



Nevada Water Resources Association 2015 Annual Conference

Challenges and Opportunities of Surface and Ground Water Interactions in Idaho and Beyond

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

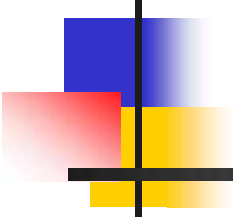
January 29, 2014





Outline

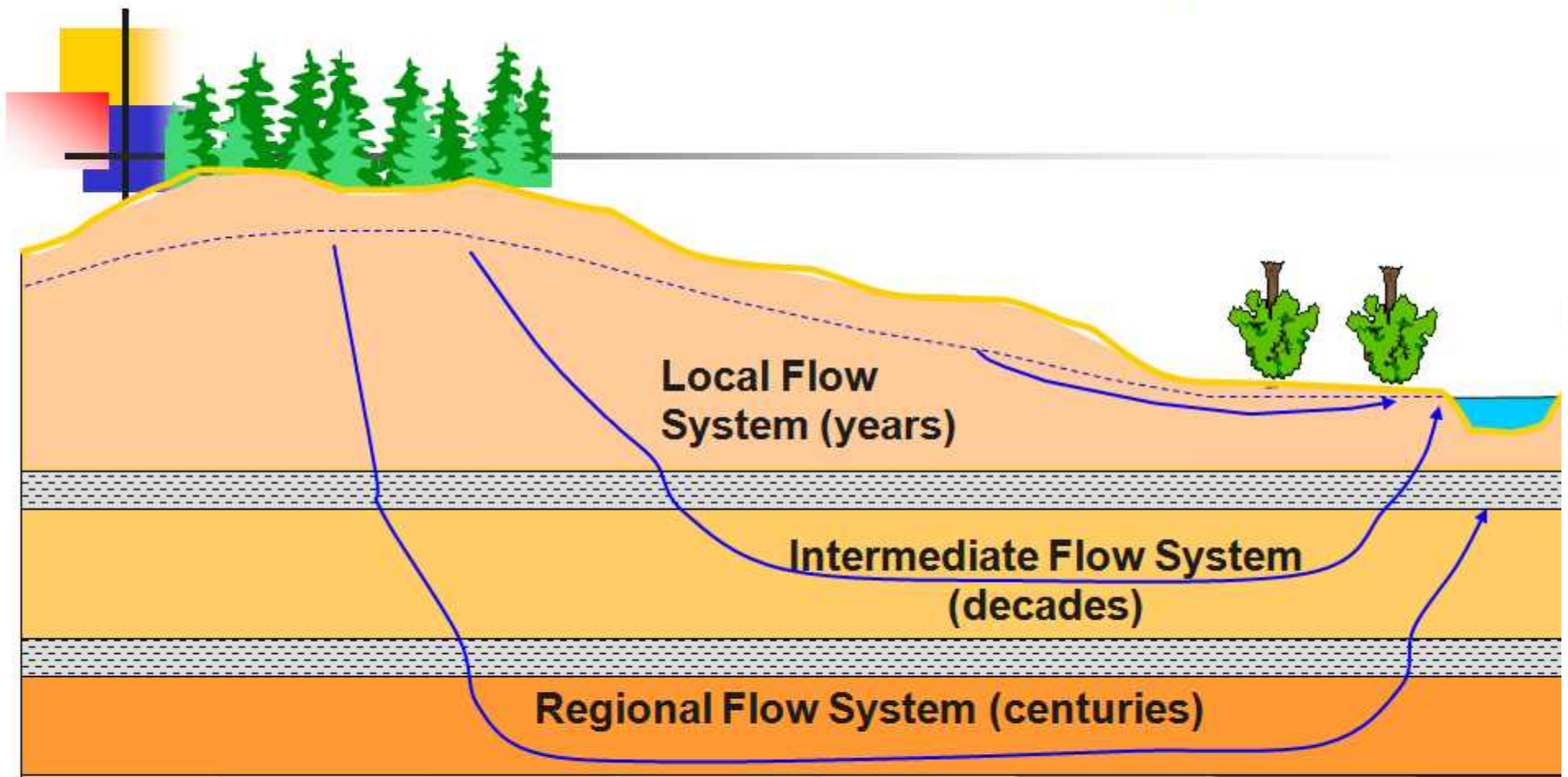
- Idaho and many other Western States recognize a connection between surface water and ground water
- First in time is first in right
- Water right adjudication enables joint (conjunctive) administration
- Continuation of pumping junior wells requires mitigation
- Ground water recharge can be a solution



