

Public-Private Partnerships For Managed Aquifer Recharge

Comments to the Natural Resources Interim Committee



David R. Tuthill, Jr., Ph.D., P.E.

September 17, 2014





Outline

- A water crisis is brewing in Idaho
- Something **can** be done about it
- The Idaho Water Resource Board is already addressing the crisis
- Recharge Development Corporation has an idea to augment existing efforts



Which sector will benefit from improved water resources management in Idaho?

Alphabetical Order

- Agricultural
- Commercial
- Domestic
- Energy
- Industrial
- Municipal

Ability to Pay Order

- Domestic
- Municipal
- Commercial
- Industrial
- Energy
- Agricultural



The Snake River Basin Adjudication

- Is now almost completed
- The Final Unified Decree has been signed
- Decrees rights to ground water
- Establishes the connection between ground water and surface water
- Enables delivery (curtailment) of ground water rights



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

January 28, 2014

RE: Notice of Potential Curtailment of Ground Water Rights in the Eastern Snake Plain Aquifer

Dear Water Right Holder,

The purpose of this letter is to inform you that you are the water right holder of record for one or more water rights that could be subject to curtailment during the 2014 irrigation year (November 1, 2013 – October 31, 2014) as a result of the Surface Water Coalition (SWC) delivery call. The SWC delivery call applies to ground water rights that affect reaches of the Snake River in the American Falls area that are hydraulically connected to the Eastern Snake Plain Aquifer (ESPA). The Director of the Idaho Department of Water Resources (Department) is administering water rights by priority as required in the order of June 23, 2010, issued in response to the water delivery call made by members of the SWC, which includes the A&B Irrigation District, the American Falls Reservoir District #2, the Burley Irrigation District, the Milner Irrigation District, the Minidoka Irrigation District, the North Side Canal Company, and the Twin Falls Canal Company. A copy of the order can be found on the Department's website:

predictions, there is a 50% chance that no curtailment will be required and a 30% chance that ground water rights with priority dates junior to May 31, 1989, may be curtailed. If the predicted runoff is the same as in 2001, the lowest runoff water year since 1981, ground water rights with priority dates junior to September 23, 1974, may be subject to curtailment. All curtailment predictions assume that no mitigation water is provided by junior ground water users.¹

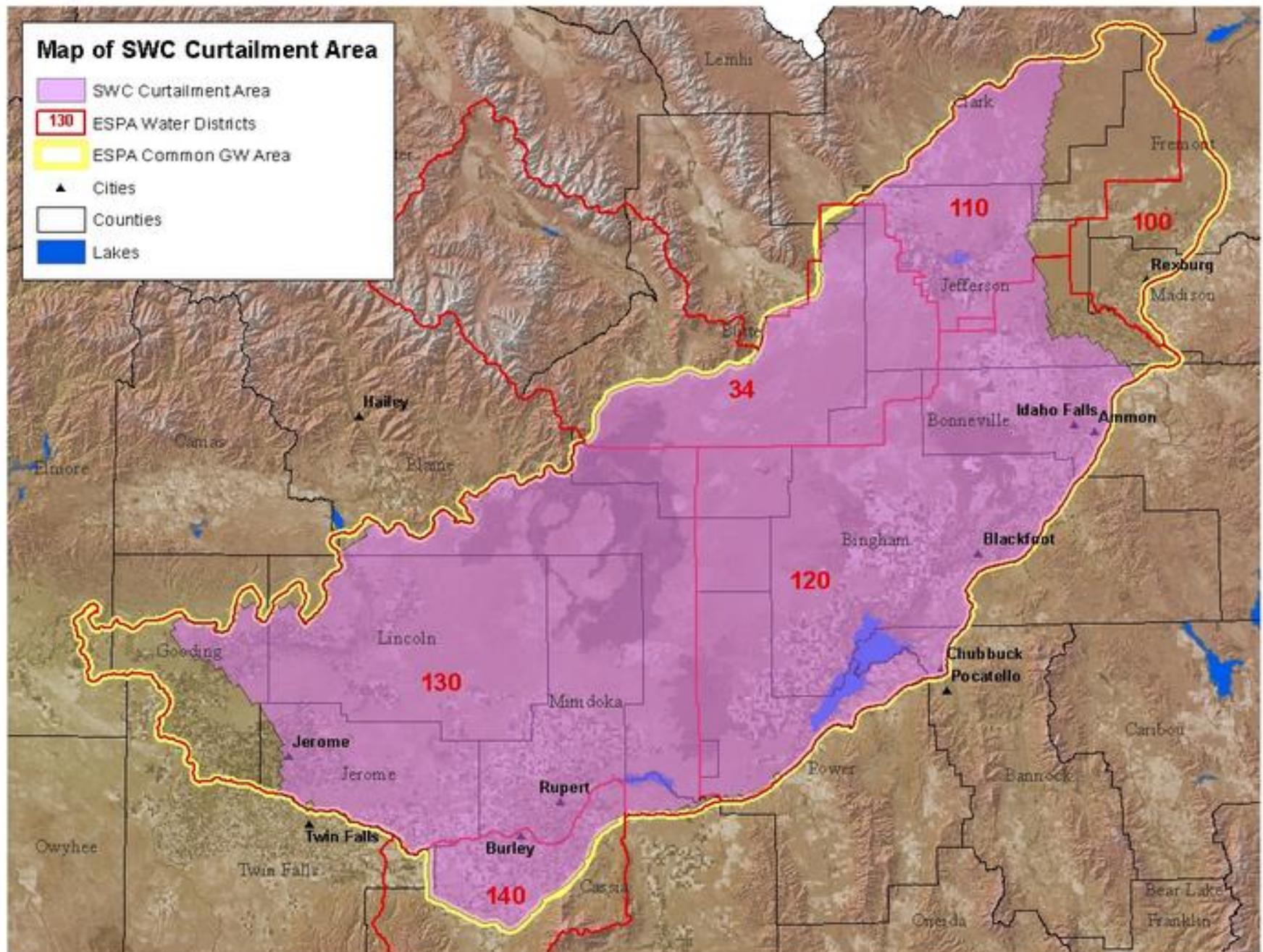
A copy of this notice has been sent to affected ground water right holders in the SWC delivery call curtailment area. A map showing the location of the SWC curtailment area and a list of ground water rights within the curtailment area junior to September 23, 1974, may be accessed from the Department's website: www.idwr.idaho.gov (select the link **ESPA 2014 Curtailment Warning Notice** under the **What's New** tab).

I hope this letter assists you in planning your beneficial use of water during the remainder of the year.

