Treasure Valley Comprehensive Aquifer Management Planning

"Considerations for the Future of Water Management in the Treasure Valley"

Dave Tuthill, PhD, PE

July 30, 2010

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Water Solutions

Prediction…

Relative to water delivery in the Treasure Valley…

Change

is coming
between now and 2020

Outline

- Water administration basics
- Evolution of surface water management in the Treasure Valley
- Evolution of ground water management in the Treasure Valley
- Implementation of conjunctive administration
- Rapid advances in technology
- How we can deal with change

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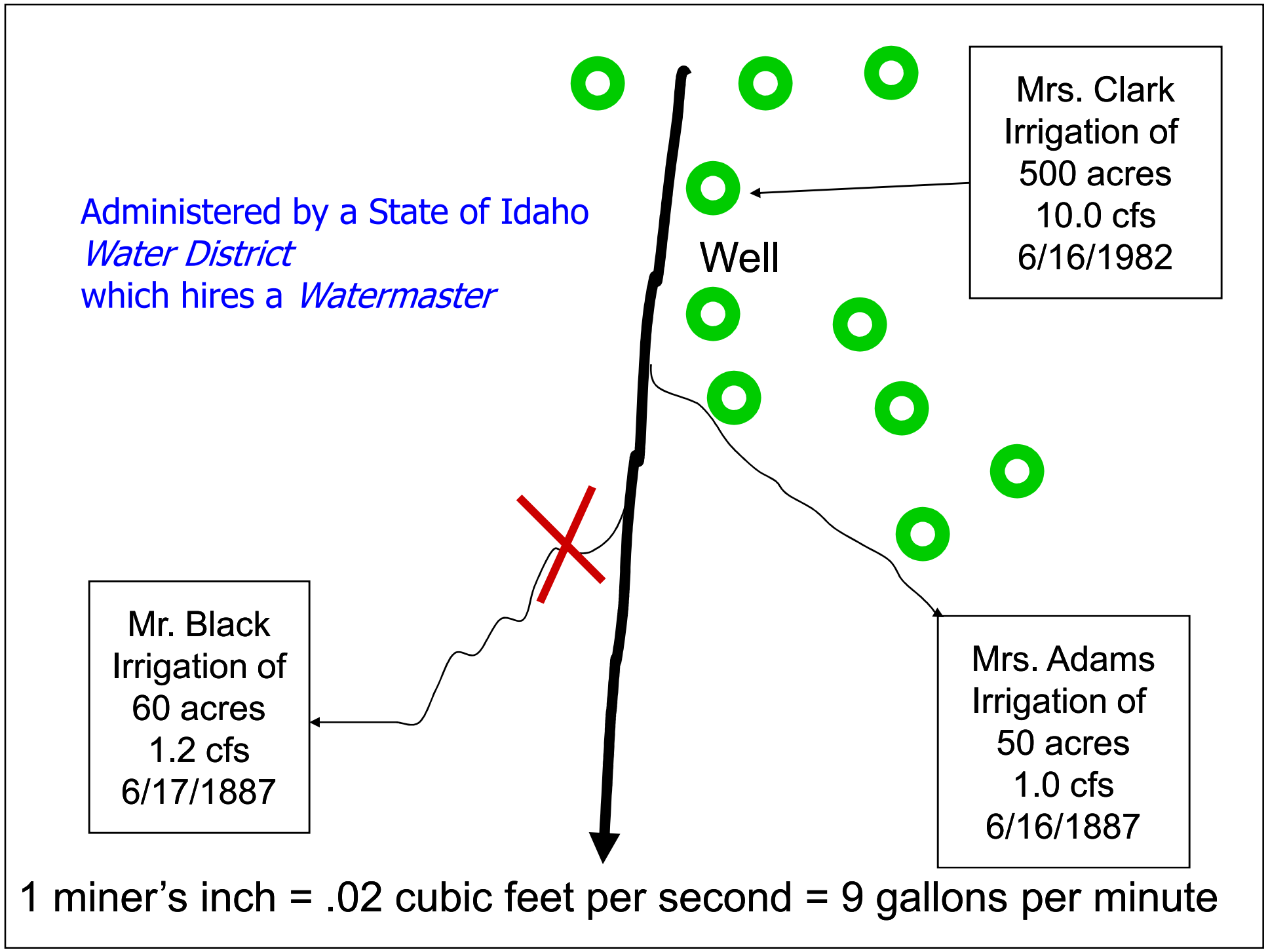
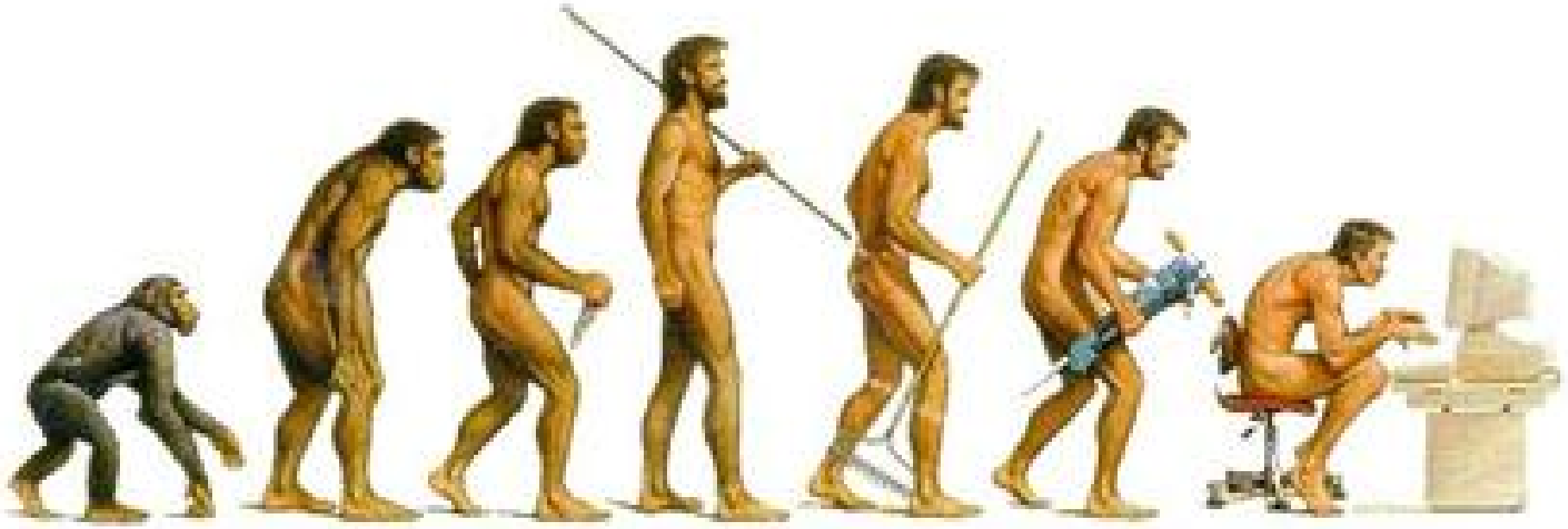
In Idaho the *appropriation doctrine* is used for the delivery both surface water rights and ground water rights—

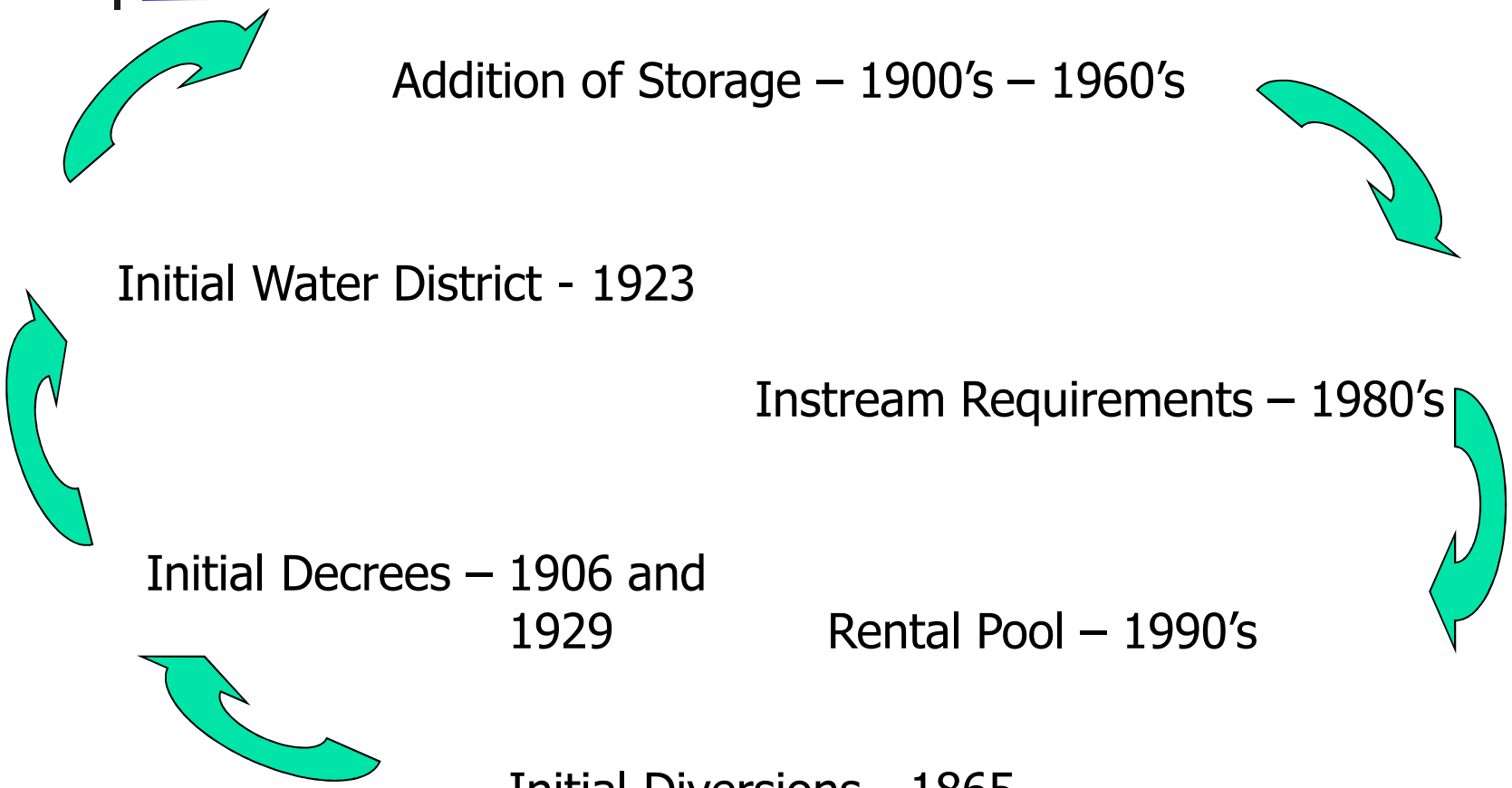
"first in time is first in right"