In Idaho the appropriation doctrine
is used for the delivery both
surface water rights and ground
water rights—

“first in time is first in right”

Ground Water Flow Systems



Why consider conjunctive relationships between ground water and surface water?

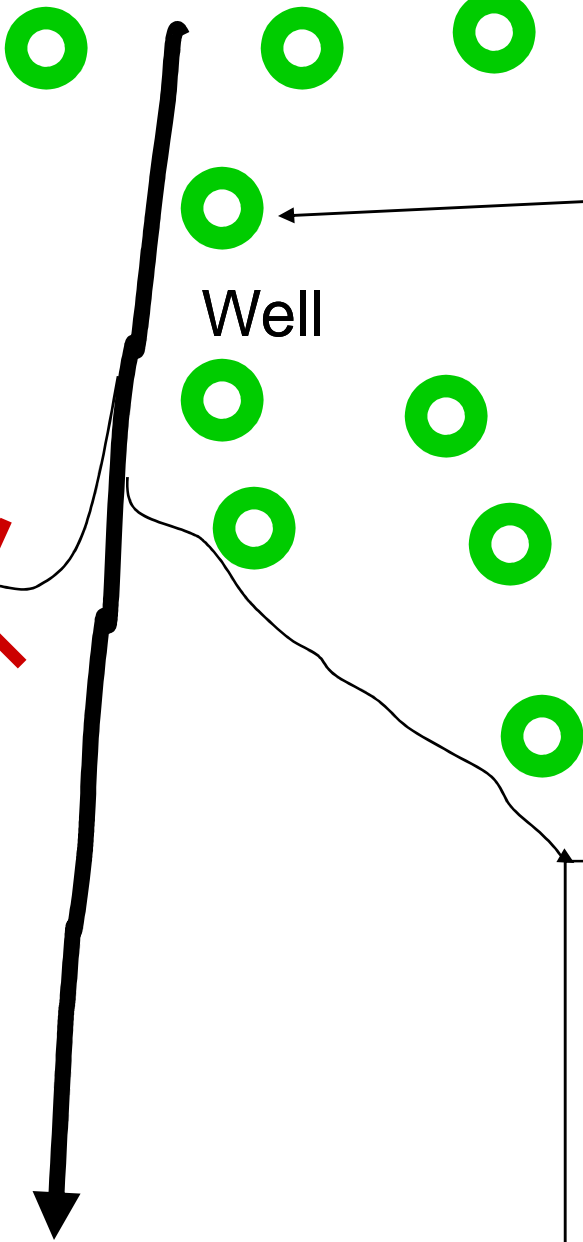
Problem

Water deliveries must consider connections
between ground water and surface water
(conjunctive administration)

if fair delivery is to be achieved



Mr. Black
Irrigation of
60 acres
1.2 cfs
6/17/1887



Well

Mrs. Clark
Irrigation of
500 acres
10.0 cfs
6/16/1982

Mrs. Adams
Irrigation of
50 acres
1.0 cfs
6/16/1887

Reprinted by D. Tuthill with permission from the Publisher
Reproduction without permission strictly prohibited



The Water Report TM

Water Rights, Water Quality & Water Solutions in the West

In This Issue:

**Conjunctive
Management 1**

**Stormwater
Regulation
& Management 12**

CONJUNCTIVE MANAGEMENT IN IDAHO

PUBLIC-PRIVATE PARTNERSHIPS & CONJUNCTIVE MANAGEMENT OF SURFACE AND GROUND WATER

by David R. Tuthill, Jr., Phillip J. Rassier, and Hal N. Anderson
Idaho Water Engineering, LLC (Boise, Idaho)

Public-Private Partnerships can reduce development risks, provide more cost-effective and timely infrastructure delivery, offer the potential for better ongoing maintenance, and leverage limited public sector resources, all while

Full Article available at IWE website

ncppp.org/resources/papers/WhitePaper2012-FinalWeb.pdf

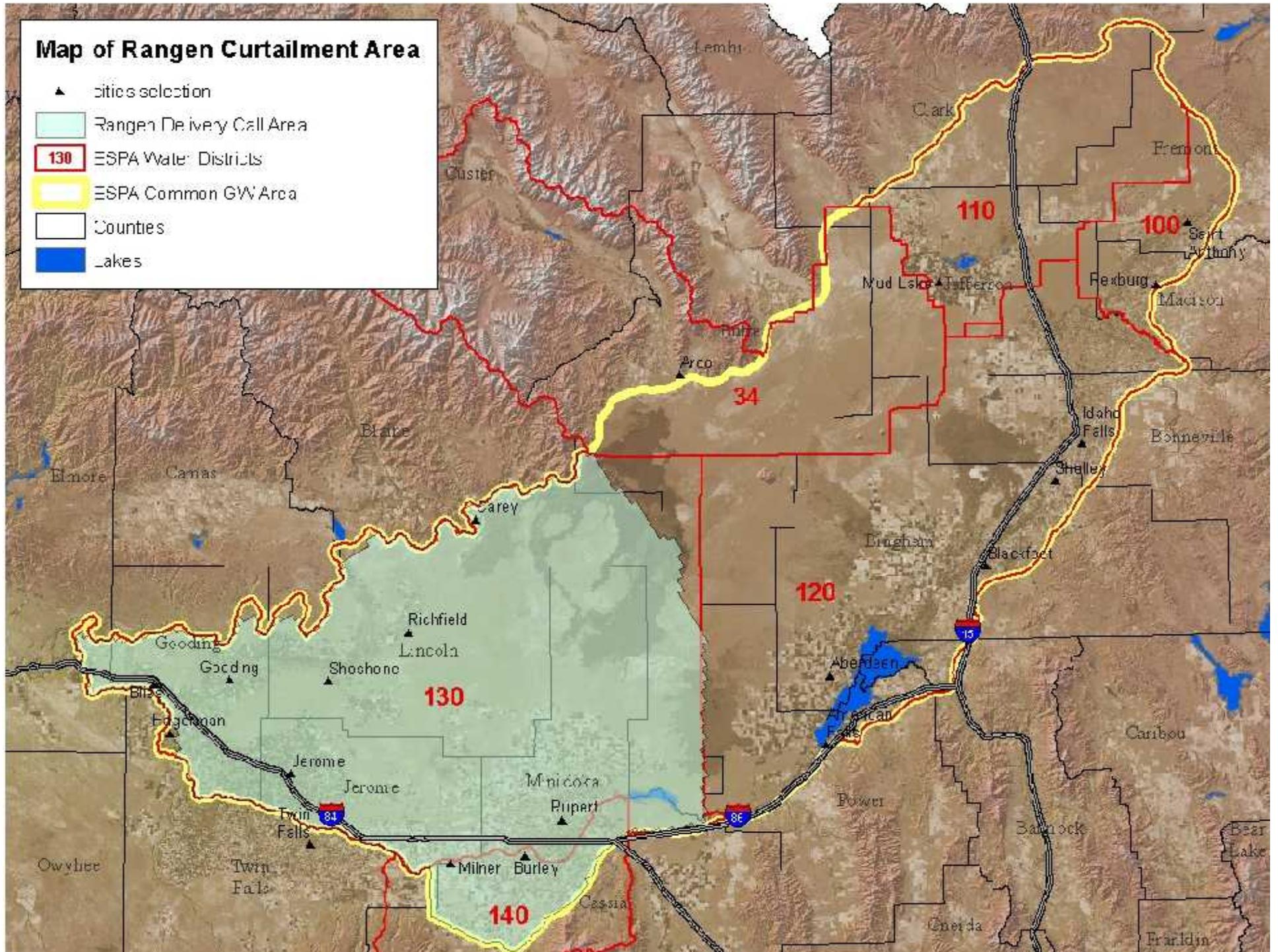


Steps Toward Conjunctive Administration in the Wood River Valley

- Adjudicate the surface water rights ~ 1900
- Establish Water District 37 to administer surface water rights ~ 1900
- Commence delivery of surface water rights ~ 1900
- Adjudicate ground water rights – 1987 – 2013
- Establish a Water Measurement District -- 2011
- Incorporate ground water rights in Water District 37 – 2013
- Construct a ground water model – 2015
- Receive a “Delivery Call” from a senior water right
- Commence delivery of ground water rights – 2015 or 2016 (per IDWR)

Map of Rangen Curtailment Area

- ▲ cities selection
- Rangen Delivery Call Area