Respectfully,

A handwritten signature in black ink, appearing to read "Gary Spackman". The signature is written in a cursive style with a long, sweeping underline.

Map of Potential SWC Curtailment Area



Water Rights and Recipients of 2014 ESPA Curtailment Notice Dated January 28, 2014
Surface Water Coalition Delivery Call

Current Owner	Water Right No.	Priority Date	Diversion Rate (cfs)	Purpose of Use	Total Acres
2 W LANDS LLC	35-14322	1/24/1978	1.62	IRRIGATION	585
2 W LANDS LLC	35-14323	12/17/1990	5.16	IRRIGATION	560.4
2 W LANDS LLC	35-14324*	6/1/1980	0.29	IRRIGATION	588
2 W LANDS LLC	35-8925	2/14/1991	0.23	STOCKWATER, DOMESTIC	
3 L LAND & CATTLE LLC	35-7746	8/25/1978	5	IRRIGATION	675
4 BROS DAIRY INC	37-20613	12/19/1974	1.12	STOCKWATER, COMMERCIAL	
4 BROS DAIRY INC	37-20614	12/19/1974	0.58	STOCKWATER, COMMERCIAL	
4 BROS DAIRY INC				STOCKWATER, COMMERCIAL	
4 BROS DAIRY INC				IRRIGATION	211
4 BROS DAIRY INC				IRRIGATION	349
4 BROS DAIRY INC				STOCKWATER, COMMERCIAL	
4 BROS DAIRY INC				STOCKWATER, COMMERCIAL	
4 CREEKS LAND & LIVESTOCK LLC				STOCKWATER	
93 GOLF RANCH				IRRIGATION	188
A & B IRRIGATION DISTRICT; UNITED STATES OF AMERICA ACTING THROUGH	36-15127B*	4/1/1984	28.89	IRRIGATION	82610
A & B IRRIGATION DISTRICT; UNITED STATES OF AMERICA ACTING THROUGH	36-15193B*	4/1/1965	0.31	IRRIGATION	82610
A S T A S T A					10
A S T A S T A					10
STATES OF AMERICA ACTING THROUGH	36-15196B*	4/1/1981	0.08	IRRIGATION	82610
A L L FARMS	35-8581B	5/29/1985	2.32	IRRIGATION	116
A L L FARMS	35-8582	5/29/1985	12.11	IRRIGATION	621
AARDEMA FARMS LTD PARTNERSHIP	36-14035B	5/26/1976	0.42	STOCKWATER, COMMERCIAL	

69 Pages of Recipients

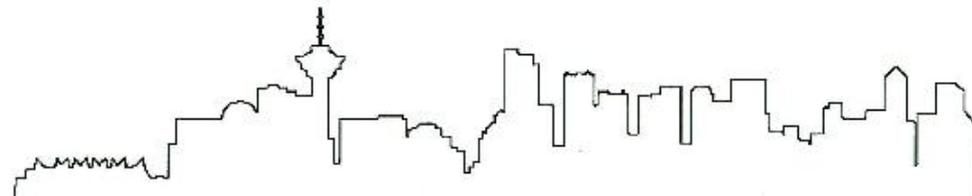
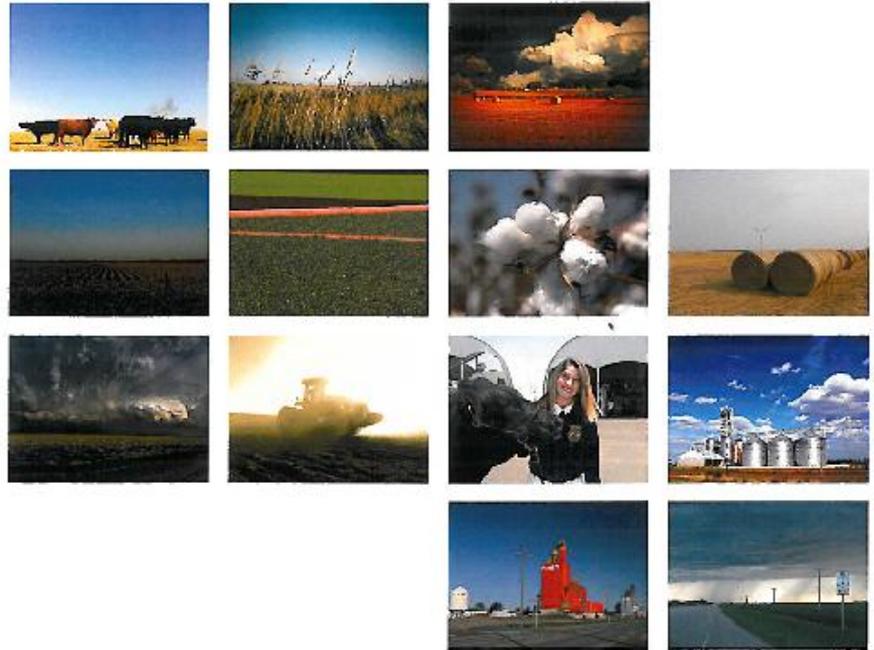
In summary, **existing** users of ground water need protection from curtailment calls

“The future of
north America
is to be the
breadbasket of
the world”

Dr. Paul Genho
President, Farmland Reserve, Inc.
Salt Lake City, UT

SARL

State Agriculture and Rural Leaders



Legislative Ag Chairs Summit XII | Vancouver, British Columbia | June 7-9, 2013

Agricultural Water:
Protecting the Future of Our Nation



A diverse group of concerned agricultural producers react to the lack of leadership on water supply issues and priorities