Administered by a State of Idaho
Water District
which hires a *Watermaster*
Well
Mrs. Clark
Irrigation of
500 acres
10.0 cfs
6/16/1982
Mr. Black
Irrigation of
60 acres
1.2 cfs
6/17/1887
Mrs. Adams
Irrigation of
50 acres
1.0 cfs
6/16/1887
1 miner's inch = .02 cubic feet per second = 9 gallons per minute

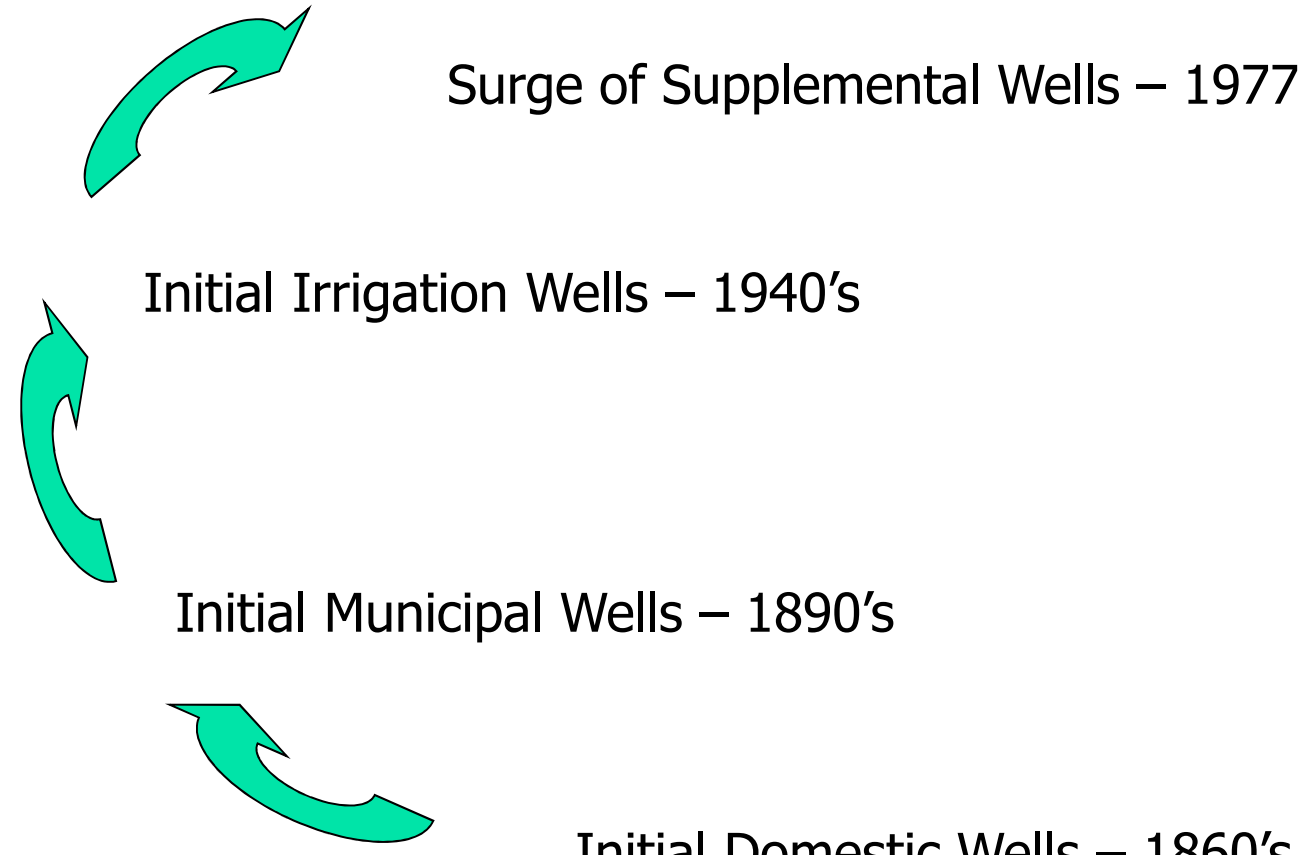
Darwin's Evolutionary Cycle



Surface Water Evolutionary Cycle – Boise River



Ground Water Evolutionary Cycle – Boise River Basin



Implementation of Conjunctive Administration

Problem

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

if fair delivery is to be achieved

Additional Drivers of Change

- Increased efficiencies of irrigation have led to reduced deep percolation
- Increasing urbanization
- Increased recognition of instream values
- Water needs for energy production
- Impacts of climate change?
- A need to coordinate land use planning with water use planning

Implementation of Conjunctive Administration

All but 100 recommendations resolved April 22, 2010

Basin poised for Implementation of Conjunctive Administration

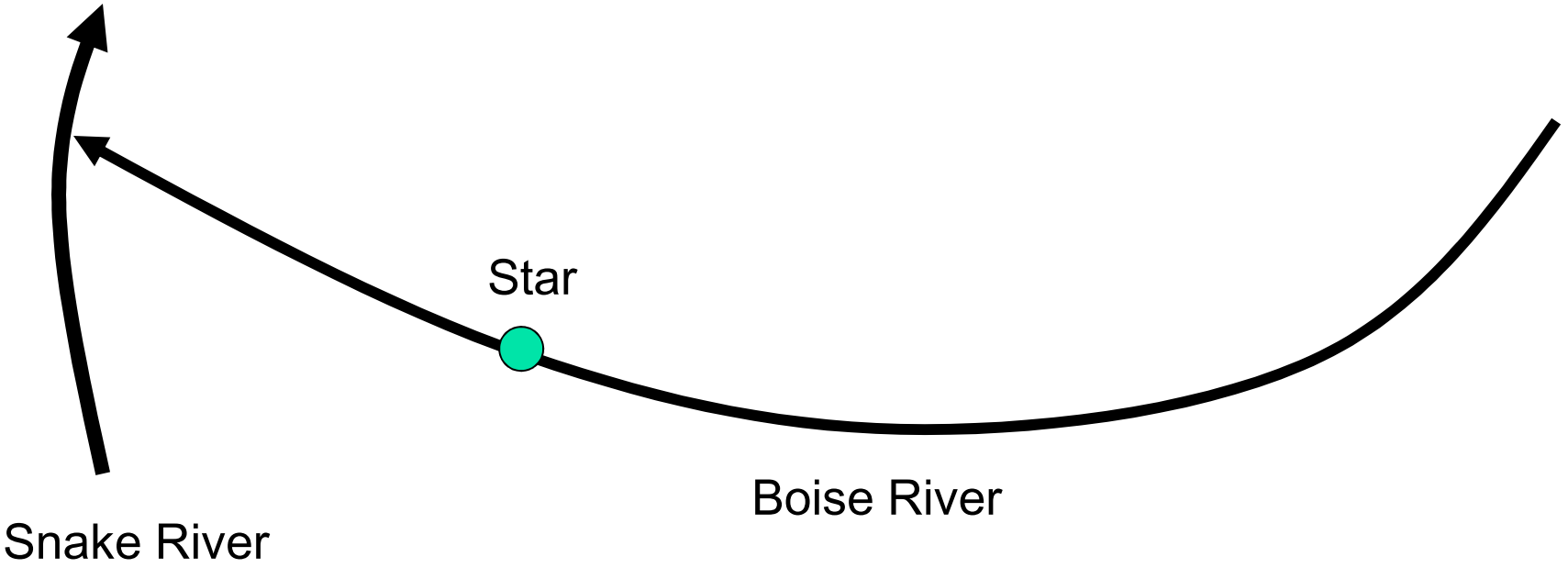
Recommended water rights in Basin 63:
13,000+ domestics
6,000+ non-domestics