- 130 ESPA Water Districts
- ESPA Common GW Area
- Counties
- Lakes



Related Documents

-  [Stay of Curtailment Notice – Rangen Delivery Call - January 26, 2015](#)
-  [Order Granting Motion to Stay Curtailment - January 22, 2015](#)
-  [Notice of Curtailment – Rangen Delivery Call - January 20, 2015](#)
-  [Non-Irrigation Rights Subject to Curtailment as of 1/19/2015 – Rangen Delivery Call - January 19, 2015](#)
-  [Order Denying Petition to Amend Fourth Mitigation Plan and Request for Temporary Stay - January 17, 2015](#)
-  [Final Order Conditionally Approving Cities Second Mitigation Plan - January 16, 2015](#)
-  [Letter to A&B Irrigation District Regarding Removal from Curtailment - November 26, 2014](#)
-  [Order Granting Rangen's Motion to Determine Morris Exchange Water Credit; Second Amended Curtailment Order - November 21, 2014](#)
-  [Order Approving IGWA's Fourth Mitigation Plan - October 29, 2014](#)

Judge stays Idaho water curtailment on 474 junior users



John O'Connell
Capital Press

Published:
January 23, 2015 4:27PM

After the Idaho Department of Water Resources mailed curtailment orders to 474 dairies, cities and industrial water users in the Magic Valley drawing groundwater from the Eastern Snake Plain Aquifer, a district judge granted the users a two-week stay.