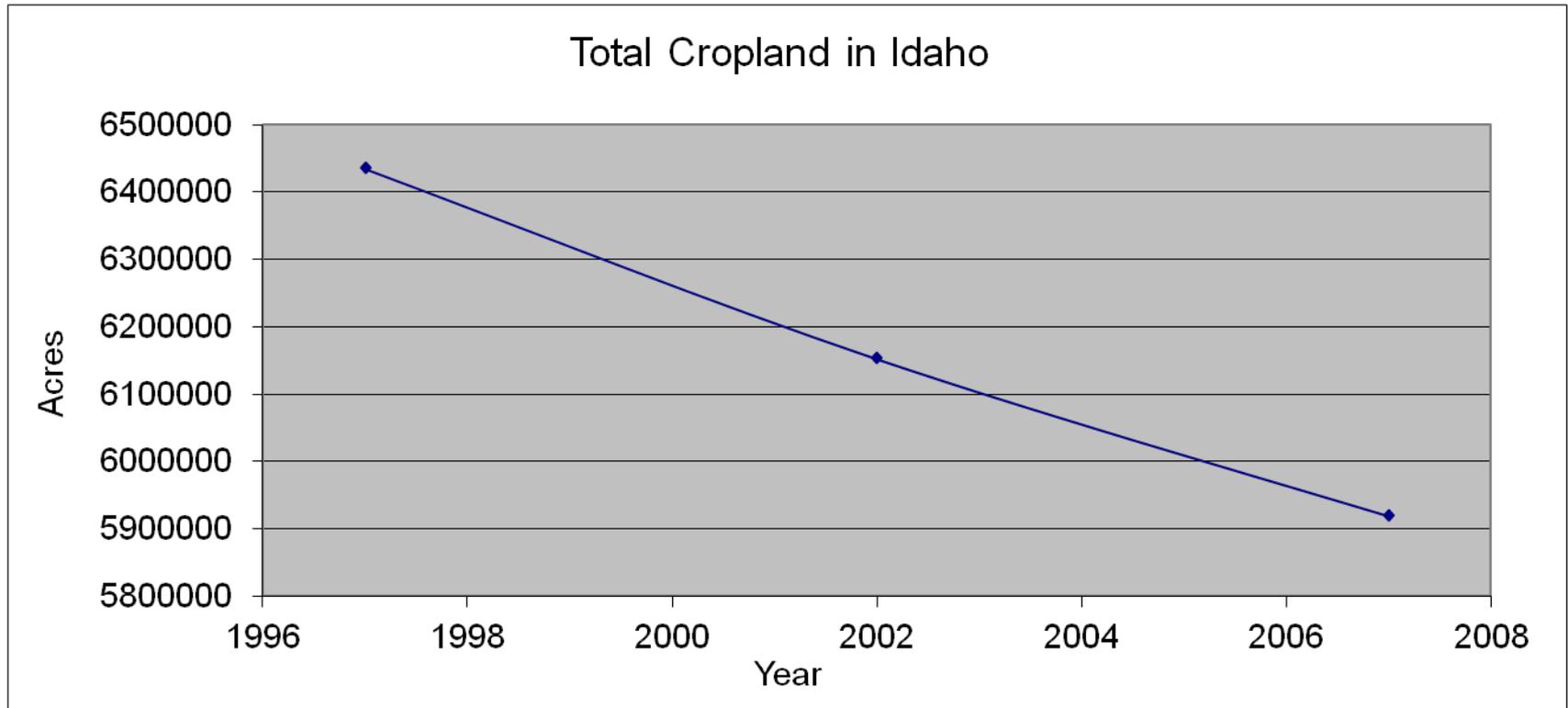
“Our nation needs agriculture and agriculture needs water”

11 Water Supply Recommendations, including:

- Increase the emphasis on water storage technologies, including underground storage when practical

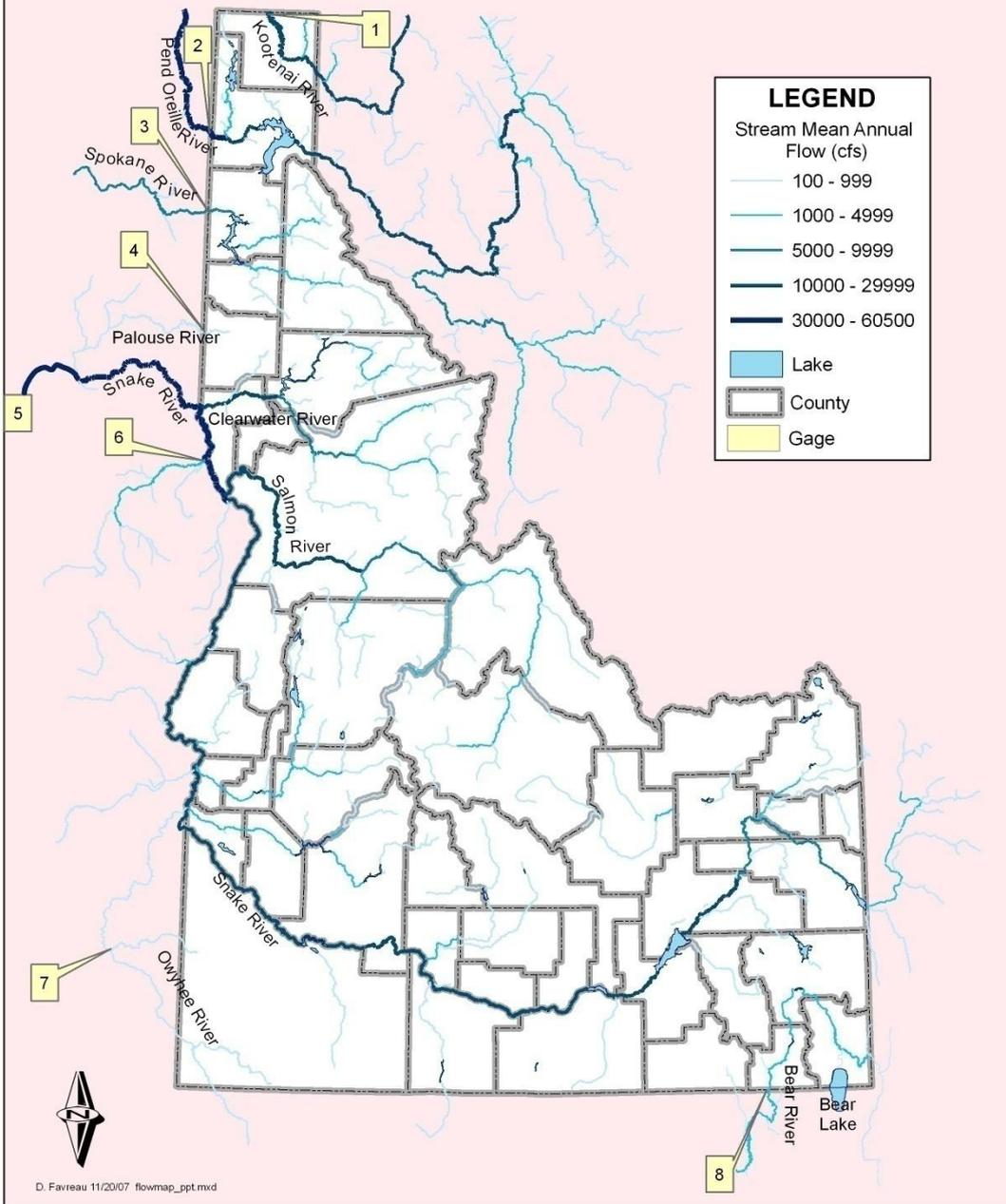
Idaho's Declining Farmed Land

Source: USDA Census of Agriculture for Idaho



Losses from 1997 to 2007: - 516,547 acres of crop land (8.0%)
234,916 acres of irrigated farmland (6.9%)

