resources, and increase the number of trees around the state?
Same format as above	**(2) Health and Quality of Life**	How might we increase local capacity to address the human health impacts of a changing climate? How might we improve quality of life in light of increased pollutants, changing disease and weather patterns, and fear and uncertainty around a changing climate?
Same format as above	**(3) Recreation and Wildlife**	How might Idaho's outdoor recreation, fish, wildlife, and natural resource industries adjust to changes in fire frequency and intensity and changes in snow and water quantity and quality?
Same format as above	**(4) Agriculture and Rangeland**	How might agriculture and range management techniques improve soil health and manage water and energy use in light of Idaho's changing climate? How might the agricultural and rangeland industries adapt and collaborate to preserve productive lands, improve soil quality and watershed health, and strengthen the interdependent relationships between communities and government?
Same format as above	**(5) Buildings and Cities**	How might we improve Idaho's built environment to reduce pollution, increase use of renewable energy, and improve quality of life? How might community growth and development, and generation of distributed energy resources be used to adapt to Idaho's changing climate?
Thursday Evening Reception, 5:00 pm - 7:30 pm		

Friday Morning, November 17, 8:30 - 11:45 AM - Jordan Ballroom		
8:30-8:45 am	**Welcome Back**	Overview of day
8:45-9:45 am	**Innovative Solutions by Idaho's Industrial Leaders**	Challenge and success stories from Idaho's industrial leaders about their response to our changing climate: How to manage energy, water use, transportation, supply chain, and impacts of water and heat. Panelists include:
9:45-10:45 am	**New Business Opportunities and Solutions for Idaho**	Panelists will share their experiences developing new business models emphasizing social entrepreneurship and discuss how we can support the creation of more economic opportunities in Idaho.
10:45-11:00 am	**Break & Snacks**	**Head to facilitated breakout session:** Recognizing Impacts and Developing Interdependent Solutions
11:00-1:30 pm	**Facilitated Breakout Session: Solutions with Working Lunch**	Return to breakout groups to develop solutions. With 30 minutes of examples of solutions.
1:40-2:30 pm	**Regroup: Recap//Highlight of Developed Solutions**	Highlight solutions that emerged during the facilitated breakout sessions.. Each group shares for 7 minutes. Discussion, open forum and general Q & A.
2:30–3:00pm	**Closing Remarks**	Goals for moving forward with knowledge gained from the Summit will be emphasized as we prepare the next generation of Idahoans, exchange of information in open dialogue, and make a post-summit report and actions available to participants. Evaluation/survey of summit.