Snake River Basin Adjudication initiated in 1987

Creation of water rights from surface water and ground water

Impact of Implementation of Conjunctive Administration

Ground water diversions are administered with surface water diversions



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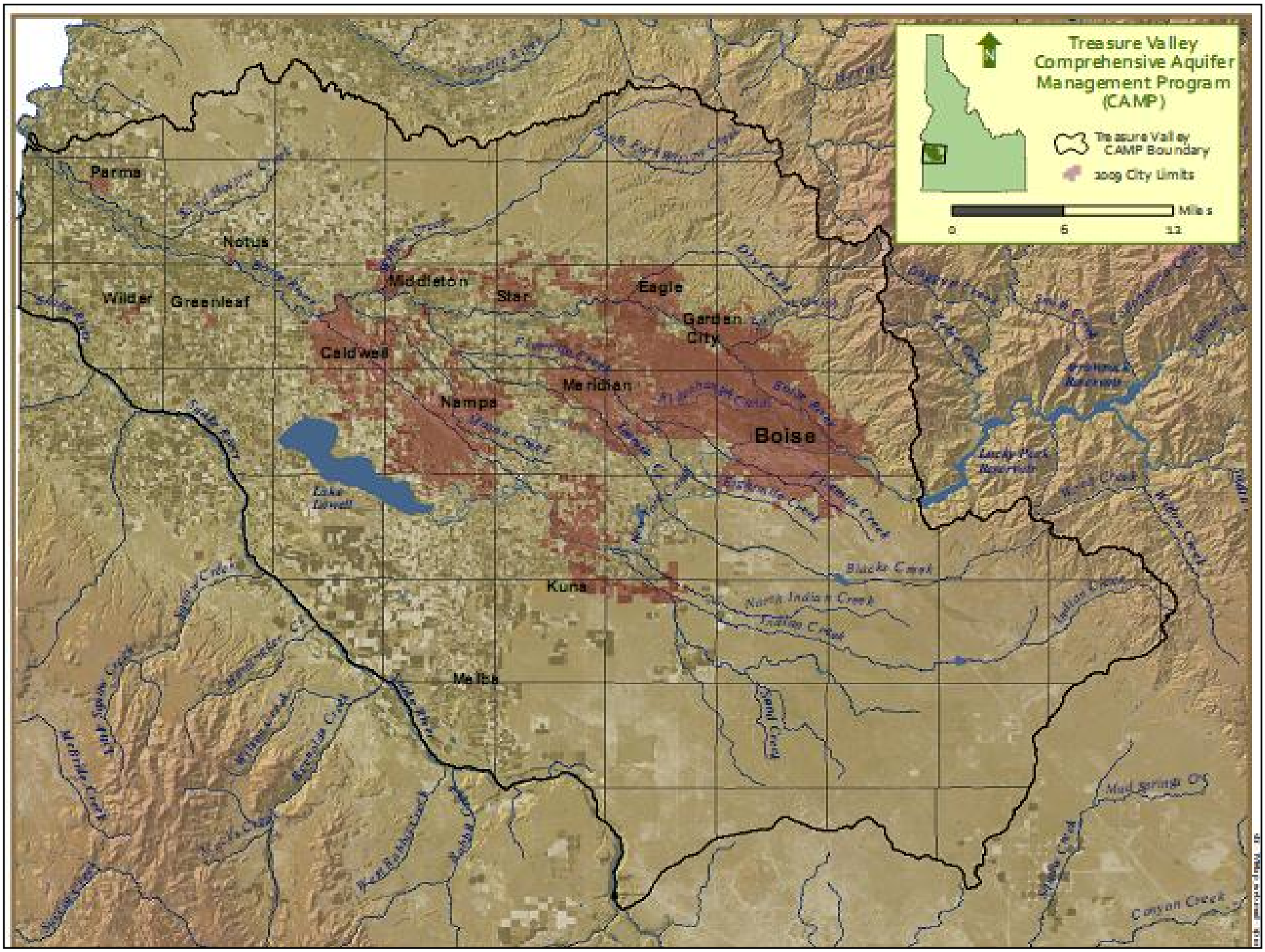
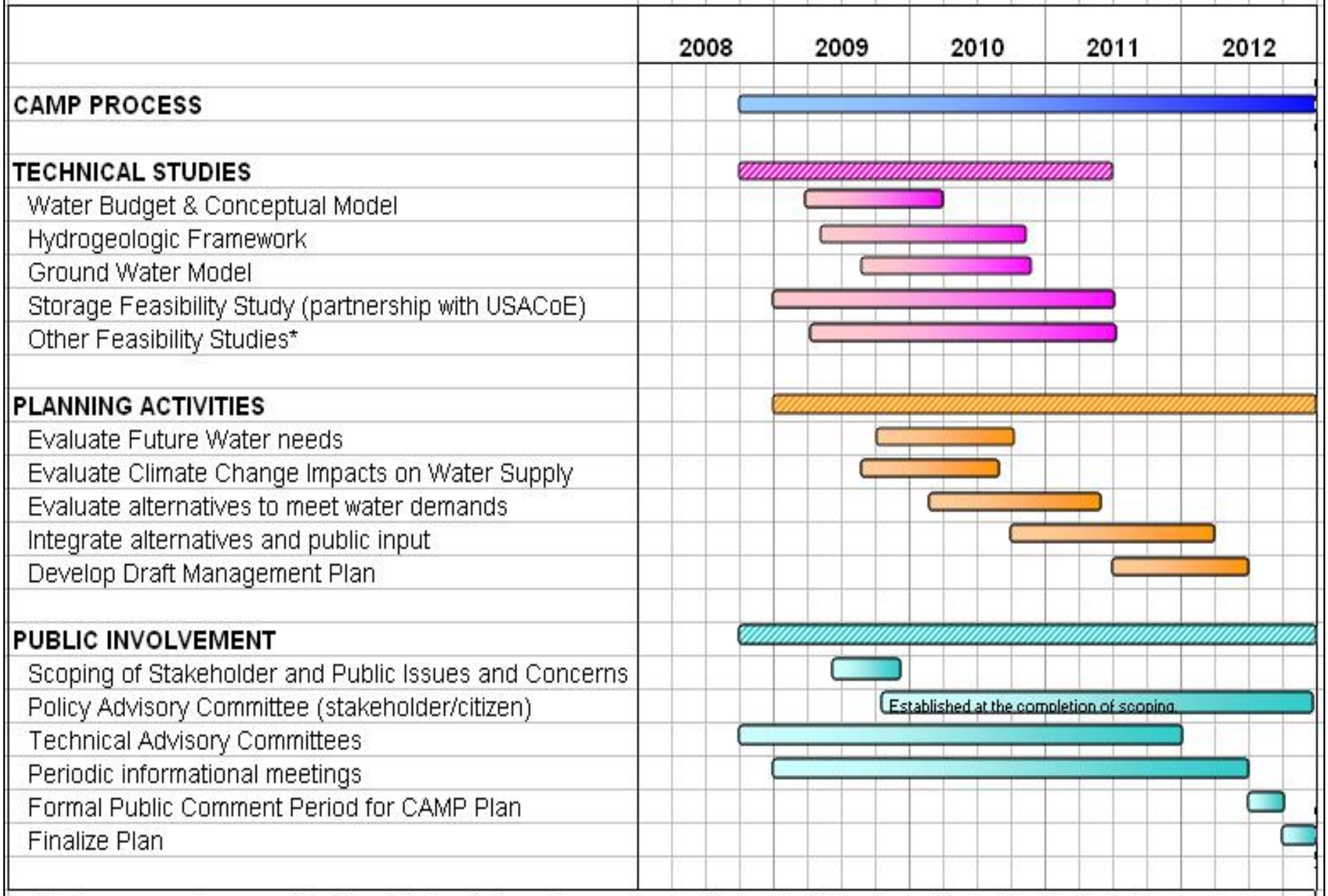

Treasure Valley
Comprehensive Aquifer
Management Program
(CAMP)
Treasure Valley
CAMP Boundary
2009 City Limits
Miles
0
6
12
Parma
Notus
Middleton
Star
Eagle
Wilder
Greenleaf
Garden
City
Caldwell
Meridian
Nampa
Boise
Lake
Lowell
Kuna
Melba

Treasure Valley Comprehensive Aquifer Management & Planning Process



*Recharge, weather modification, interbasin transfers, conservation and other alternatives identified during process

Members	Affiliation
Abramovich, Ron	NRCS
Atkinson, Michelle	Micron Technology, Inc.
Barrie, Rex	Boise River Watermaster WD #63
Batt, Gayle	Wilder Irrigation District
Bowling, Jon	Idaho Power Company
Burnell, Barry	Idaho Department of Environmental Quality
Dane, Russ	Keller Williams Realty
Deveau, Paul	Boise Project Board of Control
Dixon, Dave	Greenleaf Farms Inc. - Owner
Duspiva, Gary	Canyon County P&Z Commission
Fraser, Rob	Idaho Wildlife Federation - President
Fuss, Michael	Nampa Public Works Director
Goodson, Stephen	Governor's Office
Howard, Matt	Bureau of Reclamation
Jones, Chris	Trout Unlimited - VP Ted Trueblood Chapter
Larson, Bill	Treasure Valley Partnership