Ave. Water Year Vol. Flowing From ID

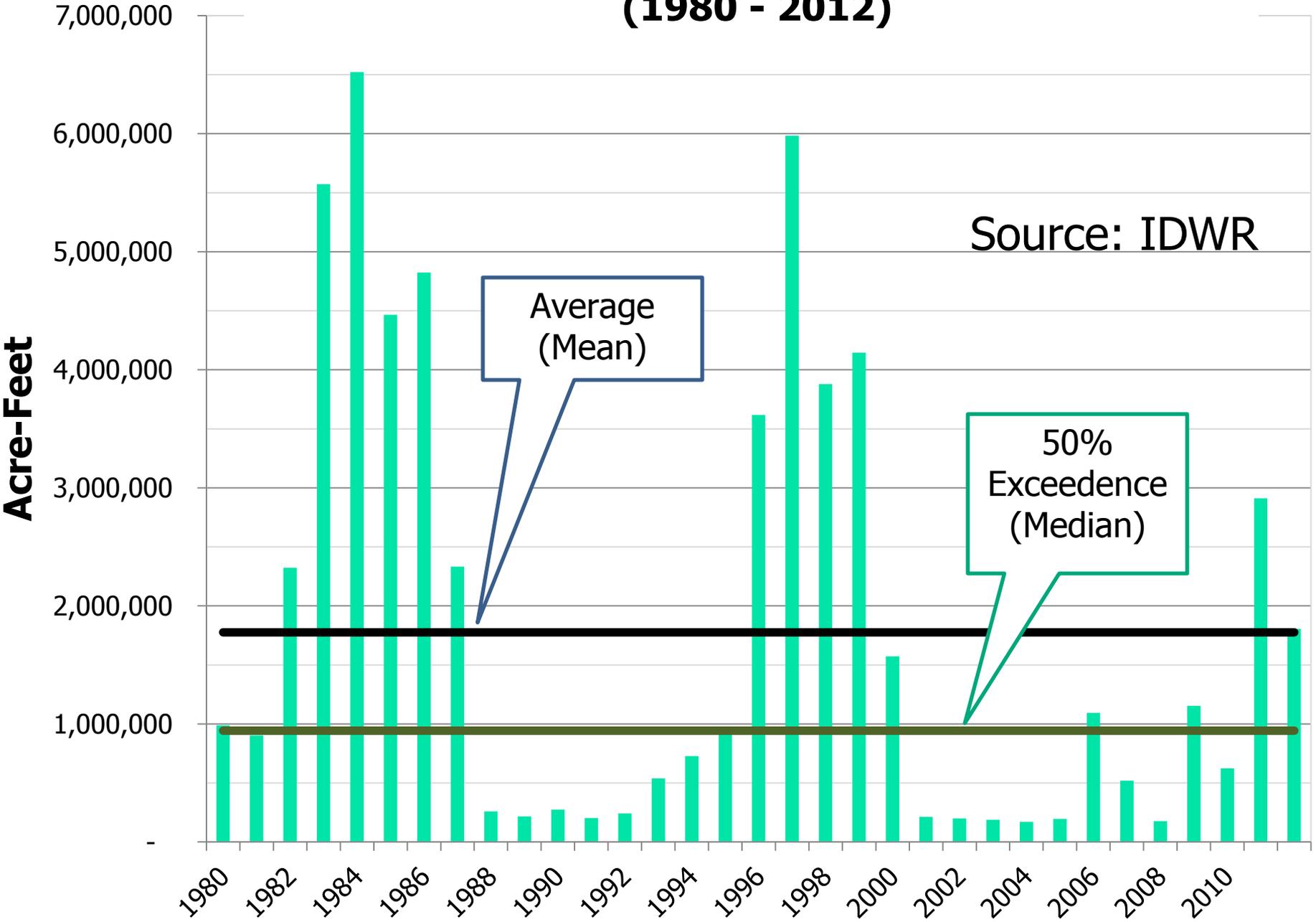


Gage

1. Near Porthill, ID
11,153,000 AF
2. Albeni Falls Dam
17,633,000 AF
3. Near Post Falls, ID
4,475,000 AF
4. Near Potlach, ID
190,000 AF
5. Lower Granite Dam
34,850,725 AF
6. Near Anatone, WA
25,281,000 AF
7. Near Rome, OR
686,000 AF
8. ID-UT State Line
770,000 AF

Total = over 95MAF!

Total Annual Volume of Natural Flow Passing Milner (1980 - 2012)



Source: IDWR

Average
(Mean)

50%
Exceedence
(Median)

Capital Press Stories



**Water unlocks productivity
of Eastern Oregon farmland**

February 15, 2013

Capital Press The West's Ag Website

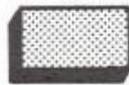
Home California Idaho Oregon Washington Opinion Livestock Dairy Other N

Posted: Tuesday, October 26, 2010 4:25 PM

Proposals would water more Washington acres from Columbia River

...Four of the eight alternatives released Tuesday would supply surface water to about 57,000 acres currently irrigated by groundwater south of Interstate 90. The other four proposals would replace groundwater with surface water for 102,600 acres, both north and south of the interstate.