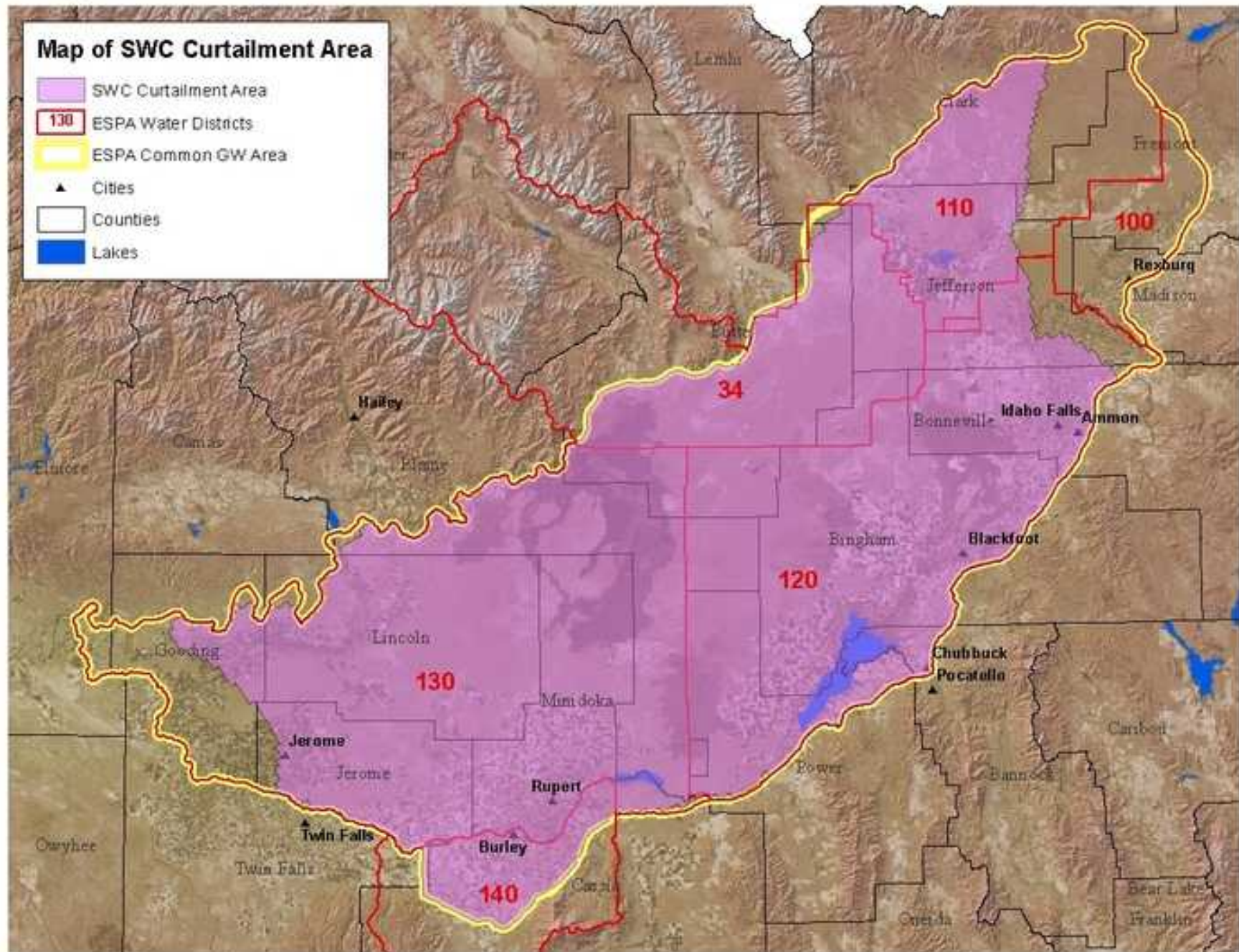
TWIN FALLS, Idaho — Fifth District Judge Eric Wildman has issued a stay on curtailment of 474 junior groundwater users affected by the Hagerman-based Rangen trout farm's delivery call.

The Jan. 22 ruling granting a stay until Feb. 7 narrowly averted a calamity for the Magic Valley dairy industry, as well as several other industrial and municipal users.

The Idaho Department of Water Resources had already mailed curtailment orders informing recipients — including large cheese plants, J.R. Simplot and 189 Magic Valley livestock operators — to prepare to shut off their pumps, pending notification by a department official.

In January, IDWR Director Garty Spackman ruled junior Magic Valley groundwater users owe Rangen 9.1 cubic feet per second of spring water to offset declines to Rangen's spring flows attributable to their use. He allowed mitigation to be phased in over five years, starting with 3.4 cubic feet per second for 2014.

Map of Potential SWC Curtailment Area





So.... What is the solution?