Treasure Valley

Comprehensive Aquifer Management Plan

Advisory Committee

Established March 26, 2010

McKee, Lynn	Ada Cty. SWCD - Vice Chair
Nelson, Greg	
Patton, Brian	Idaho Department of Water Resources
Peter, Kathy	Unaffiliated, former Director of USGS Idaho Water Science Program
Pline, Clinton	Nampa/Meridian Irrigation District - Board
Prigge, John	Sorrento Lactalis - Wastewater Treatment Manager
Rhead, Scott	United Water - Director Engineer
Ronk, Jayson	VP of Idaho Assn of Commerce & Industry
Scott, Jeff	Pioneer Irrigation District Water Superintendent
Shoemaker, Gary	City of Caldwell Water Department
Stewart, Lon	Sierra Club
Stewart, Warren	City of Meridian Pub Works Dept - Engineer Manager
Thornton, John	N. Ada Cty. GW users; N. Ada Co Foothills Assoc; Member of N. Ada Cty. Tech. Working Group
Ward, Rick	Idaho Department of Fish and Game
Woods, Paul	Boise City Public Works Department
Yerton, Janice	Water System Operator, Kuna

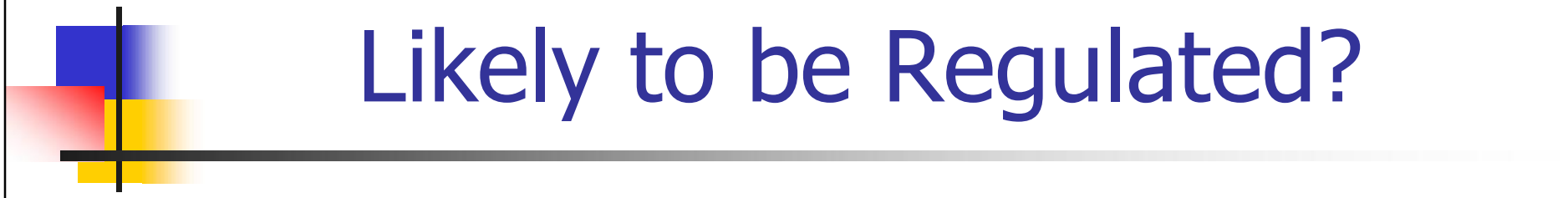
Treasure Valley

Comprehensive Aquifer Management Plan

Advisory Committee

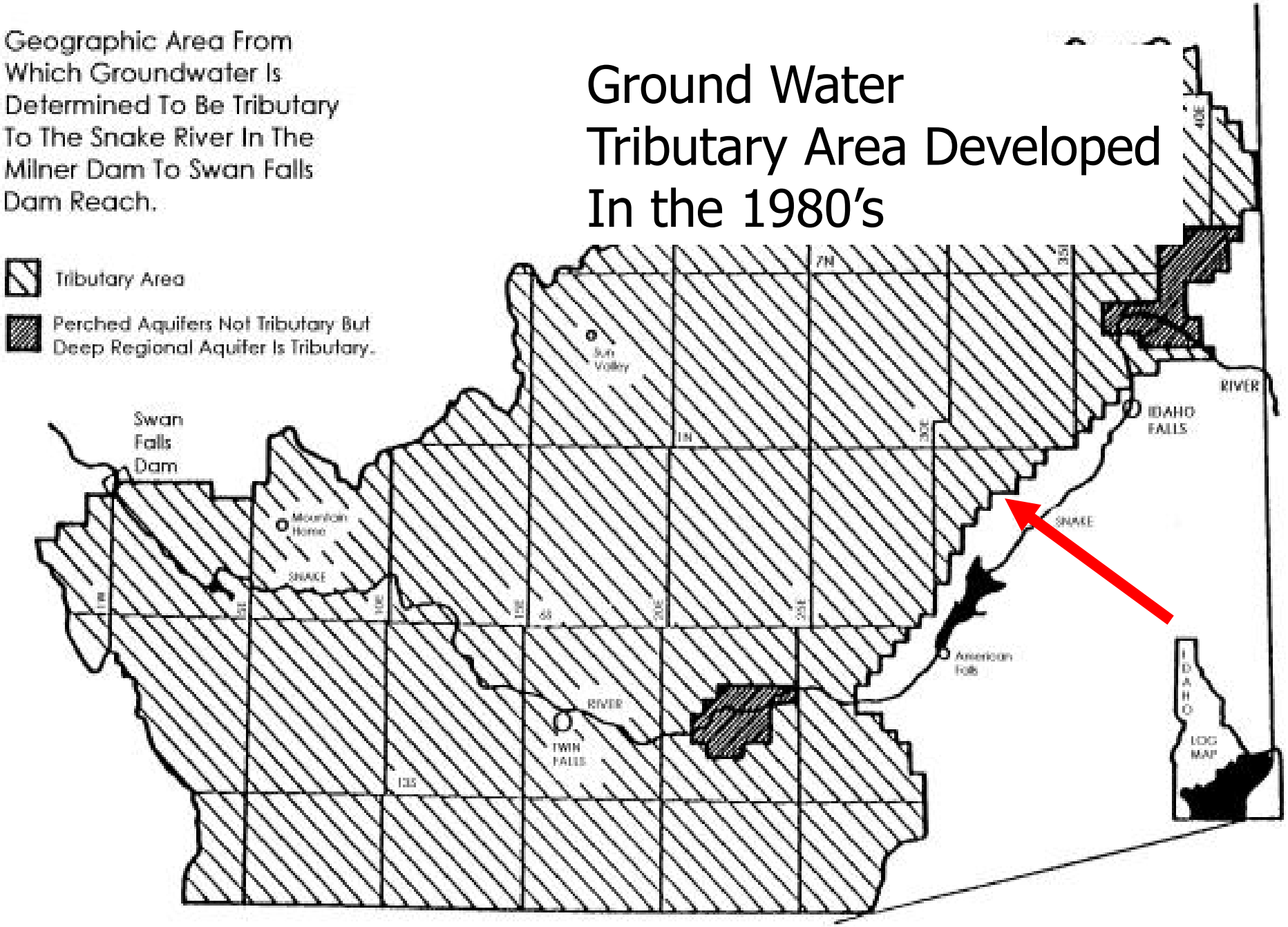
Established March 26, 2010

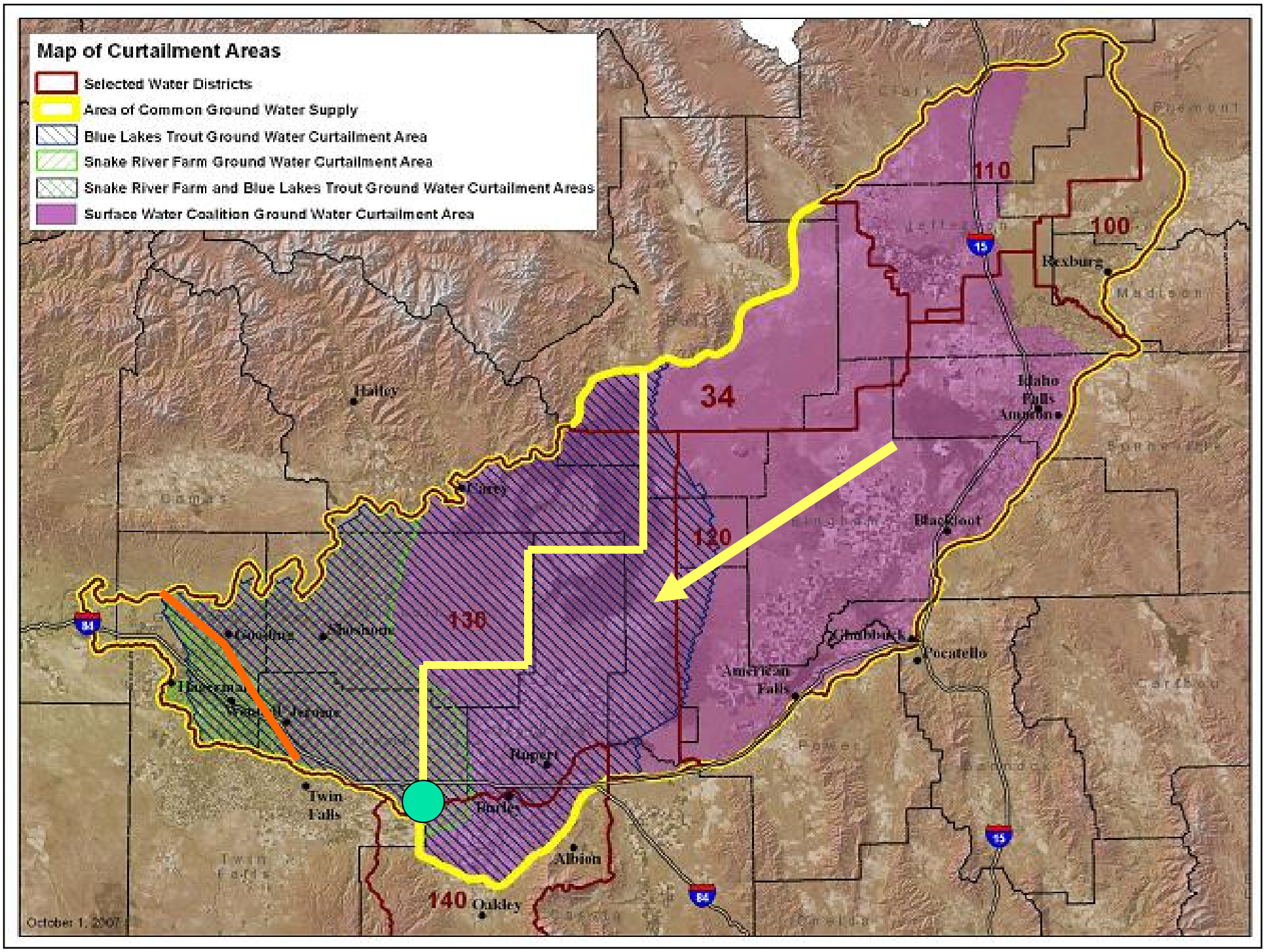
Which Wells are Likely to be Regulated?