PRINCIPAL AQUIFERS



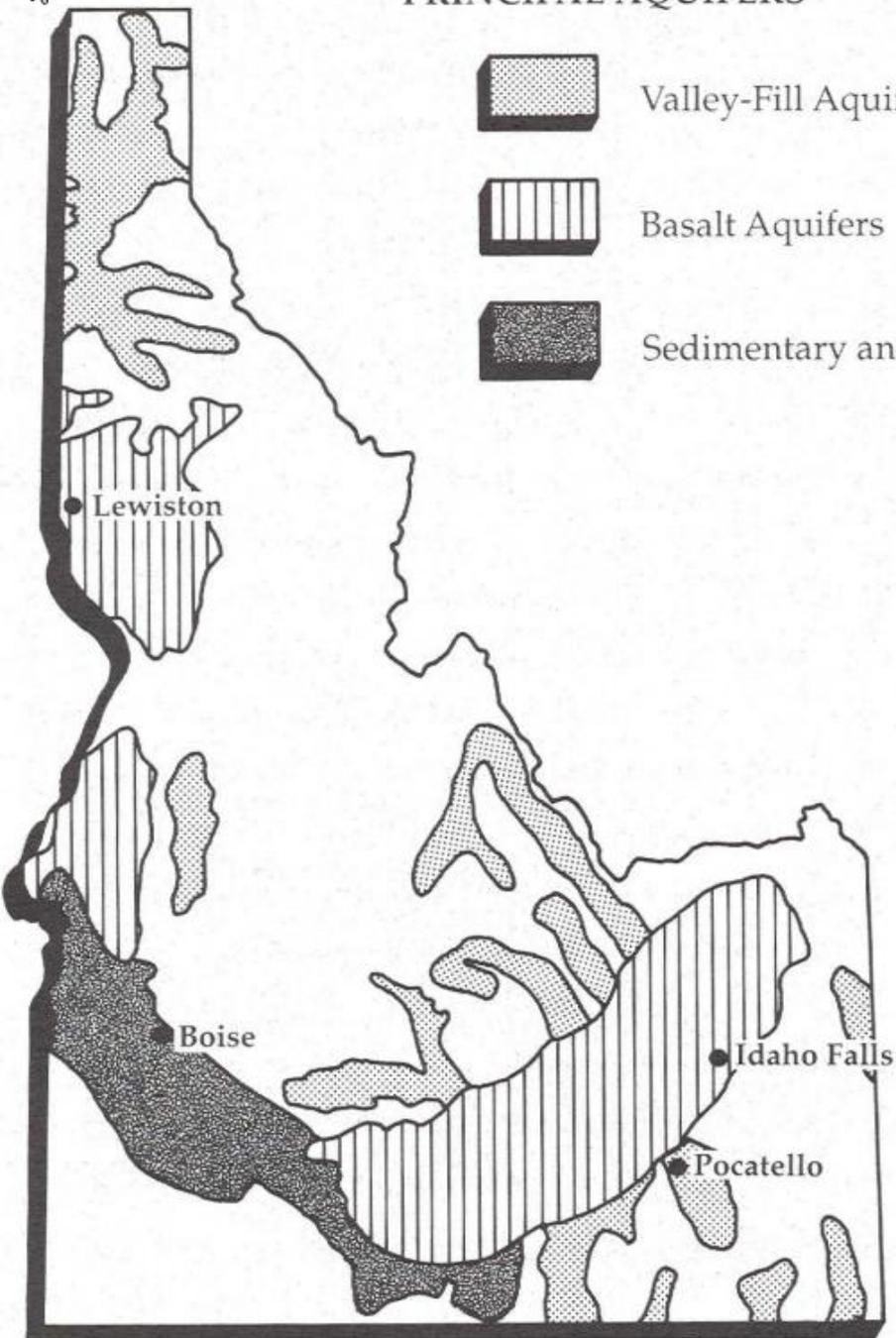
Valley-Fill Aquifers



Basalt Aquifers



Sedimentary and Volcanic Aquifers



Where are Aquifer Storage Opportunities?

Map from IDEQ Website

Aquifer Recharge

Editors' Note:
Groundwater v. Ground Water
 While there is, as yet, no uniformity in usage within or among the states "groundwater" is expressed as a single word throughout this



MANAGED AQUIFER RECHARGE



AN OVERVIEW OF LAWS AFFECTING AQUIFER RECHARGE IN SEVERAL WESTERN STATES

by Evan Mortimer, University of Idaho College of Law (Moscow, ID)

Note: This article has been reprinted by Idaho Water Engineering with permission from the publisher.