- To the extent there is an available water supply, implement

Managed Aquifer Recharge

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 are working to stabilize aquifers through various methods, including managed aquifer recharge. One recent example is the passage of House Bill 547, which established the Idaho Water Resource Board for statewide aquifer stabilization. In California, the Legislature recently voted to place a \$7.545

Full Article available at IWE website

Aquifer Recharge

Legal Issues

MANAGED AQUIFER RECHARGE

PART II: LEGAL ISSUES IN THE WESTERN UNITED STATES

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

&

David R. Tuthill, Jr., Idaho Water Engineering (Boise, Idaho)

Reprinted by Idaho Water Engineering with permission from the Publisher

INTRODUCTION

As noted in part one of this three-part series on laws and regulations affecting managed aquifer recharge in the western United States (Managed Aquifer Recharge: An Overview of Laws Affecting Recharge in Several Western States, TWR #127), expanding the use of aquifer recharge is becoming increasingly important for our growing, water-dependent, society.

A thorough understanding of the involved legal rights is necessary for establishment and operation of an effective and efficient managed aquifer recharge project. However, relevant laws addressing groundwater recharge remain relatively undeveloped in most states. Many questions remain largely unanswered.

LEGAL QUESTIONS CONCERNING GROUNDWATER RECHARGE INCLUDE:

- Is recharging water into an aquifer a "beneficial use"?
- Can an overlying landowner prevent others from storing water in aquifers beneath his land without his consent?
- Is an entity trespassing when its recharged water runs under another person's land?
- Does the "Takings Clause" in the US Constitution's Fifth Amendment — requiring "just compensation" for private property taken for public purposes — apply to managed aquifer recharge projects, and if so, to what degree?

- I nt?
- S source before making a "call" to protect their senior water right?

Full Article available at IWE website



In This Issue:

**Managed
Aquifer Recharge 1**

**Texas v. New Mexico
& Colorado 11**

**Gila River
Water Storage 20**

MANAGED AQUIFER RECHARGE

BENEFITS OF PUBLIC-PRIVATE PARTNERSHIP

by David R. Tuthill, Jr., Hal N. Anderson, Idaho Water Engineering (Boise, ID)
and Michael Comeskey (Boise, ID)

Reprinted by Idaho Water
Engineering with permission
from the Publisher.

INTRODUCTION

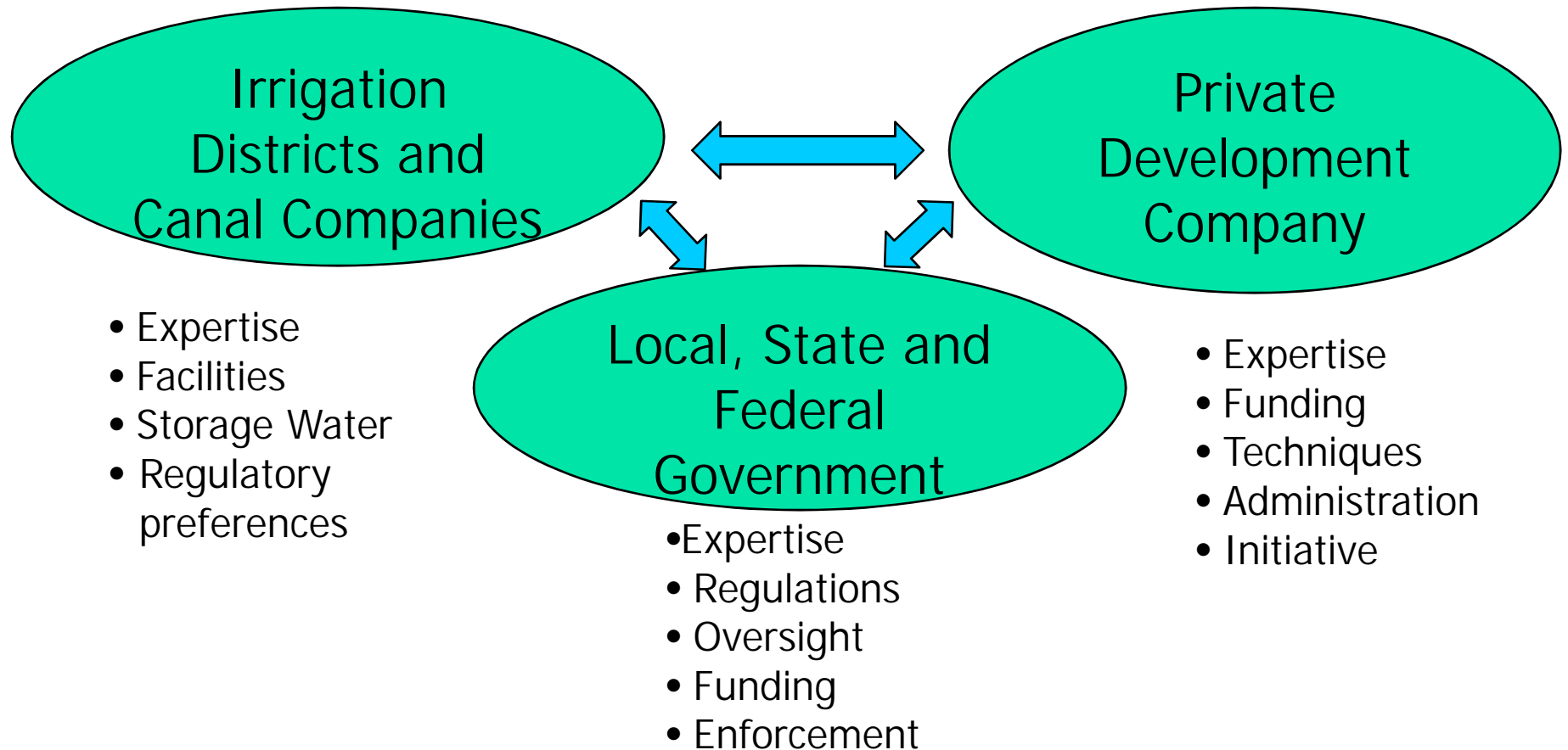
Demands on water are increasing worldwide, including the western United States. Supplies in many basins are fully allocated and competition is rapidly increasing to secure future needs. Conservation and improved efficiency, while helpful, will not provide enough savings to satisfy all future needs. Additional storage is needed to maximize