Ground Water Tributary Area Developed In the 1980's

Geographic Area From Which Groundwater Is Determined To Be Tributary To The Snake River In The Milner Dam To Swan Falls Dam Reach.




Map of Curtailment Areas
Selected Water Districts
Area of Common Ground Water Supply
Blue Lakes Trout Ground Water Curtailment Area
Snake River Farm Ground Water Curtailment Area
Snake River Farm and Blue Lakes Trout Ground Water Curtailment Areas
Surface Water Coalition Ground Water Curtailment Area
110
100
34
120
130
140
Rexburg
Idaho Falls
Ammon
Blackfoot
Pocatello
Chubbuck
American Falls
Hailey
Carey
Gooding
Shoshone
Jerome
Rupert
Twin Falls
Burley
Albion
Oakley
October 1, 2007

MEMORANDUM

DATE: February 22, 2008 Amended Application Processing No. 59

TO: Water Management Division

FROM: Gary Spackman

RE: Processing of Applications to Appropriate Water in the Lower Boise River Basin

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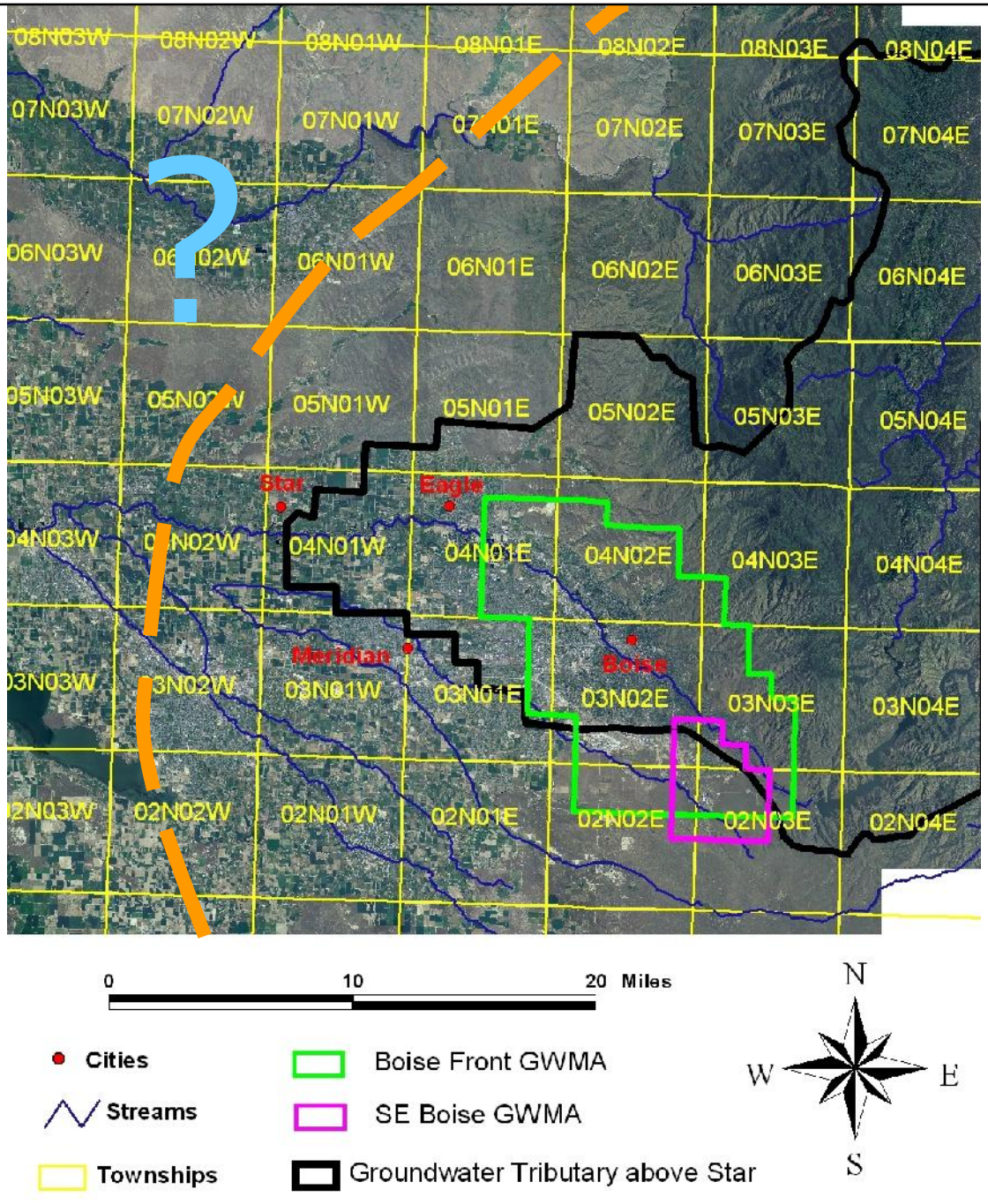
This memorandum replaces the original Application Processing Memorandum No. 59 issued in 1996.

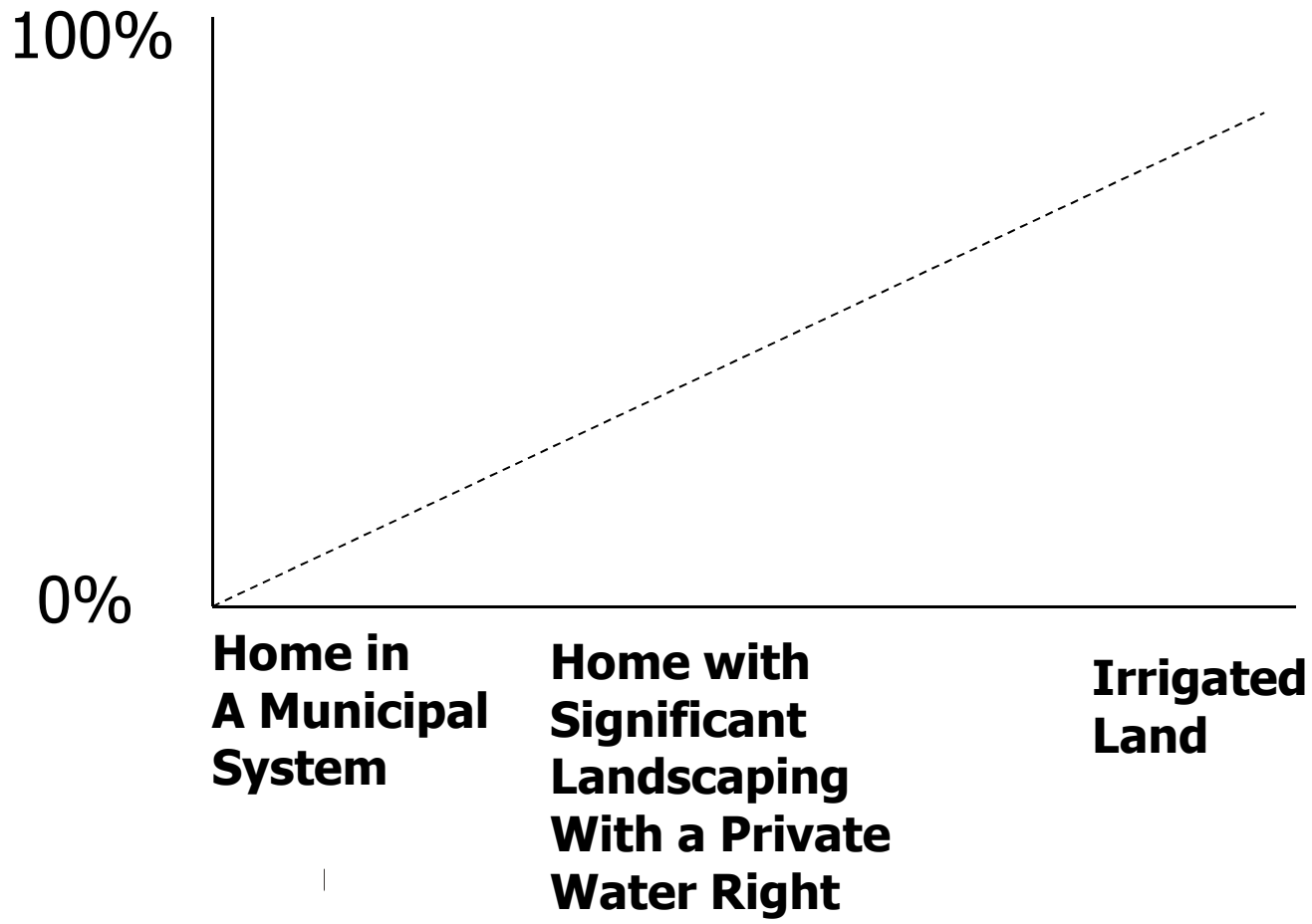
Until further instructions are given, the following provisions apply to the processing of applications to appropriate water in the Boise River Basin (Administrative Basin 63) downstream from Lucky Peak dam.[1]

1. Surface water in the Boise River or tributary to the Boise River upstream from Star Bridge is fully appropriated during the irrigation season and during much of the rest of the year. As stated in the May 3, 1995, Amended Moratorium Order for the Boise River drainage:


08N03W
08N02W
08N01W
08N01E
08N02E
08N03E
08N04E
07N03W
07N02W
07N01W
07N01E
07N02E
07N03E
07N04E
06N03W
06N02W
06N01W
06N01E
06N02E
06N03E
06N04E
05N03W
05N02W
05N01W
05N01E
05N02E
05N03E
05N04E
Star
Eagle
04N03W
04N02W
04N01W
04N01E
04N02E
04N03E
04N04E
Meridian
Boise
03N03W
03N02W
03N01W
03N01E
03N02E
03N03E
03N04E
02N03W
02N02W
02N01W
02N01E
02N02E
02N03E
02N04E
0
10
20 Miles
Cities
Streams
Townships
Boise Front GWMA
SE Boise GWMA
Groundwater Tributary above Star
N
W
E
S

How water management change impacts water professionals

Value of a Water Right as a Percent of Property Value



Inhibitors to Discussing Water Rights in Property Transactions

Historic

- Lack of buyer awareness
- Lack of determination of water rights
- Lack of regulation
- Lack of measurement
- Lack of enforcement
- Lack of economic incentive

Emerging

- Increasing awareness
- Snake River Basin Adj.
- Northern Idaho Adj.
- Adjudication enables
- Increased gaging
- Remote sensing
- Increasing water value

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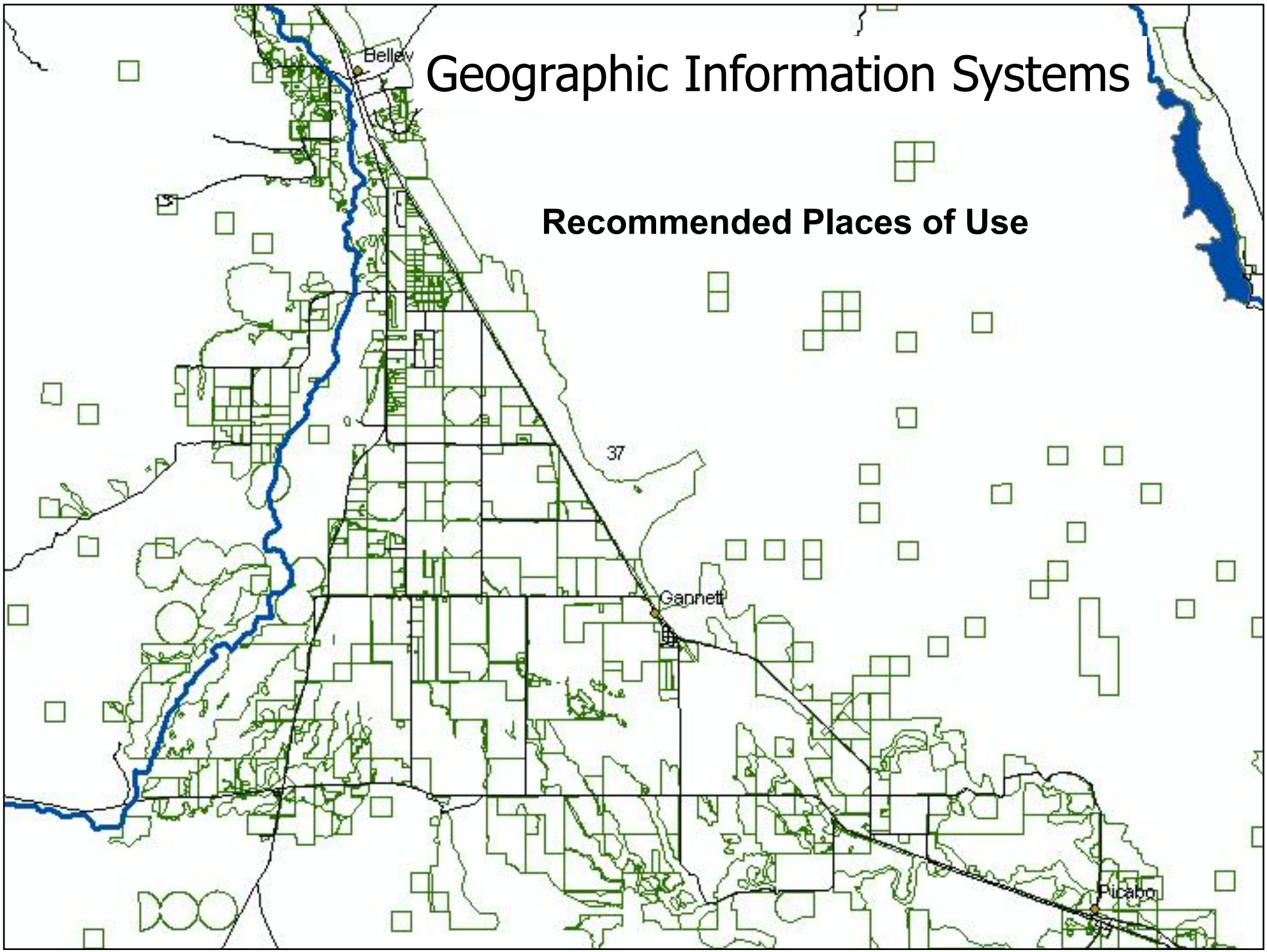
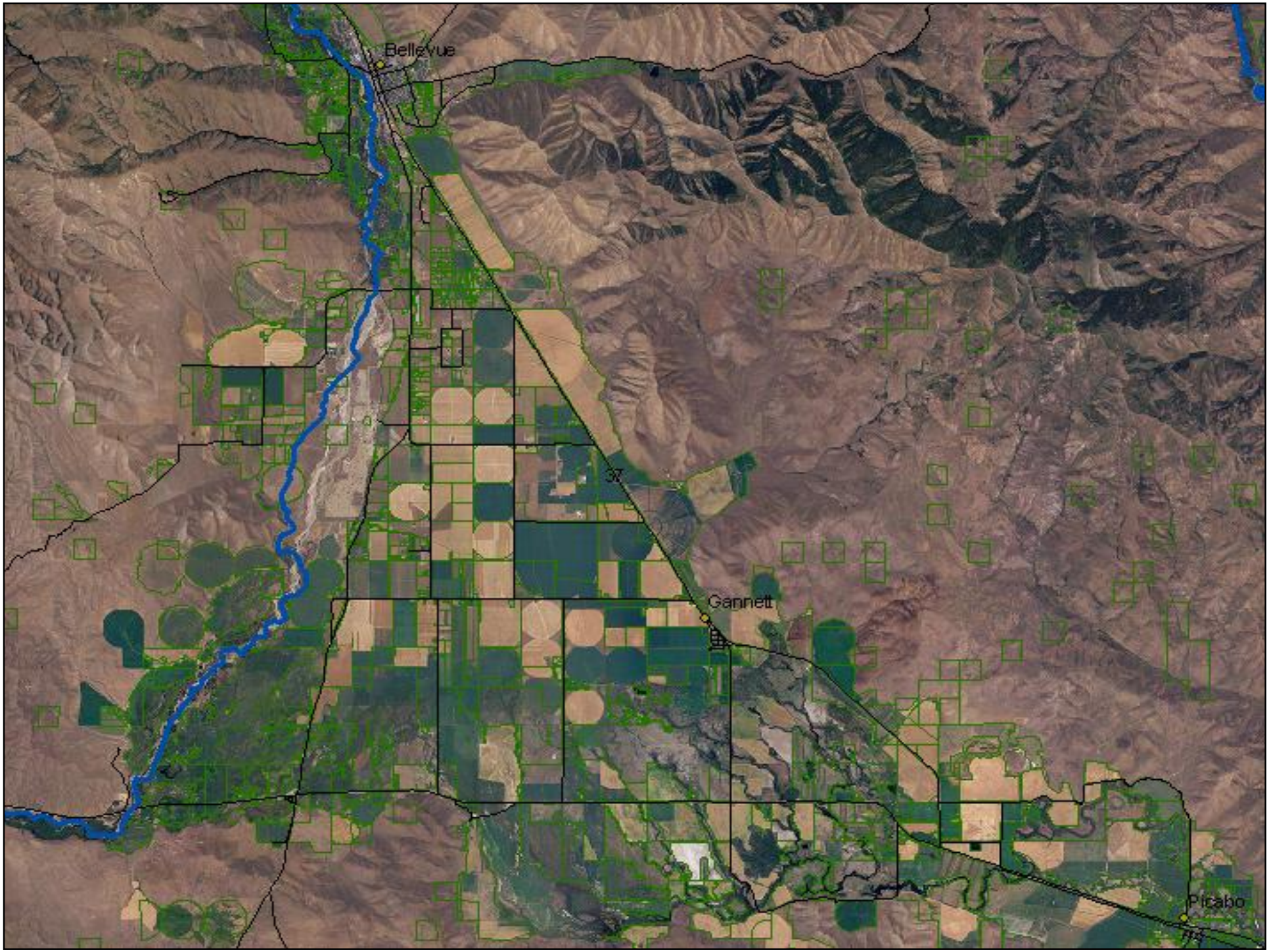
Advances in Technology