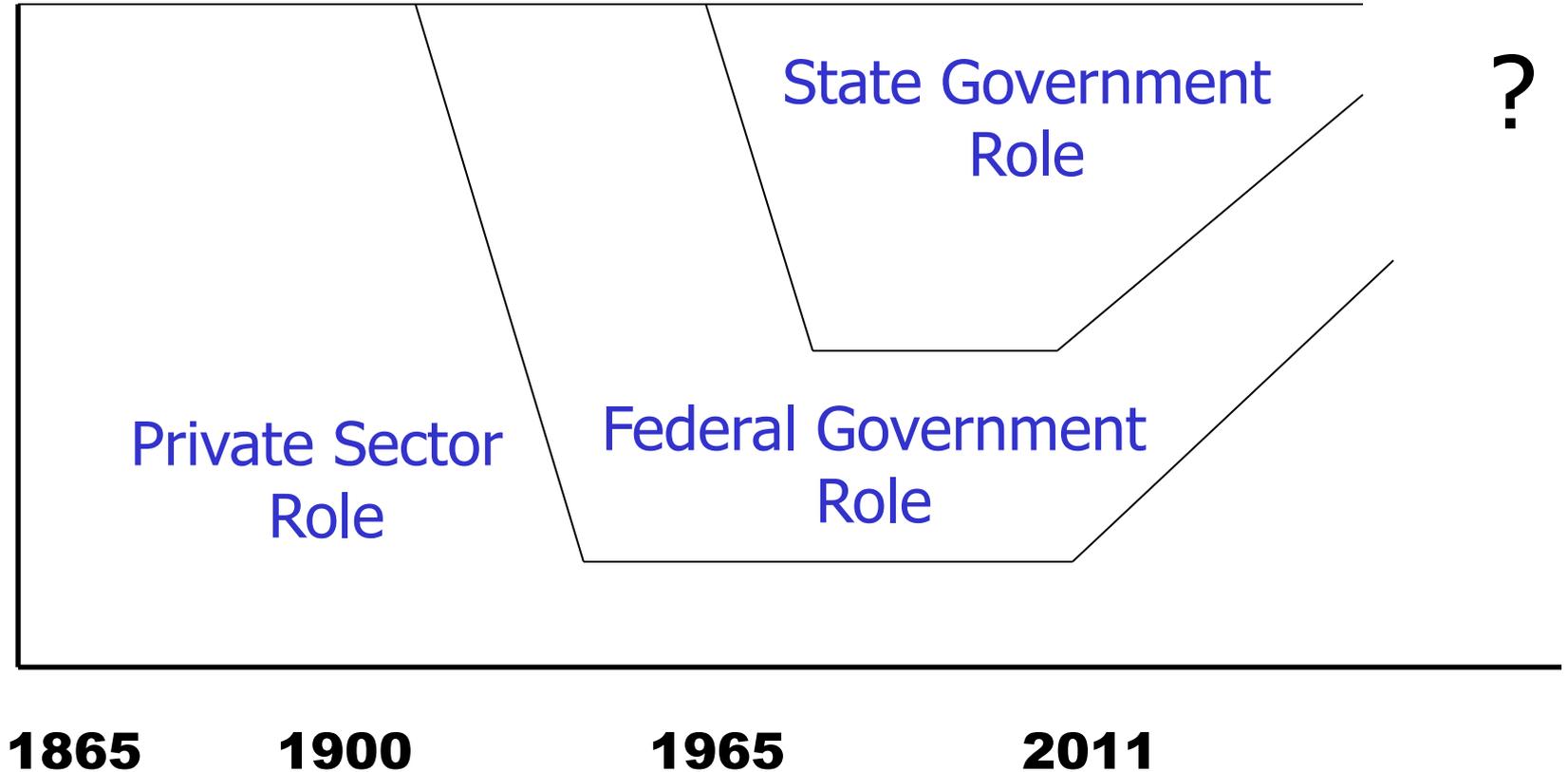
INTRODUCTION

Given the ever-increasing demand for finite water resources in the western United States, the effective functioning of our aquifers continues to be of the utmost importance. Numerous western aquifers currently suffer from moderate to severe overdraft, with groundwater withdrawal outpacing replenishment, while many other aquifers are on their way towards one-hundred percent depletion. This unsustainable situation will continue unless something is done to stop the overdraft of groundwater. As aquifer depletion becomes more problematic, a continued effort to stabilize aquifers and promote the managed recharge of aquifers will be crucial to the economic and social health of the western United States.

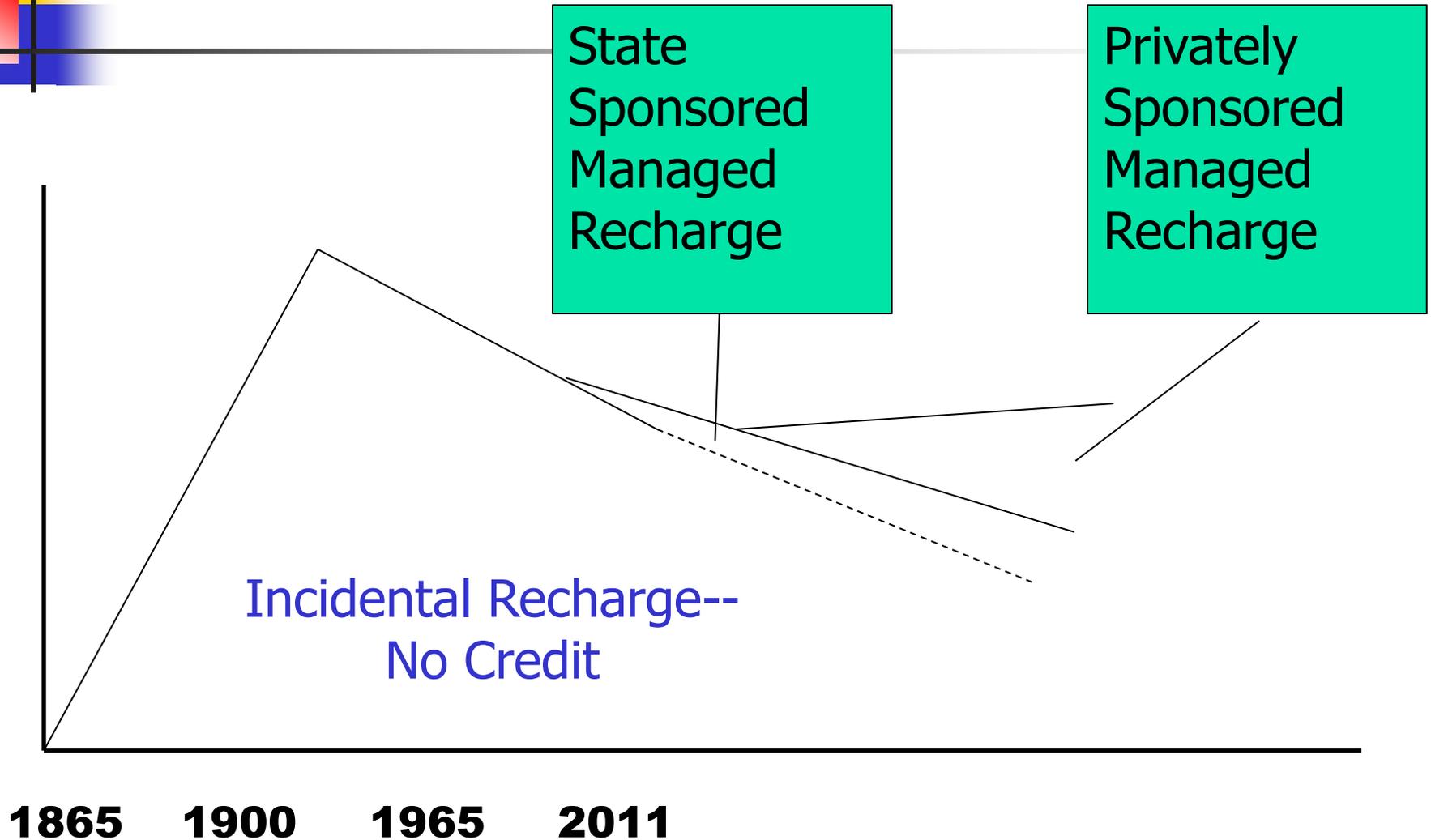
Some efforts are already underway. In a number of western states, both public and private entities
 and re
 which dedicates \$5 million annually in state Cigarette Tax revenue to be used by the Idaho Water Resource Board for statewide aquifer stabilization. In California, the Legislature recently voted to place a \$7.545