Full Article available at IWE website

developed. Remaining surface sites face decreasing public funding and new environmental

What entities will develop storage and recharge in the future?

Public-Private Partnerships



Potential Benefit of a Public-Private Partnership

Recharge Potential

Alternative 1. Government only.

No profit motive.
Does not provide for specific needs.
Limited funding.



Alternative 2. Private Only.

Needs Government support.
Can provide additional opportunities
for Government programs.
Can satisfy needs of specific clients.

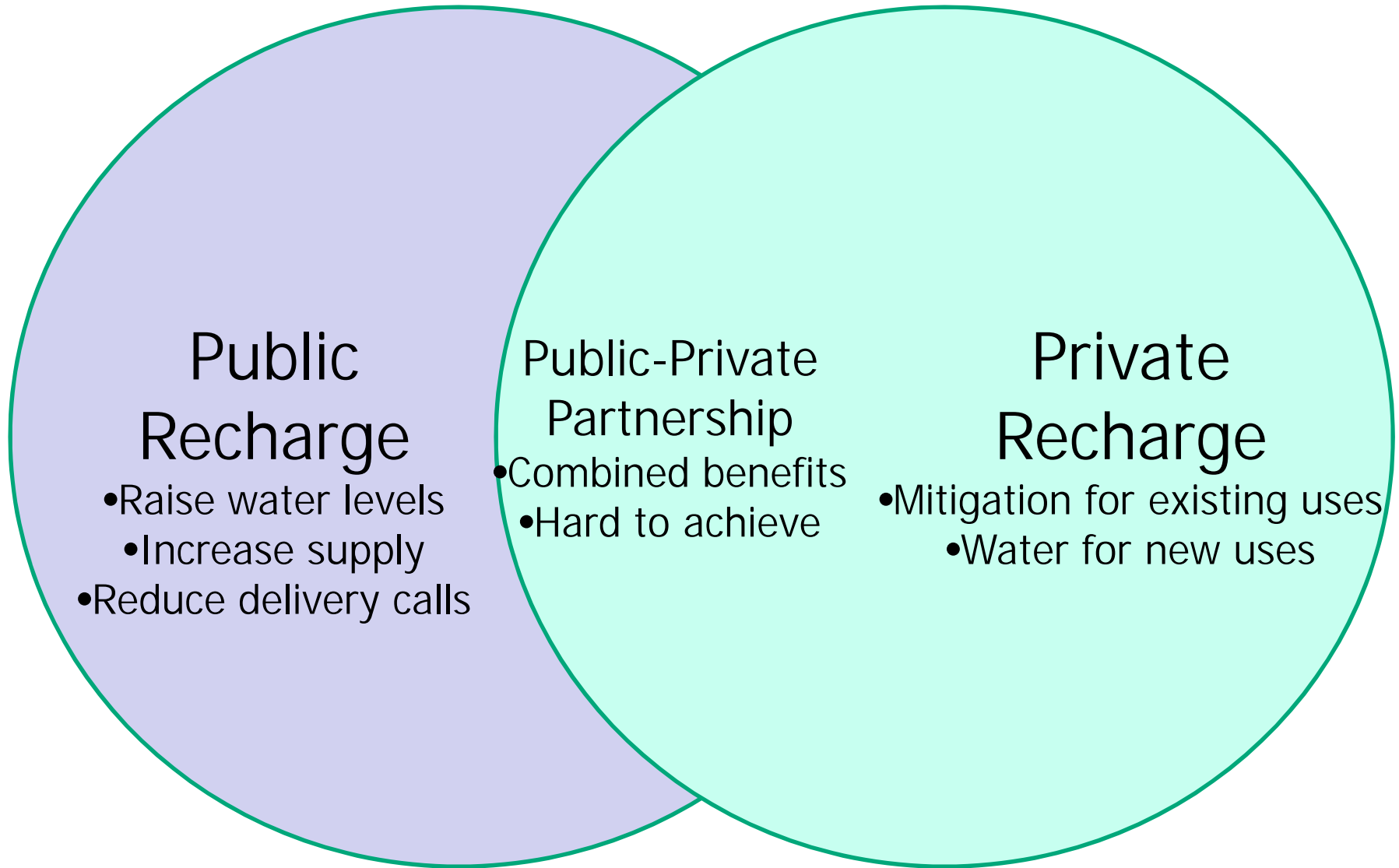


Alternative 3. Public-Private Partnership.

Minimizes regulatory impediments.
Leverages efforts and investments.
Provides efficiencies.
Maximizes return on investment.

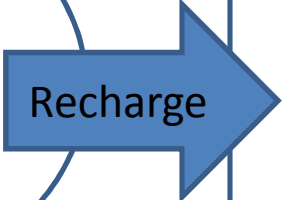


Managed Aquifer Recharge



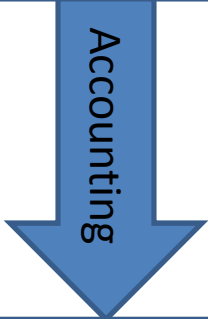
**Recharge
Development
Corporation**

**Corporation
-Owned
Recharge
Facilities**

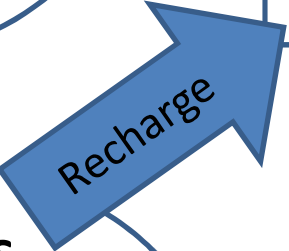


**Technical
Processing**
-Measurement
-Modeling

**Recipients
(via Contracts)**
-Municipalities
-Subdivisions
-Commercial/Industrial
-Existing Irrigation
-Replacement Acres



**Providers
(via Contracts)**
- Irrigation Districts
- Canal Companies



Mitigation Plans
-Mitigation of
Existing Uses
- New uses



Thank you.



Website: www.idahowaterengineering.com

Email: info@idahowaterengineering.com