Geographic Information Systems




Bellevue
Gannett
Picabo


Bellevue
37

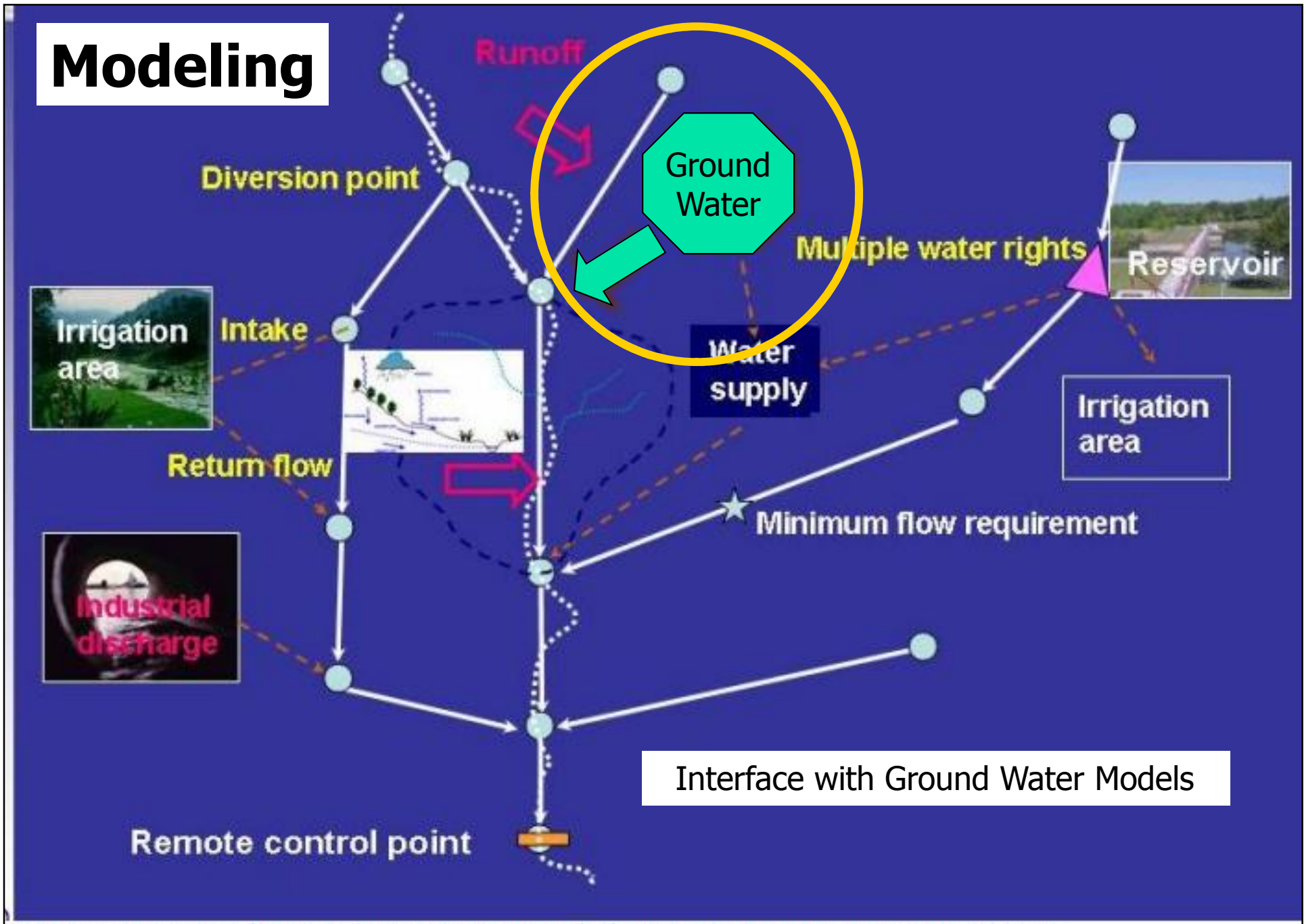


Figure 1.1 Simplified schematization of the MIKE BASIN model network

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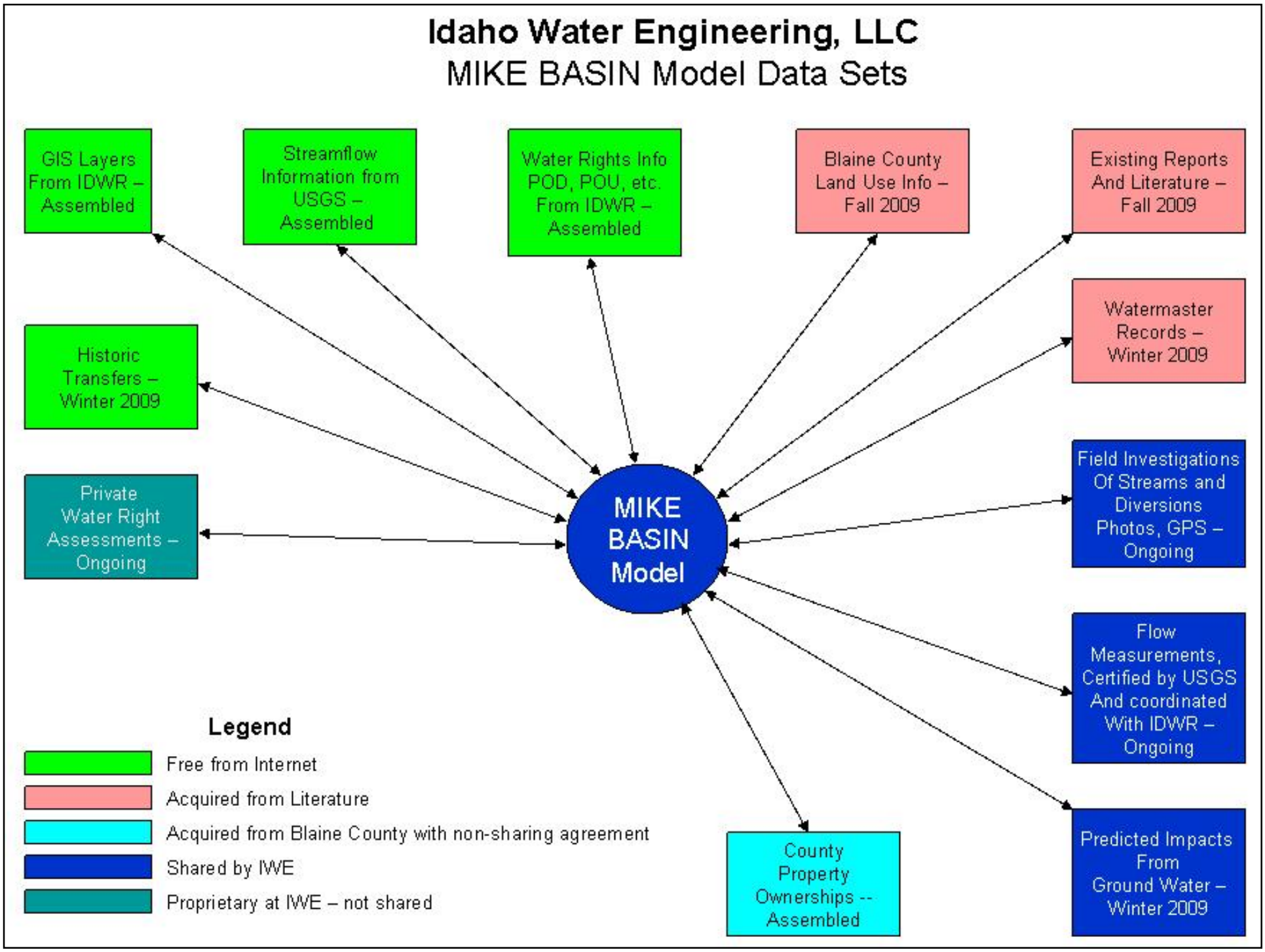
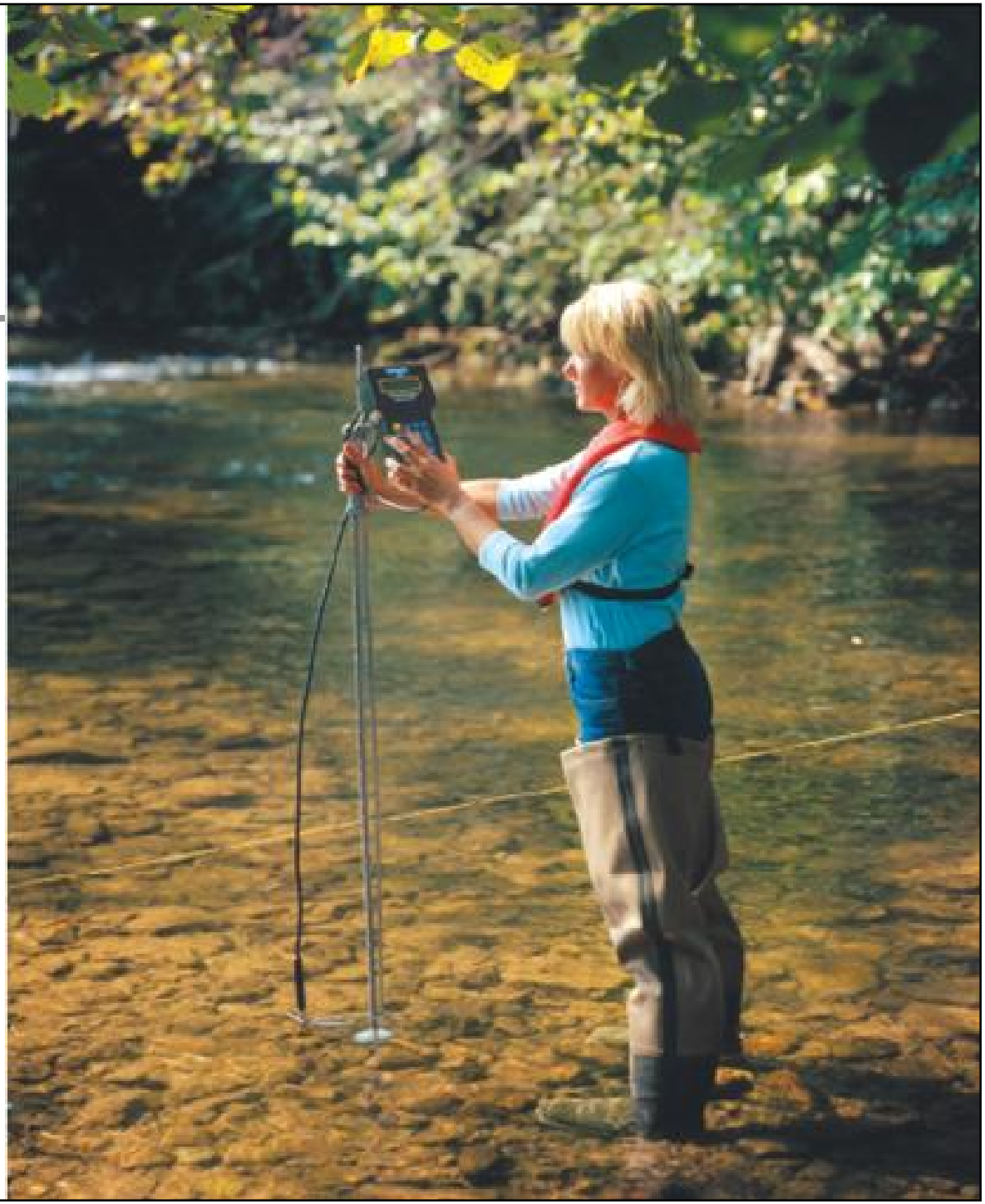
MIKE BASIN Model Data Sets