Full Article provided as a handout

Primary Drivers of Water Projects in Idaho

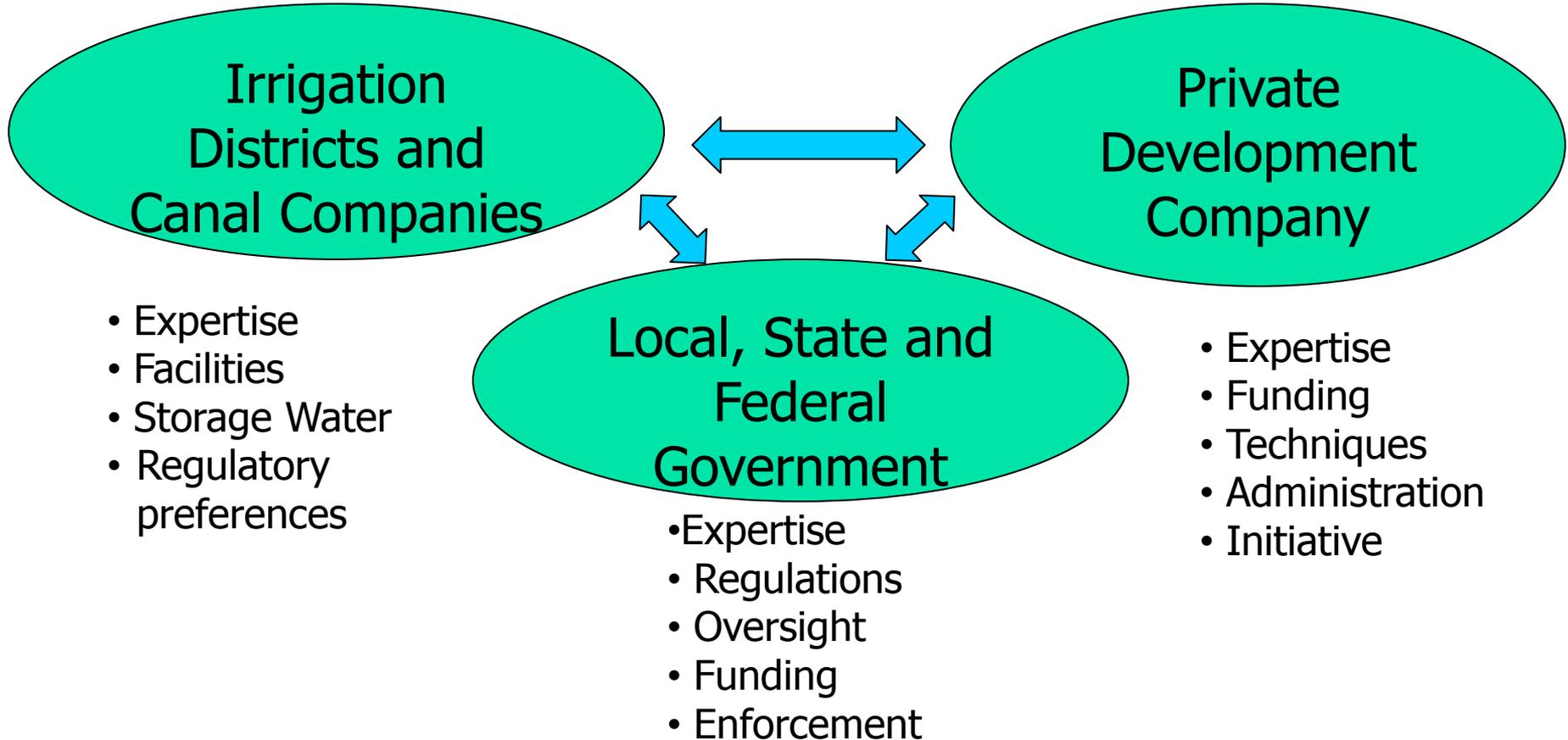


Role of Recharge



What entities will develop storage and recharge in the future?

Public-Private Partnerships



Types of Public-Private Partnerships



According to the EPA:

- Nearly half of all water systems in the U.S, 24,290 are privately owned;
- 1,343 have shared ownership; and
- Most of the rest belong to local governments



Public

Shared
Ownership

Private



#EFISUMMIT



Goldman
Sachs

Water – Innovative Public-Private Partnerships (P3s)

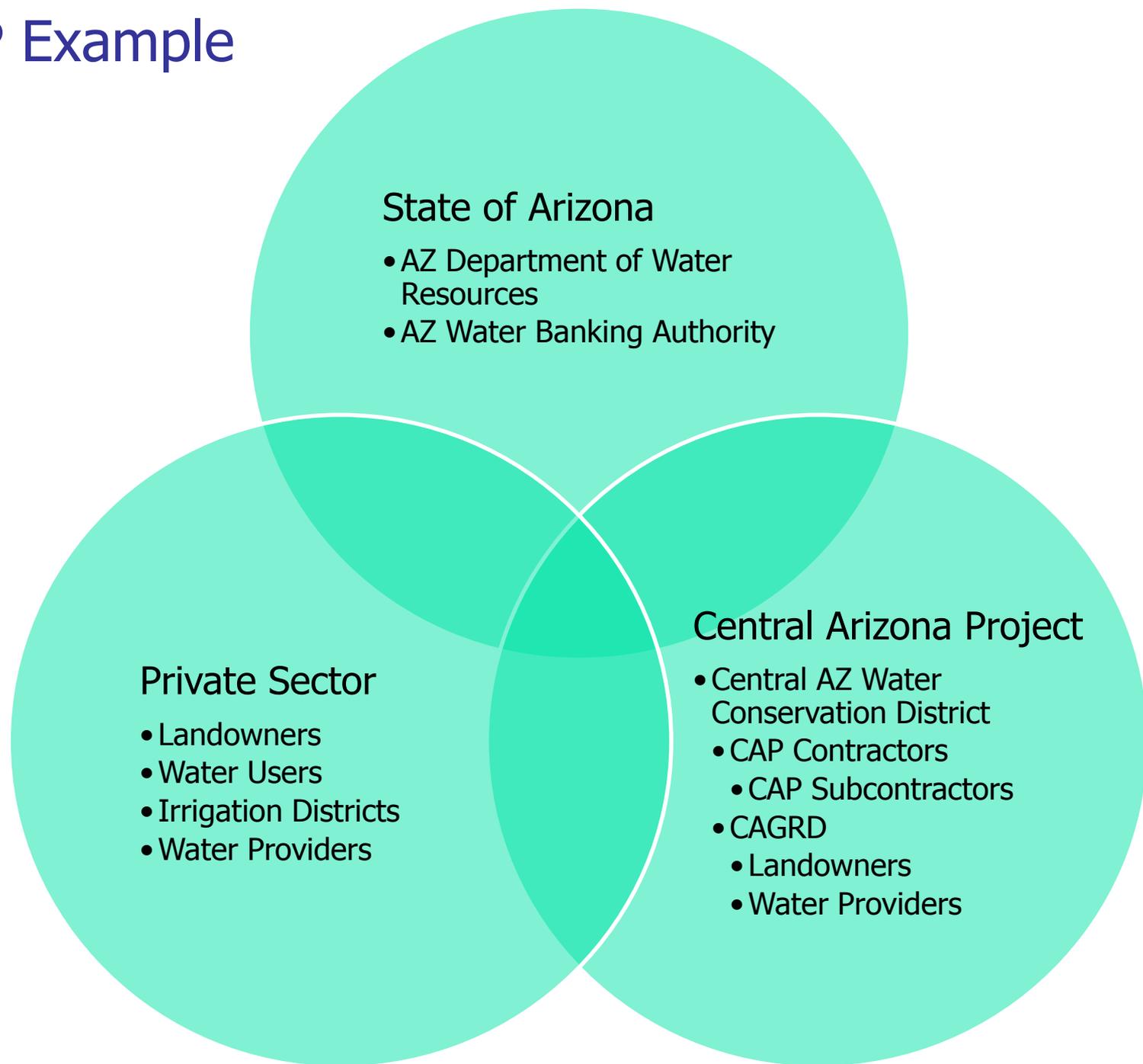
P3s in the US: In the US, government owned systems comprise 84 percent of the country's ~53,000 water systems and 98 percent of its ~16,000 wastewater systems¹. The American Society of Civil Engineers assigned US water infrastructure a D+ grade (*Poor: At Risk*) citing more than \$1 trillion in drinking water, wastewater and stormwater infrastructure capital improvements needed over the coming decades². With growing public sector financial constraints and aging water systems, municipalities have become more receptive to partnerships with the private sector.