Streamflow Measurement



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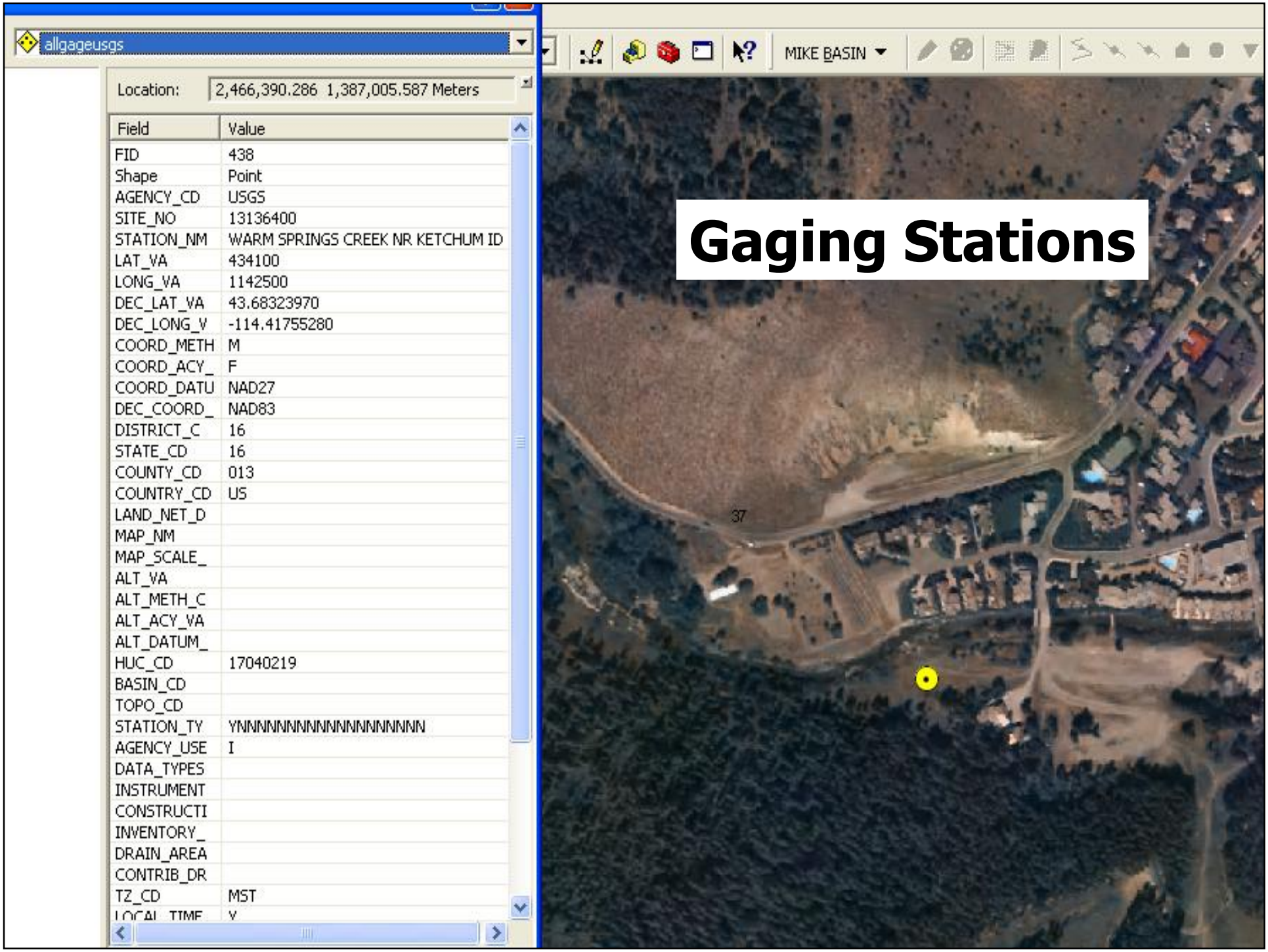
allgageusgs
Location: 2,466,390.286 1,387,005.587 Meters
Field
Value
FID 438
Shape Point
AGENCY_CD USGS
SITE_NO 13136400
STATION_NM WARM SPRINGS CREEK NR KETCHUM ID
LAT_VA 434100
LONG_VA 1142500
DEC_LAT_VA 43.68323970
DEC_LONG_V -114.41755280
COORD_METH M
COORD_ACY_ F
COORD_DATU NAD27
DEC_COORD_ NAD83
DISTRICT_C 16
STATE_CD 16
COUNTY_CD 013
COUNTRY_CD US
LAND_NET_D
MAP_NM
MAP_SCALE_
ALT_VA
ALT_METH_C
ALT_ACY_VA
ALT_DATUM_
HUC_CD 17040219
BASIN_CD
TOPO_CD
STATION_TY YNNNNNNNNNNNNNNNNNN
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DATA_TYPES
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CONSTRUCTI
INVENTORY_
DRAIN_AREA
CONTRIB_DR
TZ_CD MST
MIKE BASIN
Gaging Stations
37

How Water Professionals can Deal with Water Management Change

1. Recognize that conjunctive administration is coming
2. Stay abreast of technology
3. Collaborate with specialty expertise
4. Collaborate between government and private capabilities

and…

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THINK AHEAD

Additional Thoughts…

- Water Management in the Treasure Valley is evolving toward Conjunctive Administration
- An orderly transition can be achieved if steps are taken prior to critical moments
- The Treasure Valley can become a model for this transition
- Water professionals should inform clients of this evolution in their interactions

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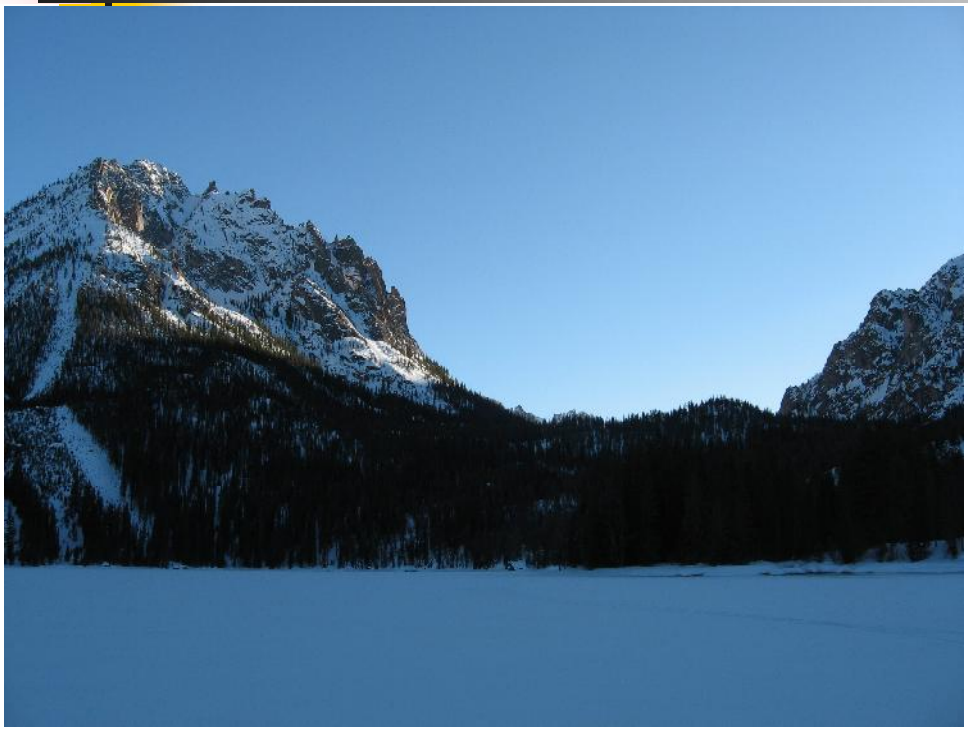

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