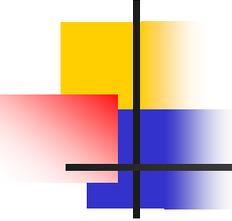
For example, in December 2012, the city of Rialto, California, teamed up with private equity firm Table Rock Capital, Union Labor Life Insurance Co. and Veolia Water in a 30-year water and wastewater concession. At the time of the transaction, Rialto was



In February 2013, Goldman Sachs, GE and WRI hosted a summit entitled "Water: Emerging Risks & Opportunities" to discuss the intersection of capital, policy and technology in addressing critical US water challenges. [Read the white paper](#) and [watch videos](#) from the summit.

PPP Example





Staging

Creation

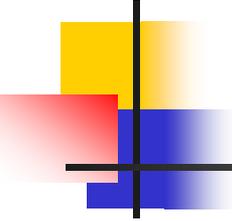
- Short-Term
- 1 – 2 Years

Construction

- Medium-Term
- 2 – 6 Years

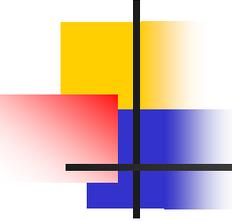
Operation

- Long-Term
- 6+ Years



Two Approaches

- **Approach 1** – State pays canal companies to recharge using state water rights.
- **Approach 2** – State partners with private companies to incentivize recharge under private rights – the state pays less, and receives its return via uncaptured recharge. This offers the potential for a large return on investment for the state.



Applications for Private Ground Water Recharge above American Falls

■ 01-10625 Peoples Canal & Irr. Co.	350 cfs
■ 01-10626 Snake River Valley Irr. Dist.	525 cfs
■ 01-10597 Idaho Irrigation District	300 cfs
■ 01-10598 New Sweden Irrigation Dist.	300 cfs
■ 01-10629 Aberdeen Springfield Canal Co.	1200 cfs
■ 21-13144 Fremont Madison Irr. Dist.	<u>1200 cfs</u>
■ Total	3875 cfs

Draft Permits Distributed by IDWR on
September 12, 2014

State of Idaho
Department of Water Resources

Draft Permit to Appropriate Water

NO. 1-10625

Priority: June 19, 2013

Maximum Diversion Rate: 350.00 CFS

This is to certify, that PEOPLES CANAL & IRRIGATION CO
1050 W HWY 39
BLACKFOOT ID 83221

has applied for a permit to appropriate water from:

Source: SNAKE RIVER

Tributary: COLUMBIA RIVER

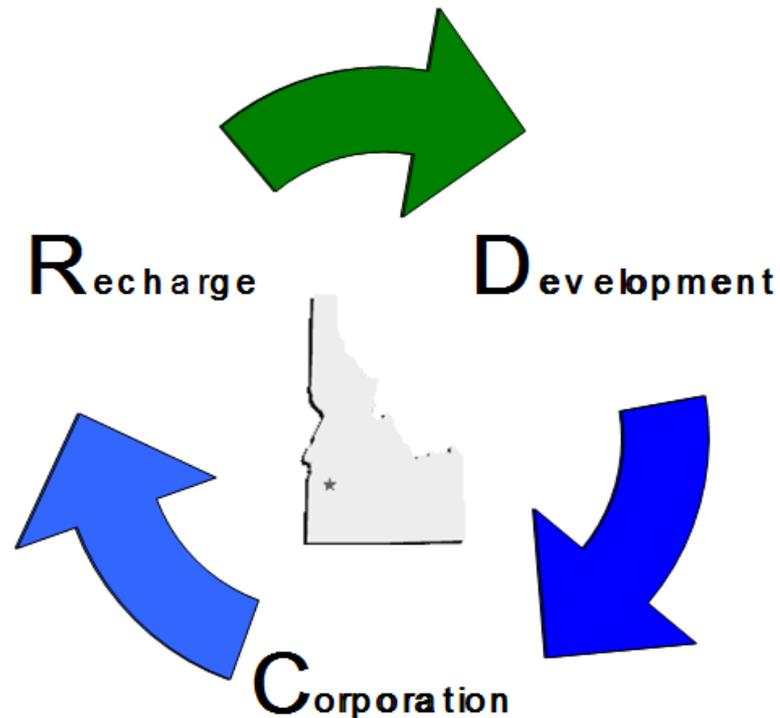
and a permit is APPROVED for development of water as follows:

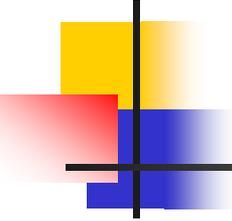
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
GROUND WATER RECHARGE	01/01 to 12/31	350.00 CFS	

LOCATION OF POINT(S) OF DIVERSION:

SNAKE RIVER L1 (NW1/4SE1/4NE1/4) Sec. 26, Twp 01S, Rge 36E, B.M. BINGHAM County

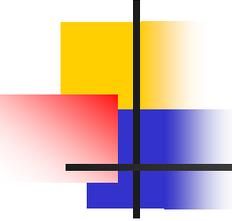
Implementation of Public Private Partnerships Will Stimulate Managed Aquifer Recharge in Idaho





Proposal

- IWRB is moving forward very well with managed aquifer recharge below American Falls
- A Recharge Development Corporation proposal invites initiation of a PPP to incentivize the private sector to recharge above American Falls



Next Steps

- The Recharge Development Corporation will make a Proposal to the Idaho Water Resource Board on September 22, 2014
- The proposal represents a step toward initiating PPPs in the Upper Snake
- Your support of the process is encouraged

The telling of the story belongs to the agriculturalist, those 2% of the American population who actually manage soil and water, whether as farmer or rancher.

The Idaho Legislature and the Idaho Water Resource Board have the opportunity to encourage the private sector to enhance the availability of water for for agriculture in Idaho